THE IMPACT OF PROPERTY TAX LIMITS ON LOCAL GOVERNMENT BORROWING

Prepared for the
States as Facilitators or Obstructionists of Local Governments Conference
Co-hosted by the DeVoe Moore Center and the LeRoy Collins Institute
Florida State University
February 25-27, 2010

Sharon N. Kioko, Ph.D.
Assistant Professor - Department of Public Administration
Maxwell School of Citizenship and Public Affairs
Syracuse University
426 Eggers Hall
Syracuse, NY 13214
Email: snkioko@maxwell.syr.edu
Phone: (315) 443-9049

Draft: Please do not cite without the authors permission.

ABSTRACT

Property tax limits place significant constraints on a local government's ability to manage its resources. These limits indirectly constrain the government's borrowing authority, as the amount of general tax dollars available to meet principal and interest payments on tax supported debt is now subject to the limit. At the state level, there is evidence to suggest that dollar limits on appropriations (revenue and expenditure caps) may lead to increased general obligation debt, while limits on taxing authority may lead to lower general obligation debt but more revenue debt (Kioko, 2009b). This study finds local governments with limits on taxing authority (assessment limits, property tax rate limits, and property tax levy limits) do issue less general obligation debt while local governments with revenue and expenditure caps issue more general obligation debt. This suggests that the structure of the property tax limits is an important determinant of a governments taxing or spending authority, where tax limits are a binding constraint while the expenditure caps are a non-binding constraints. This study also finds that while their taxing authority may be constrained, local governments with property tax levy limits were able to issue more revenue debt, suggesting that perhaps their ability to diversify their revenues allowed them to increase their borrowing capacity.

1. INTRODUCTION

Virtually all states have imposed some limitation on their local government's ability to levy property taxes or issue debt. Property tax limitations include limitations on property tax rates, assessment values, and revenue or expenditure caps (Mullins & Joyce, 1996, p. 334). Limitations on local government borrowing authority include dollar limits on outstanding debt as a percent of assessed property values and in some states, a voter approval requirement. In concert, the limitations curtail current and future spending authority of these governments.

Fiscal institutions are not always effective especially since a number of them are non-binding. Moreover, government officials can and do circumvent the limitations to produce fiscal outcomes that were clearly not intended. For example, while the property tax limits have curtailed the taxing authority of local governments, they do not constrain overall spending. Local governments have simply changed how specific goods are financed by becoming less dependent on tax revenues (Hoene, 2004; Yuan, Cordes, Brunori, & Bell, 2007, p. 19). Limitations on tax supported debt do not stop governments from issuing debt, but rather change the nature of the debt structure to include a variety of forms of non-guaranteed debt and shifts state-level debt down to local debt (Johnson & Kioko, 2009; Kiewiet & Szakaly, 1996).

This study seeks to expand our understanding of the impact of fiscal constraints specifically local government property tax limits on the supply of municipal debt. Property tax limits are a constraint on taxing authority of a local government. A limitation on their taxing authority should have an impact on how much general obligation debt a local government can issue, as the financing instrument relies on the taxing authority of the issuer to meet its principal and interest payments. This study finds local governments with limits on taxing authority (assessment limits, property tax rate limits, and property tax levy limits) do issue less general obligation debt while local governments with revenue and expenditure caps issue more general obligation debt. This suggests that the structure of the property tax limits is an important determinant of a governments taxing or spending authority, where tax limits are a binding constraint while the expenditure caps are a non-binding

constraints. This study also finds that while their taxing authority may be constrained, local governments with property tax levy limits were able to issue more revenue debt, suggesting that perhaps their ability to diversify their revenues allowed them to increase their borrowing capacity.

We begin with review of the literature on property tax limits (section 2) and debt limits (section 3) on local government spending and borrowing. In section 4 and 5 we develop our research hypothesis and describe our data. Section 6 provides an interpretation of our results, discussion and conclusion.

2. TAX AND EXPENDIUTRE LIMITS (TELs) AND LOCAL GOVERNMENT SPENDING

While the property tax revolt begun with California's Proposition 13, voter initiatives to limit taxing authority, specifically property taxes begun as early as the 1870's in cities like Houston and San Francisco and resurged once again during the Great Depression in states like Michigan, Nevada, Ohio, Oklahoma, West Virginia, and Washington (Rubin, 1998; Yuan, et al., 2007). In examining these tax revolts, Rubin (1998) found that there has been a consistent pattern of expenditure growth generally driven by a growth in population, an expansion of government functions, rapid inflation, or some combination of the above - followed by a recession that contributed to tax protests, voter initiatives, and the ratification of tax and expenditure limits. Property tax revenues are more likely to get out of balance with people's ability to pay more so than any other tax because they are a tax on wealth rather than a tax on income or consumption. Consequently, taxpayers often find their tax burdens, which were carried comfortably during a period of general prosperity, becoming intolerable during an economic recession (Brennan & Buchanan, 1979; Mullins & Wallin, 2004; Rubin, 1998; Wallin, 2007). In a study by Alm and Skidmore (1999), the authors found that growth in property taxes increased the probability that a tax limit (whether state or local tax limit) would ratified.

TELs are provisions intended to ensure fiscal discipline and enhance accountability. They are popular among taxpayers who often view these limits as a necessary solution to address issues

brought forth by the taxpayers. Voter support is often focused on a desire for lower taxes and more efficiency in government. Voters often believe that their own taxes would be reduced without affecting their desired services (Ladd & Wilson, 1982; Levy, 1975). In approving these limits, taxpayers believe their political representatives are not acting in their best interests. They therefore seek these limitations not only to restrict the actions of their current and future representatives, but also to prevent them from taking actions that the taxpayer predicts they would have taken in the absence of the limit (Brennan & Buchanan, 1979). Through these limits, taxpayers are seeking assurances that their taxes would not grow unpredictably.

Mullins and Joyce (1996) classify local government TELs into five basic categories including limits on assessment increases, limits on overall property tax rates, limits on specific property tax rates, levy limits, and revenue and expenditure caps. An additional nonbinding limitation called the "Full Disclosure – Truth in Taxation" has also been adopted by a number of local governments. Mullins and Joyce (1996) find that some of these limits are potentially binding if combined with other types of limits. For example the limits on overall property tax rates limits are potentially binding if combined with assessment limits; otherwise the limits are potentially non-binding with alterations to assessment practices (pg. 77). The levy limits are potentially binding; however, local governments can diversify their revenue sources to reduce the impact of these limitations on total spending authority. The revenue or expenditures caps are a "formidable constraint", given their fixed nature of total appropriations in any fiscal year.

The literature on impact of these property tax limitations is extensive. Yuan et al (2007) classifies these studies into fall broad groups – (1) whether TELs have indeed had their intended effect on restraining government revenue and spending; (2) the impact of TELs on education spending; (3) the impact of TELs on property values; and (4) distributional effects of TELs. This study does not provide a review of this literature. Notwithstanding, Mullins and Wallin (2004) summarize some of the findings - TELs had *"… (1) little effect on overall size of the state and local public sector, (2) decreased use of local broad based taxes (specifically property taxes), and shifts*

to state aid, user charges, and miscellaneous revenues, and (3) expanded relative fiscal (revenues and expenditures) roles for state governments"(pg. 15).

This study will focus will be on the impact of these limitations on the fiscal structure of local governments. Specifically, this study will review changes in local government revenues and empirically test the impact of these changes on local government borrowing.

TELs did not change the amount of taxes collected, they did change how specific goods and services are financed (Yuan, et al., 2007, p. 19). Local governments have become less reliant upon tax revenues, and substituted lost tax revenues with user charges and fees. In California for example, Hoene (2004) found that between 1972 and 2002 property tax revenues declined approximately 9 percent. However, over the same period, revenues from user charges and miscellaneous revenues increased by approximately 13 percent. Shadbegian (1999) found that while local governments did substitute tax revenues with user charges and fees, the substitution is less than dollar-for-dollar (for every $1 in lost property tax revenues, local government increased miscellaneous revenues by $0.27). Hoene (2004) also found that over the same period federal and state aid to local governments in California had declined 10 percent - therefore while state governments did offset local government revenue losses by increasing aid to local governments (Skidmore, 1999), their support to local governments has begun to wane.

The Tax Revolt has changed property taxation, the fiscal structure of local governments, and their ability to meet the needs of those whom they serve (Mullins & Joyce, 1996). Property tax limitations have diminished local government autonomy and increased fiscal centralization (Sokolow, 2000). Today, local governments relying more on procyclical tax revenues and will become increasingly susceptible to cuts in aid which are more likely to occur when the demand for services is at their peak (Bland, 2005; Thompson & Green, 2004; Yuan, et al., 2007).

Mullins (1996) notes that property tax limits have produced horizontal shifts of responsibility through the increased role of special service and finance districts (pg. 113). In concluding her study on special district formation among the states, McCabe (2000) notes that while TELs were intended

to limit growth in government spending, they may actually lead to an increased propensity to create more local governments (pg. 129). Bowler and Donovan (2004) for example find that in states where voter initiated measures was not a possibility, the number of local government jurisdictions declined. However once a state adopted a TEL, the number of local government jurisdictions in that state increased, more so in states where ballot initiatives were easier to use. Carr (2006) qualifies these findings. He argues that growth in local government jurisdictions is not as magnified; in fact only the most restrictive environments had substantially more special districts.

This research is tangential to the question at hand. What these authors have examined is the growth of these special districts that are not only charged with provision of public services but can levy taxes, impose charges, and have the authority to issue debt. These studies have examined growth in local government jurisdictions, however, they do not examine changes in government spending - specifically, the use of long term debt. Bennett and Dilorenzo (1982) is the seminal work in the area of property tax limitations and local government borrowing. In their study, the authors show that when state governments imposed restrictions on the taxing authority local governments, these governments responded by establishing off-budget entities (OBEs) that were largely beyond the scrutiny of voters and their expenditures were no longer subjected to the property tax limits. [1] Marlow and Joulfaian (1989) empirically test the hypothesis expressed in Bennett and Dilorenzo (1982). They find that TELs do not affect off budget activity; however governments with large expenditures tend to have larger values of off-budget activities. They do not concede to the fact that these limits do not have an effect on long term borrowing, but rather suggest that more research is necessary to provide conclusive results.[2] In a recent report by Standard and Poor's (2008), the agency suggests that these limitations have had an impact on the structure of local government borrowing. If property tax limitations have constrained current spending, local governments may have substituted lost current revenues with future tax revenues. The rating agency notes that in states like California and Massachusetts, debt has been used to make up for constraints on revenues.

[1] In this study the authors use the term off-budget entities to encompass a number of quasi-governmental agencies established by local governments. These include public authorities, special districts, commissions, agencies, and boards (Bennett & DiLorenzo, 1982, p. 334).
[2] They suggest that their use of a cross-sectional dataset may perhaps have led to such results (pg. 120)

In this study we test empirically the impact of these property tax limits on local government ability to issue general obligation vs. revenue debt.

3. DEBT RESTRICTIONS AND LIMITS ON STATE AND LOCAL GOVERNMENT BORROWING

The movement to limit debt issuance started in the 1840s when several states found themselves unable to repay their debts during an economic depression. Several states defaulted on their debt (Indiana, Illinois, and Michigan) as well as debt sold on behalf of banks (Florida, Mississippi, Louisiana, and Arkansas) (Heins, 1963; Wallis, 2005). States had envisioned their internal improvements to be self supporting entities, as such, taxpayers only assumed a contingent liability i.e. so long as the projects were a financial success, the taxpayer bore no cost. Current restrictions on debt are intended to eliminate taxpayers assuming such liability. Governments are now required to identify the purpose of the debt issue; raise current taxes by an amount sufficient to service the debt; and hold a public referendum to authorize the tax increase (Wallis, 2005, p. 217).

Restrictions on local governments borrowing begun for the most part in the 1870's (Wallis & Weingast, 2006; Williams & Nehemkis, 1937). The structure of local government limits for the most part mimic those imposed on state governments. They included debt limits tied to property valuations for a number of counties a voter referendum was required to approve the debt issue.

When states imposed limits on their general obligation borrowing authority it fostered growth in local government debt as well as growth in revenue debt. State debts were roughly nine times local debts in 1841 and by 1902, local debts were roughly eight times state debt (Wallis & Weingast, 2006). Currently, 46 states have a statutory or constitutional provision which expressly restricts the amount general obligation debt county governments may incur to a percent of the property tax base. Kiewiet and Szakaly (1996) found states that explicitly prohibit general obligation debt have by far the largest amount of local long term debt ($1,292 per capita) while states without

any restriction on borrowing authority had the least amount of local long term debt outstanding ($906) (pg. 79).[3]

Revenue debt allowed governments to continue issuing debt without violating any of the constitutional requirements that were currently in place. Since the government does not pledge its taxing authority, but rather pledges the revenues of the quasi-governmental entity the debt does not constitute a liability of the government establishing the entity, but rather a liability of the issuer. Issuance of revenue debt began in the late 1930's, growing twenty fold between 1945 and 1958. States and local governments now issue as much if not more revenue debt as they do general obligation debt. One caveat exists with revenue debt. While it is reasonable to assume that the primary motive for issuing revenue debt is to circumvent constitutional limitations, not all debt can be guaranteed by an unlimited tax pledge. Governments must match revenues with services provided, and revenue debt allows governments to limit tax subsidization of services for a fee. Moreover, any excessive reliance on the unlimited tax pledge will dilute the pledge to the point that the credit position of the issuer is endangered. It's therefore more prudent to examine efficiency gains (or losses) of issuing revenue debt vs. general obligation, rather than assume governments issue revenue debt to circumvent the limitations.

While the terms debt restrictions and debt limits are used interchangeably in the literature, they differ in substance and application (Denison, Hackbart, & Moody, 2009; Kioko, 2009b; Wallis & Weingast, 2006). Debt restrictions are procedural restrictions on debt issuance. The generally include a requirement that either debt issues must be approved by voters of the state (or local government) in a referendum or by a legislative supermajority vote, or in some instances by a legislative super majority vote and voter referendum. Debt limits on the other hand are *dollar* limits on the amount of debt a government can issue. The limits are either a percent of assessed property values, personal income, or a measure of debt affordability i.e. a percent of general fund revenues

[3] There is a limit to their study. In estimating the impact of debt restrictions on government borrowing, they fail to use only local government debt, but rather use state and local government debt. The coefficients given this dependent variable are not significantly different from zero. However, if there is a substitution of the borrowing function between the state and local government the coefficient would not be significantly different from zero. The authors should have estimated a model with local government debt as their independent variable. This would provide evidence consistent with Table 2, pg. 79.

(generally less than 5 percent). If the government has a combination of a debt restriction and a debt limit, it cannot put the issue to a vote of the people or its legislature if the outstanding debt or debt service is expected to exceed the pre-determined cap.

While research of the impact of debt restrictions on local government borrowing is limited, its results are consistent with studies examining the impact of debt limits and restrictions on state government borrowing (Bunch, 1991; Heins, 1963; Hur, 2007; Johnson & Kioko, 2009; Kiewiet & Szakaly, 1996; Kioko, 2009b; Nice, 1991). Farnham (1985) and McEachern (1978) find general obligation and revenue debt is lower in communities subject to the state imposed debt limits. Structural differences in the debt restrictions do matter. Local governments that do require voter approval for general obligation debt issues issue less (more) general obligation (revenue) debt especially in communities there was no provision to exceed the limit (Farnham, 1985).

Debt limitations have been criticized as blunt instruments on borrowing. Critiques include limitations do not make distinction between revenue producing improvements e.g. water systems and those paid from taxation e.g. schools and hospitals. Moreover, these limits do assess the local government ability to finance such improvements (Bowers, 1951; Williams & Nehemkis, 1937). Since these property tax limits were imposed, they are likely to have reduced the local governments' ability to meet principal and interest payments if they solely relied upon assessed property values (and property taxes) as the basis of assessing a government ability to meet principal and interest payments i.e. a debt limit that remains grounded in assessed value does not reflect the government true taxing authority if any type of property tax limit is currently in place. As noted in Denison, Hackbart, and Moody (2009) there is no direct link between debt limits (e.g. % of assessed property values) and debt capacity (% of unrestricted general fund revenues).

4. RESEARCH HYPOTHESIS

Property tax limits constrain the actions of the political agent. In doing so, taxpayers can be more certain of the property tax liability when such constraints are present, compared to if they were

absent. These limitations place significant constraints on a government's ability to manage its resources to meet demands for services. Furthermore, the limitation on a government's taxing authority indirectly constrains the government's borrowing authority as the amount of general tax dollars available to meet principal and interest payments on tax-supported debt is now subject to the limit. Johnson and Kriz note that the "financial markets may view tax limitations as increasing the default risk of debt issues because of the constraints on the government's ability to raise revenue" (2005, p. 85). This was the case when Fitch Ratings stripped the City of Indianapolis of its AAA bond rating. The rating agency citied that the statewide property tax reforms the Indiana General Assembly had imposed restricted growth in the residential tax base - a move they perceived would squeeze the city's already tight finances.[4]

A growing literature has begun to examine the impact of various budgetary constraints on government borrowing. Clingermayer and Wood (1995) and Hur (2007) for example found weak evidence that TELs may increase state borrowing. States with dollar caps on spending as well as limited authority to levy higher or new taxes[5] issued less general obligation debt but more revenue debt (Kioko, 2009b). At the state level, the spending caps *explicitly* exempt all debt service payments i.e. the government can appropriate above the spending cap in order to meet its principal and interest payments (Kioko, 2009a). Jung, Roh, and Kang (2009) found that local governments are increasingly relying on nontax revenues sources such as impact fees and special assessments to meet their capital spending needs. However, these revenues only provided partial tax relief - i.e. the fees supplement lost tax revenues, but do not remove the pressure to use long term debt. The authors found that these charges significantly increased the level of outstanding general obligation debt. In examining the effect of these types of fees on new debt issues, the authors found that revenue debt is more heavily used to fund additional infrastructure ($0.67 cents per $1.00 of revenue debt borrowing) compared to general obligation debt ($0.56 cents per $1.00 of general obligation borrowing). This is consistent with debt issuance across local governments. Outstanding general

[4] "*Fitch Strips Indianapolis of Prized AAA bond rating*" Indiana Business Journal, Aug. 29, 2009
[5] These include voter approval requirements and legislative supermajority votes for higher or new taxes that can be found in 16 states.

obligation debt declined shortly after the property tax limits were approved in the late 70's to a low of approximately 30 percent of total outstanding debt. In 2000, general obligation debt was approximately 40 percent of total outstanding debt (Jung, et al., 2009).

While Jung et al. (2009) hypothesize that this drastic change in composition of local government debt is a result of the property tax limitations; they do not test the impact of these property tax limits on local government borrowing but rather focus on the impact of special fees and assessments on borrowing authority of local governments. This study seeks to extend this literature by examining the impact of property tax limitations on long term debt obligations of county governments. While a property tax limit will constrain a local government's current revenues, debt can be used to expand current spending by dedicating future tax revenues. In examining the statutory and constitutional provisions of state governments spending caps (i.e. revenue limits, expenditure limits, and appropriation limits) Kioko (2009a) found state governments explicitly exempt debt service payments from the limit – i.e. in determining its appropriations subject to the limit, debt service payments on any general obligation debt was were not subject to the spending limit. This exemption did not extend to governments with limits on taxing authority i.e. these states still have to seek authority from voters or the legislature (where applicable) if new or higher taxes were to be levied. In other words, the spending caps are a non-binding constraint on government borrowing, while the limits on taxing authority are a binding constraint (Kioko, 2009a, 2009b). Unfortunately, there is no study to date that examines exemptions from these spending caps at the local level. We also do not find any evidence to suggest that local governments (subject to property tax limits) have an override provision that allows them to levy additional taxes (specifically the property tax) to meet its debt service requirement.[6] We therefore can only state our hypothesis assuming the statutory and constitutional provision either allow or do not allow the local government to appropriate above the limit to meet principal and interest payments.

[6] While we find an examination of the statutory and constitutional provisions related to property tax limits is warranted, we find this examination is beyond the current paper.

We develop two hypotheses of the impact on budgetary constraints (property tax limits) on long term obligations of a local government. If there are provisions in the property tax limit laws that allow a local government to either levy higher taxes or appropriate above the limit in order to meet principal and interest payments or alternatively exempt these payments from its spending cap – we expect to find that these governments can maintain or increase its current level of spending by issuing more debt. In this case, the government is substituting current revenues with expected future revenues. Over time, these local governments will accumulate more debt.

Alternatively, the revenue constraint may impose a real hard constraint on local government authority especially if debt service payments are not exempt from the limit i.e. the local government cannot appropriate above the limit or debt service payments are not exempt from the spending cap. Moreover, if the property tax limit is a limit on taxing authority (e.g. levy limit or tax rate limit), this may further constrain the borrowing authority of these local governments. A government would therefore either have to limit spending in order to maintain its current level of borrowing or vice versa. In this case, the tax limit is a binding constraint on current and future spending authority of the government. Local governments would therefore want to minimize their debt service payments in order to maintain some level of budgetary flexibility.

As we have alluded to earlier in this section, the literature on property tax limits does not identify whether all expenditures are subject to the limit or certain expenditures e.g. debt service payments are exempt from the limitation. Assuming that all expenditures are subject to the limit, we expect to find that these limits impose a hard constraint. Local governments will minimize their default risk by reducing their long term obligations – specifically general obligation debt. If debt service payments are exempt, these local governments will increase their spending my appropriating future tax revenues through the use of long term general obligation debt. This finding would be consistent with the findings at the state level (Clingermayer & Wood, 1995; Hur, 2007; Kioko, 2009b).

Hypothesis: *Local governments with a property tax limit are more likely to have less outstanding general obligation debt as the property tax limit represents a binding constraint on current and future spending authority of a local government.*

5. DATA AND EMPIRCAL MODEL

To test our hypothesis we use a panel dataset that data spans a 20 year period from 1972 – 2002, and includes approximately 3107 unique county governments in 49 states (unbalanced panel).[7] We obtained the county government data from the U.S. Census Bureau. The data represents the census of county governments at 5 year intervals ('72, '77, '82, '87, '92, '97, '02). Descriptive statistics for all the variables used can be found in Table 1 below. To control for changes in price, all dollar amounts have been converted to real dollars with 2000 as the base year.

[Insert Table 1]

Studies examining the impact of fiscal institutions on long term debt have either used total debt (Clingermayer & Wood, 1995; Ellis & Schansberg, 1999; Farnham, 1985; McEachern, 1978) as the dependent variable of interest or developed separate models to estimate the impact of fiscal limits on general obligation debt and revenue debt (Hur, 2007; Kiewiet & Szakaly, 1996; Nice, 1991). The latter is a more appropriate treatment of debt as the determinants of, and more importantly, the impacts of the institutional constraints are different for each type of debt instrument. Therefore, while some authors found weak evidence that the limits constrain government borrowing (or total debt), this may be because of the author's choice of the dependent variable (specification bias). There has also been a debate as to whether the dependent variable should be a measure of total outstanding debt or annual change in outstanding debt; the former being a stock measure, and the later a flow measure. Scholars have noted that there are disadvantages to using debt per capita including measuring the future debt commitment at one point in time against a current income measure (Bahl & Duncombe, 1993, p. 33). Given the focus of this study is the cumulative effect of budgetary

[7] We exclude Alaska from our analysis.

constraints; these patterns would not be accurately captured if a measure of annual change in debt is used as government borrowing is generally unpredictable, non-linear, and a function of a number of factors including the availability of matching federal funds, access to the municipal bond market, voter approval of debt issues etc.

We specify our model as follows

$$\begin{aligned} Debt_{it} = {} & \alpha_0 + \alpha_1 FedIGR_{it} + \alpha_2 StateIGR_{it} + \alpha_3 IncomeTax_{it} + \alpha_4 SalesTax_{it} + \alpha_5 Misc.Rev_{it} \\ & + \alpha_6 UtilityRev_{it} + \alpha_7 PropertyTax_{it} + \alpha_8 CountyShare_{it} + \alpha_9 CapitalExp_{it} \\ & + \alpha_{10} StateDebt_{it} + \alpha_{11} Pop_{it} + \alpha_{12} Density_{it} + \beta_1 AssessLimit_{it} + \beta_2 Prop.TaxLimit_{it} \\ & + \beta_3 PropLevyLimit_{it} + \beta_4 ExpenditureCap_{it} + \gamma_1 LocalDebtLimit_{it} \\ & + \gamma_2 VoterApproveGODebt_{it} + \varepsilon_{it} \end{aligned}$$

Clingermayer and Wood (1995) and Martell and Smith (2004) found intergovernmental revenues were a substitute for general tax revenues and as a result, high intergovernmental revenues would result in lower government borrowing. They contend that governments will seek ways to maintain current spending. One alternative would be to levy higher taxes (current spending); the other would be to offset those lost revenues with long term debt (expected future tax revenues). If the taxing authority of a government is limited, the government is more likely to substitute lost intergovernmental revenues with long term debt. We can therefore expect to find the relationship between intergovernmental grants and local government borrowing to be inversely related, with decreasing grant levels offset with higher borrowing (2004, p. 70). While the data does not classify intergovernmental funds as matching grants or non-matching (Martell & Smith, 2004) – they do, at least for state intergovernmental funds, identify use of these funds (educational, tax relief, health, highway and transit, community development, welfare, and other general revenues). We do not believe that the use of these funds would provide any additional explanatory power and therefore only include per capita federal and state intergovernmental revenues. While the mean for federal

intergovernmental revenues ($83.90) is significantly lower than that of sate intergovernmental revenues ($823.20), there is more variation in federal intergovernmental transfers.[8]

Local governments derive tax revenues from three major sources - property tax, income tax, and sales tax. The mean real property tax levy was $654.99; however, this varies widely across counties (standard deviation of $544.44). To control for revenue sharing, we include an additional variable of county property tax share. The mean county property tax share over the period of our analysis was 33 percent. We expect the level at which the county government is able to exert it "property" taxing authority will affect its borrowing capacity.

Our data also shows that the revenues from these property taxes have diminished over time. In efforts to diversify their revenues, local governments now levy local option income and sales taxes. Between 1972 and 2002, the number of county governments levying any type of local option taxes doubled. In 2002, there were 521 county governments levying a local option income tax, up from 213 in 1972.[9] Of the 3107 unique counties in our data, 2115 levied a local option sales tax in 2002. This number is nearly twice the number of counties levying the tax in 1972 (1172 counties).[10] There is more widespread use of the sales tax ($823.20 per capita) than the income tax ($11.39 per capita). It is expected that these taxes will play a critical role in local government borrowing and perhaps even increase the debt capacity.

Local governments derive a significant proportion of their revenues from providing services for a fee. A significant proportion of these fees will be used to meet debt service requirements especially for public utilities (water, electric, gas, and transportation). Utility revenues are generally pledged to meet principal and interest payments on public utilities as a majority of public utilities have the authority to issue revenue debt and are less likely to issue general obligation debt. Per capita utility revenues over the period of analysis were $199.72; however, these revenues varied

[8] The coefficient of variation for federal intergovernmental transfers was 171.83%, while that for state intergovernmental transfers was 48.66%. Coefficient of variation= σ/μ.
[9] States in which most local governments levy an income tax include Indiana, Kentucky, Maryland, Michigan, Ohio, and Pennsylvania.
[10] The data also shows that 81.65 percent (or 17,752 counties) levied the sales tax while 13.73 percent (or 2,986 counties) levied the local option income tax.

significantly across our data (standard deviation of $523.84). Miscellaneous revenues on the other hand represent an alternative source of revenues for local governments that are dedicated toward capital spending. We expect local governments to rely on these revenues to issue revenue debt, more than general obligation debt (Jung, et al., 2009).

To control for the level of investments and demand for infrastructure, we include local government capital spending, population, and density. Local governments will generally finance a proportion of their capital expenditures with current revenues (pay-as-you-go) but will substitute current revenues with expected future tax revenues (pay-as-you-use), especially in years where local government revenues have declined. We also expect that if these governments have limits on appropriations, they are more likely to shift capital expenditures off-budget and finance these expenditures with revenue debt. The population and population density variables are proxies for individual demand for public services and infrastructure. Economic theory has shown that there are economies of scale in service provision. Therefore while the population increases the use of debt to finance capital needs, we expect the level of government debt to decrease in more densely populated areas.

To control for the constraints on local government borrowing we include two indicator variables on 1) if borrowing authority is limited to a percent of assessed value or government revenues and 2) if voter approval is required for general obligation issues. Of the 21,741 counties in our dataset, 91.08 percent (19,802 counties) have some type of debt limit and 61.56 percent (13,385) have a voter approval requirement. Our expectation will be consistent with the literature on debt limitations and local government borrowing at the state level. States that have a revenue based limit do issue more debt per capita than states that do not have a revenue based limit i.e. the revenue based limit allows governments to assess their borrowing authority in a more objective manner, thereby restricting borrowing only if their ability to meet principal and interest payments is significantly constrained. As noted in Briffault (1996), this is unlikely. In fact the municipal bond market will constrain local government borrowing authority more than any self-imposed debt limit. Even though there is no evidence to suggest that the voter approval requirement is an effective

constraint (Farnham, 1985), we state a priori that we expect counties with a voter referendum requirement for debt issues to issue less general obligation debt. This statement is consistent with empirical studies on the impact of voter approval requirements on borrowing at the state level.

Wallis and Weingast (2006)and Kiewiet and Szakaly (1996) found evidence that state governments after imposing limitations on their borrowing authority, pushed down the responsibility to provide these services (through the use of long term debt) to local governments. States with the most stringent type of limit – i.e. those that prohibit the issuance of general obligation debt have higher local government borrowing. There are two alternatives to specifying this relationship. One would be to specify this relationship using dummy variable indicators for the institutional constraint at the state level. The alternative would be to specify this relationship in terms of outstanding debt per capita at the state level. We opt to specify this relationship using outstanding state government general obligation and revenue debt. In using a debt per capita measure, we implicitly control for the institutional structure i.e. states with a voter approval requirement issue less general obligation debt but more revenue debt, while states with no limit on debt issuance issue more general obligation debt and less revenue debt. As discussed in Kiewiet and Szakaly (1996), the relationship is expected to be negative (inverse).

We include indicator variables for the property tax limits. We identify four different types of tax limits 1) property tax rate limits (including specific property tax rate limits); 2) property tax revenue limits; 3) limits on assessments and 4) revenue and expenditure caps.[11] As Mullins and Joyce (1996) note, the limits are *potentially* binding when combined with other types of limits. We therefore create binding limit dummy variable indicator that represents local governments that have a limit on overall and/or specific property tax rates and a limit on assessment (i.e. 1 and 3 above). The revenue and expenditure caps are a "formidable constraint" and we do not combine these limits with any other type of limits. While the property tax revenue limit is potentially binding, we know

[11] Two states impose general revenue limits on local governments – Colorado and Wisconsin. Colorado also imposes an expenditure limit; however it was approved at an earlier date (1973, compared to 1992 for its revenue limit). Revenue limits are not limits on taxing authority but rather limits on appropriation authority i.e. they are not limits on tax rates but on tax revenues. These limits are comparable to expenditure limits (Kioko, 2009a). We therefore opt to combine the two.

local governments have diversified their sources of tax (and nontax) revenues. We therefore include this as a dummy variable indicator. There is widespread use of the property tax rate limits (including specific property tax rate limits). Our data shows 60.54 percent (or 13,162 counties) had some form of property tax rate limits. 21.68 percent (or 4,713 counties) had some form of a property tax levy limit; 12 percent (or 2,607 counties) had either a revenue or expenditure cap; 7.53 percent (or 1,638 counties) had an a limit on growth in assessed values of property; and only 6.62 percent (or 1,440 counties) had a potentially binding limit as described above.

6. RESULTS AND CONCLUSION

Table 2 presents the results of the two-way fixed effects regression model estimating the impact of property tax limits on local government borrowing. The second and third column of Table 2 presents estimates for the general obligation debt model while the fourth and fifth column presents the estimates for the revenue debt model.

[Insert Table 2 here]

The negative coefficient for federal intergovernmental revenues confirms our hypothesis that federal intergovernmental grants are substitutes for local government borrowing authority. For every dollar per capita of additional federal intergovernmental revenues, local governments will decrease general obligation debt issuance by $0.59 (coefficient is not significantly different from zero) and revenue debt issuance by $0.56. These results are somewhat consistent with those of Martell and Smith (2004). Using data from the 50 states, the authors found federal grants stimulate issuance of general obligation debt (positive coefficient) but they did not stimulate issuance of revenue debt (negative coefficient) an indicator of a substitution effect, where governments have to compensate for lost grant revenues with additional borrowing. Our estimates of intergovernmental transfers from state governments to these county governments are more consistent with Martell and Smith (2004). State grants to local governments stimulate issuance of general obligation debt ($0.597, positive coefficient). With each additional dollar of state grant revenues, these local governments decreased

their long term revenue debt by $0.924. This suggests that public authorities at the local level are vulnerable to changes in state grants in aid.

The results also show that local governments rely on tax revenues to issue general obligation issues, but did not rely on these revenues to issue revenue debt. For every per capita dollar of tax revenues, local government issues between $0.22 (property tax) and $0.71 (income tax). The sales and income taxes were not significant determinants of revenue debt issuance, and counties with the property tax also traded off revenue debt issuance (-$0.47) with general obligation debt. We included an additional variable of for property tax share. The property tax revenues include revenues to the county as well as those dedicated to municipalities, school districts, and special districts within those counties. We find that as the local government county tax share increased, its general obligation debt decreased, but its revenue debt increased. This perhaps reflects the fiscal structure of these local governments. Local governments rely on miscellaneous and utility revenues to issue their revenue debt. For every dollar per capita of miscellaneous and utility revenues, these local governments had $4.54 and $3.67 in outstanding revenue debt. A very small proportion of miscellaneous revenues are dedicated towards general obligation debt issuance ($0.08) especially when compared to the other tax revenues.

To control for public demand for infrastructure we included population, density, and capital outlays. The population and density variables are not significantly different from zero. Capital outlays were significant determinants of local government borrowing. For every dollar in capital appropriations, these local governments increased their outstanding obligations by $0.25 (general obligation) and $1.02 (revenue debt).

Scholars have suggested that after imposing limit on their borrowing authority, state governments pushed down the responsibility to provide these services to local governments (Kiewiet & Szakaly, 1996; Wallis & Weingast, 2006). Our findings contradict the literature – outstanding debt at the state level is positively correlated with local government debt issuance. For every additional dollar of state general obligation debt issued, local governments will issue an additional $0.078.

Local governments issue significantly more revenue debt ($0.48 per capita) for every additional dollar in revenue debt outstanding at the state level. This suggests that state governments do impose an additional burden on local governments.

As expected the revenue based limits do not constrain local government borrowing. These counties issued more revenue debt per capita ($1538.14). Voter approval requirements significantly constrained borrowing authority. These governments issued significantly less general obligation ($324.67) and revenue debt ($380). The former outcome is consistent with literature; however the later is quite surprising. We expected that these local governments will substitute their lost ability to issue general obligation debt with revenue debt, but our results show that these voter approval requirements either directly constrain local government authority or are an indicator of fiscal prudence.

Our results for the impact of property tax limits on government borrowing are consistent with the literature (Kioko, 2009b) and hypothesis. The limits on taxing authority (assessment limits, overall and specific property tax rate limits, and property tax levy limits) constrain local government borrowing authority. Assessment limits (1638 counties) had the greatest impact on general obligation borrowing authority (-$159.57), while the counties with property tax rate and levy limits reduced their borrowing authority by $85.90 and $78.23. The expenditure caps are non-binding constraints on local government borrowing authority. Outstanding general obligation debt was $121.15 higher in counties with expenditure caps (2,607 counties). The dummy variable indicator of the interaction of assessment limits and property tax rate limits was not significantly different from zero an indicator that perhaps these limits did not impose an additional constraint on borrowing authority.

We hypothesized that with constrained taxing authority, these governments will increase their revenue debt issuance. Counties with property tax levy limits are the only governments to issue more revenue debt ($361.27). This perhaps is an indicator that these local governments are able to generate non-tax revenues that are pledged to meet revenue debt repayments. The coefficient for

counties with assessment limits is positive but is not significantly different from zero. On the flip side, counties with property tax rate limits and expenditure caps issued less revenue debt ($348.84 and $534.06, respectively). This result is somewhat surprising. We expected these counties would issue more revenue debt. This perhaps is evidence that these counties do not want to over-extend their debt position and risk default.

This study presents preliminary evidence that limits on local government taxing authority do constrain borrowing. At the state level, there is evidence to suggest that dollar limits on appropriations (revenue and expenditure caps) may lead to increased general obligation debt, while limits on taxing authority may lead to lower general obligation debt but more revenue debt (Kioko, 2009b). This study finds local governments with limits on taxing authority (assessment limits, property tax rate limits, and property tax levy limits) do issue less general obligation debt while local governments with revenue and expenditure caps issue more general obligation debt. This suggests that the structure of the property tax limits is an important determinant of a governments taxing or spending authority, where tax limits are a binding constraint while the expenditure caps are a non-binding constraints. A review of the statutory and constitutional provision on how these property tax limits are expected to impact a local governments borrowing authority is warranted.

TABLE 1: DESCRIPTIVE STATISTICS

VARIABLE	OBS	MEAN	STD. DEV.	MIN	MAX
General Obligation Debt per capita	21741	676.78	700.56	0.00	25,772.73
Revenue Debt per capita	21741	1,009.93	4,313.83	0.00	148,391.30
Federal Intergovernmental Rev	21741	83.90	144.17	0.00	12,960.41
State Intergovernmental Rev	21741	823.20	400.61	0.00	6,002.84
Income Tax Revenues Per Capita	21741	11.39	46.84	0	1,068.17
Sales Tax Revenues Per Capita	21741	77.28	113.51	0	2,361.09
Property Tax Per Capita	21741	654.99	544.44	14.91	15,050.21
County Property Tax Share (%)	21741	33.2342	22.7846	0	100
Misc. Revenues Per Capita	21741	484.80	479.74	0	18,995.52
Utility Revenues Per Capita	21741	199.72	523.84	0	23,086.44
Capital Outlays	21741	299.76	397.14	0.00	25,307.25
Population	21741	78,444.02	285,613.70	66	9,733,679
Density	21741	259.56	4,567.58	0.10	239,639.90
State General Obligation Debt Per Capita	21741	859.42	702.98	0.00	5,377.67
State Revenue Debt Per Capita	21741	311.43	412.06	0.00	3,741.23
Local Government Debt Limit	21741	0.9108	0.2850	0	1
Voter Approval Requirement on GO Debt	21741	0.6157	0.4865	0	1
Assessment Limit	21741	0.0753	0.2639	0	1
Overall and Specific Property Tax Rate Limit	21741	0.6054	0.4888	0	1
Property Tax Levy Limit	21741	0.2168	0.4121	0	1
Expenditure Caps	21741	0.1199	0.3249	0	1
Binding Limit	21741	0.6623	0.2487	0	1

TABLE 2: EMPIRICAL RESULTS

	General Obligation Debt Per Capita		Revenue Debt Per Capita	
Federal Intergovernmental Rev	-0.5920	0.04559	-0.5595	0.31649*
State Intergovernmental Rev	0.5966	0.03553*	-0.9254	0.25929***
Income Tax Revenues Per Capita	0.6804	0.24615***	2.8723	2.36127
Sales Tax Revenues Per Capita	0.7108	0.15965***	-0.8507	0.59252
Property Tax Per Capita	0.2211	0.42163***	-0.4739	0.17990***
County Property Tax Share (%)	-2.3008	0.47574***	7.5958	3.39776**
Misc. Revenues Per Capita	0.0825	0.30843***	4.5407	0.72852***
Utility Revenues Per Capita	-0.3842	0.32165	3.6730	0.76262***
Capital Outlays	0.2532	0.05106***	1.0158	0.41227**
Population	0.0017	0.00014	-0.0001	0.00187
Density	0.0000	0.00444	-0.0092	0.00761
State General Obligation Debt Per Capita	0.0788	0.23964***	-	-
State Revenue Debt Per Capita	-	-	0.4765	0.09347***
Local Government Debt Limit	37.9497	45.26869	1538.1440	421.80720***
Voter Approval Requirement on GO Debt	-324.6724	25.77252***	-380.3527	196.11450*
Assessment Limit	-159.5687	31.15374***	204.7811	140.61910
Overall & Specific Property Tax Rate Limit	-85.8966	20.83052***	-348.8436	135.32670*
Property Tax Levy Limit	-76.2265	24.45150***	361.2729	137.67060***
Expenditure Caps	121.1511	35.85765***	-534.0638	234.91990**
Binding Limit	20.3423	32.64610	101.2141	130.88270
Constant	863.9706	74.90217***	-1768.8310	622.17850***
N	21,741		21,741	
No. of Counties	3,107		3,107	
No. of Years	7		7	
R^2	0.4579		0.5997	

FIGURE 1: OUTSTANDING DEBT PER CAPITA BY LOCAL GOVERNMENT DEBT LIMIT (1977-2002)

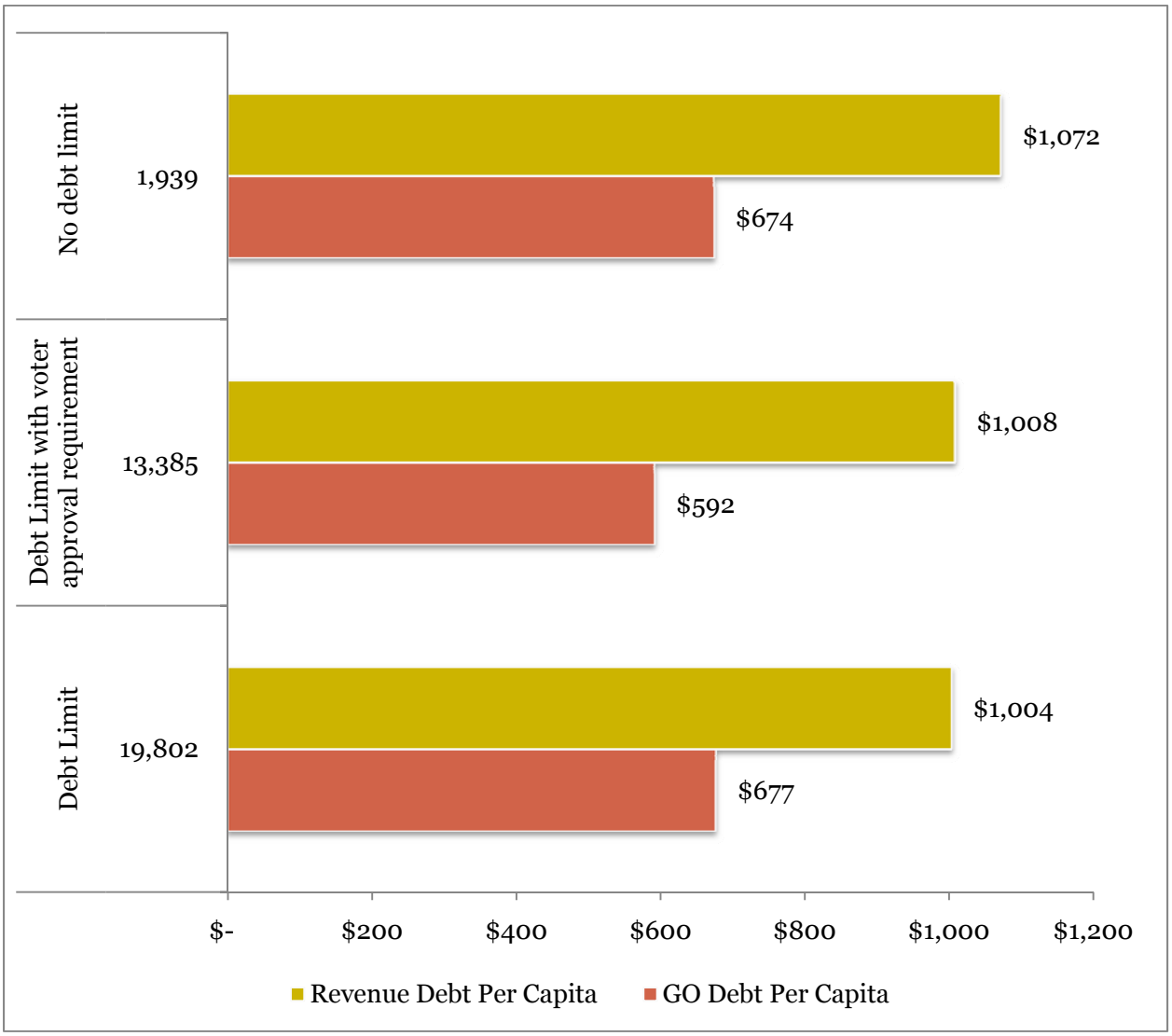
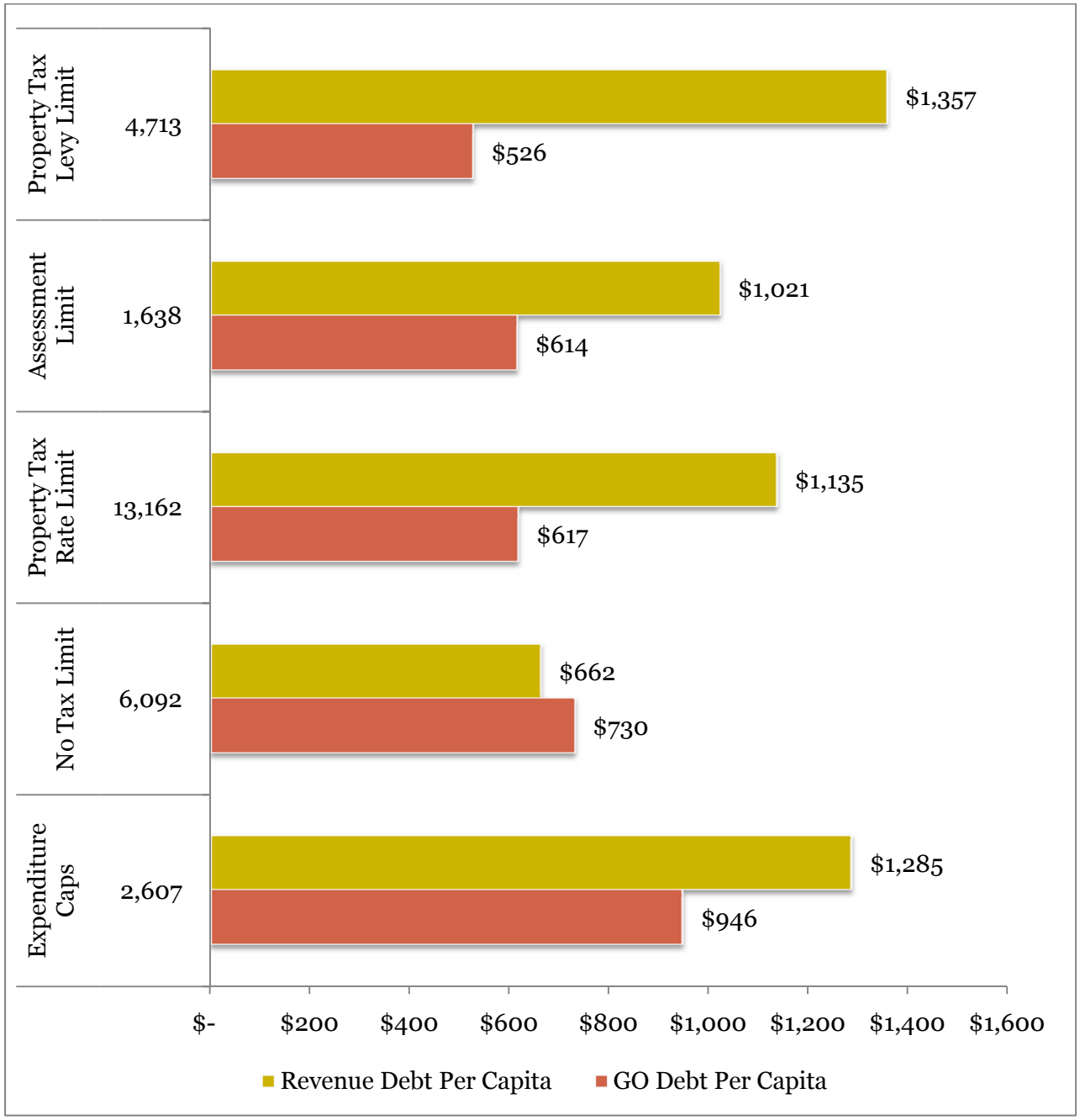


FIGURE 2: OUTSTANDING DEBT PER CAPITA BY PROPERTY TAX LIMIT (1977-2002)[12]



[12]The tax limit categories are not mutually exclusive.

BIBLIOGRAPHY

Alm, J., & Skidmore, M. (1999). Why Do Tax and Expenditure Limitations Pass in State Elections? *Public Finance Review, 27*(5), 481-510.

Bahl, R., & Duncombe, W. (1993). State and Local Debt Burdens in the 1980s: A Study in Contrast. *Public Administration Review, 53*(1), 31-40.

Bennett, J., & DiLorenzo, T. J. (1982). Off-budget Activities of Local Government: The Bane of the Tax Revolt. *Public Choice, 39*(3), 333-342.

Bland, R. L. (2005). *A Revenue Guide for Local Government* (2 ed.). Washington D.C>: ICMA.

Bowers, J. L. (1951). Limitations on Municipal Indebtedness. *Vanderbilt Law Review, 5*(37).

Bowler, S., & Donovan, T. (2004). Evolution in State Governance Structures: Unintended Consequences of State Tax and Expenditure Limitations. *Political Research Quarterly, 59*(2), 189-196.

Brennan, G., & Buchanan, J. M. (1979). The Logic of Tax Limits: Alternative Constitutional Constraints on the Power to Tax. *National Tax Journal, 32*.

Briffault, R. (1996). *Balancing Acts: The Reality Behind State Balanced Budget Requirements*. New York: The Twentieth Century Fund Press.

Bunch, B. S. (1991). The Effect of Constititutional Debt Limits on State Government Use of Public Authorities. *Public Choice, 68*(1), 57-69.

Carr, J. B. (2006). Local Government Autonomy and State Reliance on Special District Governments: A Reassessment. *Political Research Quarterly, 59*(3), 481-492.

Clingermayer, J. C., & Wood, B. D. (1995). Disentangling Patterns of State Debt Financing. *American Political Science Review, 89*(1), 108-120.

Denison, D. V., Hackbart, M. M., & Moody, M. J. (2009). Intrastate Competition for Debt Resources. *Public Finance Review, 37*(3), 269-288.

Ellis, M. A., & Schansberg, E. D. (1999). The Determinants of State Government Debt Financing. *Public Finance Review, 27*(6), 571-587.

Farnham, P. G. (1985). Re-examining Local Debt Limits: A Disaggregated Analysis. *Southern Economic Journal, 51*(4), 1186-1201.

Heins, A. J. (1963). *Constitutional restrictions Aganist State Debt*: The University of Wisconsin Press.

Hoene, C. (2004). Fiscal Structure and the Post-Proposition 13 Fiscal Regime in California Cities. *Public Budgeting and Finance, 24*.

Hur, M. (2007). Fiscal Limits and State Fiscal Structure: An Analysis of State Revenue Structure and Indebtedness. *Municipal Finance Journal, 8*(3), 19-35.

Johnson, C. L., & Kioko, S. N. (2009). *Principal Agent Theory, Fiscal Institutions and the Supply of Municipal Debt*. Paper presented at the Association of Budgeting and Financial Management Conference.

Johnson, C. L., & Kriz, K. A. (2005). Fiscal Institutions, Credit Ratings and Borrowing Costs. *Public Budgeting and Finance, 25*(1), 84-103.

Jung, C., Roh, C.-Y., & Kang, Y. (2009). Longitudinal Effects of Impact Fees and Special Assessments on the Level of Capital Spending, Taxes, and Long-Term Debt in American Cities. *Public Finance Review, 37*(5), 613-636.

Kiewiet, D. R., & Szakaly, K. (1996). Constitutional Limitations and Borrowing: An Analysis of State Bonded Indebtedness. *Journal of Law, Economics and Organization, 12*(1), 62-97.

Kioko, S. N. (2009a). Enhancing the Structure of General Fund Limits.

Kioko, S. N. (2009b). Tax and Expenditure Limits and State Borrowing Patterns. Center for Policy Research.

Ladd, H. F., & Wilson, J. B. (1982). Why Voters Support Tax Limitations: Evidence from Massachusetts' Proposition 2-1/2. *National Tax Journal, 35*(2), 121-148.

Levy, M. (1975). Voting on California's Tax and Expenditure Limitation Initiative. *National Tax Journal, 28*(4), 426-436.

Marlow, M. L., & Joulfaian, D. (1989). The Determinants of Off-Budget Activity of State and Local Governments. *Public Choice, 63*(2), 113-123.

Martell, C., & Smith, B. M. (2004). Grant Levels and Debt Issuance: Is There a Relationship? Is There Symmetry? *Public Budgeting and Finance, 24*(3), 65-81.

McCabe, B. C. (2000). Special-District Formation among the States. *State & Local Government Review, 32*(2), 121-131.

McEachern, W. A. (1978). Collective Decision Rules and Local Debt Choice: A Test of the Median Voter Hypothesis. *National Tax Journal, 31*(2), 129-136.

Mullins, D. R., & Joyce, P. G. (1996). Tax and Expenditure Limitations and State and Local Fiscal Structure: An Empirical Assessment. *Public Budgeting and Finance*(Spring), 75-101.

Mullins, D. R., & Wallin, B. A. (2004). Tax and Expenditure Limitations: Introduction and Overview. *Public Budgeting and Finance, 24*(4), 2-15.

Nice, D. C. (1991). The Impact of State Policies to Limit Debt Financing. *Publius, 21*(1), 69-82.

Rubin, I. (1998). *Class, Tax, and Power: Municipal Budgeting in the United States*: Chatham House.

Shadbegian, R. J. (1999). The Effect of Tax and Expenditure Limitations on the Revenue Structure of Local Government, 1962-87. *National Tax Journal, 52*(2), 221-238.

Skidmore, M. (1999). Tax and Expenditure Limitations and the Fiscal Relationships between State and Local Governments. *Public Choice, 99*(1), 77-102.

Sokolow, A. D. (2000). The Changing Property Tax in the West: State Centralization of Local Finances. *Public Budgeting and Finance, 20*(1), 85-104.

Standard&Poors (2008). *On Prop. 13's 30th Birthday: How Tax Limits Affect Government Finances*. San Francisco.

Thompson, F., & Green, M. T. (2004). Vox Populi? Oregon Tax and Expenditure Limitation Initiatives. *Public Budgeting and Finance, 24*(4), 73-87.

Wallin, B. A. (2007). *Fiscal Trends in the US: Did the Tax Revolt Make a Difference?* Paper presented at the Association of Budgeting and Financial Management.

Wallis, J. J. (2005). Constitutions, Corporations, and Corruption: American States and Constitutional Change 1842-1852. *Journal of Economic History, 65*(1), 211-256.

Wallis, J. J., & Weingast, B. R. (2006). Dysfunctional or Optimal Institutions?:State Debt Limitations, the Structure of State and Local Governments, and the Finance of American Infrastructure. In E. Garret, E. A. Graddy & H. E. Jackson (Eds.), *Fiscal Challenges: An Interdisciplinary Approach to Budget Policy*. Cambridge: Cambridge University Press.

Williams, C. D., & Nehemkis, P. R., Jr. (1937). Municipal Improvements as Affected by Constitutional Debt Limitations. *Columbia Law Review, 37*(2), 177-211.

Yuan, B., Cordes, J., Brunori, D., & Bell, M. (2007). Tax Expenditure Limitations and their Effects on Local Public Finances.