SPECIAL DISTRICT FORMATION: EVIDENCE FROM PANEL DATA

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ABSTRACT

This paper empirically examines the formation of special districts in the United States. It investigates, in particular, the adoption of tax and expenditure limitations (TELs) on local governments to determine how they have motivated special district formation. The paper extends the research agenda by reporting an analysis for TELs and special district formation through the post-Proposition 13 tax revolt in the states. Theory on special-purpose governments and, on TELs, guides the research – literatures interested in the impact of fiscal institutions on local government reorganization. Main findings are that adoption of one type of TEL – general limitations – is encouraging the formation of special districts with taxing powers. Substantively, adoption of general limitations raises the number of taxing districts by approximately 13 percent. A flexible model for panel data, inclusive of fixed effects and time trends, turns out to be crucial for identifying estimates for the role of TELs in special district formation.

INTRODUCTION

What has been the impact of tax and expenditure limitations in special district formation? This paper presents results from an empirical study addressing this question for the fifty states through the post-Proposition 13 tax revolt in the United States.[1] This research problem has implications for theory and implementation of state-local institutions and the organization of multilevel governments. The paper draws on two strands of literature: First, it follows research on local government reorganization and, in particular, special-purpose governments in the states (Bauroth, 2015; Berry, 2009; Burns, 1994; Feiock & Carr, 2001; Foster, 1997; MacManus, 1981; McCabe, 2000, 2004; Mullin, 2009, 2014). This growing literature proposes that special district formation is influenced by the intersection of demand for services and state rules on local autonomy. Additionally, the paper draws on research on tax and expenditure limitations (ACIR, 1995; Briffault, 2002; Gelfand et al., 2007; Kioko, 2011; Martell and Teske, 2007; Mullins & Wallin, 2004; Yuan et al., 2009). In general, this literature documents how TELs are shaping fiscal arrangements in state and local governments. Theory from those strands of literature motivates the present research concerning the role of TELs in special district formation.

The literature documents that special-purpose governments are forming as alternatives for decentralized governance and provision of services (Berry, 2009; Briffault, 1996; Burns, 1994; Carr & Farmer, 2011; Foster, 1997; McCabe, 2000, 2004; Mullin, 2009).[2] Special districts are formed to provide services independently from general-purpose governments. For example, if the provision of services by general-purpose governments is restricted, special district formation becomes a frequent alternative. One of the reasons for

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[1] Data from this research are available from the author on request. The author is grateful to Rifat Sangida for excellent research assistance.
[2] As compared to other nations, special-purpose governments are unique institutions of American federalism—as no exact counterparts appear to exist elsewhere. The literature on multilevel governments suggests the "functional associations" of Switzerland as comparatively related to special-purpose governments in the states (Hooghe & Marks, 2003).

that frequency relates to the comparatively lower costs of special district formation, as compared to the reorganization of general-purpose governments. Special districts are increasingly providing services, even though reliance on special districts vary among states (Bauroth 2015). Special-purpose governments enable provision of specific services, though they lack the 'police powers' of general-purpose governments (Briffault, 1996; Foster, 1997). Therefore, the role of special-purpose governments is narrower than that of general-purpose governments.

The Tiebout model posits that governmental fragmentation (and specialization) allows for tax and service packages tailored to different resident preferences (Tiebout, 1956; Ostrom et al., 1961). Nevertheless, the literature also points out the tax and service biases that could result from shifting authority to special-purpose governments (Berry, 2009; Foster, 1997). Special district formation thus matters, as there are common pool, accountability, and other consequences of specialized governance. Critically, special-purpose governments may allow groups to circumvent, not only fiscal constraints, but also policy decisions away from general-purpose governments (Foster, 1997; Berry, 2009; Mullin, 2009; Sbragia, 1996).

Procedurally, the states allow for special-purpose governments by a general legislation framework or, on a case-by-case basis, by special legislation. A special district thus originates from local initiative if general legislation allows for it or, otherwise, from special legislation. While the formation of special-purpose governments is more common where general legislation is available, state legislatures draw occasionally on special legislation to form special-purpose governments (Berry, 2009; Foster, 1997; Sbragia, 1996). In particular, special legislation may be necessary if either a general legislation framework is unavailable or local initiative for special district formation proves unworkable.

Unintended effects of TELs include the reorganization of the local government sector by functional delegation from general-purpose to special-purpose jurisdictions (Briffault, 2002; Carr & Farmer, 2011). Although special-purpose governments have a long history, their proliferation is historically recent and

appears to come hand-in-hand with TEL adoption in the states. While a range of explanatory factors has been offered for special district formation, the literature is concerned increasingly about post-Proposition 13 TEL legislation in the states. Whereas agreement exists around some explanatory factors,[3] the role of tax and expenditure limitations remains inconclusive. Therefore, building consensus around central explanations for special district formation is needed, where the role of TELs remains the most debated explanation. In prior research, TELs—in particular those of the post-Proposition 13 period—correlate inconsistently with special districts (e.g., see reviews by Berry, 2009; Carr & Farmer, 2011; Foster, 1997; Lewis, 2000). While those inconsistent findings could have resulted from different sets of data and methods, they do suggest that TELs can be influential factors in specific contexts. The data and framework reported in this paper refine the specification of the dependent variable and the independent variables of interest.

Post-Proposition 13 literature includes MacManus (1981), who examines special districts as property tax relief mechanisms. She finds weak correlations for property tax limitations and the number of special districts in the South. McCabe (2000) finds that special district formation was greater in states imposing TELs on local governments. Bowler and Donovan (2004) examine the unintended effect of tax and expenditure limitations on local government formation and conclude that TELs encourage reliance on special districts in those states where direct initiatives are easier to introduce. Carr and Farmer (2011) explore conditional effects of TELs on local governments and conclude that TELs on counties influence special district formation. This strand of literature thus finds support for the hypothesis that TELs motivate special district formation, though those findings are sometimes conditional on other factors.

Another strand of literature finds different results. Foster (1997) finds that property tax limitations are associated with

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[3] The literature is close to agreement on the role of enabling legislation for special districts and the role of functional rules on general-purpose governments. See Bauroth (2015); Berry (2009), Briffault (1996), Foster (1997), and McCabe (2000) for additional discussion of those factors.

lower numbers of special districts and interprets those unexpected findings as potentially reflecting antitax sentiment binding special districts. In particular, Foster argues for refined conceptualizations on special-purpose governments, such as fiscal types and geographic types. Fiscally, Foster explains how taxing districts and nontaxing districts serve different motivations for service provision by special districts; however and though crucial to theoretical linkages with TELs, those special district fiscal types have not received sufficient attention. Lewis (2000) looks into Proposition 13 and concludes that property tax limitations did not influence special district formation in California. Berry (2009) analyzes the consequences of special district overlap through a political economy framework and panel data tests. While focusing on fiscal consequences, Berry also reports no evidence for TELs and special district reliance. And recently, Bauroth (2015) finds some evidence for an effect of property tax limitations on special district formation, though that effect appears to vary by function.

In sum, the literature explains special district formation as a mechanism to relieve fiscal restrictions on general-purpose governments—an explanation that has received limited confirmation from earlier research. In spite of conceptual differences, the literature has looked at factors explaining special district formation in an aggregated fashion, that is, without differentiating types of fiscal rules and special districts. However, since TELs typically restricted the property tax source, yet increasingly multiple sources, fiscal explanations for special-purpose governments should identify specific linkages to their sources of revenue and expenditure. Thus, different TELs would result in differentiated incentives for reliance on special district fiscal types (Briffault, 2002; Gelfand et al., 2007; Foster, 1997). For the evolving role of the property tax, and for the hypothesized effect of TELs, specification of special district fiscal types is necessary to articulate research hypotheses.

The following areas are the specific focus of this paper. First, the paper examines effects from two families of TELs on local governments: property tax limitations and general revenue-expenditure limitations (ACIR, 1995; Briffault, 2002; Gelfand et al., 2007; Mullins & Wallin, 2004; Yuan et al., 2009). Our

conceptual approach is that those TEL families should be specified independently to understand their influence in special district formation. As the empirical section reports, independent specification of TELs does matter. Second, according to the differentiated influence of TEL families, this paper specifies special districts by fiscal type: taxing districts and nontaxing districts. These fiscal types should be central to the development of a conceptual framework for special-purpose governments (Foster, 1997).

       This research analyzes TELs adoption and special district fiscal types through a pooled cross-sectional analysis. It reports data for TELs adoption and special district formations, as well as an empirical framework to identify the effect of tax and expenditure limitations. Due to this focus, other explanatory factors will be briefly noted as will nonfiscal typologies on special-purpose governments (c.f., Carr & Farmer, 2011; Foster, 1997). Finally, the paper focuses on jurisdictionally *independent special districts*, so neither districts dependent on general-purpose governments nor school districts are within our scope (c.f., Berry, 2009; Burns, 1994; Foster, 1997).

       The literature has recognized special districts as a widely diverse array of special-purpose governments. Consequently, terms to distinguish special districts are introduced. Even though the term *special-purpose governments* would do justice to the wide diversity of those governmental entities (Berry, 2009; Foster, 1997), this paper also uses the common term *special districts* (for simplicity and for similar intents). To identify major types of special districts, the literature has proposed alternative typologies, such as fiscal types and geographic types (Carr & Farmer, 2011; Foster, 1997). The paper focuses on special district fiscal types, taxing districts and nontaxing districts, which are related to distinct motivations for special district formation.

FISCAL LIMITS ON LOCAL GOVERNMENTS

The paper uses specific terminology for tax and expenditure limitations. TELs may be differentiated into distinct families. The paper examines the following families of binding TELs on general-purpose governments: (a) property tax limitations and (b) general limitations (ACIR, 1995; Briffault, 2002; Gelfand et al., 2007; Mullins & Wallin, 2004; Yuan et al., 2009).[4] *Property tax limitations* are ceilings on the property tax revenue or joint limits on rate and assessment increases. *General limitations* are limits on multiple revenues and expenditures of general-purpose governments. These working definitions, following the literature on TELs, will imply different effects on local governments. This section examines the conceptual usefulness of the TEL families.

Property Tax Limitations

The traditional TEL on local governments, property tax limitations are the focus of the seminal literature on special district formation (Bollens, 1986; Burns, 1994; Foster, 1997; MacManus, 1981). These limitations have a long history in some states. Early property tax limitations either applied to a specific purpose or allowed for numerous exemptions, so they were typically nonbinding. However, recent property tax limitations differ from early limitations in important ways. In general, recent limitations are more restrictive. Post-Proposition 13 legislation has been intended, in part, to bind circumvention opportunities from property tax limitations (ACIR, 1995; Briffault, 2002; Kioko, 2011; Martell & Teske, 2007; Mullins & Wallin, 2004; Yuan et al., 2009).

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[4] In the paper, the term "binding" refers to limitations that actually (not just nominally) restrict a local government. It means that we have to evaluate the actual economic impact, not just the intent of a legal limitation. For example, a property tax limitation may nominally restrict (i) rates, (ii) assessment levels, or (iii) the property tax revenue. Limitation (i) or (ii) is either *nonbinding*—unless both are imposed. Note, however, that a limitation on property tax rates could be binding in states with adherence to assessment practices that prevent manipulation of property assessment for tax purposes. (I thank a referee for suggesting these points). Data on binding limitations are compiled from the existing sources (e.g., see ACIR, 1995; Mullins & Wallin, 2004; Yuan et al., 2009).

Though property tax limitations are specified differently through state laws, their intended effect is practically similar: to limit property tax revenue raised by local governments. Our focus is on *binding* property tax limitations, as different from nominal property tax limitations. Identification of the binding potential of property tax limitations has been a crucial insight by the literature, as it identifies certain conditions for property tax limitations to turn binding. If a property tax limitation restricts independently rates or assessment levels, it can be avoided by adjusting one (or the other) element (ACIR, 1999; Mullins & Wallin, 2004). Since rates and assessment levels are elementary factors in the property tax system, limits upon them are theoretically binding if imposed jointly. Consequently, recent legislation has been intended to bind both property tax elements. Or property tax limitations are binding if they impose a numeric ceiling on the property tax revenue, since a ceiling fixes the amount or growth rate of the property tax revenue. In sum, property tax limitations will bind if they (a) bind both rates and assessment levels or (b) fix a revenue ceiling (the empirical analysis draws directly on these elements to operationalize variables on binding property tax limitations).

Even though several states have adopted property tax limitations, these limitations are also nonbinding if allowing for circumvention opportunities. One way in which property tax limitations turn out to be nonbinding is by allowing for numerous exemptions; thus, general-purpose governments can avoid property tax limitations by reallocating property tax revenue toward exempted functions or by inter-fund transfers. The actual effect of property tax limitations thus hinges on whether or not these limitations restrict enough exemptions. If allowing for so many exemptions, property tax limitations will turn out to be nonbinding in practice.[5] Apparently, property tax limitations adopted after Proposition 13 are more restrictive than earlier property tax limitations by narrowing down exemption options (Briffault, 2002; Gelfand et al., 2007; Kioko, 2011;

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[5] Property tax limitations can allow for "special levy" exemptions. They also exempt property tax revenue for debt repayment and generally for capital spending (ACIR, 1995; Gelfand et al., 2007; Mullins & Wallin, 2004).

Martell & Teske, 2007; Mullins & Wallin, 2004; Yuan et al., 2009).[6]

General Limitations

Since property tax limitations were typically nonbinding, antitax groups have been advocating for more binding TELs. A family of newer TELs may be conceptualized as general revenue-expenditure limitations or, more parsimoniously, general limitations. Their identification is one of the key insights from the literature (ACIR, 1995; Briffault, 2002; Gelfand et al., 2007; Kioko, 2011; Mullins & Wallin, 2004; Yuan et al., 2009). Broadly speaking, general limitations have been introduced to bind multiple revenues and expenditures. Consequently, general limitations are intended to constrain the overall fiscal authority of general-purpose governments.

Since property tax limitations may encourage nontax sources, general limitations are intended to bind various sources of revenue and expenditure. General limitations thus constrain, not only property tax revenues, but also nontax revenues such as user fees and charges. As stated in their legislation, general limitations fix the amount of revenues and expenditures by indexing them to parameters such as inflation rates. General limitations narrow down exemptions as well, as compared to exemptions available from property tax limitations. General limitations thus relate to any constraints on the ability to use multiple revenues and expenditures. In theory, they are by construction binding limitations (Gelfand et al., 2007; Kioko, 2011; Martell & Teske, 2007; Mullins & Wallin, 2004; Yuan et al., 2009).

Procedurally, general limitations tend to be adopted by referendum. Therefore general limitations are more common in states where the direct initiative is available to voters. For example, a number of western states have adopted general limitations by referendum; Colorado's Taxpayer Bill of Rights (TABOR), adopted in 1992 and partly suspended in 2005, is an

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[6] Property tax limitations also can be amended by the state legislature or courts. For example, courts may override property tax limitations whenever they are inconsistent with public financing of constitutionally guaranteed services (Briffault, 2002; Gelfand et al., 2007).

example of general limitations (Kioko, 2011; Martell & Teske, 2007; Mullins, 2010; Yuan et al., 2009). Nevertheless, if general limitations are adopted into the state constitution after a referendum, their amendment would require a constitutionally equivalent procedure. That is, an ex-post referendum would be necessary to amend general limitations from the state constitution. These constitutional limitations thus stand in contrast to statutory limits that can be amended by legislatures.

In spite of procedural hurdles, general limitations can be amended. As a response to their often dramatic impact, repeal or suspension of general limitations has been possible in a number of cases (see table 2). In other cases, legislation has been simply intended to adjust specified limits; for example, amendments have adjusted the allowable growth rate of revenues and expenditures to reflect change in the economic environment. If amendments or circumvention opportunities are precluded, general limitations will heighten incentives for special district formation. The paper thus expects stronger effects from general limitations, compared to property tax limitations. To assess their impact, however, the revenue source of a special district will make a difference.

FISCAL AUTHORITY FOR SPECIAL-PURPOSE GOVERNMENTS

Special-Purpose Governments with Tax Authority
Fiscally, a special district may be differentiated according to whether or not it can impose property taxes. As defined, *taxing districts* are those special districts enabled to raise property taxes (Foster, 1997). These types of districts are theoretically intended to 'collectivize' the costs of service provision. Taxing districts rely on spreading costs of service provision across property owners rather than, as in nontaxing districts, charging users for services.

Through taxing districts, "collective tax financing inevitably results in redistribution of costs from nonresidents to residents, service users to nonusers, and tax-exempt organizations to taxpaying ones" (Foster, 1997, p. 107). Property tax revenue is essential for indivisible or nonchargeable

functions such as public safety, even though the property tax has supported a variety of purposes (Census of Governments, 1982 to 2007). The consequences of reliance on property tax sources are mixed, however. Tax revenue sacrifices efficiency by separating those who pay from those who benefit—the benefit principle of public finance (Buchanan & Tullock, 1962); on the other hand, tax revenue does allow for public financing of core services in taxing districts.

Though functionally specific, taxing districts relieve otherwise fiscally constrained general-purpose jurisdictions (MacManus, 1981). As specified in their legislation, newer TELs are intended to bind general-purpose jurisdictions while still exempting revenues for special purposes (Gelfand et al., 2007; Kioko, 2011; Mullins, 2010). If these expectations hold, TELs will influence taxing district formation yet that expectation hinges on the liberality of exemptions available from either TEL family. Consequently, TELs are to be examined for their differential role: taxing district formation seems implausible to relieve nonbinding TELs but plausible as TELs turn binding.

Taxing district formations exceed nontaxing district formations in some states (Census of Governments, 1982 to 2002). This research thus emphasizes taxing districts, for which there are stronger expectations for TEL effects; however, nontaxing districts are relevant to assess nontax factors in special district formation.

Special-Purpose Governments without Tax Authority

Compared, *nontaxing districts* are those special districts not enabled to raise property taxes. The literature proposes that these types of districts are formed to 'privatize' services (Foster, 1997; see also Census of Governments, 1982 to 2002). Since nontaxing districts lack tax authority, that privatization takes place in the form of user charges and fees for services. Nontaxing districts depend consequently on user-based revenue, for example, by charging on utility provision of services (Foster, 1997; Mullin, 2009). Applying the benefit principle of public finance, nontaxing districts can be functional for business-like services. In general, one of the typical purposes of nontaxing

districts is to detach business-like functions from general-purpose jurisdictions.[7]

Unlike property taxing districts, nontaxing districts are financed by distinct nontax revenues (Foster, 1997; Census of Governments, 1982 to 2002). Another purpose of nontaxing districts is therefore to operationalize programs financed by intergovernmental aid (Peterson, 1995). Often nontaxing districts are formed by special legislation from the state legislature, as compared to taxing districts formed by voter initiative (Briffault, 1996; Foster, 1997). So nontaxing districts may be intended to restrict intergovernmental aid aside from the general fund of general-purpose governments. To prevent fungibility of revenues, intergovernmental aid may be conditional on the formation of an independent district.[8] Special legislation for independent nontaxing districts may thus be intended to allow for intergovernmental aid. However, as federal and state aid are exempted from TELs, they cannot bind nontaxing districts financed by intergovernmental aid (Mullins and Wallin, 2004; Kioko, 2011).

In sum, property tax limitations may not affect nontaxing districts, yet general limitations can affect some nontaxing districts' revenue or expenditures. Where restricting a specific revenue or expenditure item, then general limitations can affect general-purpose and special-purpose governments reliant on that item. Alternatively, other factors may explain nontaxing district formation. Nontax factors, such as demand for services for which the benefit principle applies, should underpin nontaxing districts (Foster, 1997). After accounting for those factors, TELs may not generally influence nontaxing districts. Formally, the absence of direct linkages for TELs and nontaxing districts may be stated as a null hypothesis. If taxing districts and nontaxing districts are different, we should observe empirically

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[7] Because a nontaxing district raises nontax revenue exclusively for that district's spending, nontaxing districts also are useful to secure debt financing for infrastructure. This debt functionality of nontaxing districts is permissible, as interpreted by courts, through the special fund doctrine (Briffault, 2002; Gelfand et al., 2007; Sbragia, 1996). Thus nontaxing districts may be intended to pledge nontax revenue exclusively for debt repayment.
[8] Fungibility relates to the possibility of conflating funds that were originally intended for one purpose (Peterson, 1995, chap. 6).

different relationships for fiscal limitations and those types of districts.

Hypotheses

Null H$_1$: *Property tax limitations on general-purpose governments do not raise nontaxing district formations.*
H$_2$: *Property tax limitations on general-purpose governments raise taxing district formations.*
Null H$_3$: *General limitations on general-purpose governments do not raise nontaxing district formations.*
H$_4$: *General limitations on general-purpose governments raise taxing district formations.*

EMPIRICAL FRAMEWORK

The unit of analysis is *the county (or county-equivalent) area* as defined by the Census Bureau for data reporting on special districts. Observing special district formation by county areas builds on recent literature (Berry, 2009; Carr & Farmer, 2011). The county area is a smaller unit of analysis for isolating dynamics of special district formation, compared to states or metropolitan areas: it is the smallest level of census disaggregation enclosing the universe of local governments in the United States. Still, counties are stable areas over time, which allows for a pooled cross-sectional analysis.

Dependent Variable

This section summarizes the data; see table 1 for complete definitions. Guided by the research hypotheses, the dependent variables of interest are (a) the number of nontaxing districts and (b) the number of taxing districts in the county areas. For comparability with existing literature, the number of special districts (aggregated for all types) is also reported. Consistent with the prior theoretical background, identifying dependent variables separately will be important for identification of different TEL effects. Dependent variables are collected at 5-year intervals. The number of special districts (of all types) is collected for the years 1972, 1977, 1982, 1987, 1992, 1997, 2002 and 2007. The number of nontaxing districts

and taxing districts is available for 1982, 1987, 1992, 1997 and 2002. As data availability permits, a long panel is possible for the number of special districts as a whole, whereas a relatively less extended panel is possible for the number of nontaxing districts and taxing districts.[9]

Table 1.
Data

Variable	Definition	Mean	SD
	Dependent variables		
Special districts	Number of independent special-purpose districts of all types in the county area. **Source**: Census of Governments (1972-2007)	11.923	(18.234)
Taxing districts	Number of independent special-purpose districts with property tax authority in the county area. **Source**: Census of Governments (1982-2002)	3.028	(6.237)
Nontaxing districts	Number of independent special-purpose districts without property tax authority in the county area. **Source**: Census of Governments (1982-2002)	3.510	(4.920)
	Tax and expenditure limitations		
Property tax limitations	A property tax limitation on general-purpose local governments. It is for (a) a limit on the property tax revenues or (b) joint limits on rate and assessment increases. It takes the value of 1 in the year of adoption and subsequent years. **Sources**: Mullins and Wallin (2004) and Yuan et al. (2009)	0.649	(0.477)
General limitations	A general limitation on general-purpose local governments. It is for (a) a limit on the general revenues or (b) a limit on the general expenditures. It takes the value of 1 in the year of adoption and subsequent years. **Source**: Mullins and Wallin (2004) and Yuan et al. (2009)	0.080	(0.271)
Limitations on the state government	A limitation on the state government. It is for (a) a limit on the general revenues or (b) a limit on the general expenditures. It takes the value of 1 in the year of adoption and subsequent years. **Source**: Kioko (2011) and Mullins (2010)	0.676	(0.468)
	Governmental controls		
Local gov. fragmentation	Number of general-purpose governments in the county area. It is weighted to per capita levels and transformed into its natural log. **Source**: Census of Governments (1972-2007)	5.632	(1.421)

[9] The Census of Governments did not collect data on nontaxing districts and taxing districts before 1982 and in 2007.

Local debt outstanding	Long-term, outstanding debt of general-purpose governments in the county area. It is weighted to per capita levels, deflated by the consumer price index of the U.S. Bureau of Labor Statistics, and transformed into its natural log. **Source**: Census of Governments (1972-2007)	10.442	(1.419)
State debt outstanding	Long-term, outstanding debt of the state government. It is weighted to per capita levels, deflated by the consumer price index of the U.S. Bureau of Labor Statistics, and transformed into its natural log. **Source**: Census of Governments (1972-2007)	16.867	(1.376)
State-to-local aid	State aid to general-purpose governments in the county area. It is weighted to per capita levels, deflated by the consumer price index of the U.S. Bureau of Labor Statistics, and transformed into its natural log. **Source**: Census of Governments (1972-2007)	9.483	(1.118)
Federal-to-local aid	Federal aid to general-purpose governments in the county area. It is weighted to per capita levels, deflated by the consumer price index of the U.S. Bureau of Labor Statistics, and transformed into its natural log. **Source**: Census of Governments (1972-2007)	6.596	(2.326)
State centralization	Degree of centralization of the state and local government sector. It is the ratio of state expenditure to total state-plus-local expenditures. **Source***: Census of Governments (1972-2007)	0.691	(0.080)
	Demographic controls		
Population	Total population in the county area. It is transformed into its natural log. **Source**: The Census Bureau's Intercensal Estimates (1970-2005)	10.244	(1.445)
Population squared	Square of the preceding variable. **Source**: The Census Bureau's Intercensal Estimates (1970-2005)	107.016	(30.352)
Population density	Ratio of population to square miles in the county area. **Source**: The Census Bureau's Intercensal Estimates (1970-2005)	8.363	(1.740)
Percent under 19	Percentage of population aged under nineteen in the county area. **Source**: The Census Bureau's Intercensal Estimates (1970-2005)	0.271	(0.033)
Percent 65 and over	Percentage of population aged sixty five and over in the county area. **Source**: The Census Bureau's Intercensal Estimates (1970-2005)	0.150	(0.041)
Racial heterogeneity	Probability that two people, when randomly sampled from the county area, will belong to different races. **Source**: The Census Bureau's Intercensal Estimates (1970-2005)	0.120	(0.155)

Income per capita	Income per capita in the county area. It is deflated by the consumer price index of the U.S. Bureau of Labor Statistics and transformed into its natural log. **Source**: U.S. Bureau of Economic Analysis (1970-2005)	4.912	(0.209)
	Panel controls		
Time effects	Set of dummy variables classifying observations by year. For example, for 1970 observations, it takes the value of 1 and zero otherwise; for 1975 observations, it takes the value of 1 and zero otherwise, and so on.	*N/a*	
State effects	Set of dummy variables classifying observations by state. For example, for Alabama observations, it takes the value of 1 and zero otherwise; for Alaska observations, it takes the value of 1 and zero otherwise, and so on.	*N/a*	
Time trends	Interaction of the two preceding variables.	*N/a*	

Note: The table presents definition and sources for the data. Summary statistics are also reported for the most recent year. N/a means "not applicable" for the set of panel controls. Unless noted otherwise, the unit of analysis is the county (or county-equivalent) area as defined by the Census Bureau. All variables are time-variant.

Independent Variables

Guided by the hypotheses, the independent variables of interest are for (a) property tax limitations and (b) general limitations on general-purpose governments. Time-variant dummy variables account for those TEL types; that is, a distinct dummy variable for each TEL type. When any of those TELs is adopted, the corresponding dummy variable takes the value of 1. Following adoption, a TEL will similarly take the value of 1 for subsequent years (unless that TEL is later suspended or repealed, when it would be recoded as zero). For example, Colorado observations take the value of 1 in 1992 and subsequent years; in 2005, Colorado observations are recoded to reflect the partial suspension of TABOR provisions (Martell & Teske, 2007). Two, time-variant variables on property tax limitations and on general limitations are then compiled from Kioko (2011), Mullins and Wallin (2004), and Yuan et al. (2009) (see also table 1). These data exhaust all theoretically binding TELs in the states. (Nonbinding limitations are excluded from this analysis.)

Control Variables

Control variables are selected from related theories. The model baseline includes control variables for governmental and demographic characteristics. First, the number of general-purpose governments per capita controls for local government fragmentation. This fragmentation control is based on the theory that special-purpose governments are formed to recover economies of scale lost to fragmentation of general-purpose governments (Briffault, 1996; Foster, 1997). Second, the debt outstanding of state and local governments controls for the borrowing level of those governments. Controls for debt outstanding are based on the theory that special districts are particularly intended to supply capital for infrastructure (Foster, 1997; McCabe, 2000). Third, federal and state aid controls for the levels of aid to local governments. These controls are motivated on the theory that intergovernmental aid alters fiscal behavior by local governments. The flypaper effect and fungibility are potential consequences of intergovernmental aid (Hines & Thaler, 1995; Peterson, 1995). Fourth, the ratio of state expenditure to state-plus-local expenditures controls for the degree of fiscal centralization. This control is based on the theory that fiscal centralization influences state-local government structure (Oates, 2011), which thus shapes the role of special-purpose governments.

Demographic controls include the following. First, measures of population, population squared, and population density are included. These controls make up a baseline of demand for services (Cutler et al., 1993; Alesina et al., 2004). Second, the fraction of the population aged under 19 and the fraction of the population aged 65 and over control for demand for services by those population groups. Third, a measure of heterogeneity controls for differentiated preferences for taxes and services by racially heterogeneous populations (Burns, 1994; Alesina et al., 2004). Fourth, income per capita controls for demand for services as determined by income level. The literature shows the importance of income as a determinant of demand for services (Cutler et al., 1993; Alesina et al., 2004). These time-variant control variables are collected from the Census of Population of 1970, 1980, 1990 and 2000, as well as

from the Census Bureau's Intercensal Estimates of 1975, 1985, 1995 and 2005.[10] Again, see table 1 for detailed definitions and sources.

Model

To isolate the impact of TEL adoptions, controls are added to the pooled cross-sectional analysis. Fixed effects control for (unobserved) time-invariant factors. Those fixed effects are operationalized by a full set of dummy variables by state. The fixed effects hold constant long-run characteristics unique to every state. An additional control includes time trends. Whereas fixed effects control for time-invariant factors, time trends allow for a flexible specification where unobserved factors are allowed to vary by state and over time (Wooldridge, 2010, chap. 11). The significance of fixed effects and time trends as relevant controls will be reported in the results section.

More formally, consider a general exponential model (Wooldridge, 2010, chap. 13):

$$districts_{it} = \exp\left[\beta_{1i}(controls)_{it} + \beta_{2i}(tels)_{it} + \beta_{3s}(state)_s + \beta_{4t}(time)_t + \beta_{5s}(state \times time)_{st} + \varepsilon_{it}\right]$$

In this equation, the subscripts denote a county area i and time t for time-variant variables. The variable $districts_{it}$ denotes the dependent variable(s); $(tels)_{it}$ encapsulates tax and expenditure limitations; $(controls)_{it}$ encapsulates governmental and demographic controls; $(state)_s$ denotes fixed effects; $(time)_t$ denotes year effects; and $(state \times time)_{st}$ accounts for time trends. The coefficient(s) β_{2i} represent the TEL effects of interest. I employ pooled Poisson quasi-maximum likelihood (QMLE) to estimate those coefficients; the primary benefit of pooled Poisson QMLE is its consistency under flexible

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[10] Necessarily, the independent variables are lagged two years to the dependent variables. The Census of Population collects data for years ending "0", whereas the Census of Governments collects data for years ending "2". Therefore 1970 population variables are merged to 1972 special district counts, etc. For consistency, a similar procedure is followed for intercensal years: 1975 population variables are merged to 1977 special district counts, etc. This short lag is useful because the independent variables are predetermined to the dependent variables.

conditions, particularly for pooled cross-sectional data (Wooldridge, 2010, chap. 18). Nevertheless, as a robustness check, results from an alternative method will be also reported. To assess statistical significance, clustering observations by state will ensure standard errors fully robust to serial correlation and overdispersion (Wooldridge, 2010, p. 757).

Table 2 reports summary statistics for the data analyzed in subsequent sections. It reports the year of adoption for TELs and the number of special districts by census year. The table provides an overview of special district growth over the study period, and it shows that reliance on special districts varies among states.

Table 2.
Special Districts and Tax and Expenditure Limitations in States

	P.T. Limit	Gen. Limit	Year of Census					
			1982	1987	1992	1997	2002	2007
	Year		Number of Special Districts					
AL			390	421	487	491	525	529
AK	1972		6	14	14	14	14	15
AZ	1913	1921	130	253	261	304	305	301
AR	1981		505	505	561	639	704	724
CA	1978	1979	2,506	2,734	2,797	3,010	2,830	2,765
CO	1913	1992[d]	1,030	1,085	1,252	1,358	1,414	1,904
CT			281	281	368	387	384	453
DE	1972		139	202	196	257	260	259
FL	1995		417	414	462	526	626	1,051
GA			390	410	421	473	581	570
HI			14	14	16	15	15	15
ID	1979[a]		659	705	728	789	798	880
IL	1991		2,602	2,783	2,920	3,068	3,145	3,249
IN	1973		897	836	939	1,236	1,125	1,272
IA	1978		361	372	388	433	542	528
KS	1970[b]		1,370	1,387	1,482	1,524	1,533	1,531
KY	1979		517	569	590	637	720	634
LA	1978		39	24	30	39	45	95
ME			195	203	199	229	222	248
MD			264	223	223	241	85	76
MA	1980		354	391	396	413	403	423
MI	1978		184	250	277	332	366	456
MN		1971[e]	356	374	377	406	403	456
MS	1980		315	307	320	395	458	458
MO	1980		1,195	1,217	1,386	1,497	1,514	1,809
MT	1987		450	514	556	600	592	758
NE	1990	1996	1,157	1,119	1,047	1,130	1,146	1,294
NV	1983	1984[f]	134	146	156	153	158	146
NH			113	120	116	165	148	137
NJ	1980	1976	454	486	374	281	276	247
NM	1979		101	112	116	653	628	633
NY	1981		923	978	980	1,126	1,135	1,119
NC			321	321	321	325	319	315
ND	1981		692	703	722	764	764	771
OH	1976		377	410	513	592	631	700
OK	1996		916	498	524	552	560	642
OR	1916		825	876	835	959	927	1,034

PA	1940	2,050	1,805	2,006	1,919	1,885	1,728
RI	1985	80	83	83	76	75	91
SC		242	300	291	310	301	299
SD		199	212	262	302	376	526
TN		469	462	477	490	475	475
TX	1982	1,681	1,892	2,266	2,182	2,245	2,291
UT	1969[c]	211	236	329	384	300	288
VT		83	95	104	112	152	144
VA		83	106	129	156	196	186
WA	1971	1,130	1,177	1,157	1,202	1,173	1,229
WV	1990	292	290	350	362	342	321
WI		263	366	377	696	684	756
WY		225	250	373	478	546	549
Total		30,344	31,268	33,173	36,201	36,507	38,838
5-year growth		*N/a*	3.0%	6.1%	9.1%	0.8%	6.4%

Note: The table reports summary statistics for the main variables analyzed in the paper. It reports (a) year of adoption of binding TELs and (b) counts of special districts from the Census of Governments. P.T. Limit stands for property tax limitation; Gen. Limit stands for general limitation.
[a] repealed 1992; [b] suspended 1989; [c] repealed 1986; [d] suspended 2005; [e] repealed 1993; [f] repealed 1989

FINDINGS

This section presents the findings based on the model specifications outlined in the above section. It concentrates on significant findings from table 3. The analysis is organized into three subsections: (a) effects of property tax limitations and general limitations, (b) robustness to alternative models, and (c) summary of other factors in special district formation.

Main Findings

Findings for special districts (aggregated for all types), as the dependent variable, are reported in model (1), table 3. These findings provide a baseline for comparison with related findings from the literature. In model (1), neither property tax limitations nor general limitations seem to have an effect in special district formation. However, when the dependent variable for special district fiscal types is specified independently, the results change significantly.

Table 3.
What Factors Affect Special District Formation?

Dependent variable	All districts	Nontaxing districts	Taxing districts
Model:	(1)	(2)	(3)
Property tax limitations	-0.053	0.147	0.083
	(0.162)	(0.362)	(0.095)
General limitations	0.520	**-0.827***	**0.148**
	(0.338)	(0.180)	(0.070)
Local gov. fragmentation	1.169***	0.781***	0.172**
	(0.393)	(0.148)	(0.085)
Local debt outstanding	-0.100	0.015	-0.045**
	(0.077)	(0.033)	(0.018)
State debt outstanding	-0.152	-0.337	0.076
	(0.163)	(0.354)	(0.097)
State-to-local aid	0.490	0.311***	0.170*
	(0.309)	(0.091)	(0.092)
Federal-to-local aid	0.027	-0.017	-0.002
	(0.045)	(0.020)	(0.012)
State centralization	2.696	8.896*	-3.872***
	(3.390)	(4.575)	(1.279)
Demographic controls	286.6***	159.3***	76.7***
Time effects	256.9***	71.2***	125.1***
Fixed effects	2e+7***	7e+10***	3e+11***
Time trends	9e+5***	7e+8***	5e+10***
N	23,313	14,777	14,777

Note: The table reports average partial effects from pooled Poisson (quasi-MLE) and standard errors clustered by state in parenthesis. It also reports the *chi-square* obtained for the joint significance of control variables and panel effects. The number of observations (N) is equal to the number of county areas times the number of years.
***$p<.01$; **$p<.05$; and *$p<.10$
Sources: See table 1.

The effect of property tax limitations is positive when tested for nontaxing districts and taxing districts (models 2 and 3). While the sign of property tax limitations is positive, still they are insignificant in either model. Thus, property tax limitations have positive yet insignificant associations with nontaxing districts and taxing districts. Taken together, these results are consistent with one strand of the literature (Berry, 2009; Foster, 1997; Lewis, 2000), which finds no evidence for property tax limitations and special district formation. In terms

of the research hypotheses, these results are consistent with **Null H₁** that assumed no effect of property tax limitations in nontaxing district formation. And the results do not support **H₂** that predicted a positive effect of property tax limitations in taxing district formation.

By contrast, there are significant results for general revenue-expenditure limitations. When general limitations are tested on special districts as a whole, their marginal effect appears positive though insignificant. But when general limitations are tested on special districts by fiscal type, the results are significant and point to different directions. When general limitations are tested on nontaxing districts, their effect is negative. When general limitations are tested on taxing districts, their marginal effect turns positive. These findings thus report the importance of differentiating types of TELs and types of special districts. In terms of the research hypotheses, these results contradict **Null H₃** that assumed no effect of general limitations in nontaxing district formation. Significantly, the results do support **H₄** that predicted a positive effect of general limitations in taxing district formations.

Results on general limitations represent substantively large effects, as the following estimates indicate. Interpreted in terms of percentage change (Long & Freese, 2014, chap. 9), adoption of general limitations lowers the number of nontaxing districts by approximately 25 percent. In contrast, adoption of general limitations raises the number of taxing districts by approximately 13 percent. These results stand in contrast to the seemingly insignificant effect of general limitations when they are tested on special districts as a whole. The results thus highlight the differentiated effect of general limitations in special district formation by fiscal type. The positive effect of general limitations in taxing district formation appears consistent with theory.

Why would general limitations encourage taxing districts while discouraging nontaxing districts? Some sources suggest that general limitations, though exempting the revenue supporting a special district, could otherwise bind its expenditures (Briffault, 2002; Gelfand et al., 2007). General limitations release revenues of taxing districts "that do not

exceed the reasonable costs of the services and are not used for unrelated revenue purposes. On the other hand, some spending limitations have been held to apply [to nontaxing districts]" (Gelfand et al., 2007, p. 124). In other words, the negative effect of general limitations on nontaxing districts could result from limitations binding nontaxing district expenditures.

Robustness to Alternative Models

This section reports additional tests to evaluate whether the main findings are robust.[11] These sensitivity tests focus on results for nontaxing districts and taxing districts. A first sensitivity test removes extreme observations (or outliers). Specifically, the county areas with the 1-percent largest number of special districts are removed (table 4, panel I). Reassuringly, the results do not change significantly after this sensitivity test, as both the sign and significance levels remain similar. This sensitivity test may mitigate concerns that outliers influence the results (outliers understood as extreme counts of special districts among county areas). A second robustness test uses negative binomial full MLE instead of pooled Poisson QMLE (table 4, panel II). Based on the dependent variable's conditional mean, pooled Poisson QMLE is more consistent than full MLE methods for count data (Wooldridge, 2010, chap. 18). Nevertheless, alternative results from negative binomial are reported to check that the main results depend not on the method. The results do not change significantly after the negative binomial regression and rather appear stronger.

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[11] These sensitivity tests focus on issues of possible concern. They relate to the (a) influence of extreme observations, (b) dependence on the estimation method, and (c) role of limitations on the state government.

Table 4.
Robustness to Alternative Models

Dependent variable	Nontaxing Districts	Taxing Districts
Model:	(4)	(5)
I. Removing 1-percent largest counts		
Property tax limitations	0.381	-0.004
	(0.251)	(0.074)
General limitations	**-0.798***	**0.156**
	(0.203)	(0.064)
II. Estimating by negative binomial full MLE		
Property tax limitations	0.259	-0.011
	(0.307)	(0.067)
General limitations	**-0.867***	**0.197***
	(0.207)	(0.075)
III. Controlling for state limits and interactions		
Property tax limitations	-0.378	0.082
	(0.495)	(0.093)
General limitations	**-1.350***	**0.166**
	(0.270)	(0.161)
Limitations on the state government	-0.847**	0.080
	(0.358)	(0.202)
Property tax × General limitations	0.958	0.003
	(0.662)	(0.174)
Property tax limitations ×	0.880*	0.014
limitations on the state government	(0.450)	(0.190)
General limitations ×	-0.128	-0.114
limitations on the state government	(0.467)	(0.196)

Note: The table reports average marginal effects and, in parenthesis, robust standard errors clustered by state. The tests are described in the section on sensitivity to alternative models.
***p<.01; **p<.05; and *p<.10
Sources: See table 1.

A third sensitivity test adds limitations on the state government, and a full set of TEL interactions, as control variables (table 4, panel III). A time-variant variable for general limitations on the state government is thus included. While the baseline model is focused on local governments, controlling for limitations on the state government may be based on an argument that those limitations encourage delegation of

functional responsibilities to local governments, in particular, special-purpose governments (Bowler & Donovan, 2004; Briffault, 2002; Kioko, 2011; Martell & Teske, 2007; Sbragia, 1996; Wallis & Weingast, 2008).[12] This can be an overly restrictive test, however, as limitations on the state government are imposed alongside limitations on local governments, making it difficult to distinguish the effect of different limitations.

After those re-specifications, general limitations on local governments maintain their negative impact on nontaxing district formation. When tested on taxing districts, general limitations on local governments seem to lose significance although the size of the effect is similar and relatively stronger. It is worth noting that limitations on the state government predict a lower number of nontaxing districts. As noted above, an interpretation of this result is that limitations on general-purpose governments could affect nontaxing districts by restricting revenue transfers from general-purpose governments, or the variable for general limitations could capture (unobserved) types of rules binding special-purpose governments.

Based on the sensitivity tests from table 4, I conclude that the effects of general limitations appear strong, particularly as compared to those of property tax limitations. The effect of general limitations in nontaxing district formation remains significant and negative after the sensitivity tests. The positive effect of general limitations in taxing district formation is robust across model specifications, except for model 5, panel III. Substantively, the effects of general limitations on local governments are large. For comparability, the findings are summarized in table 5.

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[12] State-level TELs may be classified as general fund limits and procedural limits (Kioko, 2011). This research simply controls for state-level TELs (as a robustness check), since the focus is on TELs on local governments.

Table 5.
Research Findings

Dependent variable	Nontaxing Districts	Taxing Districts	Nontaxing Districts	Taxing Districts
Independent variable	Property tax limitations		General limitations	
Research hypothesis	H$_1$	H$_2$	H$_3$	H$_4$
Hypothesized effect	null	positive	null	positive
Direction as hypothesized	no	**yes**	no	**yes**
Substantive effect	4.6%	7.4%	−24.5%	12.8%
Statistically significant	no	no	**yes**	**yes**
Sensitive to alternative models	no	no	no	partially

Note: The table summarizes the research hypotheses and findings.
Sources: See table 1.

Other Factors in Special District Formation

Returning to table 3, this penultimate section briefly discusses results on control variables. For space consideration, the tables do not display these results (results available from the author). Control variables are relevant for two reasons. First, control variables represent nontax explanations for special district formation. Second, time-variant controls make up the model baseline upon which the effects of property tax limitations and general limitations can be isolated. Governmental controls, fixed effects, and time trends are the focus of this section.

First of all, (general-purpose) local government fragmentation is a robust predictor of special district formation. This fragmentation variable is significant across models—that is, for nontaxing districts and taxing districts. In substantive terms, if local government fragmentation rises by one standard deviation, the number of special districts rises by approximately 25 percent. This result supports the expectation that special-purpose governments are formed to overcome general-purpose government fragmentation and recover economies of scale, for example, through the regionwide provision of services (Briffault, 1996; Foster, 1997). Second, debt outstanding of (general-purpose) local governments has a significant, negative association with taxing districts. This finding suggests that greater borrowing capacity of general-purpose governments mitigates the need for taxing districts. In substantive terms, if local government debt increases by one standard deviation, the

number of taxing districts decreases by approximately 6 percent. The debt outstanding of the state government is not significant.

Third, state aid to local governments is a robust predictor of special district formation; in particular, state aid is a strong predictor of nontaxing district formation. In substantive terms, if state aid rises by one standard deviation, the number of nontaxing districts rises by approximately 12 percent. Federal aid to local governments is not significant. Fourth, the degree of centralization of the state–local public sector has a negative effect on taxing district formation. In substantive terms, if state centralization increases by one standard deviation, the number of taxing districts decreases by approximately 23 percent.

Additional controls include time effects, fixed effects, and time trends. These controls should be jointly assessed (Woodridge, 2010, chap. 11). Time effects are significant as indicated by their joint *chi-square* test. Fixed effects are strongly significant across models as indicated by the large *chi-square* and significance levels at 1 percent. This latter result is intuitive and logical. Since state-level factors underpin usage of special-purpose governments, the dummy variables by state account significantly for inter-state variation; that is, any (unobserved) state-level factor is fully absorbed by the set of dummy variables.[13] Third, the model baseline accounts for time trends operationalized by interacting the time and fixed effects (Wooldridge, 2010, p. 376). While fixed effects control for invariant factors, adding time trends is important to flexibly allow unobservable factors to vary over time. Time trends thus isolate the impact of TEL adoption, otherwise confounded by time-variant factors if trends were omitted. The significance of fixed effects and time trends is shown through joint *chi-square* tests (table 3). In conclusion, these specifications for panel data control for unobservable factors and are therefore helpful to estimate the influence of TELs in special district formation.

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[13] Fixed effects control for time-invariant factors by state. Those unobserved effects could include, for example, institutional factors such as laws on local government autonomy, constitutional debt limitations, among others. Earlier studies rely on state-level data to control for those factors. Because this study aims to isolate the time-variant influence of TELs, fixed effects strictly absorb any state-level factors (albeit at the cost of abstracting them from the analysis).

DISCUSSION AND CONCLUSIONS

This paper reports results from an analysis of special district formations in the United States. To assess their impact in special district formation, the analysis captures adoption of tax and expenditure limitations through the post-Proposition 13 tax revolt in the states. A pooled cross-sectional analysis evaluates the impact of TEL adoption in special district formation. Main findings include that property tax limitations and general limitations are distinct, fiscal rules whose effect may be identified separately in research on special district formation. Controlling for demographic and governmental characteristics, fixed effects, and time trends, the impact of TEL adoptions is therefore identified.

The empirical findings appear consistent with basic conceptualizations for families of TELs and of special-purpose governments. Different TELs indeed result in different effects on special district fiscal types. Consistent with one strand of literature, property tax limitations fail to predict special district formation. As discussed at the outset, local governments are able to substitute alternative sources for limited property tax revenue.[14] However, the most significant finding is that one family of TELs – general limitations – does influence special district formations. Those general limitations appear to encourage taxing districts while discouraging nontaxing districts. General limitations constrain fiscal authority overall, so their severity may justify functional legislation for special-purpose governments with taxing powers.

The literature has documented that TELs have unintended effects on the local government sector. Consistent with those expectations, the present research shows that TELs are not uniform and may be differentiated to assess their influence on special district formation. Special districts, as enabled with different types of authority to raise revenue, are affected differently by TELs. At a theoretical level, therefore this

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[14] Alternative revenues include user fees and charges for services, as well as taxes other than the property tax (Briffault, 2002; Oates, 2011).

research links explanations for TEL consequences and local government reorganization. Consequently, I conclude that fiscal rules are a relevant framework influencing the structural and functional role of special districts in the states.

Implications for decision making and practice may include the following. Consistent with the literature, this research suggests that special district formation can be a useful approach to relieving fiscal limitations. However, decisions on special district formation should be assessed in light of the types of limitations imposed on local governments. And while special districts allow localities to provide services, special districts' limited accountability to the public will continue to be a practical concern. There is, in sum, a practical trade-off that decision makers have to assess, in terms of utilizing special districts as a response to legal restrictions on the fiscal authority of local governments.

To add conceptual specificity, this paper tests hypotheses suggested by, but inconclusively settled in, research on special-purpose governments. Nevertheless, the paper has limitations. Areas not explored in this research, open for future research, are as follows. First, research may look further into the consequences of special-purpose governments, including both fiscal and governance implications for the states and their localities. Second, future research may investigate the role of special districts in supporting interlocal contracting and cooperation. For instance, cooperative services by taxing districts could be an alternative framework to overcome fiscal limitations. Third, whether certain constitutional or statutory rules bind special districts remains to be explored. Work on these questions will broaden knowledge around special-purpose governments in the states.

REFERENCES

Advisory Commission on Intergovernmental Relations. (1995). *Tax and expenditure limits on local governments.* Washington, DC: ACIR Publications.

Alesina, A., Baqir, R., & Hoxby, C. (2004). Political jurisdictions in heterogeneous communities. *Journal of Political Economy, 112*(2), 348-396.

Bauroth, N. (2015). Hide in plain sight: The uneven proliferation of special districts across the United States by size and function. *Public Administration Quarterly, 39*(2), 295-324.

Berry, C. R. (2009). *Imperfect union: Representation and taxation in multilevel governments*. New York, NY: Cambridge Press.

Briffault, R. (1996). The local government boundary problem in metropolitan areas. *Stanford Law Review, 48*(5), 1115-1171.

Briffault, R. (2002). Disfavored constitution: State fiscal limits and state constitutional law. *Rutgers LJ, 34*, 907-957.

Bollens, S. A. (1986). Examining the link between state policy and the creation of local special districts. *State & Local Government Review, 18*(3), 117-124.

Bowler, S., & Donovan, T. (2004). Evolution in state governance structures: Unintended consequences of state tax and expenditure limitations. *Political Research Quarterly, 57*(2), 189-196.

Buchanan, J. M., & Tullock, G. (1962). *The calculus of consent: Logical foundations of constitutional democracy*. Ann Arbor, MI: University of Michigan Press.

Burns, N. (1994). *The formation of American local governments: Private values in public institutions*. New York, NY: Oxford University Press.

Carr, J. B., & Famer, J. (2011). Contingent effects of municipal and county TELs on special district usage in the United States. *Publius: Journal of Federalism, 41*(4), 709-733.

Cutler, D. M., Elmendorf, D. W., & Zeckhauser, R. J. (1993). Demographic characteristics and the public bundle. *Public Finance, 48*(S), 178-198.

Feiock, R. C., & Carr, J. B. (2001). Incentives, entrepreneurs, and boundary change: A collective action framework. *Urban Affairs Review, 36*(3), 382-405.

Foster, K. A. (1997). *The political economy of special-purpose government*. Washington, DC: Georgetown University Press.

Gelfand, D. M., Mintz, J. A., & Salsich. P. W. (2007). *State and local taxation and finance* (3rd ed.). St. Paul, MN: Thomson/West.

Hines, J. R. & Thaler. R. H. (1995). Anomalies. The flypaper effect. *The Journal of Economic Perspectives, 9*(4), 217-226.

Hooghe, L., & Marks, G. (2003). Unraveling the central state, but how? Types of multi-level governance. *American Political Science Review, 97*(2), 233-243.

Kioko, S. N. (2011). Structure of state-level tax and expenditure limits. *Public Budgeting & Finance, 31*(2), 43-78.

Lewis, P. G. (2000). The durability of local government structure: Evidence from California. *State and Local Government Review, 32*(1), 34-48.

Long, J. S., & Freese. J. (2014). *Regression models for categorical dependent variables using stata* (3rd ed.). College Station, TX: Stata Press.

MacManus, S. A. (1981). Special district governments: A note on their use as property tax relief mechanisms in the 1970s. *Journal of Politics, 43*(4), 1206-1214.

Martell, C. R., & Teske, P. (2007). Fiscal management implications of the TABOR bind. *Public Administration Review, 67*(4), 673-687.

McCabe, B. C. (2000). Special-district formation among the states. *State and Local Government Review, 32*(2), 121-131.

McCabe, B. C. (2004). Special districts: An alternative to consolidation. In J. B. Carr & R. C. Feiock (Eds.), *City-County Consolidation and Its Alternatives: Reshaping the Local Government Landscape* (pp. 131-152), Armonk, NY: M.E. Sharpe.

Mullin, M. (2009). *Governing the tap: Special district governance and the new local politics of water.* Cambridge, MA: MIT Press.

Mullin, M. (2014). Local boundaries. In D. Haider-Markel (Ed.), *The Oxford handbook of state and local government* (pp. 397-414). New York, NY: Oxford University Press.

Mullins, D. R. (2010). Fiscal limitations on local choice: The imposition and effects of local government tax and expenditure limitations. In S. Wallace (Ed.), *State and local fiscal policy: Thinking outside the box* (pp. 201-265). Northampton, MA: Edward Elgar Publishing.

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

Oates, W. E. (2011). *Fiscal federalism* (reprinted ed.). Cheltenham, UK: Edward Elgar Publishing.

Ostrom, V., Tiebout, C. M., & Warren, R. (1961). The organization of government in metropolitan areas: A theoretical inquiry. *American Political Science Review, 55*(4), 831-842.

Peterson, P. E. (1995). *The price of federalism*. Washington, DC: Brookings Institution.

Sbragia, A. (1996). *Debt wish: Entrepreneurial cities, U.S. federalism, and economic development*. Pittsburgh, PA: University of Pittsburgh Press.

Tiebout, C. M. (1956). A pure theory of local expenditures. *Journal of Political Economy, 64*(5), 416-424.

U.S. Census of Governments. (1982-2007). Government organization and finance phases.

Wallis, J. J., & Weingast R. (2008). Dysfunctional or optimal institutions: State debt limitations, the structure of state and local governments, and the finance of American infrastructure. In E. Garret, E. Grady, & H. Jackson (Eds.), *Fiscal challenges: An interdisciplinary approach to budget policy* (pp. 331-363). New York, NY: Cambridge University Press.

Wooldridge, J. M. (2010). *Econometric analysis of cross section and panel data* (2nd ed.). Cambridge, MA: MIT press.

Yuan, B., Cordes, J., Brunori, D., & Bell, M.E. (2009). Tax and expenditure limitations and local public finances. In N. Augustine et al., *Erosion of the property tax base: Trends, causes, and consequences:* (pp. 149-196). Cambridge, MA: Lincoln Institute of Land Policy.