COLLEGE OF URBAN PLANNING AND PUBLIC AFFAIRS UIC

The Fiscal Policy Space of Cities: A Comprehensive Framework for City Fiscal Decision-Making

Report prepared by the Fiscal Policy Space of Cities research team
at the University of Illinois at Chicago[1]

Abstract

This paper describes a new framework—the Fiscal Policy Space (FPS)—for assessing the unique financial, economic, and political parameters cities operate under. We devised the FPS framework to help model how city leaders confront revenue and spending decisions and the environment that constrains their decision-making space. The FPS framework includes three attributes that shape policy choices: 1) the intergovernmental system, 2) the underlying economic and fiscal system, and 3) citizen demands for services and the local political culture. We created new measures from 100 cities' experiences to depict how the interaction of the three dimensions constrains a city's FPS and shapes its ability to respond to economic shifts. We find, for example, that cities with the most constrained FPS are more likely to spend more per capita and, during the Great Recession, drew down reserves dramatically; and those with the least constrained FPS spent less per capita and maintained their reserves during the Great Recession. The FPS is a construct that reshapes the narrative about cities and their fiscal behavior. As cities continue to emerge from the Great Recession, the FPS offers insight on where to focus policy and guidance from federal, state, and local policymakers within the complex intergovernmental system.

The generous support of the John D. and Catherine T. MacArthur Foundation is greatly appreciated. We would like to thank Valerie Chang for her unwavering commitment to this research project that focuses on the municipal finances and fiscal policy behavior of American cities.

Overview

Cities and metropolitan regions are the drivers of economic wealth and competitiveness.[2] Underlying cities' abilities to create and sustain economic growth is the fiscal capacity of general-purpose municipal governments. These governments invest in local economies; construct, maintain, and operate the infrastructure on which economic development is built; and ensure the health, safety, and welfare of the people in their communities.[3] The consequences of the Great Recession have been severe for cities and their economic regions. Underlying economic conditions have compromised the capacity of cities to invest in future economic growth. These conditions have undermined the fiscal capacity of city governments to raise adequate resources and adequately fund investment and services.

A city's fiscal capacity to extract resources or revenue to fund basic services and infrastructure is unique. Some, but not all, cities can tax income and utilities. Some can tax real estate transfers and tangible property. Others can tax retail sales and motor fuels. Still others can tax gross receipts. Cities, like all organizations, share similarities, but like all organizations, it is their differences that define them.

The national debate on cities—their precarious fiscal positions during and after the recession, and how to prevent another Detroit—is not much different from the national debate on health care. Everyone has a favorite treatment (policy) and every city claims it won't work in their city. In one respect, the refrain that "it won't work here" is understandable. After all, cities, much like human beings, evolve and adapt to changing economic, social, and political circumstances. With time, new personalities, different community needs and wants, and new identities emerge, making cities that at one time might have shared similar characteristics appear quite different over time.

The main theme of the Fiscal Policy Space framework is analogous to the personalized or precision medicine initiative underway. After all, wrote President Obama in the 2016 budget address, "Treatments that are very successful for some patients don't work for others. Think about it, if you need glasses, you aren't assigned a generic pair. You get a prescription customized for you."[4]

Cities, too, are idiosyncratic. The effects of policy prescriptions are unpredictable, and each city's unique history, demographic makeup, land use and development patterns, and more require us to consider each city individually. That is what the Fiscal Policy Space begins to do.

The Economic and Fiscal Condition of U.S. Cities

The economic malaise following the recession of 2008-09 has lingered longer than any other since the Great Depression, and the "fiscal recession" has lingered longer still.[5]

Although local governments, especially those that rely on the property tax, were not affected as quickly as their state and federal counterparts, cities in general experienced declining general fund revenue for six consecutive years starting in 2007.[6] In constant dollars, the average city lost between 0.9 percent and 4.5 percent of its revenue from the previous year for five consecutive years between 2007 and 2012.

Nonetheless, the "average" city masks the variation in city fiscal positions. City revenue structures are too complex for broad-stroke analyses. There is no average or typical municipal revenue structure. In the twentieth century, cities' own-source revenues shifted from a near total reliance on the property tax to a complex mix. Today, cities' property tax revenues compose only a slightly greater share than their combined sales and income tax revenues, which are also nearly equal to city user charge revenues.[7] In fact, approximately 9 percent of U.S. municipalities have the authority to levy an income tax, and 55 percent have authority to levy a sales tax.

The contemporary revenue picture represents the direct fallout from the Great Recession, and it has dramatic implications for the services that cities provide and the quality of life of the residents and communities. The annual fiscal surveys conducted by the National League of Cities in cooperation with the University of Illinois at Chicago show a persistent trend of service cuts and retrenchment. The two areas most likely to be cut during the Great Recession were personnel (wages, pensions, and other benefits) and infrastructure projects—cuts that, ironically, provide a drag on the national economic recovery.[8] The unemployment numbers from the U.S. Bureau of Labor Statistics reveal that approximately a half million jobs were lost in the local government sector during the Great Recession.[9] At the same time, cities have also made severe cuts in a range of services, from social and human services, to parks and recreation and public safety.

Identifying solutions and pathways requires an enhanced understanding of the underlying fiscal and economic capacities of cities and the factors that drive those capacities. Unfortunately, the national dialogue about the governance of cities and regions is poorly informed about the range of variation in local governance and economic models, and it lacks timely, relevant data describing current and ongoing conditions. Assessments of local conditions too often assume similarities in revenue and governance structures, ignore wide variation in underlying economic drivers, and lack understanding of the myriad differences in local political culture, traditions, and institutions.

The Frame: Fiscal Policy Space of Cities

Much of the research and policy discourse has focused on understanding the changing dynamics of the economy. Some has focused on the role of state governments, but much less has focused on the economic and fiscal dynamics of cities.[10] The size and shape of the fiscal policy space of cities vary considerably. Cities are authorized or required by state governments to perform certain responsibilities and to raise certain kinds of revenue. They may also offer other, elective services in response to local demands and political culture and may often generate revenue from these nonprescribed activities. Underlying economic and demographic factors also drive city fiscal capacity. The variation in fiscal policy space suggests that there are at least 50 municipal systems framed by each state's constitutional structures. Yet, even within states, cities' revenue systems are not homogeneous. Although each municipality is unique, it is also true that patterns and typologies of resource-generating activities and institutions can be identified that can better inform our understanding of fiscal and economic decision-making, adaptation, and governance.

The Fiscal Policy Space (FPS) framework contends that policymakers operate within a confined decision-making environment. This confined environment typically transcends periods of change in the business cycle, defining the range of options available to local policymakers in periods of economic growth and decline. The key attributes of this decision environment, which are adapted from earlier work by Pagano and Hoene,[11] collectively mold the "space" within which fiscal policy is addressed. They include the following:

- The *intergovernmental context*, including both state-imposed and locally imposed limitations on taxes and expenditures.
- The *fiscal base,* meaning the link between a city's economic base and its fiscal architecture or authority to tap into a city's underlying economy.
- The *demands and preferences of citizens* for a quantity and quality of services and the *local political culture* that creates a set of expectations, norms of conduct and behavior, and informal rules.

Sample Cities

We collected data for the FPS project from 100 cities that are representative of the municipal sector, provided variation in terms of revenue structures and region of the country, and had available data.[12]

A key challenge in selecting a sample of cities that is economically representative of the municipal sector is that economic output data are not collected regularly for a wide range of cities. For example, gross domestic product estimates are typically available for metropolitan areas but not as readily or regularly available for individual cities. As a result, the project team

used a selection method that attempts to crudely approximate the relative economic and fiscal importance of large cities within metropolitan areas. We selected project cities on the basis of their relative population size and the relative population size of their metropolitan statistical area (MSA), based on the 2011 census estimates. To be included in the sample, a city must be among the largest U.S. central cities and be within the largest MSA's in the United States. For example, a smaller central city located in a large MSA would not be included in the sample, or a larger central city located in a smaller MSA would not be included. The interaction of city size and MSA size produced a list of cities that approximates the most economically and fiscally influential cities in the United States.

We have created a public-access data portal that includes more than 600 variables for the time period 1992-2012 for the 100 sample cities at:
http://www.srl.uic.edu/fiscalpolicyspace/index.php

FPS Attribute 1: The Intergovernmental Context

As noted, three major attributes of the FPS shape and limit the options and decisions of city policy officials: a city's intergovernmental context, the link between a city's economic base and its fiscal architecture, and citizen demands for services all interact to constrain and confine fiscal policy behavior.

Cities are creatures of state government, and any analysis of their fiscal policy space should start by describing how cities are nested within state rules and fiscal structures—their intergovernmental context. State fiscal structures primarily shape a city's intergovernmental context. Those structures include authorities, limitations, and accompanying rules that state governments set. For instance, even if city officials were to propose a tax on residents' income, in most states they would be restricted from doing so under state laws. Moreover, although nearly all major cities are authorized to levy a local property tax, many states limit or cap the tax, which limits the ability of city leaders to adjust the property tax to changing economic conditions.

Our analysis of the intergovernmental context starts by examining state fiscal structures, including local taxing authority, state aid to cities, and the existing of tax and expenditure limitations (TELs). The legal existence of TELs does not in and of itself constrain cities' FPS. Therefore, we also analyze the extent to which state-imposed TELs have barred property tax increases or whether a "gap" exists between the actual property tax rate and the TEL-imposed property tax rate.

This section examines state-local fiscal structures and how state fiscal regimes do or do not create a fiscal environment that makes it difficult for cities to effectively fund their own activities.[13]

Our analysis is organized around four criteria:

1. **City general taxing authority**, which refers to states providing cities access to general taxes, in particular taxes on property, sales, and income;
2. **Own-source revenue reliance**, which refers to the proportion of total revenues that cities generate from their own local sources, thus determining their ability to control the majority of their revenue;
3. **State aid**, or the amount of state support for cities as a proportion of their total revenue;
4. The existence of **tax and expenditure limits (TELs)**, which constrain local fiscal autonomy by restricting local governments' taxing or spending authority.

A key distinction is public education, a required service in all states, is not organized in a uniform manner. School districts, an independent level of government, govern the majority of

schools. However, some states make schools a dependent service provided by general purpose local governments, either as a function of incorporated municipalities or as a county responsibility.[14] Cities in states where schools are dependent local government services tend to be more reliant on local property taxes, less fiscally autonomous, and more dependent on state aid.

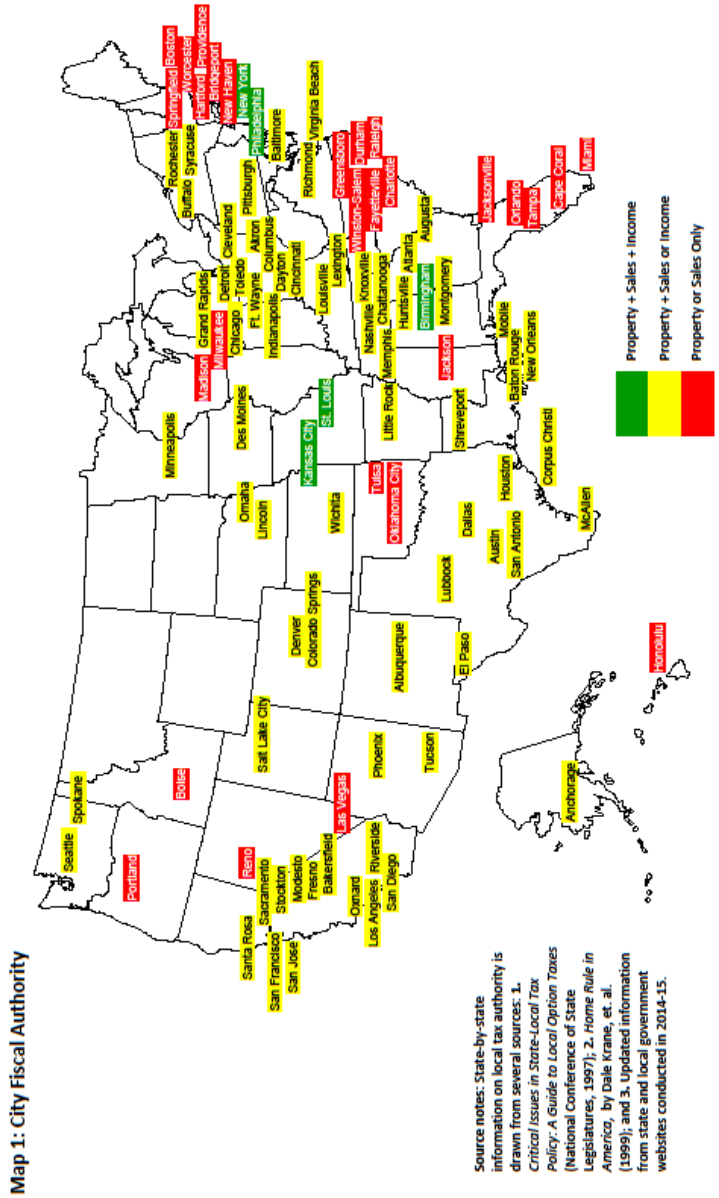
City General Taxing Authority

We first examine the tax authority of city governments using the three major sources of state and local tax revenue: the property tax, sales tax, and income tax. We rate cities as having authority if they have an option to levy the tax, a local option to control the tax rate (within some increment; they have some ability to shift the rate), and if the revenue is for general use. The most fiscally autonomous cities would, therefore, be allowed a local option for all three tax sources, and the revenue from those sources would all be for general use. The least fiscally autonomous cities would be prohibited from levying any of the three taxes or be restricted from changing the tax rate and using the revenue.

No state uniformly authorizes all three tax sources (see Map 1). The most common state fiscal structure is one in which a state allows its cities to levy two local option taxes, typically a local property tax and local sales tax (usually added on as an increment to the state sales tax). Some states allow particular cities to levy some form of a third local option tax. For example, cities in Alabama can levy a local option property tax and sales tax and a local option occupation tax (a form of income tax) paid by those working in those cities. Birmingham has used the latter. Cities in Missouri, New York, and Pennsylvania can levy special tax options (income tax in Kansas City, St. Louis, New York City, and Yonkers, and a sales tax in Philadelphia).

Among the three major taxes, an incomes tax is used the least and, where authorized, they vary in application and structure. Cities in Ohio and Kentucky can tax personal income at both the place of employment and the place of business, making their income taxes a "commuter" tax as well as a tax on residents. Moreover, Ohio and Kentucky cities can tax business profits at the same rate as individual income. Cities in Washington State can impose a business and occupancy (B&O) tax on all businesses (including services) that perform work or sell services within the jurisdiction and on all incomes that are derived from working within the city. In other words, the B&O tax operates much like a broad-based sales tax (including services) and income tax.[15]

Cities with the least fiscal autonomy (one local tax authority or no local tax autonomy) are in many New England states, such as Boston, MA; Hartford, CT; and Providence, RI. These cities only have access to a local property tax. Cities in Florida, Idaho, Mississippi, Nevada, Oregon, and Wisconsin are also limited to a local property tax. Cities in Oklahoma only have access to a local sales tax.[16]



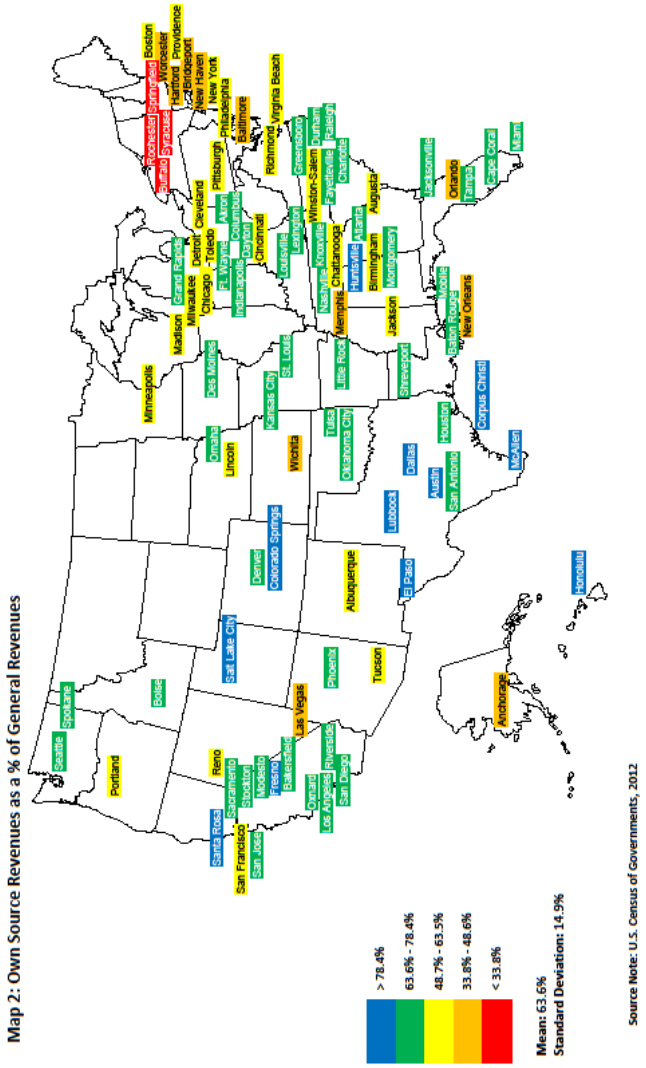
Own-Source Revenue

We also examine the share of general revenue derived from local sources, including major taxes (property, sales, income) and fees and charges.[17] This differs from the measure of fiscal authority

in that it extends to how much cities rely on local sources.[18] Having authority to levy a tax, for instance, does not necessarily mean the tax is levied or structured to produce significant revenue.

We compare cities that are at least one standard deviation above or below the mean their own-source revenue.[19] Those cities with the highest levels of own-source revenue (see Map 2) generate significant revenue from two tax sources plus charges and fees. Dallas, Colorado Springs, Austin, TX, and Salt Lake City generate significant revenue from fees and charges. Other cities rely more on local property tax or local sales tax revenue.

A large number of the sample cities cluster around the mean, but within a considerable range (approximately 50–78 percent). Cities with own-source revenue at least one standard deviation below the mean often have two local-option taxes, but rely on one of them relatively seldom (Anchorage). Such cities also rely less on fees and charges (Anchorage, Worcester, MA, Baltimore, and several cities in Connecticut), or their reliance on a local option property tax is lower than other cities (New Orleans, Orlando, Las Vegas, Memphis). A small group of cities falls two standard deviations below the mean—Buffalo, Rochester, and Syracuse in New York and Springfield, MA. These cities seldom rely on a single local tax (the property tax), there are no other local option taxes, and they also rely very little on fees and charges.



State Aid

State aid also increases cities' fiscal capacity. Although it could be argued that too much state aid makes cities beholden to the state, in general, well-structured state aid can increase the overall capacity of cities.

We measure state aid to cities as the share of general revenue from state sources (direct state aid), regardless of intent. In this case, we separate cities in states in which schools are dependent units of city government because those cities receive substantially larger state assistance to help cover school expenditures. Among this smaller group (see Table 1), those that rely most on state aid—Buffalo, NY; Springfield, MA.; Rochester, NY; and New Haven, CT, for example—also have significantly less own-source revenue, which not surprisingly makes them more reliant on state assistance.

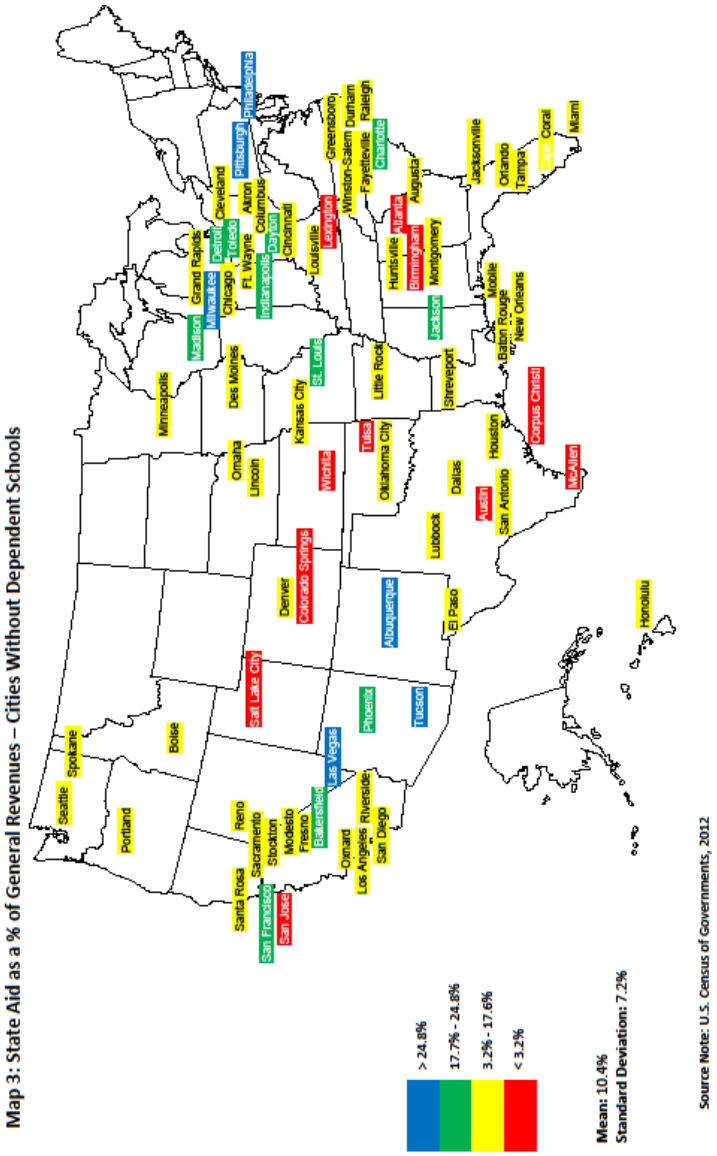
Table 1: State Aid as a Percentage of General Revenues (among cities with dependent schools)

City	State	State Aid (%)	SD
Buffalo	NY	68.05	1
Springfield	MA	65.68	1
Rochester	NY	59.26	1
New Haven	CT	58.82	1
Syracuse	NY	54.54	
Bridgeport	CT	50.54	
Worcester	MA	47.58	
Hartford	CT	45.21	
Anchorage	AK	42.08	
Baltimore	MD	41.27	
Providence	RI	38.69	
Memphis	TN	35.27	
Virginia Beach	VA	32.42	
Richmond	VA	31.91	
New York	NY	29.04	
Boston	MA	28.09	
Nashville	TN	23.81	-1
Knoxville	TN	13.64	-1
Chattanooga	TN	8.11	-1
Mean		40.74	
SD		16.15	

Source: U.S. Census of Governments (2012)

Notes:
SD = standard deviation. "General Revenue" is used as defined by the U.S. Census of Governments, including all local revenue except that from utilities and liquor store operations. The U.S. Census defines "General Revenue" in broader terms than most cities' definitions. "State aid" is defined as general revenues that cities receive from state governments. Data are missing for Charlotte, NC.

Among the larger group of cities without responsibility for schools, certain states stand out for state assistance. Cities in Pennsylvania, Wisconsin, Arizona, and Ohio receive significantly larger shares of state assistance (see Map 3) than others. In contrast, those in Texas and California receive less state aid.

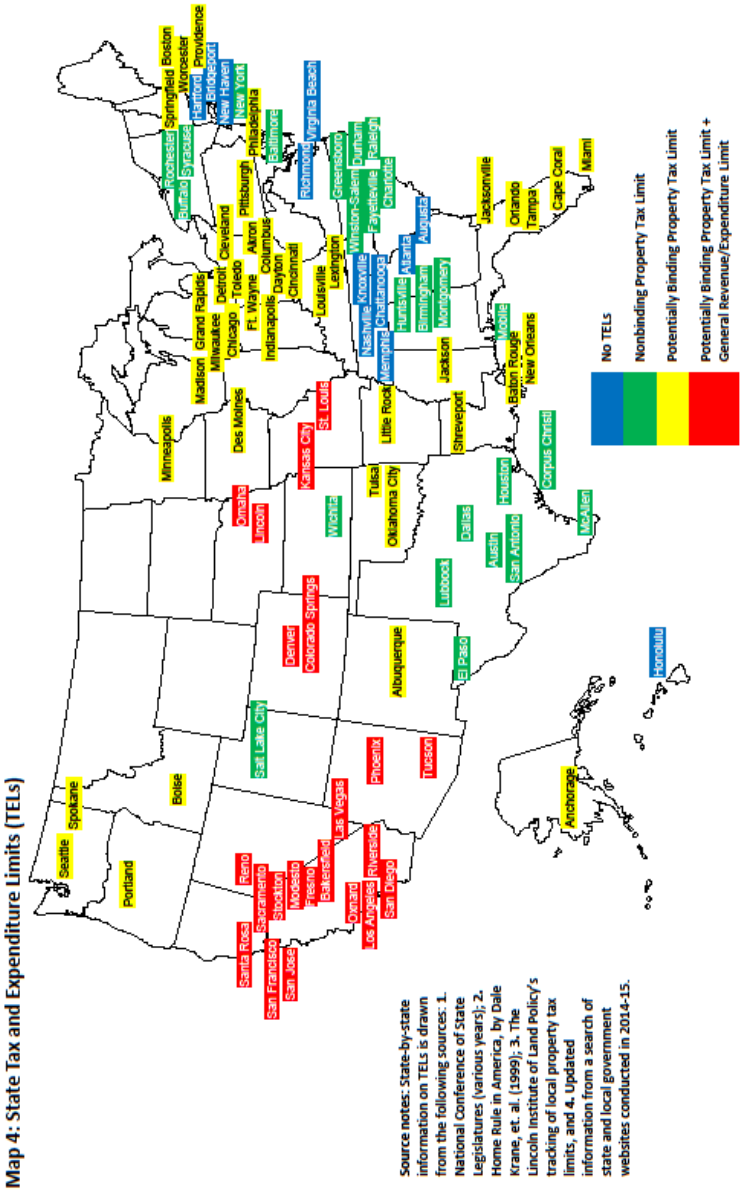


Tax and Expenditure Limits

Another way that state and local tax systems are constrained is through voter- or state-imposed (constitutional or statutory) TELs. We examine two types of TELs: those that constrain the property tax in particular and those that constrain overall revenue spending increases. Locally, the most common TELs affect local property taxes, while effects on general revenue and spending limits are less common.

There are three types of property tax limits: 1) those that seek to cap the property tax rate; 2) those that seek to limit growth in local property assessments; and 3) those that seek to limit the total levy (revenue) growth from property taxes from year to year. Not all of these limits are individually binding in that raising assessments could circumvent a rate limit, or raising the property tax could circumvent an assessment limit. We therefore make a distinction between relatively "less (or non-) binding" and "potentially binding" property tax limits. Potentially binding limits are those with either a levy limit (because it caps the bottom line level at which the levy might increase) or some combination of rate and assessment limits together, thereby negating the ability of localities to circumvent the limits. General revenue and spending limits are considered potentially binding on their own given that they create caps on revenue or spending growth.[20] Sixty-three of the 100 sample cities have potentially binding limits in place (see Map 4).

Twelve cities are unencumbered by TELs.[21] Twenty-five cities confront nonbinding property tax limits. The next tier, encompassing 41 cities, includes those constrained by potentially binding property tax limits, in other words, those cities where a state TEL effectively caps or largely restricts the local property tax. Lastly, 22 cities confront a combination of potentially binding property tax limits and some form of limit on the annual growth of general revenues or expenditures. It is worth noting that the existence of potentially binding TELs does not mean that cities have no fiscal policy space available. Rather, it likely reduces the available space to maneuver, limiting the range of fiscal decisions at the disposal of city leaders.



The Property Tax TEL Gap—TELs are an important factor in shaping the local fiscal policy space, particularly those that limit local property tax authority and growth (and, therefore, TEL are particularly important in cities that rely on property taxes as a major revenue source). Most property tax TELs are imposed by state governments, but several cities also have imposed

TELs as additional constraints on local property taxes. Specific TEL terms and conditions vary across states and over time. For example, California imposes a 2 percent limit on annual property tax levy growth, whereas Pennsylvania, which also limits local property tax levies, sets the growth limit at 10 percent. Property tax limits can also be amended.

TEL Gap Data Collection and Calculation—We present a new measure of TEL stringency, a *TEL gap*, to indicate the difference between maximum allowable property tax levy and actual tax levy.[22] We standardized the gap by calculating the ratio between the gap and the actual levy. We first compared the maximum allowable rates for growth imposed by state TELs with the locally imposed TELs. If there was discrepancy between the two, we used the more restrictive limit to estimate the legal ceiling. Given that a limit can be imposed on the property tax levy, property tax rate, and assessment growth, and given that cities can be subjected to different combinations of these limits, we used the matrix in Table 2 to estimate the legal ceiling.

Table 2: Calculation of Maximum Levy Allowed Based on Different TEL Combinations

	Levy=0	Levy=1
Rate=0, Assess=0	$AssessValue_{t-1}$*$p\text{-}rate_{max}$	$Levy_{t-1}$*(1+LevyCap)
Rate=1, Assess=0	AssessValue*RateCap	min[$Levy_{t-1}$*(1+LevyCap), AssessValue*RateCap]
Rate=0, Assess=1	MaxAssess*p-rate	min[$Levy_{t-1}$*(1+LevyCap), MaxAssess*p-rate]
Rate=1, Assess=1	MaxAssess*RateCap	min[$Levy_{t-1}$*(1+LevyCap), MaxAssess*RateCap]

Notes: This table outlines all the combinations for calculating P(max), the maximum levy allowed by state-imposed TELs. The maximum levy can be inferred given the maximum property tax rate and the maximum assessment, or by applying the maximum allowable rate for levy growth to the base value, usually the actual levy of the prior year. The notations are as below: "Rate", "Assess" and "Levy" denotes the enactment of rate, assessment, and levy limit, respectively (=1 if enacted). "LevyCap" denotes the maximum allowable rates for growth for levy. "RateCap" denotes the property tax rate cap. "AssessValue" denotes the assessment of a city in a given year. "P-rate" is the actual property tax rate of a city in a given year. "MaxAssess" denotes the maximum assessment a city is allowed to collect given the assessment limit; here MaxAssess=$AssessValue_{t-1}$*(1+AssessCap), where "AssessCap" is the maximum allowable rates for growth for assessment.

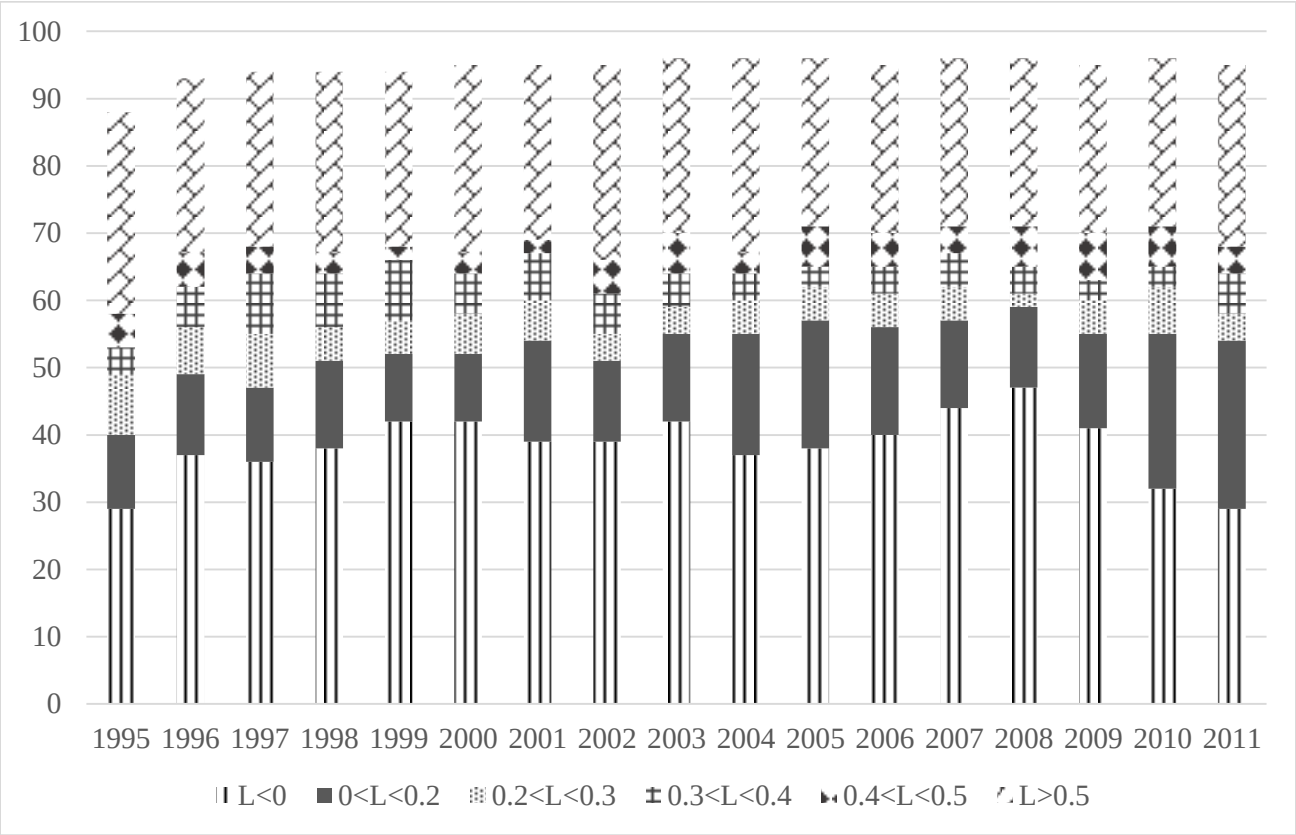
For the cities with no TELs, we used the maximum property tax rate across all cities in a given year to identify the TEL gap. Although these cities are not subject to any legal limits on property taxes, in practice their levy is not infinite. The maximum tax rate in the sample provides a

reasonable estimate for the highest possible level of tax levy. Using the same approach, we also calculated the revenue gap for the cities subject to general revenue and expenditure limits.[23]

Negative TEL gap— There were many instances of a negative TEL gap. A TEL gap becomes negative when an exemption allows cities to exceed existing limits. The distribution of negative TEL gaps can shed light on the extent to which cities are exempted from TELs over time. Of the 1,609 total observations, 652 (40 percent) had a negative TEL gap. Among these, 315 (that is, 40 cities in some years) had a TEL gap between 0 and -0.1, indicating these cities exceeded their ceiling levy by 10 percent in these years. Another 177 (that is, 31 cities in some years) had a TEL gap between -0.1 and -1, indicating that the actual levy exceeds the ceiling levy by two times. Twelve cities had a TEL gap smaller than -1 (the actual levy is twice the ceiling).[24] Four of these 12 cities are only subject to rate limits and thus it is possible for them to exceed the ceiling levy by increasing property assessed values. The remaining eight cities are subject to potentially binding TELs (a levy limit, or simultaneous rate and assessment limits), but it is likely that there are TEL exemptions, or a related process, that allow the cities to exceed the ceiling levy.

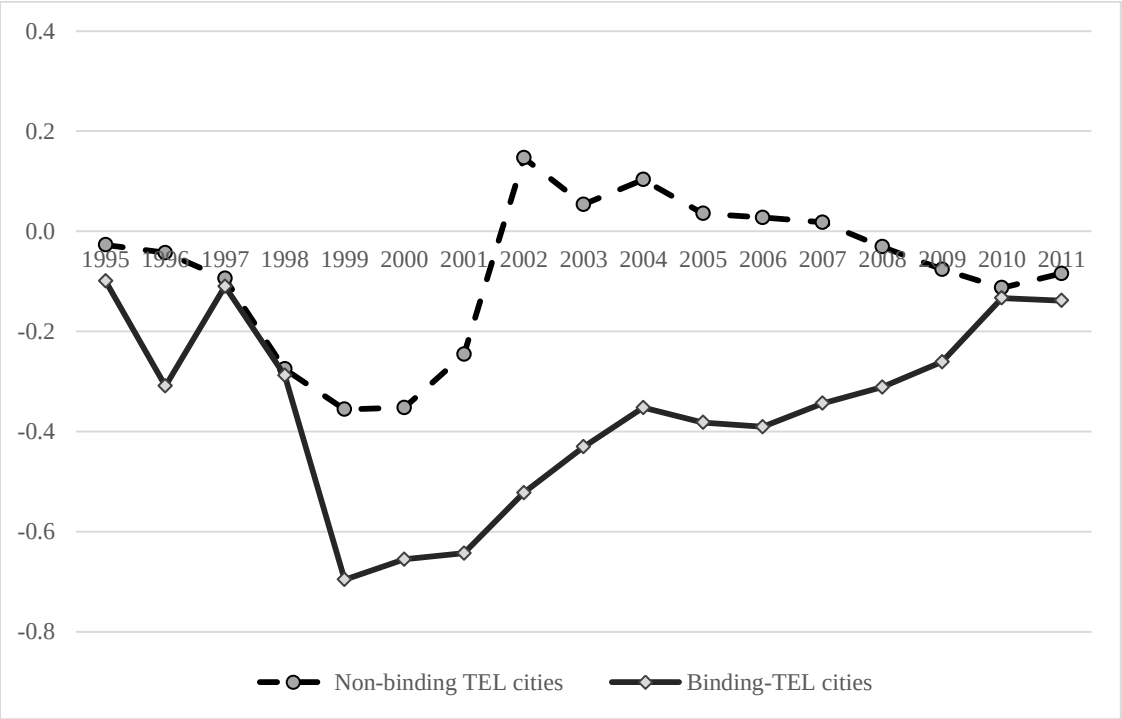
To examine the extent of TEL stringency, we divided the TEL gap into six brackets. The first bracket includes all negative TEL gap cities—those cities that have exceeded the limits. The next four brackets are 0–0.2, 0.2–0.3, 0.3–0.4, and 0.4–0.5. The last bracket includes all TEL gap with values greater than 0.5. Figure 1 depicts the number of cities within each bracket and between 1995 and 2011. The number of cities in the first (less than zero) and second (0–0.2) brackets increased, indicating that TELs became increasingly stringent after taking into account actual property taxes levied. It also suggests that with time, more cities approached the legal levy limit, or managed to exceed it through exemptions, voter override, or other processes.

Figure 1: Number of Cities by TEL Gap Bracket (1995-2011)



Interaction between TEL Gap and "Bindingness."— We also identified an interaction between the TEL gap and the degree to which a TEL binds the city's ability to raise revenues. . Nonbinding TELs, defined as imposing only a rate limit or only an assessment limit, can create an abundant gap for property taxation because cities can circumvent the rate limit by raising assessments or bypass the assessment limit by raising the property tax rates. Dividing cities into binding and nonbinding groups, Figure 2 delineates the change in the average TEL gap between 1995 and 2011. We find that cities subject to nonbinding TELs or with no TELs had higher average TEL gaps than cities with potentially binding limits. We also find higher TEL gap averages between 2001 and 2007 for the cities with nonbinding limits, whereas the average TEL gap for cities with potentially binding limits remains negative, pointing to less fiscal policy space. Figure 2 suggests that potentially binding TELs are, in fact, more restrictive because they limit the upside for additional property tax growth and, therefore, constrain the fiscal policy space of cities confronted by those limits.

Figure 2: TEL Gap by Binding or Nonbinding TELs



Our analysis of the TEL gap in cities yields two important, if preliminary, conclusions. First, potentially binding TELs appear to limit, as intended, the fiscal policy space of city governments by either eliminating or reducing the space (the gap) between the actual property tax rate or levy and the property tax ceiling the limit imposed. Second, for those cities with some degree of TEL gap (that is, not operating at the ceiling), TELs become increasingly stringent with time, presumably as more cities take actions to increase the rate or levy and thereby approach the ceiling imposed by the TEL.

Summary

The attributes of the state fiscal structure (intergovernmental context) create a necessary foundation for improving our understanding of the fiscal policy space of cities. The picture that emerges of state-city fiscal regimes is one of constrained fiscal policy spaces. Few cities are given an array of fiscal policy tools to navigate business cycles, in essence expanding their fiscal policy space. Many of the cities that are allowed more fiscal autonomy and capacity in terms of state-local tax structures are also confronted by potentially binding TELs or limited levels of state assistance. Many cities lacking fiscal autonomy and capacity receive more state aid or are less constrained by TELs on the limited revenue authority that they do possess. There are no

examples of cities with a combination of broad fiscal autonomy and capacity (in terms of own-source revenue), greater state aid, and freedom from TELs. There are, in contrast, cities with little or no fiscal autonomy, limited capacity, low levels of state aid, and potentially binding TELs.

The structure of state-local systems fundamentally determines the extent to which cities' fiscal bases are well aligned with their economic bases, highlighted in a later section. In addition, state-local fiscal structures interact with and are shaped by local political cultures, which determine the demand for city services and willingness to provide city revenues (discussed later). Expanding the fiscal policy space of cities will therefore require revisiting the issue of options available within the context of state-local fiscal structures.

FPS Attribute 2: Alignment between Cities' Economic Base and Fiscal Base

The second FPS attribute is the extent to which the fiscal base of cities is well or poorly aligned with their bases of economic activity. For instance, if the average income of a city's residents increases, one might conclude that the economic and fiscal bases of the city have improved. Yet, if the city is unable to tax local incomes and other local option taxes remain stable, the city's fiscal health might hardly improve at all. We present a "fiscal base" measure that is meant to more accurately represent the extent to which a city's fiscal levers overlay the growth sectors of the city's economy.

The evolution of municipal revenue structure was largely a response to the changing political climate and legal constraints on municipal revenue. The evolution of municipal revenue systems, however, does not reflect the changing economic bases of cities, which have undergone significant changes in recent decades. As a result, municipal revenue structures have gradually become disconnected from their economic bases. This misalignment has undermined the fiscal capacity of municipal governments to raise adequate resources and fund investment and services at appropriate levels.

Our analysis seeks to reconnect the two. Using economic and fiscal data from 100 large U.S. cities, we first calculated the constant dollar value of three economic components: per capita market value of properties, per capita value of retail sales, and per capita income.[25] We aggregated the three measures and calculated the share of each component in the aggregate economic base. Then we compared each economic base share with the share of tax revenue collected from that source.

The comparison shows quite substantial differences between taxes and the economic bases. For instance, in Mobile, AL, in 2010, the per capita value of properties was 60 percent of its aggregate economic base, but the local property tax only contributed 10 percent total tax revenue. Similarly, the shares of per capita value of properties were 63 percent and 61 percent in Colorado Springs and Oklahoma City, respectively, in 2010, but the shares of property tax revenue were just 15 percent and 16 percent, respectively. On the other hand, in Wichita, KS; Jackson, MS; Rochester, NY; and Buffalo, NY, per capita values of properties were less than 60 percent of their aggregate economic bases, but property taxes accounted for 100 percent of tax revenue in 2010. The average shares of per capita value of properties and property taxes were 64 and 67 percent, respectively, for the 100 sample cities in 2010.

A similar pattern of misalignment is evident for local sales taxes. In 2007, some cities had significant per capita retail sales (above 20 percent in Fort Wayne, IN and Jackson, MS) but very low shares of sales taxes (zero in Fort Wayne and Jackson). Other cities had quite large shares of

sales tax revenue (88 percent in Colorado Springs and 92 percent in Mobile) but relatively small shares of per capita value of retail sales (14 percent for Colorado Springs and 19 percent for Mobile). The average shares of per capita value of retail sales and sales tax were 12 percent and 24 percent, respectively, for the sample cities in 2007.

The misalignment of municipal tax structure with cities' economic base is the result of changing economic conditions coupled with a largely politically driven evolution of municipal tax structures. The substantial gaps between the share of tax revenue and the share of cities' tax base reflect municipalities' varying access to different components of the economic base for revenue. The restricted access to revenue results in structural imbalance between revenue-raising capacity and spending need.

A City's *Fiscal Base*

A city's ability to transform its economic base into government revenue depends on the types of legal taxing authorities and state-imposed constraints on revenue. Therefore, we introduce *fiscal base* to better reflect the extent of alignment between a city's revenue structure and its underlying economic base. We define municipal fiscal base as the aggregate economic activities from which cities can draw to finance public services. In other words, a fiscal base is the economic base that a city government can tax. The definition not only reflects the connection between economic conditions and revenue raising potential, but it also highlights the restrictive nature of relevant state laws and statues on municipal access to various revenue sources.

The *fiscal base value* is defined as the weighted average of the three economic base components: per capita market value of properties, per capita value of retail sales, and per capita income. We use the share of the aggregate broad-based taxes from a particular source (property tax, sales tax, income tax) as the weight of that economic tax base, and we calculate the fiscal base value as a weighted average of the three tax bases. For instance, if property tax accounts for 60 percent of total local tax revenue, the per capita property value will be multiplied by 60 percent.

We calculate the fiscal base for 93 sample cities in 2000 and 2010. Some cities are excluded because of missing data. We find wide variations in fiscal bases across the cities. In both 2000 and 2010, the fiscal base values are above $100,000 for four cities: Orlando, FL; Honolulu, HI; Portland, OR; and Atlanta, GA. Five cities have fiscal bases below $30,000 in both years, including Oklahoma City, Mobile, AL; Buffalo, NY; Colorado Springs, CO; and Tulsa, OK. The median values of the fiscal base are $44,733 in 2000 and $54,195 in 2010. Minimum values are $22,049 and $22,613, respectively. Maximum values are $162,319 and $170,643.

Between 2000 and 2010, the fiscal base grew in 67 cities (some significantly) and declined in 26 cities. Three cities doubled their fiscal base in this 10-year period, including San Diego, CA, from $40,357 to $98,697; Miami, FL, from $57,355 to $126,547; and Oxnard, CA, from $26,811 to $59,214. However, five cities saw a decline of more than 20 percent in their fiscal base in the

same period. These cities are Winston-Salem, NC, from $95,102 to $75,277; Greensboro, NC, from $98,030 to $74,270; Charlotte, NC, from $115,172 to $78,882; Fayetteville, NC, from $72,984 to $46,504; and Boise, ID, from $120,158 to $71,635. The median growth rate during the period was 17.4 percent.

Fiscal Base Rankings

For cities with similar tax structures, their fiscal base rankings are based on three tax bases, and particularly the property tax base. The figures show the relative magnitude of each per capita tax base (measured by the distance from origin to the intersection of the blue triangle with each axis) and the relative magnitude of the reliance ratio on each broad based tax (measured by the distance from the origin to the intersection of the orange triangle with each axis). The numbers 1, 2 and 3 on the triangle points differentiate property tax base (ratio), sales tax base (ratio) and income tax base (ratio). The other decimal numbers only show relative scales without much practical meaning.

For instance, Buffalo, NY, and Orlando, FL, are two of 23 cities that relied solely on property tax in 2010. Orlando's fiscal base is ranked 1st because its per capita property values are approximately $171,000 compared with $25,000 in Buffalo, which as ranked 91st in 2010 (see Figures 3 and 4). Seattle and Sacramento are also similar in tax structure (deriving about 73 percent from property tax and 27 percent from sales tax). Yet they have quite different fiscal bases (Seattle was ranked 4th and Sacramento 40th in 2010) because Seattle has much larger property and sales tax bases ($197,000 and $27,000 per capita, respectively) than Sacramento at $82,000 and $10,000, respectively (see Figures 5 and 6).

A large fiscal base is the result of a high valued tax base coupled with a high reliance on that tax revenue. As a result, two cities with similarly valued tax bases may have quite different fiscal bases if their tax structures are different. For instance, as shown in Figures 7 and 8, Boston and Denver had similar per capita property values in 2010 ($137,000 and $134,000, respectively). They also had similar per capita retail sales in 2007 ($11,500 and $11,900, respectively), and similar per capita personal incomes in 2010 ($32,000 and $31,000). Yet Boston's 2010 fiscal base is much higher (7th) than Denver's (42nd) because Boston relies much more on property tax (100 percent) than Denver (40 percent). Although Denver also collects about 60 percent of its tax revenue from municipal sales taxes, the sales tax base is much smaller than the property tax base. Likewise for Tampa, FL, and Huntsville, AL (see Figures 9 and 10). Both cities share similar per capita property values and retail sales. But because Tampa relies primarily on property taxes and Huntsville relies more on sales taxes, Tampa ranks much higher (12th) on its fiscal base than Huntsville (59th).

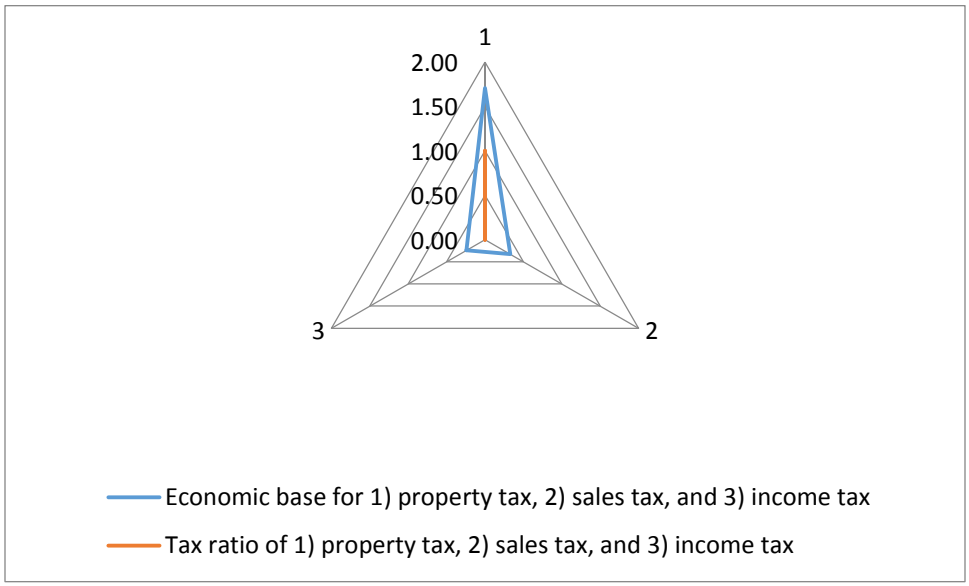


Figure 3: Orlando, ranked #1 in 2010

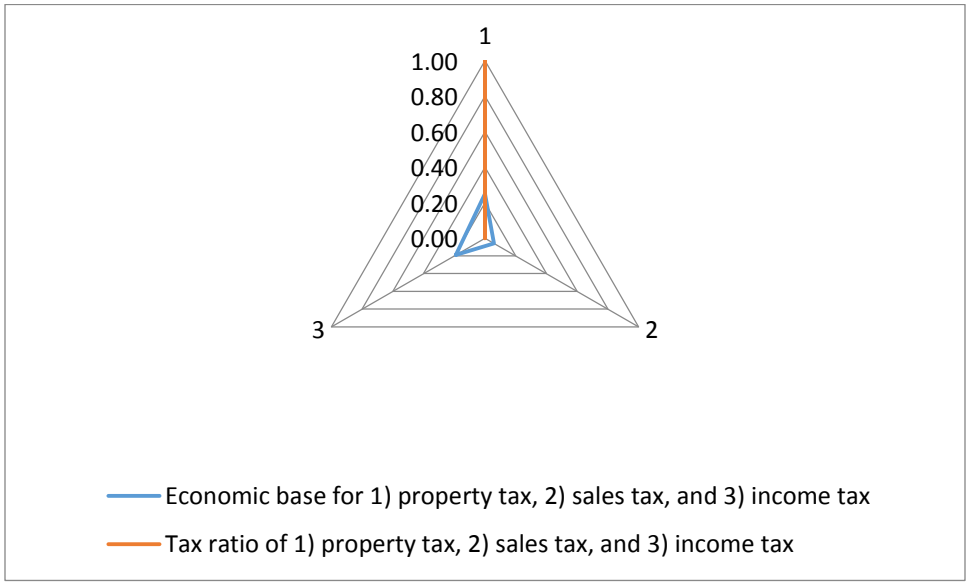


Figure 4: Buffalo, ranked #91 in 2010

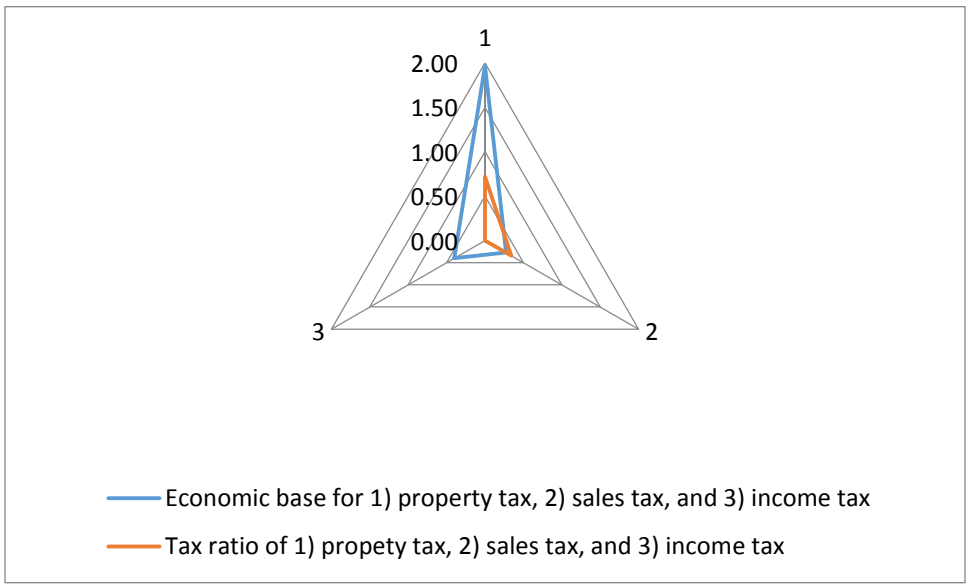


Figure 5: Seattle, ranked #4 in 2010

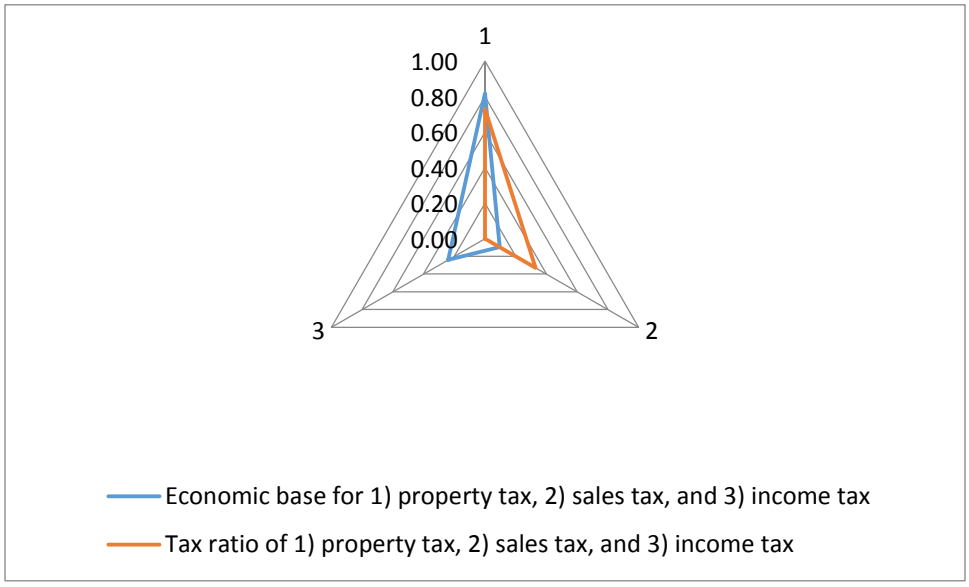


Figure 6: Sacramento, ranked #40 in 2010

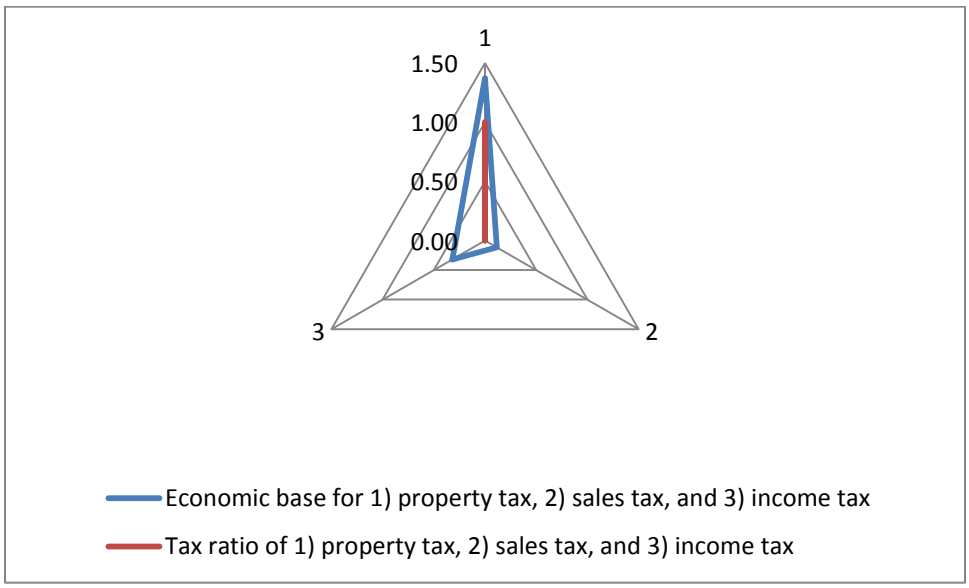


Figure 7: Boston, ranked #7 in 2010

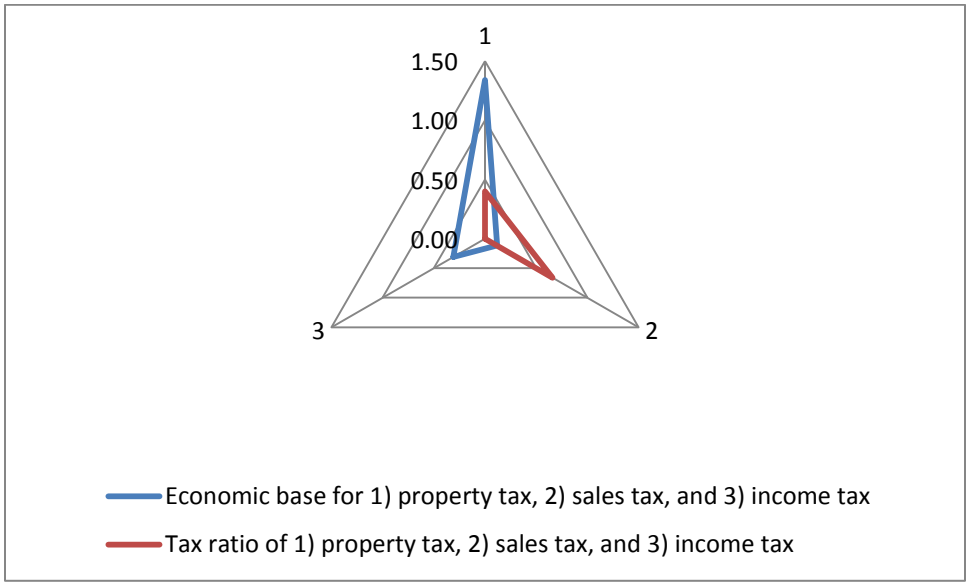


Figure 8: Denver, ranked #42 in 2010

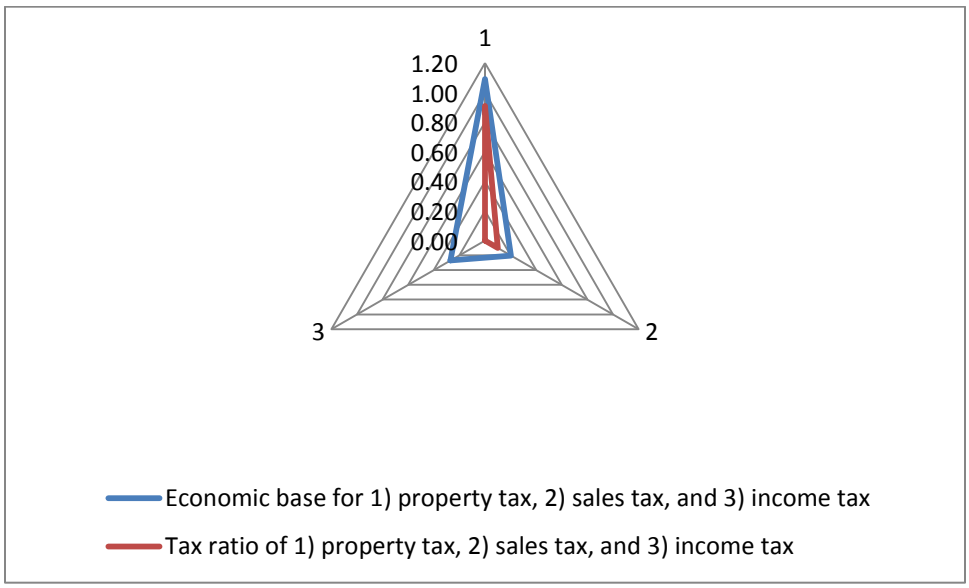


Figure 9: Tampa, ranked #12 in 2010

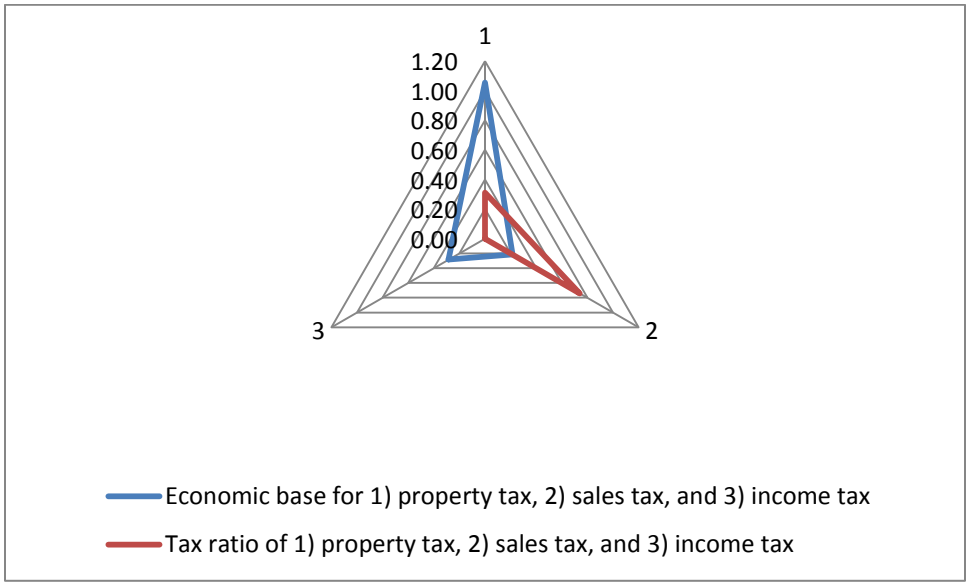


Figure 10: Huntsville, ranked #59 in 2010

The alignment of a city's revenue structure with its changing economic base is an important determinant of the fiscal capacity of municipal governments. We developed the fiscal base measure to reflect the extent to which a city's economic base is accessible to municipal finances. The preliminary analysis demonstrates that for many cities, municipal access to the city's economic base is substantially confined, and tax policymaking under such a confined environment tends to not fully use certain economic bases but overuse others to generate municipal revenue. Therefore, we argue that cities' fiscal capacities have gradually become disconnected from their economic and demographical bases.

The concept of fiscal base allows us to further investigate the extent of alignment between a city's tax structure and its economic base. The measure of fiscal base also helps analyze the patterns among clusters of cities and to better understand the effects of underlying economic conditions on municipal fiscal choices that are also affected by other political, socioeconomic and financial factors. The underlying economic base determines the maximum potential revenue bases. State restrictions on city revenue narrow a city's access to its economic base, and local legal constraints and political culture further restrain the space of fiscal policymaking.

FPS Attribute 3: Local Political Demand

The third FPS attribute addresses the variation among cities in demands on government services and local political culture. The higher the demands, the less likely city leaders can expand or provide additional services, unless higher demands are coupled with greater acceptance of higher taxes. For example, the Great Recession put pressure on many cities to provide more social services. However, at the same time, the public recognized that services would likely decrease amid declining fiscal conditions. We present a new measure of "demand" as a means of exploring the impact of citizen demands on the fiscal policymaking behavior of city officials.

As an essential dimension of the FPS, the local political demand attribute—its conceptualization and operationalization—is unique and enables a greater understanding of the tension that local fiscal policymakers can feel as a result of local political demands. The elephant in the room for any locality is the local political culture and its dynamic interaction with the demands and preferences of its citizens. Essentially, this attribute formalizes the interaction of how local political ideology, interests, culture, and institutions of a community act to constrain or widen fiscal decision-making options.

Measuring the Local Political Space

It is not possible to "cleanly" separate the elements of local politics; instead, this FPS attribute comprises a limited number of summary measures of city politics that encapsulate various influences on fiscal policy.

The local political demand includes:

1. The partisanship or ideology of the local population, which primarily refers to the rightward or leftward tilt of voters (or those who might sometimes choose to vote) in the area; and

2. Resident and interest-group demands, which may be thought of as the bottom-up pressures facing local policymakers from various constituencies, whether organized or unorganized.

Partisanship or Ideology of the Local Population— The strength of political party leanings is not always theorized as an essential component of local fiscal policy in comparison to federalism, economic competition, and leadership. However, we cannot ignore that in local politics just as in national politics, party allegiances underlie policy preferences. Democratic tendencies are associated with more expansive fiscal policies and with allegiances to public employees, the poor, and minorities, whereas Republican leanings are associated with fiscal

conservatism, a presupposition against tax increases, and allegiance to a good business climate and businesslike efficiencies in government.

As such, we expect significant differences between left-leaning (more Democratic) and right-leaning (more Republican) cities in their approaches to fiscal reform and financial adjustments. We rank local political ideology on a simulated scale from liberal (low negative values) to conservative (high positive values); for the FPS sample of cities, the 2002 local political ideology scale ranged from -0.96 to 0.32, and the 2002 local political ideology scale ranged from -1.02 – 0.24.[26] Liberal cities, particularly those with high union coverage, will tend to experience pressures in favor of increasing or maintaining per capita spending levels and levels of public employment. Depending on one's perspective (and on whether economic times are bountiful or poor), this might be viewed as either a constraint on fiscal reform or an opportunity for new sorts of programmatic commitments.

Resident and Interest-Group Demands—The local public sector is where local demands and interests are translated into public policy decisions and public services.[27] Both resident demands and other interest group demands can affect fiscal policy decision-making differently and thus are two separate concepts in measuring the local political space.

We use housing affordability to represent resident demands. We capture local resident demands in a rent-to-income ratio.[28] Housing affordability has been shown to predict certain orientations to residential policy among city officials, who were apparently cognizant of residents' affordability problems.[29] Homeowners are generally thought to be more sensitive than renters to increases in local taxes or indebtedness (given homeowners pay property taxes), whereas renters, low-income households, and racial minorities are often thought to hold more fiscally expansionary views. Local resident demands are represented in a rent-to-income ratio, a measure of unaffordability of rental housing in the city, where higher values indicate greater rental housing unaffordability.[30]

Interest groups' influence on the local political space focuses on public-sector unions (or other associations of municipal employees), who bargain for or protest against particular types of fiscal changes. We use the percentage of public-sector workers covered by a collective bargaining agreement in a metropolitan area in a given year to represent interest group demands.[31] Cities with a larger percentage of public-sector unionized workers will tend to exact pressure on fiscal policymakers for certain types of fiscal changes, such as less contracting or outsourcing of services. In addition, more public sector unionization should generate more pressure to retain existing spending commitments (especially for personnel) and support higher taxes and more revenue. Thus, the effect can both constrain and expand the fiscal decision-making process.

Local Political Demand Space

Together with the other FPS attributes, local ideology, public unionism, and housing affordability might well have interactive, contingent, and nonlinear effects on fiscal policymaking. The demand scale is the summary measurement of this dynamic interaction that represents the political pressure for fiscally expansionary policy in each city. High values on the demand scale indicate greater pressure, which would make fiscal load-shedding, contracting out, or austerity policies more difficult. Low (negative) values indicate less fiscally expansionary pressure.[32]

Tables 3 and 4 rank cities on their local demand scale scores and suggest which cities are likely to experience the greatest and least political pressure for fiscally expansionary policy. Table 3 identifies which cities in the sample scored the highest and lowest on the local political demand scale in both 2002 and 2012. Seven cities scored in the top five highest-demand scales in both 2002 and 2012. In most cities, the overall demand scale declined across the period, most likely because of the Great Recession when cities were forced scale back services and the public understood why. The exceptions were Detroit and San Diego, each of which dealt with its own idiosyncratic but extreme fiscal crises.

Eight cities fell into the lowest-scoring group in both 2002 and 2012 (Table 1). While Colorado Springs scored the lowest of all cities in 2002, it was second to Lubbock, TX, in 2012. Lubbock had less local political demand on its decision-making in 2012.

Table 3: Cities with Highest and Lowest Demand

City	State	Local Political Ideology (scale X to X; high values = conservative)		Unaffordable Housing (rent to income ratio)		Public Sector Unionization (%)		Demand Scale (X to X; high values = greater pressure)	
High Demand		2002	2012	2000	2010	2002	2012	2002	2012
Hartford	CT	-0.60	-0.68	0.27	0.35	62.60	60.50	1.91	1.80
New Haven	CT	-0.76	-0.82	0.26	0.34	57.20	61.90	1.89	1.84
Providence	RI	-0.81	-0.83	0.23	0.29	68.20	63.40	1.71	1.44
Boston	MA	-0.80	-0.83	0.24	0.29	61.70	62.30	1.67	1.42
Bridgeport	CT	-0.54	-0.58	0.23	0.32	78.20	62.30	1.63	1.39
Detroit	MI	-0.68	-0.74	0.20	0.34	62.60	62.60	1.22	1.78
Miami	FL	-0.39	-0.54	0.27	0.37	30.50	38.90	1.20	1.44

Low Demand		2002	2012	2000	2010	2002	2012	2002	2012
Ft. Wayne	IN	0.15	0.06	0.16	0.17	66.00	27.90	-0.42	-1.11
Lubbock	TX	0.27	0.24	0.19	0.22	14.30	0.00	-1.00	-1.39
Virginia Beach	VA	0.32	0.19	0.18	0.22	22.40	12.70	-1.04	-1.08
Wichita	KS	0.00	-0.03	0.15	0.18	23.30	28.60	-1.08	-0.97
Winston-Salem	NC	0.02	-0.16	0.17	0.20	9.90	13.00	-1.09	-0.85
Lincoln	NE	0.06	-0.05	0.15	0.17	23.60		-1.13	-1.25
Huntsville	AL	0.11	0.14	0.14	0.17	16.10	35.10	-1.40	-1.07
Colorado Springs	CO	0.31	0.18	0.17	0.17	15.50	24.50	-1.42	-1.29

Table 4: Local Political Demand Scale Ranking of Sample Cities

City	State	Demand Scale 2002	Demand Scale 2012
Hartford	CT	1.91	1.80
New Haven	CT	1.89	1.84
Providence	RI	1.71	1.44
Boston	MA	1.67	1.42
Bridgeport	CT	1.63	1.39
Syracuse	NY	1.49	0.93
Buffalo	NY	1.49	1.30
New York	NY	1.40	1.33
Rochester (NY)	NY	1.37	1.39
San Francisco	CA	1.32	1.26
Detroit	MI	1.22	1.78
Miami	FL	1.20	1.44
Los Angeles	CA	1.09	1.03
Philadelphia	PA	1.06	1.05
Santa Rosa	CA	0.92	0.72
Cleveland	OH	0.91	1.01
Springfield (MA)	MA	0.83	0.94
Seattle	WA	0.76	0.64
Minneapolis	MN	0.74	0.53

Baltimore	MD	0.72	0.62
Pittsburgh	PA	0.71	0.58
Chicago	IL	0.67	0.65
Sacramento	CA	0.64	0.62
New Orleans	LA	0.63	0.76
San Diego	CA	0.51	0.60
Milwaukee	WI	0.39	0.52
Portland (OR)	OR	0.38	0.42
Madison	WI	0.37	-0.15
St. Louis	MO	0.35	0.51
Worcester	MA	0.33	0.42
San Jose	CA	0.30	0.44
Stockton	CA	0.26	0.80
Richmond	VA	0.25	0.34
Memphis	TN	0.23	0.01
Akron	OH	0.22	0.09
Dayton	OH	0.20	-0.06
Birmingham	AL	0.19	0.17
Riverside	CA	0.19	0.44
Honolulu	HI	0.18	0.42
Orlando	FL	0.13	-0.12
Spokane	WA	0.10	-0.11
Fresno	CA	0.09	0.08
Oxnard	CA	0.06	0.09
Atlanta	GA	0.05	-0.14
Toledo	OH	0.01	0.20
Modesto	CA	-0.01	0.23
Denver	CO	-0.03	-0.09
Tampa	FL	-0.05	-0.03
Cape Coral	FL	-0.08	-0.43
Cincinnati	OH	-0.09	-0.18
Columbus (OH)	OH	-0.11	0.02
Austin	TX	-0.11	-0.15
Grand Rapids	MI	-0.18	0.16
Tucson	AZ	-0.18	-0.36
Kansas City (MO)	MO	-0.19	-0.24
Anchorage	AK	-0.27	-0.99
Las Vegas	NV	-0.28	-0.14

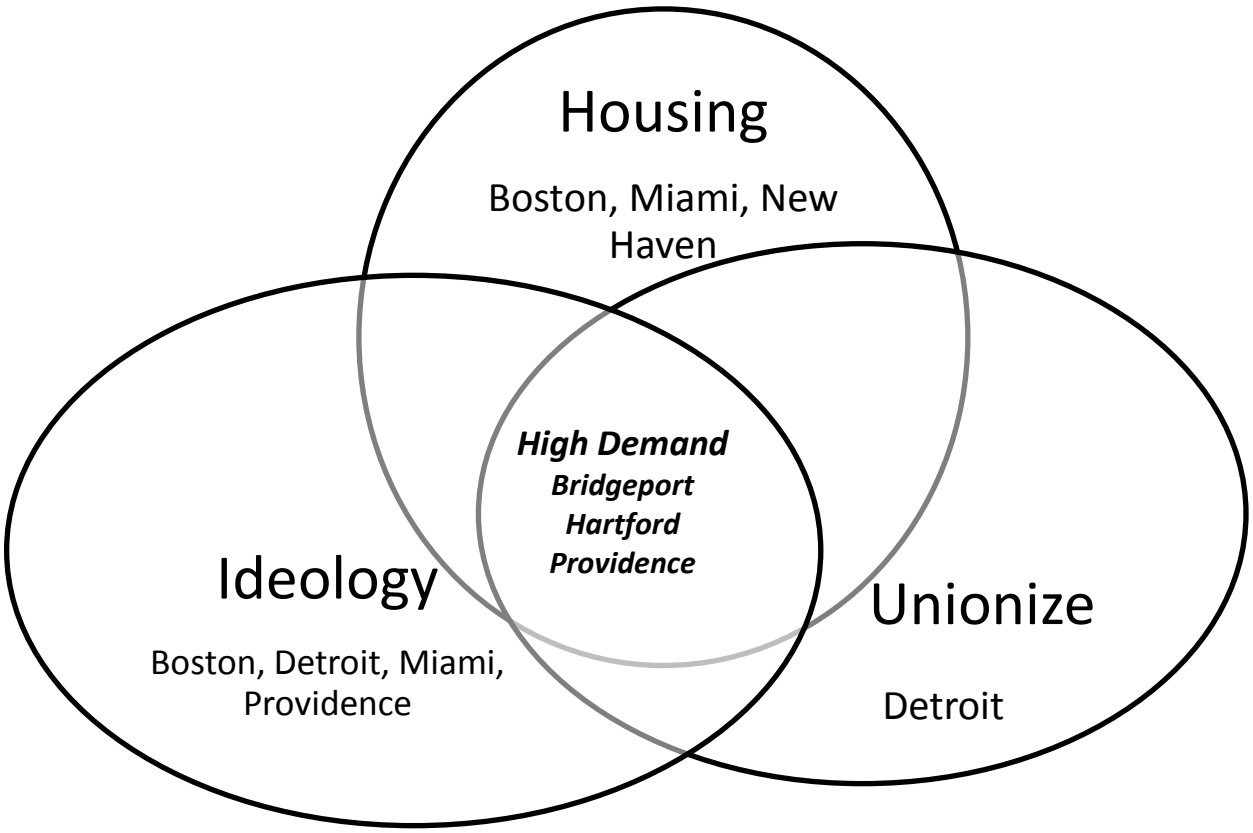
Des Moines	IA	-0.30	-0.32
Louisville	KY	-0.32	-0.59
Reno	NV	-0.34	-0.18
Durham	NC	-0.39	-0.41
Tulsa	OK	-0.40	-0.82
Albuquerque	NM	-0.41	-0.59
Dallas	TX	-0.41	-0.16
Ft. Wayne	IN	-0.42	-1.11
Houston	TX	-0.49	-0.41
Bakersfield	CA	-0.49	-0.33
Baton Rouge	LA	-0.51	-0.33
Salt Lake City	UT	-0.53	-0.79
Shreveport	LA	-0.55	-0.71
McAllen	TX	-0.56	-0.73
Greensboro	NC	-0.56	-0.36
Mobile	AL	-0.58	-0.55
Little Rock	AR	-0.60	-0.88
Phoenix	AZ	-0.63	-0.69
Indianapolis	IN	-0.66	-0.54
Jackson	MS	-0.67	-0.10
Knoxville	TN	-0.68	-0.57
Raleigh	NC	-0.69	-0.72
Nashville	TN	-0.71	-0.79
Chattanooga	TN	-0.72	-0.83
Jacksonville	FL	-0.72	-0.67
Montgomery	AL	-0.78	-0.32
Boise	ID	-0.79	-0.84
Corpus Christi	TX	-0.83	-0.71
Charlotte	NC	-0.83	-0.83
El Paso	TX	-0.85	-0.69
San Antonio	TX	-0.85	-0.65
Omaha	NE	-0.86	-0.94
Lexington	KY	-0.88	-0.75
Augusta (GA)	GA	-0.91	-0.24
Fayetteville (NC)	NC	-0.98	-0.94
Lubbock	TX	-1.00	-1.39
Virginia Beach	VA	-1.04	-1.08
Oklahoma City	OK	-1.06	-0.97

Wichita	KS	-1.08	-0.97
Winston-Salem	NC	-1.09	-0.85
Lincoln	NE	-1.13	-1.25
Huntsville	AL	-1.40	-1.07
Colorado Springs	CO	-1.42	-1.29

Note: *Ideology*, a component of the summary scale, was inverted for the *Demand Scale* calculation, per description in text. However, in this section and for all figures and tables, *Demand Scale* is not inverted as it is for the fiscal, tax, demand, and gap analysis in the "Putting It Altogether" section.

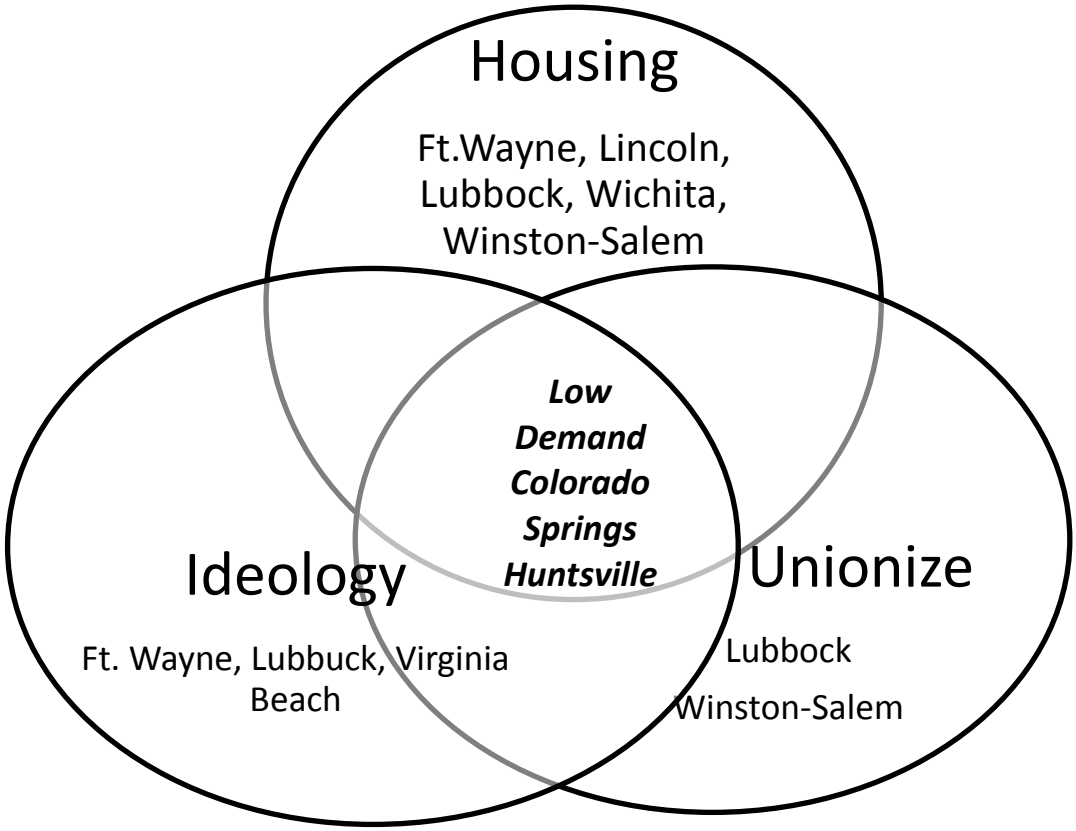
The cities with high demand scores likely face the greatest expansionary pressures. In 2002 the top high-scoring cities were Hartford, CT, New Haven, CT; Providence, RI; Boston, MA; and Bridgeport, CT. In 2012, Detroit and Miami moved into the top five replacing Boston and Bridgeport. The top-scoring cities in 2002 and 2012 are not necessarily at the extremes for each of the demand scale's component measures. Figure 11 illustrates the overlap of these dimensions among cities with high demand scores. The cities with the greatest political pressure and more expansionary fiscal decision-making are Bridgeport, Providence, and Hartford.

Figure 11: High Demand Scale



The cities with the least political pressure for expansionary policies in 2000 were Wichita, KS; Winston-Salem, NC; Lincoln, NE; Huntsville, AL; and Colorado Springs, CO. In 2012, Virginia Beach, VA: Ft. Wayne, IN; and Lubbock, TX, replaced Wichita, Winston-Salem, and Huntsville. Overall, the cities expected to have the least political pressure and expansionary fiscal policy are Colorado Springs and Huntsville (Figure 12).

Figure 12: Low Demand Scale



Case Study: Providence

Providence is a perfect example of the types of expansionary fiscal pressures that a city can experience. Providence was hit hard by the Great Recession. Employment declined significantly, particularly in manufacturing, which, given its ongoing 30-year decline, has resulted in a low per capita income as the workforce transferred from manufacturing to the lower-paying service industry.

In addition, Providence's fiscal architecture is not as well aligned with its fiscal base. Beyond the pressure of lower earnings among its residents, Providence relies heavily on property taxes, ranging from 35 to 57 percent of total revenue. However, properties have low market and assessed values compared with most constrained FPS cities. The fiscal reliance is compounded because nearly 40 percent of the city's property is tax-exempt, owned by more than 3,000 nonprofit organizations, such as the universities and hospitals that are eight of the ten largest employers in Providence.[33] The assessed value of this property is said to be more than $3 billion.[34] Providence also relies on state aid (which has in the past been reduced by 50 percent), and in 2009, the state legislature eliminated general revenue sharing payments to all municipalities. Finally, in 2007, the state passed more stringent TEL legislation that limited levy increases and required a city's governing body to secure an 80 percent majority to increase the tax cap.[35] Thus, Providence is restricted by a misaligned fiscal architecture compounded by TEL restrictions.

This fiscal misalignment, however, confronts great local political demand for fiscal expansion. Providence's expenditures on public safety have remained steady as did expenditures for public works, though still low among constrained FPS cities. In 2009, Mayor David Cicilline's proposed $7.1 million budget reduction included a wage freeze for unionized employees, estimated to save $12 million. He also proposed eliminating 30 vacant fire positions to save another $3 million. After tense negotiations with the fire union, both sides came to a tentative agreement that froze wages for 2010 and 2011 and reduced 31 positions by way of attrition.[36] A few years later in 2011, Mayor Angel Taveras sought to cut the police force by 78 positions, but contract negotiations resulted in only 30-40 early retirements and the elimination of 26 unfilled vacant positions. Thus, in 2011, the number of law enforcement employees reached a two-decade low of 428 compared with 494 in mid-2009.

The effect of local political demand in combination with fiscal and intergovernmental limitations is evident in Providence. Providence experienced declining housing affordability and became more liberal during the decade. Strong unionization made it difficult to reduce municipal employment even though it would create savings. The policy actions suggest that Providence is in a desperate need of breathing room.

Pathways of Adjustment: How the Fiscal Policy Space Shaped Cities' Recent Fiscal Policy Responses

We posit that the three FPS attributes fundamentally shape the fiscal policy actions—the pathways of adjustment—that city leaders employ when encountering changing economic and fiscal conditions, whether an external shock (e.g., the Great Recession) or a period of marked economic growth. Here we begin to examine the interaction of cities' FPS and their fiscal pathways of adjustment to identify any patterns that can inform a more detailed and robust analysis of how the FPS of cities drives policy action.

We cluster cities on the basis of four FPS attributes.[37] We then categorized cities by creating dummy variables that designate cities in the following manner:

Fiscal Base (FISCAL) denotes cities with a fiscal base measure above the mean, indicating cities with fiscal architectures that are better aligned with their underlying fiscal base. Cities below the mean do not receive the "Fiscal" designation (see Tables 5 and 6).

Demand Pressure (DEMAND) denotes cities with a local political demand scale measure above the mean, indicating that cities with fewer local political demands. Cities below the mean do not receive the "Demand" designation.

Tax Authorization (TAX) denotes cities with access to more than a local property tax, either a local sales tax, or local income tax, or both. Cities with access only to a property tax do not receive the "Tax" designation.

Property Tax Gap (GAP) denotes cities with the ability to increase their local property tax levy, within the space allowed by property tax TELs. Cities lacking this ability, and which are therefore operating at their maximum property tax levy, do not receive the "Gap" designation.

Table 5: FPS City Clusters 2000

Cluster 1 (N = 26)		Cluster 2 (N = 31)	Cluster 3 (N = 25)	Cluster 4 (N = 9)
None	**Fiscal**	**Demand Tax**	**Demand Fiscal Tax**	**Gap Demand Fiscal Tax**
Springfield	Boston	Cincinnati	Reno	Charlotte
	Demand	Fort Wayne	**Gap Fiscal Tax**	Durham
	Des Moines	Grand Rapids	Memphis	Fayetteville
	Wichita	Indianapolis	Richmond	Greensboro
	Gap	Lexington	**Gap Demand Tax**	Nashville
	Bridgeport	Albuquerque	Columbus	Raleigh
	Buffalo	Bakersfield	Kansas City	Salt Lake City
	Milwaukee	Baton Rouge	Corpus Christi	Virginia Beach
	Providence	Colorado Springs	Dallas	Winston-Salem
	Rochester	Huntsville	Denver	
	Worcester	Little Rock	El Paso	
	Tax	Shreveport	Houston	
	Cleveland	**Gap Tax**	Knoxville	
	Dayton	Akron	Lubbock	
	Detroit	Baltimore	McAllen	
	Pittsburgh	Toledo	Mobile	
	Birmingham	St. Louis	Oklahoma City	
	New York	Fresno	Omaha	
	Philadelphia	**Demand Fiscal**	Phoenix	
	Los Angeles	Las Vegas	San Antonio	
	N. Orleans	Atlanta	Tulsa	
	Oxnard	Hartford	**Gap Demand Fiscal**	
	Riverside	Honolulu	Anchorage	
	Sacramento	Madison	Austin	
	San Diego	Orlando	Boise	
	Santa Rosa	Jacksonville	Cape Coral	
	Spokane	Portland	Chattanooga	
	Stockton	**Gap Fiscal**	Tampa	
		Gap Demand		
		Jackson		
		Lincoln		
		Fiscal Tax		
		Chicago		
		Minneapolis		
		San Francisco		
		Seattle		

Table 6: FPS City Clusters in 2010

Cluster1 (N = 18)		Cluster 2 (N = 32)	Cluster 3 (N = 30)	Cluster 4 (N = 11)
None	**Fiscal**	**Demand Tax**	**Demand Fiscal Tax**	**Gap Demand Fiscal Tax**
Milwaukee	Boston	Dayton	Little Rock	Charlotte
Springfield	Worcester	Fort Wayne	**Gap Fiscal Tax**	Dallas
	Demand	Indianapolis	Richmond	Durham
	Des Moines	Albuquerque	San Diego	Greensboro
	Gap	Baton Rouge	Santa Rosa	Knoxville
	Buffalo	Huntsville	**Gap Demand Tax**	Nashville
	Hartford	Shreveport	Cincinnati	Raleigh
	Providence	Spokane	Lexington	Reno
	Rochester	**Gap Tax**	Kansas City	Salt Lake City
	Tax	Baltimore	Bakersfield	Virginia Beach
	Akron	Columbus	Colorado Springs	Winston-Salem
	Cleveland	Pittsburgh	Corpus Christi	
	Detroit	Toledo	Denver	
	Grand Rapids	St. Louis	El Paso	
	Birmingham	Fresno	Fayetteville	
	New York	Memphis	Houston	
	Philadelphia	Riverside	Lubbock	
	New Orleans	Sacramento	McAllen	
	Oxnard	Stockton	Mobile	
		Demand Fiscal	Oklahoma City	
		Anchorage	Omaha	
		Boise	Phoenix	
		Madison	San Antonio	
		Gap Fiscal	Tulsa	
		Bridgeport	**Gap Dem. Fiscal**	
		Honolulu	Atlanta	
		Portland	Austin	
		Gap Demand	Cape Coral	
		Jackson	Chattanooga	
		Lincoln	Las Vegas	
		Wichita	Orlando	
		Fiscal Tax	Tampa	
		Chicago	Jacksonville	
		Los Angeles		
		Minneapolis		
		San Francisco		
		Seattle		

Shifting Constraints

Using these designations, we grouped cities into four clusters for 2000 and 2010 (see Table 5 (2000) and Table 6 (2010)).[38] Moving left to the right represents moving from a cluster of cities that is more constrained (has less FPS) to less constrained (has more FPS). We use only 91 cities in this analysis owing to missing data.

Cities in Cluster 1 are the most constrained, with none of the designations outlined above or with flexibility on only one attribute of the FPS. Cluster 1 cities would be expected to have relatively less space to maneuver when encountering external shocks. Cities in Cluster 2 possess some combination of two FPS attributes, such as lower demand pressures and additional tax authority or a property tax gap and additional tax authority. Cities in Cluster 3 have some combination of three FPS attributes, the most common being available property tax gap, lower demand pressures, and additional tax authority. Cities in Cluster 4 have all four FPS attributes, suggesting that these cities should have the most FPS and are the least constrained.

The analysis reveals several cities that changed clusters. Table 7 lists those cities that moved and how their FPS either expanded or contracted. In all, 27 of the 91 cities changed clusters between 2000 and 2010. Twenty of these 27 shifts had to do with cities either gaining or losing property tax gaps, such as Milwaukee.. Fourteen cities gained a property tax gap, which may have resulted from fiscal policy responses of city leaders, but is also possible that the recession dramatically reduced property tax levies by 2010. The fiscal base designation shifted for eight of the 27 cities, indicating that the alignment of these cities' fiscal structures with their underlying fiscal bases either improved or worsened. Because none of the 27 cities experienced a change in tax authority, the shifts in fiscal base designations would most likely be from changes in underlying economic and fiscal conditions. Not surprisingly given slow-to-change political culture, only three cities experienced some change in political demand pressures.

Table 7: Change in FPS City Clusters, 2000-2010

City	FPS Change	Attribute
Akron	contracted	- gap
Anchorage	contracted	- gap
Atlanta	contracted	- gap
Fayetteville	contracted	- fiscal
Hartford	contracted	+ gap, - demand, - fiscal
Jacksonville	contracted	- gap
Memphis	contracted	- fiscal
Milwaukee	contracted	- gap
Orlando	contracted	- gap
Worcester	same	- gap, + fiscal
Bakersfield	expanded	+ gap

Boise	expanded	+ gap
Bridgeport	expanded	+ fiscal
Cincinnati	expanded	+ gap
Colorado Springs	expanded	+ gap
Columbus	expanded	+ demand
Dallas	expanded	+ fiscal
Dayton	expanded	+ demand
Las Vegas	expanded	+ gap
Pittsburgh	expanded	+ gap
Reno	expanded	+ gap
Riverside	expanded	+ gap
Sacramento	expanded	+ gap
San Diego	expanded	+ gap, + fiscal
Santa Rosa	expanded	+ gap, + fiscal
Spokane	expanded	+ demand
Stockton	expanded	+ gap
Wichita	expanded	+ gap

City Fiscal Responses from 2007 to 2012

We are particularly interested in how cities responded to the Great Recession, particularly between 2007 and 2012. Despite some variation in the specific actions taken by cities, common responses emerged. Generally, when cities confront declining economic and fiscal conditions, they can raise additional revenue (from taxes, fees and charges, and intergovernmental revenues), reduce expenditures by cutting programs and services (including staffing), or draw down reserves. We examined city responses in these categories during the period using the 2010 city cluster designations.

Revenue Patterns—Overall, total city revenue declined across all clusters (see Figure 12). The largest drop occurred in Cluster 1 cities, those cities with the most constrained FPS. The mean decline for total revenue was $186 per capita between 2007 and 2012.[39] In all four clusters, revenue declines were notable for non-tax revenue, with the scale of the decline following a linear pattern. The largest drop occurred in Cluster 1 ($172 per capita), followed by Cluster 2 and Cluster 3, and finally Cluster 4 ($52 per capita).

For nontax revenue, the largest source of revenue is intergovernmental, where there is notable variation across the city clusters. Cities in Cluster 1 lost the largest amount, dropping by $103 per capita. Several cities in Cluster 1 are driving this decline, including Philadelphia (-$311), Boston (-$318), and Providence (-$523). Here again, revenue declines follow a linear pattern

across the city clusters. (Cities in Cluster 4 experienced a mean increase of $17 per capita over the period.)

Cluster 1 declines appear to be driven, in part, by the prevalence of cities in this cluster with dependent schools (where school districts are the responsibility of city governments). Eight of the 18 Cluster 1 cities have dependent schools. For these cities, funding for education comes from a combination of local property tax revenues (typically a larger share than cities receive in other states) and state assistance (which is provided to separate school districts in other states). As a result, these cities receive a larger share of their annual revenues from the state and, therefore, are likely to experience larger swings in intergovernmental revenues as economic and fiscal conditions shift in similar ways for city and state governments. Overall, this pronounced pattern in intergovernmental revenue changes matches up with expectations about the interaction of cities' FPS and their fiscal policy responses, showing that the more constrained cities experienced more substantial revenue declines and the less constrained cities experienced smaller declines or actual gains.

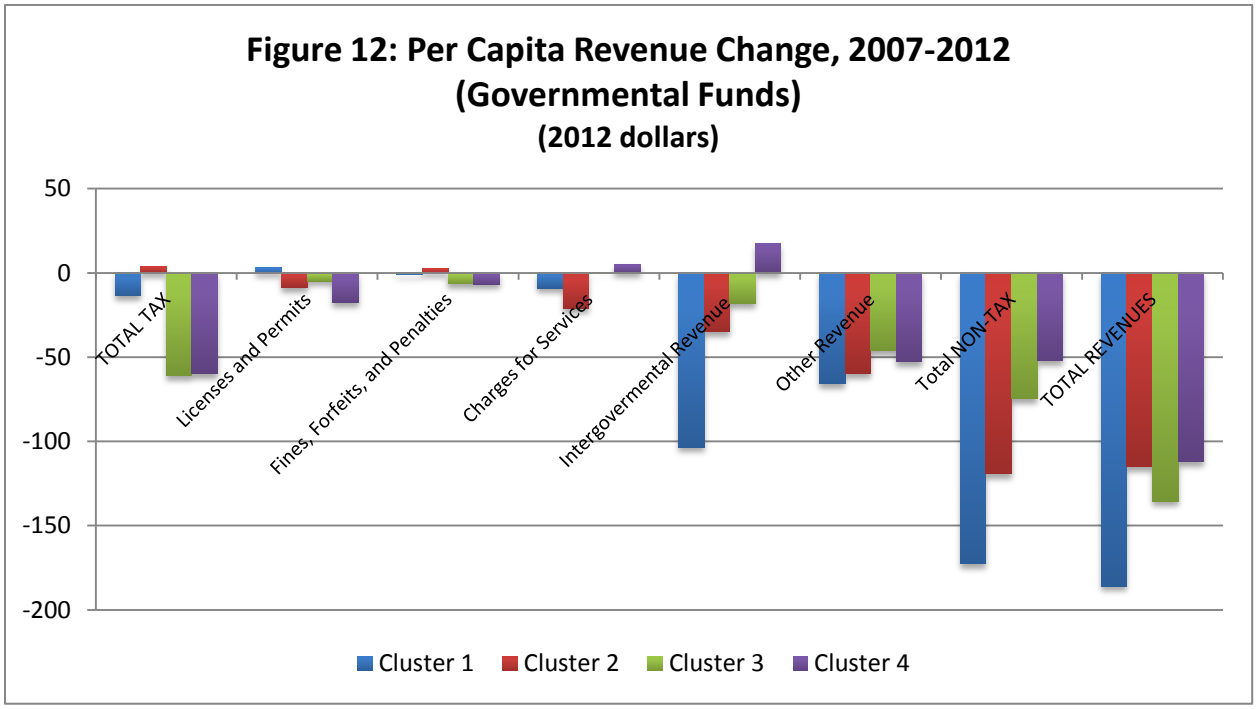
Patterns in tax revenue follow a somewhat similar, if less pronounced, pattern. Cities in Clusters 3 and 4 experienced the largest drops in tax revenues at $61 per capita and $60 per capita, respectively. Several cities in these clusters experienced particularly large declines in tax revenues: Tampa, FL (-$223 per capita); Richmond, VA (-$232 per capita); Virginia Beach, VA (-$334 per capita); and Cape Coral, FL (-$416 per capita). For example, Tampa (Cluster 3), characterized by lower demand pressures, available property tax gap, and better fiscal base alignment, also relies more on local property tax revenue because it lacks additional sales or income tax authority. The Great Recession, driven in large part by a decline in housing values and wealth, significantly reduced local property tax revenue from $187.1 million to $119.4 million over the period. Many of the cities in Clusters 3 and 4 (33 of 41 cities) have authority over two sources of local tax authority, in most cases a combination of a local property tax and local sales tax. The Great Recession reduced both sources of revenue in most cases.

In comparison, cities with more constrained FPS experienced smaller tax revenue declines. Cities in Cluster 1 experienced only $14 per capita declines. Cities in Cluster 2 experienced a slight increase in tax revenue of $4 per capita. Although the pattern of tax revenue is not as linear as non-tax revenues (and intergovernmental revenue in particular), those cities with more fiscal policy space—presumably those cities more able to shape their tax revenue—experienced larger declines in tax revenue during the period than more constrained cities.

The breadth of tax revenues affected and the size of their declines during the recession suggest that tax revenue declines should have been significant for most cities. However, there was surprising variation among cities, particularly in terms of the effect on local property tax revenue.[40] Much of that variation reflects the dramatically different housing markets and, therefore, local property tax collections. The factors driving that variation likely have less to do

with the FPS of cities than other issues particular to the Great Recession and specific types of housing markets.

In summary, non-tax revenue, and intergovernmental revenues in particular, declined for cities in all four clusters during the timespan, but to a greater degree in cities with more constrained FPS (cities in Clusters 1 and 2). Cities with less constrained FPS (Clusters 3 and 4) were more likely to experience some combination of decline in tax and non-tax revenue.



Source: Comprehensive Annual Financial Reports, downloaded via Electronic Municipal Market Access

Expenditure Patterns— As with the patterns in city revenue, patterns in city expenditures (see Figure 13) from 2007 to 2012 reveal the effects of the economic downturn. Cities' spending declined in all the categories except debt service. However, spending on city programs and services did not decline in proportion to the decline in city revenue, suggesting that cities balanced their budgets during the period using additional options, most likely by using reserves. We account for city reserves by measuring spending as a share of cities' total general expenditures, that is, their fund balance. We will address patterns in fund balances in the next section, but it is clear at first glance that reduced fund balances were common to cities in all four clusters.

The interaction between FPS and spending responses yields less discernible patterns than for revenue (excluding fund balances). However, when observing spending in aggregate, and

factoring out a few city cases where expenditure declines are anomalies, we begin to observe patterns that are more unique to the clusters.

In the spending category of "general government," Cluster 3 had the largest decline. A few cities are driving those averages. Atlanta and Chattanooga, for example, reduced government spending by $253 and $166 per capita, respectively. Without those two cities, the decline in the mean for Cluster 3 declines from $34 per capita to $22. This leaves the differences among the clusters minor, at $11 per capita decline for cities in Cluster 1, $23 for cities in Cluster 2, and $15 for cities in Cluster 4. That cities in all four clusters exhibited similar patterns in general government spending is not surprising given that most cities cut general government spending (largely for city administrative services) in response to economic and fiscal shocks.

Spending on public safety declined substantially in Cluster 3 cities. Atlanta reduced spending by $198 per capita; Richmond, VA, by $138; and El Paso, TX, by $171. The mean decline is $31 per capita. Excluding those three cities, the average decline is $20 per capita. Similarly, in Cluster 2, Bridgeport, CT, drove up the average with a $324 per capita increase in public safety spending. Without Bridgeport, public safety spending in Cluster 2 actually decreased by $28 per capita. Here again, removing the extreme cases reveals that changes in spending on public safety were relatively consistent across the cluster.

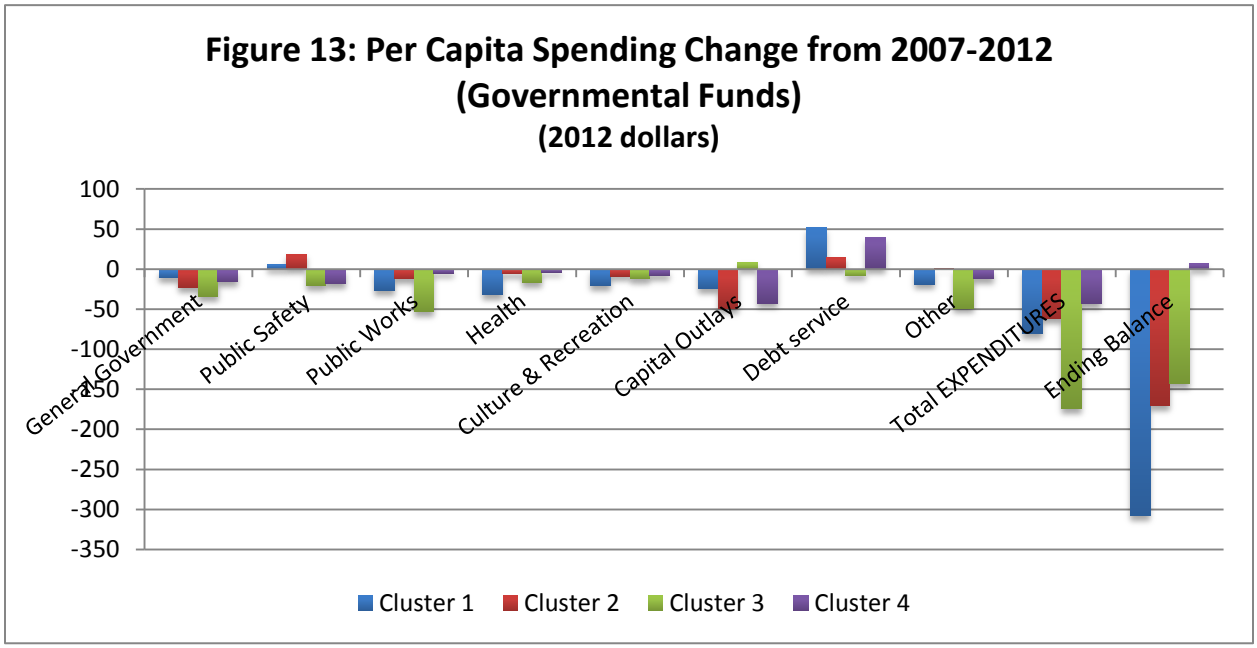
Perhaps more notable is that the scale of the changes in public safety spending was not particularly large in any of the clusters, given that public safety expenditures typically encompass the largest category of city spending. In other words, few cities significantly cut spending on public safety during the recession. This is not surprising, given the corresponding increases in demand for those services during recessions, as well as contracts with public safety employees and the optics and related political challenges that come with public safety cuts.

Public works spending declined in all clusters, with the largest decline in Cluster 3. When factoring out Kansas City's $500 per capita decline, Cluster 3 declined by only $24 per capita instead of $53 per capita. Although public safety spending declines were somewhat similar across the four clusters, spending declined more in cities with the most restricted FPS.

Overall city spending declined in all four clusters, with Cluster 3 leading way with the largest reductions. Once again, a handful of cities drive the reductions, with five cities experiencing total spending reductions of more than $450 per capita. Total spending reductions for the remaining 16 cities were $47, slightly more than the average decline of $43 for Cluster 4 cities. Patterns were again linear, with the largest reduction in Cluster 1 (most constrained) and the smallest reduction in Clusters 3 and 4. In other words, the more constrained cities, with fewer tools at city leaders' disposal to respond to the recession, made greater cuts in city spending across the board. City leaders in cities with more fiscal policy space to maneuver were able to avoid these more drastic cuts.

Fund Balance Patterns — Observing fund balances from 2007 to 2012 (see Figure 13) provides a better understanding of how cities responded to fiscal decline. A very clear linear progression is evident in fund balances across the four clusters. Cities in Cluster 1 exhibited the largest mean reduction in their fund balance, a decline of $307 per capita. Cities in Cluster 2 reduced their mean fund balance by $170 per capita, and cities in Cluster 3 by $143. Cities in Cluster 4 registered a slight increase in fund balance of $7 per capita, in many cities essentially maintaining funding balance levels.

Particularly notable is the scale of the changes in fund balance relative to other spending. Clusters 1-3 drew down fund balances more significantly than they reduced city spending, although most cities clearly employed a combination of both strategies. Overall, cities with more restrictive FPS attributes are tapping into the fund balance to a greater degree than cities with fewer constraints.



Source: Comprehensive Annual Financial Report, downloaded via Electronic Municipal Market Access.

Summary

This exploratory analysis reveals that, in general, cities that were more constrained confronted and responded to the period during and after the Great Recession with larger cuts to total revenue (particularly nontax/intergovernmental revenue), larger cuts in spending, and larger reductions in fund balances. Less constrained cities experienced smaller cuts to total revenue, although they were more likely to see larger declines in tax revenue. Less constrained cities were also less likely to cut spending on city programs as significantly as cities with more FPS constraints, and

they were able to maintain or only marginally draw down fund balances. Although the analysis covers only one time period, it points to a clear relationship between the constraints on the fiscal policy space of cities—the room for city leaders to maneuver when confronted by changing conditions—and the resulting fiscal actions and outcomes of cities.

The FPS is a behavioral frame and needs to be better understood in order to (i) analyze the efficacy of fiscal policy decisions, (ii) design federal or state programs, and (iii) identify appropriate changes in those constraints that enhance city autonomy to efficiently, effectively and fairly pursue their own pathways to make better communities and cities.

NOTES

[1] This effort draws on the work we've done together, what we've learned, and our continuing commitment to better informing the dialogue about cities. It also draws upon the interest of – and collaboration with – the Federal Reserve Bank of Chicago and the State-Local Fiscal Policy Working Group of the Fed banks, and the MacArthur Foundation's interest in improving outcomes in the state-local arena. We are grateful to the participants of two Thinkers' Sessions who helped shape the project and clarify the concept of Fiscal Policy Space. The Thinkers' Sessions, supported by the Lincoln Institute of Land Policy, were convened in the Great Cities Institute of the University of Illinois at Chicago in March 2006 and January 2007. The participants included: Richard Feiock, Elisabeth Gerber, Deborah Carroll, Katherine Barrett, Richard Greene, Rachel Weber, Nathan Anderson, Rebecca Hendrick, William Barnes, Benoy Jacob, Kseniya Khovanova, Kim Rueben, John Petersen, David Garrison, Annette Steinacker, Joan Youngman, Brian Murphy, Daphne Kenyon, Jane Malme, David Perry, and Semida Munteanu. The FPS research team includes the co-Principal Investigators of the FPS project, Michael A. Pagano and Christopher Hoene, in addition to Yonghong Wu, Darrene Hackler, Paul Lewis, Richard Mattoon, Christiana McFarland and numerous graduate research assistants, including Shu Wang, Ayman Bari, Yu Shi, Nisa Yazici, Jill Mason Terzakis, James Eisenhauer, Samuel Bassett, Kathryn Cowlin, and Suriya Sundararaj.

[2] See, e.g., Edward Glaeser, *Triumph of the City: How Our Greatest Invention Makes US Richer, Smarter, Greener, Healthier, and Happier* (New York: Penguin Books, 2012); Bruce Katz and Jennifer Bradley, *The Metropolitan Revolution: How Cities and Metros Are Fixing Our Broken Politics and Fragile Economy* (Washington, DC: Brookings Institution, 2013).

[3] Duranton and Puga argue that there still are gaps in understanding city growth: "Furthermore, some potential drivers of the growth of cities are yet to be explored. The biggest gap is arguably studying the effects of municipal and city governments, local policies and public finance." (p. 57) See Gilles Duranton and Diego Puga, "The Growth of Cities." CEPR Discussion Paper no. DP9590. (August 2013), http://ssrn.com/abstract=2309234.

[4] Lindsay Holst, "The Precision Medicine Initiative: Data-Driven Treatments as Unique as Your Own Body," White House Briefing Room, January 30, 2015, https://www.whitehouse.gov/blog/2015/01/30/precision-medicine-initiative-data-driven-treatments-unique-your-own-body.

[5] The Great Depression witnessed unemployment rates of nearly 25 percent, while the Great Recession's unemployment rate reached nearly 10 percent by 2009. The stock market (Dow Jones Industrial Averages) dropped by 89 percent by 1933, but only 20-30 percent by 2010. Price declines were nearly 25 percent during the Great Depression, while they remained steady during the Great Recession. Bank foreclosures reached nearly 50 percent in 1933, but only 10 percent during the Great Depression. Social disruptions were fairly limited during the Great Recession but widespread during the 1930s. See, e.g., Michael A. Pagano, "Cities and the Great Recession: Lessons in Dynamic Change and Adaptation." In *Metropolitan Resilience in a Time of Economic Turmoil*, ed. M. A. Pagano (Urbana: University of Illinois Press, 2014), 3-18.

[6] Christiana McFarland and Michael A. Pagano, *City Fiscal Conditions in 2015* (Washington, DC: National League of Cities, 2015).

[7] According to the latest census estimates, 38 percent of total own-source revenues are derived from user fees, charges, and miscellaneous, while 28 percent is derived from the property tax and 26 percent from both the local-option sales and income taxes.

[8] McFarland and Pagano, *City Fiscal Conditions in 2015*.

[9] According to Bureau of Labor Statistics, seasonally unadjusted data released for April 2016, the total number of local government employees is 14,463,000, as compared with 14,914,000 employees for November 2008. This represents an improvement over 2013's low-water mark, which counted a half-million fewer local government positions than in 2008. http://www.bls.gov/web/empsit/ceseeb1b.htm

[10] Studies on city fiscal conditions are abundant in the academic literature. Our argument is not that there's a dearth of studies, rather that these studies focus on the 'average' city without recognizing the enormous variation among city fiscal options or they ignore the fiscal policy behavior of cities or the constraints within which fiscal decision making occurs. Examples of a city fiscal conditions studies include: Ladd, H. F., and Yinger, J.M. 1989. *America's Ailing Cities: Fiscal Health and Design of Urban Policy*. Baltimore, MD: John Hopkins University Press; Tannenwald, Robert. 1999. "Fiscal disparities among the states revisited." *New England Economic Review*: 3-25; Advisory Commission on Intergovernmental Relations. 1981. *Measuring the fiscal capacity and effort of state and local areas*. Washington, DC: ACIR; Clark, T.N. and Ferguson, L.C. 1983. *City Money: Political Processes, Fiscal Strain and Retrenchment.* New York: Columbia University Press; Hendrick, R. 2004. "Assessing and measuring the fiscal health of local governments: Focus on Chicago suburban municipalities." *Urban Affairs Review*, 40 (1): 78-114; Chernick, Howard, Adam H. Langley, and Andrew Reschovsky. 2015. "Comparing central city finances using Fiscally Standardized Cities." *Journal of Comparative Policy Analysis* 17(4): 430-440; Hendrick, R. 2014. "Municipal fiscal policy space and fiscal structure: Tools for managing spending volatility." *Public Budgeting and Finance*, 34 (3): 24-50.

[11] Michael A. Pagano and Christopher W. Hoene, "States and the Fiscal Policy Space of Cities." In *The Property Tax and Local Autonomy,* Michael Bell et al., eds. (Cambridge, MA: Lincoln Institute of Land Policy, 2010).

[12] By representative, we mean that the cities selected should represent a sizeable portion of the municipal sector in terms of economic output and fiscal capacity. The sample must also provide sufficient variation along several dimensions, including revenue structures (tax authority) and region of the country (using U.S. Census regions and Federal Reserve districts). Therefore, the selected project cities do not represent a random sample of cities. The sample also reflects a focus on feasibility in terms of data collection, including cities whose economic and fiscal information is regularly reported in national data sources or that are willing to provide requested information and data. A key challenge in selecting a sample of cities that is economically representative of the municipal sector is that economic output data are not collected regularly for a wide range of cities. For example, Gross Domestic Product estimates are typically available for metropolitan areas, but not as readily or regularly available for individual cities. As a result, the project team employed a selection method that attempts to crudely approximate the relative economic and fiscal importance of large cities within metropolitan areas. Project cities were selected based on their relative population size *and* the relative population size of their metropolitan statistical area (MSA), based on the 2011 U.S. In order to be included in the sample, a city must be among the largest central cities in the U.S. *and* within the largest MSA's in the U.S. For example, a smaller central city located in large MSA might not be included in the sample, or a larger central city located in a smaller MSA might not be included. The interaction of city size and MSA size produced a list of cities that approximates the most economically and fiscally influential cities in the U.S. Washington, D.C. is excluded from the sample because of its unique governmental structure. In addition, the analyses conducted as part of the FPS project will occasionally separate out or exclude New York City when the relative fiscal capacity would otherwise overwhelm aggregated city data.

[13] We use the terms "cities" and "municipalities" broadly to refer to all municipal governments.

[14] These states include Alaska, Connecticut, Maine, Maryland, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Rhode Island, Tennessee, and Virginia.

[15] Local income taxes, as we refer to them here, are not always referred to as income taxes by the individual states. In Kentucky, for instance, cities and counties levy two income related taxes, an occupational license tax on income earned in a jurisdiction by individuals and a net profits tax on businesses.
[16] Oklahoma cities can levy a property tax for debt service.
[17] "General revenue" as defined by the U.S. Census of Governments, including all local revenues except revenues from utilities and liquor store operations. This definition is broader than how states and cities budget, in which the "general fund" is the annual operating budget, with a series of other funds for special activities/projects.
[18] Our measure of own-source revenue reliance differs from a commonly used census definition of "own-source revenues" in that local revenues are not counted as own source if there is no local authority (using our definition of authority based on a local option that can be used for general purposes). Local fees and charges revenues include administrative and court fees, waste disposal fees, building permits, development impact fees, law enforcement and fines and fees, and service fees for libraries and parks.
[19] Measured as one standard deviation above the mean capacity (percent share of general revenue). Throughout the report we generally use the mean and standard deviation statistics to determine break points for differences among states.
[20] We created a five-point scale to indicate the restrictiveness of TELs in 2012. A higher number indicates more restrictive TELs and therefore the less space for fiscal policies. The scale is: 1 = no TELs; 2 = nonbinding property tax limit; 3= potential binding property tax limit; 4 = nonbinding property tax with general revenue or expenditure limit, potential binding property tax limit with general revenue or expenditure limit, or binding property tax limit; and, 5 = binding property tax with general revenue or expenditure limit . For the purpose of analysis, we reverse the scale so that a lower number indicates less fiscal policy space, a direction that is consistent with the other dimensions in our analysis. We place cities along an axis based on this five-point scale.
Here again we examine the three major sources of state and local tax revenue, the property tax, sales tax, and income tax. Once again, we rate municipalities as having authority if they have a local option to control the tax rate and if the revenues are for general use. We also define tax authority as one that has been executed, rather than one that is authorized by legislation and not implemented. We use data collected from US Census of Governments (2012) and official websites of city governments to determine whether the cities in our sample have authority to levy a property tax, sales tax, and income tax. This less (or non-) binding / potential binding approach is well documented within the academic and analytic research on TELs. For instance, see Daniel R. Mullins and Bruce A. Wallins. 2004. "Tax and expenditure limits: Introduction and overview." *Public Budgeting and Finance* 24: 2–15.
[21] Georgia had a potentially binding property tax limit that expired in 2011.
[22] For state-imposed TELS, we used Lexis Legal to identify laws on state-imposed TELs. We cross-referenced our list of laws with secondary data sources such as Advisory Commission on Intergovernmental Relations, *Tax and expenditure limits on local governments.* Report M-194. (Washington, DC: Government Printing Office, 1995) and Lincoln Institute of Land Policy. We also used a search of legislative session laws to track TEL amendments, producing a panel data set on TEL changes. We used the following protocol to code TEL terms and conditions: limit types, maximum allowable rates for growth, institutional codification (constitutional vs. statutory), override processes, and TEL exemption. For a detailed discussion and explanation, see Shu Wang, *Effects of State-Imposed Tax and Expenditure Limitation on Municipal Revenue Structure: A Legal Approach*, PhD dissertation, Department of Public Administration University of Illinois at Chicago, 2015. For locally imposed TELS, we used Brooks and Phillips' survey responses as a guide in identifying which cities may have TELs. We then attempted to confirm legislation in city charters and municipal codes. We collected the local ordinances and coded the limit rates specified, the tax base on which the rate is applied, whether the limit is binding, whether the referendum is allowed to override the limits, and whether supermajority is needed for tax increase. See, Leah Brooks and Justin Phillips, "When and why do cities bind
themselves? The existence and extent of locally imposed tax and expenditure limits." Working Paper. Cambridge, MA: Lincoln Institute of Land Policy, 2009.
[23] The data are limited in the following ways. First, some cities do not report assessed values for a particular year or throughout the entire study period, which reduced the number of observations from 1,700 to 1,609. Second, there are many instances of a negative TEL gap. Negative values indicate that the cities managed to exceed the legal TEL

ceiling through exemptions or voter overrides. Because of the lack of data on the amount of TEL exemptions, we are unable to incorporate the TEL exemptions into the TEL gap measure.

[24] They are Fort Wayne, IN; Indianapolis, IN; Huntsville, AL; Birmingham, AL; Philadelphia, PA; Pittsburgh, PA; Minneapolis, MN; Shreveport, LA; Chicago, IL; Des Moines, IA; Detroit, MI; and Little Rock, AR. Although there is a levy limit imposed by Pennsylvania, the limit only applies to cities with population less than 250,000, and thus is not applicable to Philadelphia and Pittsburgh.

[25] For cities that are authorized to collect income tax from commuters, we use per capita income for the entire metropolitan areas to incorporate the exported portion of income tax to nonresidents.

[26] The ideology variable is a result of two larger efforts. First, we utilize Tausanovitch and Warshaw to estimate mrp_ideology, where the estimate of left/right ideology of city residents is on a standardized scale, where negative values represent liberalism and positive values conservatism. Tausanovitch and Warshaw estimated from pooled surveys of 275,000 Americans, using multilevel regression and post-stratification (MRP) to impute the "ideal points" of public opinion at the city level for cities of 25,000 or higher population. Because Tausanovitch and Warshaw state that these estimates represent the average value for each city from 2000 to 2011, we interpret these values as approximating 2006 or 2007 values, thus are appropriate for the 2007 FPS sample year. For other FPS years, we simulate MRP ideology scores using our second procedure to estimate the "ideology_##_sim" variables. The resulting ideology values for each city are estimated (or simulated) values of mrp_ideology_Tausanovitch for the sample years of the Fiscal Policy Space Project: 1992, 1997, 2002, 2007, and 2012. Since the Tausanovitch & Warshaw ideology estimate was available only for a single time point, taken to be 2006, we adjusted the ideology scores to the FPS years by using presidential vote variables, which are available for presidential-election years, but only at the county level. To make these ideology estimates, we used the following procedure. First, we ran an OLS regression of mrp_ideology_Tausanovitch on elec_06interp (the latter being the average of the presidential vote in 2004 and 2008). The residuals of this regression provide a good way to "correct" the presidential-election variables (given they are measured at the county rather than municipal level) and relate them to the MRP values. By construction, a regression of mrp_ideology_Tausanovitch on elec_06interp and the residuals of the previous regression fits the data perfectly (i.e., R-squared of 1.0). We use the values of the coefficients and constant of this regression equation in order to estimate values of ideology for earlier and later years in the data series. Specifically, the equation is: ideology_##_sim = .8096758 – (.0190509 * elec_##) + residMRPelec06, where ## is the 2-digit year abbreviation, and residMRPelec06 are the residuals of the regression of mrp_ideology_Tausanovitch on elec_06interp (and * is a multiplication sign). We use the following presidential election variables for specific years of ideology:

- ideology_92_sim: elec_92
- ideology_97_sim: elec_96
- ideology_02_sim: elec_02_interp
- ideology_07_sim: Here we simply substitute the mrp_ideology_Tausanovitch value, which
- should correspond to approximately 2006.
- ideology_12_sim: elec_12

Special note regarding Anchorage, AK: Presidential election data are missing for Anchorage. However, Tausanovitch and Warshaw did provide an ideology estimate for Anchorage. In order to not lose a case from the analysis, we have inserted values of ideology_##_sim for Anchorage for the missing years (i.e., other than 2007). We do this by adjusting upward and downward its mrp_ideology_Tausanovitch value by the average difference from 2007 to the year in question among the other 99 FPS cities. Source: Downloaded and entered from http://www.americanideologyproject.com/ , "City-Level Public Preference Estimates"; for documentation of the method, see Chris Tausanovitch and Christopher Warshaw "Measuring Constituent Policy Preferences in Congress, State Legislatures, and Cities," *Journal of Politics* 75(2)(2013): 330-342.

[27] Deacon, R. T. (1978). "A demand model for the local public sector," *Review of Economics and Statistics* 6, 184-92.

[28] The rent-to-income ratios differ due to data availability. For rentincomeratio_00 and rentincomeratio_10,we use a ratio of annualized rent of the given Census year (for example 2000) to median household income the year prior (for example 1999) because the decennial Census asks respondents for their income in the prior calendar year. The rent-to-income ratio is a measure of the unaffordability of rental housing in the city. The year 2010 is used instead

of 2012 because lack of data after 2010 makes it impossible to align a straight-line interpolation of the value of the rent-to-income ratio for census year 2010 with FPS sample year 2012. Thus, the 2010 data are used for the 2012 analysis.

[29] Paul G. Lewis and Max Neiman. 2009. *Custodians of place: Governing the growth and development of cities*. Washington: Georgetown University Press.

[30] The rent-to-income ratios shown differ due to data availability. For rentincomeratio_00 and rentincomeratio_10: Ratio of annualized rent (in the given Census year, for example 2000) to median household income the year prior (for example 1999; note that the decennial Census asks respondents for their income in the prior calendar year). This is a measure of the unaffordability of rental housing in the city. The year 2010 is used instead of 2012 for this variable due to the fact that a straight-line interpolation of the value of the rent-to-income ratio for the Census year 2010 to coincide with FPS sample year 2012 is not possible because of a lack of data subsequent to 2010; thus the 2010 data is used for 2012 analysis.

[31] The municipal-level data are unavailable, and Anchorage, AK, and Lincoln, NE, are missing from the source data for the final two years (2007, 2012). For documentation, see http://unionstats.gsu.edu and Barry T. Hirsch and David A. MacPherson, "Union Membership and Coverage Database from the Current Population Survey: Note," *Industrial and Labor Relations Review*, 56 (2)(January 2003):349-54.

[32] The demand scale is constructed by standardizing the values of the three individual items to mean 0 and variance 1, and then summing the standardized values. Note that the *Ideology* variable, which runs from liberal (low values) to conservative (high values), is reversed before the standardizing and summing takes place. The command in the Stata 12 statistical package that produces the scale is: alpha ideology_##_sim union##_coverage rentincomeratio_##, std gen(demand_scale_##); where ## is the 2-digit year (02 or 12), and italicized words are variable names. Alpha reliability coefficient for the scale is .73 in 2002. Note that demand_scale_12 is a summary scale of our estimate of the political pressure for fiscally expansionary policy in each city in 2012. This variable is constructed exactly like the demand scale for the earlier 13 years, except that we use rentincomeratio_10, given that we lack estimates of median rent or median income after 2010. The alpha reliability coefficient for demand_scale_12 is .70.

[33] Sarah Emmans, "Providence Case Study," unpublished report for the George Mason University Municipal Sustainability Project, Center for State and Local Government Leadership, George Mason University, http://s3.amazonaws.com/chssweb/documents/12790/original/GMU_Providence_9.13.pdf?1379560620.

[34] Ibid.

[35] Ibid.

[36] Denise Dowling, "Cease Fire," Rhode Island Monthly, May 2010. http://www.rimonthly.com/Rhode-Island-Monthly/May-2010/Cease-Fire/index.php?cparticle=3&siarticle=2#artanc.

[37] We first calculated *Z*-scores for the fiscal base and the demand pressure variables to determine if a city's score was above or below the mean of each of these variables. We further classified cities by whether they have access to more than a local property tax (either a local sales or income tax) and if cities have a property tax gap, if they have room to increase their revenues through the property tax (despite the existence of TELs).

[38] The biggest challenge in clustering cities is to demarcate the clusters clearly; that is, how to determine the threshold that places cities in each cluster. Our strategy centered on the mean for the demand pressure and fiscal base attributes of the FPS. We then categorized cities by whether they had access to more than a property tax and whether they had a property tax gap and could increase the levy. Clustering cities on the basis of whether they are above or below a mean value has its flaws, but for our purposes of understanding city fiscal behavior, this method allows us to compare and analyze similarly situated cities within the FPS framework. Further and more robust testing of this relationship is needed to truly understand the subtle differences between cities and how the constraints they confront drive their responses to changing economic and fiscal conditions.

[39] All revenue and expenditure data are standardized to 2012 dollars and presented in per capita terms. Revenue and expenditure data were collected from the city Comprehensive Annual Financial Reports posted on the Electronic Municipal Market Access (EMMA) website. See the description of data extraction for the FPS project at: http://www.srl.uic.edu/fiscalpolicyspace/index.php

[40] See, for example, the National League of Cities' annual reports on "City Fiscal Conditions" 2009-2012.