What Lies Beneath these Creatures of the State: Understanding the Death of U.S. Local Governments*

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After analyzing 35 years of census data on local government change, this study finds that the dissolution of special districts or "exits" in U.S. counties, are largely unrelated to demand factors. Using fixed effects regression specified at the all-county and urban county levels, we find that restrictions on the fiscal autonomy of cities are associated with decreases in the special district exit rate. There is also evidence that state grants of "broad" or "limited" functional home rule to cities increase special district dissolutions. These results appear to be driven by highly asset specific functions. The findings are consistent with the circumvention argument, made in the local autonomy literature, and may also indicate some service consolidation albeit from a different perspective.

Keywords: Special districts, dissolution, local autonomy, boundary change

INTRODUCTION

The number, size and form of local governments are everchanging in the U.S. which pose interesting challenges to the field of public administration. Studying and measuring their dynamics offers scholars and practitioners a chance to understand the values and demand for decentralization of local government as opposed to a more centralized system. Fragmentation as opposed to consolidation, has proved to be the most common way to organize governments in a metropolitan area and is further evidenced by special districts proliferation. Tiebout (1956) developed one of the earliest theories about why metropolitan areas fragmented based on rational choice theory and residents "voting with their feet." Scholars such as Burns (1994) and Foster (1997) have paved the way in developing theories of local government growth and the creation of special districts based on this seminal work. In addition, several studies have explored their work further by examining both the creation and dissolution of special districts (Bollens 1957; Leigland 1994; Bauroth 2010; Goodman and Leland 2019; Moldogaziev, Scott, and Greer 2019; Zhang 2019). This study builds upon this body of literature by using 35 years of empirical data paired with metrics of dissolution or "exit" derived from the industrial organizations literature (Goodman 2020). Fundamentally, we ask if the process of dissolution is merely district creation in reverse – are the same factors important in the creation of special district just as important in dissolution?

Local governments are dynamic, and we expect to see continued growth and fragmentation on the horizon. These trends of course, are not completely free of the occasional dissolution, annexation or in rare cases, consolidation. Why fragmentation as opposed to consolidation is preferred way to organize governments in a metropolitan area has long been a key research question in the fields of public administration. developed a theory about why metropolitan areas fragmented based on rational choice theory and

*Preliminary Draft, Please do not cite or circulate without author's permission.

Current version: August 8, 2022; *Corresponding author*: cgoodman@niu.edu.

and have worked toward developing a theories of local government growth. However, this topic has largely gone unexplored in terms of special districts in metropolitan areas. Several studies have been done on both creation and dissolution of special districts . But we do not know if dissolution merely means replacing old government new ones. Drawing from the industrial organizations literature, this study uses a relative measure of creation and dissolution to establish an exit rate to help us answer this question.

Special districts that provide critical public services such as transportation, water management, business development and housing, now constitute over forty percent of all U.S. jurisdictions (Berman and West 2012; Maynard 2013). This form of local government is the largest single form of local government in the United States with just over 38,000 units and growing (Goodman 2019). This numbers have exploded, and the growth of this form of local government has been much larger than any other, more than doubling in numbers since 1952 (Goodman and Leland 2019). This is roughly twelve times larger than the amount of counties and twice as large as the number of municipalities or towns/townships. Additionally, the growth over time in the number of special districts has been much higher than other forms of local government. Since 1952, the growth in the number of special districts was 210 percent with an annualized growth rate of 1.9 percent. This is much larger than the growth in general purpose local governments over the same time period (5.5 percent; annualized growth of 0.09 percent). The growth in new special districts has slowed somewhat in recent years (since 2000) but shows little signs of abating. But the story of growth is not so simple. Underneath creation lies even more formation, yet somewhat masked by dissolutions. In any given 5-year period between 1977 and 2012, approximately 6 percent of all special districts and 8 percent of special districts in urban counties were dissolved, consolidated, or otherwise disappeared on average. This trend is compared against 17 to 20 percent growth in new special districts, respectively over the same time period.

The large historical growth in special districts paired with fairly consistent yet lower levels of dissolution suggest a churn in the market for special districts. It seems logical for these districts to be dissolved or to become inactive and newer, more relevant districts be created to address the new preferences for policy solutions leading to further fragmentation. It could also be that when special districts age, they may become obsolete. This can denote changes in the demand for policy solutions or signal a need for reform and consolidation. This potential process suggests a number of factors that may be relevant in explaining the rate of special district dissolution in a particular area. Demand for services, state rules affecting local autonomy, and substitutions are likely all influential in understanding if special districts are dissolved. This paper addresses the question of what lies beyond the appearance of growth, we ask whether special district dissolution is merely special district creation in reverse (more fragmentation) or something else.

The previous research on special district dissolution can be organized into two distinct camps. The first is most closely aligned with the organizational mortality literature (Hannan and Freeman 1977). Individual organizational dissolutions are examined as a process of both internal and external constraints. Younger special districts are more susceptible to dissolution (Bauroth 2010; Moldogaziev, Scott, and Greer 2019). Larger jurisdictions may be able to stave off dissolution (Moldogaziev, Scott, and Greer 2019) as well as those with elected boards (Bauroth 2010). External rules forbidding dissolution of districts with outstanding debt help to prolong their lives (Moldogaziev, Scott, and Greer 2019). More generally, governments with more resources and with greater population density are less susceptible to dissolution (Zhang 2019). The second camp and most closely aligned with the analysis to follow examines special districts dissolution as a system-level phenomena with largely external processes leading to more or fewer dissolutions in a particular geographic aggregation. What little research exists in this tradition focuses largely on local demand, state rules, and the existence of policy entrepreneurs as important (Bauroth 2010). In general, all three factors are statistically associated with dissolution but in vastly different ways.

This analysis adds to the literature in a number of ways. First, a new means of measuring special district creation and dissolution is introduced. Using techniques from the industrial organizations literature, relative measures of creation and dissolution based on the number of districts "at risk" are used based on Goodman (2020). Second, the long panel nature of the data allows for more robust tests of causal effects than previous literature. Previous attempts have been purely cross-sectional in nature. Finally, state restrictions on county governments are incorporated. Previous literature has examined the role of state restrictions on cities; however, county governments have been shown to be important in the creation of special districts (Farmer 2010). It is plausible that because counties are often administrative arms of the state (Benton 2002), state restrictions on counties are important in the dissolution of special districts.

The analysis proceeds as follows. First, the previous literature on special districts is examined with special attention paid to the limited literature on dissolution. Next, the data and empirical methodology are explained. Results are presented and implications for future research are discussed.

PREVIOUS RESEARCH

Institutional Context

The data on special districts utilized in this study and is the most commonly used data in the literature is from the Census of Governments. The U.S. Census Bureau defines a special district as governments that "are independent, special purpose governmental units that exist as separate entities with substantial administrative and fiscal independence from general purpose local governments" (U.S. Census Bureau 2019). They key characteristics are administrative and fiscal independence. Fiscal independence is achieved through the power to determine a budget, levy taxes, charge user fees, or issue debt without review for another governmental entity. Administrative independence is achieved through fiscal independence plus having 1) an independently elected governing body, 2) a governing body representing two or more state or local governments, or 3) an appointed board with functions different from the appointing government. This definition excludes entities when fiscal or administrative independence is violated. Typically, administrative independence is violated though the composition of the governing body. In these cases, the entity is classified as "dependent" and its financial and employment data is added to the sponsoring government's information. Even with this limited definition, the Census of Governments data provide the best and most comprehensive data on special district activities in the United States.

An important unique characteristic of special districts is their territorial flexibility (Bollens 1957; Olberding 2002; Mullin 2007). Unlike cities or some towns, special districts may take on nearly any shape and may overlap other forms of local government including other special districts. This allows special districts to take on near infinite spatial arrangements. Additionally, territorial flexibility allows the collection of special districts serving any particular area to change rapidly over short distances. Two parcels located next to each other may enjoy vastly different public services at differing costs solely because of their inclusion (or exclusion) from various special districts. Special districts are also often free from many legal restrictions imposed on general purpose local governments.[1] Special districts can typically be created to cover any land area without consideration to assessed value, population, or territorial size (Bollens 1957). Special district elections are exempt from the one person/one vote requirementBriffault (1993) and Burns (1994).[2] As a result, voting rights can be apportioned on the basis of any number of bases with owning property within the

1. Cities and towns/townships.

2. *Salyer Land Co v. Tulare Basin Water Storage District*, 410 U.S. 719 (1973) and *Ball v. James*, 451 U.S. 355 (1981).

district being particularly popular. Burns (1994) argues that special districts appear to go out of their way to limit political participation and participation in special district elections is low Hudson (1996) and Little Hoover Commission (2000). This is a marked difference from general purpose governments even though turnout in local government elections tends to be quite low (See Bauroth (2005) for a richer discussion on the uniqueness of special district elections).

Why Do Special Districts Dissolve?

On an individual level, there are a number of reasons why a special district might dissolve. Moldogaziev, Scott, and Greer (2019) explains there are a number of "liabilities" that threaten organizations. Prior research on private and non-profit firms suggests newer firms are more susceptible to organizational mortality, also known as the liability of newness. They find this result for special purpose water districts, a highly capital intensive service in Texas. The second liability is the liability of smallness or organizational size. Smaller organizations are more susceptible to organizational mortality. Smaller organizations may face limitations in their ability to attract new customers or gather the necessarily financial resources to stave off eventual dissolution (Hager, Galaskiewicz, and Larson 2004). Initial founding conditions, particularly those that constrain an organization, can hamper growth and increase the potential for failure as well (Moldogaziev, Scott, and Greer 2019) . However, if these initial conditions provide for more autonomy, it is possible these conditions can provide the flexibility necessary to gather enough resources to stave off failure. Finally, the competitive landscape is seen to be important. As competition rises, the potential for organizational mortality increases as more organizations compete for a relatively constant set of resources.

At a more systemic level, Bauroth (2010) suggests three primary reasons why special districts might dissolve. First, if there is demand for the public services that are currently being provided, there is less incentive to dissolve a special district. This can be further generalized to all public services. Increased demand for public services can be met by creating new local governments (general or specialized) or the demand can be met by existing governments. This would suggest that a special district that may have been declining could see a resurgence if demand is strong enough, staving off dissolution.

Second, if special districts are a clever means to avoid state-imposed restrictions on general purpose governments, we should expect dissolution of special districts to be lower in places with more restrictions. There is a robust debate about whether special districts operate as a circumvention mechanism (see Shi (2017), Goodman (2018), and Goodman and Leland (2019) for more recent analyses); however, if districts work in this manner, there should be less incentive on the part of local politicians to reduce their option to attempt to circumvent these restrictions. All else equal, imposing new restrictions should stem the exit rate.

Finally, the existence of boundary change entrepreneurs may disrupt the dissolution of special districts (both blocking dissolution from the agenda and blocking the formal dissolution). As Schneider, Teske, and Mintrom (1995) explain, the benefits of engaging in public entrepreneurship must outweigh the costs of doing do. If boundary entrepreneurs perceive a significant financial benefit from the continued existence of special districts, they may choose to allocate their resources in support of the cause. Feiock and Carr (2001) outline three groups of potential boundary actors: public officials, businesses, and residents/citizens organizations. We focus on businesses as a boundary entrepreneur. These actors are often successful in influencing local boundary change (see Burns (1994) for an example, albeit framed differently), yet are not often studied. Businesses (and specifically developers and other real estate associated industries) stand to benefit financially from the continued existence of special districts, both as a service provider (infras-

tructure) and from what often comes along with special district development, real estate development. In general, these three factors plus the characteristics of the services provided form the primary independent variables for the analysis to follow.

DATA SOURCES, VARIABLES, & EMPIRICAL STRATEGY

Data Sources & Variables

The largest and most comprehensive database of information on special districts is the *Census of Governments*. Conducted every 5 years in years ending in "2" and "7" by the U.S. Census Bureau, the Census of Governments collects organizational, financial, and employment information on all local governments in the United States. While there are numerous potential issues with the Census of Governments data as it pertains to special districts (see Leigland (1990b), Sacks (1990), and Leigland (1990a) for an overview of this debate), the Census Bureau imposes a number of constraints on the definition of a special district that allows for comparison across time and space. As mentioned previously, all organizations in the Census of Governments beyond dependent school districts are required to have both administrative and financial independence from other public organizations. This definitional requirement allows an "apples-to-apples" comparison of districts across states that may have vastly different state-specific definitions of a special district. Relatedly, the Census Bureau of quite transparent about their process of delineating administrative and financial independence (See U.S. Census Bureau (2019) for the most recent iteration of this reporting). The combination of these two factors makes the Census of Governments data attractive for cross-state, time-series analyses, even with the deficiencies in the data.

Following Goodman (2020), the Census *Government Integrated Directory* (GID) the basis for whether a special district has been created or dissolved. The directory is continuously updated and allows for the tracking of public organizations across time, even if their names change. A special district is registered as "created" the first year it appears in the GID. In actuality, a special district may be created at any point between two Census of Governments, but it is registered at the end of the period. A special district is registered as "dissolved" if it fails to show up in the Census of Governments data for more than one consecutive round of data collection. The Census Bureau make a significant effort to clean the Census of Governments data and eliminate non-response, resulting in a cleaner estimation of exits.

Historically, the literature on special districts has not incorporated the concept of measurement of change, and instead rely on count data. Using count data does not necessarily give enough detail about the nature of dissolution's impact on the local government landscape. A single dissolution in a county with numerous special districts may not be very disruptive while a single dissolution in a county with only 2 or 3 districts may lead to significantly more disruption. A measure is necessary to enumerate the number of dissolved districts as a function of the total number of districts "at risk" of dissolution at any given time. Goodman (2020) constructs measures of special district creation and dissolution that are based on the industrial organizations literature on firm entry and exit (Dunne, Roberts, and Samuelson 1988). The following components are derived from the Census of Government data outlined above.

$$
\begin{aligned}
NE_{it} &= \text{number of special districts created in county } i \text{ between census years } t-1 \text{ and } t \\
NX_{it-1} &= \text{number of special districts dissolved in county } i \text{ between census years } t-1 \text{ and } t \\
NT_{it} &= \text{total number of special districts in county } i \text{ between census years } t-1 \text{ and } t
\end{aligned}
$$

These components are used to make the final measures of entry and exit. They are based on the number of special districts created, dissolved, and total number of districts.

Using the components outlined above, both the entry (1) and exit (2) rate are specified.

$$ER_{it} = \frac{NE_{it}}{NT_{it-1}} \tag{1}$$

$$XR_{it-1} = \frac{NX_{it-1}}{NT_{it-1}} \tag{2}$$

The exit rate (XR) is specified with the total number of special districts in the previous period. This represents the total pool of districts that could potentially exit in the following period. There is no equivalent pool for potential entrants. To maintain consistency with Dunne, Roberts, and Samuelson (1988), the previous period total is used. Both of these measures allow for the examination of the proportion of entrants and departures as a function of the total number of special districts in the previous period. The exit rate (XR) is the dependent variable for this analysis. In addition to the overall exit rate, exiting districts are broken down by their asset specificity (Brown and Potoski 2003).[3] The specialized investments of highly asset specific districts may make their dissolution more difficult as close substitutes are likely unavailable or costly.

As explained above, there are potentially three forces at work leading to special district dissolution or exits, demands for special district services, state institutional arrangements and boundary change entrepreneurs. Consistent with Goodman and Leland (2019) and Goodman (2018), nine variables form the group of special district demand related variables (see Table 1 for data sources and complete definitions). These include population, per capita personal income, population density, population growth, job per capita, and measures of heterogeneity of age and race. These are all standard variables to measure the demand for local public services. Increases in any of these variables should be associated with increased demand for special district services and therefore lower the exit rate. The final two variables, the usage of townships and the change in the number of cities, operationalize alternatives to special districts. Townships are a more limited form of local government, often without the full powers of a municipality. Previous research has suggested that special districts can be an important complement for townships, filling in service delivery gaps created by their more limited powers (Carr 2006; Goodman 2018). As such, the usage of townships should be associated with a lower special district exit rate. Finally, new municipalities may serve as replacements for a collection of special districts, particularly on the urban fringe. If this is correct, an increase in the number of municipalities should be associated with an increase in the exit rate of special districts.

To operationalize the state-level institutions that grant or restrict powers of general purpose local governments, three variables representing grants (positive or increasing local autonomy or negative, reducing local autonomy) of fiscal or functional autonomy are presented. These data are largely sourced from the now-defunct Advisory Commission on Intergovernmental Relations (ACIR). The first is negative grants of fiscal autonomy and are operationalized as potentially binding tax and expenditure limitations (TELs) imposed on cities or counties (Mullins and Wallin 2004). As not all TELs have the potentially to materially alter the behavior of local government, the focus is on only the TELs (or combination of TELs) that potentially bind, altering city or county behavior relative to special districts. As Mullins and Wallin (2004)

3. District functions are matched to the services enumerated by Brown and Potoski (2003). High asset specificity districts rank greater than 3 in their ranking. For those functions that cannot be matched, the authors have determined whether they are high or low. The matches and rankings are available upon request.

Table 1: Data Sources & Variables

Variable	Source	Definition
Exit rate	COG	See equation 2.
Demand-related variables		
Personal income, per capita	REIS	Personal income ($1,000s) divided by population.
Population (1000s)	REIS	Population estimate.
Population density	Census	Population divided by county land area.
Jobs, per capita	REIS	Non-farm employment divided by population.
Age Index	SEER	A Leik index of age, 17 5-year categories plus age 0 and age 85+.
Race Index	SEER	A Leik index of race, 3 categories (white, Black, other).
Use of towns	COG	State uses the township form of local government, 1 if yes.
Chg. in cities	COG	Difference in the number of cities in a county, $t-1$ to t.
Institutions		
Mun. TEL	MW	Potentially binding tax and expenditure limitation imposed on municipalities, 1 if yes.
Cnt. TEL	MW	Potentially binding tax and expenditure limitation imposed on counties, 1 if yes.
Mun. debt limit	ACIR	Local debt limit as a function of assessed value imposed on municipalities, 1 if yes.
Cnt. debt limit	ACIR	Local debt limit as a function of assessed value imposed on counties, 1 if yes.
Mun. functional home rule	KRH	A state grants municipalities the power to exercise local self government in a broad or limited manner, 1 if yes.
Cnt. functional home rule	KRH	A state grants counties the power to exercise local self government in a broad or limited manner, 1 if yes.
Entrepreneurs		
Entry rate$_{t-1}$	COG	See equation 1
Location quotient, NAICS 236	CBP	See equation 3.
Location quotient, NAICS 237	CBP	See equation 3.
Location quotient, NAICS 238	CBP	See equation 3.
Location quotient, NAICS 531	CBP	See equation 3.

Notes: ACIR = Advisory Commission on Intergovernmental Relations (1993); CBP = County Business Patterns, various years; COG = Census of Governments, various years; KRH = Krane, Rigos, and Hill (2001); MW = Mullins and Wallin (2004); REIS = Regional Economic Information System, various years; SEER = Surveillance, Epidemiology, and End Results (SEER) Program, various years. NAICS 236 = Construction of Buildings; NAICS 237 = Heavy and Civil Engineering Construction; NAICS 238 = Specialty Trade Contractors; NAICS 531 = Real Estate.

explain, general revenue or expenditure limits, property tax levy limits, or the combination of any overall or specific limit and an assessment limit are all potentially binding. The data on TELs presented by Mullins and Wallin (2004) is updated to 2012 using the Lincoln Institute for Land Policy's Significant Features of the Property Tax data. The second negative grant of fiscal autonomy are operationalized as state imposed local debt limits originally sourced from Advisory Commission on Intergovernmental Relations (1993) and heavily updated by Goodman (2018) and Goodman and Leland (2019).[4] A local debt limit is indicated if state imposes a limit on city or county bonded debt as a function of assessed value. The final institution is grants of functional autonomy to cities or counties. The presence of functional autonomy for cities or counties is indicated if a state grants local governments the power to exercise local self-government (i.e. choose the services they wish to provide) in a broad or limited manner and is sourced from Krane, Rigos, and Hill (2001). As explained above, the extant literature generally hypothesizes that reducing local autonomy is associated with increased creation/usage of special districts as a circumvention mechanism. If special district dissolution is special district creation in reverse, these reductions of autonomy should stave off dissolutions as the usefulness of special districts as circumvention mechanisms still remains. Therefore, it is hypothesized that reductions of local autonomy[5] be associated with a lower special district exit rate, all else equal.

To operationalize the importance of boundary change entrepreneurs in a county, the location quotient (LQ) is used, a common technique in the economic development and regional science literatures to measure the importance of an industry in a particular region's industrial specialization relative to the national economy. It is commonly defined as the ratio of industry employment to total employment in an area divided by the ratio of total industry employment to total employment (Isserman 1977). In this analysis, the LQ is used to measure whether certain industries are more prevalent in a county than the average county in the U.S. Consistent with Burns' (1994) finding that "developers" are often important entrepreneurs in the special district creation process, four 3-digit NAICS industry subsectors[6] are chosen to represent the potential concentration of such entrepreneurs in a county. They are Construction of Buildings (NAICS 236), Heavy and Civil Engineering Construction (NAICS 237), Specialty Trade Contractors (NAICS 238), and Real Estate (NAICS 531) subsectors. The first three are the components of the NAICS 23 Construction sector. The final subsector is the composed of those firms/employees engaged in the sale or leasing of real estate. All four subsectors stand to financially benefit from the existence of special districts, either directly through their employment in infrastructure related projects or indirectly through the potential increase in real estate values derived from higher infrastructure or service provision. We speculate the likelihood of boundary change entrepreneurship is higher in counties with an over-representation of these industries, and all else equal, should be associated with a lower rate of special district dissolution.

The location quotient (LQ) is defined as follows.

$$LQ_{jk} = \frac{E_{jk}}{E_j} \Big/ \frac{E_k}{E} \tag{3}$$

4. Data available at https://github.com/cbgoodman/localdebtlimits/

5. The imposition of TELs or debt limits or the restriction of functional autonomy.

6. There are two important complications to this method. First is the transition from the Standard Industrial Classification (SIC) system to North American Industry Classification System (NAICS) in 1997 that altered the classifications of industry. Second, small industries in small areas are often not reported for data privacy reasons. I use the method outlined in Eckert et al. (2020) to impute the missing industry data where applicable and to harmonize the pre-1997 County Business Patterns data to NAICS.

Where the E_{jk}/E_j is the ratio of employment in industry subsector k to total employment in county j and E_k/E is the ratio of total employment in industry k to all employment (E). A value of $LQ = 1$ indicates the concentration of the industry k in county j is the same as the national concentration (i.e. industry k is no more or less important to the local economy than it is nationally). A value of $LQ > 1$ indicates a higher concentration of industry k in county j relative to national concentration, suggesting industry k is important to the local economy than in the national economy. A value of $LQ < 1$ indicates lower concentration in industry k in county j relative to the national economy.

In addition to the location quotient-based operationalization of boundary change entrepreneurs, the entry rate of new special districts (ER_{it-1}), lagged one time period, is also used (see equation 1 for the exact definition) to measure the prior success of boundary entrepreneurs in creating special districts. If boundary entrepreneurs are successful in previous time periods, the need for existing special districts may be diminished, increasing the exit rate in the current time period. This would be consistent with the "creative destruction" view of special district creation and dissolution where older, obsolete special districts are dissolved to make way for newer, more relevant districts. In either view, an increase in the special district entry rate should be associated with an increase in the special district exit rate, all else equal.

Sample Construction

There are two primary samples in this analysis. First a panel of nearly all counties in the contiguous United States is used. Second, a panel of all metropolitan counties in the United States is used. "Urban" is defined as a county belonging to a primary metropolitan statistical area using OMB's 1999 definition. The panel of all counties consists 3,048 counties with an unbalanced panel of 24,294 observations and is inclusive of all seven Census of Governments from 1982 to 2012. The urban counties sample consists of 779 counties with an unbalanced panel of 6,371 observations.

Table 2 provides descriptive statistics for the two samples. Overall, the two samples are fairly consistent. The mean exit and entry rates for special districts are similar as are the fiscal and functional autonomy variables. Across all time periods from 1977 to 2012, the mean exit rate for all counties is 5.8 percent and 7.6 percent for urban counties. Figure 1 demonstrates the mean exit rate for both samples across time. The trend is fairly stable with a slight downward trend in both samples in more recent time periods. Interestingly, the exit rates of highly asset specific districts are larger than those districts with less asset specificity. On average 3.6 percent of highly asset specific districts exit in any given year compared against 1.2 percent of less asset specific districts.

specific districts. Cities and counties face similar levels of potentially binding TELs (56 and 58 percent, respectively) and similar limitations on bonded debt (87 and 81 percent, respectively). Municipalities have more functional home rule than counties. This is a trend that has been well documented (Benton 2002); however, counties have been gaining autonomy as they modernize (Benton 2005). The average (urban) county has about 5 percent (17 percent) higher concentration than the national concentration of construction of buildings trades, 17 percent (21 percent) higher concentration in heavy and civil engineering, 20 percent (1 percent) lower concentration in specialty trades, and 41 percent (24 percent) lower concentration in real estate. The urban sample is wealthier, larger in population, denser, and has more jobs per capita than the all counties sample.

Table 2: Descriptive statistics

	(1)		(2)	
	All county panel		Urban county sample	
	Mean	St. Dev.	Mean	St. Dev.
Exit rate	0.058	0.120	0.076	0.128
Exit rate, high asset specificity	0.036	0.115	0.045	0.114
Exit rate, low asset specificity	0.012	0.081	0.019	0.100
Entry rate, t-1	0.173	0.513	0.195	0.544
Institutions				
Mun. TEL	0.562	0.496	0.546	0.498
Cnt. TEL	0.577	0.494	0.582	0.493
Mun. debt limit	0.873	0.333	0.839	0.368
Cnt. debt limit	0.808	0.394	0.774	0.418
Mun. FHM	0.741	0.438	0.743	0.437
Cnt. FHM	0.443	0.497	0.441	0.497
Entrepreneurs				
Location quotient, NAICS 236	1.049	0.973	1.171	0.692
Location quotient, NAICS 237	1.168	1.528	1.205	0.973
Location quotient, NAICS 238	0.797	0.639	0.993	0.529
Location quotient, NAICS 531	0.591	0.975	0.757	0.667
Demand-related variables				
Personal income, per capita	23.632	8.196	26.998	8.897
Population (1000s)	83.928	292.188	248.045	531.292
Population growth	0.693	1.648	1.421	1.770
Population density	173.606	884.722	531.119	1617.867
Jobs, per capita	0.354	0.137	0.396	0.136
Age Index	0.430	0.031	0.409	0.027
Race Index	0.124	0.146	0.150	0.129
Use of towns (Yes=1)	0.317	0.465	0.360	0.480
Chg. In cities	0.040	0.379	0.101	0.615
No. of counties	3,048		802	
No. of states	48		47	

Notes: NAICS 236 = Construction of Buildings; NAICS 237 = Heavy and Civil Engineering Construction; NAICS 238 = Specialty Trade Contractors; NAICS 531 = Real Estate.

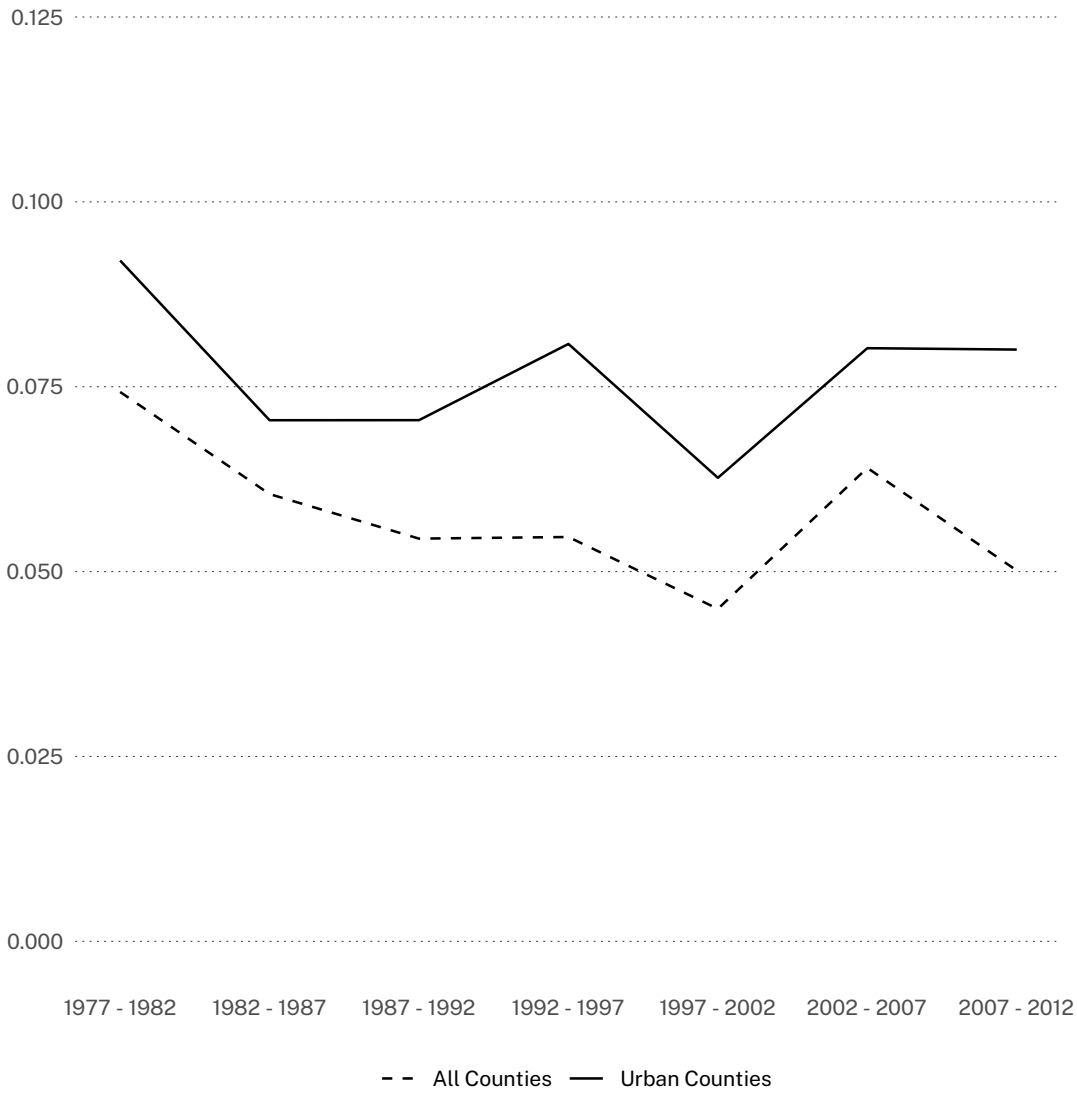

Figure 1: Exit Rate by Sample, 1977-2012

Empirical Strategy

We first estimate a model of the special district exit rate as a function of demands for special district services, institutions, and boundary entrepreneurs, including county and year fixed effects. This is most similar to Bauroth (2010) on the dissolution side and Goodman and Leland (2019) on the creation side.

$$XR_{it} = \alpha + \beta \boldsymbol{X}_{it} + \delta \boldsymbol{I}_{it} + \gamma \boldsymbol{E}_{it} + \phi_i + \tau_t + \varepsilon_{it} \tag{4}$$

Equation 4 has the exit rate as a function of demands for special district services ($\boldsymbol{X}_{it}$), institutions ($\boldsymbol{I}_{it}$), and the concentration of boundary change entrepreneurs ($\boldsymbol{E}_{it}$). County (ϕ_i) and time (τ_t) fixed effects are included; therefore, identification comes from within-county changes over time. Counties are compared to each other and all share a common time effect. Equation 5 introduces MSA-specific time effects (τ_{mt}) which limits the sample of data to only urban counties.

$$XR_{it} = \alpha + \beta \boldsymbol{X}_{it} + \delta \boldsymbol{I}_{it} + \gamma \boldsymbol{E}_{it} + \phi_i + \tau_{mt} + \varepsilon_{it} \tag{5}$$

The overall specification is the same as equation 4; however, the introduction of MSA-specific time effects (τ_{mt}) eliminates the variation between MSAs and identifies β, δ, and γ based on variation within individual MSAs. Since local autonomy is measured at the state level, identification of these variables in equation 5 is predicated on MSAs that cross state lines. There are 35 such MSAs in 1999. The construction of the samples and specifications likely bias normally calculated standard errors. For both equations 4 and 5, standard errors are clustered on the state. This is to adjust the downward bias in standard errors as the result of serial autocorrelation in the special district exit rate and local autonomy being constant within each state.

RESULTS

Table 3 reports the findings for two equations specified above, both overall and disaggregated by asset specificity. For the urban sample results, specifications have been displayed that include the equations with and without their respective unit×year fixed effects to demonstrate the effect of limiting the variation to only that within such aggregations. Contrary to Bauroth's (2010) findings, there's little systematic relationship between demand-related variables and the rate of special district exit. Among the all county sample, only jobs per capita is statistically related the special district exit rate. A one job per capita increase is associated with a 0.5 percent decrease in the special district exit rate, all else equal; however, a more realistic expectation given the mean value of jobs per capita (0.3) of a one job per 10 resident increase is associated with a 0.05 percent decrease in the special district exit rate. However, once the sample is disaggregated by asset specificity, the results change. Among highly asset specific district types, greater variation in age and race in a county is associated with an increase in the exit rate. Similarly, among low asset specific district types, greater variation in race in a county is associated with an increase in the exit rate. Taken together, these results suggest more racially diverse counties experience higher rates of special district dissolutions.

Among urban counties (regardless of which specification), only the usage of townships is associated with the special district exit rate. In counties where the township form of local government is used, the special district exit rate is approximately 5 percentage points lower than counties/states that do not authorize townships. This result appears to be largely confined to asset specific district types. This conclusion is mirrored by Carr (2006) and Goodman (2018) who finds the usage of townships is a positive predictor of special district reliance. Paired together, urban counties with township governments rely more heavily on

special districts and the probability of dissolution is lower. These results reinforce that special districts can be important complements to townships in the local intergovernmental service delivery arena, particularly among highly asset specific service functions. No other demand-related variables are statistically associated with the all county or urban county special district exit rate.

Potentially binding tax and expenditure limits focused on municipalities is associated with 4.9 percentage point reduction in the special district exit rate. The effect size is roughly half for highly asset specific district types and unrelated to special district exists among low asset specific districts. This result also holds in the urban county sample with potentially binding TELs associated with a reduction in the exit rate for all district and highly asset specific district types in particular. These results are similar to the count-based findings of Bauroth (2010). Potentially binding TELs imposed on county governments is statistically related to district exits among highly asset specific districts; however, the coefficient is positive, suggesting these restrictions lead to an acceleration of district exits.

Unlike Bauroth (2010), our results suggest the granting of broad functional home rule status to municipalities increases the likelihood special district exits in the all-county sample. This finding disappears when the sample is disaggregated into asset specific types or applied specifically to urban counties. When municipalities are allowed to provide more services, the need for specialized service delivery declines and districts exit. This finding is broadly consistent with the hypothesis that circumvention of state-imposed restrictions is a driver of special district growth. Absent such restrictions, special districts exit the local governance market.

The final group of variables related to the prevalence and actions of boundary change entrepreneurs. Actions of entrepreneurs in the previous time period, operationalized as the special district entry rate in the previous time period, is statistically unrelated with the current period special district exit rate for all district or disaggregated by asset specificity. This provides no evidence of a link between the success of boundary change entrepreneurs in the previous time period and the current period exit rate. Similarly, there is little evidence of a connection between the prevalence of boundary change entrepreneurs in the current time period and the special district exit rate. An exception to this is the concentration of Heavy and Civil Engineering Construction employees in urban counties. A 0.1 unit increase in the NAICS 237 LQ (implying a 10 percent increase in industry concentration) is associated with a 0.05 percentage point decrease in special district exit rate among urban counties. The result appears driven by highly asset specific district types. This finding is consistent with the argument that interest groups who stand to benefit from district provision of infrastructure lobby to keep such district around. However, there is not overwhelming evidence to suggest boundary change entrepreneurs are influential in the special district dissolution process.

DISCUSSION & CONCLUSION

The intent of this analysis is to examine whether special district dissolution is special district creation in reverse in other words, the function of the special district is just reconstituted into a newer version. Using a new-to-the-literature measure of special district exit, the results suggest a mixed answer to the question. The data demonstrate that previous special district entries are not influential on the special district exit rate. Some reductions of local autonomy decrease the exit rate that is consistent with prior results. Boundary change entrepreneurs can be influential, but the results appear context specific and somewhat limited. Finally, demand related variables are largely unrelated to special district exits. This analysis also has its limitations. As is common with much work on state-imposed limitations on local government, the measurement of these factors is somewhat blunt. Currently, more nuanced measures of local autonomy

Table 3: Influences on special district exit rate

	All county panel			Urban county sample					
		High Asset	Low Asset			High Asset		Low Asset	
	All	Specificity	Specificity	All		Specificity		Specificity	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Entry rate,$t-1$	0.0210	0.0125	0.0061	0.0176	0.0195	0.0117	0.0110	0.0138	0.0130
	(0.012)	(0.007)	(0.004)	(0.013)	(0.014)	(0.009)	(0.009)	(0.010)	(0.010)
Local Autonomy									
Mun. TEL	−0.0486**	−0.0242*	−0.0067	−0.0575**	−0.0315	−0.0443**	−0.0110	−0.0277	−0.0108
	(0.011)	(0.009)	(0.011)	(0.018)	(0.016)	(0.010)	(0.012)	(0.014)	(0.016)
Cnt. TEL	0.0127	0.0128	0.0077	0.0121	0.0155	0.0348**	0.0122	0.0230	0.0127
	(0.010)	(0.009)	(0.011)	(0.019)	(0.014)	(0.009)	(0.012)	(0.015)	(0.017)
Mun. debt limit	−0.0172	−0.0094	0.0017	0.0078	−0.0100	0.0027	0.0188	0.0106	0.0270
	(0.025)	(0.015)	(0.004)	(0.045)	(0.019)	(0.026)	(0.037)	(0.013)	(0.015)
Cnt. Debt limit	0.0186	0.0034	−0.0040	0.0103	0.0046	0.0110	0.0450*	0.0041	−0.0198
	(0.016)	(0.010)	(0.003)	(0.021)	(0.011)	(0.011)	(0.022)	(0.008)	(0.020)
Mun. FHM	0.0461**	0.0036	−0.0080	0.0741*	0.0015	0.0033	−0.0040	−0.0173	−0.0100
	(0.014)	(0.011)	(0.005)	(0.029)	(0.014)	(0.014)	(0.016)	(0.010)	(0.007)
Cnt. FHM	0.0170	0.0140	0.0067	0.0103	−0.0005	0.0049	0.0196	0.0035	−0.0008
	(0.012)	(0.007)	(0.006)	(0.012)	(0.010)	(0.009)	(0.012)	(0.012)	(0.011)
Boundary Change Entrepreneurs									
Location quotient, NAICS 236	0.0023	0.0011	0.0001	0.0016	−0.0063	0.0003	0.0001	0.0015	0.0004
	(0.002)	(0.002)	(0.001)	(0.004)	(0.007)	(0.003)	(0.003)	(0.003)	(0.003)
Location quotient, NAICS 237	−0.0004	−0.0005	−0.0006	−0.0045**	0.0003	−0.0039*	−0.0030	−0.0017	−0.0025
	(0.001)	(0.001)	(0.000)	(0.002)	(0.004)	(0.002)	(0.002)	(0.003)	(0.003)
Location quotient, NAICS 238	0.0007	−0.0016	−0.0003	0.0086	0.0038	0.0008	−0.0052	−0.0019	−0.0018
	(0.002)	(0.002)	(0.001)	(0.007)	(0.005)	(0.004)	(0.004)	(0.005)	(0.004)
Location quotient, NAICS 531	−0.0003	−0.0005	0.0000	0.0046	0.0023	0.0022	−0.0009	0.0020	0.0014
	(0.001)	(0.001)	(0.000)	(0.004)	(0.004)	(0.002)	(0.003)	(0.002)	(0.002)
Controls									
Personal income, per capita	0.0003	0.0004	−0.0001	0.0016	0.0009	0.0007	−0.0003	0.0003	−0.0008
	(0.001)	(0.000)	(0.000)	(0.001)	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)
Population (1000s)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Population Growth	−0.0009	−0.0006	−0.0008	0.0008	0.0002	−0.0007	−0.0024	−0.0018	−0.0019
	(0.001)	(0.001)	(0.000)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)
Population density	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Jobs, per capita	−0.0494*	−0.0172	−0.0080	−0.0919*	−0.0878	−0.0595	0.0503	−0.0249	0.0188
	(0.019)	(0.015)	(0.009)	(0.045)	(0.048)	(0.040)	(0.049)	(0.042)	(0.037)
Age Index	0.1254	0.3172**	0.0466	−0.4564	−0.0728	0.0033	−0.7410**	−0.2460	−0.3438
	(0.187)	(0.087)	(0.048)	(0.468)	(0.354)	(0.158)	(0.209)	(0.138)	(0.294)
Race Index	0.0306	0.1073**	0.0830*	0.1006	0.0015	0.1649**	0.1139	0.1329*	0.1173
	(0.050)	(0.035)	(0.031)	(0.075)	(0.101)	(0.059)	(0.080)	(0.051)	(0.064)
Chg. In cities	0.0046	0.0022	−0.0004	0.0058	0.0050	0.0039	0.0033	0.0007	0.0003
	(0.003)	(0.002)	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)	(0.002)
Use of towns (Yes=1)	0.0020	−0.0155	0.0042	−0.0290	−0.0501**	−0.0415**	−0.0443*	−0.0049	−0.0050
	(0.018)	(0.016)	(0.004)	(0.030)	(0.011)	(0.009)	(0.019)	(0.030)	(0.020)
MSA × period dummies					X		X		X
n	24.294	24.294	24.294	6.371	6.371	6.371	6.371	6.371	6.371

All samples include county fixed effects. Model 3 includes period fixed effects. Standard errors are clustered on the state. Significance levels: ** p<0.01, * p<0.05. NAICS 236 = Construction of Buildings; NAICS 237 = Heavy and Civil Engineering Construction; NAICS 238 = Specialty Trade Contractors; NAICS 531 = Real Estate.

do not exist; however, their development and incorporation would significantly strengthen many analyses, including this one.

As Moldogaziev, Scott, and Greer (2019, 546) note, special district exits can be disruptive to the local public sector and understanding the factors associated with exit can help to provide key information about how to "ensure the continuation of core governance tasks." This analysis suggests that some state-imposed rules on local governments are associated with special district exits. State lawmakers should be sensitive to how their actions, particularly around restrictions on municipalities, may trigger ripples of disruptions in the local public sector. While it may not be their intention to impact special districts when deciding whether to limit general purpose local governments, the results presented here suggest there are secondary effects that could have consequences for service delivery.

Future research should examine the influence of special district dissolution on service delivery. We know very little about what happens when a special district dissolves or merges. We assume that service is transferred to another local government, either a new special district or an existing general purpose local governments through annexation or consolidation; however, this needs to be explored.

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