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DOES GROWTH PAY FOR ITSELF? PROPERTY TAX TRENDS FOR SCHOOL SYSTEMS IN GEORGIA

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I. Introduction

The net benefits of growth in Georgia is a contentious subject across the state. Some people are encouraged by the addition of new jobs and the gains from the new economic activity that accompany growth, but others bemoan the loss of a quality of life in the state. Growth also raises some important questions regarding the effects of Georgia's development on the budgets of the state and local governments.

This report is an attempt to carefully examine one budgetary effect of economic growth — in terms of population, employment and income — on school systems in Georgia. Specifically, we examine for each Georgia county for the period 1987 to 1998 the impact of economic growth on real (i.e., inflation adjusted) per-student taxable property (hereafter the adjusted tax base). For example, new employment in a school district should increase the property tax base, but may also increase the number of students. The fundamental question is whether the growth in the property tax base is larger than the growth in the number of students. This report explores this economic growth - school budget relationship.

Two other growth issues for school systems are also explored here. The first is the effect of enrollment growth on a school system's capital budget — where new students may create facility demands that put constraints on instructional and other types of spending. The second topic is state support for school districts with varying enrollment and resource growth.

The report is organized as follows. In the second section, the methodology for calculating the adjusted tax base and consolidating sub-county school systems is discussed. Growth in enrollment and the adjusted tax base are compared in the third section, while the fourth section is used to present more comprehensive estimates for determinants of adjusted base growth. In the fifth and sixth sections, the capital spending and state support issues mentioned above are examined. A conclusion can be found in the seventh section; specific county estimates follow in an appendix.

II. Methodology

In order to determine whether growth pays for itself, it is important to capture the natural response of government resources to changes in the economy. In this report, the government of interest is the school system. A school focus has several advantages, including strong public concern for the financial health of these institutions and a relatively small amount of overlap, across the different levels of government, in the actual production of K-12 education.[1]

For this report, the specific focus within the school system budget is the growth path for total taxable property, in a given jurisdiction, where this tax base is adjusted for inflation and changes in enrollment. Thus, rather than examining the income elasticity of the property tax — i.e., the expected revenue-growth response for an income increase — we look to the ability of the property tax to support a school system when prices and enrollment are changing.

The price and enrollment adjustment can be demonstrated with an example: from 1997 to 1998, the Richmond County property tax base grew by 3 percent. Enrollment, however, grew by 1.2 percent and prices increased by 2.3 percent. Thus, between 1997 and 1998, the adjusted tax base in that county declined by 0.5 percent. A zero growth rate for the adjusted tax base means that the property tax base, adjusted for inflation, grew (or declined) at the same rate as enrollment.

The property tax base used here includes state-level exemptions, as reported by the Georgia Department of Revenue, but does not reflect property tax exemptions enacted by individual local governments. These exemptions obviously affect the revenue growth path, but the *natural* revenue response to growth may be unaffected by local exemption policies. We note, however, that in jurisdictions with property tax policy changes from 1987 to 1998, e.g., increases in the homestead exemption, the estimates here will reflect the natural response and may differ from changes in revenue collections. Finally, the period covered included a few statewide changes in how certain types of property are taxed and the tax base data reflect these policy changes.[2]

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[1]Public safety is an example of a government service with considerable overlap — in Atlanta, public safety is produced by the federal, state, county and city governments.

[2]For example, the value of certain agricultural properties was adjusted from fair market value to current use value in 1991.

Since comparable data on the value of taxable property is available at the county level, enrollment for within-county school systems are consolidated. The absence of overlap in education production makes consolidation rather straightforward, but divergent individual system experiences are lost in overall county averages — i.e., Americus city school administrators could have experienced an adjusted tax base decline while Sumter County schools experienced an increase. Across a state with 159 counties, only 27 school systems operate at the sub-county level and within-county consolidation is not an issue for most of Georgia.[3]

The growth rate for the adjusted property tax base is calculated for each county with an exponential trend relationship

$$\log B_t = \alpha + \beta t$$

where B_t is the adjusted tax base in year t. The average annual growth rate for a particular county is calculated as the exponent of the specific estimate β minus 1.

Before examining the local growth estimates, two underlying assumptions must be discussed. First, many counties currently use a local one-percent sales tax for additional education-based funding, but this revenue source is not considered here. One justification for this omission is that these are relatively new taxes — the special purpose local option sales tax for educational purposes was authorized in 1996 — and therefore not part of a county's long-run growth experience. Additionally, each local tax expires after five years and must be renewed by referendum.[4] In these cases, the importance of the local sales tax to a county's future growth experience is speculative.

Economies of scale are also not considered in this evaluation of whether growth pays for itself. The existence of economies of scale is important — if the cost per student of providing an education falls as a school system gets larger, resources don't need to match enrollment growth in order to maintain the same quality of education. The hypothesis here is that economies of scale can exist, but the typical Georgia school system is generally not in a position to exploit them. One reason is that enrollment changes are not always smooth,

[3]Atlanta school enrollment, however, has been assigned to Fulton County. Roughly 10 percent of Atlanta school students actually live in DeKalb County and the assignment distorts the level of resources in both counties. We believe, however, that the resource growth rate is largely unaffected.

[4]It should be noted, however, that a handful of counties include school systems in the sharing formula for revenues from the older local option sales tax. This tax does not expire.

both from year-to-year and across individual schools, making any attempt to restructure the district in order to reduce average cost difficult.[5] A second reason why counties can fail to exploit economies of scale is that research has failed to clearly identify the important enrollment levels for these economies. Fox (1981) reviewed the extensive literature on the subject and concluded that while most district-level studies found economies of scale, "... there are weaknesses in each study which raise doubts about the exact size of any economies." (Fox, p. 287).

[5]In fact, if school systems follow the private sector in outsourcing some functions (e.g. food service and transportation), the practice may reduce average cost for all enrollment levels and economies of scale may disappear.

III. Growth in Enrollment and the Adjusted Tax Base

Figure 1 shows the distribution of enrollment growth rates for the period 1987-1998. With annual statewide population growth of 1.9 percent per year, roughly two-thirds of Georgia counties experienced relatively modest annual school enrollment growth between -1 percent and 2 percent (the three largest bars in Figure 1). Across the state another quarter of the counties could be called "fast enrollment growth", i.e., exceeding a 2 percent increase in the typical year. A final group, totaling only 12 counties, witnessed significant enrollment declines, and they are included in the left tail of Figure 1.

Turning to school-system resources, annual growth in the typical adjusted tax base is low. In the average county, the property tax base grew, even after the adjustments for changing enrollment and inflation, but the rate was generally less than 2 percent per year (Table 1). In other words, the per-student tax base increased slightly in the typical year. During the 1987 to 1998 period, 25 of the 159 Georgia counties experienced the difficult combination of an enrollment increase and an adjusted tax base decline.

One important issue is whether a resource-growth distinction exists between counties with enrollment growth and counties with enrollment declines. Average growth rate of the adjusted tax base for these two basic county types can also be found in Table 1. Enrollment-growth counties generally fared worse. However, the difference between the averages was slight, 1.2 percent adjusted resource growth per year for growing school systems versus 1.5 per year for declining school systems. Also, counties with a growing student population were more likely to experience a *decline* rather than an increase in the adjusted base, 21 percent of counties versus 13 percent.

While counties with enrollment growth had slightly lower growth in the adjusted tax base, one shouldn't conclude that *fast* development is a necessary drag on school resources. In fact, some of the Georgia counties with unusually strong enrollment growth had better than average resource growth. For example, Cherokee County experienced annual enrollment growth of just under 5 percent and annual adjusted tax base growth of 3.5 percent. Overall, the correlation coefficient between adjusted

FIGURE 1. DISTRIBUTION OF ANNUAL ENROLLMENT GROWTH RATES

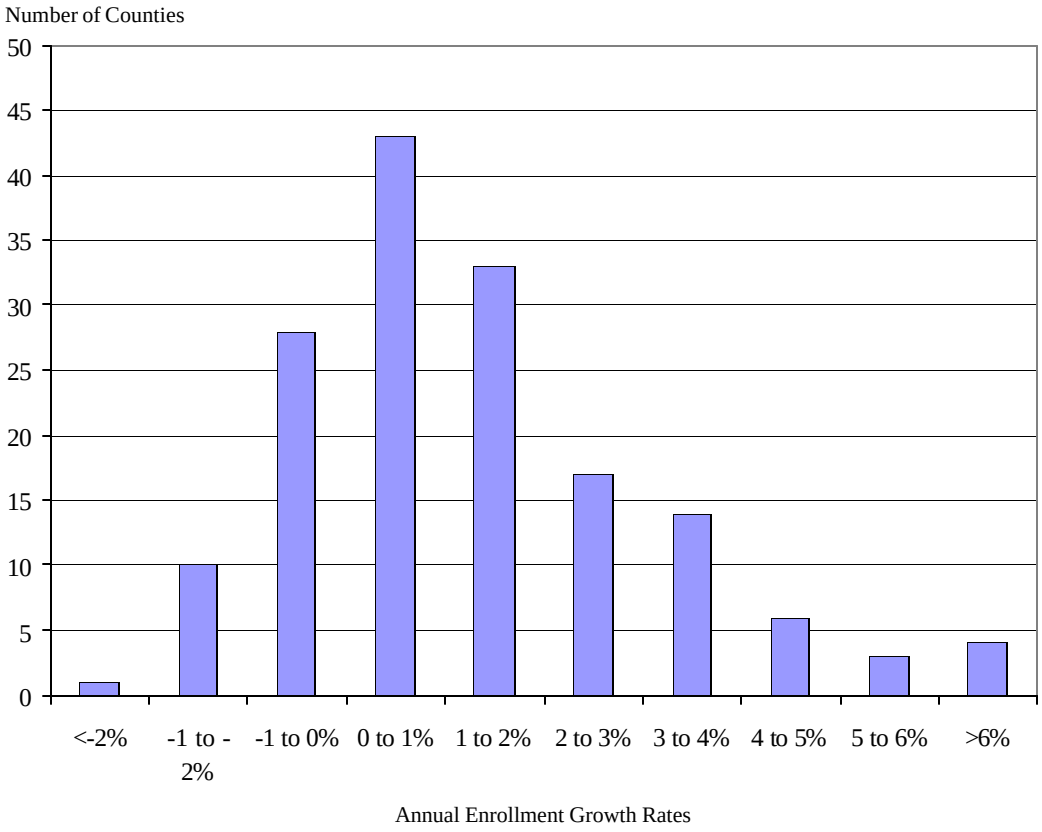


TABLE 1. DESCRIPTIVE STATISTICS FOR GEORGIA COUNTY ADJUSTED PROPERTY TAX BASE GROWTH

	Enrollment Growth Counties	Enrollment Decline Counties	All Counties
	Annual Growth Rate of Adjusted Base		
Average	1.2%	1.5%	1.3%
Minimum	-5.1%	-2.7%	-5.1%
Maximum	5.8%	8.8%	8.8%
	Number of Counties		
Total:	120	39	159
With an Adjusted Tax Base:			
Decline	25	5	30
Growth Rate Between 0 and 2 percent	54	20	74
Growth Rate Greater than 2 percent	41	14	55

Notes: The adjusted tax base is the net property tax digest — as reported by the Georgia Department of Revenue (various years) — per pupil, adjusted for inflation. The annual growth rate is calculated for the period 1987 to 1998. A growth rate of 1.3 percent means that on average, the real, per-student tax base grew by 1.3 percent per year.

property tax base growth and enrollment growth for the 159 counties in Georgia is only -0.14.

The distribution of the estimates for the adjusted tax base provide further evidence on the wide array of growth experiences in Georgia. In 55 counties, new resources increased faster than enrollment (and inflation) by more than 2 percent per year. In 30 counties, however, the adjusted property tax base declined in the typical year and this budget source failed to match enrollment growth.[6] In other words, in 19 percent of Georgia counties, the per-student property tax base, adjusted for inflation, fell. The distribution of the

[6]Note that in 5 counties, enrollment declined and the adjusted tax base also declined, meaning resources were falling faster than enrollment.

annual average growth rate (for the adjusted tax base) has been charted in Figure 2. The largest number of counties have a growth rate of the adjusted base of between 1 percent and 2 percent per year, but this group only totals about 1/3 of all Georgia counties.

For a particular Georgia school system, a relatively large annual growth rate for the adjusted tax base does not necessarily mean smooth growth in adjusted resources. Figure 3 includes a comparison of annual adjusted base growth and the long-run trend line for three Georgia counties (Banks, Newton, and Wilkinson). Each county experienced both enrollment and tax base growth, but the figures reveal an important insecurity in local finance.

The insecurity is clearest for Banks County, where most of the long-run growth occurred in 1991 and 1992 and the adjusted tax base was generally flat over the rest of the period. Newton and Wilkinson Counties experienced some relatively stable growth years, but they also experienced periods of fiscal uncertainty. In the former county, resources cycle the long-run path between 1987 and 1991 and remain flat between 1993 and 1997. In the latter, the adjusted tax base total for 1989 is not surpassed again until 1995.

In Figure 4, similar charts have been prepared for three other counties (Heard, Long, and Monroe) where enrollment grew and property tax base growth was not sufficient to maintain the property tax base level per student. Heard County probably experienced the most difficult budget environment as adjusted resources declined sharply from 1989 to 1992. The series for Long and Monroe Counties feature a more predictable decline, but here, each area experienced one year of unexpectedly strong resource growth (1992 for Long County, 1990 for Monroe). Beyond that turn in the series, however, declines in the adjusted tax base continued.

FIGURE 2. DISTRIBUTION OF ADJUSTED PROPERTY TAX BASE GROWTH RATES

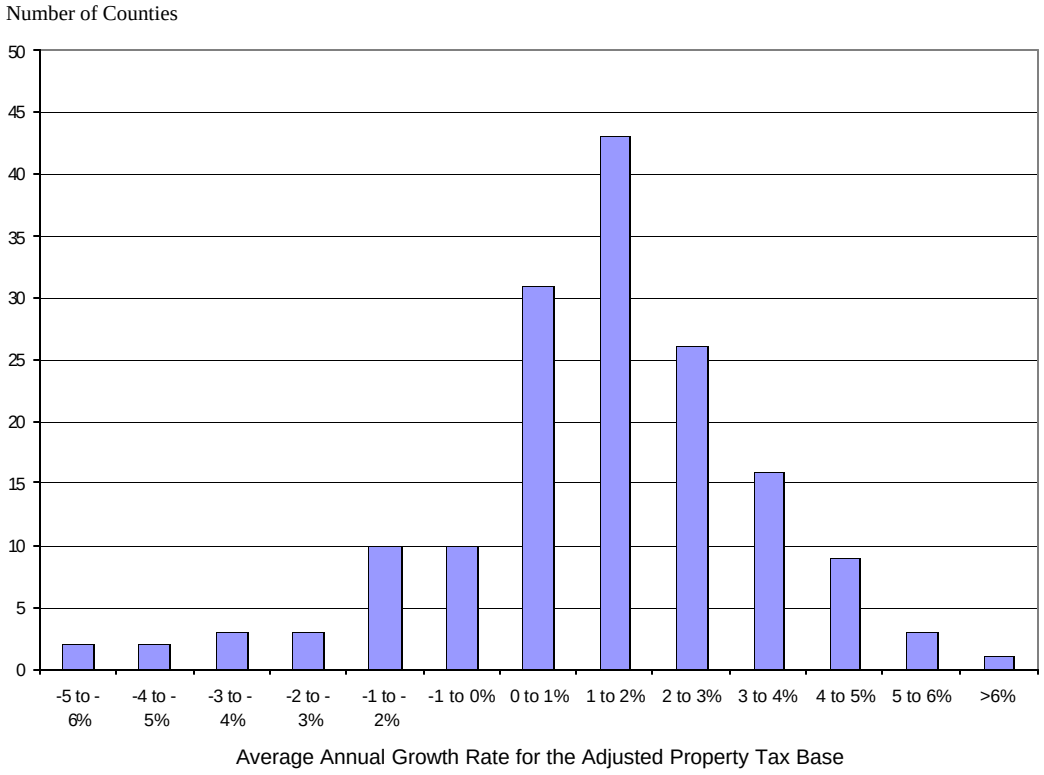


FIGURE 3. ADJUSTED PROPERTY TAX BASE AND TREND LINE FOR THREE COUNTIES WITH GROWING ENROLLMENT AND ADJUSTED TAX BASE

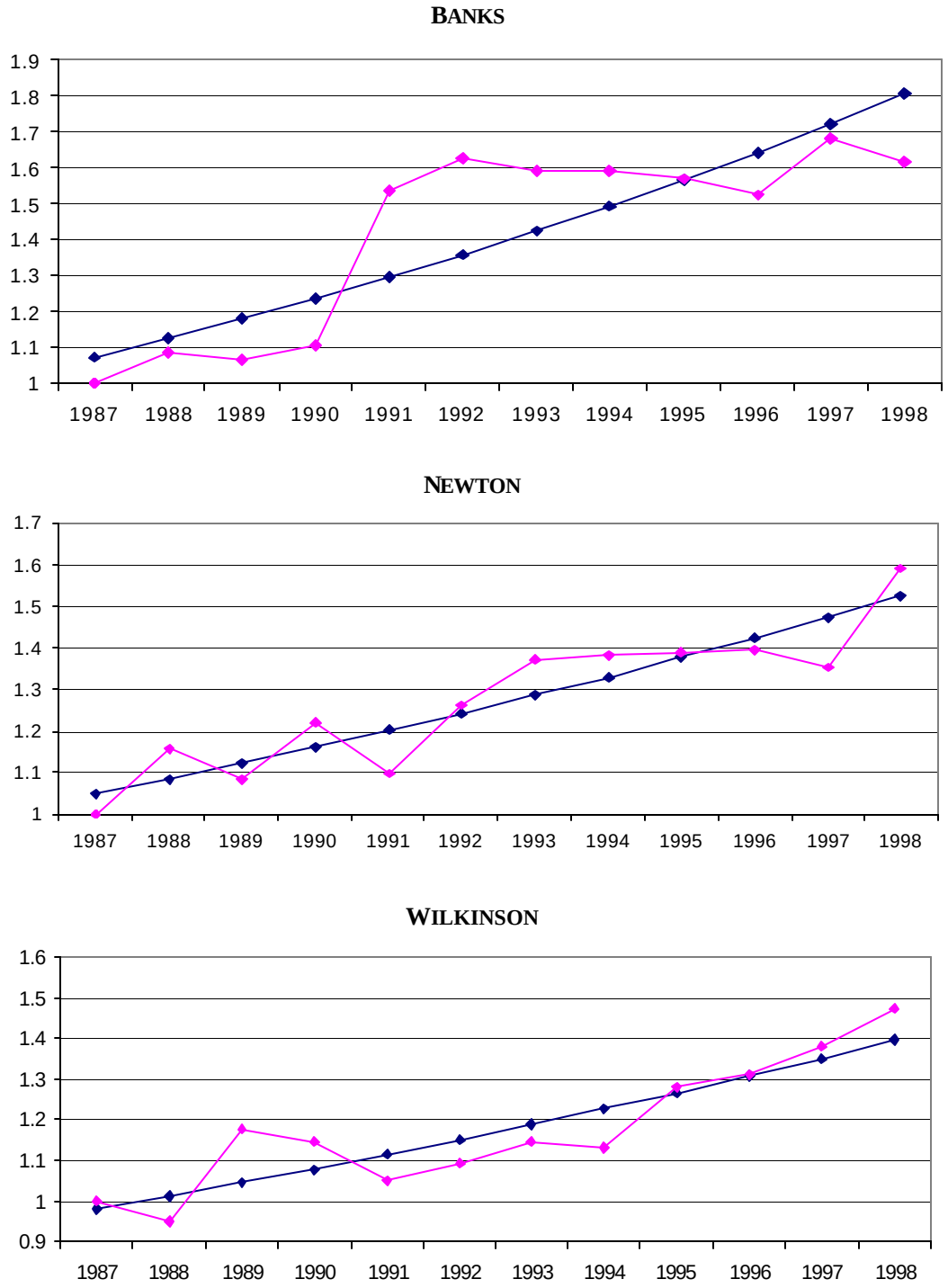
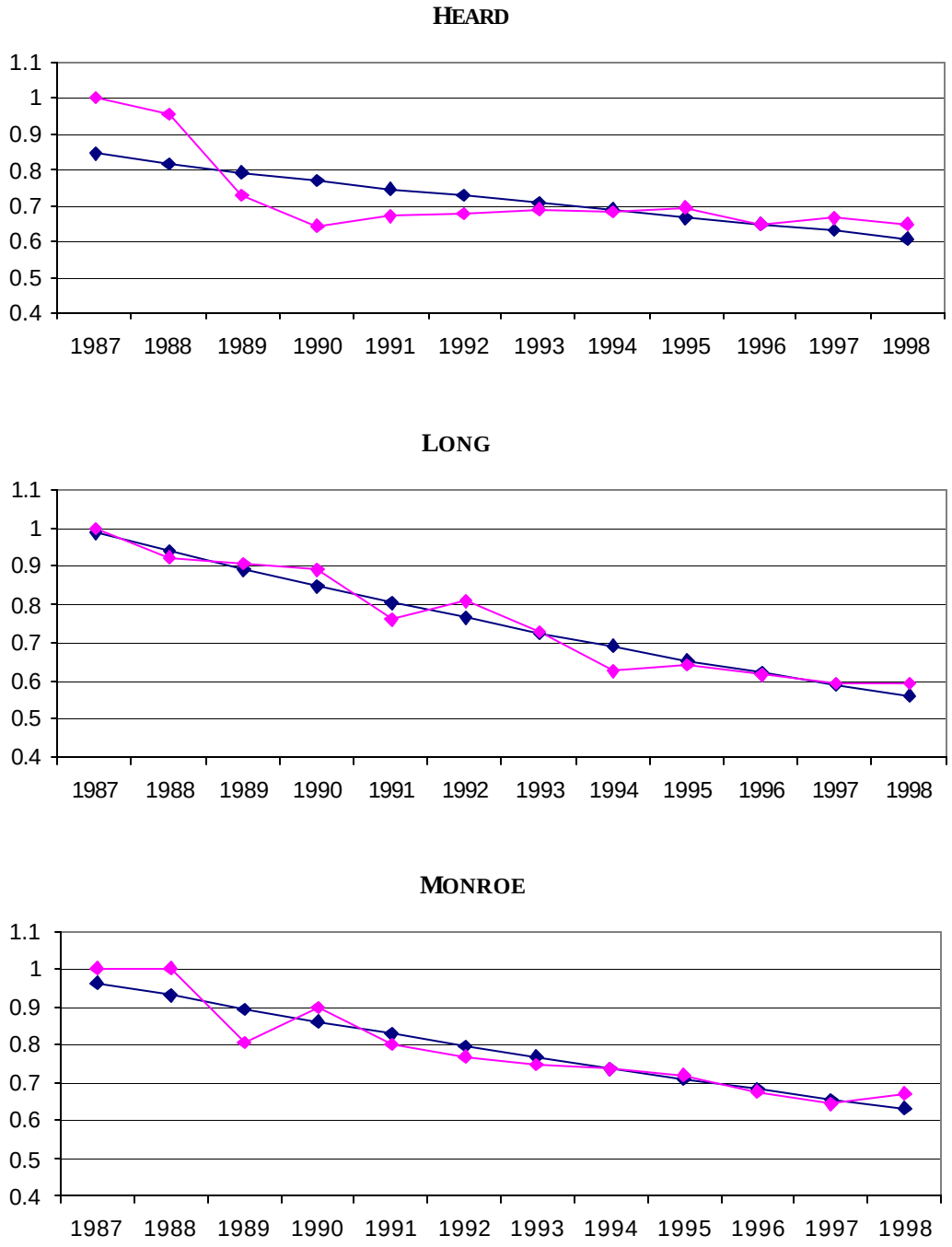


FIGURE 4. ADJUSTED PROPERTY TAX BASE AND TREND LINE FOR THREE COUNTIES WITH GROWING ENROLLMENT AND A DECLINING ADJUSTED TAX BASE



Finally, the growth estimates for each Georgia County (presented in the Appendix) include a count on the number of years, within the eleven year period spanned by the data, in which the adjusted tax base declined. The typical county with fast tax base growth — exceeding 2 percent in the typical year — also experienced 3 years of declining local resources. For counties with moderate growth in the adjusted tax base–between 0 and 2 percent per year–we generally observe 4 and 5 years with declines in the adjusted tax base. Finally, policy makers in a county with a downward resource trend usually experienced 7 annual declines.

IV. Sources of Growth in the Adjusted Property Tax Base

A. Economic Growth and Growth in the Adjusted Tax Base

To investigate how economic growth affects the growth path for the adjusted property tax base, we regressed the average annual growth for the adjusted tax base against several measures of economic growth. The estimates from four simple regressions in Table 2 confirms the idea that growth in a county generally leads to growth in the adjusted tax base. In the first two panels, growth in total county income and growth in employment are used separately as independent variables. The coefficients on both measures of growth are positive and statistically significant, but the adjusted R^2 statistic here, 0.05, also confirms the finding above that many other factors affect the growth rate of the adjusted tax base. Thus, an increase in economic growth will increase the local resource growth rate, but because there are other factors that determine the growth rate of the adjusted tax base, economic growth will not guarantee that the growth rate for the adjusted tax base will be positive.

Table 2 also includes two multi-variate attempts to determine the effects of individual economic growth components. In the first we separate income growth into growth in per capita income and growth in population. The effects of both on the growth in the adjusted base are positive and significant. In the last panel employment growth is added. The coefficients are all positive, but population is no longer significant. In essence, the estimate on county population growth may have actually picked up the effect of new jobs that frequently accompany the population growth.

The growth rate for county per capita income has the largest effect on the growth of the adjusted base. For example, if per capita income growth increases from 1 percent per year to 2 percent, the regression results indicate that the adjusted base growth rate will increase anywhere from 0.7 percent to 0.92 percent. Again, for these regressions, most of the variation in growth rates for the adjusted property tax base remains unexplained.

TABLE 2. THE EFFECT OF SELECTED ECONOMIC GROWTH RATES ON THE GROWTH RATE FOR THE ADJUSTED TAX BASE

	Estimate	t-statistic	Estimate	t-statistic	Estimate	t-statistic	Estimate	t-statistic
Constant	0.002	0.50	0.007	2.85	-0.007	1.35	-0.005	0.98
Growth Rate for:								
Total Income	0.352	3.12	—	—	—	—	—	—
Population	—	—	—	—	0.356	3.27	0.074	0.46
Per Capita Income	—	—	—	—	0.921	3.83	0.701	2.74
Employment	—	—	0.051	3.68	—	—	0.048	2.33
Adjusted R^2	0.05		0.07		0.09		0.11	

B. Explaining Differences in the Growth of the Adjusted Tax Base

Developing a more comprehensive model to explain why the adjusted property tax base grew in some counties and declined in others is difficult. There are two basic sources for an increase in the property tax base and a comprehensive model should identify both. The first includes the mix of changes to the residential and commercial tax base each year. The residential activity is measured here using income and population variables while new business activity is captured with employment changes for each economic sector relative to the population in the county. For an example of the latter, Bartow County gained 778 construction jobs from 1987 to 1998. Since the 1987 population was 50,623, we measure the construction employment increase for Bartow County as 0.015, i.e., 778/50,623.[7]

The second source of growth occurs when new construction is added to the tax base and market conditions change the value of the existing property. Anderson (1991) finds that these overall housing market conditions are affected by the current housing stock, the price of land, and the interest rate. For our analysis, however, there are problems with capturing this effect. For the interest rate, there is no variation across the observations, and the price of land is not available. As to the housing stock, Anderson (1991) made annual adjustments with building permit data, but there are two problems with using that approach in this study. First, the annual variation in an individual county is extreme — from 1991 to 1993 in Dodge County, building permits authorized for new private housing units totaled 5, 57, and 4 respectively. Second, a building permit is required for the construction of new housing in Georgia, but the permit does not indicate when, and even if, the new housing will be completed.

[7]Since the difference between total employment and total population varies across Georgia counties, often due to commuting patterns, we focus on the number of new jobs relative to the county's population.

Given these limitations, two regression equations have been estimated in an attempt to capture some basic determinants of adjusted property tax base growth (Table 3). The first regression in Table 3 includes a separate measure for each economic sector (in the commercial determinants), but missing values for many rural counties mean that only 96 Georgia counties are used in the analysis. The second regression uses a more limited commercial specification, but with more than 90 percent of the Georgia counties represented.

Among the residential determinants, only growth in per capita income appears to be important, i.e., statistically significant. Since income is assigned to the county of residence, this estimate captures the effect of increasing housing demanded from households with increasing income.[8] For the larger sample, i.e., the second regression, an increase in the share of adults under 45 reduces the growth rate of the adjusted tax base, most likely through an increase in school-age children.

For the commercial determinants, wholesale trade is the only sector that boosts the adjusted tax base. When wholesale trade is folded into the "other sectors" variable in the second equation, the parameter on that broader variable is positive and significant. Outside of wholesale trade, manufacturing and the "other sectors" have effects that are generally positive but statistically insignificant.

There are two additional statistically significant coefficients in Table 3. The first (Urban Dummy) captures an urban-county effect, where these areas experienced, on average, a faster growth rate in the adjusted tax base. Increasing demand for urban land over the period could be an important factor here, but an interaction term between population growth and population density (where more residents in a dense area should clearly drive up the price of land) fails to produce a similar result.

[8]Obviously, some of this income effect is on the market for existing homes rather than the market for new and remodeled housing.

TABLE 3. DETERMINANTS OF THE ADJUSTED PROPERTY TAX BASE GROWTH RATE FOR GEORGIA SCHOOL SYSTEMS

Variable	Estimate	t-statistic	Estimate	t-statistic
Constant	0.033	1.31	0.054	2.57
Urban Dummy	0.016	3.16	0.013	2.73
Property Tax Rate	-0.001	-2.49	-5E-04	-1.68
Residential Determinants:				
Per Capita Income in 1987	8E-07	0.59	-7E-07	0.51
Share of Adult Population Under 45	-0.040	-1.14	-0.098	-2.86
Per Capita Income Growth	0.531	1.80	0.441	1.69
Population Growth (PG)	2E-04	0.15	0.414	1.59
PG Squared	4E-05	-1.49	-7.05	-1.80
Population Density & Growth Interaction (PD&GI)	0.059	0.20	-3E-04	-0.28
PD&GI Squared	-4.81	-1.2	-2E-05	-0.78
Commercial Determinants:				
New Employment in:				
Construction	0.070	0.03	—	—
Manufacturing	0.072	1.40	0.093	2.03
Trans., Comm. and Public Utilities	0.348	1.54	—	—
Wholesale Trade	0.584	2.26	—	—
Retail Trade	0.136	1.27	0.02	0.21
Finance, Insurance and Real Estate	0.281	1.01	—	—
Services	0.289	1.57	—	—
Government	0.008	0.09	0.02	0.28
Other Sectors	-0.277	-1.65	0.094	2.32
Observations	96		147	
Adjusted R^2	0.30		0.25	

Notes: The data cover the 1987 to 1998 time period. Growth rates are calculated separately with an exponential trend line. The new employment variables are calculated as the change in employment for that sector divided by the county population in 1987. On the left panel, the "Other Sectors" includes mining and agricultural services. On the right panel, the variable includes all sectors other than manufacturing, retail trade and government. The property tax rate variable is total millage in 1994.

The second significant coefficient is on the property tax rate dummy, which equals one if the county's property tax rate is above the state average. A county that was one mill over the average property tax rate in Georgia could expect a slightly lower growth rate of the adjusted tax base during the period. Since residents are more likely to benefit from additional taxation — through the provision of additional public services — it can be argued that the property tax rate coefficient is more likely the effect of a higher tax rate deterring commercial development.

In summary, the determinants of growth in the adjusted tax base are somewhat vague. Wholesale trade and per capita income enhance growth of the adjusted base, but for many other factors the effects are not clear. Urban status and the property tax rate caused significant effects, but cannot be definitively assigned to the residential or commercial side of the tax base.

V. Capital Spending

Population growth may be problematic for school policymakers when new construction projects are required to accommodate new students. In this section, we turn to local capital spending and analyze whether these projects are particularly difficult for growing school systems.

Using annual growth rates for local capital spending is not entirely meaningful as year-to-year variation for a particular county can be large. For example, capital spending in Cherokee county declined by 23 percent from 1991 to 1992 and then increased by 19 percent from 1992 to 1993. Since our panel of school system budget data only covers nine years, a long-run growth estimate may be influenced by this variation.

In an attempt to identify reliable trends in capital spending, spending for the 1988-1990 period is compared with spending for 1994-1996 (Table 4). For each county, capital spending as a share of total spending is calculated for each three-year span and then the changes in capital spending are compared to enrollment growth.

TABLE 4. LOCAL CAPITAL SPENDING COMPARISON BY COUNTY ENROLLMENT GROWTH BUDGET SHARE AVERAGES FOR 1988-1990 AND 1994-1996

Enrollment Growth	Number of Counties		Average for Capital Spending as a Share of Total Local Spending	
	Total	Where Capital Spending Share Increased	1988-1990	1994-1996
Greater than 30 percent	10	9	0.17	0.23
Between 10 and 30 percent	39	17	0.14	0.15
Between 0 and 10 percent	62	29	0.09	0.11
Less than 0	35	17	0.09	0.10

Notes: Since annual variation in capital spending is large, enrollment and capital spending are averaged for the 1988-1990 and 1994-1996 periods. Thirteen Georgia counties that reported zero capital spending were omitted from this table.

As expected, counties in the fast enrollment growth group (the first row of Table 4) reported a substantial increase in capital spending. In the earlier period, these school

systems devoted 17 percent of the local budget to capital items, and this share increased to 23 percent. The increase was consistent across counties — in fact, only one county with fast enrollment growth did not increase its capital spending as a share of the local budget.

Moving down the rows in Table 4 we find two changes in the period-to-period comparison. First, the percentage of counties with an increase in the capital-spending share falls as enrollment growth declines. Second, capital spending for every county group increases very slightly from the earlier period to the later. For example, 29 of the 62 counties with enrollment growth between 0 and 10 percent increased the capital-spending share of the local budget, but the group average only rose from 9 to 11 percent. Clearly, these groups did not have the same pressing need for new capital projects.

VI. State Support

The Georgia state budget primarily supports local school systems through two Quality Basic Education (QBE) grants (Rubenstein, 2000). The first grant is calculated as the difference between the amount necessary to provide a basic education less the local fair share. The second grant — often referred to as the equalization grant — provides additional funding for systems with low property-wealth per student. In this section, we briefly examine how total state basic revenues for local school systems changed during the same period for which growth was examined above.

It is important to note that while the QBE grants represent the majority of state-to-local education transfers in Georgia, this total state basic revenue measure omits transfers for transportation, school lunch, and even capital spending projects. The omission of the last item from this analysis reflects our view that state support for capital projects is not a consistent revenue source for school systems. Three details in the school-system finance data support this view. First, state assistance for debt service and capital outlays generally fell, in relative terms, to about 10 percent of total local capital spending in 1996.[9] Second, nearly 50 percent of local school districts report zero state capital support in any particular year despite often having sizable local capital spending. Finally, total Georgia state debt service and capital outlay transfers to school systems are generally only 5 percent of the QBE grant total.

Table 5 shows the growth in state support for the same enrollment growth categories found in Table 4. The data indicate that in general, the growth rate in state support exceeded the combination of inflation and enrollment growth, but generally by less than one percent per year. A positive finding from Table 5 is that all 11 of the fast-enrollment-growth counties were partially compensated with increasing QBE resources, even after adjusting for inflation and enrollment.

[9] For more details on the program and the spending levels, see Walker and Sjoquist (1994).

TABLE 5. GROWTH IN ADJUSTED STATE SUPPORT TO SCHOOL SYSTEMS BY ENROLLMENT GROWTH

Enrollment Growth	Number of Counties		Average Annual Growth Rate for Adjusted State Support
	Total	With State Adjusted Resource Growth	
Greater than 30 percent	11	11	0.77
Between 10 and 30 percent	41	32	0.62
Between 0 and 10 percent	66	56	0.74
Less than 0 percent	41	38	1.16

Notes: State support only includes the two basic state-to-local grants under the QBE program.

The surprise in Table 5 is the relatively rapid growth in state support for counties with declining enrollment. In the average year, adjusted state support for these counties grew by a little more than 1.1 percent while the other combined groups received, on average, an increase of less than 0.75 percent.

Table 6 is used to further delineate growth in state support. Here, counties are classified by whether enrollment increased and whether the adjusted tax base grew. Again, the most sensitive group, counties with growing enrollment and a declining adjusted tax base, generally received growing state QBE support, even after adjusting for inflation and changing enrollment. However, counties with declining enrollment and an increasing adjusted tax base experienced *faster* QBE growth when the transfers are adjusted for enrollment (far right column in Table 6). In fact, a school district with declining enrollment generally received a flat flow of total QBE funds (adjusted for inflation only), but that trend actually boosted per-student funds. Conversely, a district with increasing enrollment often received larger increases in the total QBE grants, but these increases disappear when the per-pupil adjustment is made. Thus, enrollment trends do not appear to be fully reflected in the state grants, but it should be noted that the growth trends may be explained by other factors, including changes in the type of enrollment and in the relative size of the equalization grant. This remains an important topic for future research.

TABLE 6. GROWTH IN STATE SUPPORT TO SCHOOL SYSTEMS FROM 1988 TO 1996 BY COUNTY TYPE

County Type		Number of Counties		Average Annual Growth Rate	
Enrollment	Adjusted Tax Base	Total	With Growth in Adjusted State Support	Total State Support	Adjusted State Support
Growth	Decline	26	22	3.3%	0.74%
Growth	Growth	92	77	2.4	0.70
Decline	Decline	4	3	0.0	0.64
Decline	Growth	37	35	0.7	1.22

Notes: The growth rates in the "total support" column are based on data adjusted for inflation only. All other data were adjusted inflation and enrollment changes before growth rates were calculated.

VII. Conclusion

From 1987 to 1998, school systems in Georgia experienced enrollment growth, adjusted tax base growth, an increase in capital spending (as a share of total spending) and an increase state support. For these general averages, it would appear that growth "paid for itself" in the sense that the property tax base increased faster than enrollment and prices.

Within the annual, county-by-county data, however, one finds numerous instances where growth failed to pay for itself. In some cases, enrollment continued to grow and the adjusted tax base slumped. In other counties, the adjusted tax base rarely grew and local policymakers were in the unenviable position of delivering more education with no additional own-source resources. Per capita income, the types of new jobs, and the property tax rate in the county are three important factors associated with growth for the adjusted tax base over the period.

In counties with relatively strong enrollment growth, local policymakers faced two additional challenges over the period. First, the share of local spending committed to capital projects increased. Second, growth in the state's largest education grants (i.e., QBE) adjusted for inflation and student growth was modest. In total, the likelihood of local property tax base volatility, increasing capital spending, and QBE funds that are somewhat insensitive to enrollment growth, mean that growth brings risk to a local school system budget. The question for Georgia's state policymakers is whether this is acceptable risk or whether the state needs to modify the school finance system in order to reduce this risk.

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Appendix

AVERAGE ANNUAL GROWTH RATES FOR GEORGIA COUNTIES, 1987 - 1998

County	Average Annual Growth Rate			Years in Which the Adjusted Tax Base Declined
	Adjusted Property Tax Base	Enrollment	Total Personal Income	
Appling	-2.4%	-0.8%	1.9%	8
Atkinson	1.6	0.9	3.9	5
Bacon	1.1	-0.7	2.6	4
Baker	1.1	-1.4	1.9	7
Baldwin	1.7	0.7	2.2	6
Banks	4.9	2.5	4.2	6
Barrow	1.5	3.8	4.5	5
Bartow	2.6	2.9	4.9	3
Ben Hill	1.2	-0.4	2.6	4
Berrien	0.9	0.5	2.5	5
Bibb	1.8	0.1	1.9	1
Bleckley	1.6	1.3	2.1	5
Brantley	-0.8	1.6	4.4	7
Brooks	0.7	-0.2	2.9	5
Bryan	2.0	4.8	5.8	3
Bulloch	2.7	2.4	4.1	4
Burke	-5.1	1.2	1.3	9
Butts	0.8	1.4	3.4	4
Calhoun	2.4	-3.1	1.4	3
Camden	-3.1	7.8	5.7	9
Candler	1.7	0.9	3.3	4
Carroll	5.7	0.9	3.1	2
Catoosa	1.9	1.0	3.3	2
Charlton	-3.6	1.4	2.4	6
Chatham	1.1	1.0	2.0	2
Chattahoochee	-1.8	2.7	1.2	4
Chattooga	3.4	-0.2	2.3	2
Cherokee	3.5	4.9	6.4	5
Clarke	2.8	0.3	2.7	1

AVERAGE ANNUAL GROWTH RATES FOR GEORGIA COUNTIES, 1987 - 1998 (CONTINUED)

County	Average Annual Growth Rate			Years in Which the Adjusted Tax Base Declined
	Adjusted Property Tax Base	Enrollment	Total Personal Income	
Clay	4.2%	-2.0%	3.2%	4
Clayton	-0.5	2.6	1.8	6
Clinch	0.4	-0.1	4.1	3
Cobb	0.5	3.3	4.5	4
Coffee	2.4	1.6	3.7	3
Colquitt	0.2	0.6	1.7	5
Columbia	1.9	4.3	4.2	1
Cook	2.2	0.7	2.7	3
Coweta	3.0	4.3	6.1	5
Crawford	0.0	2.9	2.7	5
Crisp	0.1	0.1	2.0	6
Dade	0.3	0.6	2.8	4
Dawson	-0.5	3.3	7.2	6
Decatur	1.6	-0.5	2.1	4
De Kalb	-1.6	2.2	2.6	7
Dodge	3.6	-0.1	2.4	2
Dooly	1.6	-0.6	2.3	5
Dougherty	2.6	-1.0	2.0	4
Douglas	2.9	1.7	3.9	2
Early	-0.8	0.0	1.9	4
Echols	-4.7	2.5	2.3	7
Effingham	1.1	3.9	5.1	4
Elbert	2.0	0.7	1.7	4
Emanuel	0.4	0.7	2.0	4
Evans	2.3	0.3	3.1	4
Fannin	4.8	0.9	3.7	3
Fayette	2.0	5.1	5.8	3
Floyd	3.2	0.7	2.2	1

AVERAGE ANNUAL GROWTH RATES FOR GEORGIA COUNTIES, 1987 - 1998 (CONTINUED)

County	Average Annual Growth Rate			Years in Which the Adjusted Tax Base Declined
	Adjusted Property Tax Base	Enrollment	Total Personal Income	
Forsyth	5.8%	5.7%	10.0%	1
Franklin	3.4	0.9	3.1	4
Fulton	2.1	1.4	4.2	5
Gilmer	5.4	3.3	4.4	5
Glascock	2.5	-1.2	2.0	5
Glynn	1.3	1.3	3.1	4
Gordon	3.5	1.0	3.0	2
Grady	0.4	1.3	2.2	6
Greene	8.8	-0.5	3.7	1
Gwinnett	-0.4	5.3	6.4	5
Habersham	1.9	1.5	3.7	3
Hall	1.2	3.2	4.1	5
Hancock	0.1	-0.6	2.6	6
Haralson	0.3	1.7	2.2	6
Harris	-0.1	3.2	4.0	5
Hart	4.5	0.4	1.8	4
Heard	-2.9	1.6	4.2	6
Henry	1.4	7.5	6.8	3
Houston	1.1	2.8	2.8	5
Irwin	-1.4	1.4	2.5	5
Jackson	4.8	2.1	5.2	2
Jasper	1.5	2.4	4.0	6
Jeff Davis	1.5	0.5	1.4	4
Jefferson	1.0	0.2	1.4	6
Jenkins	0.5	-0.4	1.4	3
Johnson	3.7	-1.1	1.8	5
Jones	0.2	2.4	2.0	3

AVERAGE ANNUAL GROWTH RATES FOR GEORGIA COUNTIES, 1987 - 1998 (CONTINUED)

County	Average Annual Growth Rate			Years in Which the Adjusted Tax Base Declined
	Adjusted Property Tax Base	Enrollment	Total Personal Income	
Lamar	2.3%	1.5%	2.9%	4
Lanier	-1.5	1.5	2.3	7
Laurens	1.9	1.0	2.5	3
Lee	1.8	3.4	5.4	4
Liberty	-0.9	4.7	4.3	4
Lincoln	1.0	0.7	2.2	3
Long	-5.0	6.5	4.5	8
Lowndes	2.4	1.2	3.1	2
Lumpkin	1.3	3.6	5.4	5
McDuffie	1.5	1.0	2.1	4
McIntosh	2.3	0.2	2.9	4
Macon	0.1	-0.6	2.2	5
Madison	2.2	1.7	3.8	4
Marion	0.6	1.3	2.6	4
Meriwether	0.4	-1.0	3.0	5
Miller	-2.7	-0.4	2.0	7
Mitchell	3.1	-0.8	2.8	2
Monroe	-3.8	2.4	2.3	8
Montgomery	-1.7	0.9	1.9	7
Morgan	1.9	0.9	3.7	2
Murray	0.9	2.2	3.8	4
Muscogee	1.7	0.9	1.3	1
Newton	3.5	2.0	4.3	3
Oconee	2.6	4.9	4.5	4
Oglethorpe	2.8	1.8	3.5	3
Paulding	-0.9	6.6	5.6	7
Peach	1.1	1.5	1.2	6
Pickens	4.3	3.1	5.7	3
Pierce	1.2	1.1	3.9	4

AVERAGE ANNUAL GROWTH RATES FOR GEORGIA COUNTIES, 1987 - 1998 (CONTINUED)

County	Average Annual Growth Rate			Years in Which the Adjusted Tax Base Declined
	Adjusted Property Tax Base	Enrollment	Total Personal Income	
Pike	1.1%	2.8%	3.4%	5
Polk	1.8	0.5	1.8	5
Pulaski	1.1	-0.3	2.8	4
Putnam	3.6	2.1	4.6	3
Quitman	3.1	1.2	2.8	6
Rabun	4.8	0.2	4.5	3
Randolph	1.4	-0.3	1.4	4
Richmond	0.6	1.1	1.1	6
Rockdale	0.1	2.7	3.9	4
Schley	-1.6	1.2	2.1	7
Screven	-1.5	0.8	1.8	5
Seminole	-0.6	0.8	2.5	7
Spalding	2.1	-0.1	2.6	3
Stephens	2.8	0.8	2.9	2
Stewart	0.1	-1.7	1.5	6
Sumter	0.1	1.0	2.7	5
Talbot	1.3	-1.6	1.8	6
Taliaferro	-1.5	-1.7	0.2	6
Tattnall	-1.2	0.5	3.1	6
Taylor	0.6	0.4	1.8	5
Telfair	2.1	-0.8	1.9	3
Terrell	1.4	0.2	1.6	4
Thomas	1.3	1.0	2.7	3
Tift	2.1	0.2	3.0	3
Toombs	3.1	0.1	1.7	4
Towns	4.4	1.4	5.7	2
Treutlen	0.3	-0.7	2.1	6
Troup	3.2	0.6	2.3	1
Turner	1.5	-0.6	1.4	4

AVERAGE ANNUAL GROWTH RATES FOR GEORGIA COUNTIES, 1987 - 1998 (CONTINUED)

County	Average Annual Growth Rate			Years in Which the Adjusted Tax Base Declined
	Adjusted Property Tax Base	Enrollment	Total Personal Income	
Twiggs	1.5%	0.3%	2.1%	6
Union	3.0	3.2	5.7	3
Upson	0.9	0.3	1.9	6
Walker	4.0	-0.6	1.7	2
Walton	2.2	3.3	4.3	3
Ware	0.8	-1.0	1.7	4
Warren	-0.1	-0.4	1.4	4
Washington	1.0	1.0	2.6	2
Wayne	0.7	1.0	2.8	4
Webster	-4.5	3.1	1.7	6
Wheeler	0.2	-0.7	1.9	6
White	1.6	3.0	4.9	5
Whitfield	2.6	1.3	2.9	1
Wilcox	1.5	-0.2	2.9	5
Wilkes	2.8	-0.6	1.4	4
Wilkinson	3.3	-1.2	0.7	4
Worth	-1.2	1.7	3.2	7

About the Author

Richard Hawkins is Principal Associate with the Fiscal Research Program and Associate 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.

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