

Fiscal Research Program

**THE NEW LOCAL REVENUE
ROLLER COASTER : GROWTH
AND STABILITY IMPLICATIONS
FOR INCREASING LOCAL SALES
TAX RELIANCE IN GEORGIA**

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**FRP Report No. 33
April 1999**



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**THE NEW LOCAL REVENUE ROLLER COASTER:
GROWTH AND STABILITY IMPLICATIONS FOR INCREASING
LOCAL SALES TAX RELIANCE IN GEORGIA**

EXECUTIVE SUMMARY

- The local sales tax base (i.e., total taxable spending) typically grows more slowly than the property tax base. In real, per-capita terms, the average county sales tax base has actually declined over time. Projects funded with new local sales taxes will therefore be subject to slower autonomous revenue increases.
- For the typical Georgia county, the property tax base is somewhat more stable than the sales tax base, with less variation from the long-run growth path. When local government officials rely on new sales taxes, surprising sales tax shortfalls may be possible.
- In about sixty percent of Georgia counties, however, increased sales tax reliance (and reduced property tax reliance) brings greater stability to total property and sales tax revenue. For these counties, unusual changes in one revenue source are partially offset by unusual changes in the other. This stability can only be realized, however, if local officials have the ability to use revenues from each source interchangeably.
- A few county characteristics clearly affect revenue performance. Metropolitan status and rapid population growth, for example, destabilize both sales and property tax revenues. Additional construction activity increases sales tax revenue growth, but also destabilizes the revenue source.
- Most local sales taxes will continue to apply to grocery food purchases. For the minority of local sales taxes with a state mandated food exemption, the long-run growth rate should be slightly greater, but short-run instability should also be greater.

THE NEW LOCAL REVENUE ROLLER COASTER: GROWTH AND STABILITY IMPLICATIONS FOR INCREASING LOCAL SALES TAX RELIANCE IN GEORGIA

I. Introduction

One of the most important changes in Georgia's local tax systems over the past two and a half decades has been the authorization and adoption of new sales taxes. In 1975, the only local sales tax in Georgia funded the Metropolitan Atlanta Rapid Transit Authority (MARTA). By the end of 1998, more than half of Georgia counties used three one-percent sales taxes. The state now features a Local Option Sales Tax, a Special Purpose Local Option Sales Tax, a Homestead Option Sales Tax, and the most recent sales tax for educational purposes. Since two of these taxes are supposed to reduce local reliance on the property tax, the substitution clearly brings new tax policy issues.

If local governments increase reliance on the sales tax, two important issues are:

- How do revenue growth patterns change?
- How does revenue responsiveness to the business cycle change?

Using state tax collections as a guide, one finds that the sales tax base grows slowly relative to the Georgia economy and that sales tax cycles are surprisingly large. For example, state collections increased by less than one percent in 1992 (over collections for the previous year) and 10.6 percent in 1993. If local sales taxes follow this uneven growth path, greater local sales tax reliance has serious consequences for local budgets.

In this study, we use the term revenue performance to include the dual issues of long-run tax base growth and short-run tax base cycles. There is no reason to believe that local governments cannot survive with poor revenue performers -- slow revenue growth or sizable revenue fluctuations -- but new revenue structures bring new revenue performance. Unexpected revenue changes should

make the budgetary process more difficult -- short-run changes may be mistaken for long-run changes and long-run changes may not be promptly identified.

In this paper, we examine revenue performance for sales and property taxes at the Georgia county level, building towards an understanding of the revenue structure-revenue performance issues in four steps. The first step is to calculate growth and stability estimates for each county property tax base and each county sales tax base from 1975 to 1992 (the most consistent available series reported by the Georgia Department of Revenue). The second step is to compare and contrast these estimates according to county type. Toward this end, we have chosen metropolitan status and population growth history as the classifications for examination. In the third step, we use regression analysis to identify the county characteristics that influence revenue growth and revenue stability. In the fourth step, the data are used to simulate the effects of county consolidation on revenue performance. As a final revenue performance topic, we discuss the expected consequences on revenue performance of a state-mandated food exemption for some new local sales taxes.

Throughout the analysis we hold tax rates constant so that revenue growth is the same as tax base growth.

A. Growth and Stability of Sales and Property Tax Bases

With regard to the first step, the estimates indicate that the long-run growth path of the sales tax base (in real, per-capita terms) is negative for the average county. Nominal revenues increase over time, but the increase disappears when one adjusts for inflation and population growth.

Conversely, the property tax base increased in the average county over time (again in real, per-capita terms). Without tax rate adjustments, counties with greater property tax reliance should

have experienced stronger revenue growth. In fact, taxable spending (i.e., sales tax base) grew faster than the property tax digest in only eight Georgia counties.

Turning to revenue stability, the property tax is a more stable revenue source in 129 of the 159 Georgia counties. When revenue sources are distinct, greater sales tax reliance increases revenue instability. But if revenue sources are pooled, the revenue stability consequences are not as clear. In about 60 percent of Georgia counties, a simulated increase in sales tax reliance reduced total sales and property tax instability. If local policymakers could transfer unexpected surpluses in either revenue source account, additional sales tax reliance in those counties would have increased revenue stability.

B. County Characteristics Associated with Revenue Performance

For the second and third steps, we examine the relationship between revenue performance characteristics and selected county characteristics. Counties in metropolitan areas and counties with rapid population growth are found to have greater revenue instability with respect to both the property tax and the sales tax. Regarding revenue growth, metropolitan counties had faster growth than non-metropolitan countries, but with a more comprehensive regression analysis that includes other explanatory variables the metro/non-metro distinction is not statistically significant. Since increasing income definitely boosts the tax base (for both sources), the metropolitan differential is probably the result of income growth in Georgia's urban and suburban counties. Not surprisingly, per-capita tax base growth appears unaffected by population growth. In other words, there is no adjusted advantage (or disadvantage) to fast growth.

The size of the construction industry is an important connection between a county economy and its sales tax base. When construction increases, sales tax collections on building materials increase local revenue growth. But this cyclical industry also destabilizes local sales tax revenue.

C. Effects on Revenue Performance of Consolidation

The estimates in this study are also used to examine the revenue-stability consequences of county consolidation. Two county consolidations are simulated here: one for a four-county region south of Columbus, and the other for a five-county region west of Albany. The simulations indicate that sales tax instability dramatically improves when small local revenue sources are combined. Property tax instability also improves, on average, but not every county fairs better under a regional revenue system.

D. The Effect of Exempting Food

Sales tax revenue performance changes when the composition of the tax base changes. Since the Georgia food exemption applies to some new local sales taxes, these taxes should produce less revenue and exhibit different growth and stability properties. In general, grocery food is a slow-growth spending category for households and we expect any local sales tax with a food exemption to grow faster over time. The literature suggests, however, that food expenditures are fairly stable over the business cycle and that larger tax bases are less sensitive to specific price changes. Thus, one can probably expect a new local sales tax with a food exemption to be more volatile in the short run.

II. Measuring Revenue Growth and Stability

There are two basic approaches to examining revenue performance, i.e., the long-run growth and short-run variability properties of a revenue source. The first approach is indirect (see Dye and McGuire, 1991), where in every period actual collections are compared with an estimate or prediction of revenue. With this approach, the long-run growth path is derived from the estimated revenue, while short-run variability is captured with some measure of the difference between the long-run growth path and actual collections.

The second approach is a direct measure of structural growth and cyclical revenue cycles. With direct measures (see Fox and Campbell, 1984; Mikesell, 1991; Hawkins, 1996), one attempts to separate long-run growth determinants from short-run variability influences. This approach has one clear advantage: relationship separation should help local budget authorities distinguish between the short-run and long-run effects. Without direct models, we have imperfect knowledge of the sources of unusual revenue patterns and risk misinterpreting these patterns.

Direct measures, however, are more difficult to estimate. For example, suppose the unemployment rate in Fulton County increases above the rate in DeKalb County. Since many residents of each county work in the other, the effect of Fulton County unemployment is not limited to Fulton County revenue. If we are modeling DeKalb County revenue with measures of the business cycle, we would want to include measures for other relevant counties. Unfortunately, we do not know precisely which counties are relevant.

Given interdependent county economies, we choose the indirect approach of measuring long-run revenue growth and short-run revenue instability. For this study, growth is measured with an exponential trend specification (Box 1), and we consider a stable revenue source as one that follows a predictable growth path.

Box 1. Methodology

The stability measures are obtained by regression analysis for each revenue source, i.e., two models for each of the 159 counties in Georgia, of the following form

$$\log (S_t) = \alpha + \beta t + u_t$$

where S_t is a particular tax base for a particular county, t is a time trend and u represents a normally distributed error term. The β coefficient is our measure of revenue growth since the average annual growth rate is calculated by taking the exponent of β and subtracting one.

For a particular county, the annual instability estimate is calculated using the predicted tax base for each period from the regression. We calculate the percentage difference between the predicted tax base and the actual tax base. The instability averages reported in Appendix 1 are the average of the absolute value of these percentage differences. Thus, if one finds a 10.0 instability measure, the value indicates that in the average year, the difference between the predicted tax base and the actual tax base is 10 percent (of the actual).

For estimating growth and stability measures, the data used are taxable sales and the property tax digest value as reported by the Georgia Department of Revenue. Limitations of these data are discussed in Box 2.

Box 2. Tax Data and Limitations

The Georgia Department of Revenue reports annual data by county in its annual *Statistical Report*. The data includes local sales tax revenues, which are collected by the Department, and local property tax digest measures, which are used to determine state education funding. We use these data for the 1975 to 1992 time period. Data outside this time period are not comparable with data from this period due to changes in the methods used by the Department of Revenue; these methods are described below.

For the county property tax base, we use the total “gross assessed general property digest” as measured by the Department of Revenue. This measure does not include local homestead exemptions and our estimates reflect the growth in property tax revenue with no statutory changes, in either the millage rate or the homestead exemption level. The advantage of this measure of the property tax is that, over time, it captures the change from both economic growth and property value appreciation.

The sales tax revenue variable is based on the Georgia Department of Revenue estimate of state sales tax collections for that county. These totals are calculated by retailer remittances and as such, they do not necessarily reflect the residence of the purchaser. The advantage of retailer sourcing is that local collections, and local budgets, are also determined by retailer collections. A potential problem arises, however, when economic growth in one county increases taxable sales in another, without a matching increase in overall growth.

Box 2. Continued

The estimates of revenue totals implies that the reported collections variable is only completely consistent with the sales tax revenue variation, over time, from sales by single county vendors. Despite the limitations mentioned, the collections reported in the *Statistical Report* are the best available measure of the changes in the sales tax base in Georgia counties during the time period.

For Fulton County data, the Georgia Department of Revenue methods appear to affect the stability conclusion (Table A). In the table below, one can observe a revenue-total discrepancy between 17.1 percent and 27.4 percent (with the Georgia Department of Revenue total always greater than the revenue reported by the Fulton County Department of Finance). Further, the Fulton County tax data indicate that the property tax is more stable, while the Georgia Department of Revenue data indicate that the sales tax is more stable. But one must remember that even if revenue reporting methodology has artificially smoothed sales tax revenue, the stability estimates in Appendix 1 generally favor the property tax.

Table A. A Comparison of Georgia Department of Revenue Sales Tax Data and Actual Collections Fulton County, 1984 to 1992 (Collections in Millions of Dollars)

Year	State Collections Estimate	Actual Collections ¹	Percentage Difference
1984	\$9,432.1	\$7,621.4	23.8
1985	10,060.1	8,452.5	19.0
1986	10,306.9	8,800.3	17.1
1987	11,434.2	9,439.0	21.1
1988	12,155.5	9,999.7	21.6
1989	12,482.6	10,265.5	21.6
1990	12,673.4	10,503.0	20.7
1991	13,101.3	10,520.1	24.5
1992	13,722.2	10,773.2	27.4
Instability Estimate for 1984 to 1992 Collections	0.0026	0.0049	
Exhibit: Property Tax Instability Estimate for 1984 to 1992		0.0034	

¹ Actual collections are based on the 35% share of the Fulton County LOST which is received by the County.

Source: Fulton County Department of Finance, unpublished data and Georgia Department of Revenue Statistical Report.

III. Growth and Stability of Property and Sales Tax Bases

A. Advantages of the Property Tax

On average, property tax bases have grown faster than sales tax bases, with greater short-run stability (Table 1). The summary statistics show that in an average year, the real, per-capita property tax base grew by 1.3 percent. And for 151 of the 159 counties in Georgia, the property tax growth estimate was larger than the sales tax estimate.

For the average county, taxable sales declined between 1975 and 1992, after adjusting for inflation and population growth (Table 1). One established reason for this decline is the growth in the consumption of services (Fox, 1992). Over time, the average household in Georgia increased spending on exempt commodities and decreased spending, in relative terms, on the items in the Georgia sales tax base.¹

Table 1. Growth and Instability Estimates for Property and Sales Tax Bases
Average and Median Level across Georgia Counties 1975 to 1992

	Annual Sales Tax Base Growth Rate	Annual Property Tax Base Growth Rate	Annual Sales Tax Base Instability	Annual Property Tax Base Instability
Mean Across Georgia Counties	-0.0136	0.0132	0.1043	0.0713
Median Across Georgia Counties	-0.0144	0.0112	0.0998	0.0657
Number of Georgia Counties with Stronger Property Tax Growth: 151				
Number of Georgia Counties with Lower Instability Estimates for the Property Tax: 129				

¹ The Federation of Tax Administrators (1997) surveyed state revenue authorities on service taxation. For Georgia, the authorities reported that 34 of 164 service categories are taxed. Conversely, states like New Mexico, South Dakota and Hawaii all reported taxing more than 140 service categories.

In a typical year, the property tax base varied from long-run trend by an average of 7.1 percent (Table 1). This fluctuation does not sound impressive, but it is lower than the corresponding measure for the sales tax (slightly greater than 10 percent). For each Georgia county, the measures of growth and stability and county ranking appear in Appendix 1.

To better understand the revenue performance estimates, Figures 1 and 2 have been prepared using Richmond County data. Each figure includes the actual tax base data and the long-run trend line relative to the base in 1975. For the property tax (Figure 1), the county's long-run growth rate of approximately 2.3 percent per year is negatively affected in the early 1980's, but a recovery begins in 1985. Another decline and recovery occurs toward the end of the period.

Figure 1. Property Tax Base Comparison for Richmond County
(Data Indexed in Real, Per-Capita Terms) 1975 to 1992

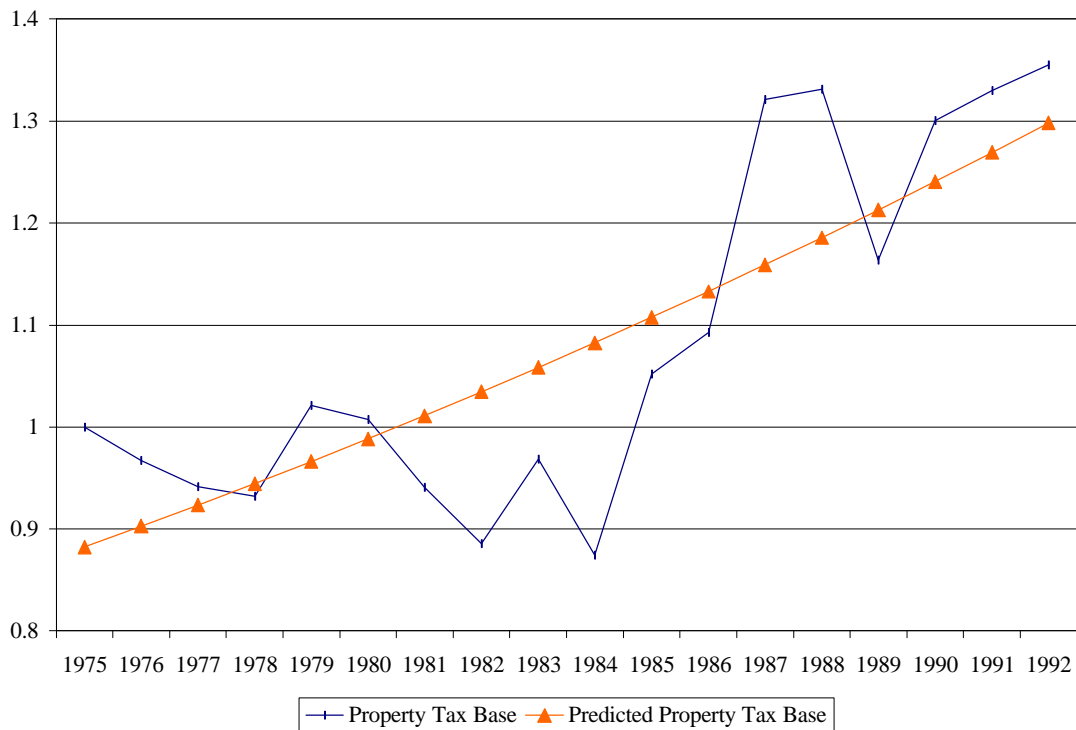
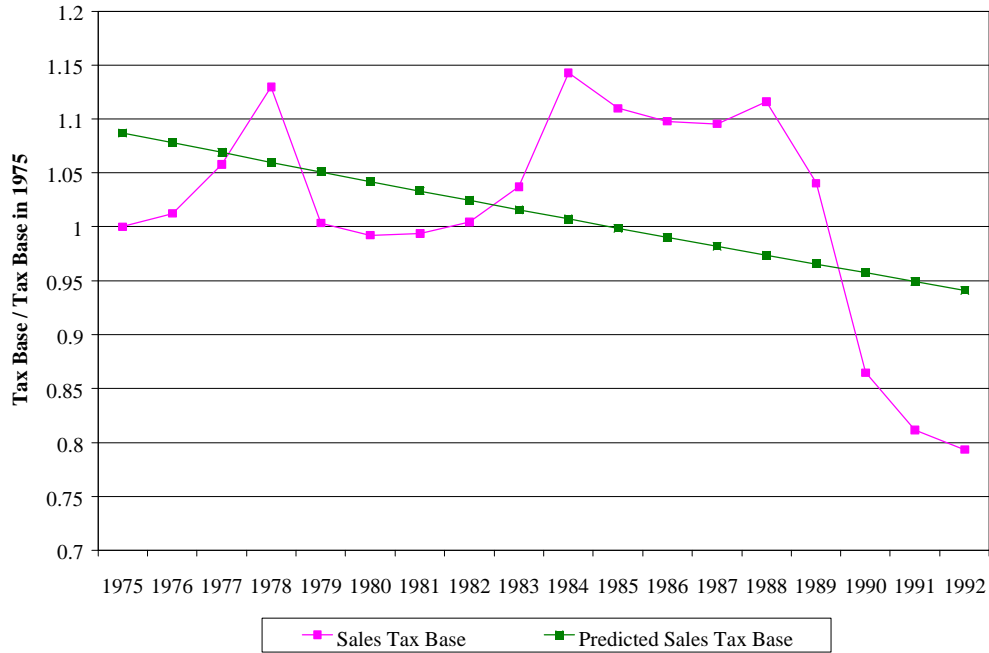


Figure 2. Sales Tax Base Comparison for Richmond County
(Data Indexed in Real, Per-Capita Terms) 1975 to 1992



For the same 17-year period, Richmond County’s real, per capita taxable sales demonstrate a downward trend (Figure 2).² Some of the unusual jumps in the sales tax base occur at roughly the same time as with the property tax base, e.g., a tax base decline in the early 1980’s, but the magnitudes differ. For example, both series declined in 1989, but the Richmond County property tax base recovered faster and remained closer to long-run trend. For taxable sales, the late 1980’s decline continued and recovery was not complete by 1992.

B. One Advantage of a New Sales Tax

Through most of this study the two revenue sources are examined separately for two important reasons. First, understanding total revenue performance means understanding the role of

² Richmond County actually adopted a sales tax in 1976.

different components in the total. In the private sector, for example, similar dis-aggregation occurs when firms track sales by different product lines.

Second, three of the local sales taxes in Georgia fund specific local expenditures. When particular spending needs are funded with a local sales tax, revenue performance for that tax alone must be clearly understood.

Total stability (i.e., stability of a combination of property and sales tax bases), however, does not precisely follow component stability. This point is emphasized with the simulation summarized in Table 2. For the simulation, each county is assumed to raise \$100 (per capita) in 1975 with either 15 percent sales tax reliance (and 85 percent property tax reliance) or 30 percent sales tax reliance. We assume tax rates are constant over the period and then compare the growth and stability of the two tax structures.

With heavier sales tax reliance, our expectation of slower revenue growth is confirmed for ninety-five percent of the counties. However, greater sales tax reliance is found to increase stability in 93 of the 158 counties examined. For these counties, offsets between the revenue sources were strong or frequent enough to improve revenue stability.

Table 2. Total Revenue Growth and Instability Effects for a Simulated Increase in Sales Tax Reliance 1975 to 1992

	Number of Georgia Counties ³
Increases in the Long-Run Growth Rate	8
Decreases in the Long-Run Growth Rate	150
Increases in the Annual Instability Average	93
Decreases in the Annual Instability Average	65

³ Due to missing 1975 data, this simulation could not be completed for Towns County.

The estimates suggest that a portfolio (of tax revenue sources) with greater balance will stay closer to the long-run growth path with smaller fluctuations. But for counties to take advantage of this stability, they need to retain the ability to use revenue from each source interchangeably. For example, in a year when sales tax revenues are high and property tax revenues are low, the local government needs to be able to substitute sales tax revenue for property tax revenue. We believe that the limitations on the use of local sales taxes in Georgia makes substitutability difficult.

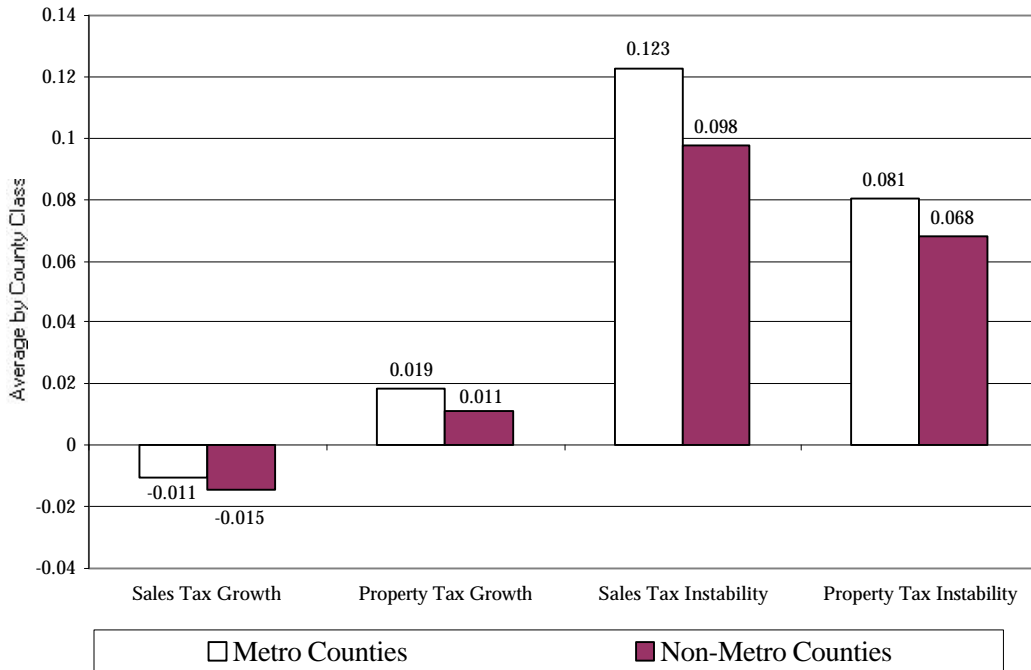
IV. Growth and Stability for Metropolitan Areas and Rapid Population Growth Counties

While a comparison of revenue performance averages support the property tax, an important question is how particular county characteristics influence the growth and stability of the two taxes. We have chosen to examine the effect of metropolitan status (urban versus rural) and relative population growth on revenue performance. Could these characteristics play an important role in explaining the differences in growth and stability reported in Table 1?

With regard to metropolitan status, rural counties experienced slightly slower tax base growth for both revenue sources (Figure 3). This growth disparity is not entirely surprising, since metropolitan income grew by a slightly faster rate -- 359 percent between 1975 and 1992 (in per-capita terms) while non-metropolitan income grew at a slightly slower rate, 355 percent.⁴

⁴ It should be noted here that while income growth boosts tax revenue, it probably affects expenditure demands unevenly. For example, income growth might increase the demand for police protection but reduce the demand for public health services.

Figure 3. Georgia County Tax Revenue Source Growth and Instability Averages by Metropolitan Area Status 1975 to 1992 Data



Note: Metropolitan status is as defined in 1992. Some of these 42 counties were not considered to be part of Metropolitan Statistical Areas in 1975.

Based on published literature, one might expect greater revenue instability in metropolitan areas. These areas typically have rapid unemployment rate increases in recessions and strong job creation in expansions. In fact, Bahl (1984) claims that sales tax reliance in metropolitan areas makes for a very unstable local revenue structure since metropolitan taxable purchases are highly variable through the business cycle (relative to the property tax digest). But, property tax instability may also follow a city's business cycle, since urban real estate markets are notoriously cyclical.

The data in Figure 3 confirm the metropolitan instability expectation. One year might bring a surprising increase in the size of the tax base in a metropolitan county, but a later year could bring a surprising decline. Bahl's sales tax instability claim is also supported as the instability of the sales tax is about four percent higher in metropolitan counties.

The relationship between tax revenue growth and population growth is more complicated. The per-capita property tax base is expected to increase with in-migration, since new housing is constructed for new residents. But a population increase resulting from higher birth rates may not lead to immediate changes in a county's property tax digest⁵.

Per-capita sales tax revenue effects should also be conditional on population characteristics. According to the U.S. Bureau of Labor Statistics, larger households spend less per person.⁶ One would therefore expect natural population increases to actually reduce per-capita taxable spending. But when migration is the dominant source of a population increase, sales tax consequences will depend on the spending habits of the migrants relative to the resident average, and on whether new retail development keeps pace with new subdivision development.⁷

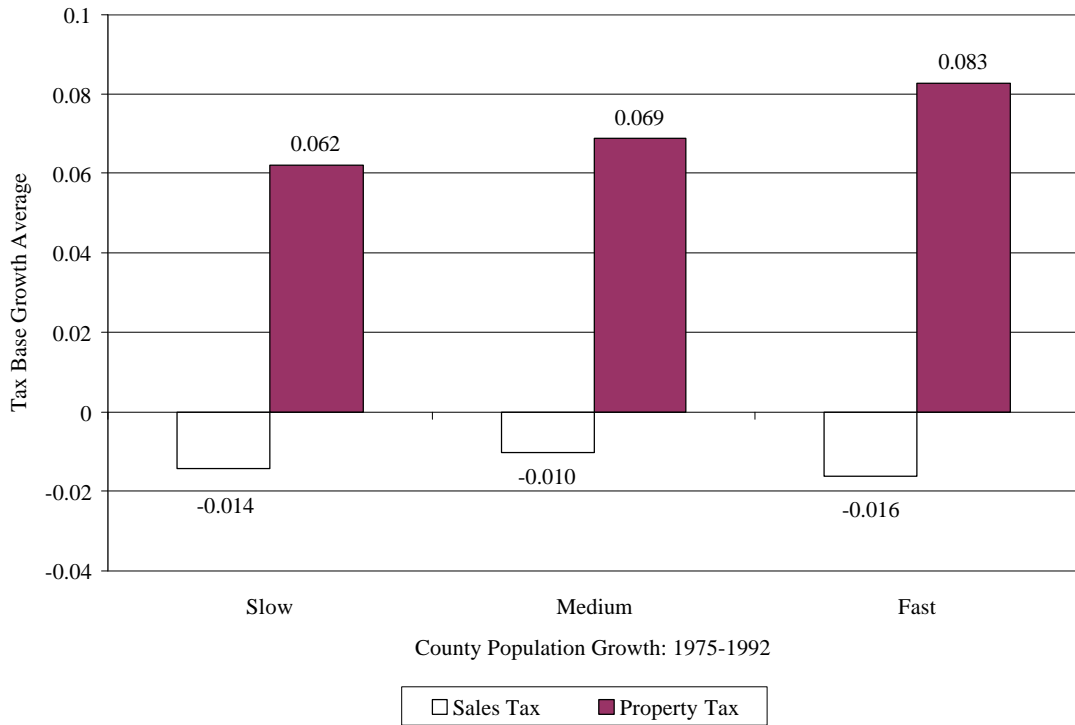
The growth relationships are shown in Figure 4. Counties have been divided into a fast population-growth group (greater than 25 percent over the period 1975-92), a medium-growth group (between 6.5 percent and 25 percent) and a slow-growth group. The population growth-property tax base growth relationship is clear, fast population-growth status contributes about 1.5 percent to the long-run property tax base growth rate (Figure 4).

⁵ Larger families do demand more housing, but one would expect a lag between births and a housing demand increase.

⁶ U.S. Bureau of Labor Statistics (1997).

⁷ New subdivision residents in a high-growth suburban county may, in the short run, spend more in established counties.

Figure 4. Georgia County Tax Revenue Source Growth Averages by Population Growth Class 1975 to 1992 Data

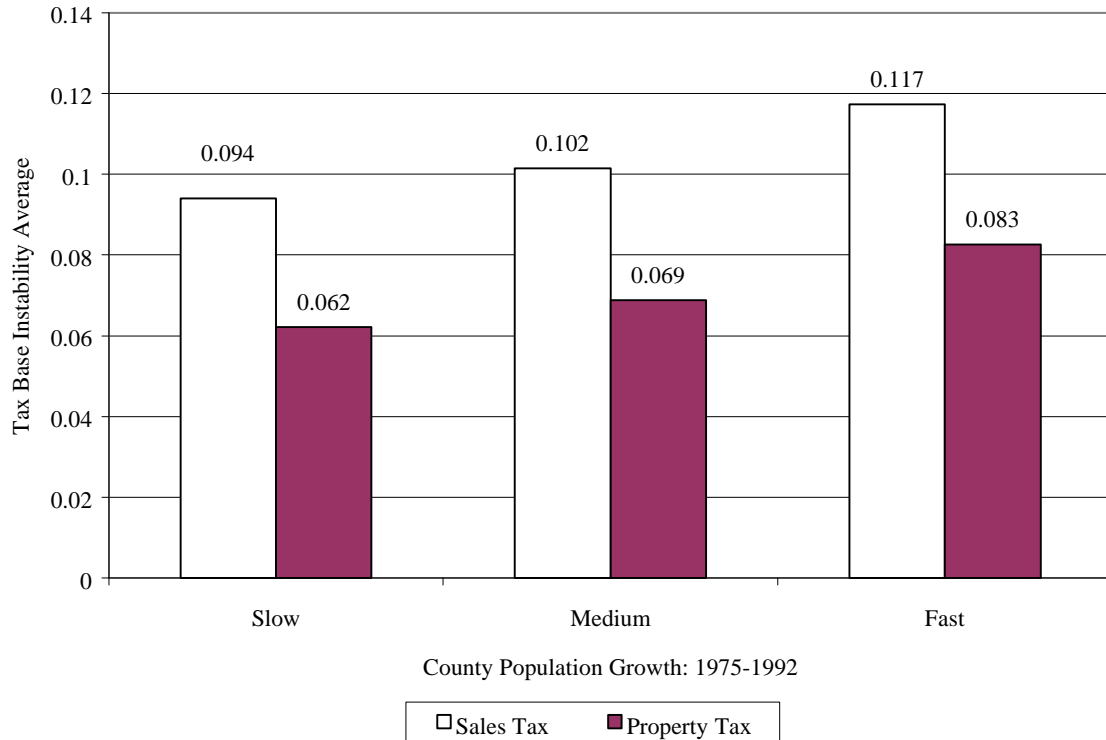


Note: The slow growth category includes the 53 counties with population growth from 1975 to 1992 of less than 6.5 percent. The medium growth category includes 53 counties with growth between 6.5 percent and 25 percent. The fast growth category includes 53 counties with population growth greater than 25 percent.

As expected, no consistent relationship between population growth and sales tax base growth appears in the data. The real, per-capita sales tax base declines were less pronounced in medium-growth counties, but even these counties experienced an annual decline of one percent per year.

While the growth effects for the two revenue sources are uneven, rapid population growth appears to destabilize revenue sources (Figure 5). For example, the average annual variation in the property tax base is roughly six percent for slow growth counties. In fast growth counties, this variation averaged more than eight percent.

Figure 5. Georgia County Tax Revenue Source County Instability Averages by Population Growth Class 1975 to 1992 Data



Note: The low growth category includes the 53 counties with population growth from 1975 to 1992 of less than 6.5 percent. The medium growth category includes 53 counties with growth between 6.5 percent and 25 percent. The high growth category includes 53 counties with population growth greater than 25 percent.

We attribute the instability finding to the fact that population growth does not occur smoothly over time. For example, the Gwinnett County population increased from about 119,000 in 1975 to 391,000 in 1992. But the year-to-year growth rate surged in the 1982 to 1987 time period.⁸ High population growth counties are easy to identify in Georgia, but the revenue performance consequence probably occurs in per-capita revenue instability and not in per-capita revenue growth.

⁸ For the entire time period, the average annual population increase was 7.3 percent. From 1982 to 1987, the average annual population increase in Gwinnett County was 9.4 percent.

V. Structural Determinants of Revenue Growth and Stability

Revenue performance comparisons across metropolitan and growth characteristics are interesting to local policymakers, but they do not fully explain differences in growth and instability. In this section, we use the results of four regressions on the performance measures in Appendix 1 to independently examine the effects of county characteristics (listed in Table 3) on each revenue performance measure.

In general, the hypothesized revenue-performance determinants are either characteristics of the economy, e.g. the importance of the retail trade sector in the county, or characteristics of the population, e.g. real, per-capita income growth for a county. Six general conclusions can be reached from the regression summary in Table 3:

- 1) Precise relationships between county structure and revenue performance are difficult to determine. Of the 80 relationships examined (20 characteristics times four performance measures,) only 15 were found to be statistically significant. The other relationships may exist, but this admittedly crude model did not capture them. The imprecision also appears in the measure of goodness of fit (R^2). The equations capture between 21 and 55 percent of the variation in the revenue performance measures.
- 2) Revenue instability for metropolitan areas (discussed above) is confirmed with this model, but relative revenue growth is not. This finding indicates that the metro-nonmetro difference shown in Figure 3 is probably caused by some underlying force. Income growth is one potential cause.⁹
- 3) A similar situation exists for the fast population growth phenomena. The regression estimates indicate that population growth itself affects revenue instability, increasing the distance between an annual value and long-run trend. But the relationship between property tax base growth and population growth (Figure 4) is not confirmed. In other words, after controlling for income and economic structure, in-migration does not clearly increase the per-capita property tax base (the averages in Figure 4 do not control for other factors).

⁹ With the U.S. Bureau of Economic Analysis (1997) data, one finds that metropolitan per-capita income increased slightly faster than non-metropolitan per-capita income.

- 4) The distinction between the effect of population growth and per-capita income growth is emphasized in the first and second columns of Table 3. It is possible that many local government officials mistake county population growth for county income growth. Independent population growth decreases per-capita taxable spending through the household size-spending profile.¹⁰ Per-capita income growth, which can follow in-migration by relatively affluent, increases per-capita taxable spending.
- 5) Construction activity affects both sales tax performance measures. As discussed by Due and Mikesell (1994) and Bahl and Hawkins (1997), construction generates a sizable amount of sales tax revenue through taxable purchases of building materials. The estimates in Table 3 verify the relationship between construction and sales tax revenue growth, but they also indicate that increased construction activity, increases sales tax base instability. The cyclical nature of the construction sector causes this sales tax instability.
- 6) Outside of the construction effects, tax base growth does not necessarily come at the expense of revenue instability. For example, population growth and metropolitan status destabilize local per-capita tax base, but do not affect the long-run growth path. Conversely, per-capita income increases generate additional per-capita sales tax base, but do not appear to affect sales tax base stability.

VI. Revenue Stability and County Consolidation

As noted in Table 3 and Figure 3, metropolitan counties were found to have more volatile revenue sources. Could this imply that consolidation of smaller Georgia counties would destabilize local tax bases? In light of the ongoing debate over county consolidation and local government efficiency, we examine the tax base stability consequences of consolidation with two tax-region simulations.

¹⁰ This is not surprising. Population growth comes in two forms: migration and birth rate. The former only affects per-capita taxable spending if new households are different from the county average, and our regression holds the county average per-capita income constant. The latter decreases per-capita taxable spending since according to Bahl and Hawkins (1997) larger households spend more than smaller households but not proportionally more.

Table 3. Significant Determinants of County Revenue Performance Measures 1975 to 1992

County Characteristic	Annual Sales Tax Base Growth Rate	Annual Property Tax Base Growth Rate	Annual Sales Tax Base Instability Estimate	Annual Property Tax Base Instability Estimate
Agricultural Share of the 1975 Economy	-			
Growth in Local Agricultural Economy				
Industrial Share of the 1975 Economy				
Growth in Local Industrial Economy				
Construction Share of the 1975 Economy	+			
Growth in Local Construction Economy	+		+	
Government Share of the 1975 Economy				
Growth in Government Economy				
Hotel Reliance		+		
Metropolitan Area			+	+
Per Capita Personal Income in 1975	+			
Growth in Per Capita Personal Income	+	+		
Population in 1975	-			
Growth in Population	-		+	+
Retail Share of the 1975 Economy				
Growth in Local Retail Economy				
Services Share of the 1975 Economy		-		
Growth in Local Services Economy				
Use Tax Reliance		N/A		N/A
Utility Reliance	N/A		N/A	

Note: a positive sign (+) means that an increase in the value of the characteristic results in a positive increase in growth or stability, while a negative sign (-) means that an increase in the value of the characteristic results in a decrease in growth or stability. A blank means the characteristic has no significant effect on the performance measure. N/A means not applicable.

The first region considered here combines Chattahoochee, Marion, Stewart and Webster Counties. Both revenue sources within the region were unstable -- only the sales tax in Webster County reached the top 20 stability grouping (Appendix 1). The second region includes Baker, Calhoun, Clay, Early and Miller counties. Again, the separate tax bases were generally unstable.

Consolidation appears to have a dramatic effect on the stability of taxable spending (Table 4). For both regions, the consolidated sales tax base is more stable than the individual county components; and the instability estimate reduction is on the order of 50 percent. The stability gains indicate that unusual revenue changes are not strongly correlated across counties -- an unexpected increase in Baker County does not imply an identical unexpected increase in the overall regional tax base. We note, however, that a revenue sharing arrangement would have to allow short-run transfers between counties in order to improve revenue stability.

General stability gains are also observed for property tax consolidation (Table 4), but are not universal. In Region A, the measured instability for the consolidated region is lower than for three of the four component counties. In Region B, the regional instability measure is only lower for two of the five counties. The gain to the least stable, Miller County, is greater than the loss to the most stable, Clay County, but the effect of county consolidation on property tax stability depends on the county.

VII. Sales Tax Performance and the Grocery Exemption

In January 1996, the Georgia legislature enacted a new state exemption that applies to food-for-home consumption purchases. The state exemption was phased-in over a three year period and the final one-percent state rate was removed on October 1, 1998.

Table 4. Two Comparisons of the Revenue Performance Effects from County Consolidation 1975 to 1992

	Annual Sales Tax Base Growth Rate	Annual Property Tax Base Growth Rate	Annual Sales Tax Base Instability Estimate	Annual Property Tax Base Instability Estimate
Region A	-0.0157	0.0133	0.0736	0.0567
Chattahoochee	0.0044	0.0428	0.1428	0.1435
Marion	-0.0225	0.0255	0.1074	0.0811
Stewart	-0.0242	-0.0100	0.0919	0.0507
Webster	-0.0270	-0.0074	0.0756	0.0930
Region B	-0.0173	-0.0006	0.0647	0.0701
Baker	-0.0302	-0.0033	0.0934	0.0616
Calhoun	-0.0295	-0.0054	0.0640	0.0945
Clay	0.0151	0.0108	0.0801	0.0508
Early	-0.0163	-0.0035	0.0707	0.0646
Miller	-0.0311	0.0075	0.0764	0.1021

Local sales tax treatment of groceries has been a debated topic in Georgia. The state allows existing local taxes to continue to include food in the tax base, but the new homestead exemption local sales tax does not.¹¹ Since these taxes will have a different tax base, one can expect different revenue performance.

The growth implications of a food exemption are clear. Food expenditures grow slowly over time, and a tax base without food should grow more rapidly. Thus, the homestead exemption sales tax (with the food exemption) should raise less revenue than a local option sales tax, but should grow

¹¹ A comprehensive treatment of the advantages and disadvantages of this policy can be found in Bahl and Hawkins (1997).

somewhat faster.¹² In fact, the robust growth of the state sales tax through the food exemption phase-in demonstrates that any revenue loss can be undetectable in an economic expansion.

Local taxes with a food exemption should have greater revenue instability, but the precise causes of the instability is not established. Fox and Campbell (1984), Dye and McGwire (1991) and Sobel and Holcombe (1996) all find that sales tax instability decreases when relatively stable food purchases are exempt. Fox and Campbell suggest that stable food purchases help mitigate unstable purchases of durable goods. Hawkins (1998) found that food (and other large purchase) exemptions increase the price-responsiveness of sales tax revenue, and that future price changes destabilizes revenue in the short run. Regardless of the cause, however, there is a consensus that food exemptions destabilize total sales tax base.

VIII. Conclusion

The property tax is clearly unpopular in Georgia and new local sales taxes have partially substituted local sales tax reliance for property tax reliance. The substitution, however, brings a new revenue path to local governments. One feature of this path is slower revenue growth. A second feature is relatively unstable sales tax collections within the total revenue path. Some counties may be able to use other revenue sources with different cycles to mitigate sales tax instability, but many will not.

Complicating the local tax environment is the fact that tax base growth and instability vary with county characteristics. Metropolitan area counties and counties with rapid population growth can expect greater instability, but these characteristics alone do not necessarily affect per-capita

¹² This faster growth is obviously limited in a pure consumer sales tax. When households reduce the grocery budget share, a sales tax with a food exemption grows relatively faster. But households cannot sizably reduce this budget share every year.

revenue growth. Metropolitan areas have experienced faster growth, but this differential disappears when one controls for income and other features of metropolitan economies. An increase in construction activity bears special mention — construction spending increases both sales tax base growth and sales tax base instability.

County consolidation is another area where tax base stability is an important issue. Two simulations indicate that sales tax stability improves dramatically when small tax bases are combined. Property tax stability improves somewhat, but some county-level taxes are more stable than the consolidated base.

Finally, the Georgia grocery exemption will only apply to a minority of local sales taxes in the state. For local governments with a food-exemption mandate, the lower revenue yield will be followed by somewhat faster growth and, in all likelihood, greater sales tax instability. Since many local sales taxes should continue to apply to food purchases, these revenue sources will continue to grow slowly, with instability relative to the property tax base and stability relative to a sales tax with a food exemption.

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APPENDIX

Sales Tax and Property Tax Stability Measures, Rankings and Indices, By County

	Estimates				Rankings			
	Relative Sales Tax Base Growth	Relative Property Tax Base Growth	Relative Sales Tax Base Instability	Relative Property Tax Base Instability	Relative Sales Tax Base Growth	Relative Property Tax Base Growth	Relative Sales Tax Base Stability (1 = most stable)	Relative Property Tax Base Stability (1 = most stable)
Appling	-0.0029	-0.0011	0.0946	0.0667	30	129	71	82
Atkinson	-0.0279	-0.0135	0.1104	0.0465	142	154	104	37
Bacon	-0.0125	0.0073	0.0965	0.0514	72	102	73	50
Baker	-0.0302	-0.0033	0.0934	0.0616	149	135	68	72
Baldwin	-0.0069	0.0183	0.0998	0.0589	46	54	80	65
Banks	0.0115	0.0131	0.0844	0.1012	6	73	44	137
Barrow	-0.0243	0.0070	0.1375	0.0841	130	103	137	113
Bartow	-0.0247	-0.0102	0.1063	0.0456	132	152	94	34
Ben Hill	-0.0165	0.0184	0.0771	0.0751	94	53	24	98
Berrien	-0.0224	-0.0096	0.0834	0.0696	118	150	41	88
Bibb	0.0037	0.0288	0.0900	0.0684	16	23	59	85
Bleckley	-0.0136	0.0093	0.0759	0.0282	76	88	21	5
Brantley	-0.0193	-0.0063	0.0741	0.0595	104	142	16	69
Brooks	-0.0279	0.0137	0.0908	0.1304	141	66	61	151
Bryan	-0.0406	0.0152	0.1934	0.0523	154	60	159	52
Bulloch	-0.0171	-0.0029	0.0609	0.0263	98	133	3	2
Burke	-0.0222	0.1521	0.1094	0.1982	117	1	103	158
Butts	0.0034	0.0271	0.0777	0.1125	17	28	25	144
Calhoun	-0.0295	-0.0054	0.0640	0.0945	146	141	6	130
Camden	-0.0813	-0.0066	0.1353	0.1131	159	143	135	145
Candler	-0.0055	-0.0070	0.0787	0.0428	38	144	29	29
Carroll	-0.0142	0.0191	0.1153	0.0818	78	49	110	112
Catoosa	-0.0082	0.0330	0.1669	0.0487	53	17	155	40
Charlton	-0.0301	0.0135	0.0730	0.1043	148	69	14	141
Chatham	-0.0154	0.0350	0.0930	0.0564	84	13	66	64
Chattahoochee	0.0044	0.0428	0.1428	0.1435	15	5	141	156
Chattooga	-0.0230	0.0274	0.1374	0.0556	123	26	136	61
Cherokee	-0.0331	0.0199	0.1393	0.0637	152	46	138	75
Clarke	-0.0062	0.0133	0.0962	0.0319	41	71	72	7
Clay	0.0151	0.0108	0.0801	0.0508	5	83	33	49
Clayton	0.0088	0.0349	0.1442	0.0852	11	14	143	116
Clinch	-0.0156	-0.0095	0.1181	0.0564	87	149	116	63
Cobb	-0.0095	0.0367	0.1257	0.0551	61	10	129	57
Coffee	-0.0092	0.0097	0.1005	0.0332	60	86	83	8
Colquitt	-0.0101	0.0077	0.0909	0.0947	64	97	62	131

	Estimates				Rankings			
	Relative Sales Tax Base Growth	Relative Property Tax Base Growth	Relative Sales Tax Base Instability	Relative Property Tax Base Instability	Relative Sales Tax Base Growth	Relative Property Tax Base Growth	Relative Sales Tax Base Stability (1 = most stable)	Relative Property Tax Base Stability (1 = most stable)
Columbia	-0.0083	0.0312	0.1164	0.0759	55	20	113	100
Cook	-0.0132	-0.0040	0.0788	0.0342	74	138	31	10
Coweta	-0.0133	-0.0054	0.1264	0.0894	75	140	130	124
Crawford	-0.0474	0.0021	0.0672	0.0689	158	119	9	87
Crisp	-0.0151	0.0096	0.0787	0.0415	82	87	30	25
Dade	-0.0152	0.0272	0.0749	0.0884	83	27	19	122
Dawson	-0.0217	0.0088	0.1469	0.0745	116	92	147	96
Decatur	-0.0069	0.0252	0.1068	0.0595	45	33	96	68
De Kalb	0.0055	0.0328	0.1201	0.0761	12	18	119	102
Dodge	-0.0147	0.0022	0.0743	0.0706	81	118	18	89
Dooly	-0.0211	-0.0167	0.0829	0.0554	112	155	39	58
Dougherty	-0.0025	0.0038	0.0859	0.0414	28	110	46	24
Douglas	-0.0032	0.0277	0.1160	0.1061	31	25	111	142
Early	-0.0163	-0.0035	0.0707	0.0646	91	136	11	78
Echols	0.0098	0.0084	0.1447	0.0745	8	94	144	95
Effingham	-0.0214	-0.0005	0.1401	0.0518	113	128	139	51
Elbert	-0.0155	0.0119	0.1069	0.0255	85	79	97	1
Emanuel	-0.0204	-0.0090	0.1019	0.0281	107	148	88	4
Evans	-0.0047	0.0121	0.1007	0.0508	34	77	84	48
Fannin	-0.0175	0.0143	0.1017	0.0768	100	64	87	105
Fayette	-0.0169	0.0091	0.1287	0.0800	96	90	132	107
Floyd	-0.0073	0.0240	0.0868	0.0340	48	36	50	9
Forsyth	-0.0065	0.0283	0.1194	0.1319	44	24	118	152
Franklin	-0.0117	0.0342	0.0932	0.0442	70	15	67	30
Fulton	-0.0026	0.0241	0.0877	0.0922	29	35	53	128
Gilmer	-0.0088	0.0092	0.1129	0.0910	58	89	108	127
Glascocock	0.0158	0.0112	0.1591	0.0657	4	80	149	80
Glynn	-0.0050	0.0205	0.0790	0.0476	35	44	32	38
Gordon	-0.0039	0.0210	0.0742	0.0807	32	42	17	108
Grady	-0.0173	0.0125	0.0637	0.0979	99	75	5	135
Greene	-0.0100	0.0331	0.1212	0.0374	62	16	121	16
Gwinnett	0.0020	0.0298	0.1642	0.0648	19	21	154	79
Habersham	-0.0079	0.0498	0.1249	0.0860	51	4	126	118
Hall	-0.0114	0.0270	0.1202	0.0414	68	29	120	23
Hancock	-0.0240	0.0376	0.1066	0.0854	127	9	95	117
Haralson	-0.0227	0.0030	0.0884	0.0766	120	114	55	104
Harris	-0.0209	0.0425	0.1478	0.0761	109	6	148	103
Hart	-0.0008	0.0416	0.1104	0.0761	25	7	105	101
Heard	-0.0326	-0.0503	0.1106	0.0956	151	159	106	133

	Estimates				Rankings			
	Relative Sales Tax Base Growth	Relative Property Tax Base Growth	Relative Sales Tax Base Instability	Relative Property Tax Base Instability	Relative Sales Tax Base Growth	Relative Property Tax Base Growth	Relative Sales Tax Base Stability (1 = most stable)	Relative Property Tax Base Stability (1 = most stable)
Henry	-0.0348	0.0035	0.1294	0.1338	153	112	133	153
Houston	-0.0161	0.0203	0.1091	0.0354	89	45	102	12
Irwin	-0.0265	-0.0035	0.0868	0.0488	134	137	49	44
Jackson	0.0051	0.0014	0.0832	0.0867	13	120	40	120
Jasper	-0.0276	-0.0188	0.1234	0.1016	139	157	125	138
Jeff Davis	-0.0061	0.0077	0.0884	0.1172	40	98	54	148
Jefferson	0.0051	0.0134	0.0783	0.0449	14	70	27	33
Jenkins	-0.0246	0.0000	0.0840	0.0714	131	124	43	91
Johnson	-0.0267	0.0028	0.0922	0.0531	136	115	65	54
Jones	-0.0214	-0.0003	0.1430	0.0668	114	125	142	83
Lamar	-0.0078	0.0064	0.0990	0.0408	50	105	79	21
Lanier	-0.0084	0.0120	0.1302	0.0534	56	78	134	55
Laurens	-0.0021	0.0175	0.1037	0.0504	27	55	91	46
Lee	-0.0203	-0.0089	0.1252	0.1067	105	147	128	143
Liberty	-0.0413	0.0032	0.0894	0.0988	155	113	57	136
Lincoln	-0.0229	0.0110	0.0721	0.0426	122	82	12	27
Long	-0.0451	-0.0241	0.0836	0.0644	157	158	42	77
Lowndes	-0.0070	0.0168	0.0877	0.0478	47	56	51	39
Lumpkin	0.0020	0.0075	0.1619	0.0887	20	99	151	123
McDuffie	-0.0163	0.0136	0.1027	0.1792	93	67	89	157
McIntosh	-0.0162	0.0121	0.0965	0.0409	90	76	74	22
Macon	-0.0039	0.0022	0.1225	0.0366	33	117	124	13
Madison	-0.0140	0.0128	0.0908	0.0638	77	74	60	76
Marion	-0.0225	0.0255	0.1074	0.0811	119	32	99	109
Meriwether	-0.0229	-0.0003	0.1188	0.0623	121	126	117	74
Miller	-0.0311	0.0075	0.0764	0.1021	150	100	23	140
Mitchell	-0.0205	0.0059	0.0943	0.0463	108	106	70	36
Monroe	-0.0298	0.1155	0.1252	0.2451	147	2	127	159
Montgomery	-0.0278	-0.0030	0.1220	0.0896	140	134	123	125
Morgan	-0.0107	0.0085	0.1803	0.1267	65	93	157	150
Murray	-0.0111	0.0298	0.1161	0.0770	67	22	112	106
Muscogee	-0.0054	0.0186	0.0919	0.0670	37	52	63	84
Newton	-0.0089	0.0142	0.1008	0.0969	59	65	86	134
Oconee	-0.0007	0.0149	0.1633	0.0688	24	62	152	86
Oglethorpe	-0.0210	-0.0045	0.1266	0.0555	110	139	131	60
Paulding	-0.0215	0.0111	0.1605	0.1423	115	81	150	154
Peach	-0.0144	0.0196	0.0787	0.0743	80	48	28	94
Pickens	0.0094	0.0191	0.1451	0.0487	10	50	146	41
Pierce	-0.0276	-0.0078	0.1002	0.0599	138	146	82	70

	Estimates				Rankings			
	Relative Sales Tax Base Growth	Relative Property Tax Base Growth	Relative Sales Tax Base Instability	Relative Property Tax Base Instability	Relative Sales Tax Base Growth	Relative Property Tax Base Growth	Relative Sales Tax Base Stability (1 = most stable)	Relative Property Tax Base Stability (1 = most stable)
Pike	0.0028	0.0051	0.0970	0.0606	18	108	75	71
Polk	-0.0178	0.0159	0.1062	0.0594	101	59	93	67
Pulaski	-0.0231	0.0164	0.0595	0.0380	124	57	2	18
Putnam	-0.0210	-0.0123	0.1007	0.0716	111	153	85	92
Quitman	0.0110	0.0359	0.1419	0.0664	7	12	140	81
Rabun	-0.0126	0.0595	0.1047	0.0904	73	3	92	126
Randolph	-0.0165	0.0036	0.0506	0.0427	95	111	1	28
Richmond	-0.0084	0.0230	0.0825	0.0757	57	37	38	99
Rockdale	0.0009	0.0208	0.1451	0.1020	22	43	145	139
Schley	-0.0189	-0.0175	0.1034	0.0371	103	156	90	15
Screven	-0.0160	-0.0014	0.0807	0.1160	88	130	34	147
Seminole	-0.0294	0.0159	0.0689	0.0741	145	58	10	93
Spalding	-0.0107	0.0227	0.0979	0.0843	66	38	77	114
Stephens	-0.0169	0.0221	0.1218	0.0293	97	40	122	6
Stewart	-0.0242	-0.0100	0.0919	0.0507	129	151	64	47
Sumter	-0.0062	-0.0004	0.0865	0.0950	43	127	48	132
Talbot	-0.0006	0.0090	0.1634	0.0707	23	91	153	90
Taliaferro	-0.0267	0.0084	0.0877	0.0458	135	95	52	35
Tattnall	-0.0142	0.0225	0.0812	0.1194	79	39	36	149
Taylor	0.0096	0.0135	0.1080	0.0491	9	68	100	45
Telfair	-0.0163	0.0146	0.0740	0.0389	92	63	15	20
Terrell	-0.0155	0.0050	0.0725	0.0349	86	109	13	11
Thomas	-0.0062	0.0189	0.1121	0.0444	42	51	107	31
Tift	-0.0082	0.0108	0.0808	0.0845	54	84	35	115
Toombs	-0.0115	0.0073	0.0822	0.0381	69	101	37	19
Towns	-0.0079	0.0407	0.0889	0.0812	52	8	56	110
Treutlen	-0.0289	0.0013	0.0782	0.0487	143	121	26	42
Troup	-0.0077	0.0263	0.0943	0.0378	49	30	69	17
Turner	-0.0294	-0.0028	0.0612	0.0368	144	132	4	14
Twiggs	0.0392	0.0198	0.1927	0.0591	2	47	158	66
Union	-0.0203	0.0250	0.1083	0.0529	106	34	101	53
Upton	-0.0236	0.0077	0.0860	0.0538	126	96	47	56
Walker	-0.0252	0.0132	0.1167	0.0487	133	72	114	43
Walton	-0.0124	0.0149	0.0999	0.1424	71	61	81	155
Ware	-0.0058	0.0067	0.0853	0.0620	39	104	45	73
Warren	-0.0430	0.0107	0.0982	0.0861	156	85	78	119
Washington	0.0016	0.0256	0.0761	0.0445	21	31	22	32
Wayne	-0.0234	0.0053	0.0895	0.0560	125	107	58	62
Webster	-0.0270	-0.0074	0.0756	0.0930	137	145	20	129

	Estimates				Rankings			
	Relative Sales Tax Base Growth	Relative Property Tax Base Growth	Relative Sales Tax Base Instability	Relative Property Tax Base Instability	Relative Sales Tax Base Growth	Relative Property Tax Base Growth	Relative Sales Tax Base Stability (1 = most stable)	Relative Property Tax Base Stability (1 = most stable)
Wheeler	-0.0101	0.0022	0.0650	0.0751	63	116	7	97
White	0.0199	0.0318	0.1144	0.0871	3	19	109	121
Whitfield	-0.0052	0.0215	0.1073	0.0418	36	41	98	26
Wilcox	-0.0180	0.0012	0.0656	0.1151	102	122	8	146
Wilkes	-0.0014	0.0012	0.1176	0.0276	26	123	115	3
Wilkinson	0.0447	0.0364	0.1727	0.0813	1	11	156	111
Worth	-0.0242	-0.0019	0.0979	0.0555	128	131	76	59

Source: Author's calculations based on Georgia Department of Revenue (various years).

ABOUT THE AUTHOR

Richard Hawkins is Principal Associate with the Fiscal Research Program and Assistant Professor of Economics at the University of West Florida. He did his undergraduate work at Emory University and received his Ph.D. in economics from Georgia State University. While at GSU he was a Research Associate in the Fiscal Research Program. His research interests include public finance, particularly the sales tax.