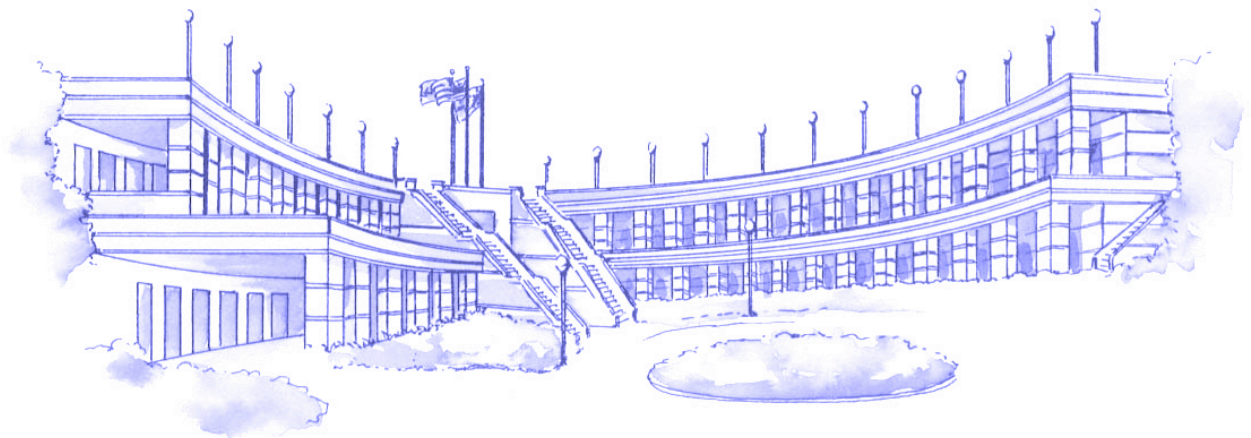


THE SOUTH CAROLINA ECONOMY AND GOVERNMENT REVENUE

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Strom Thurmond Institute of Government and Public Affairs
Clemson University

Research Project

Evaluation of the South Carolina Revenue System

Project Report

Ensuring a Competitive Revenue System for South Carolina

Holley H. Ulbrich

Working Papers

Taxes in Theory and Practice

Holley H. Ulbrich

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FINDINGS

The measures of a state's economic performance are output, employment, and income. Trends in each of these areas can affect government's ability to raise revenue.

OUTPUT—MANUFACTURING REMAINS IMPORTANT BUT OTHER INDUSTRIES ARE CONTRIBUTING MORE TO THE GOODS AND SERVICES PRODUCED IN SOUTH CAROLINA

- Goods and services produced in manufacturing remain the largest share of South Carolina's Gross State Product (GSP), but the composition of the manufacturing sector has changed over time away from nondurables and toward durable goods.

Manufacturing was the largest share of GSP at 22.6 percent in 2001, compared to 22.3 percent in 1977.

Durable goods more than doubled as a share of GSP from 6.1 percent in 1977 to 13.2 percent in 2001. This trend reflects the state's growing automotive sector, among others. The nondurable goods share of GSP (including textiles) dropped from 16.8 percent to 9.9 percent over the same period.

- Transportation and public utilities, wholesale trade, and retail trade grew much faster than overall GSP between 1977 and 2001. The service sector grew more slowly than GSP.
- The government sector fell as a share of state GSP between 1977 and 2001.

EMPLOYMENT—CHANGES IN WHERE SOUTH CAROLINIANS WORK

- In 1977, manufacturing firms accounted for 27.3 percent of all jobs in the state. By 2001, this share had fallen to 14.7 percent.
- Employment in the government sector fell from 20.4 percent of all employment in 1977 to 16.7 percent in 2001.
- Employment in services surged from 16 percent in 1977 of all employment to 26.3 percent in 2001. The share of workers in retail trade increased from 13.8 percent to 18 percent.

- The increased share of service sector employment is accompanied by a decline in labor productivity (output per worker) in that sector.
- The fastest productivity growth has occurred in the state's durable manufacturing, mining, and wholesale trade industries because of increased capital intensity and automation. As a result, employment in these sectors has grown more slowly than output.

STATE PERSONAL INCOME—ITS CHANGING COMPOSITION

- Wages and salaries remain the largest share of state personal income, but non-employment-related sources of income such as dividends, interest, rent, and government transfers have accounted for an increasing share of state personal income over the last few decades. This trend in income shares will continue as the state's population ages.
- Within employee compensation, wages and salaries have become a smaller share, with a shift toward more compensation in the form of employer supplements to wages and salaries, such as pensions, insurance, and social security.

ECONOMIC TRENDS AND THEIR IMPACT ON GOVERNMENT REVENUES

- The individual income tax and the general sales tax provide majority of revenue to the state's General Fund. Revenue from these two taxes is responsive to changes in the state's economy, especially to changes in wages and salaries.
- Revenue from the property tax, charges and fees, the corporate income tax, selective sales taxes, and miscellaneous taxes is not particularly responsive to changes in the state's economy. The property tax and charges and fees are important revenue sources for local governments.

SALES TAX REVENUE—NOT KEEPING PACE WITH INCOME

- State and local sales tax revenue has kept pace with growth in personal income since 1977. However, this apparent steady growth is the result of the addition of the fifth (EIA) penny to the state sales tax in 1985 and the adoption of local sales taxes in 29 counties since 1990. As a share of personal income, sales tax revenue to the state's General Fund has declined since 1977.
- When only tangible goods are taxed, government must either increase the sales tax rate or broaden the base by reducing exemptions in order for sales tax revenues to keep pace with growth in personal income.

A declining share of workers' earnings is available to be spent on purchase of taxable goods because of the trend to compensate workers by increasing benefits rather than cash wages. In addition, much of the fringe benefit part of compensation is spent on services (particularly health care), which are not subject to sales tax.

As the state's population ages, residents spending a declining share of their income on goods and an increasing share on services, which are not taxed.

INDIVIDUAL INCOME TAX REVENUE—AT RISK

- Individual income tax revenue is vulnerable to economic downturns. Collections fell relative to state personal income in the early 1990s and again since 2000.
- Rapid employment growth in services and retail trade means more South Carolinians are working in lower-paying jobs than in the past.
- Revenue from the individual income tax will grow more slowly as the share of personal income coming from wages and salaries continues to decline.
- The share of state personal income from dividends, interest, rents, social security, and pensions is increasing. Much of this passive income receives favorable tax treatment, especially for taxpayers over age 65.

OTHER REVENUE SOURCES: LESS RESPONSIVE TO CHANGES IN THE STATE ECONOMY

- Revenue from selective sales taxes, such as taxes on motor fuel, alcohol and tobacco, is determined by the quantity sold, not the dollar value of purchases. Unless selective sales taxes per unit are increased regularly, they lose value over time because of inflation.
- The corporate income tax is a small, volatile source of state revenue that fluctuates is extremely unstable from year to year.
- Revenue from charges, fees, and property taxes is driven primarily by desired spending levels, especially at the local government level. These rates are set annually and are not particularly sensitive changes in economic conditions

TAXATION AND SOUTH CAROLINA'S AGING POPULATION

- The share of the state population aged 55 years and older has risen from 15.4 percent in 1970 to 21.4 percent in 2000. This trend is expected to continue as more retirees relocate to the state.
- As people age, they shift more of their spending to services, such as health care, which are not subject to the sales tax.
- As South Carolinians age, more households will be eligible for the various types of tax breaks offered to seniors in the state. Some of these tax breaks are based solely on age and not on wealth, income, or types of expenditures.

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THE SOUTH CAROLINA ECONOMY AND GOVERNMENT REVENUE

South Carolina's economy has always been dynamic and evolving. The relative importance of different economic sectors and different geographic regions is always changing. The purpose of this paper is to examine a subset of the ongoing structural changes in South Carolina's economy, with a particular interest on the implications of these shifts for government revenues.

Specifically, we consider shifts in the industrial composition of the state's economy, shifts in the composition of total economic and income growth, and shifts in the composition of the state's population. Also, we consider the nature of the relationship between economic growth and government revenue growth by estimating a series of regressions in an attempt to identify the components of personal income, if any, that determine government revenue collections.

OUTPUT GROWTH IN SOUTH CAROLINA

This section provides an overview of historical trends in the South Carolina economy in terms of output, employment, and productivity. These trends will contribute to an understanding of the nature of economic growth in South Carolina. Later sections will then turn to a discussion of the relationship between the state's real economy and income and employee compensation in South Carolina, and finally the relationship between the state's economy and government revenue collections.

OUTPUT GROWTH: TOTAL AND BY INDUSTRY

One of the broadest measures of economic activity at the national level is gross domestic product (GDP). The analogue at the state level is gross state product (GSP). GSP is a measure of the market value of all final goods and services produced within a state. Real GSP provides a measure of total output over time adjusted for price changes. As such, trends in real GSP in total and at the industry level provide a useful view of overall economic growth and structural change within a state's economy.

Unlike GDP at the national level, GSP is only available annually and with a considerable lag. Therefore, real GSP is generally not useful for tracking short-term cyclical movements at

the state level. However, it is among the best indicators available for tracking longer-term trends.

As of November 2005, total real GSP and real GSP by industry is available at the industry level through 2004 using the North American Industry Classification System (NAICS), which was phased in recently to replace the long-standing Standard Industry Classification (SIC) system. GSP by industry data using the NAICS system are available only from 1997 through 2004, while estimates for SIC-based industry GSP have been made available for 1977 through 2001. Direct comparisons between SIC and NAICS categories are not possible.

Because the interest in this analysis lies in looking at long-term trends in South Carolina, this paper focuses on the longer history available from the SIC-based estimates. Therefore, all GSP-related data by industry (including real GSP, nominal GSP, employment, labor productivity and earnings) provided here end in 2001. The appendix to this paper provides the most recent industry-level data available for a current picture of the state's economic structure based on the NAICS system.

Table I provides a snapshot of real GSP in South Carolina for 1977 and 2001. Here, total real GSP and real GSP by industry are given, along with the total percent change in real GSP between 1977 and 2001. The final two columns of the table indicate the relevant industry shares of total South Carolina real GSP during both 1977 and 2001. For example, real GSP in agriculture grew from \$595 million in 1977 to \$1,678 million in 2001—an increase of 182.0 percent. Because industry real GSP grew slightly faster than total real GSP, agriculture's share in the total state economy grew slightly, from 1.4 percent to 1.6 percent. Overall, South Carolina's real GSP grew a total of 142.3 percent between 1977 and 2001.

Table I. Real Gross State Product by Industry, 1977 and 2001, S.C.

Industry	1977	2001	% Change 1977- 2001	% Share 1977	% Share 2001
Gross State Product (in billions)	\$ 43.9	\$106.5	142.3	100.0	100.0
Agriculture, forestry, and fishing	0.6	1.7	182.0	1.4	1.6
Mining	0.1	0.2	129.5	0.2	0.2
Construction	2.1	5.3	148.2	4.8	5.0
Manufacturing	9.8	24.0	144.9	22.3	22.6
Manufacturing - durable goods	2.7	14.1	427.2	6.1	13.2
Manufacturing - nondurable goods	7.4	10.6	43.8	16.8	9.9
Transportation and public utilities	2.8	9.4	239.4	6.3	8.8
Wholesale trade	2.0	7.7	280.2	4.6	7.3
Retail trade	3.9	12.5	219.8	8.9	11.7
Finance, insurance, and real estate	6.6	14.4	116.7	15.1	13.5
Services	6.2	16.1	160.0	14.1	15.2
Government	10.7	15.4	44.1	24.3	14.5

Source: U.S. Bureau of Economic Analysis.

Industry-level GSP data reveals some surprising trends. Generally, a common view of the state's economy over the last decades is that there has been a steep decline in the manufacturing sector and rapid growth in the state's service sector. In many respects this is true, as we will see when looking later at total employment. However, in terms of the value of production, this is clearly not the case.

Real GSP for all manufacturing industries increased a total of 144.9 percent between 1977 and 2001—slightly faster than the state's economy overall. As a share of the state's economy, manufacturing actually posted a slight gain, from 22.3 percent in 1977 to 22.6 percent as of 2001. Meanwhile, the state's service sectors saw total real GSP increase by 160.0 percent over the same period. In 1977, service industries accounted for 14.1 percent of the total state economy. By 2001, this figure had risen to 15.2 percent, still well below the share for manufacturing.

Of all industries shown in this breakdown, the fastest growth over this period was in the state's durable goods manufacturing sector. Meanwhile, the slowest rates of growth were posted by the state's nondurable goods manufacturing firms and by the government sector.

EMPLOYMENT GROWTH: TOTAL AND BY INDUSTRY

The structure of the state's industry mix for real output has changed relatively little since 1977. The largest shifts include the relative decline of the government sector and the shift within manufacturing from nondurable to durable goods production. The overall mix of output produced in South Carolina, industry-by-industry, has changed little. However, how we produce this output has changed dramatically, even in the relatively short time period since 1977.

Technological advances have affected production techniques in some industries more than others. For this reason, the employment data in Table 2 reveal substantial shifts in the industries employing workers in South Carolina. Between 1977 and 2001, total employment in the state increased 60.5 percent, from 1.4 million to just less than 2.3 million. The sectoral patterns now resemble the common view of the state's changing economy. The state has seen above average job growth in construction, transportation and public utilities, wholesale and retail trade, finance, insurance, and real estate, and especially the broad service sector. Meanwhile, slower growth occurred in mining, government, and durable goods manufacturing. Actual job declines were posted in the state's nondurable goods sectors.

These sectoral changes have significantly altered the mix of employment by industry. In 1977, manufacturing firms accounted for 27.3 percent of all jobs in the state. By 2001, this share had fallen to 14.7 percent. Government's employment share also fell notably, from 20.5 percent to 16.7 percent. These relative declines were the result of rapid in-

creases elsewhere. The share of employment in services surged from 16.0 percent to 26.3 percent. Retail trade increased from 13.8 percent to 18.0 percent.

Table 2. Employment by Industry, 1977 and 2001, S.C.

Industry	1977	2001	% Change 1977-2001	% Share 1977	% Share 2001
Total employment	1,411,204	2,264,800	60.5		
Agriculture, forestry, and fishing	7,943	26,914	238.8	0.6	1.2
Mining	2,000	2,280	14.0	0.1	0.1
Construction	82,070	152,415	85.7	5.8	6.7
Manufacturing - Total	384,820	334,006	-13.2	27.3	14.7
Manufacturing - durable goods	111,686	158,872	42.2	7.9	7.0
Manufacturing - nondurable goods	273,134	175,134	-35.9	19.4	7.7
Transportation and public utilities	48,659	109,494	125.0	3.4	4.8
Wholesale trade	49,633	82,833	66.9	3.5	3.7
Retail trade	194,094	407,530	110.0	13.8	18.0
Finance, insurance, and real estate	68,462	143,536	109.7	4.9	6.3
Services	225,371	596,128	164.5	16.0	26.3
Government	289,192	377,661	30.6	20.5	16.7

Source: U.S. Bureau of Economic Analysis.

LABOR PRODUCTIVITY GROWTH: TOTAL AND BY INDUSTRY

Again, the differences between the output and employment data are driven by differing effects of technological advance across industries. As should be expected given this discussion, nowhere have productivity gains played a more substantial role—at least to date—than in South Carolina’s manufacturing sectors.

Measures of labor productivity by sector are given in Table 3. The standard definition of labor productivity refers to the amount of output produced per worker hour. The data

Table 3. Labor Productivity:
Real Gross State Product per Worker by Industry, S.C.

Industry	1977	2001	% Change
Total employment	\$31,136	\$47,014	51.0
Agriculture, forestry, and fishing	74,909	62,343	-16.8
Mining	37,246	74,994	101.4
Construction	25,954	34,681	33.6
Manufacturing - Total	25,481	71,893	182.1
Manufacturing - durable goods	23,862	88,444	270.6
Manufacturing - nondurable goods	26,969	60,461	124.2
Transportation and public utilities	56,666	85,466	50.8
Wholesale trade	40,997	93,399	127.8
Retail trade	20,129	30,654	52.3
Finance, insurance, and real estate	97,087	100,332	3.3
Services	27,543	27,069	-1.7
Government	36,923	40,752	10.4

Source: Author’s calculations based on data from the U.S. Bureau of Economic Analysis.

available at the state level allow for a similar calculation, though looking at output per worker rather than worker hour. Though changes in average hours worked could skew these statistics somewhat, the major patterns would undoubtedly remain unchanged.

Total labor productivity in South Carolina—the amount of real output per worker—rose 51.0 percent, from \$31,136 in 1977 to \$47,014 as of 2001. Important differences emerge at the industry level—important for understanding the nature of employment trends and trends in compensation. In terms of the current level of real output per worker, the lowest industries include construction, retail trade, services, and government. The highest levels of real output per worker are in finance, insurance, and real estate, wholesale trade, durable goods manufacturing, and transportation and public utilities.

The fastest productivity growth has clearly occurred in the state's manufacturing, mining, and wholesale trade industries thanks to increasing capital intensity and automation. Retail trade and transportation and public utilities have seen productivity gains near the overall state average. Meanwhile, markedly lower rates of technological advance have occurred in finance, insurance, and real estate, government, and the service sectors.

If we interpret these productivity measures as indicators of the productive ability of workers in these industries, then they provide a clear explanation for the observed patterns in employment given the relative real GSP growth rates. We have seen rapid growth in service sector employment because of the low rates of productivity gains in the service sectors. Productivity in the state's service sectors has been almost unchanged since 1977. While low levels of real output per worker present a challenge for raising wage levels, this has allowed for the rapid growth of employment opportunities in these firms. Manufacturing employment has grown more slowly or declined because of the extreme technological advances witnessed in the industries.

INCOME GROWTH IN SOUTH CAROLINA

We now turn to the relationship between output growth and income growth in South Carolina. Ultimately, the important link between the economy and government revenues lies primarily in trends in the nominal economy. That is, most sources of government revenue are tied to various concepts of values that are stated in current dollars, not in real (inflation-adjusted) terms as in the previous section. Revenue collections coming from individual income taxes, sales taxes, and property taxes are linked to nominal levels of incomes, spending, and housing values.¹ It is for this reason that it is critical to understand

¹ There are exceptions to the link between revenue and trends in the nominal economy. We have excise taxes that are tied to the quantity of goods purchased such as in the case of motor fuels, beer, and cigarettes. The sales tax cap on automobiles also effectively works to tie revenue collections to the quantity of cars purchased as opposed to the value.

the trends exhibited in various measures of state personal income if we are to understand the link between output trends, income trends, and government revenues.

NOMINAL GROSS STATE PRODUCT GROWTH: TOTAL AND BY INDUSTRY

To begin, it is useful to recast our discussion of real output trends by looking at trends in nominal GSP—the market value of output by industry in current (not adjusted for inflation) dollars—as shown in Table 4. Total nominal GSP increased from \$20.3 billion to \$115.2 billion between 1977 and 2001, an increase of nearly 470 percent. Industry gains in nominal output tend to resemble the patterns in the employment data, with the fastest growth occurring in the state’s services, transportation, trade, financial services, and construction sectors. Trends in nominal GSP are useful when considering trends in employee compensation, because nominal incomes are closely tied to nominal output. It is with this background that we now consider trends in incomes and compensation in South Carolina.

Table 4. Nominal Gross State Product by Industry, S.C.

Industry	1977	2001	% Change 1977-2001	% Share 1977	% Share 2001
Total Gross State Product (in billions)	\$20.3	\$115.2	467.6	100.0	100.0
Agriculture, forestry, and fishing	0.453	1.5	232.5	2.2	1.3
Mining	0.045	0.2	260.0	0.2	0.1
Construction	0.813	6.8	739.5	4.0	5.9
Manufacturing - Total	6.3	23.1	269.0	30.9	20.1
Manufacturing - durable goods	2.0	11.7	477.4	10.0	10.2
Manufacturing - nondurable goods	4.2	11.4	169.2	20.9	9.9
Transportation and public utilities	1.4	10.3	630.0	6.9	8.9
Wholesale trade	1.3	7.0	429.3	6.5	6.1
Retail trade	2.0	12.2	504.2	10.0	10.6
Finance, insurance, and real estate	2.2	16.6	648.5	10.9	14.4
Services	2.0	19.6	890.5	9.7	17.0
Government	3.8	17.9	375.2	18.6	15.5

Source: U.S. Bureau of Economic Analysis.

There are many different compensation concepts and measures available. Among the most commonly referenced measures of incomes at the state level is total state personal income. State personal income is generally considered to be one of the two most readily available and broadest indicators of state-level economic activity, with employment the second indicator.

Personal income data are used widely both for short-term cyclical analysis and for longer-term structural analysis. In terms of the business cycle, state personal income data is available quarterly, and thus can provide insight into short-term movements in a state economy. Over a longer period of time, total growth in personal income, or trends in per capita income, provide useful indicators of overall state economic development especially relative to other states.

PERSONAL INCOME GROWTH: TOTAL BY COMPONENT AND PER CAPITA

Total state personal income is the sum of three distinct components: earnings; dividends, interest and rent; and transfer receipts. Total personal income in South Carolina increased 575 percent between 1977 and 2004, from \$16.9 billion to \$114.0 billion.²

The earnings component of personal income is the one most closely tied to labor-generated income. Generally, earnings consist of wage and salary disbursements, supplements to wages and salaries, and proprietors' income. The dividends, interest and rent component includes money received from, for example, stock dividends, all sources of interest income, and the net income from the rental of real property as well as the imputed net rental income of the owner-occupants of residential dwellings. Typically, this component of personal income is not very closely tied to production taking place within a state, though the receipt of this income is important for supporting household spending within a state. Finally, the transfer receipts component includes government payments to individuals for retirement benefits, Medicare and Medicaid payments, unemployment insurance, and federal student grants and loans.

As given in Table 5, the share of state personal income derived directly from labor via earnings has fallen from nearly 78 percent in 1977 to close to 67 percent as of 2004. Meanwhile, the shares of income derived from the other components have both increased over this period. This shift occurred because while earnings grew a total of 379 percent over this period, dividends and transfers grew by 595 percent and 649 percent, respectively.

Table 5. Total Personal Income and Components, S.C.

	1977	2004	% Change 1977-2004	% Share 1977	% Share 2004
Total Personal Income (in billions)	\$16.9	\$114.0	574.5	100.0	100.0
Earnings	13.2	76.0	475.6	77.9	66.7
Dividends, interest, and rent	1.7	16.9	895.2	10.2	14.8
Transfer receipts	2.0	21.1	954.4	11.8	18.5
Personal Income Per Capita	\$5,669	\$27,153	379.0	--	--
Earnings	4,419	18,099	309.6	--	--
Dividends, interest, and rent	580	4,030	594.8	--	--
Transfer receipts	671	5,023	648.6	--	--
Population (1,000s)	2,989	4,198	40.5	--	--

Source: U.S. Bureau of Economic Analysis.

The trends in these relative personal income shares from 1977 to 2004 are shown in Figure 1. A noticeable shift in these relative shares occurred during the late 1970s and early 1980s, when high interest rates cause the dividends, interest and rent component to experience rapid growth. Since the mid-1980s, the dividends share has remained fairly steady at

² The components of state personal income are available from the U.S. Bureau of Economic Analysis in a continuous series through 2004.

between 16 and 18 percent of total income, while the transfer receipts component has grown more quickly. These transfer receipts include some counter-cyclical items, such as unemployment insurance benefits. These benefits grew quickly during and after the recessions of the early 1990s and 2001.

Similarly, the dividends component saw its share drop in recent years because of the drop in stock prices and historically low interest rates. Looking ahead, it is likely that both the dividends and the transfers components will continue to rise more quickly than earnings. Rising interest rates and improved stock market returns should continue to boost dividends, and a large wave of retirees will boost transfer receipts.

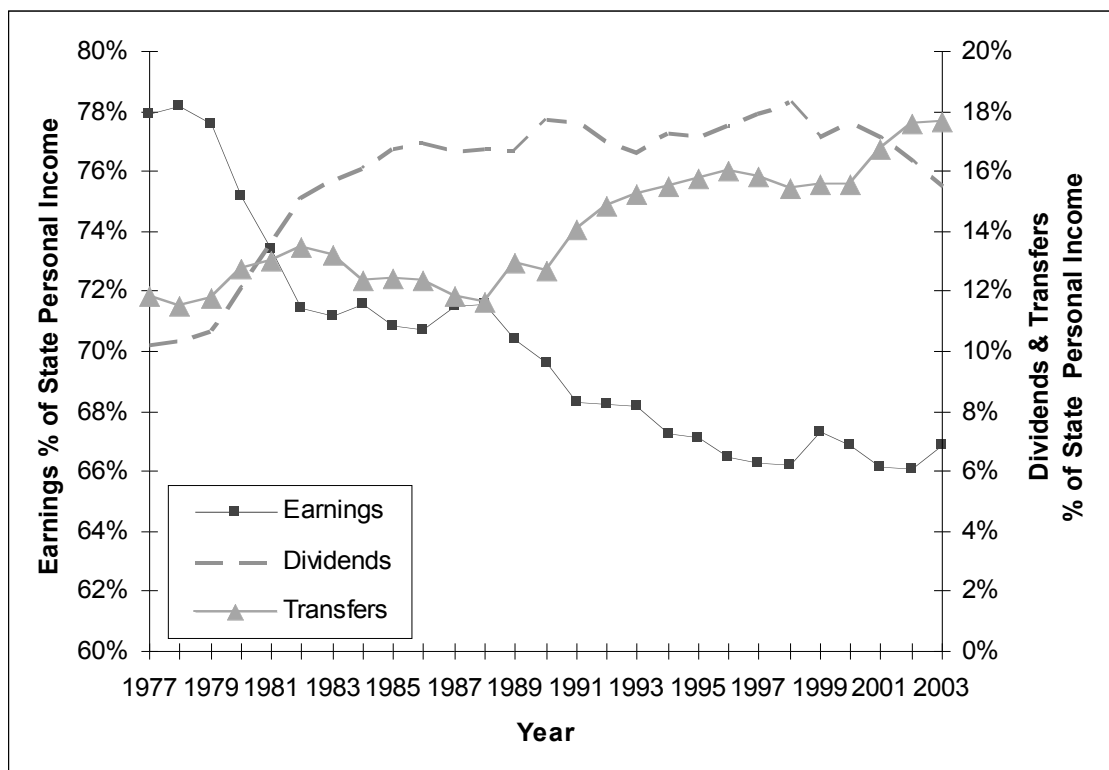


Figure 1. Components of Personal Income.

These trends in the components of personal income are clearly important when trying to link economic growth to government revenue growth. The stability or predictability of a relationship between incomes and government revenues will depend on what income components are relevant for a given tax. That is, if an individual income tax system is structured such that the relevant tax base is earnings, its behavior overtime will differ compared to a tax base that includes a combination of earnings, dividends, and transfer receipt components. These relationships are the focus of a later section of this report.

EARNINGS BY INDUSTRY

Examination of the average earnings by industry data reveals an important feature of South Carolina's long-run structural change given the general downward trend in earnings as a share of total personal income (Table 6).³ As employment has been shifting from manufacturing to nonmanufacturing, it is shifting into industries that pay less on average. Average earnings per job in manufacturing in 2001 were \$45,619. For retail trade, average earnings stood at \$18,501.

Table 6. Earnings by Industry, S.C.

	Earnings (billions)		Earnings Per Job	
	1977	2001	1977	2001
Total Earnings		\$74.3	\$10,035	\$32,805
Agriculture, forestry, and fishing	0.05	0.5	6,861	18,676
Mining	0.04	0.09	21,966	38,585
Construction	0.9	5.1	11,244	33,607
Manufacturing - Total	4.6	15.2	11,887	45,619
Manufacturing - durable goods	1.4	7.3	12,237	45,794
Manufacturing - nondurable goods	3.2	8.01	11,744	45,459
Transportation and public utilities	0.8	5.0	15,630	45,798
Wholesale trade	0.6	3.6	12,902	43,380
Retail trade	1.4	7.5	7,176	18,501
Finance, insurance, and real estate	0.5	4.9	7,832	34,239
Services	1.7	16.8	7,593	28,202
Government	3.3	14.9	11,549	39,420

Source: U.S. Bureau of Economic Analysis.

But, it is not consistently the case that South Carolina's job growth is occurring only in low-paying sectors. Four sectors that have seen above average rates of job growth also have above average earnings per job, including construction; transportation and public utilities; wholesale trade; and finance, insurance and real estate.

THE COMPONENTS OF EARNINGS

Like total personal income, total earnings are composed of three distinct sources of compensation: wage and salary disbursements; supplements to wages and salaries; and proprietors' income. Wage and salary disbursements include all monetary remuneration of employees, such as regular pay, bonuses, tips, and commissions. Supplements to wages and salaries include employer contributions to employee pension and insurance funds, such as health and life insurance and retirement funds, as well as employer contributions to government social insurance programs including social security (old-age, survivors, and disability insurance), unemployment insurance, and other government programs. Proprietors' in-

³ The total earnings figures in Table 6 differ from those in Table 5 because the Table 5 earnings are based on a location of residence concept, the earnings in Table 6 are by place of work. For example, if a resident of Georgia works in South Carolina, those earnings are included in Table 6, but not in Table 5.

come includes the income of sole proprietorships, partnerships, and tax-exempt cooperatives. The contribution of these three components to total earnings is given in Table 7.

Table 7. Components of Total Earnings, S.C.

	1977	2004	% Change 1977-2004	% Share 1977	% Share 2004
Total Earnings (in billions)	\$16.9	\$114.0	574.5	100.0	100.0
Wage and salary disbursements	13.2	76.0	475.6	77.6	73.0
Supplements to wages and salaries	1.7	16.9	895.2	13.9	18.6
Proprietors' income	2.0	21.1	954.4	8.5	8.4

Source: U.S. Bureau of Economic Analysis.

The composition of total earnings has undergone a fairly steady shift involving reduced reliance on wages and salaries and greater reliance on wage and salary supplements. If we use total personal income as our measure of a state's economy, we have already seen that labor earnings are a diminishing piece of the total economy. Now we see that actual monetary remuneration is a diminishing share of total earnings. Overall, actual monetary payments to labor have decreased from about 65 percent of total personal income in 1977 to just under 54 percent of total personal income as of 2004.

Relative to wages and salaries, employer contributions for both private and government insurance plans and other benefit programs have been growing more quickly. All of these statistics point to a fairly clear conclusion: relative to what we often think of as a measure of 'the economy'—total personal income—actual monetary payments to employees are playing a smaller and smaller role.

Offsetting the decline in the share of wages and salaries in personal income has been rapid growth in nonlabor monetary payments including dividends and transfer receipts and the value of employer contributions to benefit plans through wage and salary supplements. This is definitely an important trend when considering the relationship between economic growth and the performance of government revenues. This is especially true since many of these trends are quite well defined over a long period of time, and can reasonably be expected to continue into the future.

In terms of wages and salaries as a percentage of total industry earnings, most industries have seen a decline over time (Table 8).⁴ However, it is interesting to note that for both retail trade and services, wages and salaries have actually increased as a percentage of total earnings. Without greater detail in the data, we cannot conclude the extent to which this is due to relative declines in employer contributions for benefits or declines in proprietors' income. It is the case, though, that the retail trade and service industries tend to be more

⁴ At the industry level, data are available on wage and salary disbursements. However, the data are generally too incomplete to break out the portions of earnings by industry that are wage and salary supplements versus proprietors' income. Therefore, in Table 8 and we show only wage and salary disbursements by industry.

heavily dominated by relatively smaller firms offering fewer benefits compared to larger manufacturing firms. Therefore, it is reasonable to assume that, for example, the high percentage of wages and salaries in retail trade earnings is a function of lower benefits offered in retail trade.

Table 8. Wages and Salaries Total and Per Job, by Industry, S.C.

	Total (billions)		Per Job		As % of Earnings	
	1977	2001	1977	2001	1977	2001
Total Wages and Salaries (by place of work)	\$11.0	\$55.8	\$7,784	\$24,645	77.6%	75.1%
Agriculture, forestry, and fishing	0.04	0.4	4,778	14,496	69.6	77.6
Mining	0.02	0.06	10,086	27,710	45.9	71.8
Construction	0.7	3.5	8,073	23,247	71.8	69.2
Manufacturing - Total	3.9	11.8	10,061	35,433	84.6	77.7
Manufacturing - durable goods	1.1	5.7	10,065	35,827	82.2	78.2
Manufacturing - nondurable goods	2.7	6.1	10,059	35,077	85.7	77.2
Transportation and public utilities	0.6	3.9	12,044	35,208	77.1	76.9
Wholesale trade	0.5	3.0	10,349	35,835	80.2	82.6
Retail trade	1.0	6.2	5,228	15,284	72.9	82.6
Finance, insurance, and real estate	0.4	3.2	5,968	21,958	76.2	64.1
Services	1.1	12.4	5,015	20,877	66.0	74.0
Government	2.7	11.2	9,216	29,656	79.8	75.2

Source: U.S. Bureau of Economic Analysis.

POPULATION GROWTH AND ITS REVENUE IMPLICATIONS

South Carolina has consistently seen its population grow slightly faster than the national average in recent decades. Between 1980 and 1990, the state's population grew a total of 11.7 percent compared to 9.8 percent nationally. Between 1990 and 2000, South Carolina's population grew 15.1 percent while the nation's population grew by 13.1 percent. This trend appears to be continuing into the earliest years of the twenty-first century. Between the 2000 census and 2004, South Carolina has seen population growth of 4.6 percent while the United States has grown by 4.3 percent.

These are long-term trends that are likely to persist as the U.S. population continues to move towards the South and West from the North and East. Since 1790, the mean center of the U.S. population has moved roughly 1,000 miles to the west and south from Chestertown, Maryland in 1790 to Edgar Springs, Missouri as of 2000.⁵

The expectation of continued relatively rapid population growth in South Carolina itself suggests likely increases in both government revenues and government expenditures. However, it is the changing age distribution of the population that presents more specific implications for government revenue and spending.

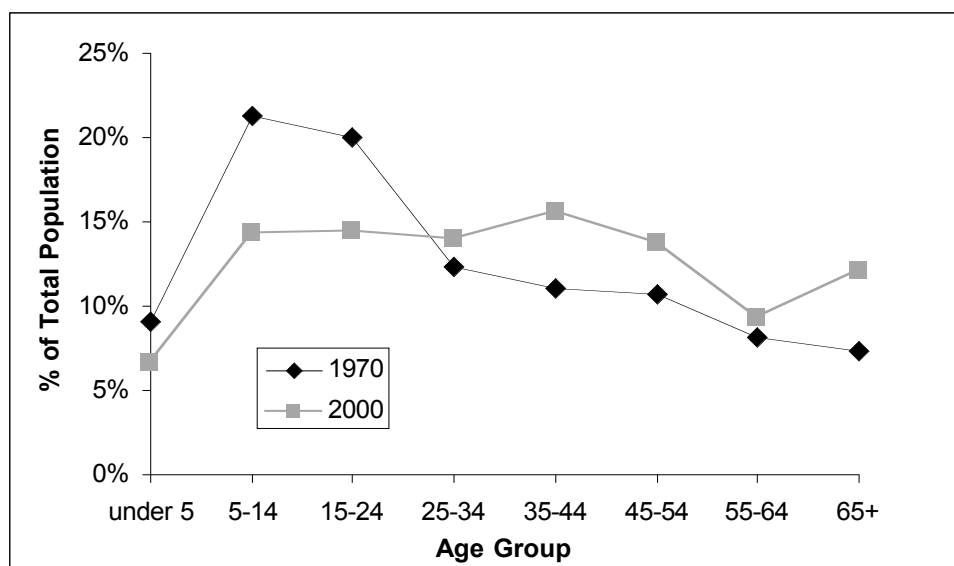
⁵ The U.S. Census Bureau issues the location of the mean center of the U.S. population after each decennial census. Between 1990 and 2000, the mean center of the population moved more than 12 miles south and more than 35 miles west.

South Carolina’s population is not only growing relatively quickly, but it is also aging relatively quickly (Figure 2). In 1970, for example, 50.5 percent of the state’s population was less than 25 years old. By 2000, the share of residents in this age range had fallen to 35.3 percent. Meanwhile, the share of the population aged 55 years and older has risen from 15.4 percent in 1970 to 21.4 percent in 2000.

From the perspective of government revenue generation the aging of the population has three clear implications: one related to the income patterns of the population, one related to the spending patterns of the population, and one driven by the tax breaks for the elderly currently in South Carolina’s tax code.

First, as the population continues to age, a growing share of the total population is leaving the peak labor earnings years. Not only does total income generally decline for the aging population, but the mix of income—in terms of labor earnings, transfers, dividends and interest—also changes, such that there can be relatively sharp drops in labor earnings for the aging population. Clearly, both the decline in total income and the shift away from labor earnings suggests downward pressure on individual income tax collections as the population ages. As the state’s population continues to age, it is likely that individual income tax revenue will grow more slowly than in the past.

In addition to the income implications of an aging population, there are also shifts in expenditure patterns as people age. Nationally, 35- to 64-year-olds have the highest average level of total spending. In 1998, average household expenditures for this age group were



Source: U.S. Census Bureau.

Figure 2. South Carolina’s Population Distribution by Age, 1970 and 2000.

\$42,236. For those under 35 years of age, average household expenditures totaled \$30,291. For those age 65 and older, average household expenditures were \$24,721. Along with the decline in income comes a decline in average expenditures as individuals age. As such, with a growing share of the total population falling into the 65 years and older age group, we would expect to see downward pressure on total expenditures and, therefore, on total sales tax collections (U.S. Bureau of Labor Statistics, 2000).

However, not only will an aging population generally spend less in total, but the composition of those expenditures will also change. Compared with the younger population segments, those age 65 and older spend about the same percentage of total expenditures on food and housing. Meanwhile, they spend a relatively smaller percentage on apparel, services, transportation and entertainment.

As might be expected, the older population allocates a substantially greater portion of total expenditures on health care. For example, households in the under-35-age group allocate about 3.2 percent of total spending towards health services. Households between 35 and 64 years spend about 4.7 percent on health care. For the older population, 11.9 percent of all expenditures are for health care services. In fact, not only does this oldest group allocate a greater portion of total spending towards health care, they also spend more on health care in absolute terms than younger households (U.S. Bureau of Labor Statistics, 2000).

Overall, as a greater share of the total population reaches age 65 and older, South Carolina can expect to see a growing number of individuals who not only have lower incomes and lower levels of spending, but there will also be a shift away from spending on traditionally taxable goods towards greater spending on health services—traditionally a nontaxed component of consumer expenditures. As was the case for individual income tax revenues, the aging of the population and the associated shifts in spending patterns would tend to exert downward pressure on sales tax revenues. As the population ages, it is likely that sales tax revenue growth will generally be slower than it has been in the past.

Finally, the aging population will also mean a growing number of South Carolinians will be eligible for the various types of tax breaks currently offered to seniors in the state. These tax breaks include the property tax homestead exemption, individual income tax deductions for those over 65, and the lower sales tax rate for those aged 85 and older. The fact that South Carolina can expect an increasing share of the total population to become eligible for these tax breaks again suggests that the state's revenue system will face increased pressures in the future.

SUMMARY OF STATE AND LOCAL REVENUES

A good starting point for exploring the links between the economy and government revenues is an examination of the state and local revenue system itself. South Carolina maintains a relatively balanced government revenue portfolio. That is, the state and local government system in South Carolina is financed by the major revenue sources in a diverse way and generally conforms to national averages in terms of revenue source reliance (Table 9).

Table 9. Own-Source State and Local Revenue, S.C.

Revenue	1982	1987	1992	1997	2002
Total Own Source (in billions)	\$3.9	\$6.3	\$8.7	\$12.6	\$15.9
Property Tax	0.6	1.0	1.6	2.0	3.1
General Sales	0.6	1.1	1.4	2.1	2.4
Selective Sales	0.4	0.6	0.6	0.8	1.0
Individual Income	0.6	1.0	1.4	1.9	2.3
Corporate Income	0.1	0.2	0.1	0.2	0.2
Other Taxes	0.2	0.3	0.4	0.7	0.7
Charges, Fees, & Misc.	1.2	2.0	3.0	4.8	6.2
Revenue Growth (%)	1982-87	1987-92	1992-97	1997-2002	1982-2002
Own-Source	61.6%	39.7%	43.7%	26.6%	310.8%
Property Tax	57.2	59.3	31.5	47.8	386.3
General Sales	81.7	25.6	42.9	15.4	276.5
Selective Sales	36.0	8.3	21.3	28.1	129.0
Individual Income	57.2	39.8	37.0	21.5	266.0
Corporate Income	44.8	-25.5	68.7	-33.2	21.5
Other Taxes	83.6	51.9	55.5	10.7	380.2
Charges, Fees, & Misc.	63.7	51.7	55.5	29.3	399.1
% of Own-Source	1982	1987	1992	1997	2002
Own-Source	100.0%	100.0%	100.0%	100.0%	100.0%
Property Tax	16.4	16.0	18.2	16.7	19.5
General Sales	16.7	18.8	16.9	16.8	15.3
Selective Sales	11.2	9.4	7.3	6.1	6.2
Individual Income	16.6	16.1	16.1	15.4	14.8
Corporate Income	3.4	3.0	1.6	1.9	1.0
Other Taxes	3.9	4.4	4.8	5.2	4.5
Charges, Fees, & Misc.	31.8	32.3	35.0	37.9	38.7

Source: U.S. Census Bureau.

In 2002, total state and local revenues from own sources were \$15.9 billion. Of this, property taxes contributed \$3.1 billion or about 19.5 percent of the total. Looking at the revenue source shares over time, it is clear that the state and local revenue system is shifting to greater reliance on property taxes, charges and fees, and other taxes while seeing declining shares for general and selective sales taxes and for individual and corporate income taxes.

Total own-source revenues grew 311 percent between 1982 and 2002. In comparison, total state personal income increased by 259 percent over this same period. Of the seven

major revenue sources shown here, only revenue from selective sales and corporate income taxes grew more slowly than personal income. But these figures can be misleading. For example, revenue from the general sales tax grew more quickly than personal income over this period only because of the increase in the tax rate from 4 percent to 5 percent in the mid-1980s. Between 1997 and 2002, personal income grew by 29.1 percent while general sales tax revenues grew by 15.4 percent.

The revenue system appears to be one that has done a good job of keeping up with the economy in the sense that revenue growth rates have generally exceeded the growth in total state personal income. Total own-source revenues have been rising fairly steadily relative to personal income (Figure 3). But, this does not necessarily imply that changes in the economy directly drive changes in revenue collections. Simply observing that total revenue is rising along with, or faster than, total personal income does not mean that the revenue system is naturally able to keep pace with economic growth.

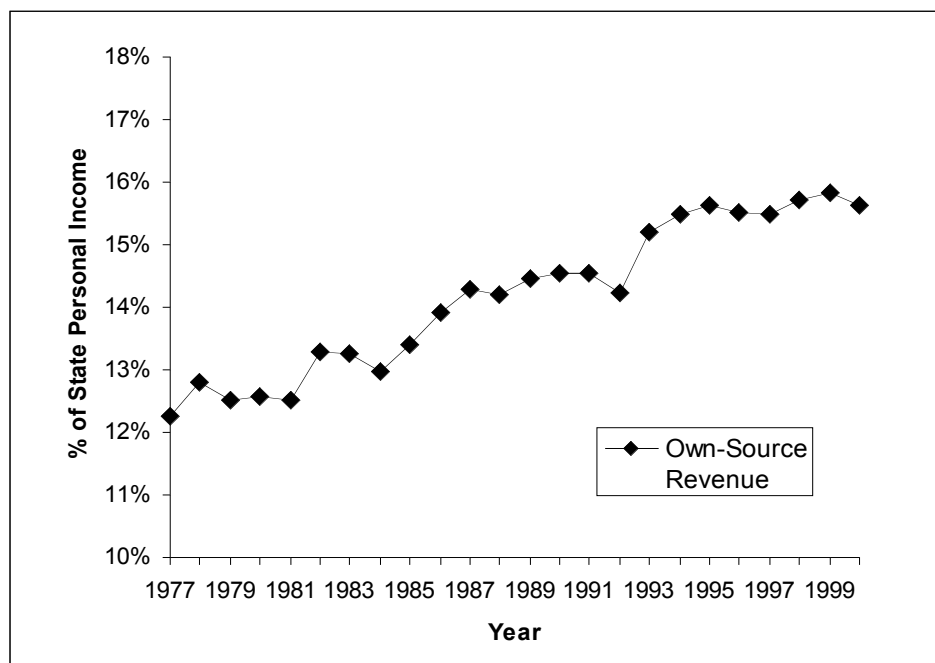


Figure 3. Total Own-Source Revenue as a Percentage of Total Personal Income.

GOVERNMENT REVENUES AND THE RELATIONSHIP BETWEEN OUTPUT AND INCOME GROWTH

We now turn to a closer examination of the relationship between personal income growth and government revenue growth. The South Carolina economy is evolving along many dimensions. The state has seen dramatic shifts in terms of the relative importance of

different sectors of the economy and shifts between regions of the state. One of the major changes in the last decades has been the trend in total personal income.

As discussed earlier, total personal income is comprised of wages and salaries; supplements to wages and salaries; proprietors' income; dividends, interest and rent; and transfer payments. These components of total income behave differently overtime, and a few relatively clear trends emerge. Ultimately, the composition of total personal income is shifting away from monetary payments for labor (wages and salaries) and towards other forms of compensation (supplements to wages and salaries) and income (dividends and transfer payments).

While the state's revenue system on the surface appears to have generally kept pace with personal income growth, we do not know what drives this relationship. Is revenue growth determined primarily by total personal income growth? Is it driven by growth in specific components of personal income? Or is revenue growth actually independent of income growth but rather determined by legislative actions? The answers to these questions can help shed light on past revenue performance and may also inform about potential revenue growth relative to economic growth in the future.

MODELING THE DETERMINANTS OF REVENUE GROWTH

To address the above questions, a set of multiple regressions can be estimated to attempt to uncover the importance of growth in the components of total personal income to growth in specific revenue sources. Specifically, for each of seven main revenue sources, the following regression is estimated:

$$\begin{aligned}
 REVGROWTH_t = & \beta_0 + \beta_1 WAGEGROWTH_t + \beta_2 SUPPLEMENTGROWTH_t + \\
 & \beta_3 PROPRIETORGROWTH_t + \beta_4 DIVIDENDSGROWTH_t + \\
 & \beta_5 TRANSFERSGROWTH_t + \varepsilon_t
 \end{aligned}$$

where $REVGROWTH_t$ is the annual rate of growth for the specific revenue source and the explanatory variables on the right-hand side are the annual growth rates of each of the components of total personal income.⁶

The underlying revenue data are from the U.S. Census Bureau for fiscal years 1977 to 2000. Using the first year to calculate the first growth rate, we are left with annual observations for fiscal years 1978 to 2000. Personal income component data are from the U.S. Bureau of

⁶ To address econometric issues due to potential autocorrelation in the error term in this regression, the error was also modeled as following an AR(1) process. This is a common approach for dealing with serially correlated errors in a time series regression such as this.

Economic Analysis. Quarterly personal income data were converted to a fiscal year basis, and the data used here are those available as of June 2005.

Two specific legislative actions are accounted for with dummy variables when necessary. For the general sale tax equation a dummy variable is included to capture the spike in revenue growth for the increase in the tax rate from 4 percent to 5 percent, and for the property tax equation a similar dummy variable is included to account for the drop in revenue growth due to expanded property tax relief in the mid-1990s.

The purpose of estimating these regressions is to analyze which of the personal income components, if any, appear to have a statistically significant impact on the growth of specific revenue sources. The results of these regressions may be useful in understanding how future revenue growth may be impacted by ongoing shifts in the composition of total personal income. Also, these regressions can help identify which revenue sources appear to be determined by something other than income growth in general.

These estimates are not intended to be strictly interpreted as elasticity estimates. Elasticities in this context would refer to the percentage change in revenue collections resulting from a 1 percent increase in wages, for example. Due to data limitations, including the need to fully remove legislative changes to the revenue code from the revenue growth variables, precise estimates of revenue elasticity are elusive. At the same time, obtaining precise elasticity estimates is not the purpose of this analysis.

While the results of these regressions may be used to reach general conclusions about revenue elasticity, the purpose really is to uncover which components of personal income, if any, are important determinants of revenue growth. For this purpose it is not necessary to fully remove legislative changes from the revenue series. That being said, the results should reliably be able to indicate whether specific revenue sources are in general *elastic* or *inelastic*, and this information can further help shape our picture of the relationship between income growth and revenue growth.⁷

INTERPRETING MODEL RESULTS

The results of the seven estimated regressions are given in Table 10. The table indicates, for each specific revenue source growth rate, the estimated coefficient on each of the income component growth rate variables. Numbers in parentheses are the *p*-values corresponding to each coefficient estimate. This can roughly be interpreted as the probability that the estimated coefficient is equal to zero. Therefore, low *p*-values indicate a stronger

⁷ A revenue source is elastic with respect to income if a one percentage point increase in income results in a greater than one percentage point increase in revenue. Meanwhile, it is inelastic if a one percentage point increase in income results in a less than one percentage point revenue increase. An elastic revenue source will on average grow more quickly than income but will tend to be more variable. An inelastic revenue source will grow on average more slowly than income but will tend to be more stable.

statistical relationship between the economic growth variable and the revenue source growth. Generally, if the p -value is less than 0.10, we can place a high degree of confidence in the conclusion that the economic variable is a significant explanatory variable for the revenue source.

Table 10. Revenue Growth Regression Results

	Individual Income Tax	General Sales Tax	Selective Sales Tax	Corporate Income Tax	Property Tax	Charges & Fees	Miscellaneous Taxes
Constant	0.007 (0.829)	0.005 (0.852)	0.026 (0.503)	-0.122 (0.395)	0.097 (0.006)	0.090 (0.013)	0.054 (0.351)
Wages and Salaries	1.474 (0.027)	1.432 (0.049)	1.199 (0.116)	0.015 (0.996)	0.261 (0.621)	-0.209 (0.743)	-1.648 (0.106)
Supplements to W&S	-0.169 (0.683)	-0.025 (0.953)	-0.183 (0.715)	3.718 (0.188)	0.253 (0.596)	0.281 (0.499)	0.757 (0.275)
Proprietors' Income	-0.139 (0.298)	-0.059 (0.623)	-0.244 (0.316)	0.330 (0.528)	-0.295 (0.189)	-0.326 (0.118)	0.601 (0.110)
Dividends, Interest & Rent	-0.096 (0.437)	-0.230 (0.081)	0.007 (0.969)	-0.264 (0.604)	-0.051 (0.748)	0.301 (0.079)	0.184 (0.511)
Personal Transfer Payments	0.115 (0.482)	-0.049 (0.743)	-0.352 (0.262)	-1.400 (0.049)	-0.133 (0.610)	0.015 (0.949)	0.360 (0.418)
R^2	0.745	0.869	0.230	0.508	0.589	0.591	0.282

Notes: All variables are annual growth rates. Numbers in parentheses are p -values. All regressions include an AR(1) term. Coefficients with p -values less than 0.1 are in bold.

The final row provides the R^2 for the estimated equation. This is a measure of the fraction of the total variation in the revenue source growth rate that is being explained by the variation in the income component growth rates. As such, a stronger relationship between the income component growth variables and revenue growth would be indicated by higher values for R^2 . So, if we are looking for a statistically meaningful relationship between economic growth and revenue growth, we are looking for low p -values and relatively high R^2 s.

As an example of interpreting these results, consider the first estimated regression with individual income tax growth as the dependent variable. Here, the estimated coefficient on wage growth is 1.47 and the associated p -value is 0.027. The p -value suggests that there is roughly a 2.7 percent probability that we could observe a coefficient as high as 1.47 if wage growth in fact had no impact on individual income tax growth. Because the p -value is relatively low, we can conclude that wage growth appears to have a statistically significant impact on income tax growth. The coefficient estimate itself indicates that if we hold all other income components constant, a one percentage point increase in wage growth results in a 1.47 percentage point increase in the growth of individual income tax revenues. Finally, the R^2 in this regression is 0.75, indicating that 75 percent of the annual variation in individual income tax revenue growth is explained by the variation in all of the income components.

We now turn to a discussion of each specific revenue source, including an examination of the trends in revenue collections relative to total personal income and total state-local revenues, as well as a discussion of the regression results for that revenue source.

INDIVIDUAL INCOME TAX

From Figures 4 and 5 it appears that as a share of total personal income, individual income tax collections have generally been rising, though income taxes collections fell relative to personal income between 1990 and 1994, as they likely did again in the period since 2000. Generally, the income tax as a share of total revenue is lower now than it was during the 1980s.

The regression results for individual income tax growth indicate that there is a relatively strong relationship between wage and salary growth and income tax revenue growth. As already mentioned, the coefficient on wage and salary growth is statistically significant, and the regression R^2 of 75 percent is relatively high for a regression of this type based on growth rates. None of the other components of personal income appear to have a significant impact on individual income tax revenues. The next lowest p -value in this regression is the 0.298 on proprietors' income, much higher than the standard cutoff of 0.1.

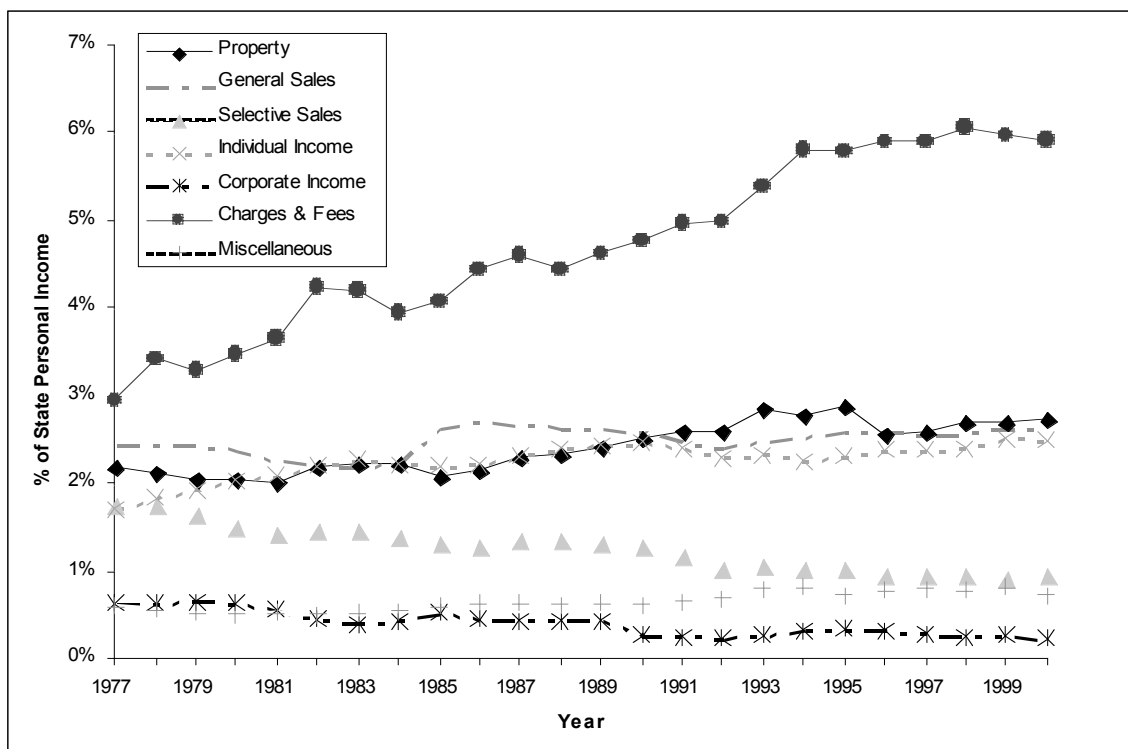


Figure 4. Revenue Sources as a Percent of Personal Income.

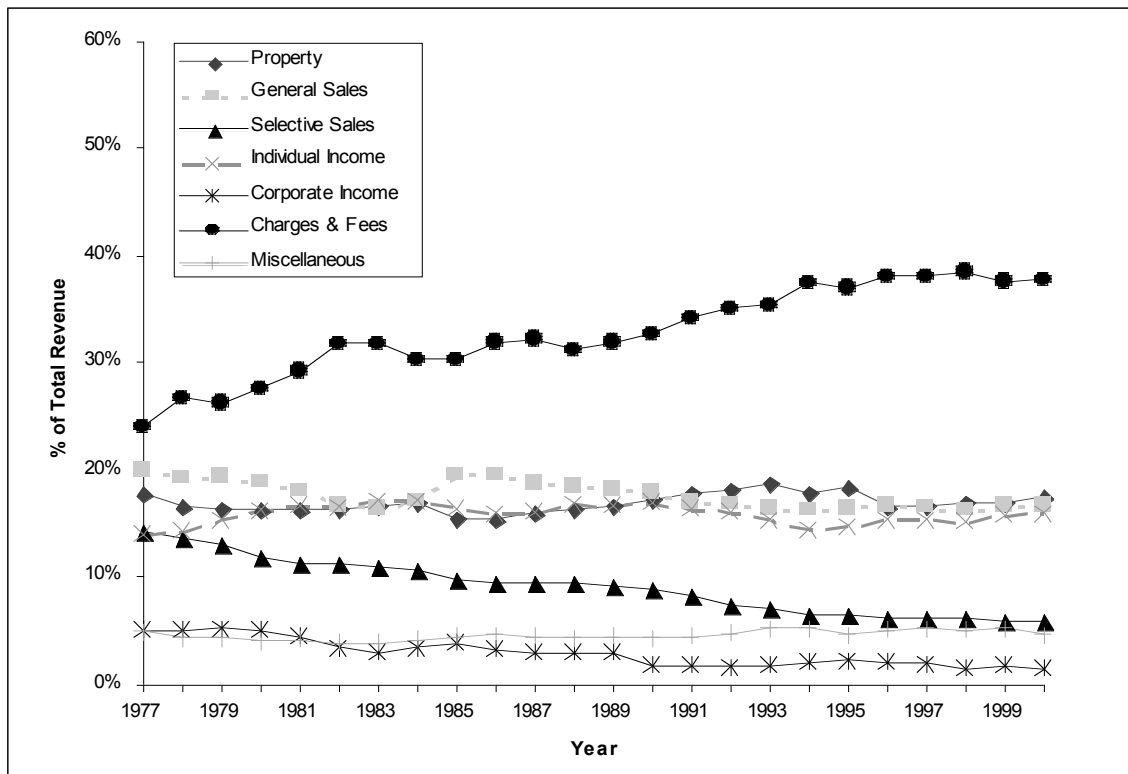


Figure 5. Revenue Sources as a Percent of Total Own-Source Revenue.

The implication of these results is that, while the individual income tax appears to be closely linked to wages and salaries, there does not appear to be a relationship with the other components of personal income. As such, to the extent that wages and salaries continue to make up a smaller share of total personal income, it is likely that changes in total personal income will have a less reliable impact on individual income tax revenues.

The coefficient on wages and salaries of 1.47 suggests that the individual income tax is elastic with respect to wage and salary growth. Again, this cannot precisely be interpreted as an elasticity because income tax growth may also be affected by legislative changes that remain in the data. Yet, it is likely that the income tax is indeed an elastic revenue source—growing more quickly than wages and salaries on average, but also displaying more variability.

GENERAL SALES TAX

State and local general retail sales taxes are an important source of revenue in South Carolina. But sales tax revenue has different behavior relative to economic trends when we look at state and local sales tax revenue combined and state sales tax revenue separately.

Combined state and local revenue from sales taxes. The general sales tax revenue trends from Figures 4 and 5 reveal a sharp jump in both series in fiscal year 1985. This is due to the increase in the state sales tax rate from 4 percent to 5 percent. Other than this shift upward, general sales tax revenues relative to both total income and total revenue were generally declining through the early 1990s. Since then, revenue from general sales taxes has been rising about as fast as both total revenues and total personal income. However, some of this apparent flattening has been due to growing use of local option sales taxes at the county level.

The sales tax base as it is currently defined is generally declining relative to the overall economy because of the ongoing relative decline in household spending on tangible taxable goods. Local governments are, however, stepping up the effort in taxing this base which has allowed total state and local sales tax collections to hold steady as a percentage of total income and total revenue.

The regression results in Table 10 for general sales tax growth indicate that both wage and salary growth and the growth rate of dividends have a statistically significant impact on sales tax revenue growth. The coefficient on wage growth is estimated to be 1.43 while the coefficient on dividends growth is estimated at -0.23. That is, this regression suggests that, holding all else constant, faster wage growth tends to boost general sales tax revenue growth while faster growth of dividends is associated with slightly slower general sales tax growth.

While the relationship between wages and sales taxes is conceptually straightforward, an explanation for the estimated impact of dividends growth is not immediately clear. One plausible explanation, though it cannot be explored further with these data, is that periods of faster dividends growth may also be a period of higher interest rates and/or the allocation of income away from spending and towards savings, thereby putting downward pressure on spending and sales tax growth.

The R^2 for this model is 87 percent indicating that the estimated model is capable of explaining much of the variation in combined state and local general sales tax growth. As was the case for the individual income tax, it appears that there is a relatively close link between wage and salary growth and general sales tax revenue growth, though here there is also an apparent negative relationship between dividends growth and revenue growth.

Interestingly, the estimated coefficient on wage and salary growth of 1.43 is very close to the coefficient in the individual income tax regression. Typically, the individual income tax is thought to be more elastic than sales taxes, and by a larger margin than indicated here. However, empirical studies of revenue elasticity with respect to income usually consider total personal income rather than the individual components as considered here. If we sum

the estimated coefficients for each of the income components for the income tax and general sales tax regressions, we find a smaller sum for the general sales tax, consistent with the notion that sales taxes are noticeably less elastic with respect to personal income than are individual income taxes.

State general sales tax revenue only. To more fully understand the trends in sales tax revenues over recent decades it is necessary to consider revenue from the state general retail sales tax in isolation (Figure 6). This revenue flows to the South Carolina General Fund and the Education Improvement Act (EIA) Fund.

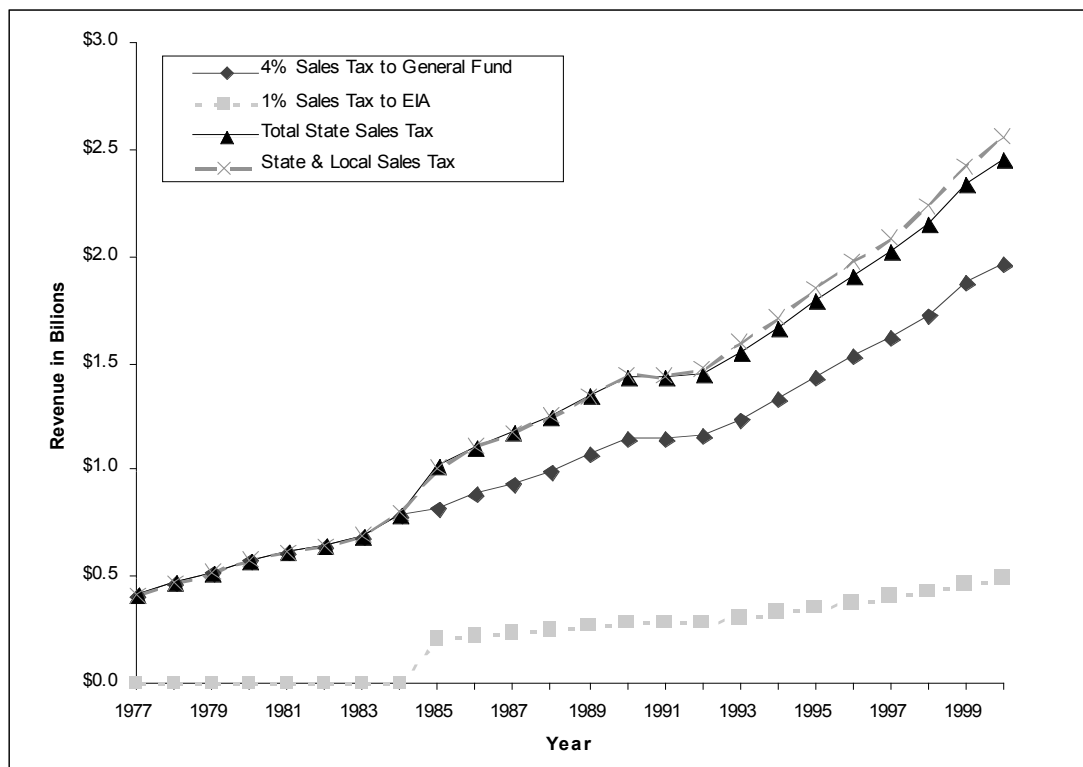


Figure 6. State and Local Sales Tax Components, South Carolina.

Through fiscal year 1984, there was only one sales tax—the state’s 4 percent sales tax with no local sales taxes. Starting in fiscal year 1985, the state sales tax rate increased to 5 percent, with the additional penny devoted to funding education via the EIA. Graphically, this is indicated by the emergence of EIA revenue and the sharp jump in total sales tax collections. Local sales taxes then emerged in fiscal year 1991, leading to a divergence between total sales tax collections and total state collections. Clearly, growing use of local sales taxes has allowed total sales tax collections to grow faster than general fund and EIA sales tax collections since 1991.

This disaggregation of total state and local sales tax collections helps shed important light on the underlying trends in the behavior of revenue from sales taxes. Clearly, the apparent ability of sales tax revenue to keep up with overall personal income and total revenue growth has been due to these significant legislative actions. Figure 7 makes these trends clearer by illustrating total state and local sales tax collections, total state sales tax collections, total general fund sales tax collections, and total EIA sales tax collections all as a percentage of personal income, which is similar to the presentation in Figure 4.

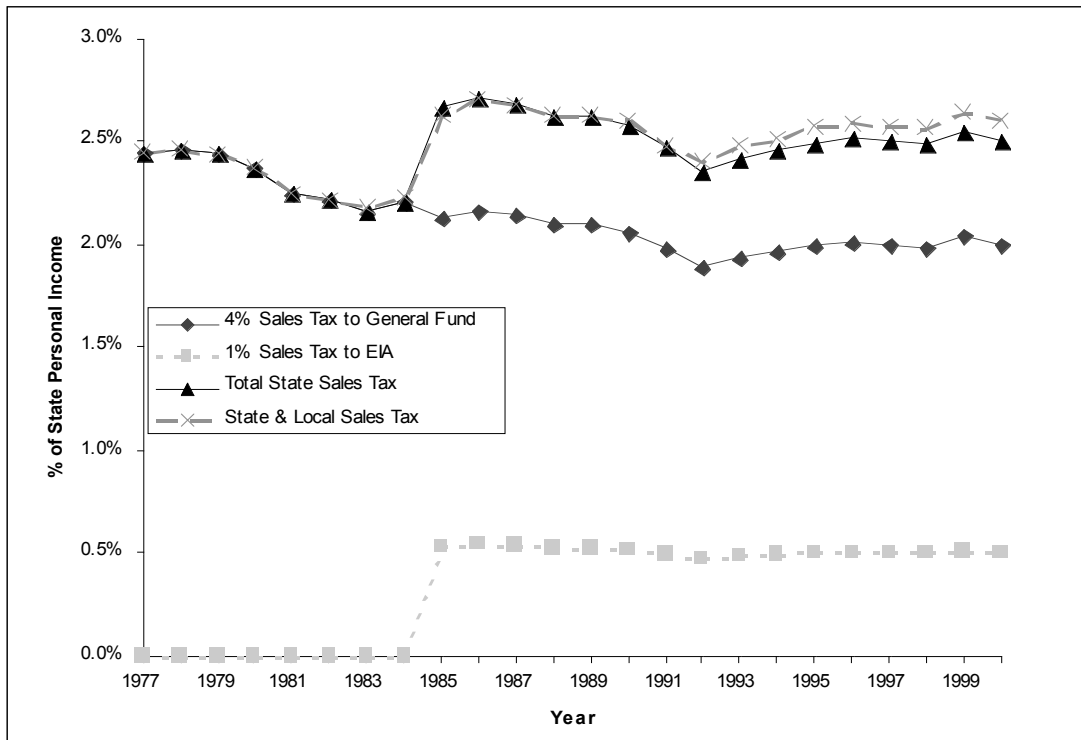


Figure 7. State and Local Sales Tax Share of Personal Income, South Carolina

Between fiscal years 1981 and 2000, total combined state and local sales tax collections rose from 2.25 percent of total personal income to 2.6 percent of personal income. This rise in sales tax collections relative to the size of the economy as measured by personal income would seem to run counter to the widely held concerns over an eroding sales tax base. However, the state’s 4 percent sales tax specifically has been largely unaltered by legislative actions, and these tax collections do reveal base erosion. The 4 percent sales tax was 2.25 percent of personal income in 1981 and has since fallen to 2 percent of personal income during fiscal year 2000. By fiscal year 2004, the 4 percent sales tax had fallen to just 1.96 percent of state personal income.

Key findings. Overall, sales tax collections in South Carolina have generally kept pace with economic growth. However, it is critical to recognize that this observed relationship

is primarily due to two significant legislative actions: raising the sales tax rate in 1985 and the emergence of local sales taxes in 1990. Absent these actions, the decline in sales taxes relative to economic growth would be more immediately noticeable. An implication of this finding is that continued legislative actions are likely required for the sales tax to continue to keep pace with economic growth. These legislative actions can take the form of further sales tax rate increases, broadening of the sales tax base, and further reliance on local sales taxes.

SELECTIVE SALES TAX

Selective sales taxes include revenues generated by the motor fuel tax, alcoholic beverages tax, tobacco products tax, public utilities and other selective sales. During fiscal year 2002, the motor fuel tax represented about 42 percent of all selective sales tax revenues. Typically, these selective sales taxes are determined by the quantity of goods purchased not the dollar value of purchases. That is, these are taxes per gallons of gasoline, packs of cigarettes, or cases of beer. As such, rising prices of these items over time do not directly translate into rising tax revenues. Trends in selective sales tax collections are therefore determined by trends in the volume of transactions. Over time the number of these transactions in many cases is rising such that total selective sales tax revenues are increasing. However, as shown in Figures 4 and 5, relative to total revenue and personal income, selective sales taxes are diminishing steadily.

The regression results for the selective sales tax indicate no significant relationship between the components of personal income growth and revenue growth. The estimated coefficient on wages and salaries is 1.20, but it is not significant at even the 10 percent level as indicated by a *p*-value of 0.116. The overall regression R^2 stands at just 23 percent, the lowest for any of the revenue sources. These results suggest that selective sales tax collections are not significantly explained by income growth. This result makes economic sense given that selective sales taxes are generally levied on goods thought to be relatively income inelastic themselves, such as gasoline, cigarettes, and beer. If purchases of these items do not respond to changes in income measures, then the corresponding tax collections also should not be responsive to changes in income.

CHARGES AND FEES

The largest and fastest growing revenue source for governments in South Carolina is charges and fees. The largest component here are hospital charges, totaling \$2.2 billion out of the roughly \$6.2 billion total for charges and fees. The magnitude of hospital charges is somewhat unique to South Carolina and certainly drives the fact that South Carolina has among the greatest reliance on charges and fees in the country.

South Carolina has a much higher share of state and local government hospitals than the national average. In 2002, for example, 28 percent of hospital beds in South Carolina were in government hospitals compared with 16 percent nationally.⁸ Similarly, 25 percent of all hospital admissions in South Carolina were to government hospitals relative to 14 percent nationally. This larger than average occurrence of government hospitals explains South Carolina's reliance on hospital charges and therefore its reliance on charges and fees in general. Figures 4 and 5 illustrate the steady increases in total charges and fees relative to both total revenue collections and personal income.

The regression results for charges and fees indicate that the only personal income component with an apparent significant link to revenue growth is dividends growth. The estimate coefficient here is 0.30 with a p -value of 0.079. Holding all else constant, this suggests that a one percentage point increase in the growth of dividends is associated with a 0.3 percentage point increase in the rate of growth of charges and fees. This result is not, however, robust across alternative specifications of the model whereas the results for the individual income tax and the sales taxes have been.⁹ The regression R^2 here is 59 percent.

Overall, it appears that there is only little or no relationship between overall income growth and the growth of revenue from charges and fees. Given the nature of these charges and fees, which in addition to hospital charges includes such items as higher education tuition, water and sewer services, ports, and parks, it may be expected that changes in economic growth would not have a significant impact on revenue collections. Indeed, the trend in revenue from charges and fees is likely determined by long-term growth of population as well as the accumulation of minor legislative changes to the components of charges and fees revenue.

PROPERTY TAX

The property tax has recently been the second largest and fastest growing revenue source behind only charges and fees. As shown in Figures 4 and 5, the relative growth of the property tax has occurred primarily since the mid-1980s. The downward shift in fiscal year 1996 is the result of property tax relief. The data used for this figure end in fiscal year 2000. More recently, property tax collections for fiscal year 2002 have surpassed their previous peaks from the early 1990s in terms of collections relative to both total revenue and personal income.

Similar to charges and fees, property taxes are a large and growing source of revenue but are generally not influenced by changes in economic conditions. The regression results reveal no significant relationship between the components of income growth and property

⁸ Data available from the Kaiser Family Foundation's website at www.statehealthfacts.org.

⁹ For example, removing the AR(1) autocorrelation correction term from this equation, which appears to only be marginally called for in this case, leads to the conclusion that dividends are statistically insignificant.

tax revenue growth. This is not a surprising result given that property tax collections from year-to-year are largely determined by changes to millage rates and these changes are driven by budgetary needs at the local level. In this way, property taxes—again similar to charges and fees—are more discretionary revenue sources that can be adjusted to meet government spending plans. While it is the availability of income and sales tax revenues that in part determines government spending levels, it is the desired level of spending that in part determines property tax revenues.

CORPORATE INCOME TAX

The corporate income tax is a relatively small but volatile revenue source. Figures 4 and 5 indicate a trend that is common across the nation—diminishing corporate income tax revenues relative to total revenue and personal income. Despite the shrinking role of this revenue source, the annual swings in corporate income taxes can be quite large and are unpredictable.

Since the mid 1980s, the average annual percentage change—without regard to direction of change—for corporate income tax revenues has been about 12 percent. Between fiscal year 2001 and 2002, corporate tax revenues fell almost 33 percent, from \$212.9 million to \$142.9 million. In fiscal year 2004, corporate tax revenues increased by \$25.6 million or about 17 percent. So, even though total corporate income tax collections make up a small part of the overall revenue system, the year-to-year swings in collections can account for a relatively large share of the volatility of the revenue system as a whole.¹⁰

The regression results suggest that the only income component that has a significant impact on corporate income tax revenues is personal transfer payments. The estimated coefficient of -1.40 has a *p*-value of 0.049. However, a plausible explanation for this result is probably that faster growth in transfer payments can occur during economic recessions as government programs such as unemployment insurance are tapped more heavily, and it is at these times that corporate profits and tax revenues fall.

Overall, it appears that there is only a limited and probably indirect relationship between corporate income tax revenues and income growth. Given the volatile nature of corporate profits and the complexity of provisions in the tax code, corporate income tax collections are inherently difficult to explain and predict.

¹⁰ This is very similar to the role of business spending as a component of economic growth. Business capital investment is a relatively small portion of gross domestic product (relative to consumption specifically), but swings in capital investment explain much of the volatility of GDP growth.

MISCELLANEOUS TAXES

The final revenue source to consider is the catchall category of all remaining taxes. As shown in Figures 4 and 5, these miscellaneous taxes have been fairly stable, growing at about the same rate as total revenue and personal income since the early 1990s. Regression results indicate that these miscellaneous taxes are unresponsive to the components of income growth. None of the individual coefficients are significant, and the regression R^2 of 28 percent is the second lowest for any revenue source.

SUMMARY AND IMPLICATIONS

The results of this research indicate that the major state and local revenue sources in South Carolina vary in terms of their relationship to personal income growth. The individual income tax and the general sales tax appear to be the most closely linked to income growth. However, for these two revenue sources, it is the wage and salary component of total personal income that is the most important determinant of revenue growth.

If wages and salaries continue to account for a smaller share of total personal income, it may become increasingly difficult for revenue from the individual income tax and the general sales tax to keep pace with overall economic growth. For the general sales tax, this is compounded by the fact that the current sales tax base is eroding over time as a growing share of income is spent on nontaxed services and on goods purchased over the internet or through catalogue sales.

Two other revenue sources appear to have a relatively weak connection to income growth. Corporate income tax revenues and charges and fees were found to have a statistically significant relationship to specific components of total personal income. However, these links to income growth are relatively weak. In the case of corporate income tax revenues, collections will likely continue to be the most volatile of the major revenue sources. Meanwhile, charges and fees are primarily determined by legislative changes via either higher or new charges and fees.

Finally, property taxes, selective sales taxes, and miscellaneous taxes were found to be determined independent of income growth. Indeed, selective sales taxes are unresponsive to income growth because the goods making up the tax base are themselves unresponsive to income growth. Meanwhile, property tax collections are largely under the control of local authorities adjusting millage rates as necessary to fund a particular level of local government services.

Overall, it appears that the state's revenue system can be characterized as one in which two major revenue sources (individual income and general sales taxes) are determined by wage and salary growth. The expected level of income and sales tax collection then largely

determines government's revenue forecast and thus planned spending levels. Meanwhile, other major sources of revenue are not influenced by economic growth, but rather are primarily determined by legislative actions, as in the case of charges and fees, or by local decisions in the case of property taxes. These revenue sources therefore appear to be more discretionary and perhaps are used to fill budgetary gaps, allowing governments to meet public service demand.

Overall, total own-source revenue to state and local governments in South Carolina has kept pace with total economic growth in recent decades as measured by total personal income growth. Own-source revenue as a share of total personal income has generally been trending upwards. But this is not the end of the story.

The South Carolina state and local revenue system as it stands today may not be able to continue to keep pace with economic growth without further legislative changes to enhance revenues. As wages and salaries take on a relatively smaller share in total economic growth, and as the current sales tax base continues to erode, there will likely be increasing pressure on revenue sources other than individual income and general sales taxes to fill in the gaps.

For the current revenue system to naturally keep pace with economic growth, it may be necessary to consider changes to the income and sales tax codes. For example, broadening the sales tax base to include the rapidly growing service sector, or broadening the individual income tax base to tap into nonwage sources of income more heavily may work to alleviate some of the future pressures on the total revenue system.

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Appendix A. Real GSP by Industry, 2004

Industry	Real GSP	% Share
Total Gross State Product (in millions)	\$124,836	100.0
Agriculture, forestry, fishing, and hunting	1,037	0.8
Mining	131	0.1
Utilities	3,482	2.8
Construction	6,139	4.9
Manufacturing	25,642	20.5
Durable goods	13,653	10.9
Nondurable goods	12,012	9.6
Wholesale trade	7,237	5.8
Retail trade	11,342	9.1
Transportation and warehousing, excluding Postal Service	2,851	2.3
Information	3,714	3.0
Finance and insurance	6,020	4.8
Real estate, rental, and leasing	13,534	10.8
Professional and technical services	5,302	4.2
Management of companies and enterprises	761	0.6
Administrative and waste services	4,692	3.8
Educational services	505	0.4
Health care and social assistance	6,649	5.3
Arts, entertainment, and recreation	925	0.7
Accommodation and food services	4,010	3.2
Other services, except government	2,847	2.3
Government	18,250	14.6

Source: U.S. Bureau of Economic Analysis

Appendix B. Employment by Industry and Real GSP per Worker, 2004

Industry	Employment	% Share	GSP Per Worker
Total Employment ^a	2,313,823	0.6	\$53,952
Agriculture, forestry, fishing, and hunting ^b	12,915	0.1	\$80,294
Mining	2,511	0.5	\$52,170
Utilities	12,013	7.0	\$289,853
Construction	162,592	11.9	\$37,757
Manufacturing	275,220	5.9	\$93,169
Durable goods	137,179	6.0	\$99,527
Nondurable goods	138,041	3.1	\$87,018
Wholesale trade	72,267	12.1	\$100,143
Retail trade	279,668	1.3	\$40,555
Transportation and warehousing, excluding Postal Service	61,588	3.7	\$46,291
Information	30,692	3.4	\$121,009
Finance and insurance	86,419	4.4	\$69,661
Real estate, rental, and leasing	78,093	6.8	\$173,306
Professional and technical services	100,965	1.3	\$52,513
Management of companies and enterprises	10,310	7.3	\$73,812
Administrative and waste services	156,868	1.7	\$29,910
Educational services	30,397	8.1	\$16,613
Health care and social assistance	168,813	5.8	\$39,387
Arts, entertainment, and recreation	39,938	16.4	\$23,161
Accommodation and food services	186,594	0.6	\$21,491
Other services, except government	134,088	0.6	\$21,232
Government	379,220	0.1	\$48,125

Source: U.S. Bureau of Economic Analysis.

^a Includes farm employment.

^b Excludes farm employment

Appendix C. Nominal GSP and Earnings by Industry, 2004

Industry	Nominal GSP (\$millions)	Percent Share	Earnings (\$thousands)	Percent Share
Total Gross State Product	136,125		83,422,865	100.0
Agriculture, forestry, fishing, and hunting	1,198	0.9	361,568	0.4
Mining	158	0.1	99,234	0.1
Utilities	3,944	2.9	1,117,606	1.3
Construction	7,670	5.6	5,875,623	7.0
Manufacturing	26,265	19.3	15,182,555	18.2
Durable goods	13,953	10.3	7,700,673	9.2
Nondurable goods	12,312	9.0	7,481,882	9.0
Wholesale trade	7,643	5.6	3,780,152	4.5
Retail trade	10,903	8.0	6,828,922	8.2
Transportation and warehousing, excluding Postal Service	3,170	2.3	2,392,837	2.9
Information	3,608	2.7	1,556,384	1.9
Finance and insurance	6,665	4.9	3,945,056	4.7
Real estate, rental, and leasing	15,185	11.2	1,793,049	2.1
Professional and technical services	5,830	4.3	4,708,244	5.6
Management of companies and enterprises	824	0.6	697,853	0.8
Administrative and waste services	4,919	3.6	3,907,617	4.7
Educational services	650	0.5	654,083	0.8
Health care and social assistance	7,668	5.6	6,631,688	7.9
Arts, entertainment, and recreation	1,051	0.8	700,054	0.8
Accommodation and food services	4,417	3.2	2,925,173	3.5
Other services, except government	3,263	2.4	2,697,247	3.2
Government	21,094	15.5	17,567,920	21.1

Source: U.S. Bureau of Economic Analysis.