

Comparing Central City Finances Using Fiscally Standardized Cities

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Abstract

Recent bankruptcies of several large central cities, most notably Detroit, have highlighted the importance of better understanding the fiscal pressures faced by American central cities. Because fiscal institutions and arrangements differ widely across U.S. cities, it has until now been very difficult to conduct comparative analysis of spending, revenues, and debt in U.S. cities. This paper describes a new city fiscal data set, called fiscally standardized cities (FiSCs) that directly addresses the varying roles of municipal governments, counties, school districts, and special districts in the financing of central cities. By taking systematic account of fiscal data for all the major units of government in large cities over a long time period (1977-2011), the FiSC data permit investigation of a wide range of important comparative policy issues for cities. We describe the methodology used to construct FiSCs, and give a number of examples to illustrate the potential uses of the FiSC data. For example, we show how spending comparisons between cities can be fundamentally misleading unless one takes account of the varying roles of overlapping governmental units. We also demonstrate how the FiSC data can be used to benchmark fiscal data for one city against comparable cities, and help reveal important patterns of fiscal stress over time.

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Comparing Central City Finances Using Fiscally Standardized Cities

Introduction

Large American central cities have faced periodic fiscal crises, for example, New York in the mid-1970s and Philadelphia in the early-1990s. Now, in quick succession three large central cities—Stockton, San Bernardino, and Detroit—have declared bankruptcy. Is this a sign that fiscal conditions in central cities have seriously deteriorated and more fiscal crises are likely over the next few years? Or, are the recent bankruptcies due to a series of bad fiscal decisions in a few cities or particularly severe local economic shocks, and hence unrelated to economic and fiscal conditions in cities around the country? To answer these questions and to address a whole range of issues related to the fiscal conditions of America's central cities requires that we are able to compare revenues, debt, and spending patterns across the nation's large cities. This paper describes a recently developed dataset that facilitates fiscal comparisons across central cities.

Perhaps surprisingly, until now it has been virtually impossible to make such comparisons. Because of variations in government structure, simple comparisons of revenue or spending data across central city municipal governments can be highly misleading. In some cities, the city government provides a full array of public services including elementary and secondary education and various social and health services, while in other cities, the city government shares the responsibility for providing these public services with overlying independent school districts, county governments, and special districts.

For example, the city governments of Baltimore, New York, and Richmond each have no independent school districts or overlying county governments that provide services to their residents. In contrast, city government spending in El Paso, Fresno, and Las Vegas accounts for less than a quarter of total spending on local public services provided to city residents and businesses. In each of these cities, the remaining three-quarters of expenditures are made by independent governments that serve central cities residents. This variation in governmental structure makes it very hard to compare revenues and spending across central cities.

A similar problem of comparability exists with respect to revenue sources. Census data on municipal government revenues indicates that in FY 2011, the City of Tucson collected only 13 percent of its total tax revenue from the property tax, instead relying heavily on a local sales tax. In contrast, the city government of Buffalo collected 87 percent of its tax revenue from the property tax. However, when we take account of the taxes paid by city residents and businesses to each city's overlying school districts, county government, and special districts, the property tax story is reversed. Property taxes accounted for 63 percent of the total tax revenues paid by Tucson residents, but only 50 percent of the tax revenues paid by the residents of Buffalo. The heavier reliance on property taxation in Tucson occurs because the county government serving the residents of Buffalo gets most of its tax revenue from a county sales tax, while the county government and independent school district in Tucson rely on property taxes.

Differences in the expenditure responsibilities of different types of governments also make fiscal comparisons difficult. For example, in 2011 the city government of Colorado Springs spent \$2,427, nearly twice as much as the \$1,364 per capita spent by the municipal government in Las Vegas. But, in Colorado Springs the city government is responsible for social services, police protection, and roads, while these services are primarily provided by the county government in Las Vegas. Not surprisingly, at \$2,452 per capita, spending in Clark County, Nevada, which includes Las Vegas, is much higher than the \$391 of per capita spending in El Paso County, Colorado, which serves Colorado Springs. Combining city and county spending, per capita spending is about \$1,000 higher in Las Vegas than in Colorado Springs.

In order to carry out meaningful comparisons of the revenue and spending of the nation's central cities, it is clearly important to deal explicitly with the heterogeneity in municipal government expenditure responsibilities and the variation in government structure. Our basic approach is to add revenues, expenditures, and other fiscal variables for each central city municipal government to a portion of the revenues and spending of overlying governments, including counties, independent school districts, and special districts. The amounts added from overlying governments are estimates of the revenues collected from and the services provided to central city residents and businesses. We refer to the results of these calculations as *fiscally standardized cities* (FiSCs). Thus FiSCs provides a fuller picture of revenues raised from city residents and businesses and spending on their behalf, whether done by the city government or a separate overlying government.

A version of the FiSC dataset that is easily accessible using dropdown menus is publicly available in the *Resources and Tools* section of the website of the Lincoln Institute of Land Policy (www.lincolnst.edu). The Institute, which is located in Cambridge, MA and provides support for research on land-related issues including the financing of local governments, provided financial support for the development of the FiSC dataset. The full panel dataset includes over 120 fiscal variables and covers 112 central cities for the years 1977 to 2011.

In the next section, we review the literature on fiscal comparisons across central cities. We then describe the FiSC methodology and discuss its strengths and limitations. Prior to the conclusion, we provide examples of how the FiSC data can be used as a benchmarking tool.

Previous Efforts to Compare Central City Fiscal Conditions

Taking account of the fiscal impacts of overlying governments as a precondition for conducting comparative analysis is not a new idea. Katharine Bradbury (1982), in a comparative study of fiscal distress in U.S. cities, calculated the “combined revenue collection in city areas” by allocating to each city area all non-municipal local government revenue within each state on an equal per capita basis. Our approach, which we describe in detail below, improves on the use of statewide averages by utilizing fiscal data from each non-municipal government that overlies each central city. This kind of disaggregated approach was utilized in an early pilot study conducted by the U.S. Census Bureau (1974). Their study, which was limited to the central city and a single suburban community in five large metropolitan areas, involved compiling fiscal data for a single year (FY 1970) from all overlapping local governments that served the residents of

each of their sample municipalities. We follow a similar, although somewhat simplified methodology, but apply it to 112 large central cities over the period from 1977 through 2011.

Other comparative studies of city finance, for example, Inman (1979) and Sjoquist, Walker, and Wallace (2005), have used dummy variables to partially adjust for overlapping jurisdictions. In their book, *America's Ailing Cities*, Ladd and Yinger (1989) explicitly address the fiscal condition of municipal governments. Their focus, however, is not on comparing the revenue of city governments, but rather on cities' revenue capacity. In developing their revenue-capacity measures they adjust for the capacity "used up" by county governments and independent school districts that overlie city governments.

Some previous empirical studies focusing on the financing of municipal governments have failed to take full account of the impact of overlapping jurisdictions. For example, Carroll (2009) utilizes Census data to study revenue diversification among all municipal governments with populations above 25,000. However, she makes no adjustments for variations in expenditure responsibilities, despite the fact that her measure of revenue diversification, a Herfindahl index, is quite sensitive to the inclusion of revenue from overlying independent governments.¹ Two recent studies of central city finance after the Great Recession have used city government financial data gathered from the cities' Comprehensive Annual Financial Reports (Pew Charitable Trusts, 2013; Ross, Yan, and Johnson, 2014). Although both these studies are unable to address differences in governmental structure, the authors have been careful not to make inappropriate fiscal comparisons across cities. Rather, they have analyzed changes over time in their sample cities.

Methodology Used to Construct Fiscally Standardized Cities

To create FiSCs, data on the revenues, expenditures, debt, and assets of city governments are combined with a share of these fiscal variables from overlying counties, school districts, and special districts. The basis for allocating county government fiscal data to FiSCs is the central city's share of county population. School district data is allocated to FiSCs based on the percentage of students in each school district who live in the central city. Finally, fiscal data for special districts are allocated to FiSCs based on the central city's share of population in each special district's service area.²

The source of the fiscal data used in the FiSC dataset are the quinquennial Census of Government Finance and, for non-census years, the Annual Surveys of State and Local Government Finance. The dataset contains information for a sample of 112 large central cities for the years between 1977 and 2011. The sample was selected based on the following population criteria. We include 1) all cities with 2007 populations over 200,000 except those with 1980 populations below 100,000 **and** 2) all cities with 1980 populations over 150,000 even

¹ We compared Herfindahl indices for the cities in our sample using both revenue data for the municipal governments and revenue data for our *fiscally standardized cities*. The results indicate that for many central cities, measured revenue diversification was very different for city governments compared to FiSCs.

² Intergovernmental revenues and expenditures from one local government to another are excluded from the FiSC allocations to avoid double counting.

if their 2007 population was below 200,000. The increase in the population cutoff from 150,000 to 200,000 reflects almost perfectly the rate of growth of the U.S. population between 1980 and 2007. These criteria were used so the sample has adequate representation of cities with slow or declining populations that would have missed the 200,000 cutoff in 2007. In addition, cities with 1980 populations below 100,000 were excluded because we do not believe that these previously small and mid-sized cities are comparable to the rest of the sample of large cities.³

County allocations to FiSCs are based on the city's share of the county's population. Thus if a city accounts for 20 percent of the county's population, then 20 percent of revenues and expenditures for the county government will be allocated to the FiSC. The sample includes 14 cities that extend into more than one county. In these cases, allocations are done separately for each overlying county based on the number of city residents that live in each county.⁴

School district allocations to FiSCs are based on the share of students in each school district that live in the central city. Thus if 75 percent of students in a school district live in the central city, then 75 percent of revenues and expenditures for that school district will be allocated to the FiSC. About 70 of the FiSCs are served by one or more independent school district(s) whose boundaries do not align with city boundaries. For these cities, the number of students in each school district who live in the central city was estimated using geographical information system (GIS) analysis with information on the boundaries of cities and school districts from Census TIGER shapefiles and data on school district enrollment at the Census block group or tract level for the 1980-2010 period. The rest of the FiSCs are served by independent school districts that are coterminous with city boundaries—in which case 100 percent of revenues and expenditures are allocated to the FiSC—or dependent school districts whose finances are already included in the budget of the city or county government providing education to central city residents.

For each school district that covers portions of both the central city and its suburbs, we estimate the share of students that live in the central city in 1980, 1990, 2000, and 2010. We used linear interpolations to estimate student shares for the years between the decennial Censuses.

In allocating special district fiscal data to FiSCs, we followed a two-pronged approach. First, an internet search was used to determine the rough service area for 414 large special districts. These 414 special districts included 297 districts with revenues or expenditures exceeding \$100 million (in 2007 dollars) in at least one of the seven quinquennial Census of Governments between 1977 and 2007, 69 smaller districts that were chosen to help guide the second prong of allocations, and all housing authorities serving FiSCs. Fiscal variables were allocated to each FiSC based on each central city's share of population living in each special district's service area. In the majority of cases, service areas of special districts were defined by city, county, or metropolitan area

³ Honolulu (HI), Jersey City (NJ), and Newark (NJ) all met the population criteria, but were excluded because they have state-administered school districts, which make it impossible to disentangle revenues and expenditures that should be allocated to the FiSC from the rest of the state's budget.

⁴ County allocations are more complicated for six cities where the city government and county government have largely merged into a single consolidated government, but there remain a few independent municipalities within the county. For these six cities, revenues and expenditures for the independent municipalities are added to fiscal variables for the consolidated governments. This treats the six FiSCs as if the city and county have completely merged, as is the case for the other 19 consolidated governments in the FiSC sample. See Langley (2013, 4) for details.

boundaries.⁵ Our internet search verified the service area for only about 10 percent of the special districts that potentially serve FiSCs. However, because we systematically investigated large special districts, this relatively small number of special districts account for about 90 percent of special district expenditures allocated to FiSCs.

The second prong of our special district allocation methodology involved the apportionment of revenues and expenditures of smaller special districts. We followed different allocation rules depending on the primary function of each special district, as determined by its expenditures. For example, hospital districts, library districts, and park districts typically serve a county or smaller geographic area, so allocations were based on the central city's share of the county population. Airports, seaports, and transit utilities typically serve an entire metropolitan area, so fiscal variables were allocated based on the central city's share of the metropolitan area population. Fire districts and certain types of utilities largely serve small municipalities or unincorporated areas. As they almost never serve central cities, no revenues or expenditures from these special districts were allocated to the FiSCs. For a more detailed description of the service areas of different types of small special districts and other aspects of the FiSC methodology, see Langley (2013).

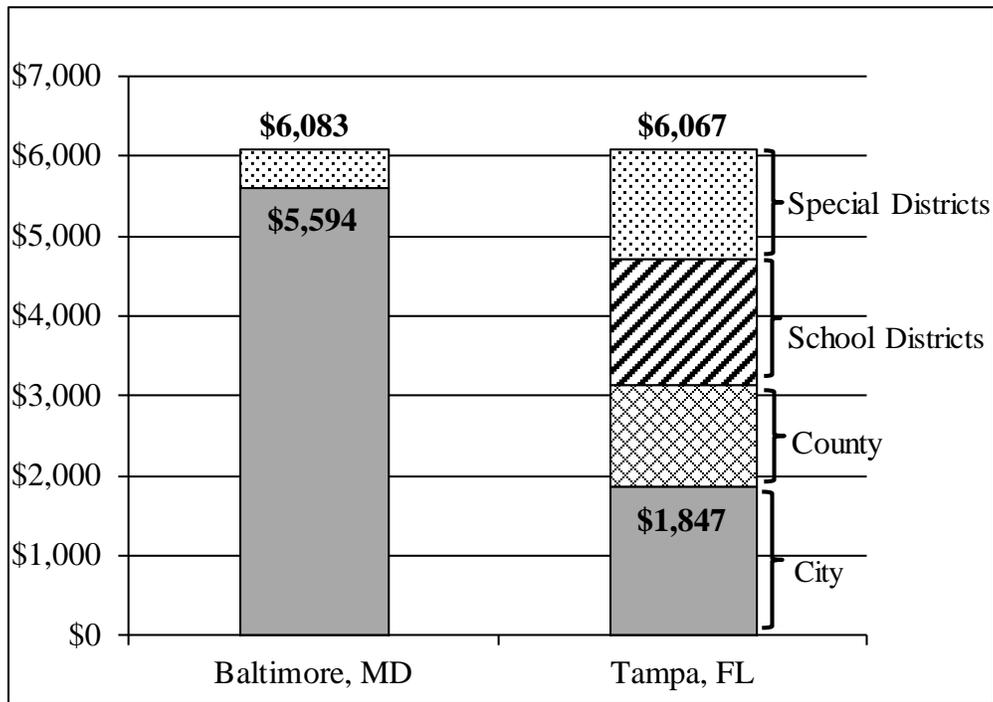
The Strengths and Limitations of the FiSC Methodology

Our primary goal in developing the FiSC methodology was to enable individuals, whether they are scholars, policymakers, or journalists, to make accurate fiscal comparisons across the nation's largest central cities. In many cases, the goal of a fiscal comparison is to ask how much the residents of one city are paying in taxes relative to the residents of another city. Or alternatively, the goal is to compare spending in two cities, such as expenditures on public safety. For many comparative purposes, which type of government levies a tax or makes an expenditure is far less important than the total amount of the tax or expenditure.

Figure 1 illustrates the importance of FiSCs in making comparisons. In fiscal year 2011, the Baltimore city government spent three times more per capita than the city government of Tampa. However, the difference is almost entirely explained by the fact that in Tampa the city government shares the provision of public services for its residents and businesses with an independent school district, with overlying Hillsborough County, and with a number of special districts serving the city, whereas in Baltimore, which has no independent school district or overlying county, nearly all spending on behalf of its residents and businesses is done by the city government. When account is taken for this difference in government structure, total per capita spending is nearly identical in the two cities.

⁵ More precise service areas were used when appropriate. This included using as the service area population the population of two or more counties but not a whole metro area; several cities and/or counties if the special district serves specific members; or an area larger than a metro area. Of the 414 large special districts we investigated, 138 did not provide services to the residents of any of the 112 central cities in our sample.

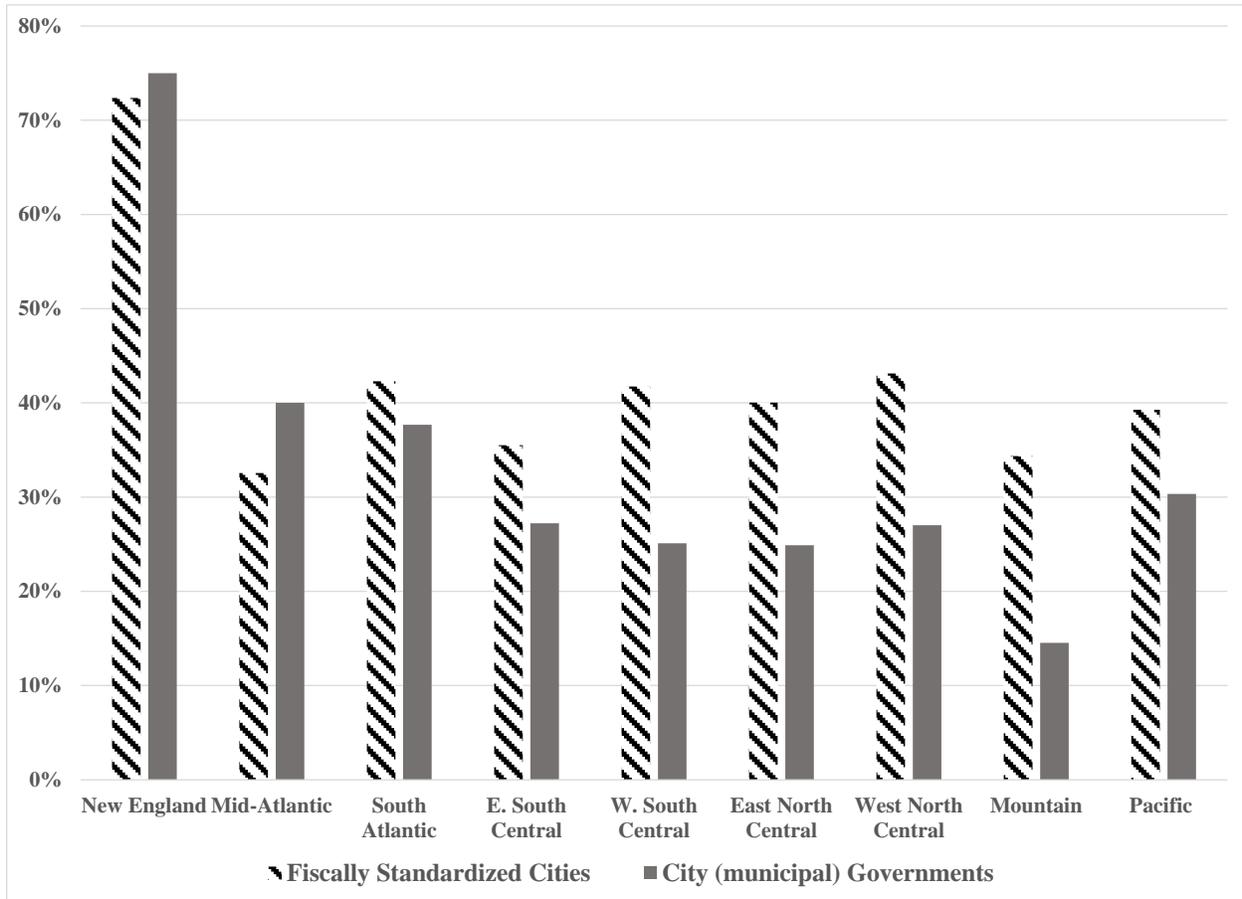
Figure 1
Per Capita General Expenditure in Baltimore and Tampa FiSCs
Decomposition by Type of Government, Fiscal Year 2011



The data in Figure 2 illustrate the large regional differences in the role of the property tax in the funding of American central cities. The solid bars measure the average share of the own-source revenues of central city municipal governments coming from the property tax in each of nation's nine census divisions. The regional differences are striking. On average, central cities in New England obtained 75 percent of their own-source revenues from the property tax compared to the average city in the Mountain division, which only raised 15 percent from the property tax. In general, East Coast cities placed much more reliance on the property tax than cities in the rest of the country.

As shown by the striped bars, regional differences in property tax reliance narrow considerably when looking at revenues collected by all local governments serving central cities. With the exception of New England and the Mid-Atlantic division, FiSCs rely more heavily on property taxes than their municipal governments alone. For example, the average Mountain division FiSC relied on the property tax for 34 percent of its own-source revenue compared to 15 percent for municipal governments in the same division.

Figure 2
Property Tax as a Percentage of Own-Source Revenue
By Census Division, 112 City Governments and FiSCs, FY 2011



In constructing FiSCs we have assumed that the distributions of revenue and expenditures are spatially uniform. In other words, per capita revenues and expenditures for county governments are the same within the central city and the suburban areas of the county. Similarly, per pupil revenues and expenditures for independent school districts are the same within each central city and in the parts of the school district outside the city’s boundaries. We recognize that in some central cities, the overlapping county may provide proportionally more services to residents of the surrounding jurisdictions and unincorporated areas than to city residents or vice versa. On the revenue side, a disproportionate share of county property tax revenues may be raised from the center city or the suburban areas, depending on spatial patterns of concentration of taxable property.

We would have liked to allocate tax revenue to FiSCs based on central cities’ share of the tax bases of overlying governments. Unfortunately, detailed data on the spatial distribution of the tax bases of overlying governments do not exist. Although a few states may collect at least some of the required information, there is no centralized source of data on tax bases. For example, although the Census Bureau started collecting data on taxable property values in the mid-19th

century, collection and compilation of these data ended in 1992 (Braybrooks, Charles, and Zamperini, 2011).

Although we have no way of systematically calibrating the bias created by following our methodology, we note that while per capita property values and taxable retail sales are higher in some central cities than in their suburbs, the opposite is true in many other metropolitan areas. We believe that our choice to allocate county and school district revenues and expenditures on a per capita and per student basis, respectively, though admittedly a simplifying assumption about a more complex reality, is nonetheless a reasonable first approximation.

It is important to emphasize that FiSCs are not governments. While FiSCs provide an important tool for conducting many types of comparative research about the nation's large central cities, a FiSC is not a decision-making body, and hence, FiSC data are not adequate for carrying out studies of the activities, decisions, or behavior of city governments. While taking account of differences in governmental structures and fiscal institutions across cities is an important element in research on city government behavior, care must be taken in using FiSC data as the basis for causal modeling of the decision making by city governments. However, data on FiSCs and their constituent governmental units – cities, counties, school districts, and special districts – do allow us to explore potential interrelationships between revenues and expenditures among the constituent units. As local revenues of all units are derived from common tax bases – whether property, sales, or income – revenue and spending decisions by one unit may affect the fiscal choices of other units. An example, which we have already begun to investigate, is whether intergovernmental aid to one government included in a FiSC, say the school district, affects the revenues and spending of city governments and other governments in the FiSC.

Using FiSCs for Benchmarking

In previous work, we have used the FiSC dataset to study the relationship between changing housing prices and property tax revenues, and to forecast how the “Great Recession” and the housing crisis would affect the financing of central cities (Chernick, Langley, and Reschovsky 2011b, 2012) and the relationship between revenue diversification and the level of revenues for cities (Chernick, Langley, and Reschovsky 2011a).⁶ The FiSC dataset can also play an important role in public sector management.

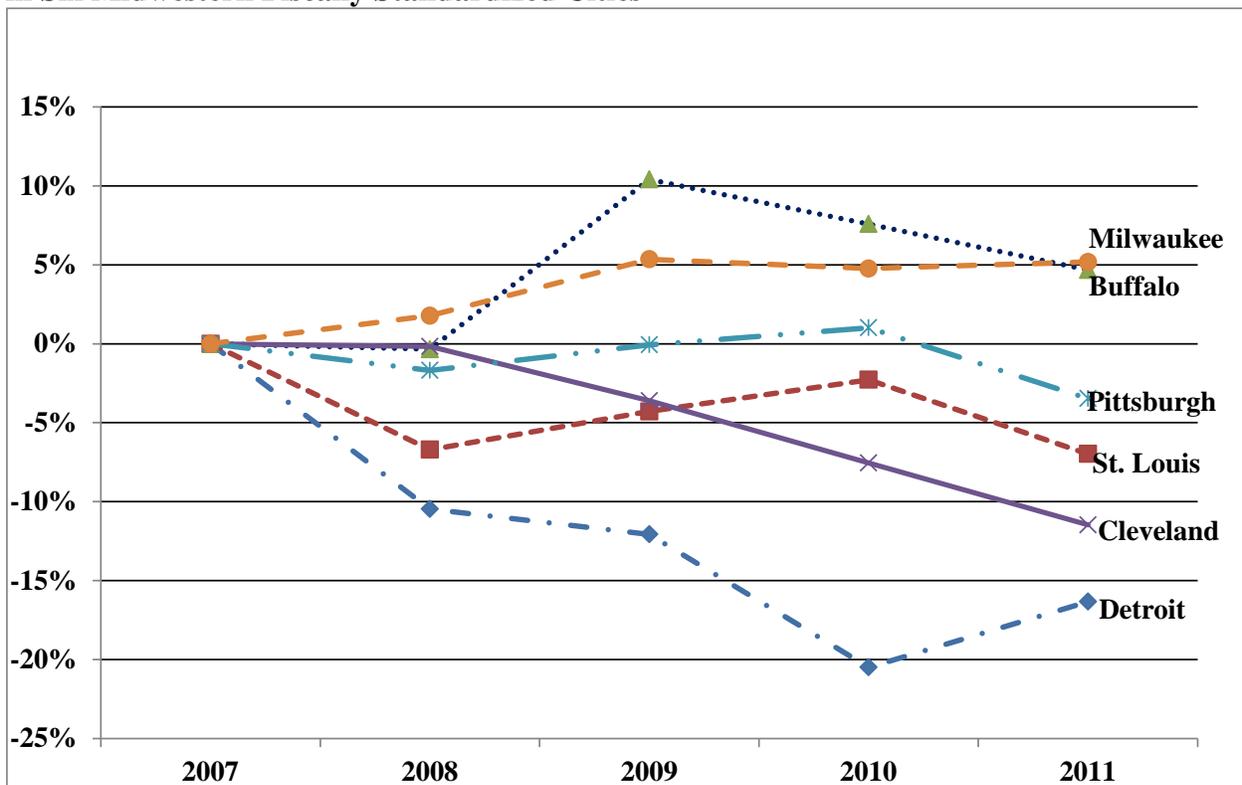
In making budget and policy decisions, both elected city officials and government administrators often want to compare their city to a set of peer cities. As we demonstrate below, the FiSC dataset can be a valuable tool for making these comparisons, a process often referred to as benchmarking. The first step is to define a set of peer cities. For demonstrative purposes, we consider the following six Midwestern cities to be peers: Buffalo, Cleveland, Detroit, Milwaukee, Pittsburgh, and St. Louis. The six have populations between 260,000 (Buffalo) and 710,000 (Detroit). All are old industrial cities, and with the exception of Milwaukee, their

⁶ The papers cited in this sentence utilized an earlier version of the FiSC dataset, which was referred to as *constructed cities*.

populations peaked in 1950 and by 2010 had fallen by more than half.⁷ Incomes are relatively low and the average poverty rate is 30 percent.

The FiSC dataset can easily be used to compare per capita revenues across peer group city governments and their FiSCs, and to compare and contrast the composition of revenues among peer cities. In Figure 3, we demonstrate the use of the FiSC dataset in comparing the percentage changes in real general revenues from 2007 through 2011. The data show that while revenues grew by about five percent between 2007 and 2011 in the Milwaukee and Buffalo FiSCs, revenues (in 2011 dollars) fell over the same period in the other FiSCs, with the largest decline in Detroit. Although not shown in Figure 3, it is worth noting that the 16 percent revenue decline for the Detroit FiSC included reductions for all the governments serving Detroit residents—the city government, the school district, Wayne County, and several special districts. In contrast, the 5 percent revenue increase for the Buffalo FiSC was the result of a large increase in revenues for overlying Erie County, which more than offset a smaller decline for the city government.

Figure 3
Percentage Change from 2007 in Real General Revenues
in Six Midwestern Fiscally Standardized Cities



One of the most common uses of benchmarking is to compare per capita expenditures across cities. In Table 1, we have ranked the six peer fiscally standardized cities by their FY 2011 per capita spending on interest payments on general debt. Debt expenditures and debt burdens are frequently used as a measure of the fiscal pressure facing cities. The data show substantial

⁷ Milwaukee’s population has fallen by 20 percent from its peak in 1960.

differences among the six FiSCs, with spending ranging from \$700 in Detroit to \$180 in Buffalo. An earlier analysis using our FiSC data showed expenditures in Detroit exceeding revenues in a number of years prior to 2011, a pattern which differed from a number of other older Midwestern cities, and one which is consistent with the very high debt levels in 2011 (Chernick, 2013). The data in the second column of Table 1 illustrate that peer comparisons of city municipal government budgets would generate substantially different results. Per capita spending on interest payments by city governments in Pittsburgh and Milwaukee are only about a third of the amounts shown in Table 1. On the other hand, 80 percent of interest payments in the St. Louis FiSC were attributable to its city government. The final column of Table 1 illustrates another dimension of a benchmarking exercise. The data show the share of total general expenditures that were devoted to interest payments in the six peer group cities. It is interesting to compare Cleveland and St. Louis, two FiSCs with essentially identical per capita spending on interest. The data in the third column of Table 1 demonstrate however that interest payments are a larger share of total spending in St. Louis compared to Cleveland.

Table 1

**Interest Payments on General Debt in Six Midwestern
Fiscally Standardized Cities, FY 2011**

FiSCs	Per Capita Interest Payments	City Gov't Interest Payments as a % of	
		FiSC Interest Payments	Interest Payments as a % of Total General Expenditures
Detroit	\$700	67.1%	11.2%
Pittsburgh	\$383	32.4%	6.3%
Cleveland	\$341	57.8%	5.2%
St. Louis	\$340	80.0%	7.0%
Milwaukee	\$211	37.0%	4.0%
Buffalo	\$180	40.6%	2.4%

Conclusions

The finances of cities – spending and revenues – are fundamental to the functioning of cities. Because fiscal institutions and arrangements differ widely across U.S. cities, it has, however, been very difficult to do comparative analysis of their spending and revenue. These difficulties are reflected in the paucity of literature in this important area of public finance and public policy. This paper has served to introduce a new city fiscal data set, called fiscally standardized cities (FiSCs) that directly addresses the varying roles of municipal governments, counties, school districts, and special districts in the financing of central cities. By taking systematic account of fiscal data for all the major units of government in large cities over a long time period (1977-2011), the FiSC data permit investigation of a wide range of important comparative policy issues for cities; issues that have resisted prior analysis. We give a number of examples to illustrate the potential uses of the FiSC data. For example, we show how spending comparisons between cities

can be fundamentally misleading unless one takes account of the varying roles of overlapping governmental units. We also show how the FiSC data can be used to benchmark fiscal data for one city against comparable cities, and reveal important patterns of fiscal stress over time.

The FiSC data are publicly available, in a very user-friendly format on the website of the Lincoln Institute of Land Policy. It is our hope that reading this paper will encourage policymakers, activists, analysts, and others interested in urban issues to avail themselves of this important new tool for understanding city finance.

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