The Impact of Tax Increment Financing (TIF)

On Local, Municipal Fiscal Health:

A Preliminary Assessment and Case Study

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Introduction

One often-raised feature of the use of tax increment financing (TIF) is the impact on the fiscal health of local governments. Supporters of TIFs regard them as opportunities to promote local business development without resorting to general revenue expenditures, while opponents note the diversion of future tax revenues lost to the coffers of municipalities and other public districts (Bower and Parish, 2005).

Research has demonstrated small, but significant, positive relationships between TIFs and such broader economic impacts such as increased jobs and sales tax revenues (Rogers and Winter, 2009), suggesting that the adoption of TIFs could be a net positive for local municipalities. Understanding the association between TIFs and their local fiscal impacts is, however, a more complicated task. First, it is not clear what the best measure of fiscal impact is. Most simplistically it is local tax revenue, which should increase as the TIF project is completed and public tax flows—primarily increased property taxes and local sales taxes—begin. Use of this measure does not take into account additional public costs that might accrue due to the new development, including local public service demand produced by users of the project. As opponents of TIFs have noted, modifications in the distribution of public tax flows impact not just municipal governments, but also school districts and other public governments that depend upon local taxes to fund their services and that might face increased service demands because of the TIF project.

Second, analysis of fiscal impacts is ultimately complicated by the lack of consistent and comprehensive data on local governments and measures of their fiscal health. Mead (2006) and Honadle, Costa, and Cigler (2004) summarize some of these measures. What they attempt to do is to provide the sort of nuanced view of local fiscal condition that balances the contributions of individual measures. Elsewhere, detailed municipal data have been used to create indices of municipal fiscal health in order to assess the condition of specific places and coordinate regional policy-making (New Jersey Pinelands Commission, 1999; The Association of Municipalities of Ontario, 2008).

One point relevant to this analysis is that any sort of historical perspective on the fiscal condition of municipalities requires data be consistently gathered and archived over a long time period. Metropolitan regions vary in their ability to collect data and interest in archiving and sharing data for local analysis. One recent effort by RubinBrown synthesize survey data from municipalities in the St. Louis Metropolitan to create a series of financial ratios detailing the overall financial health and ongoing challenges faced by local governments (RubinBrown, 2008). Other than their reports, access to this sort of fine-grained local data is limited in the St. Louis region. Even when state law requires all

municipal corporations to file financial data annually, generally compromising the sort of data that a Comprehensive Annual Financial Report (CAFR) would provide, there is no provision for easy access to this data, nor any requirement that it be archived over time. East West Gateway Council of Government (EWG) staff has made a significant contribution to local data by taking the first steps to compile a comprehensive municipal database, incorporating 15 years of data from 99 municipalities located within the EWG service area; this data serves as the main base of this analysis.

Accordingly, this analysis of the fiscal impact of TIFs represents a conditional, preliminary analysis of the impact of TIF on municipal financial measures. To do, the report shows the relationship between a variety of municipal characteristics, including TIF usage, and municipal financial health, including utilizing a fixed effects linear model to estimate the impact of TIF investment. The intent of the analysis is to provide a preliminary test as well as meaningful recommendations on how to expand local research on municipalities and how their financial condition has changed over time. Both the Ontario analysis (2008) and the RubinBrown reports (2008) represent good models for both data collection and analysis that could be replicated locally.

Because of data issues, the analysis focuses upon a group of 28 St. Louis County municipalities, the political jurisdiction in which the use of TIFs has been most prevalent and geographically consistent and where some basic form of municipal fiscal data has been made available. Figure 1 shows the location of these municipalities within St. Louis County.

[Insert Figure 1 here.]

While it would be preferable to analyze all municipalities in the EWG service area, the 28 used are the ones for which financial data is available over the 15 year period in which TIFs have been used (1993-2007). Additionally, the analysis is restricted to a number of simple financial ratios mostly involving municipal revenue and expenditures, developed in accordance with ratios used in the existing literature (Brown, 1993; RubinBrown, 2008). As such, these ratios capture just one part of the picture of municipal fiscal health. As discussed below, a more comprehensive set of indices might include additional information on municipal assets, debts and liabilities which at this point is not available.

The layout of the report is as follows. The first section reviews the basic data used in the analysis, including TIF data and municipal finance data. The second section reviews some of the main financial measures that scholars and local governments have used to evaluate municipal financial condition. This section of the report also summarizes the findings from a focus group conducted in the fall of 2009 of local

municipal finance officers about their perceptions of the fiscal solvency of local municipalities and the sorts of indicators that best capture financial health. While the literature review demonstrates the sophistication of approaches to measure municipal financial health, local data limitations restrict this analysis to several simple ratios. The section concludes with a description of how the measures were computed and how they can be interpreted.

Despite the limitations of the financial measures, the principle dataset used to create them allows for a relatively comprehensive set of measure across a 15 year period, from 1993 to 2007. The third section of the report summarizes the trend in these measures over time, emphasizing the municipalities in which there has been most change over the 15 year period. This section sets the stage for the fourth section of the report, in which the relationship between the financial measures and TIF usage are explored in more rigorous manner using a multivariate model. The final section of the report summarizes the findings and provides a general assessment on how TIFs impact financial conditions.

1.0 Description of Data

At the core, this report utilizes two types of St. Louis area data - data on local TIFs and municipal fiscal data.

The TIF data come from a database compiled by East-West Gateway staff, whose primary sources were local governments and state-level departments of economic development and revenue. University researchers at UM St. Louis and St. Louis University made significant additions to the database, including cleaning the database of duplicates, identifying the specific parcel locations of the TIFs and adding other detailed information on them, including when the TIF was adopted, who developed the TIF site and what the specific uses of the site are. The analysis in this report is based on the database as of August 31, 2009. In total, there are 338 TIF districts in six of the eight counties in East-West Gateway's service area—St. Louis City, St. Louis County and St. Charles County in Missouri and Madison County, Monroe County and St. Clair County on the east).

Table 1 lists the municipalities and corresponding TIF projects that the study uses, including when they were adopted, their general use, and the total TIF investment.

[Insert Table 1 here.]

In these municipalities there were 53 active TIFS, about 80 percent of the TIFs adopted in St. Louis County. The TIF amount comprises about 90 percent of the County's total TIF investment. The vast majority of the TIFs were specific project-based TIFs, not pay-as-you-go district TIFs. The majority (31) are retail developments. Six municipalities used in the analysis have not used TIFs. They are Clayton, Edmundson, Ellisville, Ladue, Riverview, and Wildwood.

[Insert Figure 2 here.]

Figure 2 provides a count of TIFs by the year they were adopted. It ranges from the earliest years of TIF usage, peaking in 1997 and falling since that point. Only 25 percent of the TIFs have been adopted since 2000, reflecting the general decline in the use of the incentive in more recent years and the general decline in the development of new big-box projects in St. Louis County as the restructuring of the area's retail sector reaches its current equilibrium.

The limitation of the cases used in this analysis is they do not comprise a representative sample of municipalities in St. Louis County. Analysis based upon the full population of municipalities would be best, but those data are not easily accessible.

Moreover, the cases include many more TIF using than non-TIF using municipalities. On that basis, therefore, caution must be taken in using the findings in this report to make inferences about local municipal fiscal condition generally.

The other data used in the study are municipal fiscal data, with East West Gateway again being the primary source of the data. Data on the selected municipalities has been added using the St. Louis County Fact Book (2007) and the U.S. Census Bureau (2007). The source of EWG's data file is mainly municipal CAFRs provided by local governments or acquired through the Office of the Missouri State Auditor as a part of its regulatory authority. Despite the presence of state law requiring the annual submittal of municipal fiscal data (RSMO 105.145), there is no system for effectively enforcing the requirement, making filed reports easily available to the public or archiving the reports over time. Local governments in St. Louis County likewise varied in their ability or willingness to share CAFR-related data, particularly data that would show fiscal conditions before the adoption of TIFs—which for 80 percent of these projects would be in the early and middle 1990s.

The reality is, then, that municipal fiscal data are much more limited than would be required a robust analysis of the impact of TIFs. Additionally, even when data are available, they are in a much more limited form than what is advocated by specialists who analyze the fiscal health of cities. In general, the fiscal data used for this report comprise data from 1993 through 2007 including revenue data, taxing data and expenditure data. While the CAFR data have other measures, relating to expenditures within certain categories and other types of government revenue, most of these data are not available for the cases in a manner that would warrant their investigation. Additionally, there is variability in the fiscal year used by local municipalities. The definition of fiscal year is generally consistent within municipalities, justifying the development of comparisons in the measures across municipalities over time.

Even within this relatively small set of data points, there remain some cases that are missing data. Table 2 summarizes the data coverage for each of 28 municipalities.

[Insert Table 2 here.]

The most significant omission in the data involves local sales data, which is entirely missing for Chesterfield, Eureka, Ladue, Riverview and Sunset Hills and missing in various years for another eight municipalities. Despite these limitations, the dataset is comprehensive enough to make meaningful comparisons between the cases, particularly involving financial measures that use total revenue, total taxes and total expenditures as the main data points.

2.0 Review of Municipal Financial Measures

As Berne (1992) writes, "there is ambiguity over the definition and measurement of financial condition." In his 2006 synthesis of research in the area, Meade (2006) notes that most measures include some combination of six related indicators of both municipal condition and economic condition:

- net assets and fund balances;

- annual revenues and expenses;

- changes in revenues bases;

- expenditure needs;

- debts and debt service; and

- liquidity.

Broader indices, such as those advocated by Ives and Schanzenbach (2001), have contextual factors that might impact financial condition, including socio-demographic characteristics.

Analysis of municipal financial health has been developed both in the field of municipal management and in scholarly literature. Perhaps the oldest and best know of them is the Ten-Point Test of Financial Condition, created by Kenneth Brown (1993). The tool applies 10-ratios of revenues, expenditures, operating position, debt structure, and, while requiring few data points, is relatively comprehensive in its assessment. On the other hand, the tool has been criticized as an assessment of only one year of data (Honadle, Costa, and Cigler, 2004). On the other end of the spectrum, the Financial Trend Monitoring System (FTMS) created by the International City Management Association (Groves and Valente, 1994) includes 36 indicators—30 ratios and 6 data items measured over a five year trend—and serves not just a measure of financial stability but also as part of a proactive system of municipal data management. However, the effectiveness of the system is limited by both its complexity and general unavailability of all 36 indicators for many local municipalities. Thus, one recent assessment of the tool concludes that there was practically no potential for comparability using it (Honadle, Costa and Ciglar, 2004).

Brown and ICMA represent two of the types of applied fiscal instruments, but more sophisticated systems have attempted statistical modeling to balance a variety of local factors. Chernick and Reschovsky (2008) define municipal financial health as the

local level of fiscal gap, calculated as the difference between expenditure need and revenue raising capacity. Expenditure need is calculated by a formula that includes the following factors:

- The standard level of a public service in a metropolitan area as agreed to by policy makers. In the absence of such agreement median per capita spending is used.

- A local service responsibility index. According to the authors, this can be difficult to compute in a metropolitan area with a large number of municipal governments that vary significantly in the level of service provided.

- A cost index which can be calculated one of three ways: estimating *cost functions* requires measures of public good output, which requires substantial amounts of data; estimating *expenditure functions*, which creates the difficulty of separating the impacts of preferences from the impacts of costs; or, the professional judgment approach, where a panel of experts defines the basic/adequate level of public service.

Revenue raising capacity can be measured in one of three ways:

- Representative tax system (RTS), which is a weighted sum of the various jurisdiction tax bases, where weight for each base is the average tax rate for a particular tax;

- Total taxable resources, a standard tax burden on the total local economy; or,

- Maximum revenue, which calculates the local tax rate that maximizes revenue.

While this creates a theoretically sound measure, it requires either uniform historical data or a process for establishing local consensus on fiscal terms.

Applied Municipal Fiscal Health Analysis

Beyond the discussion about what constitutes the most efficient and effective assessment of municipal health, there are a number of examples of how government officials have used assessment tools around regional decision-making. In 1999 the 53-member Pinelands Municipal Council requested the New Jersey Pinelands Commission conduct a "special project to identify and characterize municipalities experiencing poor health," defining poor health as "being below a given standard with respect to municipalities' social, economic, physical, and fiscal conditions (New Jersey Pinelands Commission, 2008)." The Commission conducted the study as an extension of its Long-Term Economic Monitoring Program and specifically wanted to test the hypotheses that the existence of certain regulations was increasing the fiscal stress of local municipalities.

In its 2008 draft report, the Commission describes the emphasis of the study on fiscal stress, but incorporates social, economic, and physical indicators to create an overall measure of municipal health. The study weighted nine variables (per capita income, poverty rate, unemployment rate, total equalized property values per capita, gross debt per capita, gross debt as a percentage of property value, effective tax rate, tax burden per capita, and tax burden as a percentage of income) to calculate a fiscal stress index (FSI) for each of 562 New Jersey municipalities.

A complementary example comes from the Association of Municipalities of Ontario, an association of 444 municipal governments in the Province of Ontario, including Toronto. In 2006, the Association initiated a process to review service delivery accountability, infrastructure issues, and fiscal architecture and economic competitiveness. A working group was established for each of the three review areas.

Of most interest in the report, the association's fiscal health working group utilized 26 indicators collapsed into six categories: property taxes (2), assessment base (6), municipal costs (6), demographics (5), economic (3), and financial (4).

Undergirding the collection and analysis of data was the fact that the Association maintains financial data in its Municipal Information & Data Analysis System (MIDAS), including Financial Information Return (FIR), collected by the Ontario Ministry of Municipal Affairs and Housing. As with other municipal fiscal health indicators, the Ontario analysis used the data to compare municipalities and in clusters. The indicators were grouped to compare fiscal health across six sub-geographies within the province including Toronto, the Greater Toronto Area, and four nonmetropolitan sections of the province.

Assessments of St. Louis Area Municipal Fiscal Health

On October 23, 2009 six municipal finance officers participated in a focus group on municipal fiscal health. The participants were recruited through the Greater St. Louis Finance Officers Association. East-West Gateway staff provided questions which were incorporated into the protocol for the focus group.

The participants identified several factors that have impacted municipal fiscal condition: increasing cost of health care; Hancock Amendment requirements for voter approval of all revenue actions; and, defined benefit pension plans

The fiscal solvency of municipalities over the past decade has been sustained by a number of revenue enhancements: telecommunications settlements (*State of Missouri, et al. v SBC Communications, et al.*); red light photo camera fines; utility rate increases (the

gross receipts tax is a percentage of utility bills); and, state enabling legislation for additional sales tax options. The participants reported that municipalities in metropolitan St. Louis have been able to maintain above average fund balances

The focus group participants indicated the Hancock Amendment requirement for voter approval of revenue measures has limited municipal fiscal options. While there may be many cases where municipalities chose not to present a tax or fee increase to voters, data indicate that during the decade from February 2000 to November 2009 there were 255 fiscal measures on the ballot among the municipalities in St. Louis County. These measures included new or increased sales taxes, utility tax increases, sewer lateral and a variety of other fees. Seventy-one percent of these revenue enhancements were approved by voters.

Another view of the financial health of local municipalities can be found in surveys conducted in 2007, 2008, and 2009 by the CPA firm RubinBrown LLP of statistical and financial information of municipalities in the St. Louis and Kansas City metropolitan areas. The survey sample included municipalities of over 5,000 residents but excludes the City of Kansas City and the City of St. Louis. In St. Louis County for example this sampling strategy includes only 42 percent of the municipalities. While the results cannot therefore be generalized across all municipalities in a metropolitan area, they do provide data for the 35-37 that responded to the survey. Using a methodology similar to Brown (1993), the survey collects data to calculate 18 ratios which are then divided into quartiles for purposes of analysis. The ratios are reported in three broad categories: government-wide, governmental fund, and general fund.

The survey results reinforce comments made by the financial officers that participated in the focus group. Up to the present, municipalities are in stable fiscal health with high liquidity ratios and low debt ratios. However, as the fiscal officers warned, the future appears to hold serious challenges. Costs will rise faster than revenues and cost control will only manage the problem for a short period of time. RubinBrown's observations about the differences between municipalities in the St. Louis and Kansas City areas provide important insights that could inform the difficulty of passing statewide municipal fiscal legislation in the coming years. The needs of the younger, growing municipalities in the Kansas City area are different from the needs of the older, stable St. Louis area municipalities. Legislators from these two metropolitan areas are likely to view fiscal reform initiatives very differently.

Description of Measures Used in St. Louis Analysis

Given the paucity of St. Louis area municipal data, creation of such multi-faceted indices of financial and economic condition is beyond the scope of this analysis. Accordingly, the analysis focuses on a much more limited set of financial ratios that can be created with data from the annual CAFR data provided by EWG. These include four measures identified in the literature (Brown, 1993; RubinBrown, 2008; AMO, 2008) as indicating the strength of municipal finances:

1. Revenue/population: total annual revenue over municipal population;

2. Taxes/population: total annual taxes over the municipal population;

3. Expenses/population: total annual expenses over the municipal population; and

4. Revenue/expenditures: total annual revenue over total annual expenditures.

The first three ratios operate under the "smaller is better" rule. A lower revenue/population ratio indicates the ability of local governments to acquire additional revenues (Brown, 1993). A lower taxes/population ratio indicates the ability of municipalities to increase taxes to generate more revenue (RubinBrown, 2008). A lower expenses/population ratio means local governments can increase services (RubinBrown, 2008). The fourth ratio operates under the "higher is better" rule; over "1" would indicate the municipality brought in more in revenue in that year than it spent.

With the data provided in the EWG data file, these four ratios can be calculated for each of the 28 municipality in pretty much every year from 1993 through 2007. This provides a consistent and comparable measure of municipal financial health for a fairly broad period. The limitation is that, on their own, these ratios provide a very limited view on the complete picture of financial condition. Thus, results based upon them should be taken with a high degree of caution and additional analysis would be required for generalization.

3.0 Trends in the Financial Measures

Because the municipal data include a relatively comprehensive set of indicators from 1993 through 2007, one initial assessment is how the measures vary across time and across other aspects of local municipalities including TIF usage. Visualization of these trends and relationships is difficult because of the number of cases; consequently, this portion of the analysis relies upon showing overall trends and trends related to groups of municipalities based upon shared characteristics.

[Insert Figure 3 here.]

Figure 3 shows a box plot graph of revenue per population for all the municipalities from 1993 to 2007. In general terms, the blue boxes and blue lines emerging vertically from them show the basic distribution of the data. Points above them are outliers, cases with values far above the normal distribution of the data for that year. The graph shows how the range of the measure has increased over the study period, with most municipalities below $1,000 in 1993, whereas by 2007 a significant portion of the cases had values above $1,000.

[Insert Figure 4 here.]

Figure 4 shows a similar graph for expenditure per population. The graph shows a trend in the expansion of the distribution of the financial measure over the 15 year period, with most cases confined to less than $1,000 per resident in 1993 and much higher values after 2002. As in Figure 3 there are a set of cases with high values per population for the 15 years.

[Insert Figure 5 here.]

Figure 5 shows a box plot of taxes per population from 1993 to 2007. Again, the measure shows a distinct spread over the 15 year period, with a clear set of outliers for many of the years.

[Insert Figure 6 here.]

Finally, Figure 6 shows a box plot of the final financial measure, revenue per expenses from 1993 through 2007. Partly because of how the measure is computed, the data take on a somewhat different form—a pattern of both expansion and contraction of the distribution over time—as well as outliers both above and below the normal distribution of the data.

One point of note in the graphs is the outlier cases. In terms of the first three measures—revenue per population, expenses per population and taxes per population—these comprise a regular set. Fenton, Brentwood and Richmond have consistently higher values than the rest of the data. Less consistent are cases like Des Peres and Clayton. What these outliers reflect is the inadequacy of the financial measures in capturing the characteristics of municipalities that have revenue generators largely supported by other sources than the local population. For Fenton, this would be the former Chrysler auto plants. For Brentwood, Richmond Heights and Des Peres various retail establishments, and for Clayton the area's commercial and office sector.

Trends in Revenue per Expenses Ratio, 1993 through 2007

For the revenue per expenses measure, the group of outliers is more idiosyncratic. Given the computation of the measure, the interpretation is that higher is better, with values over 1 representing positive equity. Implicitly, a change in the measure over time indicates a worsening financial situation. Table 3 shows the change in the revenue per expenditure measure for each of the municipalities over the 15 year period.

[Insert Table 3 here.]

The data are sorted by the type of change. At the top of the table, the "negative to negative" category are municipalities that had negative annual equity at the beginning of the study period and that saw a decrease in that measure through 2007. The "positive to negative" category is municipalities with positive equity in 1993, but negative equity in 2007. By contrast, the "negative to positive" category indicates municipalities with a negative annual equity in 2003 and a positive equity to 2007. The final two categories represent municipalities with positive equity measures in both years, with the "positive decreasing" category showing a decline and the "increasing positive" an increase over the 15 years.

[Insert Figure 7 here.]

It should be noted that most of the municipalities show some degree of variability across the 15 years, with periods of increases as well as decreases in the revenue per expense measure. Figure 7 shows the annual trend for the measure from 1993 through 2007 for municipalities in the first category—"negative to negative." Of the five municipalities, the most significant downward trend in this analysis is for Jennings, whose revenue per expenditure ratio dipped to 0.4 in 2007.

[Insert Figure 8 here.]

Figure 8 shows the annual trend for the revenue per expenditure measure for municipalities in the "positive to negative" category. The municipalities fit into two groups based upon their trends. On the one hand, Chesterfield exhibits a deep downward trend throughout most of the 1990s, and a modest recovery since that point. On the other hand, other municipalities were mostly positive through the 1990s, a downward shift after 2000, and a gradual upward trend more recently.

[Insert Figure 9 here.]

Figure 9 shows the annual trend in revenue per expenditures for the "negative to positive" category. The trends within this group of municipalities represent a more mixed set than the others. In general, most of the cities swing both above and below the "1" line.

[Insert Figure 10 here.]

Finally, Figure 10 shows the annual trend line for the final group of municipalities, the group that had positive annual equity in 1993 and also positive equity in 2007. Like the last category, the trends are a mixed bag, with most of the municipalities ranging above and below the reference line throughout most of the period. The group, however, does include a small number of municipalities with positive annual equity across most of the period, including University City and Riverview.

Trends in the Other Financial Ratios, 1993 through 2007

Like the revenue per expenses ratio, the other three ratios can be used to show municipal trends over the 15-year study period. These ratios—revenue per population, taxes per population and expenses per population—each operate under "less is more," with smaller ratios indicating the capacity of the local government to generate new revenues, increase local taxes and provide more local services.

[Insert Table 4 here.]

Because the three ratios are highly correlated with each other, table 4 shows the average percent change in the three ratios from 1993 to 2007. Given the interpretation of the three financial ratios, an increase in the ratios over the 15 year period means a worsening municipal financial condition. All of the municipalities have seen an increase in these ratios since 1993, with averages ranging from 169 percent for the revenue per population to 196 percent for expenses per population. The table colors the cases where the municipal rate of increase is greater than the average for all cases. While there is a consistent set of municipalities that have high percentage increases for all three ratios— including Maryland Heights, Des Peres, Chesterfield, Brentwood and Fenton—and some

of these municipalities have been significant TIF users, it is difficult at this level to ascertain whether TIF usage is a significant factor in the change in the ratios.

Unlike the annual trend data associated with the revenue per expenses ratio, the trend data associated with the other three ratios can be much more clearly interpreted. Figure 11 shows the annual trend of the revenue per population ratio from 1993 through 2007; for the sake of brevity, only the municipalities with percentage increases greater than the county average are shown. Leading the pack in terms of increases is Fenton, followed by Brentwood and Des Peres.

[Insert Figure 11 here.]

Figure 12 shows a similar annual trend for the taxes per population ratio; again the graph is restricted to those municipalities who had percent increases greater than the average for all of the cases. Fenton, Brentwood and Des Peres lead the group in the increase in the ratio.

[Insert Figure 12 here.]

Figure 13 shows the annual trend for the expenses per population ratio; the graph only shows the municipalities who had percent increases greater than the overall average. Similar to the last two graphs, Fenton, Brentwood and Des Peres lead the group in the increase in the ratio over the 15 year period.

[Insert Figure 13 here.]

Trends in Local Sales Taxes, 1993 through 2007

The trend graphs shown above demonstrate how a small group of municipalities have had large increases in the financial ratios used in this report to analyze the fiscal condition of municipalities. The limitation of these ratios is that they only show one aspect of local financial health and are biased against municipalities that are large revenue generators—either as the location for large manufacturing facilities or retailing. Given how these ratios are defined, they suggest that this smaller group of municipalities may be in a worse position now than in 1993. They will be less able to raise additional revenue, gather additional taxes or provide additional services. However, a more balanced conclusion is probably that municipalities with increasing ratios might face future financial difficulties if there are serious declines in revenue or local taxes—due to, for example, a prolonged decline in local retailing or closing of a particularly large and important manufacturing facility—and the municipality is unable to significantly cut back expenses that had previously been funded out of this revenue stream.

A part of this local vulnerability might be related to the degree to which local municipalities are dependent upon particular types of revenue streams. In the literature on municipal financial health, this is generally posed in the form of dependence upon external revenue sources, for instance intergovernmental aid. Unfortunately, missing data in the EWG data set on intergovernmental aid makes comparisons between municipalities impossible. It is possible, however, to compare most of the municipalities on their reliance on local sales taxes. Developing a clear sense of the trend is difficult because some of the municipalities are missing data for both the beginning and end of the period.

[Insert Table 5 here.]

As a simplified view, Table 5 shows the average local sales taxes per revenue for the 15-year period. The table colors the municipalities with an average ratio above the average for the entire set of municipalities. They include some of the municipalities that also had large percent increases in the other financial ratios, specifically revenue per population, taxes per population and expenses per population.

[Insert Figure 14 here.]

Figure 14 shows the annual trend in local sales taxes per revenue for the municipalities with an average over the 15-year period higher than the average for the sample. The graph demonstrates the continuing reliance of a certain set of municipalities on local sales tax revenues, including Fenton, Crestwood, Richmond Heights and Chesterfield. Brentwood also ranks high, although the data is missing for most of the period.

Relationship between TIF Usage and Sales Tax Distribution

The reliance of some municipalities on sales tax revenue indicates a number of insights can be discerned about the use of TIF among St. Louis County municipalities by classifying them based on the sales tax distribution. In St. Louis County, municipalities fall into three groups. Municipalities classified as "A" are all point of sale – sales tax collected within the municipality is retained by the municipality, except the 12.5 percent contributed to the pool as required in 1993 by the Missouri Legislature. Those classified as "A/B" are primarily point of sale, but have annexed areas that were "B" and that portion of the municipality remains "B". The "B" municipalities received a per capita distribution of sales tax from a County-wide pool, the so-called 'pool' cities.

[Insert Table 6 here.]

Table 6 lists all of the municipalities in St. Louis County and their sales tax status. From the table, a number of relationships can be identified.

1. *Approved/Implemented TIF projects*: A total of 86 TIF projects were approved by the 35 municipalities included in Table 6. Of those approved projects 62 (72 percent) were implemented. Of the implemented projects 71 percent were in "A" or "A/B" municipalities. In the "A" municipalities 22 of 28 projects (78.5 percent) were implemented; 22 of 32 (68.75 percent) in the "A/B" group; and, 18 of 26 (69 percent) in the "B" group.   Overall 26 of the 86 TIF projects (30 percent) were in pool jurisdictions.

2. *Implemented projects/Retail projects*: In the "A" group 13 of 22 implemented projects (59 percent) were retail. In the "A/B" group 15 of 22 (68 percent) were retail. And in the "B" group 11 of 18 (61 percent) were retail. Overall 39 of the 62 implemented projects were retail (63 percent) and 11 of the 39 retail projects (28 percent) were in pool jurisdictions.

In addition to examining TIF projects relative to the sales tax distribution status of the jurisdiction, the level of service provided directly by the municipality provides some insight to TIF usage. There is only one service area where municipalities and special districts both operate in St. Louis County – fire protection. There are 19 municipalities in St. Louis County that operate a fire department. Of the 19 municipalities with fire departments, 14 (74 percent) approved TIF projects. Of the 39 retail TIFs, 24 (61.5 percent) were in municipalities with fire departments. Of the 13 retail projects in the "A" group, 12 (92 percent) were in municipalities with fire departments; in the "A/B" group 8 of 15 (53 percent) were retail projects in municipalities with fire departments; in the "B" group 4 of the 11 (36 percent) were retail projects in municipalities with fire departments.

4.0 Multivariate Model of Municipal Financial Condition

At this level, the trend data doesn't say much about the relationship between changes in the financial measures and TIF usage. Additionally, it is self-evident that a municipality's financial condition is a function of a whole range of economic, demographic and financial factors. The next step, therefore, is to more rigorously assess how TIF usage and these other sorts of factors might influence municipal financial condition.

To do so, the analysis develops a fixed-effects linear regression model using panel data on each of the municipalities in the sample for each year from 1993 through 2007. While models could be estimated for each of the four financial measures, three of them are highly correlated with each (revenue per population, taxes per population and expenses per population) and so only the first, revenue per population, will be used. Additionally, the trend analysis of the revenue per expenditures ratio suggest that it is much more variable from year to year and thus is less consistent as an indicator of a general trend over the period. Consequently, it will be excluded from this part of the analysis.

Predictors of the financial measures include two variables capturing the use of TIFs: total TIF investment for a project and total years of an active TIF. The first variable uses the total TIF investment for TIFs in the municipality recorded in the first year the TIF started. The second variable counts the number of years a TIF is active starting in the year after the TIF started.

The model also includes data on other predictors of municipal health gathered from the 2007 County Factbook (St. Louis County Department of Planning, 2007). These four variables relate to the ability of a municipal to raise revenue:

- assessed value of residential property, per capita (2007), and

- utility gross receipts tax rate.

The data also includes whether the municipality provides fire service, either directly or by contract, as an assessment of added municipal service responsibility.

Finally, the model includes two measures that capture the socio-demographic characteristics of the municipality:

- median household income (2000),

- percent of persons below the poverty line (2000) and

- unemployment rate (2000).

There are a series of dummy variables indicating the year of the data, to capture additional fixed effects.

[Insert Table 7 here.]

Table 7 shows the results from the regression of revenue per population (excluding coefficients for the fixed effects). The model explains about 75 percent of the variation in the dependent variable and most of the variables are in the direction expected, with the exception of the Utilities Gross Receipts Tax, which is negative and significant. Most notably, TIF usage predicts an increase in the ratio, both in terms of the dollar amount invested and each year of TIF activity. Interpretation of the slope coefficients is difficult given how the dependent variable is measured. However, given that the average revenue per population ratio for TIF using cities was 513 in 1993, the impact of TIF is fairly modest—accounting for an average increase of less than 1 percent of that basis per $1 million of TIF investment over the period and about 1.5 percent increase per year of TIF activity. Much more significant in terms of the increase in the revenue per population ratio appears to be whether a city has a municipal fire department—accounting for an increase of about 400 in the ratio.

5.0 Conclusion

This report provides an initial assessment of the impact of TIF usage on municipal fiscal health. The assessment is complicated by both the limited data available on municipal finances as well as the complexity of how to measure financial condition. Given these limitations, the analysis applies four common measures of municipal financial condition relating to easily available CAFR data—revenue per population, taxes per population and expenses to population. The three measures are highly correlated given the fact that each use population as the denominator in their construction. Following the standard of scholarship, the interpretation of the three tests is that smaller is better. Thus, less revenue per population means the ability to expand revenue sources; lower taxes per population means the ability to raise additional taxes; and, lower expenses per population means the ability to increase government services. A fourth measure is investigated, but ultimately not used for the most rigorous tests.

In terms of trends over time, the analysis finds that there are a consistent set of municipalities for whom the financial measures have been increasing over the last 15 years. While these include cities that have been large TIF users—Brentwood, Des Peres and Chesterfield—they also include other municipalities that have large revenue generators that rely upon external factors, such as Fenton in terms of automobile plants. This suggests that on their own these measures may not be an accurate view of municipal financial distress. However, the fact that most of the municipalities with rapidly increasing measures also are highly reliant on local sales taxes for their revenue does suggest a potential future problem should sales tax revenues fall—because of either the loss of facilities or a decline in retail—and the municipality is unable to reduce municipal spending.

Finally, the report presents findings from a model of revenue per population using a relatively simple fixed-effects panel data model. The model finds that TIF usage operationalized both as TIF investment per year and the total number of years a TIF has been active both predict an increase in the financial revenue—and under the interpretation of the measure signal increased distress—but that these effects are rather modest.

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Tables and Figures

Table 1: TIF Usage by Selected Municipalities

City	Name	Use	Type	Start Year	TIF Amount
Ballwin	Ballwin Town Center TIF	Lowes	retail	1999	5,000,000
Berkeley	Berkeley	Northpark	commercial	1995	
	Berkeley Lumber	Berkeley Lumber	commercial		869,000
	Lambert Airport East	Vatterott	commercial	2006	
Brentwood	Eager Road Development Phase I	Target	retail	1996	20,500,000
	Eager Road Development Phase 2 & 3	Dierbergs	retail	1996	6,500,000
	Kenilworth Redevelopment/Brentwood Town Center	Whole Foods, REI	retail	1999	12,500,000
	Hanley/Eager Road Redevelopment/The Meridian	Best Buy	retail	2000	19,600,000
	Hanley/Strassner/Hanley Station	Condos, retail	mixed	2007	5,000,000
Chesterfield	Chesterfield Valley	Sam's Club, WalMart	retail	1994	72,507,000
Crestwood	Crestwood Point	Shop N Save, Walgreens	retail	1998	2,285,000
	Watson Plaza	Kohl's, Walgreen's	retail	2004	2,000,000
Creve Ceour	Creve Coeur		commercial	1989	2,500,000
	City Place III/IV Redevelopment Project	Marriot	commercial	1997	1,080,000
Des Peres	Manchester/Ballas Redevelopment/West County	Nordstroms	retail	1997	29,800,000
Eureka	Brewster Howerton	Roto-Die Company	industrial	1990	1,800,000
	West Fifth Street Redevelopment/Eureka Town Center	Wal-Mart	retail	1997	4,250,000
Fenton	Dierberg's Fenton Crossing	Dierbergs	retail	1998	7,460,000
	Gravois Bluffs Redevelopment	Wal-Mart	retail	1998	40,275,000
Ferguson	Ferguson	Wal-Mart	retail	1988	1,400,000
	East Woodstock Road TIF District	Emerson Electric	commercial	1989	
	Halls Ferry/270/The Crossing at Halls Ferry	Home Depot, Shop N Save	retail	1997	7,282,000
	Ferguson/Downtown	various	mixed	2002	12,500,000
	Lambert Airport East	Vatterott, others	commercial	2006	
Florissant	Cross Keys	Schnucks, Home Depot	retail	2004	15,500,000
	Koch Plaza	Shop N Save	retail	2007	1,800,000
Hazelwood	370/Missouri Bottom Road Redevelopment/Mills Mall	Mills Mall	retail	1998	17,029,000
	Elm Grove Redevelopment	Walgreen	retail	1999	3,600,000
	Lambert/Hazelwood -Hazelwood Commerce Center	various	commercial	2008	17,000,000
Jennings	River Road TIF Area	Louisa Foods	industrial	1997	550,000
	Stout TIF	Stout Marketing	industrial	1997	800,000
	Northland/Buzz Westfall Plaza	Target, Schnuck	retail	2003	17,000,000
Kirkwood	Meacham Park Redevelopment Project	Lowes, Walmart	retail	1994	15,430,000
	Pioneer Place	various	retail	1995	2,580,000
Maplewood	Deer Creek	Kmart	retail	1990	772,500
	S Big Bend TIF Redevelopment/Sunnen Business Park		commercial	1991	4,725,000
	Maplewood Square	Shop 'N Save	retail	1997	4,870,000
	Hanley/Folk/Lowe's	Lowe's	retail	2005	9,500,000
Maryland Heights	South Heights Area/Lakeside Crossing	Monsanto	commercial	1995	31,100,000
	East Dorsett Redevelopment District	various	commercial	2003	29,500,000
Richmond Heights	St. Louis Galleria Redevelopment	Macy's, Nordstrom's	retail	1989	14,500,000
	Francis Place/The Boulevard	various	mixed	2003	15,402,194
St. John	ST JOHN I (I170 Business Center)	various	industrial	1995	2,250,000
	ST JOHN V	Senior center	residential	1995	382,000
	ST JOHN VI		commercial	1997	
	ST JOHN VII		commercial	2002	
	ST JOHN VIII	Shop N Save	retail	2003	5,625,000
	ST JOHN IV		commercial	2007	
	ST JOHN II	Drury Hotel	leisure	1990	1,000,000
Sunset Hills	Sunset Plaza II/Plaza at Sunset Hills	Home Depot, Petsmart	retail	1996	7,800,000
	Sunset Plaza I/Shoppes at Sunset Hills	Toys R Us	retail	1997	750,000
University City	Olive East TIF	Schnucks	retail	1994	2,551,600
Webster Groves	Old Orchard TIF District	various	retail	1989	1,640,000
	Shoppes at Old Webster	various	retail	1999	4,000,000

Source: East-West Gateway COG, others

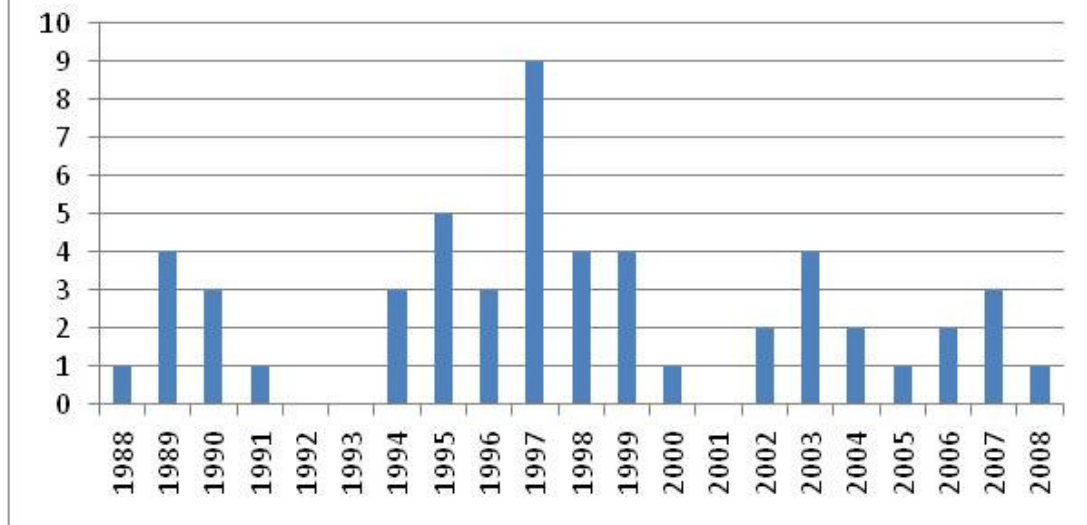Figure 2: TIF Usage by Year, Selected Municipalities

Table 2: Availability of Municipal Fiscal Data, Selected Municipalities in St. Louis County

Municipalities	Total Revenues	Total Taxes	Total Local Sales Taxes	Total Expenditures
Ballwin	1993 - 2007	1993 - 2007	1993 - 2007	1993 - 2007
Berkeley	1993-2002, 2004-2007	1993 - 2007	2000-2007	1993-2002, 2004-2007
Brentwood	1993 - 2007	1993 - 2007	1993 - 2005	1993 - 2007
Chesterfield	1993 - 2007	1993 - 2007	missing	1993 - 2007
Clayton	1993 - 2007	1993 - 2005	1993 - 2005	1993 - 2007
Crestwood	1993 - 2007	1993 - 2007	1993 - 2007	1993 - 2007
Creve Coeur	1993 - 2007	1993 - 2007	1993-2000	1993 - 2007
DesPeres	1993 - 2007	1993 - 2007	1993 - 2007	1993 - 2007
Edmundson	1993 - 2007	1993-2006	1993-1995	1993 - 2007
Ellisville	1993 - 2007	1993 - 2007	1993	1993 - 2007
Eureka	1993 - 2007	1993 - 2007	missing	1993 - 2007
Fenton	1993, 1995 - 2007	1993, 1995 - 2007	1993, 1995 - 2007	1993, 1995 - 2007
Ferguson	1993 - 1995, 1997 - 2007	1993 - 2007	1993 - 2002	1993 - 2007
Florissant	1993 - 2007	1993 - 2007	1993 - 2007	1993 - 2007
Hazelwood	1993 - 2007	1993 - 2007	1993 - 2007	1993 - 2007
Jennings	1993 - 2007	1993 - 2007	1993 - 1996, 1998 - 2007	1993 - 2007
Kirkwood	1993 - 2007	1993 - 2007	1996 - 2007	1993 - 2007
Ladue	1993 - 2007	1993 - 2007	missing	1993 - 2007
Maplewood	1993 - 2007	1993 - 2007	1993 - 1999	1993 - 2007
Maryland Heights	1993 - 2007	1993 - 2007	1993 - 2007	1993 - 2007
Richmond Heights	1993 - 2007	1993 - 2007	1993 - 2007	1993 - 2007
Riverview	1995-2005, 2007	1995-2005, 2007	missing	1995-2005, 2007
St. John	1993-2004, 2006-7	1993 - 2007	1993-1995, 1997-2003	1993 - 2007
Sunset Hills	1993 - 2007	1993 - 2007	missing	1993 - 2007
University City	1993 - 2007	1993 - 2007	2003 - 2007	1993 - 2007
Webster Groves	1996 - 2007	1996 - 2007	1996 - 2007	1996 - 2007
Wildwood	1996 - 2007	1996 - 2007	1996 - 2007	1996 - 2007

Source: East-West Gateway COG
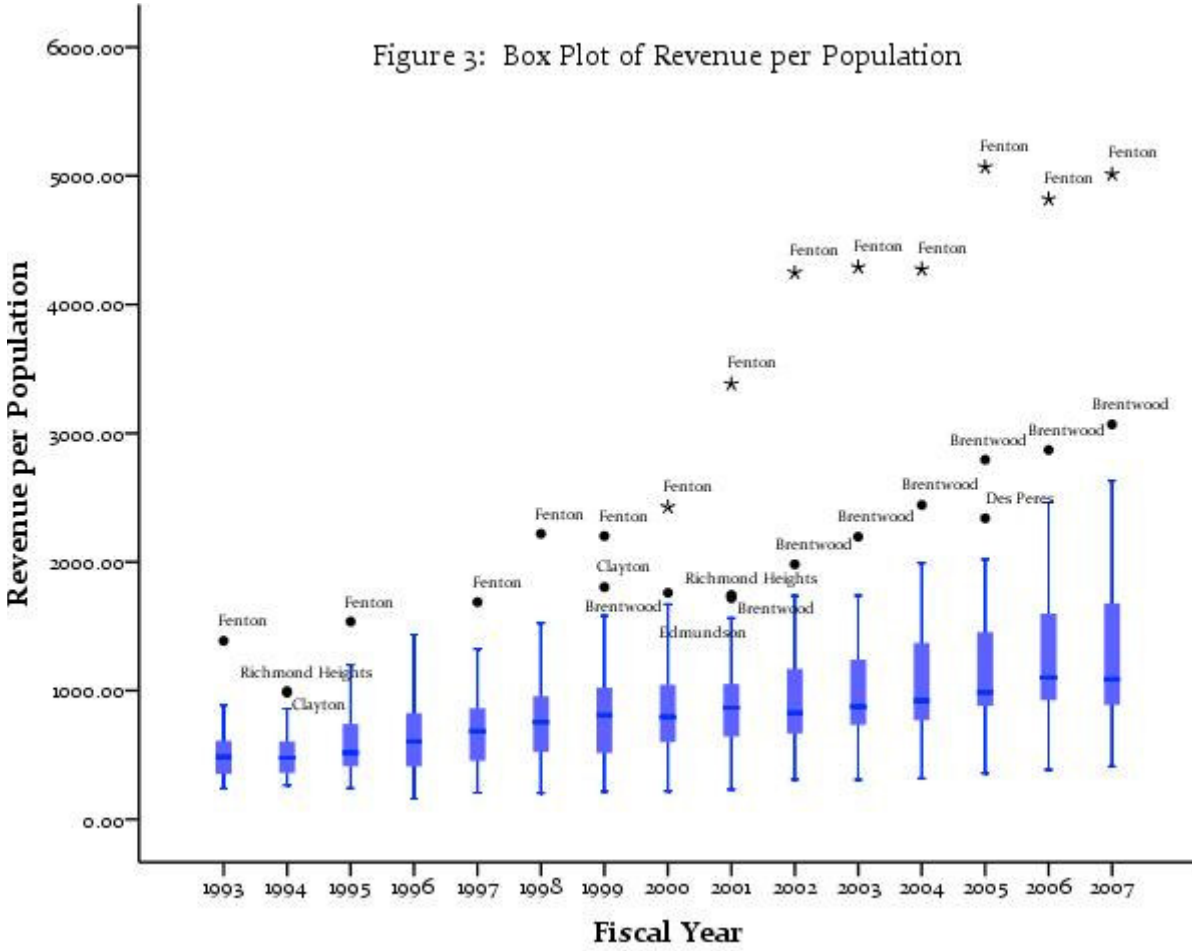
Figure 3: Box Plot of Revenue per Population
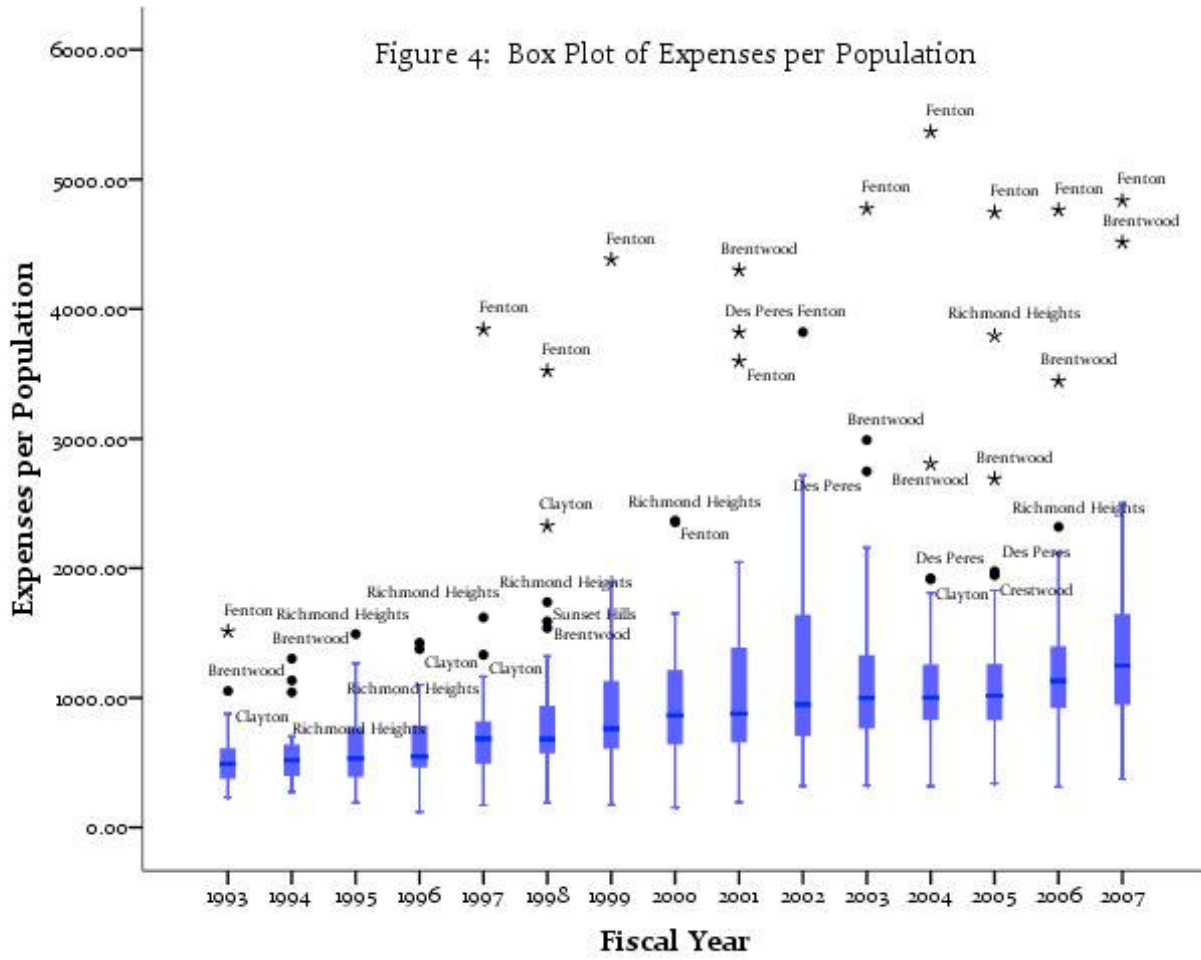
Figure 4: Box Plot of Expenses per Population
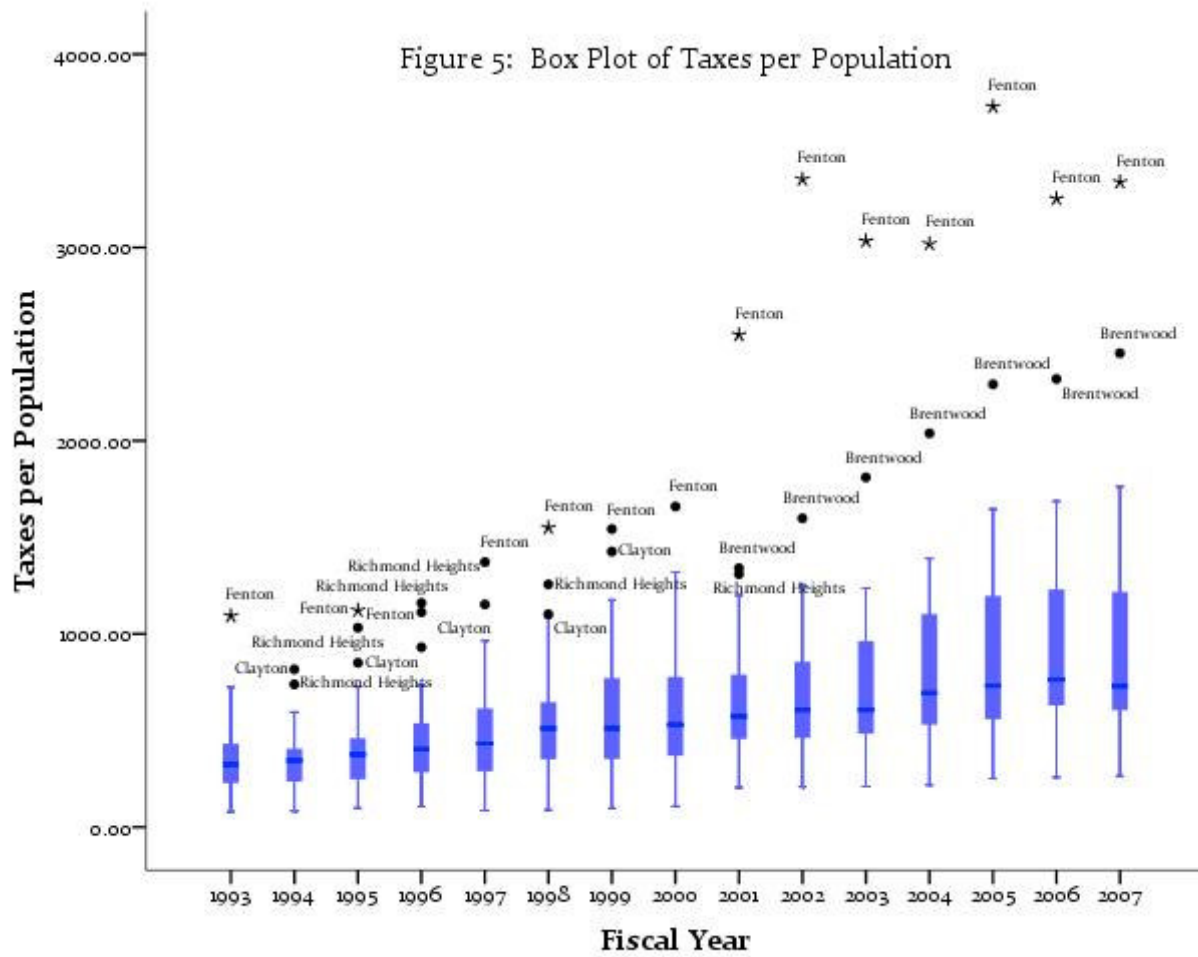
Figure 5: Box Plot of Taxes per Population

Figure 6: Box Plot of Revenue per Expenses

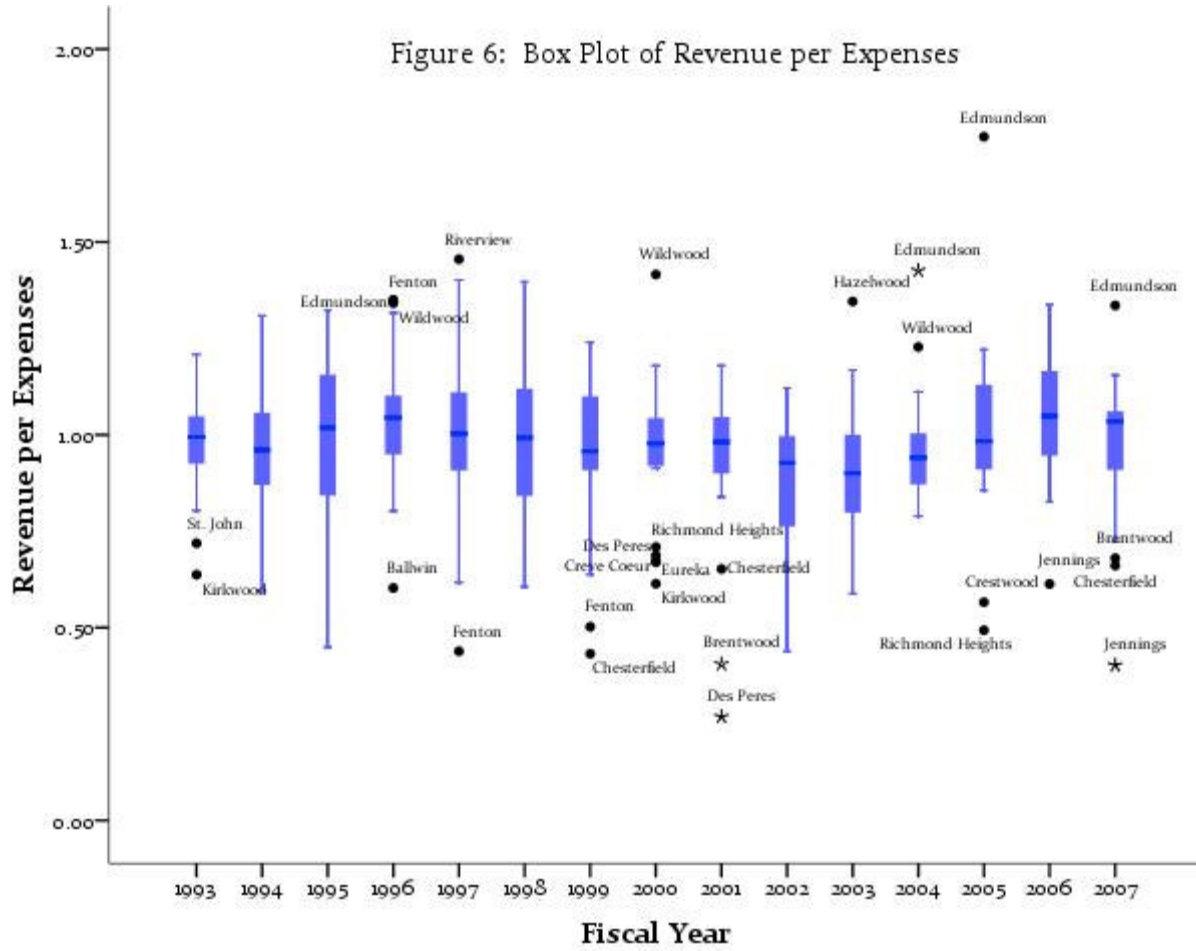**Table 3: Change in Revenue per Expenditure, 1993 to 2007**

City	1993	2007	Change	% Change	Type of Change	TIF User
Jennings	.9852	.4024	-0.58	-59%	negative to negative	Yes
Ellisville	.9627	.7236	-0.24	-25%	negative to negative	
Hazelwood	.9929	.8045	-0.19	-19%	negative to negative	Yes
Brentwood	.8249	.6798	-0.15	-18%	negative to negative	Yes
Chesterfield	1.1715	.6614	-0.51	-44%	positive to negative	Yes
Eureka	1.2085	.9290	-0.28	-23%	positive to negative	Yes
Maryland Heights	1.0608	.8884	-0.17	-16%	positive to negative	Yes
Webster Groves*	1.0361	.8887	-0.15	-14%	positive to negative	Yes
Florissant	1.0219	.9697	-0.05	-5%	positive to negative	Yes
Clayton	.9679	1.0342	0.07	7%	negative to positive	
Ferguson	.9337	1.0407	0.11	11%	negative to positive	Yes
Fenton	.9160	1.0367	0.12	13%	negative to positive	Yes
Ladue	.8972	1.0327	0.14	15%	negative to positive	
Maplewood	.9963	1.1545	0.16	16%	negative to positive	Yes
Ballwin	.8029	1.0461	0.24	30%	negative to positive	Yes
Edmundson	.9642	1.3352	0.37	38%	negative to positive	
St. John	.7189	1.0399	0.32	45%	negative to positive	Yes
Kirkwood	.6370	1.0124	0.38	59%	negative to positive	Yes
Wildwood*	1.3141	1.1204	-0.19	-15%	positive, decreasing	
Sunset Hills	1.0698	1.0143	-0.06	-5%	positive, decreasing	Yes
University City	1.0131	1.0207	0.01	1%	increasing positive	Yes
Des Peres	1.0393	1.0529	0.01	1%	increasing positive	Yes
Richmond Heights	1.0405	1.0686	0.03	3%	increasing positive	Yes
Creve Coeur	1.0604	1.0928	0.03	3%	increasing positive	Yes
Berkeley	1.0564	1.0936	0.04	4%	increasing positive	Yes
Crestwood	1.0222	1.0932	0.07	7%	increasing positive	Yes
Riverview*	1.3046	1.0533	-0.25	-19%	increasing positive	

Because of missing data, 1996 data used in place of 1993

Source: EWG Data File

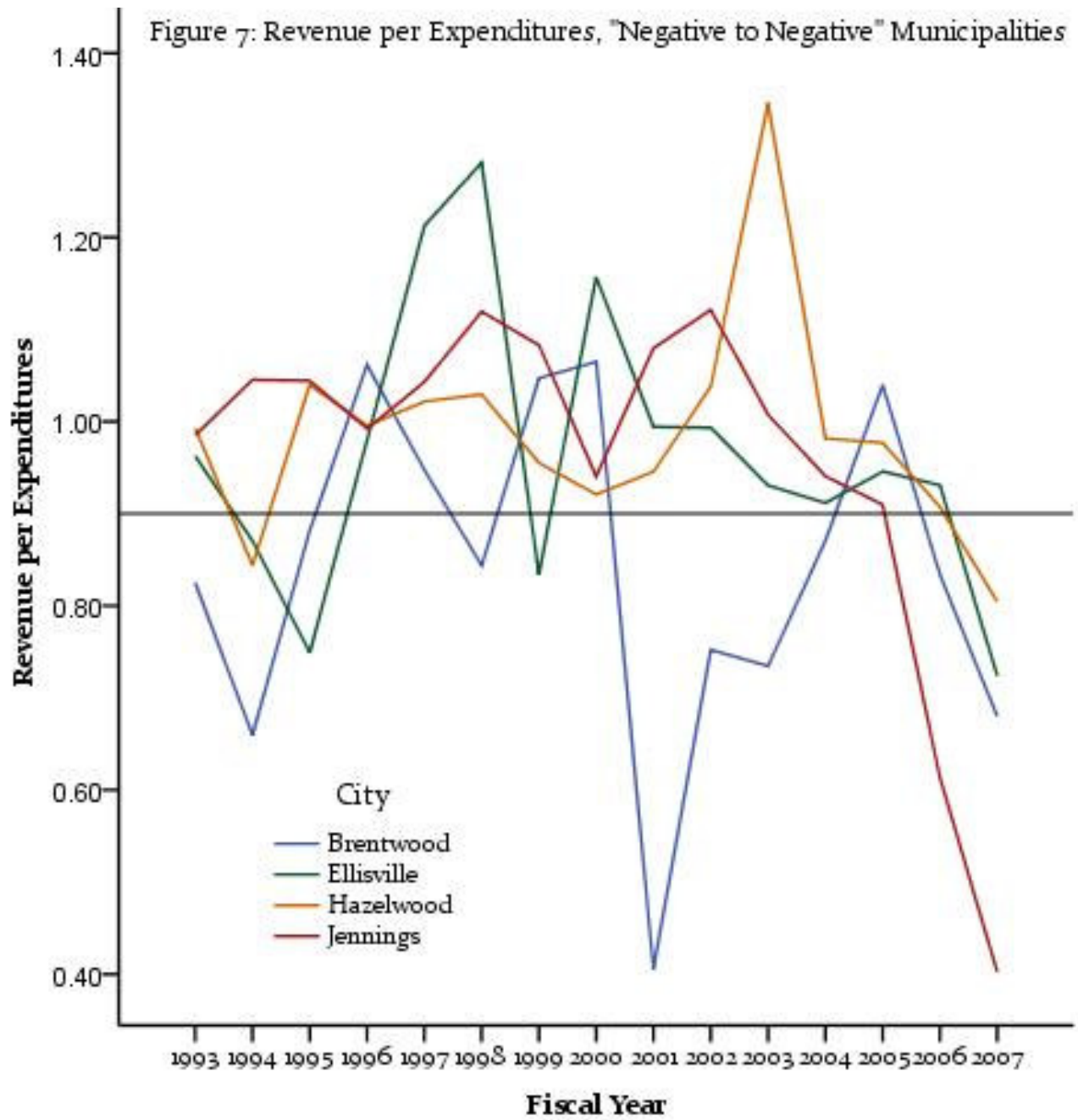Figure 7: Revenue per Expenditures, "Negative to Negative" Municipalities

Figure 8: Revenue per Expenditures, "Positive to Negative" Municipalities
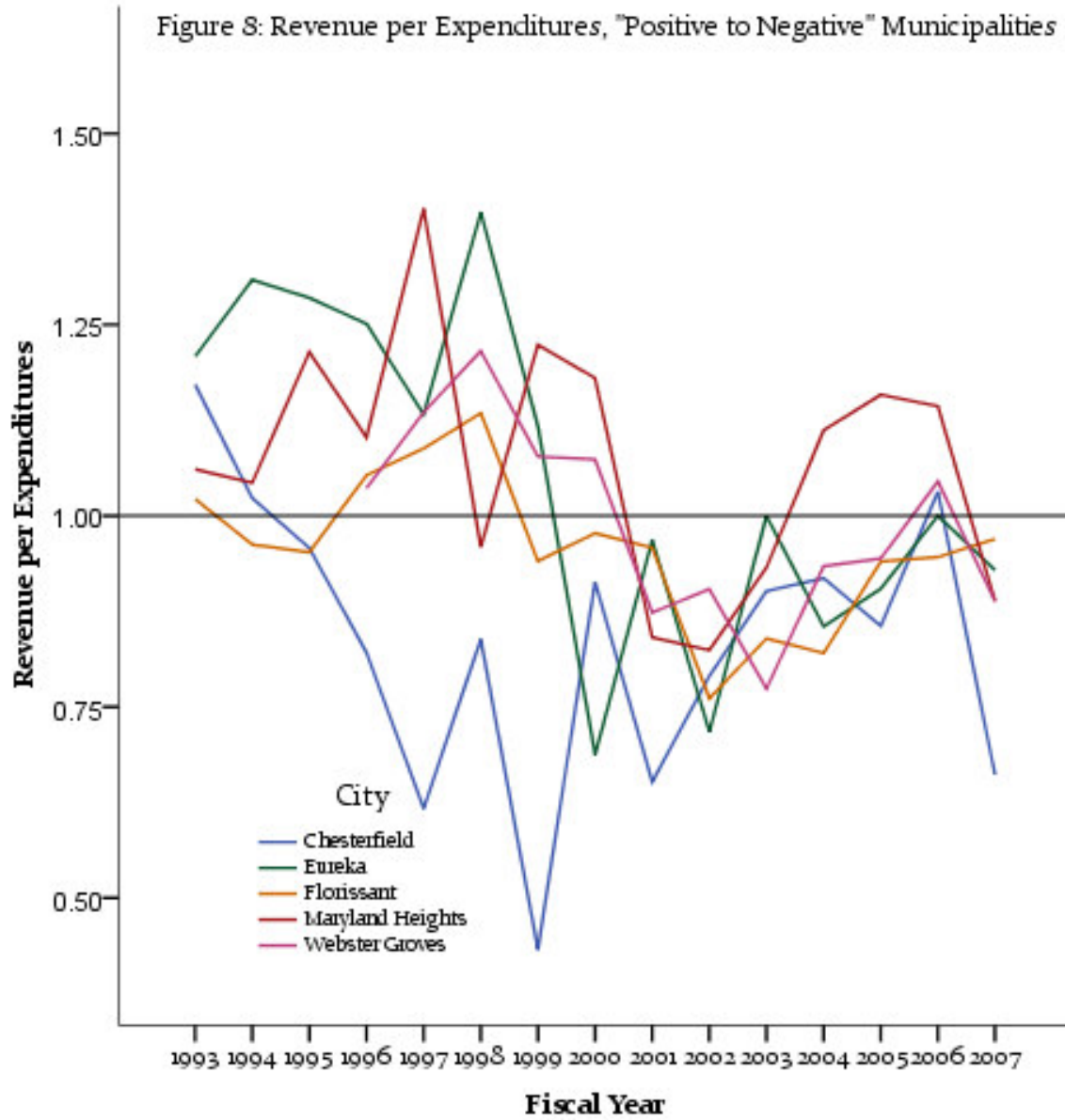
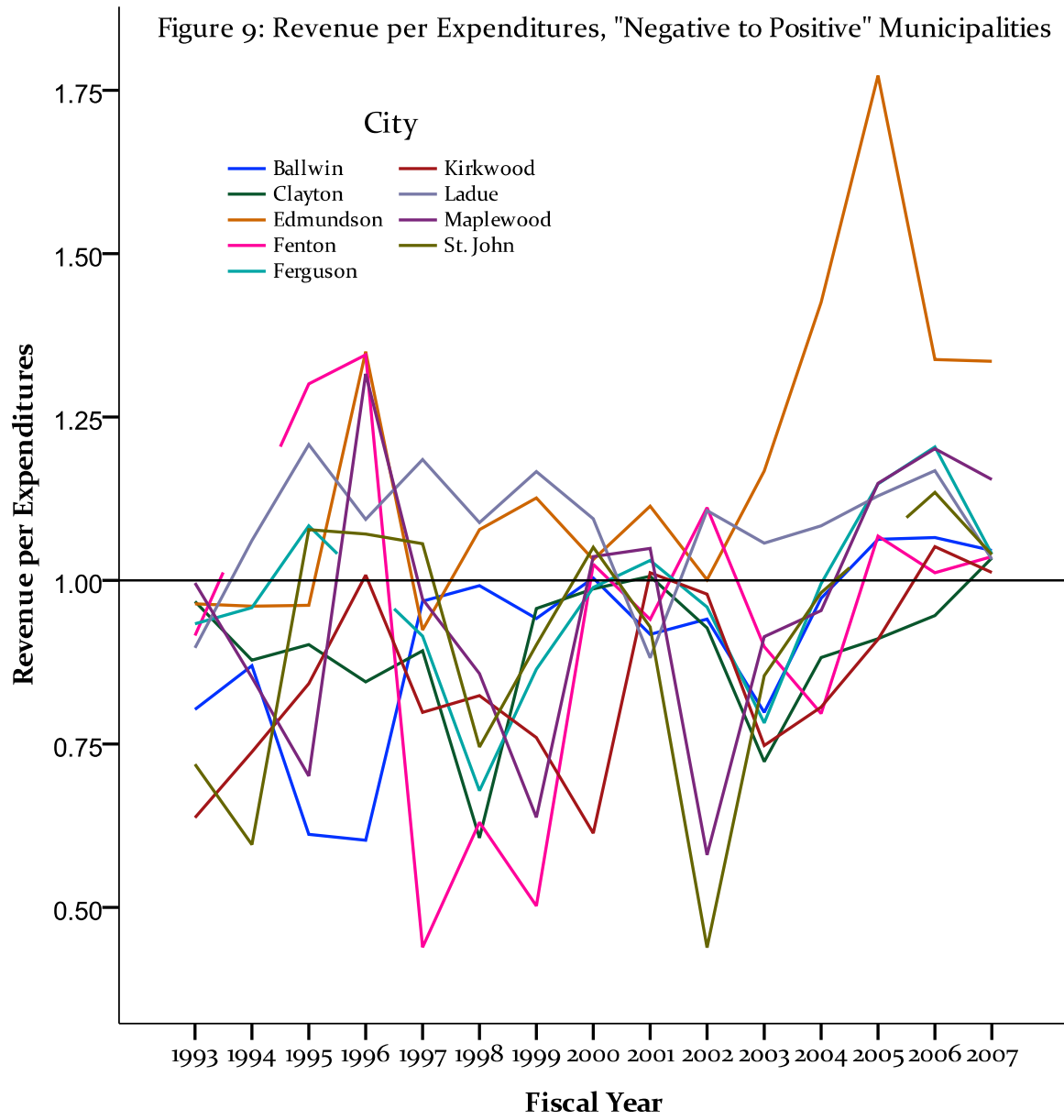Figure 9: Revenue per Expenditures, "Negative to Positive" Municipalities

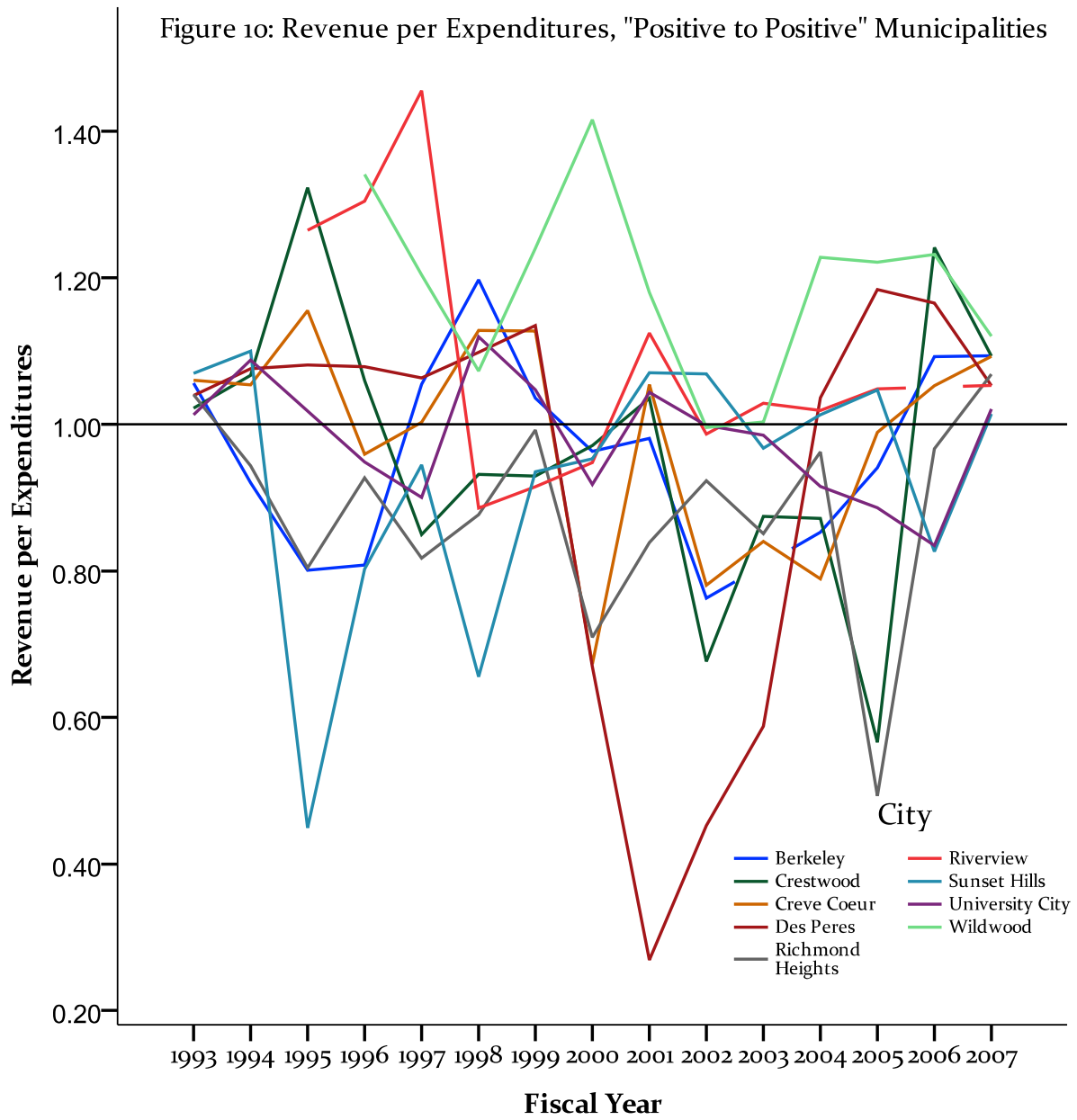Figure 10: Revenue per Expenditures, "Positive to Positive" Municipalities

Table 4: Average Percent Change, 1993 to 2007

Colored data indicates percentages above average for all cases.

	Percent Change			Average	TIF
	Rev/Pop	Taxes/Pop	Exp/Pop	% Change	Users
Maryland Heights	**407%**	377%	505%	430%	Yes
Des Peres	**365%**	453%	359%	392%	Yes
Chesterfield	**220%**	274%	467%	321%	Yes
University City	140%	672%	138%	317%	Yes
Brentwood	**253%**	310%	329%	297%	Yes
Fenton	**262%**	205%	220%	229%	Yes
St. John	**269%**	260%	155%	228%	Yes
Maplewood	**222%**	272%	178%	224%	Yes
Ladue	**179%**	326%	142%	216%	
Edmundson***	**252%**	202%	155%	203%	
Kirkwood	**186%**	320%	80%	195%	Yes
Hazelwood	143%	219%	200%	187%	Yes
Sunset Hills	**173%**	170%	188%	177%	Yes
Eureka	158%	135%	236%	176%	Yes
Wildwood*	163%	121%	215%	166%	
Jennings	79%	69%	337%	161%	Yes
Richmond Heights	161%	112%	155%	143%	Yes
Crestwood	126%	129%	111%	122%	Yes
Berkeley	114%	121%	107%	114%	Yes
Clayton**	134%	85%	119%	113%	
Ferguson	102%	130%	81%	104%	Yes
Ellisville	85%	80%	146%	104%	
Webster Groves*	82%	70%	113%	88%	Yes
Ballwin	99%	65%	52%	72%	Yes
Florissant	73%	37%	82%	64%	Yes
Creve Coeur	68%	53%	63%	61%	Yes
Riverview*	52%	34%	88%	58%	
Average	169%	196%	186%	184%	

1996 data used for basis

**2005 data used for end point*

***2006 data used for end point*

Source: EWG Data File

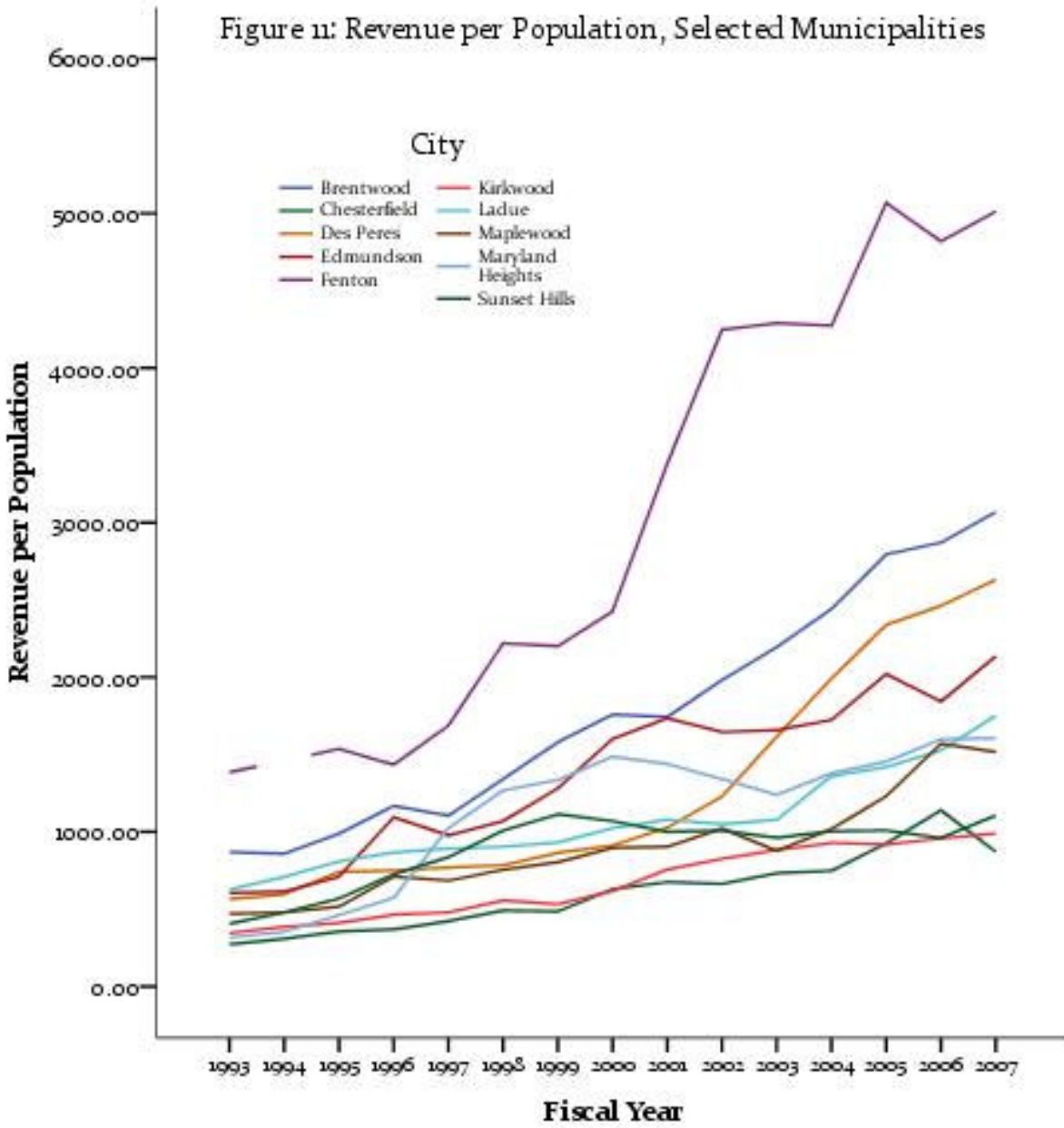Figure 11: Revenue per Population, Selected Municipalities

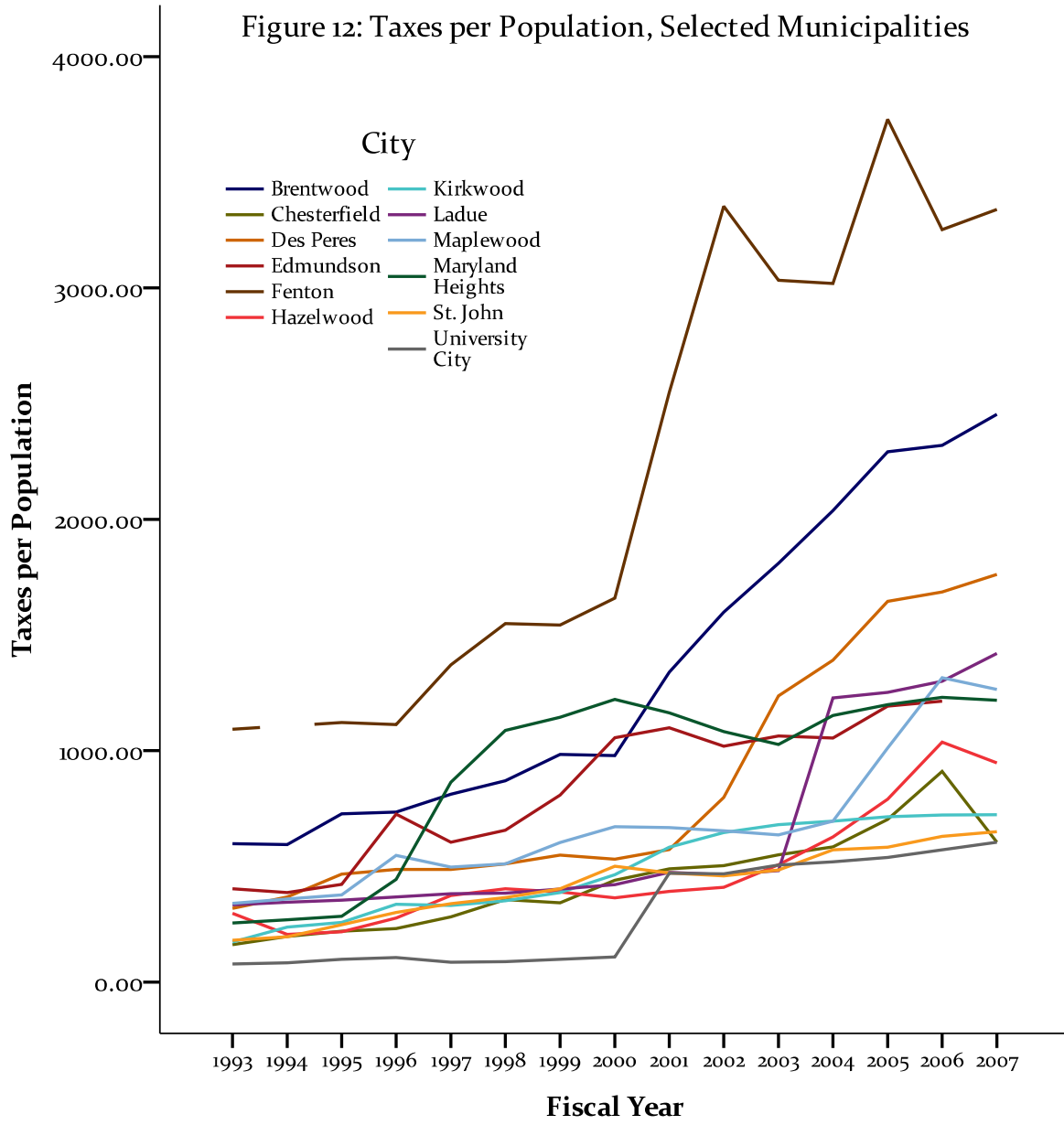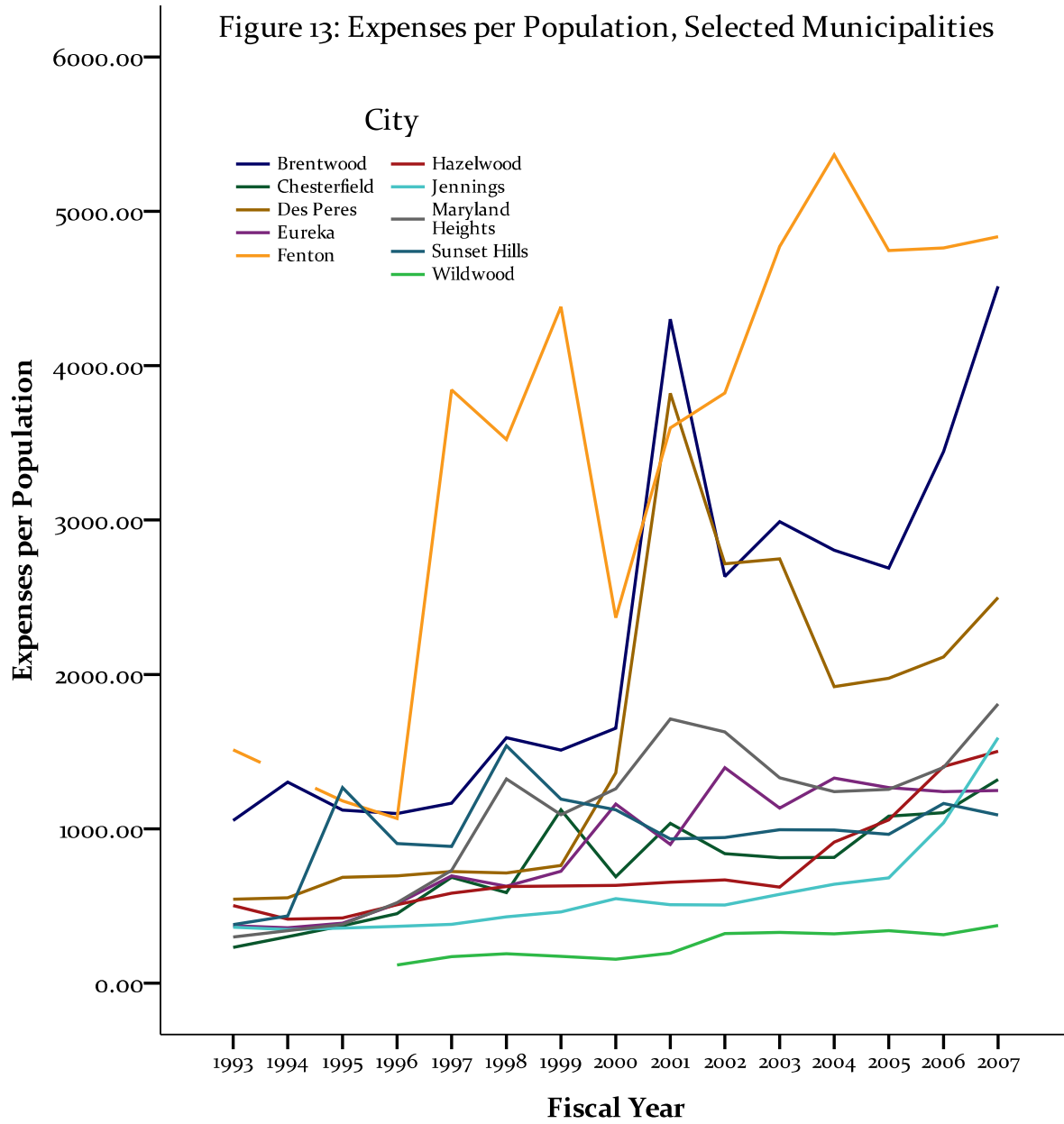Figure 12: Taxes per Population, Selected Municipalities

Figure 13: Expenses per Population, Selected Municipalities

Table 5: Average Local Sales Taxes per Revenue, 1993 - 2007

	Average
Brentwood	**0.59**
Crestwood	**0.58**
Fenton	**0.52**
Richmond Heights	**0.51**
Ellisville	**0.44**
Wildwood	**0.43**
Edmundson	**0.42**
Creve Coeur	**0.41**
Florissant	**0.40**
Kirkwood	**0.40**
Chesterfield	**0.38**
Ballwin	0.36
Ferguson	0.36
Des Peres	0.35
Hazelwood	0.34
Maplewood	0.34
University City	0.29
Webster Groves	0.27
Clayton	0.26
Jennings	0.25
St. John	0.25
Maryland Heights	0.23
Berkeley	0.21
Eureka	*
Ladue	*
Riverview	*
Sunset Hills	*
Average	0.37

* missing local sales tax data for all years

Source: EWG Data File

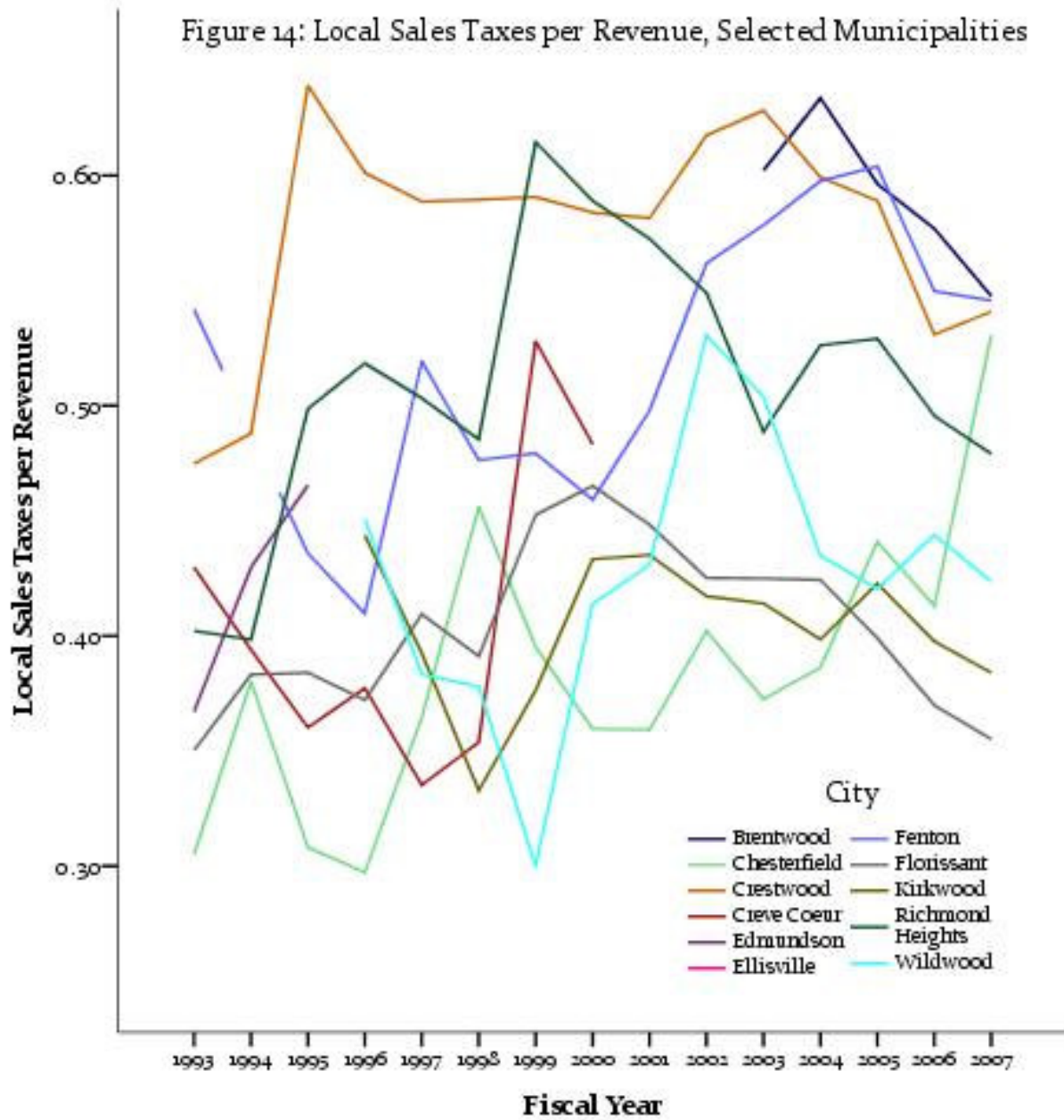Figure 14: Local Sales Taxes per Revenue, Selected Municipalities

Table 6: Summary of Municipalities by TIF Usage and Municipal Characteristics

	Total TIFs	Active/ Completed TIFs	Commerical TIFs	Industrial TIFs	Mixed Use TIFs	Retail TIFs	Sales Tax District	Fire Dept
Berkeley	3	3	3				A	X
Brentwood	5	5			1	4	A	X
Cool Valley	1	1				1	A	
Ferguson	5	5	1	1		3	A	X
Maplewood	5	4	1	1		2	A	X
Olivette	1	0					A	X
Richmond Heights	4	2			1	1	A	X
Rock Hill	3	2				2	A	X
St. Ann	1	0					A	
Ballwin	1	1				1	A/B	
Bridgeton	2	1				1	A/B	
Crestwood	2	2				2	A/B	X
Creve Coeur	2	2	2				A/B	
Des Peres	1	1				1	A/B	X
Eureka	4	2		1		1	A/B	
Fenton	3	2				2	A/B	
Hazelwood	3	3	1			2	A/B	X
Jennings	8	3		2		1	A/B	X
Kirkwood	2	2				2	A/B	X
Manchester	1	0					A/B	
Sunset Hills	2	2				2	A/B	
Valley Park	1	1	1				A/B	
Bel-Ridge	2	1		1			B	
Chesterfield	1	1				1	B	
Country Club Hills	1	1				1	B	
Dellwood	1	0					B	
Florissant	2	2				2	B	
Green Park	1	0					B	
Kinloch	1	1	1				B	
Maryland Heights	3	2					B	
Moline Acres	1	1				1	B	
Normandy	1	0					B	
St. John	8	5	1	1		2	B	
University City	2	2				2	B	X
Webster Groves	2	2				2	B	X

Source: EWG Datafile, St. Louis County Factbook, 2007.

Table 7: Regression Results

Fixed Effects Panel Model of Revenue Per Population

	Revenue per Population
TIF Investment (in Millions of Dollars)	2.8323 ***
	(2.737)
Years TIFs Active	6.788 **
	(2.232)
Assessed Value per Capita	0.034 ***
	(15.868)
Municipal Fire Department	401.133 ***
	(7.092)
Utilities Gross Receipts Tax Rate	-69.184 ***
	(-4.522)
Employment Rate	5.184
	(.434)
Median Household Income	-0.013 ***
	(-7.093)
Constant	998.624 ***
	(4.959)
Observations	405
R-squared	0.756

*** significant at 1%; ** significant at 5%