

The Impact of the Special Purpose Local Option Sales Tax (SPLOST)

on Local Government Finance in Georgia

by Changhoon Jung

Carl Vinson Institute of Government
The University of Georgia

Public Policy Research Series

www.cviog.uga.edu/pprs

Richard W. Campbell, *Series Editor*

Development and production of the Public Policy Research Series evolved from a belief that the Vinson Institute, located at the state's land grant university, is uniquely situated to anticipate critical public problems and issues and conduct long-term, objective, and systematic research on them. The series was initiated in 1987 and serves as a forum for the publication of policy research, with the intent of contributing to more informed policy choices by decision makers in the state. New to the series in 2000 are Policy Notes, two-page statements designed to define and summarize issues and to direct recipients to the series papers as well as other policy-related publications and resources.

Recently Published Policy Papers

The Impact of Welfare Reform's TANF Program in Georgia:
Criteria for Exemption from Its Work Requirements and Time Limits (2000)
Increasing the Speed Limit in Georgia: Have Rural Highways Become More Dangerous? (2000)
Protecting Stream and River Corridors: Creating Effective Local Riparian Buffer Ordinances (2000)
Whose Water Is It? Major Water Allocation Issues Facing Georgia (1998)

Recently Published Policy Notes

As Georgia's Latino Population Grows, So Does the Need to Examine the Delivery of
Governmental Services (August 2002)
SPLOST Has Little Effect on Borrowing to Finance Capital Improvements but Does Lead to
Increases in County Spending (July 2002)
Don't "Hold the Phone": Georgia Public Favors a Ban on Handheld Cell Phone Use
while Driving (June 2002)
Annexation Law in Georgia Serves Multiple Stakeholders and Is Relatively Comprehensive (May 2002)
HOPE, the Brain Drain, and Diversity: The Impact of the Scholarship on High Achievers and
African Americans (April 2002)
Few of Georgia's Local Governments Use Cameras to Enforce Red Light Violations—
Despite State Authorization to Do So (March 2002)
Public Opinion in Georgia Splits along Racial Lines (February 2002)
Georgia's Lottery Ranks High on Measures of State Lottery Revenues and Operations (January 2002)
HOPE Scholarship Affects Where, Not Whether, Students Attend College (December 2001)
Governments Put the Internet to Work, but Important Challenges Remain (November 2001)
Voter Confidence Shaken by 2000 Election, but Public Is Buoyed by State Efforts to
Update Election Equipment (October 2001)
Child Well-Being and Economic Development in Georgia (July 2001)
Cellular Phone Use while Driving: Should It Be Banned or Restricted in Georgia? (June 2001)
More Than Maps: Making Full Use of Geographic Information Systems (May 2001)
How Debt Managers View Debt Policies (April 2001)
Property Tax Relief in Georgia: The Local-Option Sales Tax (LOST) (March 2001)
New Census Numbers Suggest Gains for Rural Georgia (February 2001)
Electronic Meetings in Georgia (January 2001)
Infrastructure Development Would Benefit South Georgia (December 2000)

The Impact of the Special Purpose Local Option Sales Tax (SPLOST) on Local Government Finance in Georgia

Copyright © 2002 by the Carl Vinson Institute of Government, University of Georgia. Printed in the United States of America. All rights reserved.

Opinions expressed in the Public Policy Research Series papers are those of the authors and are not necessarily endorsed by the Vinson Institute or the University of Georgia.

Foreword

For more than two decades, Georgia has been one of the five fastest-growing states in the country. This growth resulted in a significant increase in the need for roads, highways, bridges, courthouses, jails, landfills, libraries, and other capital facilities. In the late 1970s and early 1980s, voters in Georgia were reluctant to borrow to meet these infrastructure needs, voting “no” on numerous general obligation bond issues. In 1985, the Georgia General Assembly passed the Special County Sales Tax (HB 281), authorizing local governments to levy a 1 percent sales tax to finance capital projects, one of the first states in the country to do so. The so-called special purpose local option sales tax (SPLOST) has been very popular and over the last decade has become a major vehicle for financing local government capital projects.

This policy paper by Changhoon Jung, assistant professor in the Political Science Department at Auburn University, examines how Georgia county governments have used SPLOST to finance infrastructure and capital needs. *The Impact of the Special Purpose Local Option Sales Tax (SPLOST) on Local Government Finance in Georgia* explores why some counties adopted SPLOST more quickly than did others. It also analyzes the effect of the use of SPLOST on the structure and level of long-term debt, property tax burdens, and capital and current operating spending. The findings of this research should be of interest to Georgia state and local officials who use or are considering the use of SPLOST to fund capital projects.

A number of individuals at the University of Georgia reviewed drafts of the author’s doctoral dissertation research. They include Thomas P. Lauth, Mark D. Robbins, and Arnold P. Fleischmann of the Department of Political Science; Richard W. Campbell of the Vinson Institute of Government; and Gregory A. Trandel of the Department of Economics. While the research has benefited from their comments and suggestions, the author alone is responsible for the findings presented here.

This paper is part of the Public Policy Research Series of the Carl Vinson Institute of Government. The series strives to present objective and systematic research findings on complex policy issues confronting the state of Georgia and its local governments. Understanding the impact of the use of the special purpose local option sales tax on local government borrowing, capital spending, and property tax burdens is important to state and local policy makers in Georgia and in other states.

James L. Ledbetter
Director
Carl Vinson Institute of Government

July 2002

Contents

Executive Summary 1

Introduction 4

County Government Fiscal Trends 7

Own Source Revenue 7

Intergovernmental Revenue 11

Debt 14

Spending 18

Research Approach 20

Data and Measures 20

Statistical Methods 21

Research Questions 22

Results 24

Patterns of SPLOST Use 24

Factors Affecting SPLOST Adoption 27

Impact on Long-Term Debt 31

Impact on Property Tax Burden 38

Impact on Capital Spending 41

Impact on Current Operating and Total Spending 44

Policy Implications 47

Notes 49

References 51

Appendix A: Summary of Related Studies 55

B: Pooled Regression Models 60

C: Variables Used in the Analysis 63

Tables

1. SPLOST Projects in Georgia Counties, 1985–97 25
2. Results of SPLOST Referenda in Georgia Counties, 1985–97 26
3. Determinants of Early SPLOST Adoption 29
4. Impact of SPLOST on General Obligation Debt 33
5. Impact of SPLOST on Revenue Debt 35
6. Impact of SPLOST on General Obligation and Revenue Debt Combined 37
7. Impact of SPLOST on Property Tax Burdens 40
8. Impact of SPLOST on Capital Spending 43
9. Impact of SPLOST on Current Operating and Total Spending 45

Figures

1. Own Source Revenue Trends 8
2. Composition of Own Source Revenue 8
3. Trends in Intergovernmental Revenue 12
4. Composition of Intergovernmental Revenue 12
5. Intergovernmental Revenue as a Percentage of Own Source Revenue 12
6. Short-Term Debt Trends 14
7. Number of Counties Issuing Long-Term Debt 16
8. General Obligation Debt Trends 16
9. Revenue Debt Trends 17
10. Spending Trends 18
11. Composition of Total Spending 19

Executive Summary

The need to finance infrastructure has challenged local governments across the country for decades. Investment in capital projects and maintenance of capital facilities is vital to a community's economic development and quality of life. Historically, federal and state intergovernmental grants and own source revenues, including current revenues and long-term debt, have been the major mechanisms for financing local government capital outlays. However, with the taxpayer revolt of the 1970s, and the associated decline in federal and state grants for capital purposes in the 1980s, local governments have struggled to fund their capital needs.

For more than two decades, Georgia has been one of the five fastest-growing states in the country. The growth has resulted in a significant increase in the need for roads, highways, bridges, courthouses, jails, landfills, libraries, and other capital facilities. In 1985, the Georgia General Assembly passed the Special County Sales Tax (HB 281), authorizing local governments to levy a 1 percent sales tax to finance capital projects, one of the first states in the country to do so. The so-called special purpose local option sales tax (SPLOST) has become quite popular and over the last decade has become a major vehicle for financing local government capital projects in the state.

This paper examines how Georgia county governments have used SPLOST to finance infrastructure and capital needs. Using data from the Georgia Secretary of State's Office and the Department of Community Affairs (1985–97) and employing a fixed-effects model and a time-series design, the study explores how counties have used SPLOST and why some counties adopted it more quickly than did others. The effect of the use of SPLOST on the fiscal behavior of Georgia counties is also analyzed, focusing on the structure and level of long-term debt, property tax burdens, and capital and current operating spending.

SPLOST is used most frequently to fund roads, streets, and bridges, followed by county jails, courthouses, landfills and solid waste facilities, wastewater treatment, recreation facilities, public safety facilities, hospitals, and libraries. Between 1985–97, Georgia counties held 493 SPLOST referenda, of which 411 passed (83 percent). The pass rate fluctuated during this period, ranging from a 60 percent pass rate in 1986 to a 95 percent pass rate in 1995 (see Table 2).

SPLOST is neither a powerful alternative to long-term debt nor a property tax relief measure, but it does enhance revenue for local capital spending.

Regarding adoption, a number of patterns emerged from a systematic review of SPLOST referenda records:

- Rapidly growing urban counties tend to be early adopters (1985–88) of SPLOST.
- Counties with large commercial trade centers, university towns, or tourist attractions that are able to export part of their sales tax to nonresidents tend to use SPLOST earlier and more frequently than do rural counties that lack this potential.
- Rural counties may use SPLOST to shift part of the tax burden from property owners to consumers.
- Counties that adopted SPLOST early tend to become SPLOST users over time.
- The percentage of affirmative votes in SPLOST referenda is inversely related to voter turnout—the lower the voter turnout rate, the higher the likelihood that a SPLOST referendum will pass.
- Counties with a higher percentage of home owners tended to adopt SPLOST earlier than did other counties.

The analysis of the impact on long-term debt suggests that SPLOST is unlikely to affect how often and how much debt a county issues. Statistically significant relationships were not established, but it appears that SPLOST is neither a powerful alternative to general obligation debt nor a means of reducing revenue debt. The use of SPLOST

- tends to slightly reduce both the likelihood that a county will issue general obligation debt and the amount of general obligation debt,
- tends to slightly increase both the likelihood that a county will issue revenue debt and the amount of revenue debt, and
- does not seem to reduce either the combined amount of general obligation and revenue debt or the likelihood that a county will issue both types of debt.

With regard to the effect of SPLOST on property tax burdens, the study found the following:

- SPLOST does not reduce property tax burdens. Instead, it tends to increase the per capita amount of property tax collected and the amount of property taxes expressed as a percentage of personal income.
- Although the use of SPLOST seems to slightly reduce property tax rates, the analysis suggests that rate reduction does not necessarily lead to actual reduction in the amount of property tax collected.

This study demonstrates clearly that SPLOST has emerged as a powerful instrument for increasing the amount of capital spending in Georgia counties.

- SPLOST-collecting counties spend an average of \$17.40 more on capital spending per capita than do non-SPLOST counties.
- In terms of capital spending as a share of total spending, SPLOST counties maintain an average that is 5.6 percent higher than in non-SPLOST counties.
- As expected, a dollar of SPLOST revenue brings less than a full dollar increase (38 cents) in capital spending.

In addition to increasing capital spending, SPLOST seems to lead to an increase in current operating and total spending (capital and current operating spending).

- SPLOST counties spend \$2.80 more on current operating spending than do non-SPLOST counties.
- An extra dollar of SPLOST revenue results in a 12-cent increase in current operating spending.
- An extra dollar of SPLOST revenue results in a 50-cent increase in total spending: 38 cents in capital spending and 12-cents in current operating spending.

These findings suggest, as critics have argued, that SPLOST can trigger more spending on maintenance of capital equipment and facilities.

Given the changes in fiscal federalism and the calls for local governments to diversify their revenue bases over the past two decades, it appears that SPLOST has emerged as a successful revenue diversification measure in Georgia. With its widespread use by Georgia counties, numerous administrative buildings, courthouses, jails, recreation facilities, and other capital projects have been built since 1985.

The findings of this research suggest that SPLOST does not appear to be a substitute for long-term borrowing but that local governments can increase the level of capital spending by earmarking local sales taxes (which are less visible and more politically feasible than property taxes) for specific capital projects. Moreover, SPLOST does not reduce property tax burdens and, with the associated increases in capital and operating spending, actually tends to increase the overall tax burden.

SPLOST can trigger more spending on maintenance of capital equipment and facilities.

Introduction

An adequate investment in capital projects and maintenance of capital facilities (infrastructure) is vital for economic development and quality of life in a community. Historically, federal and state intergovernmental grants and own source revenues, including current revenues and long-term debt, have been major revenue sources of local capital outlays, although the importance of these sources has fluctuated. Through the 1970s and much of the 1980s, federal aid was the major source, peaking at 40 cents out of every dollar spent on local and state infrastructure (Peterson, Holstein, and Weiss 1992, 724–69). However, the termination of federal revenue sharing, reduced federal and state grants, and various spending and tax limitations imposed by state governments and voters in the wake of taxpayer revolts since the late 1970s made it more difficult for local officials to find adequate revenue sources for capital projects (Pagano 1986; Snell 1993). Faced with declining federal and state aid and taxpayer resistance, local governments increasingly relied on user charges and fees to finance infrastructure. In recent years, impact fees, tax increment financing (TIF), and a host of innovative methods for financing local capital projects have flourished throughout the nation (National League of Cities 1987). However, given the huge costs of infrastructure, these fees and charges may not be adequate and stable revenue sources for local capital projects.

In search of more adequate and stable alternative or supplemental revenue sources to finance local capital projects, some states permitted their localities to use a portion of the revenue from income, sales, and specific excise taxes (ACIR 1989). In 1985, Georgia became one of the first states to permit its counties to utilize a local sales tax to finance a limited set of local capital projects. At the request of local elected officials, the Georgia General Assembly permitted a 1 percent special purpose local option sales tax (SPLOST) to counties for financing the growing needs of local capital projects.

To utilize the tax, a countywide referendum must be passed. Proposed projects are listed on the ballot. Once the referendum is passed, tax collection can be made for a maximum of five years or until a designated maximum amount is collected (the sunset provision), whichever comes first. The tax can be renewed through passage of another referendum. The proceeds are to be used for projects within and outside the county or within and outside municipalities. The tax proceeds can be used for local capital projects such as roads, streets, courthouses, administrative buildings, civic centers, hospitals, jails, correctional facilities, pub-

lic safety facilities, airport facilities, and solid waste facilities (Clements and Weeks 1997, 5–7).

The primary use of SPLOST revenue is to fund countywide capital projects. An examination of FY 1990 and FY 1997 data from all 159 Georgia counties reveals that about 94 percent of total SPLOST proceeds were distributed to county governments while only 6 percent went to municipalities. Although there are minor fluctuations in the composition of revenue distribution between counties and municipalities over time, that trend remains stable (Georgia Department of Community Affairs 1994a).

Since its inception, a growing number of Georgia counties have utilized SPLOST. For example, in 1985, the first year of the tax, only 12 of 159 Georgia counties used it; the number increased to 92 in 1990, and 124 in 1995. As of January 1999, 130 counties were collecting SPLOST (Georgia Department of Revenue 1999). SPLOST revenue constitutes between 6 percent and 40 percent of annual general revenue funds, depending on the county (Georgia Department of Community Affairs 1994a). Clearly, the tax is popular and has emerged as a major vehicle for financing local capital projects in Georgia.

Before SPLOST, capital projects in Georgia were largely financed with federal and state grants and through local long-term debt (specifically the general obligation bond, which is backed by the full faith and credit of issuing local governments and is primarily paid for through property tax increases). Once SPLOST became available, local governments could use sales tax money to finance part of local capital projects. Using a sales tax rather than property tax to finance local capital projects has several advantages. First, a sales tax raises money for county capital projects without necessitating an increase in property tax rates or floating new bonds. As a result, the use of SPLOST shifts part of the tax burden of financing local capital projects from property owners to consumers. Also, because the sales tax base is much broader than the property tax base, the 1 percent SPLOST that piggybacked onto the state sales tax could easily generate the necessary money with minimal administrative costs. Second, given that long-term general obligation bond financing is a major alternative to the SPLOST levy, the use of SPLOST money also cuts costs (interest payments) that must be repaid to bondholders when a long-term bond is used. Finally, through SPLOST, local governments can export part of their capital finance burden to nonresidents who use local facilities or make purchases within the political jurisdiction. Thus, the more fortunate counties that are located on tourist routes or that have regional shopping malls can garner as much as one-third of their sales tax revenue from nonresidents.

SPLOST critics complain that the tax fosters inefficiency and waste associated with big government. They argue that SPLOST projects add future operating costs to the local government because, once the projects are completed, revenues required to operate SPLOST projects must come from other sources. Critics concerned about equity insist that SPLOST makes the tax system more regressive because the poor spend a larger portion of their income on taxable items.

Aside from the advantages and disadvantages of financing local capital projects with sales tax, the security resulting from the sunset provision of SPLOST that voters do not enjoy either in property or income taxes, local officials' desire to export sales taxes to nonresidents, and the political acceptability of the sale tax vis-à-vis the property tax seem to have led more local governments to utilize the local sales tax in Georgia. Clearly, SPLOST has become an important component of local finance in Georgia, especially capital finance. The significance of this innovative sales tax is that it is not only an additional revenue source for local governments but also a response to voters' demands for a revenue source that is efficient and politically acceptable, that allows for accountability, and that is tied to specific projects.

Considering the growing importance of the sales tax in funding local capital projects in Georgia, remarkably little is known about the rationale for its adoption or its impact on local finance. (For a brief review of related studies, see Appendix A.) This study addresses six specific research questions as it explores these areas:

1. What factors prompted some counties to adopt SPLOST earlier than did others?
2. Does the use of SPLOST decrease the likelihood that a county will issue new general obligation debt and decrease the amount of debt?
3. Does the use of SPLOST increase the likelihood that a county will issue new revenue debt and increase the amount of debt?
4. Does the use of SPLOST decrease property tax burdens (i.e., per capita property tax collected and millage rates)?
5. Does the use of SPLOST increase capital spending?
6. Does the use of SPLOST lead to an increase in current operating and total spending?

County Government Fiscal Trends

This section describes the major types of own source revenues, in tergovernmental revenues, debts, and expenditures that occur in Georgia county governments. The data are derived from the annually compiled *Report of Local Government Finances (Counties)*, FY 1984–97. The Georgia Department of Community Affairs has required Georgia county and city governments to submit an annual report containing financial information about their general purpose governments since FY 1984. Of Georgia's 159 counties, 136 have consistently submitted the *Report of Local Government Finances*,¹ and data from these counties were used in this study. The population of the 136 counties makes up about 90 percent of the total state population as of 1990, and the revenues and total expenditure of these counties represent about 95 percent of the state total (Georgia Department of Community Affairs 1991; Bureau of Economic Analysis 1993). The revenue figures shown in the analysis are deflated (with 1984 as the base year) by employing the implicit price deflator (IPD) for state and local governments. Although there are minor fluctuations in the figures, the trends are consistent over the period. In size as well as in fiscal and demographic characteristics, the nonreporting counties do not differ significantly from the reporting counties, so the database can be seen as representative of all Georgia counties.

Own Source Revenue

Own source revenue refers to all tax and nontax revenue sources that are generated locally. Tax revenue includes property taxes and nonproperty taxes. In Georgia, sales taxes compose the bulk of nonproperty taxes. However, various miscellaneous taxes are also collected.

Property Taxes

The general property tax is a major revenue source for most Georgia counties, as it is in most other states (Clements and Weeks 1997). The tax is levied on real property, personal property, and intangible property. General law stipulates that real and personal property for both counties and municipalities be assessed at 40 percent of fair market value. The tax rate is stated in mills. All county governments imposed property taxes in FY 1997. Most county governments collected more than 30 percent but less than 70 percent of own source revenue from property taxes over time. Some small county governments (population below 15,000) collected more than 70 percent of own source revenue from property taxes; few counties received less than 30 percent of own source revenue from property taxes.

Figures 1 and 2 present annual property tax collections and property taxes as a percentage of own source revenue, respectively, for the 136 counties analyzed in the study. The total amount of property tax collected has doubled: a 105 percent increase between FY 1984 and FY 1997. During that period, the largest increase in tax revenues occurred between FY 1986 and FY 1989. Although the growth of property tax revenue can primarily be attributed to the increase in net digest, it results in part from local government efforts to offset losses in general revenue sharing, which was phased out beginning in 1986 (Lu 1994).

The average composition of the property tax in county government fluctuated by 10 percent of own source revenue (Figure 2): property taxes as a percentage of own source revenue were 53 percent in FY 1984 but decreased to 48 percent by FY 1997. This decline can be attributed to the increasing role of sales taxes (specifically SPLOST) in county finance since FY 1985.

Figure 1. Own Source Revenue Trends

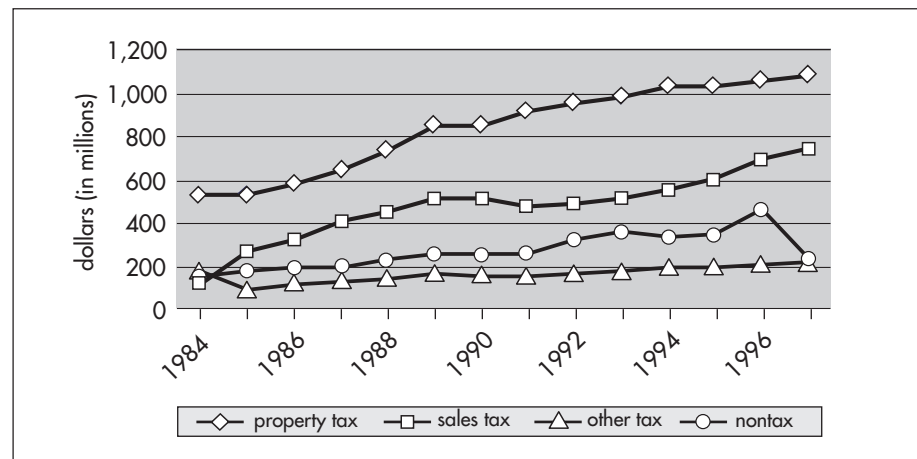
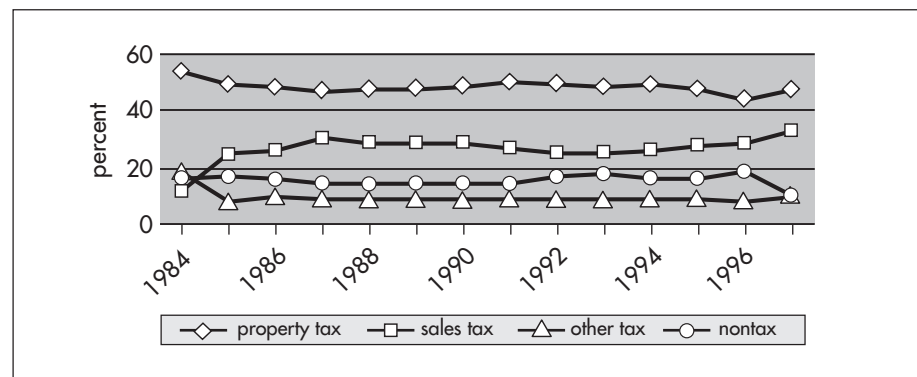


Figure 2. Composition of Own Source Revenue



Local Sales Taxes

Several types of local sales taxes are imposed across the state including the local option sales tax (LOST), SPLOST, Metropolitan Area Rapid Transit (MARTA) sales tax, and homestead option sales tax (HOST). Because MARTA has been collected only in Fulton and DeKalb counties and HOST is collected only in DeKalb County, this section primarily discusses LOST and SPLOST.

Local Option Sales Tax (LOST)

Following the property tax, LOST is the largest revenue source for most county and city governments collecting this sales tax in Georgia (Weeks and Campbell 1998). The Local Option Sales Tax Act of 1975 permits counties, with the approval of voters, to enact a 1 percent general purpose sales and use tax. The tax is imposed on the purchase, sale, rental, use, or consumption of tangible personal property and related services. (In counties that have not enacted LOST, cities may, with voter approval, impose their own sales taxes.) LOST proceeds are disbursed to a county and its qualified municipalities pursuant to an agreement negotiated by the county government and these cities based on criteria established by general law (Clements and Weeks 1997). The tax can be collected unless it is repealed by referendum or a county and its qualified cities fail to reach an agreement on the distribution of the tax, but such cases are rare in practice. Hence, once the tax is approved, it becomes practically an institutionalized revenue source for Georgia local governments.

Unlike SPLOST, LOST revenue can be used for general government purposes. It was designed to provide additional revenue sources and property tax relief to local governments (Durning 1992). In order to impose the tax in subsequent years, the tax bill of each property taxpayer must show the reduced county and city millage rate resulting from the receipt of sales tax revenue from the previous year, as well as the amount of the person's property tax that was reduced as a result (Clements and Weeks 1997, 4). Specifically, the LOST act requires that all LOST revenue collected in the second year of the tax should be used for a dollar-for-dollar reduction of property taxes.

Since its inception in 1975, the number of counties adopting the tax has gradually increased. For example, in the first year of the tax, 13 out of 159 counties utilized it. By 1978, the number had increased to 73 counties; 114 counties had adopted it by 1982; 138, by 1986; 144, by 1988; 143, by 1990; and 152, by 1996 (Georgia Department of Revenue 1998). As of January 2000, all but 6 Georgia counties were using the tax.

LOST revenue accounts for between 7 percent and 35 percent of own source revenue for counties collecting the tax (Georgia Department

of Community Affairs 1994a). For 136 counties analyzed in the study, LOST made up 11.9 percent of own source revenue in FY 1984 and decreased to 10.6 percent by FY 1997.

Special Purpose Local Option Sales Tax (SPLOST)

SPLOST has become the third largest revenue source in counties that collect the tax. Of the 136 counties analyzed in the study, only 28 (21 percent) collected the tax in FY 1987, making up 7.7 percent of own source revenue. By FY 1997, 112 counties (82 percent) collected SPLOST, making up 14.4 percent of own source revenue. Thus, SPLOST has been the fastest-growing revenue source in counties in the past decade.

The volume of total sales taxes (mostly LOST and SPLOST) has increased steadily (Figure 1), except in two recession years (FY 1990 and FY 1991). There was a 533 percent increase in the amount of total sales tax between FY 1984 and FY 1997. This rapid growth of total sales taxes is impressive compared with the 105 percent increase in property tax in the same period. As a percentage of own source revenue, total sales taxes rapidly jumped from 12 percent in FY 1984 to 30 percent in FY 1987 (Figure 2), and by FY 1997, had risen to 33 percent. This increase is mainly due to the growing use of SPLOST by counties² and is evidenced by the growing proportion of sales taxes to own source revenue in Georgia counties.

Other Taxes

Other taxes imposed in county governments include all taxes besides property and sales taxes: alcoholic beverage taxes, insurance payment taxes, hotel-motel taxes, franchise payment taxes, business and occupation taxes, and other excise and special use taxes such as the local option mixed drink tax and the real estate transfer tax (Clements and Weeks 1997). Although most counties have utilized one or more of these taxes, the taxes were not as significant as property and sales taxes as a percentage of own source revenue. In FY 1984, other taxes made up 19 percent of own source revenue, but in FY 1985, the figure suddenly dropped to 8 percent and the trends leveled off. One explanation for this change may be the collection of SPLOST in counties starting in FY 1985.

Nontax Revenues

Nontax revenues include user charges, building permit fees, licenses, development impact fees, landfill fees, parks and recreation charges, and motor vehicle tag collection fees. In addition to the charges and fees,

nontax revenues include interest earnings on investments, fines, forfeitures, sales of contraband property, and court fees (Clements and Weeks 1997). The extent to which county governments have relied on these revenue sources varies among counties but has been quite stable. Nontax revenues account for between 14 percent and 19 percent of own source revenue (see Figure 2).

Between FY 1984 and FY 1997, the total amount of own source revenue increased by 130 percent. Although property tax revenue contributed to that increase, the growing use of SPLOST and LOST accounts for much of it. This finding indirectly suggests that Georgia counties, in general, were able to increase the level of total own source revenue by diversifying their revenue structures.

SPLOST and LOST account for much of the increase in local governments' own source revenue.

Intergovernmental Revenue

Counties and cities receive funds from federal, state, and other local governments. However, intergovernmental revenue varies from year to year, unlike own source revenue, which is relatively stable (Nathan 1983; Fosset 1984, 108–63). State governments are the most important and stable intergovernmental revenue source for county governments, whereas the amount of federal grants received by local governments has fluctuated over time (Clements and Weeks 1997). Revenue from other local governments has been minimal.

Federal Grants

Revenues from the federal government are either categorical or block grants. Before 1986, nearly all county governments received some amount of general revenue sharing with no federal restrictions. However, with the gradual termination of general revenue sharing beginning in 1986, considerably fewer counties receive any form of direct federal grants.³ The gradual termination of general revenue sharing together with the reduction in other federal grants may be among the factors that prompted Georgia local governments to adopt SPLOST and LOST aggressively between 1986 and 1990.

The role of federal aid in county government finance decreased in 1986–90 (Figures 3 and 4). The total amount of federal grants decreased by 55 percent between FY 1984 and FY 1997 (Figure 3). In FY 1984, total federal grants were equivalent to 8 percent of county own source revenue (Figure 5). This share gradually decreased to 1.18 percent by FY 1990, increasing slightly in later years. Currently, it remains below 2 percent.

Figure 3. Trends in Intergovernmental Revenue

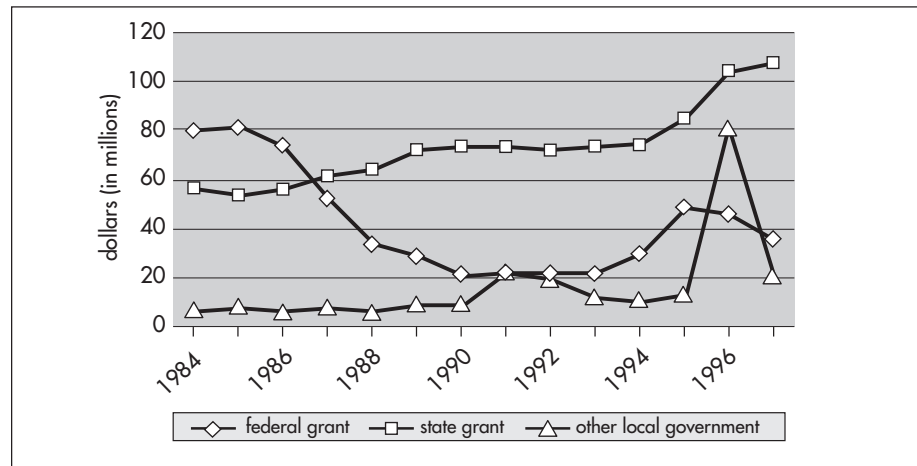


Figure 4. Composition of Intergovernmental Revenue

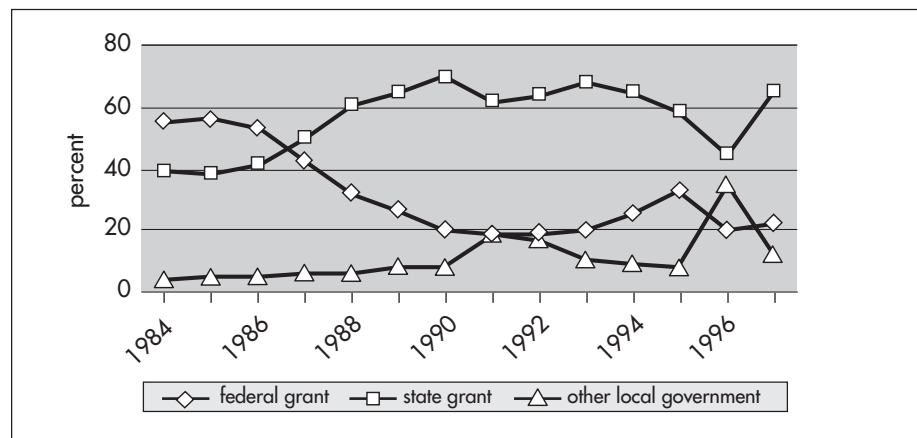
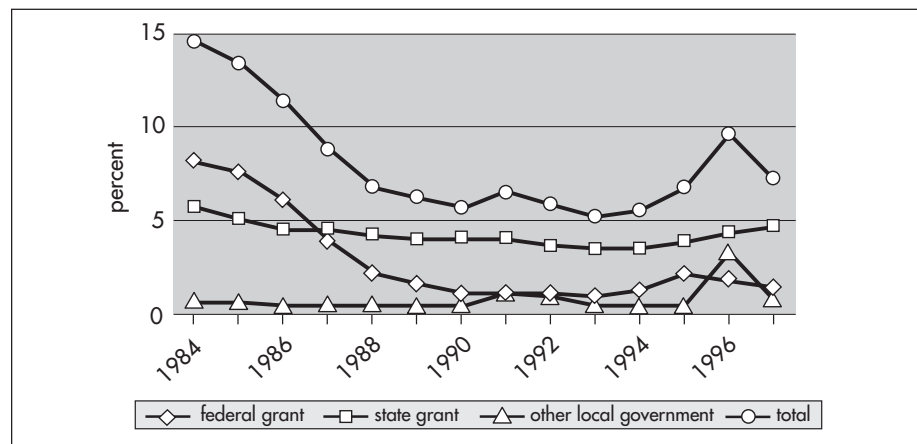


Figure 5. Intergovernmental Revenue as a Percentage of Own Source Revenue



State Grants

In Georgia, approximately 80 financial assistance programs are available to local governments, with various qualifications and conditions (Clements and Weeks 1997). Major categories of state aid programs include general public purpose grants, capital outlay grants, water/waste grants, crime and correction grants, and public welfare grants. While some grants are given to local governments on a competitive basis, others are determined by formula. The Georgia General Assembly is authorized to allocate funds to counties for any public purpose, based on a ratio of county public road mileage to total public road mileage in the state (Clements and Weeks 1997). As seen in Figure 3, the total amount of state grants between FY 1984 and FY 1997 increased by 88 percent. However, despite a slight increase in the mid-1990s, state grants as a percentage of own source revenue has generally declined (see Figure 5). It should be noted that, starting in FY 1987, the proportion of state grants as a source of local government funding has outpaced that of federal grants (Figure 4), largely because of the gradual termination of general revenue sharing and the decline in federal grants to local governments.

Revenues from Other Local Governments

Revenues from other local governments are similar to user fees in that local governments receiving services from other local governments pay for the services. The magnitude of intergovernmental revenue, then, indicates the scale of cooperation among local governments (Campbell and Glynn 1990). In general, because of economies of scale, large governments are in a better position to provide services to other local governments. Revenues from other local governments generally have amounted to less than 1 percent of own source revenue, although the total amount has increased over time (Figure 5). This figure may indicate that there is little formal cooperation among local governments in Georgia (Campbell and Glynn 1990).

The importance of total intergovernmental revenue as a percentage of own source revenue generally has decreased over time. Total intergovernmental revenue reached a peak (14.6 percent of own source revenue) in FY 1984 but decreased to 7.2 percent by FY 1997 to almost one-half of the FY 1984 level. Because federal grants drastically decreased since 1986 with the gradual termination of general revenue sharing, state grants did not increase significantly. This development, in part, led to lower percentages of total intergovernmental revenue as a percentage of own source revenue. It seems that county governments gradually relied on own source revenue (specifically local sales taxes) to finance their service delivery in order to make up for the lost intergovernmental revenue.

As has been discussed, the decrease in intergovernmental revenue is matched by an increase in total sales tax revenue over time.

Debt

Local governments use both long-term and short-term debt. Short-term debt is largely used to cover fluctuations in cash flow. Long-term debt is used to finance capital improvements.

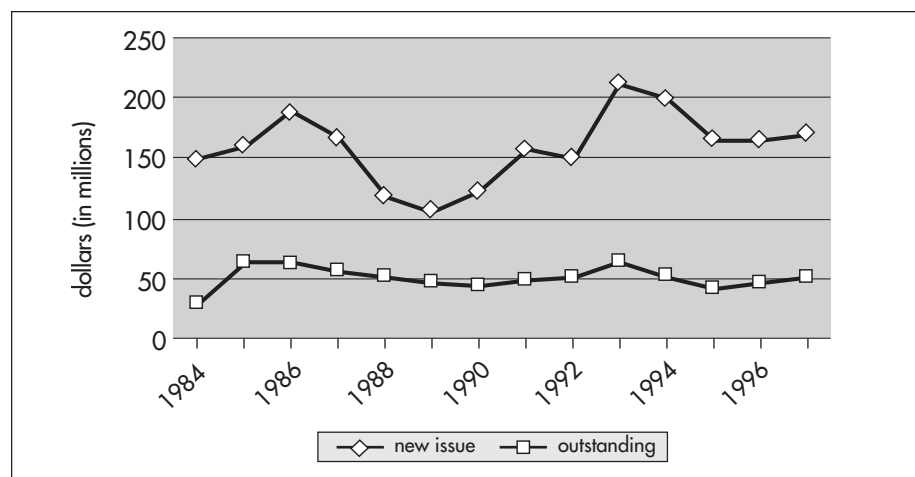
Short-Term Debt

Short-term debt is usually payable within one year of the date the debt was issued. In Georgia, the most commonly used short-term debt instrument is a promissory note for an annual temporary loan, which is payable by December 31 from general city or county funds (Clements and Weeks 1997, 25). In general, the number of counties issuing short-term debt has decreased over time, although the total amount of debt has fluctuated in response to the state of the economy (Figure 6). The total and per capita amounts of short-term debt seem to be greater in times of economic recession in the state (the mid-1980s and early 1990s), but when the overall state economy is robust, counties seem to issue less short-term debt (FY 1987–89 period).

Long-Term Debt

Long-term debt is the most frequently used debt instrument for financing capital outlays and capital projects. Georgia local governments use four types of long-term debt: general obligation bonds, revenue bonds,

Figure 6. Short-Term Debt Trends



leases, and other debts. Local governments traditionally finance capital improvements through general obligation debt. Because it is backed by the “full faith and credit” of the issuing government, general obligation debt is a relatively safe investment instrument. The pledge from the issuing government, coupled with the tax-exempt status of general obligation bonds, make general obligation debt the least expensive form of long-term debt in terms of interest rates. The Georgia Constitution limits the amount of general obligation debt that may be incurred by county and city governments to “10 percent of the assessed value of all taxable property located within a county or a municipality” (Clements and Weeks 1997, 26). To issue general obligation debt, the constitution also requires approval by a majority of qualified voters in a bond election.⁴

In using the second type of long-term debt, revenue bonds, local governments pledge the revenue derived from the project to repay the principal and interest. However, because the issuing government is not backing the debt with its taxing power, voter approval is not required, and it is not restricted by the 10 percent debt limit (Clement and Weeks 1997). As a result, revenue bond debt is less secure for investors than are general obligation bonds, and it carries higher interest rates than do general obligation bonds.

Leases as a form of long-term debt have assumed a growing importance in local government capital finance in recent years, nationally and in Georgia. Two types of leases are widely used: multiyear installment purchases and lease purchases. The traditional lease is similar to a multi-year installment purchase under which there is a single lessor to whom the city or county (the lessee) makes equal payments for the lease period, usually less than 10 years. The lessor can be a bank, an association of governments, or the equipment manufacturer. This method is frequently used to make small purchases of vehicles and equipment and in situations in which the duration of the lease is too short to make issuing bonds practical.

Lease purchase has become the preferred method for financing larger purchases and capital projects in recent years. This type of lease is called a certificate of participation because investors purchase the lease obligation in the form of certificates. The attraction of this debt method is that it has no constitutional debt limit or referendum requirement.

Georgia local governments use other long-term debt in the form of loan programs available to counties and cities through the state and federal governments (Clements and Weeks 1997). One example is the loans made to local governments by the Georgia Environmental Facilities Authority for capital needs such as water and sewer improvements.

General Obligation Debt Trends

Of 136 counties analyzed in the study, fewer than 12 issued new general obligation debt annually during FY 1984–97 (see Figure 7). Not surprisingly, the large counties are the major general obligation debt issuers in terms of both amount and frequency of issuance. The total amount of general obligation debt issued generally tends to decrease over time, although there are some fluctuations (Figure 8). This fluctuation may occur in Georgia, as in other states, because revenue debt has gradually replaced general obligation debt. In general, Georgia counties are fiscally conservative in their use of general obligation debt (Georgia Department

Figure 7. Number of Counties Issuing Long-Term Debt

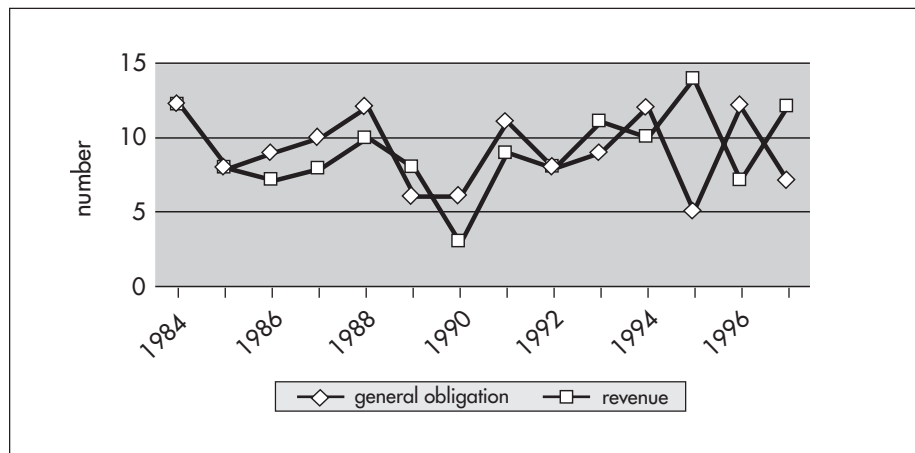
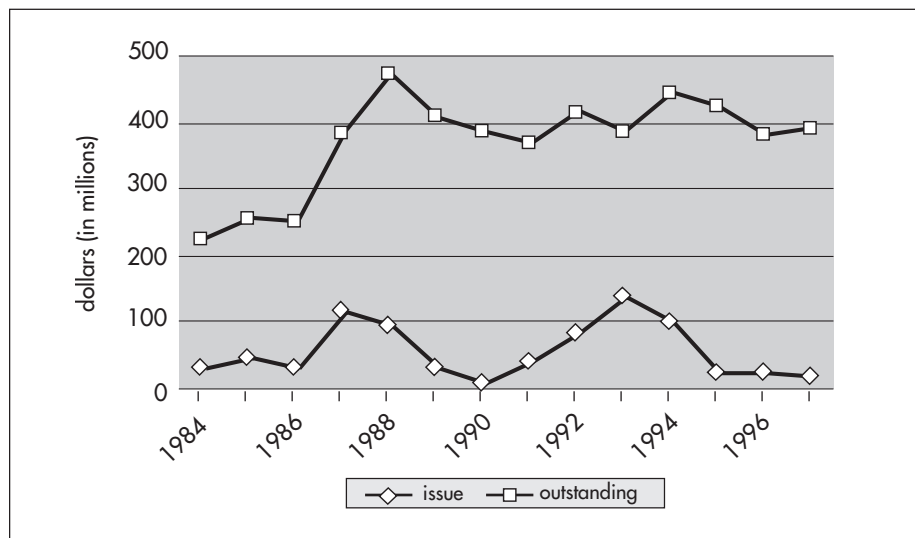


Figure 8. General Obligation Debt Trends



of Community Affairs 1994b), and none of Georgia's 159 counties have general obligation debt loads approaching the constitutional cap of 10 percent of assessed valuation. In fact, the highest proportion of general obligation debt to assessed valuation among the counties is 3.1 percent (Georgia Department of Community 1994b, 1).

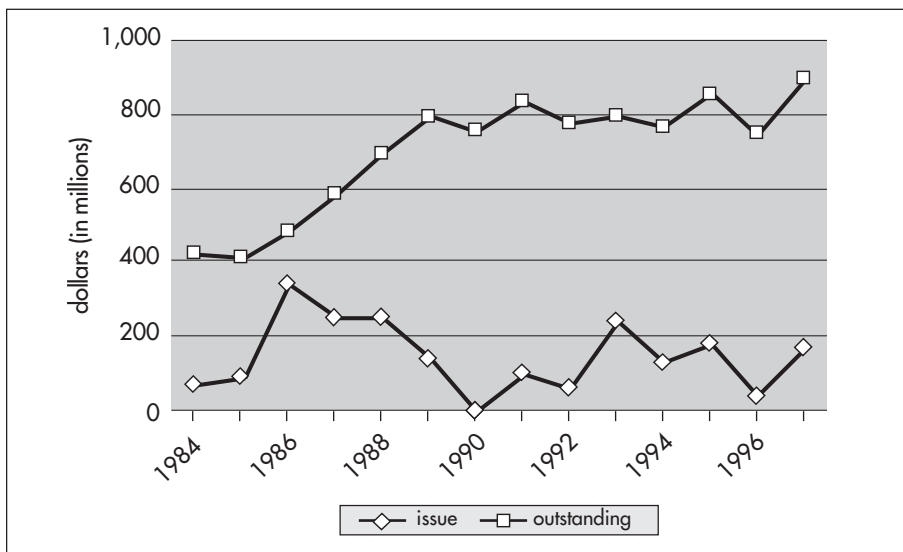
Revenue Debt Trends

As with general obligation debt, fewer than 14 counties have issued revenue bonds annually (Figure 7). Large counties are also the heavy users of revenue debt in terms of both amount and frequency of issuance. The amount of aggregate revenue debt has outpaced general obligation debt since the late 1980s in Georgia and most other states (Figures 8 and 9). This trend accelerated after the passage of the federal Tax Reform Act of 1986, which greatly limited the use of tax-exempt municipal debt for private purposes. Therefore, counties rely more on revenue debt than on general obligation debt when financing local capital projects. Because trends have fluctuated, there is no discernible pattern in the number of counties issuing new revenue debt.

Lease Purchase and Other Debt Trends

The Georgia Department of Community Affairs did not collect data on other debt and lease purchase debt instruments until 1989 and 1992, respectively. However, financing of local capital equipment and facilities by lease purchase and other debt is becoming more important. The num-

Figure 9. Revenue Debt Trends



ber of county governments entering lease agreements increased from 17 to 41 between FY 1992 and FY 1997. Lease purchase agreements made up 8.5 percent of total long-term debt in FY 1997, nearly equivalent to new general obligation debt issued that year. The number of counties that issued other debt increased from 18 to 27 between FY 1989 and FY 1997, making up 9.3 percent of total debt issued in FY 1997.

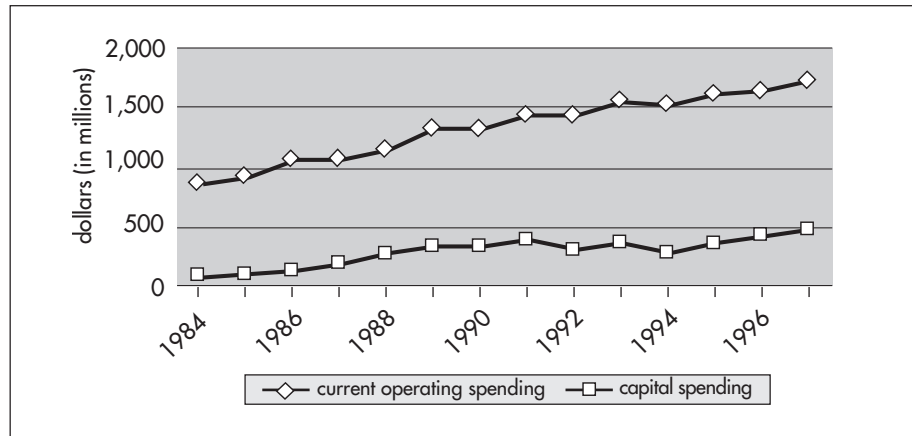
The total amount of county long-term debt has fluctuated over time, and there is no discernible pattern in its use. However, counties made less use of long-term debt between FY 1987 and FY 1990 and between FY 1994 and FY 1996. The amount of total outstanding debt has tended to increase over time. Revenue debt has accounted for more than 70 percent of total debt issued in some years and remains the largest source of long-term debt, followed by general obligation debt, other debt, and lease purchases.

Spending

Local government total expenditures can be divided into current operating spending and capital spending. Current operating spending refers to public money spent for the normal operation of government agencies, and capital spending refers to money spent on equipment, land, structures, and construction. Usually, the life of these assets spans more than a year.

Total expenditure more than doubled (132 percent) between FY 1984 and FY 1997. Current operating spending also increased, except for two fiscal years (FY 1987 and FY 1994)—a 98 percent increase in the same period. Most significant, capital spending grew 463 percent during the same period (Figure 10). In terms of share, current operating spending

Figure 10. Spending Trends

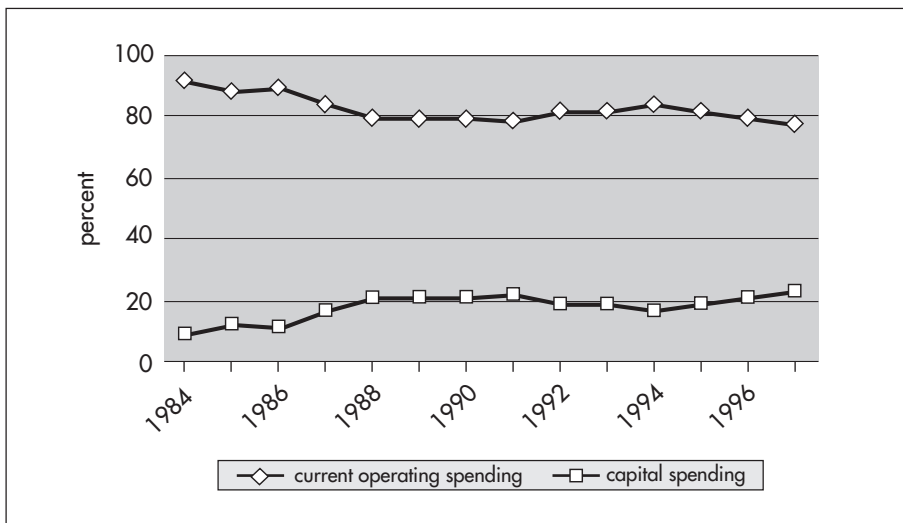


decreased from 91 percent of total expenditure in FY 1984 to 78 percent in FY 1997—a 13 percent drop (Figure 11). On the other hand, the share of capital spending as a percentage of total expenditure more than doubled, from 9 percent of total expenditure in FY 1984 to 22 percent in FY 1997. This increase in both the amount of capital spending and its share of total spending in Georgia counties can be attributed to the widespread use of SPLOST revenue for local capital projects.

Increased local revenues—and increases in the amount of capital spending and its share of total spending—can be attributed in part to the use of SPLOST.

The evidence suggests that Georgia counties were able to increase own source revenue to compensate for the loss of federal and state grants. The major contributor to increased local revenues was local sales taxes, including SPLOST.

Figure 11. Composition of Total Spending



Research Approach

This section presents data sources, measures, and statistical methods used to answer the research questions. It also describes research models used in the analysis. Variables used in the analysis are in Appendix B.

Data and Measures

As mentioned previously, about 94 percent of total SPLOST proceeds for all 159 counties were distributed for countywide purposes (e.g., county courthouses, jails, and administrative buildings), both in FY 1990 and FY 1997; only 6 percent went to municipalities. Despite fluctuations, the trend remains stable over time (Georgia Department of Community Affairs 1994a). Because county governments are the primary users of SPLOST money, the focus of this analysis is on local fiscal behavior at the county level.

Of the 159 Georgia counties, 136 consistently submitted the *Report of Local Government Finances* to the Georgia Department of Community Affairs during FY 1984–97. Because pooled regression produces better results when no cross-sectional data are missing, only these 136 counties are included in the analysis. As of FY 1990, their total general revenues and expenditures amounted to 94 percent of the totals calculated using all 158 Georgia counties submitting the report that year. These counties constituted 95 percent of the capital spending for all counties, and this percentage has remained stable over time. Thus, the 136 counties included in the analysis are representative of Georgia counties. Given the relatively long life cycles of capital projects and long-term debt and the fact that SPLOST was adopted in 1985, it might have been preferable to include data from a number of years prior to FY 1985. However, the available data are limited to FY 1984–97, which includes just one year (FY 1984) preceding SPLOST adoption. Nonetheless, the analysis should properly capture the effects of SPLOST on long-term debt, property tax levels, and spending levels.

The data required for this study came from several sources. The primary data source is the *Report of Local Government Finances* (counties). The survey covers local general purpose government finance and contains detailed information on revenues, expenditures, and debts. Although the report is an unaudited database, most local governments submitting the data stated that they had had an independent audit using generally accepted auditing and accounting procedures (Georgia Department of Community Affairs 1990). In fact, the U.S. Bureau of the Census relies on this

database in publishing the annual *Government Finances* and *State and Local Government Finance*. Another data source used for this study is the *Georgia County Guide*, which is annually compiled by the Center for Agribusiness and Economic Development and the College of Family and Consumer Sciences at the University of Georgia (Bachtel and Boatright 1983–97). The guide contains annual demographic and economic data for individual Georgia counties and cities drawn from both government and private sources. The *Georgia Statistical Abstract* provides a reliable biannual database on population, education, labor, employment, earnings, income, and other data. It is compiled from various sources by the Selig Center for Economic Growth at the University of Georgia. The *Local Government Operation Survey*, published by the Georgia Department of Community Affairs, offers data about the organization and operations of Georgia's county and municipal governments such as forms of government, administrative structures, financial management practices, and services provided. The survey, however, is conducted irregularly, and only four to five years of data are available.⁵ The primary source of election data comes from the Office of the Secretary of State of Georgia, which keeps all Georgia counties' SPLOST election records.

Statistical Methods

The primary statistical method used in this study is pooled regression analysis. The research design incorporates both cross-sectional and time-series (panel) data in a single analysis. The major strength of this approach is its ability to capture variations in terms of both time and space (Stimson 1985; Hsiao 1986; Sayers 1989; Baltagi 1995; Kmenta 1997). The design enables better identification and measurement of effects that are “simply not detectable in pure cross-sections or pure time-series data” (Baltagi 1995, 5). Neither time-series nor cross-sectional studies alone can control for individual heterogeneity, but pooled time-series analysis can do so effectively. The design is also well-suited to study the dynamics of adjustment and has the advantage of increasing the number of available observations. Depending on different assumptions about the systematic part of the equation and/or the error terms, several models of pooled regression are available, and the choice of appropriate model is contingent upon the results from diagnoses of the error terms (Johnston 1984; Sayers 1989; Baltagi 1995; Greene 1997). Detailed information about the pooled regression is described in Appendix B. The pooled regression analysis is used in analyzing the impact of SPLOST on debt levels, property tax burdens, and capital spending.

In addition to the pooled regression model, logit and tobit (censored regression) models are used in the analysis. In the logit model, the de-

pendent variable is not continuous but represents a discrete choice. When dependent variables are binary or dichotomous, the ordinary least squares (OLS) method is inappropriate because binary dependent variables are used. In this study, the logit model was used in testing why some counties adopted SPLOST at certain times and whether their use of SPLOST affects the likelihood of issuing new debt. The tobit model is a mixture of discrete and continuous distributions and is used when a substantial number of dependent variables are less than zero; there is no upper limit on values above zero. The tobit model will be used as a supplement to OLS in testing the important factors that contributed to earlier adoptions of SPLOST by counties.

Research Questions

This section briefly discusses hypotheses for the six research questions.

1. *What factors prompted some counties to adopt SPLOST earlier than did others?* Over the short term, it is expected that the greater counties' ability to export their sales taxes to nonresidents, the more quickly they will pass the SPLOST referendum. Because other counties also jump on the SPLOST bandwagon, this effect will be moderated over the long term. Also over the long term, home owners who expect property tax relief will support SPLOST; thus, the higher the percentage of home owners in a county, the more quickly SPLOST will pass.
2. *Does the use of SPLOST decrease the likelihood that a county will issue new general obligation debt and decrease the amount of debt?* Assuming that SPLOST proceeds are spent to fund projects that previously were largely financed with general obligation debt, the use of SPLOST may reduce the likelihood that a county will issue such debt. SPLOST should alleviate infrastructure funding pressure in counties because SPLOST may be used to replace general obligation debt.
3. *Does the use of SPLOST increase the likelihood that a county will issue new revenue debt and increase the amount of debt?* The use of SPLOST may not fully satisfy growing capital spending needs in fast-growing urban counties. Due to a growing tax base, these counties also have the ability to use revenue debt without fear of default. Under these circumstances, it is expected that the use of SPLOST will increase the likelihood that a county will issue new revenue debt.
4. *Does the use of SPLOST decrease property tax burdens (i.e., per capita property tax collected and millage rates)?* Unlike the local option sales tax, SPLOST was not designed as a mechanism to relieve

the burden of property taxes. It was viewed as a capital financing alternative or supplement to general obligation debt. However, because the principal and interest on general obligation debt is paid primarily from property taxes, if SPLOST reduces the amount of general obligation debt as hypothesized in this study—and thereby reduces annual debt service requirements—property tax rates (and possibly per capita property tax collections) will likely decrease over the long term.

5. *Does the use of SPLOST increase capital spending?* Since the major purpose of SPLOST money is to increase capital spending in county governments, and it is earmarked for capital spending only, counties that use SPLOST will likely realize increases in the amount and share of capital spending.
6. *Does the use of SPLOST lead to an increase in current operating and total government spending?* SPLOST critics argue that once SPLOST projects are completed, they must be maintained and operated through current operating spending. Moreover, using SPLOST to free general funds that were formerly used for capital spending may trigger an increase in current operating and total capital spending.

Results

The analysis identifies the factors that determine why some counties adopt SPLOST earlier than others and the impact of SPLOST on the property tax burden, capital spending, and current operating spending. The results are less clear regarding the impact of SPLOST on general obligation debt and new revenue debt, however. The section begins with a description of SPLOST use.

Patterns of SPLOST Use

The initial SPLOST legislation allowed a levy of the tax for a maximum of four years for a single project. For this reason, some of the earlier SPLOST levies extended only 6–12 months for a single project such as a county courthouse, jail, or administrative buildings. The law was amended in 1987 to allow counties to impose the sales tax up to a maximum of 5 years and for multiple projects. As a result, the bulk of SPLOST referenda passed after 1987 approved 4–5 years of tax collection for financing multiple projects (Singer 1987). The average collection period for a SPLOST proposal over this period was about 45 months (slightly under 4 years). Voters in some counties approved the tax five consecutive times, which means that these counties have levied the tax up to a maximum of 15 years. Because the amount of monthly SPLOST revenue collected in a county depends on taxable sales in the county, large counties with large retail outlets can collect as much as \$10 million monthly (e.g., Gwinnett County), whereas small rural counties without regional retail centers or tourist attractions garner less than \$300,000 in a month (e.g., Hancock County).

The projects for which SPLOST is most frequently used are roads, streets, and bridges, followed by county jails, courthouses, landfills and solid waste facilities, wastewater treatment, recreation facilities, public safety facilities, hospitals, and libraries (Table 1). SPLOST revenue has also been used to redeem general obligation bonds.⁶

Between 1985 and 1997, 493 county SPLOST referenda were held: 411 passed and 82 failed (Table 2). The 83 percent success rate indicates the popularity of SPLOST among Georgia voters. The rate of approval of SPLOST referenda was always high and tended to increase during the 13-year period.⁷

An examination of SPLOST referenda records shows a discernible trend (especially in the first two years of SPLOST availability) in the adoption of SPLOST across the state. Except for two counties in the At-

Table 1. SPLOST Projects in Georgia Counties, 1985–97

Types of Projects	Frequency
Roads, streets, and bridges	256
Jails	82
Courthouses	76
Land fill and solid waste treatment	71
Wastewater treatment	70
Recreation facilities	62
Public safety facilities	45
Hospital	25
Library	20
General obligation bond redemption	19
Cultural and civic centers	15
Historic buildings	9
Airport facilities	7
Industrial development	6
Parking facilities	6
Health facilities	4
Economic development	4
Other	100

Source: Georgia Secretary of State, *Special Purpose Local Option Sales Tax Election Record, 1985–97*.

lanta area, counties that experienced rapid increases in population (especially counties in the Atlanta MSA and counties adjacent to them) tended to adopt their first SPLOST earlier than did others. (The two exceptions, Fulton and DeKalb Counties, did not use SPLOST during the entire study period.⁸) Fifty-four percent (14 of 26) of the counties that adopted the tax in 1985—the first year it was available—are located in the Atlanta MSA. Counties with growing populations may have been encouraged to use SPLOST in order to finance increasing demands for local infrastructure.

Counties with large commercial trade centers, universities, or tourist attractions that are able to export part of their sales taxes to nonresidents tend to adopt SPLOST earlier and more frequently than do rural counties that lack this potential. Urban or regional retail center counties can garner as much as one-third of their sales tax revenue from nonresidents (Association County Commissioners of Georgia 1987). SPLOST may be passed earlier and used more often in these counties because county home owners realize that they can reduce their property tax bur-

Referenda records indicate that rapidly growing urban counties tend to be early adopters of SPLOST.

Table 2. Results of SPLOST Referenda in Georgia Counties, 1985–97

Year	'85	'86	'87	'88	'89	'90	'91	'92	'93	'94	'95	'96	'97	Total
Pass (N)	26	25	36	19	30	27	30	42	39	42	39	29	27	411
Fail (N)	8	17	6	8	5	11	2	7	3	3	2	5	5	82
Total (N)	34	42	42	27	35	38	32	49	42	45	41	34	32	493
Percent pass	76	60	86	70	86	71	94	86	93	93	95	85	84	83

Source: Georgia Secretary of State, *Special Purpose Local Option Sales Tax Election Record*, 1985–97.

dens by exporting part of their sales taxes to nonresidents. These home owners may also consider it appropriate for nonresidents, who do not pay property tax but use local facilities, to pay their “fair share” through SPLOST when they make purchases in the jurisdiction (Association County Commissioners of Georgia 1987).

Rural counties may use SPLOST to shift part of the tax burden from property owners to consumers.

Rural counties that have less potential to export part of their sales taxes to nonresidents because their funds largely are devoted to agriculture or forests may also use SPLOST to shift part of the tax burden from property owners to consumers. However, partly because of the regressive nature of the sales tax and relatively high poverty rates in rural Georgia, many rural counties may adopt SPLOST later and use the tax less often than do their counterparts. This trend is evident in several counties located in the mountainous western and northern parts of Georgia. As more of their neighbors adopt SPLOST, however, rural counties may adopt the tax eventually. Elected officials may become concerned that their county will lose money by failing to use the new revenue source that their neighbors have adopted (Pajari 1984).

The results indicate that counties that are early adopters of SPLOST tend to use the tax more often over time. To illustrate, of 110 counties that levied the tax at least once by 1989, 20 levied the tax twice. Of 106 counties that used the tax in the first four years (by December 1988), 75 counties (71 percent) had utilized the tax more than three times by December 1997. Of Georgia’s 159 counties, 1 had used the SPLOST six times; 2, five times; 22, four times; 59, three times; 43, twice; and 26 levied the tax only once by December 1997. Only 10 counties had not passed a SPLOST referendum by 1997.⁹

In terms of voter support, a preliminary regression result shows that the percentage of affirmative votes in SPLOST referenda is inversely related to voter turnout rate. That is, the lower the voter turnout rate,

the more likely SPLOST will pass in a referendum. This finding suggests that voters may be more likely to approve the measure in special elections, in which voter turnout is relatively low, than in a referendum included in a general election, in which voter turnout tends to be higher.

Factors Affecting SPLOST Adoption

Adopting SPLOST presents local governments with an opportunity to moderate their fiscal stress or to relieve property taxes and long-term debt burdens while improving local infrastructure. Other things being equal, the opportunity to realize substantial benefits by using SPLOST is an incentive for its early adoption.

To test empirically why some counties adopt the tax earlier than did others (research question 1), local fiscal behavior is measured at two points in time: counties' initial adoption of SPLOST is examined when the tax was first made available (1985–88) and over a 13-year period (1985–97). All 159 Georgia counties are examined in the study. By December 1988, 106 of the 159 Georgia counties (67 percent) had passed a SPLOST referendum; by December 1997, all counties except 10 (94 percent) had adopted the tax at least once.

The 1986–88 parameter is used because more than half of the counties (67 percent) had approved the tax by 1988, thus providing enough cases to test variation in its use. In those counties in which the first full four-year levy was approved by voters in 1985—before the tax was expanded in 1987 to include multiple projects and collection was extended to five years—the first round of SPLOST use would have culminated in 1988. However, because the perceptions and attitudes of elected officials and citizens—and, ultimately, the fiscal behavior—of counties that did not use SPLOST may have been affected by the successful use of the sales tax in neighboring counties, the analysis controls for this learning effect.

The second reason why counties' initial use of SPLOST is analyzed is that both local officials and voters closely scrutinize their early experience with the tax. Voters are likely to be very careful in approving the first referendum because the implications of the new tax for the overall tax burden are as yet unproven. Local elected officials who initiate SPLOST also will be careful in proposing the first SPLOST in their county. Unless they perceive pressing local needs and benefits from the tax, they will be less aggressive in proposing the first SPLOST; they do not want to give voters the impression that they are budget maximizers or are wasting taxpayers' money. However, after a first and successful SPLOST experience, passage of another referendum may be relatively easy.

To test the response of local governments to the sales tax over the short term, the adoption status of the tax by December 1988 is measured as a dependent variable (EARLY). To estimate the probability of adopting the tax, multiple logit regression is employed for reasons explained earlier. The length of time (in months) since a county approved its first SPLOST referendum, calculating back from December 1997 to the date of the first SPLOST referendum approved, is used as a dependent variable (SPLOSTAGE) in testing long-term responses of local governments to the new tax. Both OLS and tobit regression models are used to estimate parameters.

Control variables representing infrastructure needs, fiscal conditions, and socioeconomic status are used in the regression models. To measure the local infrastructure needs, variables indicating population size (POP), population density (PDENSITY),¹⁰ percentage of population aged 65 and over (AGE65), percentage of residents with four years of college or more (EDULEVEL), percentage of residents living below the poverty level (POVERTY), percentage of residents living in an urbanized area (URBAN), percentage of home owners (HMOWNER), and percentage of unpaved local roads (UNPAVED) are used. It is expected that the probability of adopting the sales tax is higher if the infrastructure needs in a locality are greater.

To represent the fiscal health of local governments, the ratio of total general revenues minus total general expenditures to total general expenditures is used (FISCALHT). To measure the degree of tax exportation to nonresidents, the TAXEXPRT (per capita taxable sales 3 per capita income) variable is utilized.¹¹ It is expected that counties that can export part of their sales taxes to nonresidents have incentives to adopt the tax earlier.

In counties that maintain high millage rates, voters and elected officials may use SPLOST to reduce rates. (LOST—which is a direct statutory substitute for property tax burden—has been widely used for this purpose since 1975.) To capture this effect, a millage rate variable (MILLAGE) is used. Voters in counties that have had success with LOST may be receptive to other types of sales tax. Eventually, this effect may facilitate earlier adoption of SPLOST in the community.¹² To measure this influence, a LOST (dummy) variable is employed.

The regression results in Table 3 present the empirical findings. The regression model (EARLY) in the first column tests important factors in the adoption of SPLOST in the early years of the tax (i.e., the four years, 1985–88, during which SLOST was first made available). The relatively low chi-square (12.45)¹³ indicates that the overall explanatory power of

the logit model is not strong (Demaris 1992). The only variable in the model that achieves any statistical significance is the TAXEXPRT variable ($p < 0.1$ level).

The positive coefficient of the TAXEXPRT variable suggests that the likelihood of counties adopting SPLOST earlier than other counties increases when there is a possibility that they can export part of their sales taxes to nonresidents. This result confirms the expectation.

Table 3. Determinants of Early SPLOST Adoption

Variables	EARLY (logit)	SPLOSTAGE (OLS)	SPLOSTAGE (tobit)
POP (log)	0.94 (0.85)	11.32 (1.14)	11.02 (1.08)
AGE65	0.034 (0.09)	-3.28 (1.94)*	-3.47 (1.99)**
EDULEVEL	0.04 (0.06)	1.11 (1.36)	1.21 (1.44)
POVERTY	0.04 (0.04)	0.85 (0.88)	0.82 (0.82)
URBAN	-0.02 (0.01)	—	—
PDENSITY	—	-0.02 (1.11)	-0.03 (1.18)
HMOWNER	0.06 (0.05)	1.09 (2.02)**	1.12 (2.00)**
UNPAVED	-0.01 (0.02)	0.07 (0.22)	0.09 (0.25)
MILLAGE	0.02 (0.03)	-0.74 (1.02)	-0.79 (1.04)
TAXEXPRT	2.04 (1.20)*	2.79 (0.12)	5.50 (0.22)
FISCALHT	-1.46 (1.20)	—	—
LOST	-0.58 (0.66)	—	—
Model Fit	12.45 (χ^2)	0.06 (R^2)	0.10 (R^2)

* $p < 0.1$. ** $p < 0.05$.

Note: Figures in parentheses represent standard error in the logit model and absolute t value for OLS and tobit models.

Although the home ownership (HMOWNER) and local fiscal health (FISCALHT) variables show the expected signs, they are far from achieving statistical significance.¹⁴ The ramifications of the LOST experience are contrary to the expectations, although the coefficient of the LOST variable in Table 3 is not statistically significant

The OLS and tobit regression models in the second and third columns of Table 3 present important factors leading to earlier adoption of SPLOST in counties over the entire period (1984–97). As the low R^2 s (0.06 and 0.10) at the bottom of the third and fourth columns of the table indicate, the overall explanatory power of the two regression models is very low. Yet, these models present two statistically significant variables: the age-65-and-over (AGE65) and percentage of home owners (HMOWNER) variables. The negative coefficient of the AGE65 variable in the OLS and tobit models indicates that for every percentage increase in people aged 65 and older in a county, the adoption of SPLOST is slowed by about three months. Because SPLOST is earmarked for capital projects with a fairly long life, older people may not see immediate and direct personal benefits from the projects and might hesitate to approve a SPLOST referendum (Clemente 1975; Hudson 1980; Button 1992).

Without analysis of individual or precinct-level voting behavior, one cannot be sure that the negative relationship between the variable AGE65 and the earlier adoption of SPLOST is attributable to the narrow self-interest of older people. However, the literature explaining the voting behavior of people in this age group regarding local taxes and school bond elections indicates that they tend to pursue minimizing their tax burden (Piele and Hall 1973; Button 1992). The same dynamic is highly likely in the case of SPLOST referenda across Georgia counties.

The positive coefficient of the HMOWNER variable in the OLS and tobit models suggests that counties that have high percentages of home owners tend to adopt SPLOST earlier than do other counties, possibly because home owners feel that this revenue source will reduce their property tax burden. Home owners, who tend to be vocal and active in local politics, may believe that capital projects usually financed with general obligation bonds (the principals and interests of which are largely repaid with property tax millage rate increases) can now be financed with sales taxes paid by consumers (including nonresidents). Thus, in casting their vote for SPLOST, home owners might be pursuing their self-interest by minimizing their tax burden, as do people aged 65 and older (Sjoquist 1981; Blackley and DeBoer 1987).

Although the TAXEXPRT variable was statistically significant during the early years of SPLOST (1985–88), the variable is not statistically

significant over the long term. Rather, the HMOWNER variable is the strongest predictor in explaining why some counties adopt the tax earlier than do others. This finding suggests that tax exportability was an important factor when counties adopted SPLOST in the early years, but as more and more counties adopted the sales tax, the possibility of property tax reduction for home owners may have become more important.

Counties that have high percentages of home owners tend to be early adopters of SPLOST because home owners expect that this revenue source will in part reduce their property tax burden.

Analysis of SPLOST adoption using the two-period cross-sectional design does not sufficiently explain the reasons why some counties adopt SPLOST earlier than do others. Unequivocally, however, voters in Georgia counties want to maximize the benefit of local capital projects financed with the 1 percent sales tax while minimizing their tax burden.

Impact on Long-Term Debt

As discussed, SPLOST can be conceptualized as an alternative to long-term debt (specifically general obligation debt). Because SPLOST proceeds are also spent to fund projects that were previously financed with revenue debt (e.g., solid waste facilities and water and sewer projects), it is likely that the use of SPLOST influences the likelihood that counties will issue new revenue debt and the amount of that debt. Taking this notion further, if SPLOST affects both general obligation and revenue debt individually, the amount of total general obligation and revenue debt will be affected as well.

Because other debt and lease purchases are also used to fund local capital projects, the use of SPLOST will likely affect the amount of these financing options. However, the total debt in these categories was less than 19 percent of the total long-term outstanding debt in Georgia counties during FY 1989–97. Furthermore, data for other types of debt and lease purchases were not available until 1989 and 1992, respectively. Because data are missing for these categories of debt, pooled regression analysis is used to examine the impact of SPLOST on general obligation and revenue debt. Forty-seven (35 percent) of the 136 counties considered in this study issued new general obligation debt at least once between FY 1984 and FY 1997; 43 counties (32 percent) issued new revenue debt. About 70 counties (51 percent) issued either general obligation or revenue debt over that period of time.

The fixed-effects model is employed to analyze the impact of SPLOST on long-term debt. Because there are many zeros in the proposed dependent variables (per capita newly issued general obligation and revenue debt), testing the effect of SPLOST on newly issued long-term debt

presents methodological challenges. Therefore, to compensate for this weakness in measuring the amount of debt, the likelihood that a county will issue long-term debt is also measured by employing the fixed-effects logit model, using a SPLOST dummy variable (SPLOST) as the dependent variable.

General Obligation Debt

It is expected that counties that use SPLOST will be less likely to issue new general obligation debt and that the amount of per capita newly issued general obligation debt will be reduced. The literature on state and local debt suggests that factors influencing the supply of public-purpose debt include spending needs, alternative revenues, debt tradition, costs of debt, and political and institutional attributes (Asefa, Adams, and Starleaf 1981; Farnham 1985; Bunch 1988). Factors affecting the demand for public-purpose debt include risk associated with debt, tax aspects, and the expected returns of a debt instrument (Bunch 1988). Market conditions and needs of the issuing entity, political factors, and institutional factors influence the supply of private-purpose debt, and demand is affected by market conditions and location desirability (Bunch 1988). Drawing on Bunch's work, this study employs a revised supply-and-demand framework based on data availability and tailored to debt practices in Georgia counties. Because the fixed-effects model cannot estimate time-invariant variables (e.g., political and institutional variables), these variables are excluded from the regression models.

Spending needs are measured with variables such as population size (POP), the percentage of owner-occupied housing (HMOWNER), the number of functions a government performs (FUNCTION), the percentage of unpaved local roads (UNPAVED), and the percentage of people living below the poverty level (POVERTY). Revenue factors are measured with variables representing SPLOST, own source general revenues excluding SPLOST (PCOWNREV), intergovernmental revenues such as federal grants (PCINRVFD), state grants (PCINRVST), and long-term debt such as general obligation debt outstanding (PCGOOUT) and revenue debt outstanding (PCREVOTG). Debt tradition is measured with variables indicating the immediate past year's outstanding general obligation ($PCGOOUT_{t-1}$) and revenue ($PCREVOTG_{t-1}$) debt (Bunch 1988).

Usually, SPLOST proceeds collected by the Georgia Department of Revenue are distributed to individual counties every three months. SPLOST revenue is spent either during the next fiscal year or gradually, according to the progress of SPLOST projects.¹⁵ Therefore, to account fully for the delayed effect of SPLOST money on other fiscal variables

and spending, a lagged SPLOST value ($SPLOST_{t-1}$ and $PCSPLOST_{t-1}$) is used throughout this study.

Table 4 presents the research findings. The GOISSDUM model (in which the dependent variable is a dummy variable indicating whether or not a county issued general obligation debt) tests whether counties that use SPLOST are less likely to issue general obligation debt. The PCGOISS (A) model (in which the dependent variable is per capita general obligation debt issued) analyzes whether the use of SPLOST affects the amount of per capita general obligation debt issued. The PCGOISS

Table 4. Impact of SPLOST on General Obligation Debt

Variables	GOISSDUM	PCGOISS (A)	PCGOISS (B)
POP (log)	1.93 (0.47)	5.82 (0.25)	5.65 (0.24)
$SPLOST_{t-1}$	-0.16 (0.53)	-1.72 (0.92)	—
$PCSPLOST_{t-1}$	—	—	-0.04 (1.13)
PCOWNREV	0.004 (1.69)*	0.09 (3.36)***	0.09 (3.39)***
PCINRVST	0.02 (1.87)*	0.15 (3.13)***	0.15 (3.15)***
PCINRVFD	-0.004 (0.34)	-0.04 (0.63)	-0.04 (0.63)
$PCGOOUT_{t-1}$	-0.007 (3.12)**	-0.14 (7.86)***	-0.14 (7.87)***
PCREVOTG	-0.001 (0.36)	-0.02 (1.51)	-0.02 (1.51)
UNPAVED	0.05 (0.98)	0.52 (1.74)*	0.52 (1.79)*
HMOWNER	0.05 (0.64)	0.88 (1.90)*	0.84 (1.81)*
POVERTY	-0.15 (1.50)	-0.11 (0.16)	-0.12 (0.19)
FUNCTION	-0.01 (0.17)	-0.18 (0.49)	-0.18 (0.47)
Model Fit	86.66 (χ^2)	0.17 (R^2)	0.18 (R^2)

* $p < 0.1$. ** $p < 0.05$. *** $p < 0.01$.

Notes: Numbers in parentheses are absolute t values. A lagged SPLOST dummy variable ($SPLOST_{t-1}$) is used as a primary independent variable in the GOISSDUM and PCGOISS (A) models, and a lagged per capita SPLOST variable ($PCSPLOST_{t-1}$) is employed in the PCGOISS (B) model.

(B) model (in which the dependent variable is per capita general obligation debt issued) tests the effect of an extra dollar of SPLOST proceeds on the amount of general obligation debt issued.

The variance explained by independent variables in the GOISSDUM model is significant at the $p < 0.001$ level, as the high chi-squares (86.66) demonstrate. However, the explanatory power of the PCGOISS (A) and PCGOISS (B) models is weak, as relatively low R^2 s in these models suggest.

The negative but statistically insignificant SPLOST coefficient (10.16) in the GOISSDUM model suggests that the use of SPLOST may reduce the likelihood that a county will issue new general obligation debt. The negative and insignificant SPLOST coefficient (-1.72) in the PCGOISS (A) model supports this view. The result can be interpreted as meaning that counties utilizing SPLOST may reduce the amount of per capita general obligation debt issued by an average of \$1.72 compared with that of non-SPLOST counties. The negative and insignificant PCSPLOST coefficient (-0.04) in the PCGOISS (B) model indicates that an extra dollar of SPLOST revenue may result in a decrease in general obligation debt of about 4 cents. Although all three coefficients of SPLOST variables are negatively associated with amount of general obligation debt issued, they do not achieve statistical significance. Therefore, it can be concluded that SPLOST may reduce the likelihood that a county will issue general obligation debt and the amount of that debt, but SPLOST is not a viable alternative to general obligation debt.

Debt tradition, represented by per capita general obligation debt outstanding in the preceding year ($PCGOOUT_{t-1}$), seems to be the strongest predictor of amount of general obligation debt issued in all three models. Negative and significant coefficients of the $PCGOOUT_{t-1}$ variable in all three regression models indicate that the greater the outstanding debt from the preceding year, the less likely a county is to issue new general obligation debt (Bunch 1988). Moreover, in all three models, the amount of outstanding per capita revenue debt ($PCREVOTG$) is negatively but insignificantly associated with the amount of general obligation debt issued. On the other hand, Table 5 shows that outstanding general obligation debt ($PCGOOUT$) is negatively associated with the use of revenue debt. This finding suggests that county officials may attempt to balance the use of general obligation and revenue debt when they make decisions about debt scheduling.

Revenue Debt

It is expected that the use of SPLOST is positively associated with the likelihood that a county will issue new revenue debt and the per capita amount of that debt (Table 5). The REVISDUM model (in which the de-

pendent variable is a dummy variable indicating whether or not the county issued revenue debt) tests whether the use of SPLOST affects the probability of issuing revenue debt. The PCREVISS (A) model (in which the dependent variable is amount of per capita revenue debt issued) analyzes whether the use of SPLOST increases the amount of per capita revenue debt. The PCREVISS (B) model (in which the dependent variable is amount of per capita revenue debt issued) tests the effect of an extra dollar of SPLOST proceeds on the amount of revenue debt issued.

Table 5. Impact of SPLOST on Revenue Debt

Variables	REVISDUM	PCREVISS (A)	PCREVISS (B)
POP (log)	3.10 (0.97)	-36.59 (1.32)	-38.24 (1.38)
POPCHANGE	0.17 (1.18)*	1.17 (1.76)*	1.19 (1.78)*
SPLOST _{t-1}	0.37 (12.12)	0.47 (0.19)	—
PCSPLOST _{t-1}	—	—	0.08 (2.05)**
PCOWNREV	-0.0005 (0.19)	-0.28 (1.49)	-0.03 (1.52)
PCINRVST	0.012 (0.88)	0.06 (1.05)*	0.06 (0.99)
PCINRVFD	0.014 (1.69)	0.15 (1.95)*	0.15 (2.0)**
PCGOOUT	-0.004 (1.34)	-0.07 (3.40)***	-0.07 (3.40)***
PCREVOTG _{t-1}	0.002 (0.99)	0.06 (2.53)***	0.06 (2.62)***
HMOWNER	-0.034 (0.44)	0.94 (1.63)	1.07 (1.85)*
POVERTY	-0.12 (1.12)	0.60 (0.73)	0.65 (0.80)
FUNCTION	-0.02 (0.31)	0.33 (0.70)	0.32 (0.67)
Model Fit	192.75 (χ^2)	0.27 (R^2)	0.27 (R^2)

* $p < 0.1$. ** $p < 0.05$. *** $p < 0.01$.

Notes: Numbers in parentheses are absolute t values. A lagged SPLOST dummy variable (SPLOST_{t-1}) is used as a primary independent variable in the REVISDUM and PCREVISS (A) models, and a lagged per capita SPLOST variable (PCSPLOST_{t-1}) is employed in the PCREVISS (B) model. The effect of the year dummy variable is not reported here.

The positive and statistically insignificant SPLOST coefficient (0.37) in the REVISDUM model suggests that the use of SPLOST may increase the likelihood that a county will issue revenue debt. The statistically insignificant SPLOST coefficient (0.47) in the PCREVISS (A) model shows that SPLOST counties may issue 47 cents more revenue debt than do non-SPLOST counties. The positive and statistically significant coefficient of the PCSPLOST variable (0.08) in the PCREVISS (B) model indicates that an extra dollar of SPLOST revenue results in an 8-cent increase in the amount of newly issued per capita debt.

It appears that the enhanced revenue potential resulting from SPLOST levies has stimulated more use of revenue debt in these counties.

Although not all signs are statistically significant, the overall empirical results indicate that the use of SPLOST is positively associated with the use of revenue debt. This result confirms MacManus's finding (1977), which suggests that the use of nonproperty taxes (particularly sales taxes) is positively associated with the use of revenue debt. Economically flourishing counties need more capital spending to keep up with growth demands, and it is possible that the enhanced revenue potential resulting from the SPLOST levy has stimulated more revenue debt use in these counties.¹⁶

One contrasting pattern in the use of revenue debt compared with general obligation debt is the positive association of the immediate past year's outstanding revenue debt, as the coefficients of the PCREVOTG_{t-1} in the PCREVISS (A) and PCREVISS (B) models in Table 5 show. This finding indicates that counties that have relied on revenue debt in the past year are likely to use revenue debt in the coming years, too. Stated another way, a county that is growing and that has real revenue potential tends to rely on revenue debt to finance the increased demand for infrastructure.

General Obligation and Revenue Debt

Since passage of the Tax Reform Act of 1986, revenue debt has emerged as the most important revenue source in financing state and local capital projects (Bland and Chen 1990; Watson and Vocino 1990). Although revenue debt is usually issued by various local public authorities and not backed by taxpayer money, numerous local capital projects have been financed with this debt. However, with the availability of SPLOST, local capital projects that used to be financed with revenue debt can now be financed with this 1 percent tax. Therefore, to understand fully the impact of SPLOST on long-term debt, the total amount of general obligation and revenue debt must be examined as well.

It is unclear how the use of SPLOST affects the likelihood of whether or not a county will issue general obligation and revenue debt and the

amount of total general obligation and revenue debt. As seen in earlier findings, the use of SPLOST decreases the amount of general obligation debt but increases the amount of revenue debt. As a result, the effect of SPLOST on the amount of total long-term debt depends on the individual amounts of general obligation and revenue debt.

Table 6 presents the regression results. The GORVISDM model (in which the dependent variable is a dummy variable indicating whether or not the county issued any general obligation or revenue debt [or both]) tests whether the use of SPLOST increases the likelihood that a county will issue a combination of general obligation and revenue debt. The

Table 6. Impact of SPLOST on General Obligation and Revenue Debt Combined

Variables	GORVISDM	PCGORVIS (A)	PCGORVIS (B)
POP (log)	7.24 (2.46)**	-14.92 (0.40)	-16.32 (0.44)
SPLOST _{t-1}	0.24 (0.99)	-0.73 (0.22)	—
PCSPLOST _{t-1}	—	—	0.06 (1.16)
PCOWNREV	0.002 (1.21)	0.05 (0.96)	0.05 (0.96)
PCINRVST	0.02 (2.10)**	0.20 (2.68)***	0.19 (2.64)***
PCINRVFD	0.01 (1.51)	0.10 (1.00)	0.10 (1.04)
PCGOOUT _{t-1}	-0.006 (3.05)***	-0.22 (7.48)***	-0.21 (7.61)***
PCREVOTG _{t-1}	0.002 (1.25)	0.08 (2.84)***	0.09 (2.89)***
HMOWNER	0.069 (1.14)	1.87 (2.53)**	1.98 (2.66)***
POVERTY	-0.11 (1.30)	0.56 (0.53)	0.61 (0.58)
FUNCTION	-0.003 (0.06)	0.21 (0.34)	0.20 (0.33)
Model Fit	278.22 (χ^2)	0.30 (R^2)	0.30 (R^2)

* $p < 0.1$. ** $p < 0.05$. *** $p < 0.01$.

Notes: Numbers in parentheses are absolute t values. A lagged SPLOST dummy variable (SPLOST_{t-1}) is used as a primary independent variable in the GORVISDM and PCGORVIS (A) models, and a lagged per capita SPLOST variable (PCSPLOST_{t-1}) is employed in the PCGORVISS (B) model. The effect of the year dummy variable is not reported here.

PCGORVIS (A) model (in which the dependent variable is the amount of combined per capita general obligation and revenue debt) analyzes whether the use of SPLOST increases the amount of aggregate per capita long-term debt. The PCGORVIS (B) model (in which the dependent variable is the amount of combined per capita general obligation and revenue debt) tests the effect of an extra dollar of SPLOST proceeds on the amount of total general obligation and revenue debt.

The positive but insignificant SPLOST coefficient (0.24) in the GORVISDM model indicates that the use of SPLOST may increase the likelihood that a county will issue long-term debt. However, a negative and insignificant SPLOST coefficient (-0.73) in the PCGORVIS (A) model suggests that SPLOST may result in decreases in the amount of long-term debt. The positive and insignificant coefficient (-0.06) of the PCSPLOST variable in the PCGORVIS (B) model further complicates the findings. Thus, the mixed signs, along with the statistical insignificance of SPLOST coefficients, make it difficult to determine the effect of SPLOST on the use of long-term debt.

Impact on Property Tax Burden

It is expected that the use of SPLOST will reduce per capita property taxes and lower millage rates. Because many factors (e.g., assessment ratio, exemptions, inflation, millage rate, property price changes, increase and decrease in taxable properties) affect the property tax digest (Mikesell 1994), equating the property tax burden with a variable measuring only the amount of per capita property taxes collected would be incomplete.¹⁷ Property taxes as a percentage of personal income (property tax collected \div personal income) and effective property tax rates (property tax collected \div property tax base) can be equally important measures in capturing property tax burdens (Ulbrich, Mabry, and Warner 1990). Thus, this study employs property taxes as a percentage of personal income (property tax collected \div personal income) as an additional dependent variable to measure the property tax burden.¹⁸ Because data on effective property tax rates are not available for the period under study, they were not incorporated into the analysis as additional dependent variables. The amount of per capita property tax collected and property taxes as a percentage of personal income are employed as rough measures of the property tax burden.

Although per capita property taxes can be increased without increasing millage rates, the millage rate alone is an unsatisfactory measure for capturing the property tax burden. However, because millage rate hikes usually accompany increases in real per capita property tax collec-

tions, millage rate is employed as a supplemental dependent variable to measure property tax burdens.

The property tax literature suggests that variations in the property tax can be explained by such factors as the amount of government spending, the availability of other revenue sources, the size of the property tax base, functional responsibilities, population size, income, and form of government (Chicone and Walzer 1986; Gold 1987). Variables representing these attributes are employed for empirical testing. Government spending is measured as per capita current operating spending (OPERATING). Revenue availability includes major revenue sources such as own source revenues, federal and state grants, and outstanding general obligation debt and revenue debt. The net property and utility digest (PCDIGEST) is the proxy for property tax base. To measure functional responsibilities, the number of functions (FUNCTION) on which a government spent any dollar amount is used. In addition, population size, population density, and income per capita are included in the regression models to represent demand for public services.

Table 7 presents the regression results. The PCPROPTX (A) model (in which the dependent variable is per capita property tax collected) tests whether the use of SPLOST affects the amount of per capita property taxes. The PCPROPTX (B) model estimates the impact of an extra dollar of SPLOST on the amount of property taxes. The TAXLEVEL model (in which the dependent variable is property taxes collected \div personal income) tests whether the use of SPLOST influences property taxes as a percentage of personal income. The MILLAGE model (in which the dependent variable is millage rate) tests whether the use of SPLOST influences millage rates.

The positive and significant SPLOST coefficient (2.70) in the PCPROPTX (A) model suggests that counties that collect SPLOST also collect average per capita property taxes that are \$2.70 higher than those in non-SPLOST counties. This finding shows that the use of SPLOST leads to a higher amount of property taxes rather than a reduction in the burden (measured in real dollar per capita property taxes collected). The positive and significant PCSPLOST coefficient (0.09) in the PCPROPTX (B) model indicates that an extra dollar of SPLOST revenue results in an increase of 9 cents in the property tax collected. Further, the positive and significant SPLOST coefficient in the TAXLEVEL model suggests that counties that use SPLOST in general have higher property taxes as a percentage of personal income. This finding indicates that property tax burdens in SPLOST counties are higher than they are in non-SPLOST counties.

Table 7. Impact of SPLOST on Property Tax Burdens

Variables	PCPROPTX (A)	PCPROPTX (B)	TAXLEVEL	MILLAGE
POP (log)	-5.93 (0.36)	-8.36 (0.51)	-0.04 (0.31)	-8.09 (3.54)
PCINCOME	0.002 (2.48)**	0.002 (2.14)**	—	0.0005 (3.83)**
POVERTY	-0.36 (0.71)	-0.31 (0.67)	-0.004 (0.85)	-0.26 (3.83)***
UNDER19	0.84 (1.08)	0.77 (1.00)	0.002 (0.29)	0.36 (3.33)***
HMOWNER	1.55 (4.64)***	1.67 (5.00)***	0.01 (4.22)***	0.19 (4.19)***
FUNCTION	-0.40 (1.45)	-0.43 (1.55)	-0.002 (0.73)	0.01 (0.81)
SPLOST _{t-1}	2.70 (1.85)*	—	0.03 (2.16)**	-0.18 (0.86)
PCSPLOST _{t-1}	—	0.09 (3.06)***	—	—
PCINRVFD	-0.001 (0.02)	-0.0004 (0.01)	0.0002 (0.58)	-0.008 (1.47)
PCINRVST	0.08 (2.29)**	0.07 (2.21)**	0.0007 (2.44)**	-0.0003 (0.07)
PCGOOUT	0.06 (5.03)***	0.06 (5.11)***	0.0004 (3.87)***	0.0003 (1.83)*
PCREVOTG	0.03 (2.88)***	0.03 (2.95)***	0.0001 (1.34)	0.0002 (0.97)
PCDIGEST	—	—	—	-0.0002 (8.12)***
OPERATING	—	—	—	0.009 (5.20)***
R ²	0.97	0.97	0.97	0.98

* $p < 0.1$. ** $p < 0.05$. *** $p < 0.01$.

Notes: Numbers in parentheses are absolute t values. A lagged SPLOST dummy variable (SPLOST_{t-1}) is used as a primary independent variable in the PCPROPTX (A), INCRATIO, and MILLAGE models, and a lagged per capita SPLOST (PCSPLOST_{t-1}) variable is employed in the PCPROPTX (B) model. The effect of the year dummy variable is not reported.

To verify that the use of SPLOST is associated with higher property taxes, a separate regression model was run with per capita SPLOST (PCSPLOST) as the dependent variable and per capita property tax (PCPROPTX) as the primary independent variable. The regression result showed that an extra dollar of SPLOST results in an increase of 1 cent in property tax revenue. This finding suggests that property tax and SPLOST tend to increase together. In part because there is no statutory requirement to roll back property taxes when using SPLOST, as is the case with LOST, SPLOST is not a statutory property tax relief measure. The simultaneous increases in property taxes and SPLOST revenue demonstrate that local governments can increase amounts generated by taxes by diversifying their tax base. This result indirectly supports the relevance of the fiscal illusion hypothesis by suggesting that local governments can end up increasing the total tax amount by diversifying their use of revenue sources.

Regarding the impact of SPLOST on millage rates, the negative and insignificant SPLOST coefficient (-0.18) in the MILLAGE model suggests that counties collecting SPLOST have average property tax rates that are 0.18 mills lower than those in non-SPLOST counties. This finding indicates that the use of SPLOST revenue may reduce millage rates insignificantly while significantly increasing the per capita property tax collected. Thus, the finding suggests that a decrease in millage rates does not guarantee a reduction in per capita property tax collected or property taxes as a percentage of personal income. It further suggests that there are cases in which per capita property taxes collected and individual property tax bills (caused by a property tax assessment increase) rise, whereas millage rates remain stable or even decrease (“backdoor tax increase”).¹⁹ These results confirm that the millage rate is an inadequate measure of property tax burden. To summarize, this analysis shows that SPLOST is not a substitute for, but a supplement to, property taxes.

SPLOST appears not to be a substitute for, but a supplement to, property taxes.

Impact on Capital Spending

Because SPLOST is an earmarked revenue source for capital spending purposes, it is expected that the amount of capital spending (per capita) and capital spending as a percentage of total spending in counties that use SPLOST will be significantly higher than those in non-SPLOST counties. However, due to possible fungibility between general funds and special funds (SPLOST), as well as between current operating spending and capital spending, it is also expected that each dollar in SPLOST proceeds will result in capital spending increases of less than a full dollar.

Researchers face two major methodological difficulties in studying capital spending in state and local governments (Kim 1987). First, the definition of capital spending varies across states—and even within states—making it difficult to compare the amount and composition of capital spending.²⁰ Capital spending in this study is defined as the sum of purchases of equipment, land, and structures and cost of construction. The *Report of Local Government Finances* has separate columns for these spending items, and this classification seems to fit well with the definition of local government's capital spending used in the literature (Poterba 1987; Bunch 1988). Second, capital expenditures tend to occur somewhat irregularly, in part because of the long life cycle of capital assets. By examining a single cross section of data or a short time series, then, one would not get a complete picture of variations in capital spending. Because this study examines a 14-year period for 136 counties, pooled time-series data are expected to capture more of the variation in the use of capital spending.

The capital spending literature cites capital spending needs, functional responsibilities, competing operating spending needs, revenue availability, political factors, and institutional factors as important determinants affecting variations in state and local government capital spending (Peterson 1968; Kim 1987; Bunch 1988; Porterba 1988). This study uses variables that represent these factors. Population size, percentage of home owners, per capita income, and percentage of unpaved roads are used to measure capital spending needs. In general, positive associations with capital spending are expected for each of these variables.

The percentage of the population under age 18 and the percentage of the population living below poverty level are used to capture competing operating spending needs (Bunch 1988).²¹ The percentage of the population under age 18 is an indirect measure of the county's role in funding primary through secondary education. Although school districts have primary responsibility for school funding in Georgia, general purpose county governments also provide limited funding (Selig Center for Economic Growth 1998).²² The percentage of the county's population living below poverty level is included as a proxy for the need for operating expenditures for welfare and job training programs (Bunch 1988).

Own source revenue, federal grants, state grants, and outstanding general obligation and revenue debt are used to measure revenue availability. Positive associations with capital spending are expected for these variables.

Table 8 presents the research findings. The first model, CAPITAL (A), measures whether the use of SPLOST affects the amount of capital spending in counties. The second model, CAPITAL (B), tests the effect

of an extra dollar of SPLOST revenue on the amount of capital spending. The dependent variable in the first and second models is per capita capital spending. The third model, PCTCAPTL, tests whether the use of SPLOST affects the share of capital spending as a percentage of total spending. The dependent variable is capital spending as a percentage of total spending.

Table 8. Impact of SPLOST on Capital Spending

Variables	CAPITAL (A)	CAPITAL (B)	PCTCAPTL
POP (log)	45.38 (1.79)*	38.41 (1.54)	15.10 (1.89)*
PCINCOME	0.005 (3.18)***	0.004 (2.48)**	0.001 (3.13)***
UNDER19	0.81 (0.71)	0.75 (0.66)	0.51 (1.41)
UNPAVED	0.42 (1.22)	0.42 (1.23)	0.19 (1.69)*
HMOWNER	-0.82 (1.69)*	-0.38 (0.79)	-0.13 (0.83)
FUNCTION	0.86 (2.11)**	0.72 (1.80)*	0.33 (2.57)**
SPLOST _{t-1}	17.36 (7.98)***	—	5.54 (8.07)***
PCSPLOST _{t-1}	—	0.38 (10.94)***	—
PCOWNREV	0.07 (2.20)**	0.06 (2.01)**	-0.007 (0.72)
PCINRVST	0.49 (9.98)***	0.48 (9.98)***	0.15 (9.78)***
PCINRVFD	0.32 (4.93)***	0.31 (4.93)***	0.07 (3.49)***
PCGOOUT	0.09 (5.08)***	0.10 (5.43)***	0.03 (4.58)***
PCREVOTG	0.08 (4.46)***	0.08 (4.64)***	0.01 (2.33)**
R ²	0.725	0.734	0.791

* $p < 0.1$. ** $p < 0.05$. *** $p < 0.01$.

Notes: Numbers in parentheses are t values. A lagged SPLOST dummy variable (SPLOST_{t-1}) is used as a primary independent variable in the CAPITAL (A) model and PCTCAPTL model, and a lagged per capita SPLOST variable (PCSPLOST_{t-1}) is employed in the CAPITAL (B) model. The effect of the year dummy variable is not reported.

The significant SPLOST coefficient (17.36) in the CAPITAL (A) model suggests that SPLOST-collecting counties spend an average of \$17.36 (per capita) more on capital spending than do non-SPLOST counties. Given that the mean value of capital spending is \$37 and that of SPLOST collection is \$22 in the 136 counties analyzed in the study, the fact that SPLOST counties spend an average of \$17.36 more on capital spending than do non-SPLOST counties demonstrates the importance of the tax in local capital project funding.

SPLOST significantly increases both the amount of capital spending and its share of total spending in Georgia counties.

The statistically significant SPLOST coefficient (5.54) in the PCTCAPTL model suggests that SPLOST counties maintain an average amount of capital spending as a percentage of total expenditures that is 5.54 percent higher than that in non-SPLOST counties. Given that the mean value of capital spending as a percentage of total expenditures is 15.5 percent over time, this figure is impressive. These findings clearly suggest that the use of SPLOST significantly increases both the amount of capital spending and capital spending as a percentage of total spending in Georgia counties.

Analyzing the per-SPLOST-dollar impact on capital spending, the coefficient of the PCSPLOST variable (0.38) in the CAPITAL (B) model indicates that an extra dollar of SPLOST revenue results in a 38-cent increase in capital spending. This finding is consistent with findings in other studies that a dollar of earmarked revenue (SPLOST) does not result in a full dollar of spending in any favored sector (Dye and McGuire 1992).

Impact on Current Operating and Total Spending

It is expected that an extra dollar of SPLOST proceeds will result in an increase in current operating spending, because maintenance and operating spending needs arise once SPLOST projects are completed. An increase in current operating spending and SPLOST use may also occur when SPLOST frees a portion of general funds previously spent for capital purposes. Mathematically, if SPLOST leads to an increase in both capital and current operating spending, there will be an increase in total spending. In order to maintain consistency in interpreting the coefficients of regression models, independent variables used in the capital spending model (Table 8) are used in the current operating and total spending models.²³

Table 9 presents the research findings. The OPERATNG (A) model tests whether the use of SPLOST increases the amount of current operating spending. The OPERATNG (B) model tests the effect of an extra dollar of SPLOST proceeds on the amount of current operating spending. The dependent variable in both models is per capita current operating spending. The TLSPEND (A) model analyzes whether the

use of SPLOST increases the total spending amount in counties. The TLSPEND (B) model tests the effect of an extra dollar of SPLOST proceeds on total spending. The dependent variable in these models is per capita total spending.

Although statistically insignificant, the SPLOST coefficient (2.81) in the OPERATNG (A) model suggests that SPLOST counties may

Table 9. Impact of SPLOST on Current Operating and Total Spending

Variables	OPERATNG (A)	OPERATNG (B)	TLSPEND (A)	TLSPEND (B)
POP (log)	-83.85 (3.52)***	-87.12 (3.66)	-39.47 (1.18)	-19.74 (1.52)
PCINCOME	0.00006 (0.04)	-0.0004 (0.28)	0.005 (2.59)***	0.004 (1.83)*
UNDER19	0.23 (0.21)	0.11 (0.10)	0.90 (0.59)	0.73 (0.49)
UNPAVED	-0.15 (0.47)	-0.16 (0.49)	0.28 (0.61)	0.27 (0.60)
HMOWNER	-0.59 (1.29)	-0.43 (0.94)	-1.40 (2.19)**	-0.80 (1.27)
FUNCTION	0.27 (0.70)	0.23 (0.60)	1.14 (2.12)**	0.97 (1.84)*
SPLOST _{t-1}	2.81 (1.38)	—	20.64 (7.21)***	—
PCSPLOST _{t-1}	—	0.12 (3.56)***	—	0.50 (11.06)***
PCOWNREV	0.35 (11.67)***	0.35 (11.70)***	0.41 (9.70)***	0.40 (9.70)***
PCINRVST	0.19 (4.13)***	0.19 (4.06)***	0.68 (10.53)***	0.66 (10.56)***
PCINRVFD	0.23 (3.84)***	0.23 (3.88)***	0.55 (6.51)***	0.55 (6.60)***
PCGOOUT	-0.07 (4.10)***	-0.07 (4.07)***	0.03 (1.15)	0.03 (1.41)
PCREVOTG	0.07 (4.63)***	0.08 (4.72)***	0.15 (6.55)***	0.15 (6.81)***
R ²	0.98	0.98	0.98	0.98

* $p < 0.1$. ** $p < 0.05$. *** $p < 0.01$.

Notes: Numbers in parentheses are t values. A lagged SPLOST dummy variable (SPLOST_{t-1}) is used as a primary independent variable in the OPERATNG (A) and TLSPEND (A) models, and a lagged per capita SPLOST variable (PCSPLOST_{t-1}) is employed in the OPERATNG (B) and TLSPEND (B) models. The effect of the year dummy variable is not reported.

spend, on average, \$2.81 more on current operating expenditures than do non-SPLOST counties. The coefficient of PCSPLOST (0.12) in the OPERATNG (B) model is statistically significant and suggests that a dollar of SPLOST revenue results in a 12-cent increase in current operating spending. Although the contribution of one dollar of SPLOST revenue to capital spending (38 cents; see Table 8) is much higher than the contribution to current operating spending (12 cents), it is evident that the use of SPLOST also leads to increases in current operating spending.

As suggested earlier, there are three possible answers for the increase. First, an extra dollar of SPLOST money may have created 12 cents in additional operating costs once the SPLOST project was completed, as SPLOST critics argue. Second, SPLOST revenue may have freed up money that was intended, or used, for capital projects prior to the adoption of SPLOST. This money is then spent for current operating purposes, which increases current operating expenditures by 12 cents. Third, the increase may result from a combination of the first and second reasons.

Regarding the impact of SPLOST on total spending, the significant coefficient of SPLOST in the TLSPEND (A) model (20.64) suggests that SPLOST counties, on average, spend \$20.64 more on total spending than do non-SPLOST counties. Of that amount, \$17.36 is used for capital spending and \$2.81 is used for current operating purposes, as coefficients of SPLOST variables in the CAPITAL (A) model in Table 8 and OPERATNG (A) model in Table 9 show.

Current operating and total spending increases in counties that use SPLOST.

The coefficient of PCSPLOST (0.50) in the TLSPEND (B) model indicates that a dollar of SPLOST results in a 50-cent increase in total spending. This amount can be broken down into a 38-cent increase in capital spending and a 12-cent increase in current operating spending, as indicated by the coefficient of the PCSPLOST variable in the CAPITAL (B) model in Table 8 and the coefficient of PCSPLOST in the OPERATNG (B) model in Table 9. As with the impact of SPLOST on capital spending, an extra dollar of SPLOST revenue does not bring a full dollar increase in total spending. In summary, then, this analysis indicates that while SPLOST is not stimulative (meaning that an extra dollar of SPLOST revenue would lead to more than a dollar increase in total expenditures), it does have an effect on current operating and total spending.

Policy Implications

The findings of this study have several practical policy implications for both local policymakers and voters. The first set of empirical tests concerned factors influencing the rate at which SPLOST was adopted. Over the short term, counties that were able to export part of their sales tax burden to nonresidents adopted the tax earlier than did other counties. However, over the long term, counties with a higher percentage of home owners tended to support SPLOST earlier than did other counties, probably with the intention of reducing their property tax burden. The results suggest that counties with the potential for exporting a portion of their sales taxes and with a relatively high percentage of home owners may rely more heavily on SPLOST than on other revenue sources (especially property taxes) to finance local capital projects.

The second set of empirical findings focused on the effect of SPLOST on long-term debt use and produced three major findings:

1. The use of SPLOST tends to slightly reduce both the likelihood that a county will issue general obligation debt and the amount of general obligation debt. However, because the SPLOST coefficients are not statistically significant and their magnitude is low, SPLOST does not seem to be a powerful alternative to general obligation debt.
2. The use of SPLOST tends to slightly increase both the likelihood that a county will issue revenue debt and the amount of revenue debt—but, again, the coefficients are statistically insignificant.
3. The use of SPLOST does not seem to reduce either the likelihood that a county will issue both general obligation and revenue debt or the amount of general obligation and revenue debt combined.

These findings show that SPLOST is neither a powerful alternative to general obligation debt nor a means of reducing revenue debt. Policymakers should be aware that SPLOST is unlikely to reduce the likelihood that a county will issue long-term debt and the amount of long-term debt.

The third test concerned the impact of SPLOST on the property tax burden. The results showed that the use of SPLOST does not reduce property tax burdens. Rather, it increases both the per capita property tax collected and property taxes as a percentage of personal income. Although the use of SPLOST seems to slightly reduce property tax millage rates, the contradictory signs in the coefficients of SPLOST variables

in the property tax level and millage rate models suggest that millage rate reduction does not necessarily lead to actual reduction in the property tax collected. From a policy perspective, the findings suggest that voters must be aware that the use of SPLOST may actually increase their real property tax burden (per capita property tax collected and property tax as a percentage of personal income).

The fourth research question tested the impact of SPLOST on capital spending, and it is on this measure that SPLOST has the greatest effect. SPLOST-collecting counties spend an average of \$17.40 more on capital spending per capita than do non-SPLOST counties. In terms of capital spending as a share of total spending, SPLOST counties maintain an average that is 5.6 percent higher than in non-SPLOST counties. Thus, SPLOST is a powerful fiscal device for increasing the amount of capital spending. However, as expected, a dollar of SPLOST revenue brings less than a full dollar increase (38 cents) in capital spending. In any case, from a policy perspective, SPLOST can be an effective means whereby Georgia local governments may increase their capital spending.

The fifth research question concerned the impact of SPLOST on current operating and total spending. The results demonstrate that SPLOST counties tend to spend \$2.80 more on current operating spending than do non-SPLOST counties. Also, an extra dollar of SPLOST revenue results in a 12-cent increase in current operating spending. As SPLOST leads to increases in both capital and current operating spending, total spending in SPLOST counties increases by \$20. And an extra dollar of SPLOST revenue results in a 50-cent increase in total spending: 38 cents in capital spending and 12-cents in current operating spending. The findings suggest, as critics have argued, that SPLOST can trigger more current operating spending. Local elected officials will want to consider this point when they contemplate implementing SPLOST projects in the future.

SPLOST has emerged as a popular instrument for financing local capital projects in Georgia.

In summary, in light of the federal government's phasing out of general revenue sharing and taxpayer resistance to increases in taxes, SPLOST seems to be a successful revenue diversification measure in Georgia. Through its widespread use in Georgia counties, numerous administrative buildings, courthouses, jails, recreation facilities, and other capital projects have been built since 1985. While SPLOST proponents tout the merit of the sales tax, opponents of the tax argue that it is regressive and may foster the inefficiency and waste associated with big government. The criticism has not, however, deterred its use and emergence as a popular instrument for financing local capital projects in Georgia counties.

Notes

1. The 23 counties that failed to submit a survey at least once during FY 1984–97 and that are omitted in the analysis are Baker, Bartow, Berrien, Burke, Candler, Catoosa, Colquitt, Douglas, Echols, Franklin, Greene, Heard, Jackson, Jenkins, Mcquintosh, Meriwether, Michell, Muscogee, Newton, Paulding, Terrell, Twigs, and Wilkson.
2. By FY 1984, 106 of 136 counties collected LOST. By FY 1987, 116 counties collected LOST. Therefore, 10 counties adopted LOST during FY 1984–97, while 28 counties collected SPLOST in FY 1987.
3. General revenue sharing was an important revenue source for local governments, specifically small governments. It accounted for about 8.8 percent and 7.8 percent of OSR in small counties and cities, respectively, in FY 1986. It totaled 2.2 percent and 2.3 percent of OSR in large counties and cities, respectively (Lu 1994, 69).
4. There are a few exceptions to these limitations: (1) funds granted by and loans obtained from the federal government or any agency pursuant to conditions imposed by federal law; (2) funds borrowed from any person, corporation, association, or the state to pay, in whole or in part, the cost of property valuation and equalization programs for ad valorem tax purposes; and (3) temporary loans.
5. The Georgia Department of Community Affairs published the *Local Government Operation Survey* in 1985, 1988, 1990, 1993, and 1995.
6. The data in the table are based on the Georgia Secretary of State's *SPLOST Election Record*, in which only major projects are listed. Therefore, the total number of each type of project will be higher than Table 4 indicates. Tracing all of the individual projects is possible by canvassing individual county election records. Nevertheless, the general trend in the frequency of SPLOST projects should remain similar.
7. The increase in the approval rate may indicate that either voters became more comfortable with the idea of imposing a tax on themselves or that government officials became more skilled in packaging the votes.
8. Elected officials in Fulton County never proposed SPLOST projects, and DeKalb County voters rejected two SPLOST referenda (1986 and 1995). However, in 1997, voters in DeKalb County approved a 1 percent homestead local option sales tax (HOST), the purpose of which is similar to SPLOST.
9. The 10 counties are Burke, Clayton, Fulton, Glascock, Houston, Pickens, Pulaski, Quitman, Treutlen, and Wayne.
10. In the logit model, the percentage of urbanization (URBAN) was used instead of a population density variable (PDENSITY). When the PDENSITY variable was employed in the logit model, the overall explanatory power of the model significantly deteriorated. This result may be due in part to the nonadoption of SPLOST in the two metro Atlanta counties with the highest population density in the state (Fulton and DeKalb). Since both the PDENSITY and URBAN variables measure similar characteristics, employing the URBAN variable would be acceptable.
11. The use of the per capita consumption figure instead of per capita income in the denominator of the equation would better measure the degree of sales tax exportation to nonresidents. Unfortunately, per capita consumption data are not available for the entire period.

12. In the early years of SPLOST (1985–88), the experience of LOST may have influenced the adoption of SPLOST in the counties. However, in the long run, since most counties adopted LOST, it is not employed in the model.
13. The model is significant at the $p < 0.20$ level.
14. The fiscal health index variable (FISCALHT) does not show any statistical significance in the ordinary least squares and tobit models. Rather, the inclusion of the variable aggravates the overall fitness of the regression models. Therefore, the variable is excluded in the tobit model for statistical economy purposes.
15. This rate of spending is confirmed by author interviews with five county finance directors conducted between November 1998 and January 1999. However, SPLOST money can be committed in advance in anticipation of the revenue, especially when a SPLOST referendum is tied with GO debt. GO debt proceeds are used in advance, and the principal and interest of GO debt are paid with SPLOST as it is collected. This practice is infrequent.
16. Since the population growth rate is controlled (POPCHANGE) in the model, it can be interpreted that the use of SPLOST increased the use of revenue debt.
17. However, the fixed-effects model employed in this study controls for some of these factors.
18. This variable may be a better measure to capture property tax burden than the per capita property tax collected. As seen in the regression results, however, the effect of SPLOST on the two measures shows similar results.
19. In Georgia, to prevent backdoor tax increases, the General Assembly enacted legislation (HB 553), which was signed into law by Gov. Roy Barnes in April 1999. The legislation, which Governor Barnes called the Property Taxpayer's Bill of Rights, requires local governments to announce the tax rate they would have to adopt in order to collect the same level of taxes following increases in property tax assessments. If local governments do not reduce tax rates to that "revenue neutral" level, even if they reduce tax rates to some extent, they must hold three public hearings for the public to comment on the tax rate and then vote on the tax rate. Further, if the new rate does not achieve "revenue neutrality," local governments must announce a tax increase. The legislation is intended to reduce property taxes for Georgia home owners. It will apply to the property of any home owner who is currently receiving a homestead exemption and pays state, county, or school property taxes.
20. In Georgia, there is no statewide definition of capital expenditures. However, local governments in general tend to include capital expenditure items that span longer than one year.
21. Most literature uses the percentage of the population under age 18 to measure this variable. Since these data are not available, the percentage of population under age 19 is used in this study.
22. Public school funding by general-purpose county governments varies. In general, in most counties, a very small portion of county budgets (less than 1 percent) is devoted to school districts.
23. Several independent variables can be added, or deleted, to estimate coefficients of different types of spending. However, the independent variables used in the capital spending regression model explain variations in the current operating and total spending models very well. Therefore, the same variables are utilized for all types of spending regressions.

References

- Advisory Commission on Intergovernmental Relations. 1989. *Local revenue diversification: Local sales taxes*. Washington, D.C.: Government Printing Office.
- Asefa, Sally A., Roy D. Adams, and Dennis R. Starleaf. 1981. Municipal borrowing: Some empirical results. *Public Finance Quarterly* 9: 271–80.
- Association County Commissioners of Georgia. 1987. Counties look to special purpose sales tax for capital improvements. *Georgia County Government* 38 (December): 30–33.
- Bachtel, Douglas C., and Susan R. Boatright, eds. 1983–97. *The Georgia county guide*. Athens: Center for Agribusiness and Economic Development, University of Georgia.
- Baltagi, Badi H. 1995. *Econometric analysis of panel data*. New York: John Wiley & Sons.
- Berry, William D., and Stanley Feldman. 1985. *Multiple regression in practice*. Thousand Oaks, Calif.: Sage.
- Blackely, Paul R., and Larry DeBoer. 1987. Tax base choice by local governments. *Land Economics* 63: 227–36.
- Bland, Robert L., and Li-Khan Chen. 1990. Taxable municipal bonds: State and local governments confront the tax-exempt limitation movement. *Public Administration Review* 50: 42–48.
- Borg, Mary O., and Paul M. Mason. 1988. The budgetary incidence of a lottery to support education. *National Tax Journal* 41: 75–85.
- Bunch, Beverly S. 1988. Variations in state government capital spending and debt practices: An empirical analysis. Ph.D. dissertation. Pittsburgh: Carnegie Mellon University.
- Bureau of Economic Analysis. 1993. *Regional population 1984–1997*. Washington, D.C.: Department of Commerce, Bureau of Economic Analysis.
- Button, James W. 1992. A sign of generational conflict: The impact of Florida's aging voters on local school and tax referenda. *Social Science Quarterly* 73, no. 4: 786–97.
- Campbell, W. Richard, and Patty Glynn. 1990. Intergovernmental cooperation: An analysis of cities and counties in Georgia. *Public Administration Quarterly* 14: 120–41.
- Chicone, David L., and Norman Walzer. 1986. Factors affecting property tax reliance. *Public Choice* 49, no. 1: 17–28.
- Clemente, Franklin. 1975. Age and the perception of national priorities. *Gerontologist* 15: 61–63.
- Clements, Betty J., and J. Devereux Week. 1997. *County and municipal revenue sources in Georgia*. Athens: Carl Vinson Institute of Government, University of Georgia.
- Demaris, Alfred. 1992. *Logit modeling: Practical applications*. Thousand Oaks, Calif.: Sage.

- Deran, Elizabeth. 1968. Earmarking and expenditures: A survey and a new test. *National Tax Journal* 25: 223–28.
- Durning, Dan. 1992. *Distributing Georgia's general-purpose local option sales tax revenues: An examination of the present policy and some options*. Athens: Carl Vinson Institute of Government, University of Georgia.
- Dye, Richard F., and Therese J. McGuire. 1992. The effect of earmarked revenues on the level and composition of expenditures. *Public Finance Quarterly* 20, no. 4: 543–56.
- Eklund, P. 1972. A theory of earmarking appraised. *National Tax Journal* 25: 223–28.
- Farnham, Paul G. 1985. Re-examining local debt limits: A disaggregated analysis. *Southern Economic Journal* 1186–201.
- Filer, John E., Donald L. Moak, and Barry Uze. 1988. Why some states adopt lotteries and others don't. *Public Finance Quarterly* 16, no. 3: 31–40.
- Fosset, James W. 1984. The politics of dependence: Federal aid to big cities. In *The changing politics of federal grants*, ed. Lawrence D. Brown, James W. Fosset, and Kenneth T. Palmer. Washington, D.C.: Brookings Institute.
- Georgia Department of Community Affairs. 1980–96. *Local government operation survey*. Atlanta: Georgia Department of Community Affairs.
- . 1984–97. *Report of local government finances*. Atlanta: Georgia Department of Community Affairs.
- . 1994a. *Local option sales taxes (1989–93)*. Atlanta: Georgia Department of Community Affairs.
- . 1994b. *Benefits and burdens: A study of city and county long-term debt in Georgia*. Atlanta: Georgia Department of Community Affairs.
- Georgia Department of Revenue. 1983–97. *Statistical report*. Atlanta: Georgia Department of Revenue.
- . 1996. *A tax guide for Georgia citizens*. Atlanta: Georgia Department of Revenue.
- . 1998. *Georgia sales and use tax county rate chart*. Atlanta: Georgia Department of Revenue.
- . 1999. *Revenue charts*. Atlanta: Georgia Department of Revenue.
- Georgia Secretary of State. 1984–97. *Special purpose local option sales tax election record*. Atlanta: Georgia Secretary of State.
- Gold, Steven. 1979. *Property tax relief*. Lexington, Mass.: Lexington Books.
- Greene, William H. 1997. *Econometric analysis*. 3d ed. New York: Macmillian.
- Heyndels, Bruno, and Jef Vuchelen. 1998. Tax mimicking among Belgian municipalities. *National Tax Journal* 51: 89–101.
- Holtz-Eakin, Douglas. 1988. The line-item veto and public sector budgets: Evidence from the states. *Journal of Public Economics* 36: 269–92.
- Hsiao, Cheng. 1986. *Analysis of panel data*. Cambridge: Cambridge University Press.

- Hudson, Robert B. 1980. Old age politics in a period of change. In *Aging and society: Current research and policy perspectives*, ed. Edgar F. Borgatta and Neil B. McCluskey. Thousand Oaks, Calif.: Sage.
- Johnston, John. 1984. *Econometric methods*. New York: McGraw-Hill.
- Jung, Changhoon. 2001. Does the local option sales tax reduce the property tax burden? The Georgia case. *Public Budgeting and Finance* (spring): 73–86.
- Kim, Karl E. 1987. Public capital investment in large American cities. Discussion Paper no. 2. Manoa: University of Hawaii at Manoa.
- Kmenta, Jan. 1997. *Elements of econometrics*. 2d ed. New York: Macmillan.
- Lu, Hao-Ran. 1994. Fiscal responses of Georgia local governments to the termination of general revenue sharing. Ph.D. dissertation. Athens: University of Georgia.
- MacManus, Susan A. 1977. The relationship between revenue structures and debt structures of U.S. central cities. Paper presented at the annual meeting of the Southern Political Science Association, New Orleans, 3–5 November.
- . 1981. The impact of functional responsibility and state legal constraints on the “revenue-debt” packages of U.S. central cities. *International Journal of Public Administration* 3, no. 1: 67–111.
- Mikesell, John L. 1994. *Fiscal administration*. 4th ed. New York: Wadsworth.
- Nathan, Richard P. 1983. State and local governments under federal grants: Toward a predictive theory. *Political Science Quarterly* 98: 47–57.
- National League of Cities. 1987. *Financing infrastructure: Innovations at the local level*. Washington, D.C.: National League of Cities.
- Pagano, Michael A. 1986. *How the public works: Major issues in infrastructure finance*. Washington, D.C.: National League of Cities.
- Pajari, Roger N. 1984. Georgia’s local option sales tax: Who adopts it and why? *Southeastern Political Review* 127–53.
- Perez, Arturo, and Ronald Snell. 1995. *Earmarking state taxes*. Denver: National Conference of State Legislatures.
- Petersen, John E. 1968. The determinants of state and local government capital outlays. Ph.D. dissertation. Philadelphia: University of Pennsylvania.
- Peterson, John E., Catherine Holstein, and Barbara Weiss. 1992. The future of infrastructure needs and financing. In *The handbook of municipal bonds and public finance*, ed. Robert Lamb, James Leigland, and Stephen Rappaport. New York: New York Institute of Finance.
- Piele, Philip K., and John Stuart Hall. 1973. *Budgets, bonds, and ballots: Voting behavior in school financial elections*. Lexington, Mass.: Lexington Books.
- Poterba, James. 1987. Capital budgets, borrowing rules, and state capital spending. Working paper. Cambridge: Massachusetts Institute of Technology and National Bureau of Economic Research.
- Sayers, Lois W. 1989. *Pooled time series analysis*. Thousand Oaks, Calif.: Sage.

- Selig Center for Economic Growth. 1984–98. *Georgia statistical abstract*. Athens: Selig Center for Economic Growth, University of Georgia.
- Shadbegian, Ronald J. 1998. Do tax and expenditure limitations affect local government budgets? Evidence panel data. *Public Finance Review* 26, no. 2: 118–36.
- Singer, Jerry A. 1987. The special 1 percent sales tax referendum: Tips and techniques on municipal participation. *Urban Georgia* 37: 9–13.
- Sjoquist, David L. 1981. A median voter analysis of variances in the use of property taxes among local governments. *Public Choice* 36: 275–85.
- Snell, Ronald, ed. 1993. *Financing state government in the 1990s*. Denver: National Conference of State Legislatures.
- Stimson, James A. 1985. Regression in space and time: A statistical essay. *American Journal of Political Science* 29, no. 3: 914–47.
- Tiebout, Charles M. 1956. A pure theory of local expenditures. *Journal of Political Economy* 64: 416–24.
- Ulbrich, Holley H., Rodney H. Mabry, and John T. Warner. 1990. Does the local sales tax provide property tax relief? Paper presented at the Western Economic Association meeting, Lake Tahoe.
- U.S. Department of Commerce. 1984–97. *Regional population*. Washington, D.C.: U.S. Department of Commerce, Bureau of Economic Analysis.
- Watson, Douglas J., and Thomas Volcino. 1990. Changing intergovernmental fiscal relationships: Impact of the 1986 tax reform act on state and local governments. *Public Administration Review* 50: 427–34.
- Weeks, J. Devereaux, and Richard W. Campbell. 1998. County revenues. In *Handbook for Georgia county commissioners*. 3d ed., ed. J. Devereaux Weeks and Paul T. Hardy. Athens: Carl Vinson Institute of Government, University of Georgia.

Appendix A: Summary of Related Studies

While no previous studies of SPLOST have been made, there have been studies of the adoption and fiscal impact of local option sales taxes and other revenue sources across the nation. Such research has focused on four related areas: local government responses to the availability of new own source revenue, the impact of a specific revenue source on long-term debt level and structure, the impact of a specific revenue source on the property tax burden, and the impact of earmarked revenue on government spending.

Local Government Responses to the Availability of New Own Source Revenue

When there are no referendum requirements and restrictions on the use of new own source revenue, local elected officials may have a great deal of latitude in using the new revenue sources. Depending on the fiscal culture, fiscal condition of local governments, and general public support, local elected officials may decide to raise and spend the new revenue in what serves their own best interests. For example, they might use the new revenue as a substitute for part of existing taxes or to complement existing revenue sources in order to provide more services. However, if the revenue does have a referendum requirement and restrictions on its use, local officials may be very limited in how they raise and spend new revenue. Following is a discussion of three theories concerning local responses to the availability of new own source revenue.

The socioeconomic approach stresses that local revenue choice and structure is a function of socioeconomic factors. In examining the results of LOST referenda held in Georgia counties for three years (1978, 1980, and 1982), Pajari (1984) found that the probability of LOST being adopted was positively associated with taxable sales, income, property value, educational achievement, metropolitan statistical area status, population density, presence of an interstate highway, and strong membership in the Republican party.

The public choice theory claims that fiscal decisions by local governments reflect median voters' preferences for tax-and-spending choices. It argues that median voters want to maximize both how their tax is used and what government services they receive. In order to minimize their tax burden, they prefer to export it to nonresidents or outside their jurisdictions. Following this approach, local governments attempt to rely heavily on taxes that are highly exportable, if possible.

In examining the 1973 Indiana tax package, which contained an optional local income tax provision designed to reduce property taxes, Blackley and DeBoer (1987) found that counties with tax bases weighted more heavily toward taxable property tend to adopt a local income tax, while those with significant amounts of non–locally owned property available for tax exportation do not. These counties relied heavily on a property tax instead. Furthermore, in analyzing why some states adopt lotteries and others do not, Filer, Moak, and Uze (1988) found that the probability of adopting a lottery as an alternative source of state revenue is positively associated with the expected return from the lottery, overall tax burden on the voters, and tax exportability.

The multijurisdiction theory emphasizes the influence of nearby communities on a community’s revenue structure and choice (Tiebout 1956; Chicone and Walzer 1986). Analyzing tax rates in 589 Belgian municipalities that operate within an institutionally homogenous setting, Heyndels and Vuchelen (1998) found that local income and property tax rates of immediate neighbors tend to be similar over time and that the intensity of this influence diminishes as geographical distance increases.

Effect of Specific Revenue Sources on Debt Structure and Debt Level

Several studies have examined how specific revenue sources affect the structure and level of long-term debt at the national and state level. Most of these looked at supply and demand, with supply representing the willingness and ability of the issuing government to provide long-term debt, and demand representing requests from private individuals and organizations for debt instruments (Bunch 1988). These studies attempted to find significant factors such as socioeconomic, demographic, political, and institutional attributes that affect variations in the amount of state and local debt. Analyzing the variations in the amount of state and local government debt issued during the 1962–63 period, Petersen (1968) found a positive relationship between borrowing levels and capital outlays, debt retired, and prior years’ borrowing and a negative relationship between taxes and borrowing levels.

At the local level, MacManus (1977) seems to be the only one to suggest that a significant relationship exists between relying on certain revenue sources and relying on various debt structures. Examining 224 U.S. cities (with populations over 50,000) for two successive fiscal years (1974 and 1975), she found that reliance upon property tax revenue is positively associated with GO debt and negatively associated with revenue debt. Nonproperty tax revenue (particularly sales tax reliance) is

negatively associated with reliance on GO debt and positively associated with reliance on revenue debt. Further, reliance on nontax revenues (current charges and miscellaneous general revenues) is positively associated with the use of revenue debt but negatively associated with reliance on GO debt.

Effect of Specific Revenue Sources on the Property Tax Burden

Not many studies have examined the effects of nonproperty taxes on property tax burdens, although property tax relief is one of the main justifications for adopting local nonproperty taxes (such as local income and sales taxes) in many states. Deran (1968) conducted one of the earliest studies that analyzed the impact of local income taxes on the property tax burden. In the mid-1960s, comparing large U.S. cities of similar size with and without local income taxes, Deran found that cities with local income taxes had lower property taxes as a percentage of total taxes, lower per capita property taxes, and lower per capita total taxes. Furthermore, both per capita property taxes and per capita total taxes had increased at a lower rate in the income tax cities over the preceding decade. Deran's findings suggest that local income tax primarily functions as a substitute for property tax. However, the study is a simple comparative analysis that does not consider several important factors that affect the level of various taxes. A more appropriate research design would employ multivariate regression analysis to measure the effects of local income taxes on the property tax and the total tax bill. It would consider such factors as differences in the assignment of functional responsibilities, service levels, tax exportability, and the availability of state or federal aid (Gold 1979).

Ulbrich, Mabry, and Warner (1990) analyzed the impact of local option sales taxes on property tax burdens across 50 states for a single year. They found that the presence of a local sales tax is negatively associated with all measures of the property tax burden in statistically significant and consistent ways. In other words, a local sales tax tends to lower the effective property tax rate by 0.83 percent and reduce the per capita property tax to \$135 less than in areas not using sales taxes. Their research suggests that local sales taxes substitute for property taxes. However, they found a positive association between local sales taxes as a percentage of personal income and effective property tax rates. This finding suggests that higher local sales taxes may be related to higher property taxes or that once a local sales tax is in place, property taxes and sales tax revenue tend to rise together.

Finally, examining 136 Georgia county governments, Jung (2001) found that the use of the 1 percent local option sales tax (LOST), which requires a rollback of property taxes, led to a \$12 reduction in property taxes. Stated another way, an extra dollar of LOST revenue provided about 28 cents in property tax relief in Georgia counties.

Effect of Earmarked Revenue Sources on Government Spending

Earmarking state and local own source revenues for specific spending purposes is an old tradition and is prevalent across different levels of government (Perez and Snell 1995). Considering the frequent and heavy use of earmarked revenue in state and local governments, very few empirical studies have been conducted to test the impact of earmarked revenues on spending in the designated categories. Deran (1965) utilized survey data on the earmarking of state taxes and found no bivariate association between earmarking as a share of expenditures and expenditures per capita. Eklund found that “earmarking is associated with a higher relative expenditure allocation to the earmarking function than when there is no earmarking” (1972, 224) after examining expenditures in developing countries. Analyzing lottery revenues in Illinois, Borg and Mason (1988) found that an increase in lottery revenues for school aid was matched by a decline in appropriated general fund revenues; school aid actually decreased after the lottery began.

After examining the 1984 and 1988 surveys conducted by the National Conference of State Legislatures in 44 states, Dye and McGuire (1992) found that an extra dollar of earmarked revenue results in either no change in expenditures or increases in spending of much less than a dollar. To be more specific, the authors asked if an extra dollar of revenue earmarked for a particular purpose (education, highways, and aid to local governments) increased spending correspondingly. They found that total spending and spending on education did not change, spending on highways increased by 19 cents, and spending on aid to local government increased by 65 cents. These results suggest that when a new tax or tax increase is earmarked for education, the state reduces general fund support for education by an equal amount. Similarly, when an extra dollar is dedicated to highways or local government aid, earmarking increases spending on that category by only 19 cents and 65 cents, respectively. These results suggest that state funds are quite fungible (i.e., money is diverted among different funds).

In sum, empirical studies show that the effects of earmarking on the favored category of expenditure and the total size of expenditure are mixed.

An earmarked tax does not necessarily lead to a spending increase in the favored sector. One dollar of earmarking does not necessarily lead to a full dollar of spending in the favored sector; rather, it results in a spending increase of much less than a dollar. Due to fungibility between general funds and earmarked taxes, total spending does not necessarily increase with earmarking. Further, a greater reliance on earmarking as a share of expenditures can result in either no change in spending or lower expenditure in practice.

Appendix B: Pooled Regression Models

In categorizing the types of pooled regression, the econometrics literature frequently uses two dimensions (Hsiao 1986; Baltagi 1995; Greene 1997). When the model specification of pooled time series (specifically error terms) is dependent only on the cross section to which the observation belongs, it is called a model with one-way effects. On the other hand, if the specification depends on both the cross section and the time series to which the observation belongs, it is called a model with two-way effects. The general specification of the error terms of the one-way effects model can be represented as $u_{it} = v_i + \varepsilon_{it}$. For the two-way effects model, the general specification is $u_{it} = v_i + e_t + \varepsilon_{it}$, where v_i denotes the individual unit effect, e_t the time effect, and ε_{it} represents a classical error term with a mean of zero and a homoscedastic covariance matrix (Greene 1997).

Another dimension of the pooled time-series design involves fixed effects and random effects. The fixed-effects model (also known as the covariance model) assumes that each cross-sectional unit and each time period are characterized by their own special intercept (Kmenta 1997). The ordinary least squares (OLS) method is reasonably robust when units are homogeneous and heteroscedasticity and autocorrelation are not at high levels (Berry and Feldman 1985). Since significant differences between units (or between time points, or both) are the source of OLS bias, direct OLS application is not appropriate for the fixed-effects model where heterogeneity is involved either between units, between time points, or both. However, the fixed-effects model can be estimated with OLS by removing these differences, either by transforming or by introducing dummy variables for the effects (Stimson 1985). It should be noted that introducing many dummy variables to represent either specific units or time points reduces the degrees of freedom in the regression model (Stimson 1985; Baltagi 1995).

Mathematically, the fixed-effects model can be expressed as the difference between the original pooled regression equation, $y_{it} = \alpha_i + \beta'x_{it} + u_{it}$ ---(1), and its group mean, $\bar{y}_i = \alpha_i + \beta'\bar{x}_i + \bar{u}_i$ ---(2). That is, the difference expressed in equation (1) minus equation (2) now can be represented by $y_{it} - \bar{y}_i = \beta'(x_{it} - \bar{x}_i) + u_{it} - \bar{u}_i$ ---(3). Equation (3) represents deviations from the group means, and these are entered as variables in the fixed-effects model (Greene 1997). Depending on the characteristics of the error terms, two types of fixed-effects models are available (Baltagi 1995). The one-way fixed-effects model (also known as least squares dummy variables, or LSDV) is preferred when an unobservable individual unit

effect (v_i) exists across cross-sectional units (Kmenta 1997). The two-way fixed-effects model fits where both unobservable unit (v_i) and time (e_t) effects are present in the error terms (u_{it}). The two-way fixed-effects model is expected to control both unit-specific and time-specific effects, and this model represents the intraunit variation over time (Baltagi 1995; Greene 1997). To detect whether fixed effects are involved in a pooled regression model, the F test is widely used (Baltagi 1995; Greene 1997).

The advantage of the fixed-effects model is that it protects against specification error caused by possible correlation between cross-sectional characteristics and explanatory variables (Stimson 1985). However, the model suffers from a large loss of degrees of freedom. Also, this fixed-effects model cannot estimate the effects of any time-invariant variable such as sex, race, or religion, since these time-invariant variables are wiped out in the process of transformation, as seen in equation (3) above.

The random-effects model (also known as an error component model) has developed from the search for a more efficient model that can cover the deficiencies associated with the fixed-effects model. The model assumes that there is no systematic error in the individual unit effect (v_i), time effect (e_t), and residual (ε_{it}). This means that unit and time effects are now collected in the error term (u_{it}) as in OLS, except that the error term is unsuitable for OLS estimation (Stimson 1985). The model further assumes that the three components of the error structure are not correlated and are homoscedastic (Sayers 1989). These conditions mean that “for each cross-sectional unit the correlation of the disturbances remains unchanged no matter how far apart in time the disturbances are” (Kmenta 1997, 626). This assumption is unrealistic in many cases. Since the OLS estimator is biased in estimating the random-effects model, the model is estimated with the generalized least squares (GLS) method.

In summary, the choice of appropriate model is dependent on the nature of the design and data structure. The fixed-effects model, which is the primary method used in the study, will be especially appropriate when (1) unit effects exist, (2) the number of cross-sectional units (N) is larger than the number of time points (T), and (3) there is no serious autocorrelation ($\rho \geq 0.3$) within each unit (Stimson 1985; Lu 1994). Primarily due to its superior ability to capture unobservable unit effects, use of the fixed-effects model has been growing in public finance and budgeting literature in recent years (Holtz-Eakin 1988; Poterba 1987; Case et al. 1993; Shadbegian 1998). Due to different fiscal cultures, fiscal conditions, and population sizes in counties across Georgia over time, it is reasonable to expect that county-specific effects (and, in some cases, year-specific effects) are working across the state on the fiscal behavior of

counties. *F* tests conducted on research models analyzing the impact of SPLOST on debt levels, property tax burdens, and capital spending all confirm that county-specific effects play an important role.²⁴ (In all cases, the null hypothesis that there is no fixed effect involved was rejected at the $p < 0.001$ level, which means that strong fixed effects are at work.) Therefore, the fixed-effects model will be primarily used in the regression analysis related to these topics in this study.

Appendix C: Variables Used in the Analysis

Variables used in the analysis are described in this section. It should be noted that a dependent variable in a regression model may also be employed as an explanatory variable in another model. The explanatory variables in the study can be grouped into two major categories: socioeconomic and fiscal variables.

Dependent Variables

CAPITAL: Per capita capital spending—[(Purchase of equipment, land, and structures plus construction expenditures)/population], in constant dollars—state and local government GDP IPD (1984 = 100).

EARLY: Dummy variable representing the status of SPLOST adoption. Counties collected SPLOST at least once between 1984–1988 are coded 1; others are coded 0.

GOISSDUM: General obligation debt dummy variable. This variable is coded 1 if a county issued any amount of general obligation debt in a specific year and 0 otherwise.

GORVISDM: Aggregate general obligation and revenue debt dummy variable. If any amount of general obligation debt, revenue debt, or both is issued in a county, it is coded 1; if not, it is coded 0.

MILLAGE: Annual property tax rate (millage rate).

OPERATNG: Per capita current operating expenditures (current operating expenditures/population), in constant dollars—state and local government GDP IPD (1984 = 100).

PCGOISS: Per capita general obligation debt, in constant dollars—state and local government GDP implicit price deflator (IPD) with 1984 base year. Calculated general obligation debt issue in a county divided by population in the county.

PCGORVIS: Per capita aggregate general obligation and revenue debt, in constant dollars—state and local government GDP IPD (1984 = 100).

PCPROPTX: Per capita property tax collected. Property tax collected/population, in constant dollars—state and local government GDP IPD (1984 = 100).

PCREVISS: Per capita revenue debt (revenue debt issue/population), in constant dollars—state and local government GDP IPD (1984 = 100).

PCTCAPTL: Percent of capital spending as percentage of total spending—(capital expenditures/total expenditures).

REVISDUM: Revenue debt dummy variable. Coded 1 if a county issued any amount of revenue debt in a specific year and 0 otherwise. Computed from Georgia Department of Community Affairs, *Report of Local Government Finances*, 1984–1997.

SPLOSTAGE: length of time, in months, between the month that a county passed its first SPLOST (over the 1985–1997) until December 1997.

TAXLEVEL: a measure of property tax burden. Property taxes as a percentage of personal income (property tax collected/personal income).

TLSPEND: Per capita total expenditures (capital expenditures plus current operating expenditure/population), in constant dollars—state and local government GDP IPD (1984 = 100).

Socioeconomic Variables

AGE65: percentage of people over age 65.

BLACK: percentage of African Americans in the community.

EDULEVEL: percent of residents who have completed four years of college or more.

FUNCTION: county government functional responsibilities. Calculated by counting the number of functions on which a county government spent any amount of money in a particular year.

HMOWNER: percentage of residents who own homes.

PCINCOME: per capita personal income, in constant dollars (state and local government GDP IPD, 1984 = 100).

PDENSITY: population density (number of people living in a square mile).

POP: population size. Log-transformed.

POPCHNGE: average annual percentage population change. The variable is calculated from population data in *Regional Population* (1983–97), Bureau of Economic Analysis, U.S. Department of Commerce.

POVERTY: percentage of people living under the poverty line.

UNDER19: percentage of people under age 19.

UNEMPLOY: unemployment rate.

UNPAVED: percentage of local roads unpaved.

URBAN: percentage of residents living in urbanized area.

Fiscal Explanatory Variables

All fiscal variables expressed in dollar terms here are converted to constant dollars with state and local government GDP IPD (1984 base year). Unless otherwise noted, the fiscal data were obtained from *Report of Local Government Finances* (1984–97), Georgia Department of Community Affairs, and population data were obtained from *Regional Population* (1984–97), Bureau of Economic Analysis, U.S. Department of Commerce.

CAPITAL: per capita capital spending. [(Purchase of equipment, land, and structures plus construction expenditures) ÷ population].

- FISCALHT**: local government fiscal health variable. Calculated as the ratio of total general revenues minus total general expenditures to total general expenditures. This calculation is derived from data in *Report of Local Government Finances (1984–97)*, Georgia Department of Community Affairs.
- LOST**: LOST dummy variable, with a value of 1 for counties collecting the LOST and 0 for non-LOST counties.
- OPERATNG**: per capita current operating expenditure (current operating expenditures \div population).
- PCDIGEST**: per capita net property and utility digest.
- PCGOOUT**: per capita general obligation debt outstanding.
- PCINRVFD**: per capita federal grants revenue including general revenue sharing.
- PCINRVST**: per capita state grants revenue.
- PCLOST**: per capita LOST collected.
- PCOWNREV**: per capita own source revenue excluding SPLOST revenue. [(Total own source revenue – SPLOST revenue) \div population].
- PCPROPTX**: per capita property tax collected.
- PCREVOTG**: per capita revenue debt outstanding.
- PCSPLOST**: per capita SPLOST collected.
- PCTCAPTL**: capital spending as a percentage of total spending (capital expenditures \div total expenditures).
- PCTXSALE**: per capita taxable sales.
- SPLOST**: SPLOST dummy variable, with a value of 1 for counties collecting the SPLOST and 0 for others.
- TLSPEND**: per capita total expenditure (capital expenditures plus current operating expenditure \div population).
- TXEXPORT**: measure of tax exportation (per capita taxable sales \div per capita income). Computed data from *The Georgia County Guide (1984–97)*, edited by Douglas Bachtel and Susan Boatright, University of Georgia Center for Agribusiness and Economic Development; and *Regional Population, 1984–97*, Bureau of Economic Analysis, U.S. Department of Commerce.

