

January 12, 2017

Fiscal Research Center

The Fiscal Architecture of Georgia

Structural Changes and Future Implications

Rahul Pathak

Sally Wallace

Table of Contents

List of Tables and Figures	I
Executive Summary	3
I. Introduction	5
II. Demographics	5
Age Profile and Projections	7
Migration and Income Flows	13
Race and Ethnicity	17
Vital Statistics and Health Care	18
Families and Living Arrangements	20
III. Production and Employment	
Production and Output	22
The Industrial Composition	24
Employment and Wages	28
IV. Income and Consumption	37
Personal and Household Income	38
Decomposition of Personal Income	42
Income Inequality	45
Consumption Patterns and Sales Tax Revenues	49
V. Additional Economic Issues	
Globalization	52
Technology	53
Innovation	54
VI. Fiscal Structure and Institutions	55
Revenues	56
Expenditures	60
Tax Expenditures	65

The Intergovernmental Landscape	66
Debt and Liabilities	68
VII. Conclusion	70
References	72
About the Authors	77
About the Fiscal Research Center	77

List of Tables and Figures

TABLES

Table 1	Key Population Characteristics for Georgia, the United States, and Neighboring States
Table 2	Average Income Estimates of Elderly In- Migrants and Out- Migrants to and from Georgia
Table 3	Average Gross Estate for Tax Purposes (thousand dollars)
Table 4	Shares of Consumption Expenditures by Age of Reference Person for the United States, 2014
Table 5	Shares of Aggregate Income and Taxes by Age for the United States, 2014
Table 6	Income Migration to and from Georgia, Top 10 States, FY 2012 to FY 2014
Table 7	Key Health and Education Characteristics for the United States, Georgia and Neighboring States
Table 8	Medicaid and PeachCare Membership and Payments in Georgia, 2000 to 2015
Table 9	Key Housing Characteristics for Georgia and the Neighboring States
Table 10	The Distribution of Gross State Domestic Product across Industries in Georgia, 1997- 2013, Percent
Table 11	Annual Employment Growth (percent) in Georgia by Occupations, 2005- 15
Table 12	Post-Recession Growth in Georgia in the Number of Firms and Average Monthly Employment by Industry (2010- 14)
Table 13	Projections for Growing and Declining Industries in Georgia, 2014-24
Table 14	Annual Growth in Hourly Wages in Georgia by Occupation, 2005- 15
Table 15	The Distribution of Households in Georgia and the United States by Income Groups and Central Tendencies of Income, 2005- 14
Table 16	Patents and STEM PhDs in Georgia, the United States, and Neighboring States, 2000 and 2010
Table 17	Revenue Sources of the State of Georgia, FY 2016, Estimates
Table 18	Georgia's State Revenue Portfolio (2013 dollars)
Table 19	Georgia's State and Local Revenue Portfolio (2013 dollars)
Table 20	State and Local Government General Revenue for Georgia, the United States, and Neighboring States, FY 2013
Table 21	Georgia State Fund Appropriations by Policy Areas
Table 22	Expected Percentage Pay Difference between State and Local and Comparable Private Sector Workers
Table 23	Selected Tax Expenditures in Georgia (in millions of dollars)

FIGURES

Figure 1	Population Growth in Georgia, 1980- 2012
Figure 2	Population Pyramid for Georgia, 2014
Figure 3	Population Pyramid for the United States, 2014
Figure 4	Population and Age Projections for Georgia
Figure 5	Elderly Tax Bonus for the Highest- Income Quartile, Select Southeastern States, 1977-2002

- Figure 6 Relative State and Local Tax Burden and Average Incomes of Georgia's Domestic In-Migrants and Out-Migrants, 2012
- Figure 7 Changing Racial Profile of Georgia's Population, 2000- 14
- Figure 8 Nominal Medicaid Expenditures in Georgia by the State and Federal Government, Federal FY 2000-13
- Figure 9 Share of Married Residents in Georgia by Age and Gender, 2006 to 2014
- Figure 10 Real Per Capita Gross Domestic Product (2009 dollars) for Georgia, the United States, and Neighboring States 2000- 14
- Figure 11 Annual Growth in Real Per Capita Product, the United States, and Georgia, 2000- 14
- Figure 12 Share of Major Industrial Classifications in Georgia's Gross Domestic Product, 2013
- Figure 13 Annual Average Employment in Manufacturing and Service Sectors, Georgia, 1990-2013
- Figure 14 Percentage Growth in Employment and Wages in Georgia by Occupation, 2010- 15
- Figure 15 Measures of Labor Underutilization, the United States and Georgia, 2010- 15
- Figure 16 Changes in Nominal per Capita Income in Georgia and the United States, 1995- 2015
- Figure 17 Per Capita Income as a Percentage of U.S. Income, Georgia and Neighboring States, 1995- 2015
- Figure 18 Real per Capita Income for Georgia, Neighboring States and the United States, 2008- 14
- Figure 19 Personal and Household Income, Georgia and the United States, 2005- 14
- Figure 20 Number of Students Enrolled in Postsecondary Institutions in Georgia, 2001- 14
- Figure 21 Net Earnings as a Percentage of Personal Income, Georgia, Neighboring States, and the United States, 1980- 2014
- Figure 22 Current Transfer Receipts as a Percentage of Personal Income, Georgia, Neighboring States, and the United States, 1980- 2014
- Figure 23 Dividend, Interest, and Rent as a Percentage of Personal Income, Georgia, Neighboring States, and the United States, 1980- 2014
- Figure 24 Gini Index for Georgia, the United States, and Neighboring States, 2006- 14
- Figure 25 Income Shares of the Top 10 Percent of Georgia Population, 1970- 2013
- Figure 26 Income Shares of the Top 10 Percent of the U.S. Population, 1970- 2013
- Figure 27 Trends in Consumption Expenditures in Georgia, 2000- 14
- Figure 28 Federal Share of State Revenue, 2000- 13
- Figure 29 State and Local General Expenditures for Georgia and the United States, Percentage Distribution
- Figure 30 State and Local General Expenditures, Percentage Distribution for Georgia and Neighboring States, 2004- 13
- Figure 31 State Percentage of State and Local Tax Revenue for Georgia and Neighboring States, Selected Years 1980- 2013
- Figure 32 Own-Source General Revenue of Local Governments in Georgia, the United States, and Neighboring States, 2004- 13
- Figure 33 Unfunded Pension Costs as a Share of State Personal Income in Georgia, the United States and Neighboring States, 2003- 13
- Figure 34 Debt Obligations as a Percentage of State Personal Income in Georgia, the United States and Neighboring States, 2003- 13

Executive Summary

Structural changes in demographics and the economy are creating new challenges and opportunities for subnational governments in regard to public finance across the United States. This report focuses on major demographic and economic changes over the last two decades that affect the state of Georgia and discusses the fiscal implications of these changes. In prior decades, Georgia was relatively less affected than other states by demographic trends such as the aging of the workforce. However, the state's population is expected to age substantially over the next 20 years, which will significantly influence revenues and the demand for public services. Furthermore, health care reform in the state is still pending, and Georgia lags behind the national average on most of health indicators. The impacts of these trends are important in terms of economic growth. Georgia's economy and industrial composition have also changed dramatically over the last two decades, with a strong decline in manufacturing. In recent years, there has been some job growth in the manufacturing and construction sectors, and the growth in employment in the state has been above the U.S. average.

On the fiscal front, a consistent stream of revenue from income taxes has supported Georgia's finance structure, but the current tax and fee system may not be suited to long-term demographic trends and expenditure requirements. Increasing liabilities for infrastructure as well as pensions, a shrinking sales tax base, and a decline in taxes as a share of personal income pose the most significant challenges to the state. There are several areas where Georgia is showing positive trends such as stronger employment recovery and consistent population growth. In this report, we discuss the main demographic and economic trends and how they may affect state finances. We also provide an overview of key global and national trends that may have a bearing on the regional economy. The five sections of this report cover different aspects of the economy and public finance. The main trends and their fiscal implications are as follows:

- Population growth is higher than the national average and is likely to continue.
 - Tax base will continue to expand
- Georgia's relative age advantage will shrink as the population ages at a faster pace than it has till now.
 - A reduction in the buoyancy of income tax and sales tax¹
 - Increased demand for social services and pressures related to pension liabilities
- Georgia has seen a long-term decline in manufacturing jobs. Some low-wage occupations have shown a positive recovery. Also, the state is seeing an increase in employment as well as wages in some technology- and knowledge-based sectors.
 - Manufacturing decline and employment growth in low-wage occupations would reduce tax handles
 - Positive boost to taxes from development of some knowledge-based sectors
- Increased global competition for economic activity and new technologies will change the production process and employment patterns, and will complicate economic transactions.
 - Increasingly difficult to tax corporate and business income

¹ Tax buoyancy refers to the changes in tax revenues in response to economic growth (economic growth is usually measured as changes in personal income).

- Taxing Internet-based or electronic transactions is increasingly complex and would require improvements in tax administration
- The underperformance of the state on health indicators is a cause of concern.
 - More investments and expenditures in health care, particularly in rural Georgia
 - Aging population means increased health care expenses and other social benefits
- The state faces increasing pension liabilities and large public-private pay disparities.
 - Aging-related expenditures likely to increase; wage bills may also increase if public-private disparities are addressed

I. Introduction

Economic, demographic, and institutional characteristics of a jurisdiction define the fiscal architecture that shapes public finances. As these characteristics change over time, there is a corresponding shift in the public finance landscape. Governments may have to modify their revenue and expenditure streams to keep step with these changes. Failure to adjust in the short run can lead to longer term problems as the mismatch between revenue and expenditure growth puts stress on the budget.

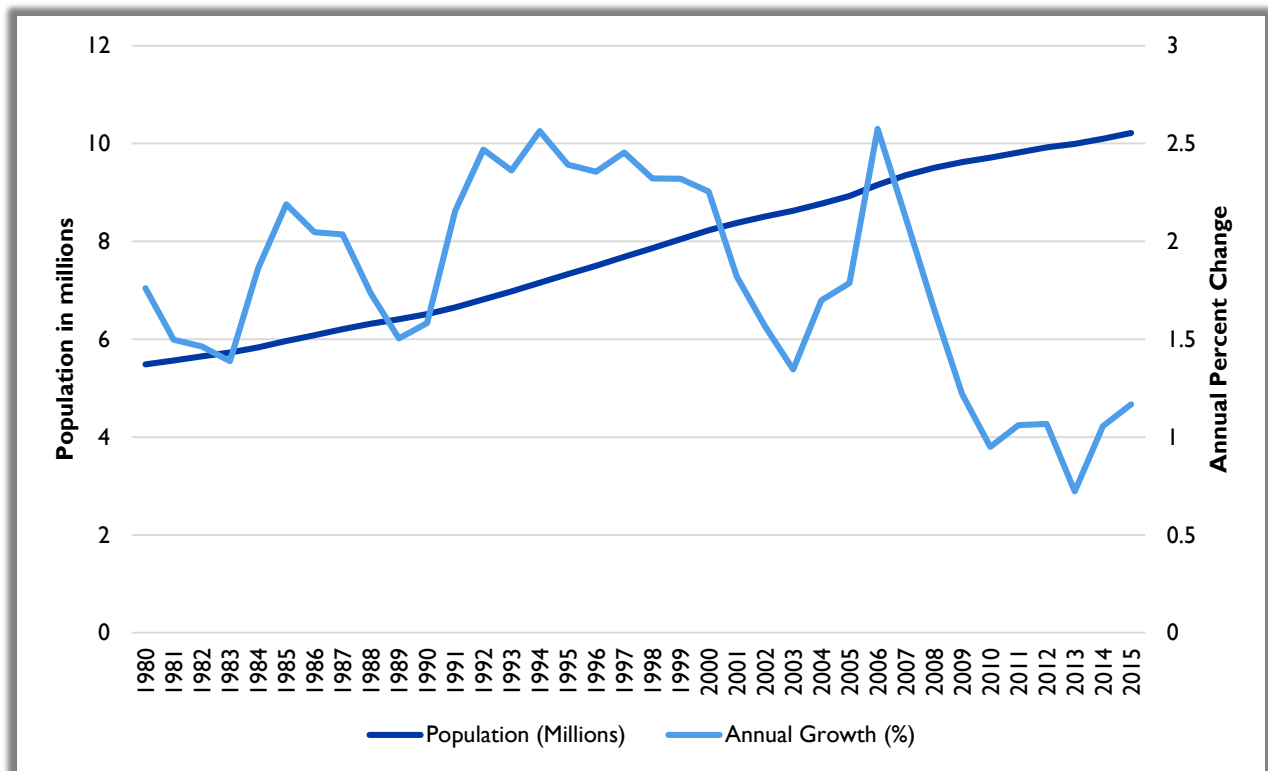
The state and local public sector is particularly sensitive to these changes due to the relative mobility of labor and capital within national borders. In the 2000s, two recessions affected economic activity across the entire country. Several states continue to face sluggish growth and intense competition for resources and markets. Further, demographic changes such as an aging workforce are affecting economic activity and tax bases in several states. In this context, examining the changing trends in individual states can help inform researchers and policymakers of upcoming fiscal challenges. This report focuses on Georgia and examines the key trends in institutional, economic and demographic characteristics that may have implications for the fiscal health of the state in the coming years.

The primary objective of this report is to identify structural changes in the fiscal architecture of Georgia and discuss future implications of these changes, especially for state revenues and expenditures. This report has seven sections. Section 2 examines demographic changes occurring in the state, including population trends, the age profile, household structure and health. Section 3 summarizes economic changes in Georgia with a focus on production, industrial composition and employment. Section 4 presents key income and consumption trends in Georgia and the neighboring states. Section 5 discusses additional economic factors such as globalization, technology and innovation that will play a critical role in shaping future revenues and expenditures. Section 6 provides an overview of revenue and expenditure trends and the fiscal structure of Georgia. Section 7 concludes with a discussion of future expectations, opportunities, and policy challenges.

II. Demographics

Georgia's population has increased steadily over the last four decades, and the trend is likely to continue in the future. Georgia's population doubled from around 4.5 million in 1970 to approximately 9.5 million in 2010, and crossed the 10 million mark in 2014. The 10-year growth rate in the 1970s and 1980s was close to 19 percent and increased to 26 percent during the 1990s. In the 2000s, the population growth rate fell back to previous levels (approximately 18 percent), with a peak around 2005-06 following substantial migration to Georgia after Hurricane Katrina (Figure 1).

Figure I. Population Growth in Georgia, 1980-2012



Source: U.S. Census Bureau

Other states in the Southeast have also seen steady population increases during this period. Georgia and North Carolina have an almost identical population growth trajectory. Florida has grown much faster than other southern states, while Tennessee, Alabama and South Carolina have grown at a relatively slower pace. Annual population growth in Georgia slowed in the wake of Great Recession, dropping to less than 1 percent between 2009 and 2010. However, it has regained momentum during the last five years. Overall growth in Georgia during 2010-2015 was 5.4 percent, which was higher than the national average of 4.1 percent and higher than most of the neighboring states (Table I). The population projections from the Governor's Office of Planning and Budget (OPB) suggest that Georgia's population will continue to increase consistently to about 15 million people by 2030 (Office of Planning and Budget 2013).

Table I. Key Population Characteristics for Georgia, the United States, and Neighboring States

	U.S.	GA	AL	FL	SC	NC	TN
Total population in millions (2015)	321.42	10.21	4.86	20.27	4.90	10.04	6.60
Population Growth Rate (2010-15)	4.1	5.4	1.6	7.8	5.9	5.3	4.0
Population Per Square Mile, 2010	87.4	168.4	94.4	350.6	153.9	196.1	153.9
Average Household Size, 2010-14	2.63	2.72	2.55	2.62	2.56	2.54	2.53
Median Age (2010)	37.2	35.3	37.9	40.7	37.9	37.4	38.0
Percent Women (2014)	50.8	51.2	51.5	51.1	51.4	51.3	51.3
Percent White (2014)	77.4	62.1	69.7	77.8	68.3	71.5	78.9
Percent Black (2014)	13.2	31.5	26.7	16.8	27.8	22.1	17.1
Percent Asian (2014)	5.4	3.8	1.3	2.8	1.5	2.7	1.7
Percent Hispanic (2014)	17.4	9.3	4.1	24.1	5.4	9.0	5.0
Foreign-Born Persons, Percent, 2010-14	13.1	9.7	3.5	19.6	4.8	7.6	4.7
Noncitizens, Percent, 2015	7.0	7.0	2.0	9.0	2.0	5.0	3.0

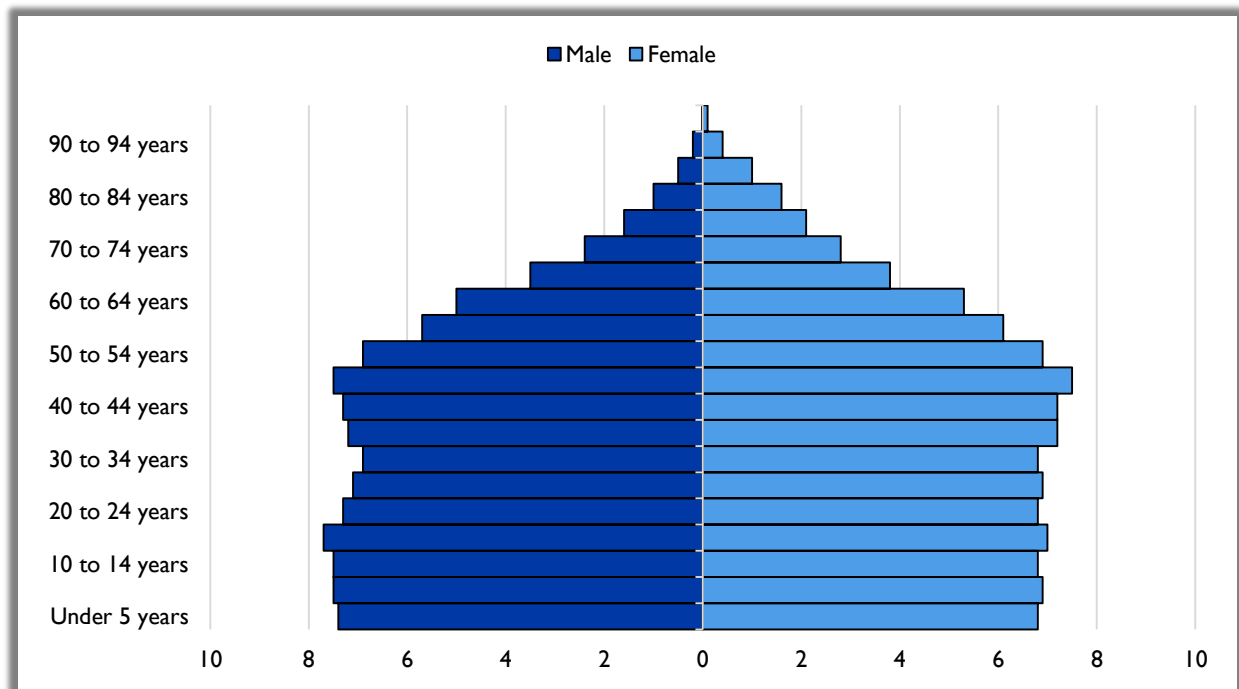
Source: U.S. Census Bureau, Quickfacts (www.census.gov/quickfacts/table/PST045215/00)

An appropriate balance between natural population growth and migration is essential to sustaining a competitive economy and maintaining a jurisdiction's fiscal health. The Great Recession affected domestic and international migration to Georgia due to limited economic opportunities and reduced mobility. In the immediate aftermath of the Great Recession, natural births and deaths were a significant component of population change. The OPB estimates that during 2011 and 2012, natural increase was the leading factor behind population growth (56 percent), compared to the pre-recession period (45 percent during 2000-09).

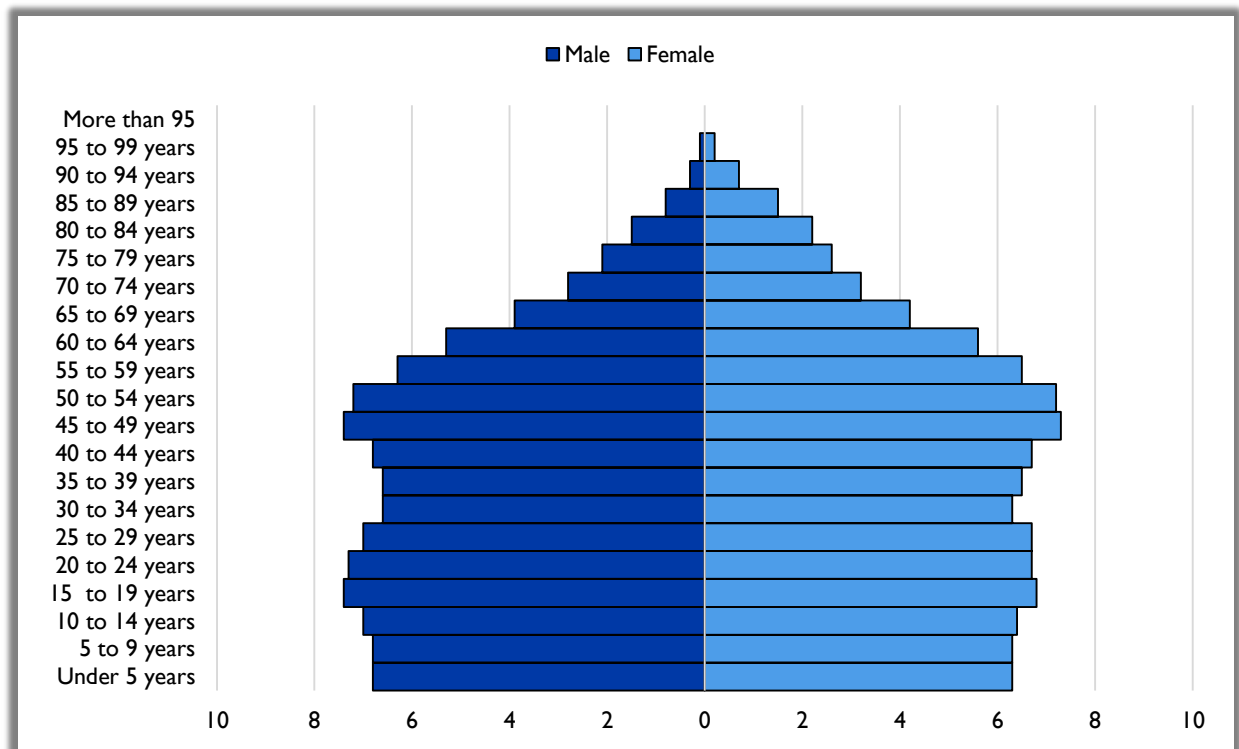
AGE PROFILE AND PROJECTIONS

In 2010, Georgia had the sixth-youngest population among the 50 states. The median age in Georgia in 2010 was 35.3, lower than that of the United States (37.2) and all other neighboring states (Alabama, 37.9; Florida, 40.7; South Carolina, 37.9; North Carolina, 37.4; Tennessee, 38.0). There are two key reasons for this relative age advantage. Figures 2 and 3, which show the 2014 age pyramids for Georgia and the United States, respectively, illustrate these reasons. First, according to the 2010 Census, a quarter of Georgia's population was under 18 years old; thus, Georgia's age pyramid was relatively steeper at the bottom than the United States' pyramid. Second, the state has a relatively smaller share of the 50-64 age group as compared to more rectangular age pyramid for the United States. This relative demographic advantage for Georgia will diminish substantially over the next 20 years because of the aging of 40-50 year old cohort, which is currently the largest age group in Georgia. The aging of Baby Boomers and the Generation X currently is one of the key reasons for a relatively higher rate of aging in Georgia.² The elderly population in Georgia (65 or older) is expected to grow by 143 percent from 2000 to 2030. Georgia is among the 10 states with the highest projected growth in the elderly population, and it joined the list of 11 states with more than 1 million elders in 2010 (Landers et al. 2005, West et al. 2014).

² Generation X refers to the demographic cohort following the Baby Boomers and preceding Gen Y (or the Millennials). Typically, those born between the early 1960s and the late 1970s are referred to as Gen X.

Figure 2. Population Pyramid for Georgia, 2014

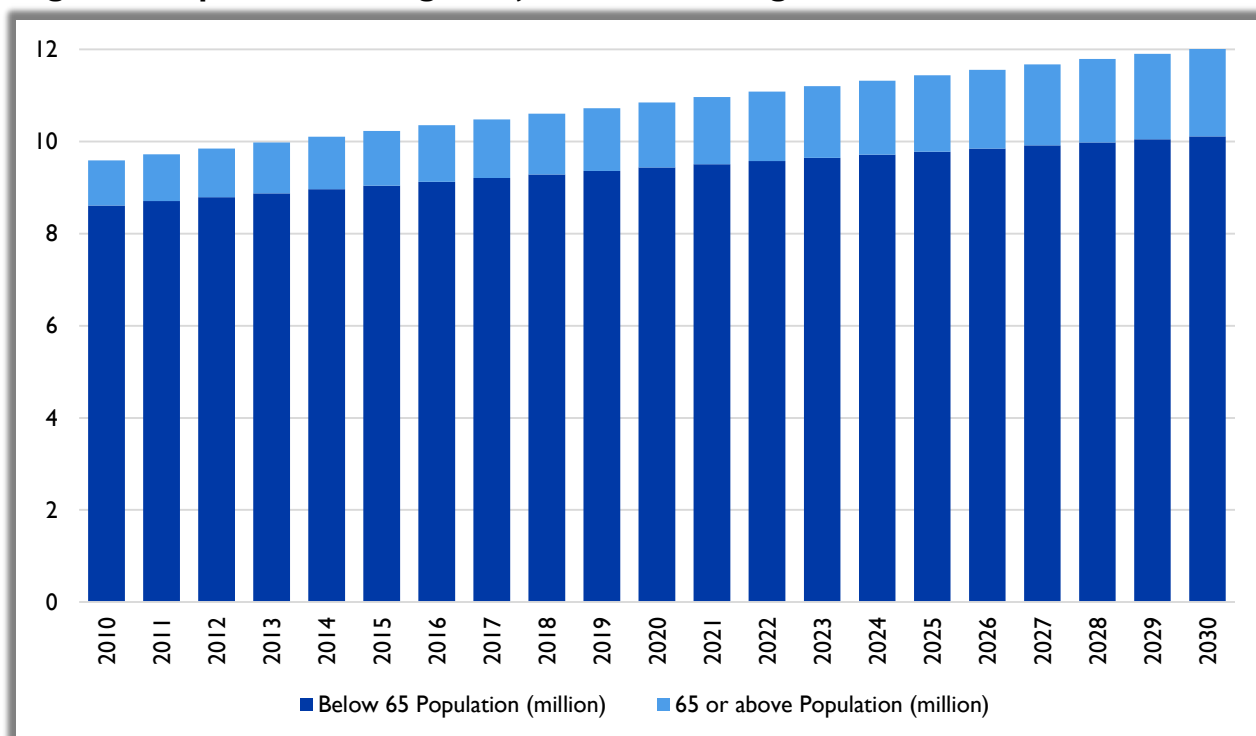
Source: U.S. Census Bureau

Figure 3. Population Pyramid for the United States, 2014

Source: U.S. Census Bureau

Georgia's population has begun to age, a trend likely to continue according to age projections by the Centers for Disease Control and Prevention (CDC). Figure 4 shows the projected increasing share of persons over age 65 during the next decade. In addition, Georgia offers tax incentives for the elderly, making it one of the most retirement-friendly states in some national analyses.³ Although the empirical evidence of a relationship between state tax incentives and elderly interstate migration is mixed (Bakija and Slemrod 2004, Conway and Rork 2012, Onder and Schlunk 2015), Georgia remains competitive in attracting retirees. According to an analysis by researchers at the University of Georgia, Georgia outranked the majority of states and maintained a net positive flow (inflow minus outflow) of domestic retirees per year during 2007-11. However, the retirees who move to Georgia have less income than the retirees who migrate to other states (Selig Center for Economic Growth 2013). A simple analysis of the annual American Community Survey (ACS) microdata for last 10 years also suggests that Georgia might be attracting more elderly in-migrants than retirees leaving the state. On average, the elderly in-migrants appear to have relatively lower personal income than the elderly out-migrants, which may affect the demand for public and social services in the medium to long term (Table 2).

Figure 4. Population and Age Projections for Georgia



Source: State Population Projections, CDC (wonder.cdc.gov/wonder/help/PopulationProjections.html)

³ In comparative rankings, Georgia is consistently rated as an attractive retirement destination. In 2015, www.kiplinger.com, a personal finance magazine website, ranked Georgia as the fifth most tax-friendly state for retirees, noting the exemption for Social Security income and exemptions for other retirement income. See www.kiplinger.com/tool/retirement/T055-S001-state-by-state-guide-to-taxes-on-retirees/index.php?map=&state_id=11&state=Georgia.

Table 2. Average Income Estimates of Elderly In-Migrants and Out-Migrants to and from Georgia

YEAR	IN-MIGRANTS (65 OR OLDER)		OUT-MIGRANTS (65 OR OLDER)		RATIO (IN/OUT)
	ANNUAL INCOME (\$)	SAMPLE	ANNUAL INCOME (\$)	SAMPLE	
2014	30,224.46	194	32,153.41	141	94.0%
2013	28,206.90	202	24,405.40	154	115.6%
2012	30,771.60	161	39,375.89	115	78.1%
2011	24,678.86	142	25,428.93	94	97.1%
2010	24,676.43	145	32,339.28	96	76.3%
2009	25,046.15	159	22,053.05	74	113.6%
2008	28,312.34	163	24,912.82	116	113.6%
2007	20,981.66	155	32,756.50	95	64.1%
2006	21,962.45	201	31,879.47	74	68.9%
2005	20,232.05	189	33,573.51	84	60.3%

Notes: (1) All the estimates are from one-year American Community Survey public use microdata samples published by the Minnesota Population Center (usa.ipums.org/usa/). (2) Income refers to each respondent's total pre-tax personal income or losses from all sources for the previous year and is not adjusted for inflation. (3) The estimate includes only those elderly who reported "moving between the states." (4) Estimates are adjusted using sampling weights, but sampling errors are likely.

However, annual personal income does not provide a complete picture of the wealth profile of the elderly population because it does not include the value of a variety of assets. State-level information on net estate taxes is an alternative metric that can provide some insight into the economic activity and wealth associated with the elderly population. Table 3 reports the average value of gross estates reported for federal estate tax purposes for Georgia, the United States and neighboring states from 2002 to 2014. The average gross estate for Georgia is consistently smaller than the U.S. average. This suggests that the average wealth of the elderly in Georgia is lower than the national average (based on reported federal estate information). Average wealth of the elderly is higher in Georgia than in some neighboring states like Alabama and Tennessee, but lower than in Florida.

Table 3. Average Gross Estate for Tax Purposes (thousand dollars)

	2002		2006		2010		2014	
	GROSS	STATE/U.S.	GROSS	STATE/U.S.	GROSS	STATE/U.S.	GROSS	STATE/U.S.
U.S.	2,126.29	1.00	4,311.11	1.00	8,570.57	1.00	14,208.53	1.00
GA	2,021.74	0.95	4,003.90	0.93	6,968.66	0.81	13,473.42	0.95
AL	2,203.33	1.04	4,037.97	0.94	7,213.24	0.84	11,347.40	0.80
FL	2,421.54	1.14	4,712.50	1.09	8,647.80	1.01	19,110.64	1.35
NC	2,076.25	0.98	3,913.35	0.91	7,027.93	0.82	10,385.73	0.73
SC	2,070.52	0.97	3,171.00	0.74	6,336.93	0.74	23,301.50	1.64
TN	1,940.08	0.91	4,149.21	0.96	8,725.35	1.02	10,152.91	0.71

Source: IRS Statistics of Income, Tax Stats (<http://www.irs.gov/uac/tax-stats>)

The taxable consumption of older adults also lags that of younger age cohorts (Foster 2015, Sjoquist et al. 2007, Wheeler 2000). Table 4 shows an analysis of consumption expenditures of U.S. households for different age groups. The households in the 65 or more group consumes a relatively smaller proportion of goods and services that contribute significantly to sales tax (food, alcoholic beverages, entertainment, apparel, transportation) and a higher proportion of services that are nontaxable or contribute little to sales tax such as health care and household operations such as personal services.

Table 4. Shares of Consumption Expenditures by Age of Reference Person for the United States, 2014

KEY CONSUMPTION ITEMS	< 25	25-34	35-44	45-54	55-64	> 65
Food	4.4	16.4	20.2	22.3	18.6	18.1
Alcoholic Beverages	4.4	19.1	18.5	22.6	18.2	17.1
Household Furnishings	4.0	14.9	18.2	22.8	20.8	19.4
Apparel and Services	4.8	17.9	21.4	23.6	18.5	13.8
Transportation	4.5	16.0	20.0	23.0	19.0	17.5
Utilities	3.3	13.7	18.8	22.0	20.3	21.9
Household Operations	2.5	19.8	25.2	17.0	15.0	20.5
Housekeeping Supplies	2.4	13.0	16.8	21.8	22.9	23.0
Health Care	1.7	10.1	16.1	19.5	21.4	31.3
Entertainment Fees	2.6	13.6	27.8	23.0	18.3	14.8

Source: Consumer Expenditure Survey, U.S. Bureau of Labor Statistics, September 2015

Notes: Contains imputed values; large sampling errors are possible.

The elderly population earns a smaller share of its income from taxable wages and salaries and relies more on public assistance and benefits (many of which are nontaxable). Table 5 shows that the 65 and older group contributes a relatively small proportion to state revenues through direct personal taxation. Further, the elderly have access to extra exemptions and have a federal and state tax advantages with a lower tax liability (Conway and Rork 2008, Edwards and Wallace 2004, Institute on Taxation and Economic Policy 2015, Penner 2000). Conway and Rork (2008) estimated statewide tax bonuses for the elderly between 1977 and 2002. They found that states in the Southeast (particularly Georgia) offer substantially large bonuses that have increased over time (Figure 5). We do not have access to more recent estimates of tax bonuses, but these estimates may have changed in a substantial way given the new incentives that the state has adopted in the last decade.⁴ In summary, the increasing share of elderly and retirees in the population, along with generous exemptions, may pose a significant challenge to state revenues in the future.

Table 5. Shares of Aggregate Income and Taxes by Age for the United States, 2014

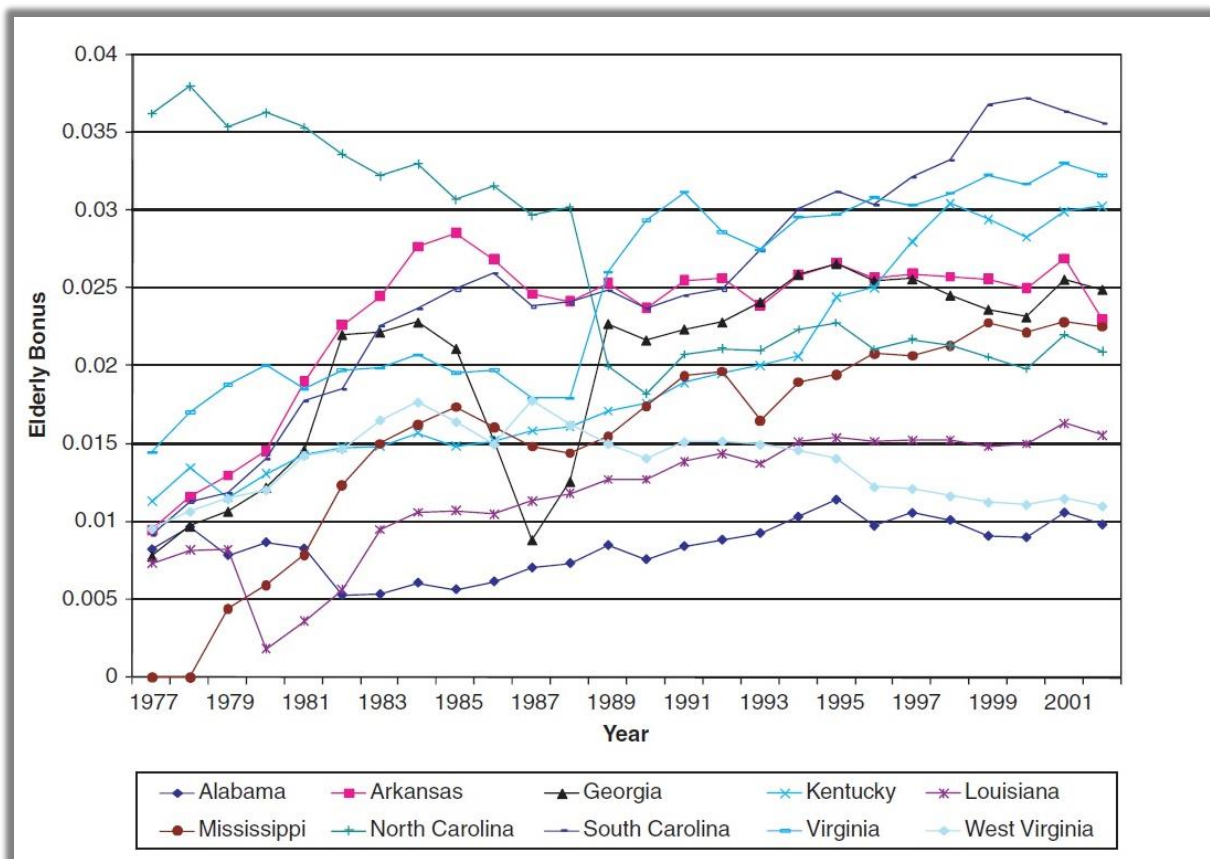
	< 25	25-34	35-44	45-54	55-64	65 OR MORE
SOURCES OF INCOME						
Wages and Salaries	3.4	17.6	24.8	27.2	20.4	6.7
Self-Employment Income	0.9	8.2	24.3	30.7	26.9	9.0
Social Security, Retirement Income	0.3	0.9	1.9	4.9	18.7	73.2
Interest, Dividends, Rental or Property Income	1.0	6.2	7.7	14.5	30.6	39.9
Public Assistance, Supplemental Security	7.7	21.1	21.0	20.6	18.3	11.4
Compensation, Benefits and Contributions	7.6	11.0	14.1	20.6	21.4	25.3
Other Income	24.6	24.1	10.6	14.7	11.6	14.4
PERSONAL TAXATION						
Personal Taxes ^a	1.2	12.2	23.4	29.4	25.0	8.7
Federal Income Taxes	1.0	11.7	23.3	29.7	25.4	8.9
State and Local Income Taxes	1.8	14.4	23.8	28.7	23.4	7.9
Other Taxes	1.3 ^b	7.0	12.4	23.0	40.4	15.9

Source: Consumer Expenditure Survey, U.S. Bureau of Labor Statistics, September 2015

Notes: a. Contains imputed values. Large sampling errors are possible.

⁴ The retiree-friendly policies continued in Georgia through the 2000s under Governor Perdue. In 2012, the Georgia Jobs and Family Tax Reform plan capped the retirement income exclusion for seniors at \$65,000 (\$130,000 for joint filers). In addition, there have been several changes in the income tax and property tax for the elderly that may have made the tax bonus even larger during the 2000s. See Badertscher (2015) and Kiplinger (2015).

Figure 5. Elderly Tax Bonus for the Highest Income Quartile, Select Southeastern States, 1977-2002



Source: Reproduced from Conway and Rork (2008)

MIGRATION AND INCOME FLOWS

Although the overall change in population due to migration is relatively smaller in Georgia than in its neighbors, migration still may have a significant effect on government revenues. The ACS collects annual information on state-to-state migration flows and provides some insights into the nature of migration. The most recent ACS estimates available are for 2014, and they highlight the interconnected character of the regional economy in the Southeast, showing massive inflows and outflows of people. The highest number of in-migrants and out-migrants in Georgia in 2014 were from the neighboring states of Florida, Alabama, North Carolina, South Carolina and Texas. Further, Georgia has experienced positive net inflows of migrants from some of the richer states such as New York, California and Pennsylvania. From a public finance perspective, the issue is not just the net movement of people but also the income profile of in-migrants and out-migrants — whether the state is gaining or losing potential revenue from this movement of taxpayers. The Internal Revenue Service's (IRS) Statistics of Income Division provides data on migration inflows and outflows based on the state of residence reported on federal tax returns. For Georgia, the aggregate outflows and inflows of income are relatively balanced. In fiscal year 2014, the total outflow was \$6.21 billion and the total inflow was \$6.51 billion. Florida, Texas, California, South Carolina, North Carolina, Tennessee, Alabama, Virginia, New York and Illinois are the 10 states with the highest income migration from and to Georgia (Table 6). There is significant variation in the balance of inflows and outflows between states and over time. For example, during FY 2014, the reported gross

income of taxpayers who moved from Georgia to Florida was \$1.17 billion, which was substantially more than the reported income (\$0.88 billion) of the residents who moved from Florida to Georgia. In the same year, the reported income of taxpayers moving between Georgia and North Carolina was around \$0.35 billion. Because migration patterns change from year to year, they vary over time. Although outflows from Georgia to Florida typically exceed inflows across years, the difference between Georgia outflows and inflows from Florida was substantially lower in FY 2012 (in the immediate aftermath of the Great Recession), with adjusted gross income (AGI) outflows of \$1.19 billion and inflows of \$1.16 billion.

Table 6. Income Migration to and from Georgia, Top 10 States, FY 2012 to FY 2014

	AGI-OUTFLOW (BILLION \$)	AGI-INFLOW (BILLION \$)	AGI PER RETURN- OUTFLOW (\$)	AGI PER RETURN- INFLOW (\$)	INFLOW- OUTFLOW TO GEORGIA (\$)
FY 2014					
Florida	1.17	0.88	58,137	43,666	-14,471
Texas	0.64	0.44	38,910	51,850	12,940
California	0.41	0.37	64,604	56,954	-7,650
South Carolina	0.40	0.29	54,951	40,908	-14,043
North Carolina	0.35	0.36	49,193	45,818	-3,375
Tennessee	0.34	0.30	48,521	43,482	-5,039
Alabama	0.33	0.34	41,801	39,197	-2,604
Virginia	0.23	0.32	53,653	64,242	10,589
New York	0.22	0.36	48,438	50,094	1,656
Illinois	0.14	0.26	55,487	66,093	10,606
Foreign	0.17	0.16	60,937	56,880	-4,057
All States	6.04	6.34	50,174	50,188	14
Total Migration	6.21	6.51	50,413	50,336	-77
FY 2013					
Florida	1.69	1.33	70,783	54,234	-16,549
Texas	0.65	0.48	51,124	54,006	2,882
South Carolina	0.43	0.32	50,726	42,193	-8,533
California	0.42	0.38	57,957	53,582	-4,375
North Carolina	0.41	0.38	49,863	47,782	-2,081
Alabama	0.38	0.35	40,409	36,568	-3,841
Tennessee	0.37	0.33	47,371	44,585	-2,786
New York	0.36	0.37	63,633	49,871	-13,762
Virginia	0.27	0.33	55,724	61,071	5,348
Illinois	0.19	0.24	62,193	58,121	-4,072
Foreign	0.17	0.17	56,560	54,347	-2,213
All States	7.2	7.0	53,513	50,976	-2,537
Total Migration	7.4	7.2	53,581	51,052	-2,529

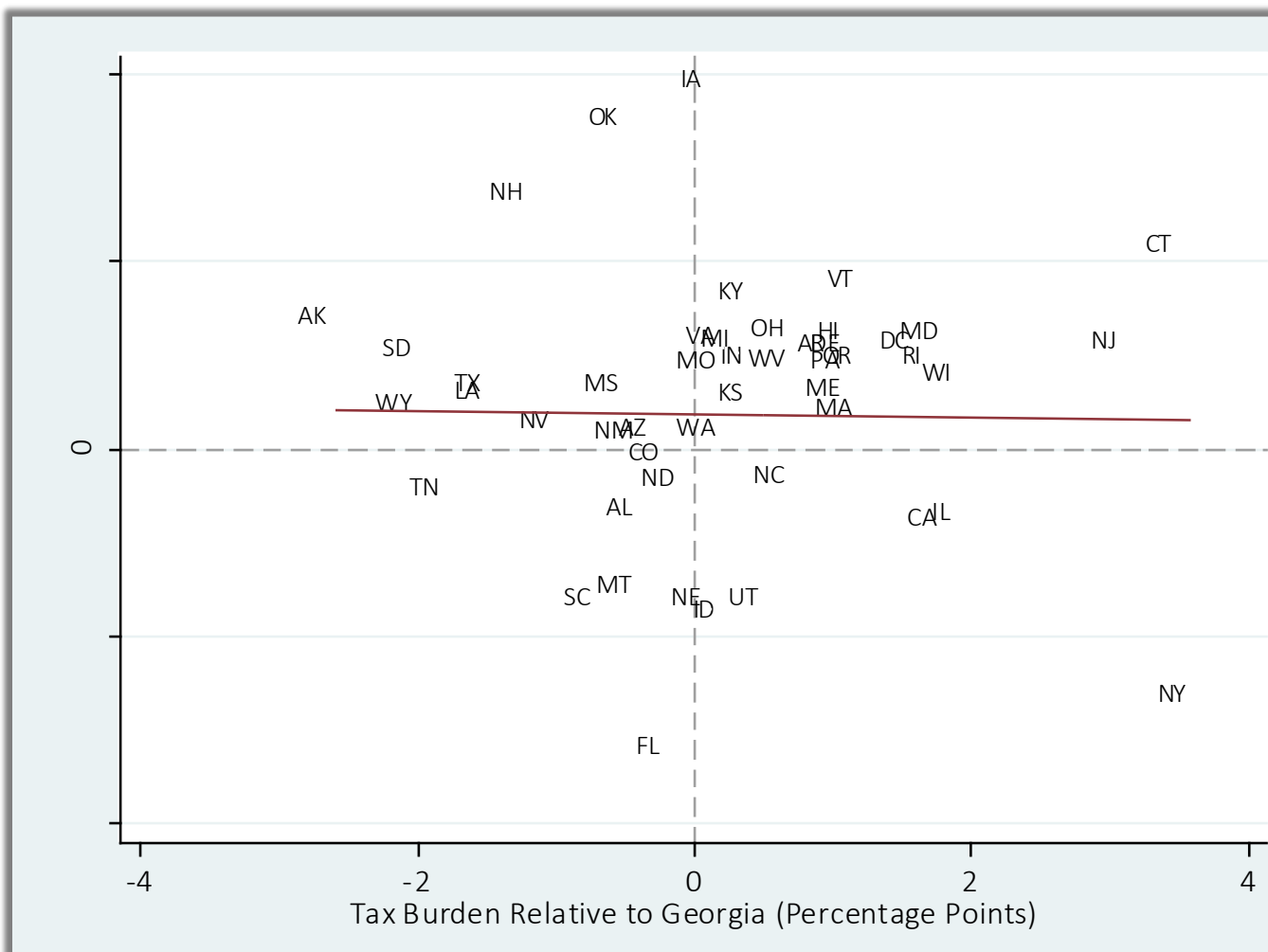
	AGI-OUTFLOW (BILLION \$)	AGI-INFLOW (BILLION \$)	AGI PER RETURN- OUTFLOW (\$)	AGI PER RETURN- INFLOW (\$)	INFLOW- OUTFLOW TO GEORGIA (\$)
FY 2012					
Florida	1.19	1.16	44,819	39,308	-5,511
Texas	0.52	0.39	44,923	45,790	867
North Carolina	0.39	0.34	43,179	42,780	-399
California	0.39	0.34	50,141	47,753	-2,389
South Carolina	0.36	0.33	41,634	41,940	306
Tennessee	0.34	0.29	42,507	39,965	-2,542
Alabama	0.33	0.33	34,369	33,187	-1,182
Virginia	0.25	0.26	50,685	51,058	373
New York	0.23	0.32	38,366	42,332	3,966
Illinois	0.16	0.22	46,663	51,747	5,084
All States	0.20	0.17	56,812	50,459	-6,353
U.S. Migration	6.15	6.22	43,311	43,049	-262
Total Migration	6.35	6.39	43,635	43,219	-416

Source: State-to-State Migration Flows, Statistics of Income Division, Internal Revenue Service

IRS data also enable us to estimate AGI per return for statewide inflows and outflows. In FY 2014, in 30 states the AGI of in-migrants to Georgia was higher than that of out-migrants. For the remaining 20 states, the out-migrants had a higher average AGI. At the aggregate level, during this period, the average AGI for domestic in-migrants was \$50,188 and out-migrants was \$50,174, which suggests relatively similar reported incomes of the two groups.

For tax policy, an additional question is whether the state and local tax burden is partly shaping the migration pattern and its income composition. The traditional tax competition literature argues that a higher tax burden may contribute to household migration (especially, for high-income households), but the empirical evidence on the subject is mixed (Cohen et al. 2014, Feldstein and Wrobel 1998, Liebig and Sousa-Poza 2006, Wallace 2002, Young et al. 2016). Compared to other states, Georgia has a relatively lower tax burden. A key question is whether there is any correlation between the aggregate income profile of migrants and the relative tax rates. Figure 6 plots states' tax burden relative to Georgia's in 2012 on the x-axis and the difference in the average AGI of in-migrants and out-migrants on the y-axis. In this simple analysis, there seems to be no significant correlation between the tax burden of the states and the difference in the average income profile of in-migrants versus out-migrants. However, the statewide distribution does suggest that relatively high-income households migrate to Georgia from several states with higher tax rates (e.g., Connecticut, top right quadrant). There is a parallel movement of high-income households to other states with high tax rates (e.g., California, bottom right quadrant). Obviously, a clearer understanding of this issue requires more analysis, but on the surface, it appears that migration inflows and outflows in Georgia are balanced in terms of the impact of taxes, with the exception of a few neighboring states (bottom left quadrant).

Figure 6. Relative State and Local Tax Burden and Average Incomes of Georgia's Domestic In-Migrants and Out-Migrants, 2012

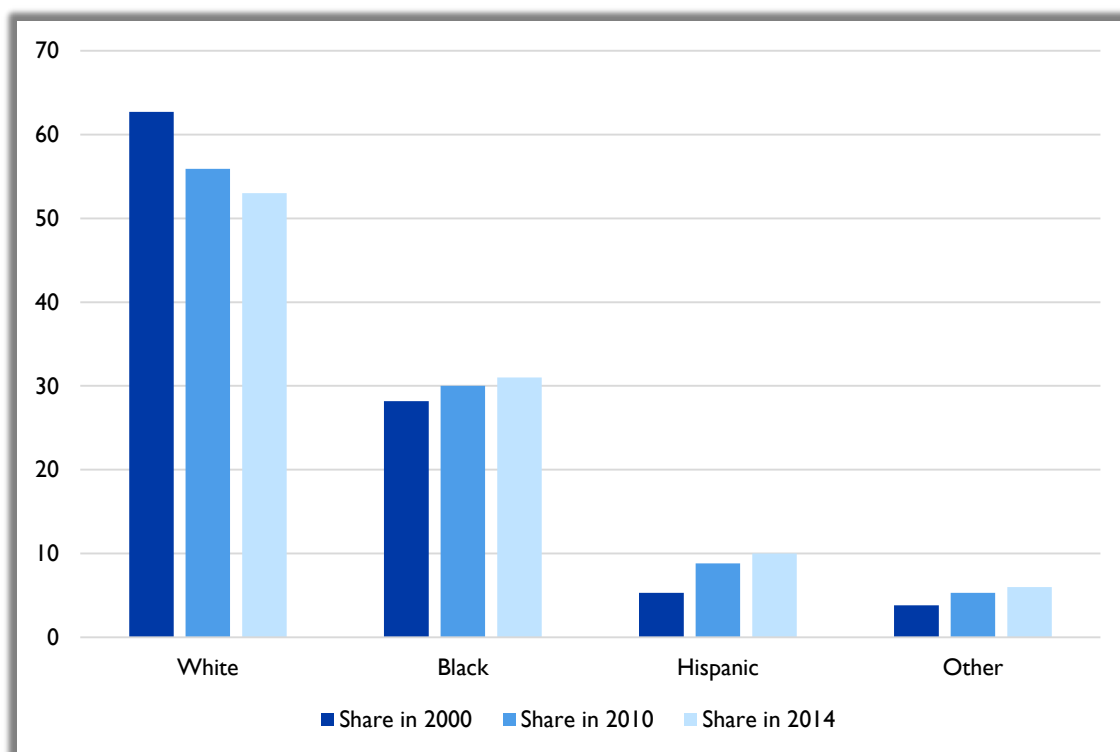


Notes: (1) Analysis does not include Minnesota because of outlier values. (2) The X-axis shows the relative tax burden for FY2012, calculated using data from the Tax Foundation (taxfoundation.org/article/state-and-local-tax-burdens-1977-2012). (3) The Y-axis shows the average annual gross income per return for FY2013, derived from IRS migration data (<http://www.irs.gov/uac/soi-tax-stats-migration-data-2012-2013>).

RACE AND ETHNICITY

Caucasians have historically been the largest racial group in Georgia. However, the white share of the overall population has been declining, and Georgia is becoming more racially diverse. The proportion of whites in the total population of the state fell from 62.7 percent in 2000 to 53.0 percent in 2014 (Figure 7). During the same period, the share of blacks increased by about 3 percentage points, Hispanics by 4.7 percentage points and other racial groups by 2.2 percentage points. The growth in the Hispanic population is noteworthy; the number of Hispanics almost doubled from 0.43 million to 0.85 million from 2000 to 2010. Within the “other” group, the Asian population grew by approximately 84 percent during 2000-10.

Figure 7. Changing Racial Profile of Georgia’s Population, 2000-14



Source: Governor’s Office of Planning and Budget and Kaiser Family Foundation

Georgia’s population is much more diverse than that of its neighbors, with the highest share of blacks and Asians and the second-highest proportion of Hispanics after Florida (Table I). Among its neighbors, Georgia also has the second-highest proportion of foreign-born residents and noncitizens, next only to Florida. The urban economics literature has generally found an association between measures of diversity and economic growth (Glaeser 2011, Ottaviano and Peri 2006, Quigley 1998). Thus, Georgia’s relative advantage on this metric may be a factor in promoting future growth and competitiveness of the regional economy and may positively influence state revenues.

VITAL STATISTICS AND HEALTH CARE

Georgia lags the national average on most health indicators, making health care an important issue for the state. In 2015, Georgia was ranked 40th among the 50 states by America's Health Rankings. Georgia's health ranking has not changed much over the last decade, and the state underperforms on several public health metrics. According to the CDC, in 2015, the percentage of Georgians that reported poor or fair health was about 1 percentage point higher than the national average, but it has remained stable at that rate. Georgia's obesity rate (65.7) is higher than the national average (64.1), and life expectancy in Georgia is 77.2 years compared to the national average of 78.9 years (Table 7). Compared to its neighbors, Georgia is ahead of Alabama, South Carolina and Tennessee on this metric but is behind Florida and North Carolina. A similar trend exists for infant mortality per 1,000 live births. Georgia (7.0 per 1,000 births) is behind the national average (6.0 per 1,000 births) and all neighboring states except Alabama. One of the leading causes of infant mortality and poor infant health is low birth weight, and Georgia has a poor record on this front. In fact, according to data from the Georgia Department of Public Health, the percentage of babies born with low weight in the state increased over the last decade from 8.6 percent in 2000 to 9.2 percent in 2015. Georgia also has a substantially higher teen birth rate (28.4 per 1,000) than the national average (24.2 per 1,000). Georgia's teen birth rate has consistently declined since 2007 but remains much higher than the national average. One of the indicators on which Georgia performs fairly well is the child immunization rate. Georgia's average immunization rate (69.8 percent) lags the national average (70.4 percent) by only 0.6 percentage points.

Table 7. Key Health and Education Characteristics for the United States, Georgia and Neighboring States

	U.S.	GA	AL	FL	SC	NC	TN
Birth Rate Per 1,000 Women, Age 15-44, 2014	62.9	62.2	61.8	59.7	61.1	61.0	63.0
Life Expectancy at Birth (Years), 2009	78.9	77.2	75.4	79.4	77.0	77.8	76.3
Teen Birth Rate Per 1,000, Age 15-19, 2014	24.2	28.4	32.0	22.5	28.5	25.9	33.0
Infant Mortality Per 1,000 live births, 2013	6.0	6.9	8.6	6.2	6.9	7.0	6.8
With Disability (Under 65 years), 2014	8.5	8.7	11.7	8.5	10.2	9.5	11.2
Non-Institutionalized Reporting Disability, 2014	12.6	12.4	16.2	13.4	14.8	13.6	15.9
Adult Overweight/Obesity Rate, 2015	64.1	65.7	67.0	62.2	67.0	65.6	67.1
Fair or Poor Health- Adults, Self-Reported, 2014	17.8	18.8	22.9	19.3	19.7	19.0	23.8
Child Immunization Rate (19-35 Months), 2013	70.4	69.8	77.0	70.0	66.5	72.0	68.5
Without Health Insurance, Under 65 Years, 2014	12.0	17.9	14.2	20.1	16	15.2	14.1
Percent Visiting Dentist Within Past Year, 2014	64.4	60.6	60.0	61.9	58.3	64.2	58.3
Hospital Beds Per 1,000 Population, 2014	2.5	2.4	3.1	2.7	2.5	2.2	3.1
High School or Higher, % of Persons Age 25+, 2010-14	86.3	85.0	83.7	86.5	85.0	85.4	84.9
Bachelor's or Higher, % of Persons Age 25+, 2010-14	29.3	28.3	23.1	26.8	25.3	27.8	24.4

Source: U.S. Census Bureau, *State Quick Facts*; Centre for Disease Control and Prevention (kff.org/statedata/)

Georgia residents also have a low utilization of health care services. The state is behind the national average on regular dental visits. OPB estimates that nearly one in seven counties has no dentists, with an overall shortfall of around 104 dental health professionals. Georgia also has a relatively low availability of hospital beds compared to neighboring states, and Georgia marginally lags the national average for hospital beds per 1,000 inhabitants. Some commentators have called for more investment in the health care infrastructure (particularly in rural Georgia, see Sweeny 2016) in addition to improving access to health care. OPB estimates that around 1.8 million Georgians (about 20 percent) do not have health insurance, and Georgia has the sixth-highest percentage of uninsured residents in the country. Further, 17.9 percent of the non-elderly population in Georgia does not have health insurance, substantially more than the national average (12 percent).

The state has been successful in providing coverage to children, who account for almost 71 percent of total Medicaid and PeachCare enrollment (Gates et al. 2016). Over the years, Medicaid and PeachCare spending in Georgia has increased substantially (Table 8 and Figure 8). In Georgia, Medicaid payments grew from \$3.5 billion in 2000 to \$8.96 billion in 2015, and PeachCare payments increased from \$50 million in 2000 to \$311 million in 2015. The federal government covers an increasing share of Medicaid spending, which is expected to grow if Georgia adopts the expansion of Affordable Care Act. Georgia is one of 19 states that have not expanded Medicaid, so health care spending may change if there is an expansion of coverage.

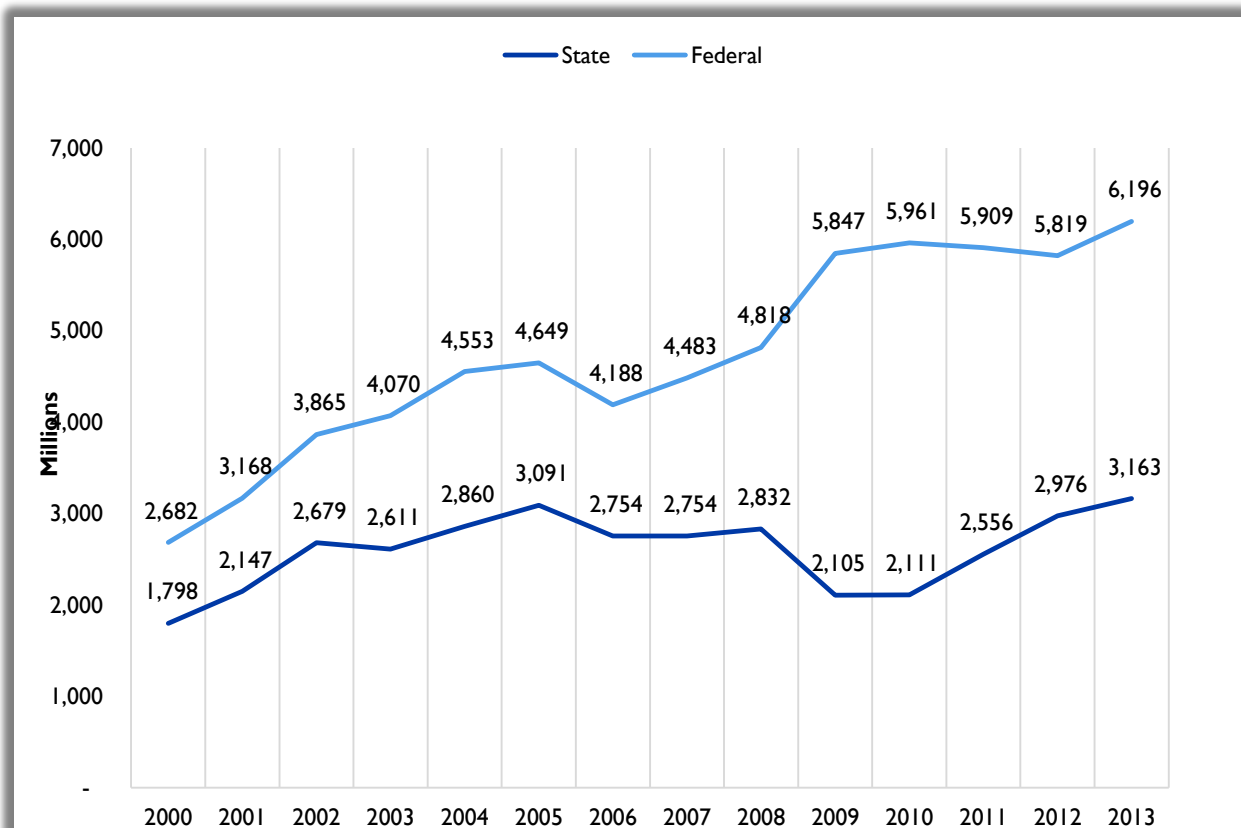
Table 8. Medicaid and PeachCare Membership and Payments in Georgia, 2000 to 2015

YEAR	MEDICAID		PEACHCARE	
	MEMBERS (MILLION)	PAYMENTS (BILLION \$)	MEMBERS (THOUSANDS)	PAYMENTS (MILLION \$)
2000	0.95	3.48	8.50	50.73
2001	1.00	3.82	14.03	115.93
2002	1.27	4.46	154.41	170.92
2003	0.18	4.89	180.95	212.32
2004	1.33	6.04	200.56	262.68
2005	1.38	6.31	208.19	273.27
2006	1.39	6.28	238.33	310.33
2007	1.28	6.16	273.66	432.16
2008	1.27	6.37	249.68	345.68
2009	1.35	6.70	205.55	304.99
2010	1.45	6.95	202.53	299.54
2011	1.50	7.46	199.53	316.60
2012	1.54	7.81	205.33	337.57
2013	1.59	8.05	218.14	401.29
2014	1.63	8.45	215.44	425.55
2015	1.81	8.96	158.54	310.72

Source: Annual Report, Georgia Department of Community Health, 2015
(dch.georgia.gov/sites/dch.georgia.gov/files/AnnualReport-2015.pdf)

Notes: (1) The Medicaid amount excludes PeachCare and includes Medicaid ABD and Medicaid LIM. (2) Includes capitation amount and net payments.

Figure 8. Nominal Medicaid Expenditures in Georgia by the State and Federal Government, Federal FY 2000-13



Source: Data from CM-64 federal reports on expenditures. Reproduced from Bourdeaux (2015)

FAMILIES AND LIVING ARRANGEMENTS

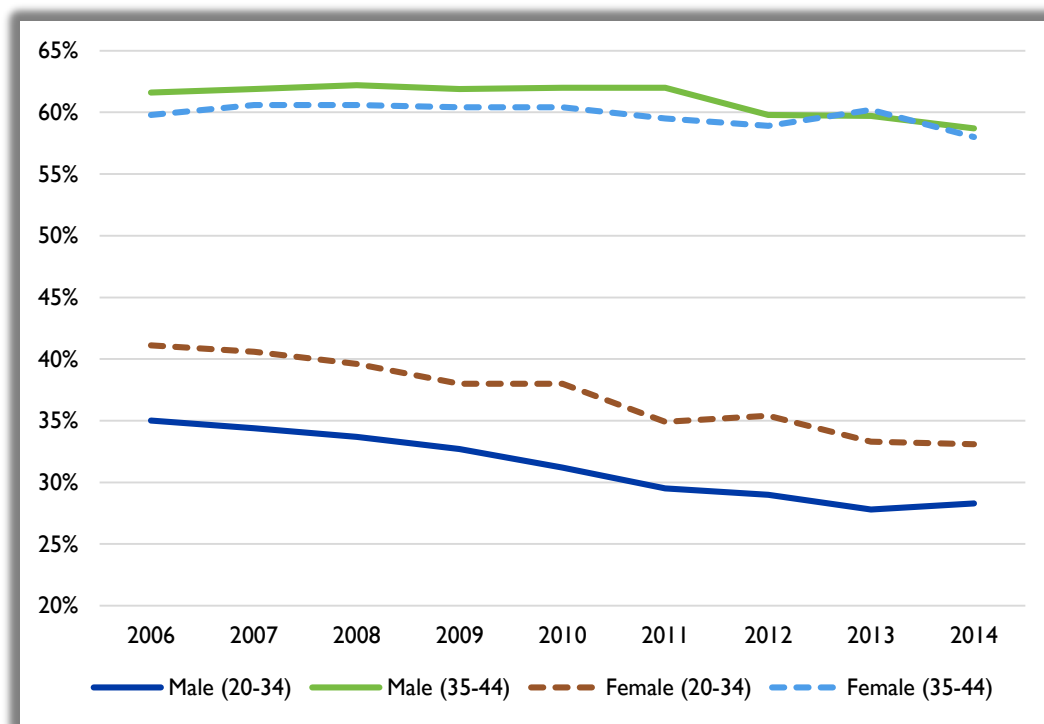
Growth in the number of households or changes in family size have direct implications for the demand for public services and thereby affect state finances. The total number of households in Georgia increased by about 500,000 between 2000 and 2010, a trend likely to continue. The average household size in Georgia is 2.72 persons, larger than the national average of 2.63. Household size in the state is also higher than in neighboring states (Table 9). Interestingly, the birth rate in Georgia (the number of births per 1,000 women of child-bearing age) is lower than the national average of 62.9 but is higher than in most neighboring states (Table 7). The mismatch between household size and the birth rate could be the result of a substantial decline in birth rates and increased immigration during the last decade.

Table 9. Key Housing Characteristics for Georgia and the Neighboring States

	U.S.	GA	AL	FL	SC	NC	TN
Persons per Household, 2010-14	2.63	2.72	2.55	2.62	2.56	2.54	2.53
Total Households, 2010-14 (million)	116.21	3.54	1.84	7.22	1.80	3.74	2.49
Owner-Occupied Housing, Percent, 2010-14	64.4	62.2	69.2	66.1	68.6	65.8	67.1
Median House Value, Owner-Occupied, 000s, 2010-14	175.7	148.0	123.8	156.2	137.6	153.6	139.9
Median Gross Rent, 2010-14	920	874	715	998	784	790	757
Population Living in Metropolitan Area (%), 2015	85	82	64	96	79	76	82

Source: U.S. Census Bureau, State Quick Facts; Centre for Disease Control and Prevention (kff.org/statedata/)

In recent years, in addition to the decline in birth rates, there has also been a drop in the share of married households. In 2006, 35 percent of men and 41 percent of women in the 20-34 age group were married (Figure 9). This share declined continuously for men until 2013 (27.7 percent), and then increased a half a percentage point in 2014 (28.3 percent). For women in the same age group, the marriage rate fell by 8 percentage points between 2006 and 2014. The drop in the share of married individuals in Georgia is also true for the higher age cohorts.

Figure 9. Share of Married Residents in Georgia by Age and Gender, 2006 to 2014

Source: American Community Survey, various years

The declining share of married households can be caused by a mix of changing attitudes toward marriage and short-term behavioral responses to changing economic conditions. According to projections by the Pew Research Center (2014), when the Millennials (age 25-34 in 2010) reach their mid-40s to mid-50s in 2030, a record 25 percent of them are likely to have never been married. The Pew survey also revealed that an estimated two-thirds of respondents in the 18-29 age group said that “society is just as well off if people have priorities other than marriage and children,” as compared to 53 percent of respondents in the 30-49 age group and 45 percent of respondents who are Age 50 and older. Some studies also show a relationship between business cycles, unemployment and marital decisions. For instance, Schaller (2013) found that a 1 percentage point increase in unemployment is associated with a 1.5 percent reduction in the marriage rate and a 1.7 percent decrease in the divorce rate.

These changes in living arrangements, whether they stem from changing social values or economic conditions, have significant implications for income taxes as well as for the dynamics of the housing market and property taxes. Marital and residential preferences may be an even more important factor for working-age Millennials, who will constitute a large section of taxpayers over the next 20 years. The Millennials who are not married have different preferences for urban amenities that affect where and how they choose to live. A survey of Millennials by the Urban Land Institute suggests that they gravitate toward living in central cities, and almost half of them live in rental housing (Lachman and Brett 2015). Such a trend will have implications for Georgia, which already has a relatively smaller proportion of households living in owner-occupied houses (62.2 percent) than the national average (64.4 percent). Changes in residential choices caused by shifting family preferences will eventually affect the housing markets and the finances of state and local governments.

III. Production and Employment

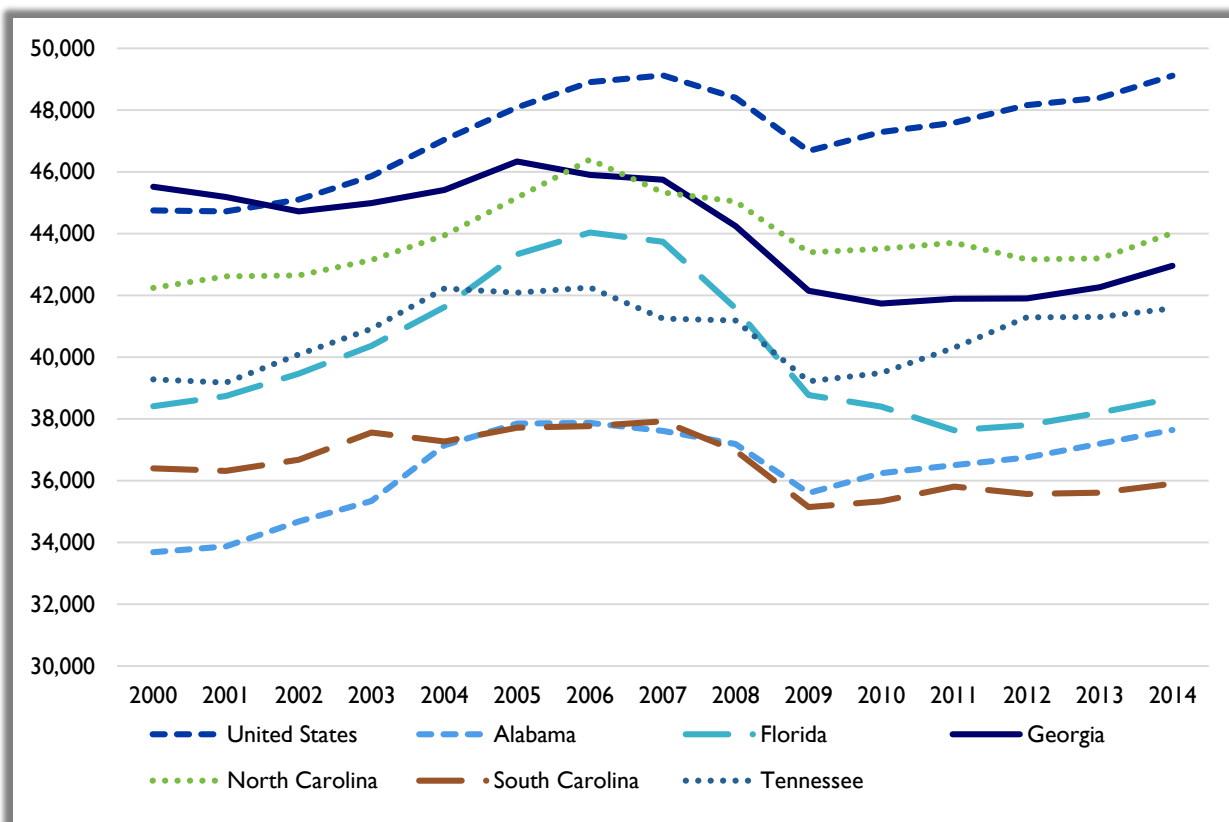
Economic characteristics such as production and employment help shape public finances and the fiscal health of a jurisdiction. These factors significantly affect tax revenues, consumption dynamics and the demand for government services. This section explores three essential aspects of Georgia’s economy: changes related to production and output across industries, changes in the state’s industrial composition over time, and employment patterns across different occupations and industries.

PRODUCTION AND OUTPUT

According to the Bureau of Economic Analysis, Georgia had the 10th-highest gross domestic product among the states in 2014 (\$474.7 billion). It increased at a compound annual growth rate (CAGR) of 0.9 percent during 2004-14 but was lower than the 1.3 percent CAGR for the United States. Changes in real per capita gross domestic product (GDP) illustrate the major economic transition that the state has witnessed during the last 15 years (Figure 10). In 2000, Georgia’s real per capita GDP was \$45,516 compared to the national average of \$44,745 and higher than all of its neighbors: Alabama (\$33,676), Florida (\$38,408), North Carolina (\$42,243); South Carolina (\$36,392) and Tennessee (\$39,277). However, the recession of the early 2000s hit Georgia’s manufacturing base hard. According to an estimate by the University of Georgia, the Peach State lost 63,900 manufacturing jobs during 2000-02 (Humphreys and Benson 2002). The real per capita GDP of the state fell to \$44,718 in 2002, dropping below the national average (\$45,097). The divergence between Georgia’s per capita GDP and the national average has continued ever since, with the difference widening further during the Great

Recession. Georgia still maintains a higher per capita GDP than its neighboring states except North Carolina, which surpassed Georgia for the first time in 2006.

Figure 10. Real Per Capita Gross Domestic Product (2009 dollars) for Georgia, the United States, and Neighboring States 2000-14

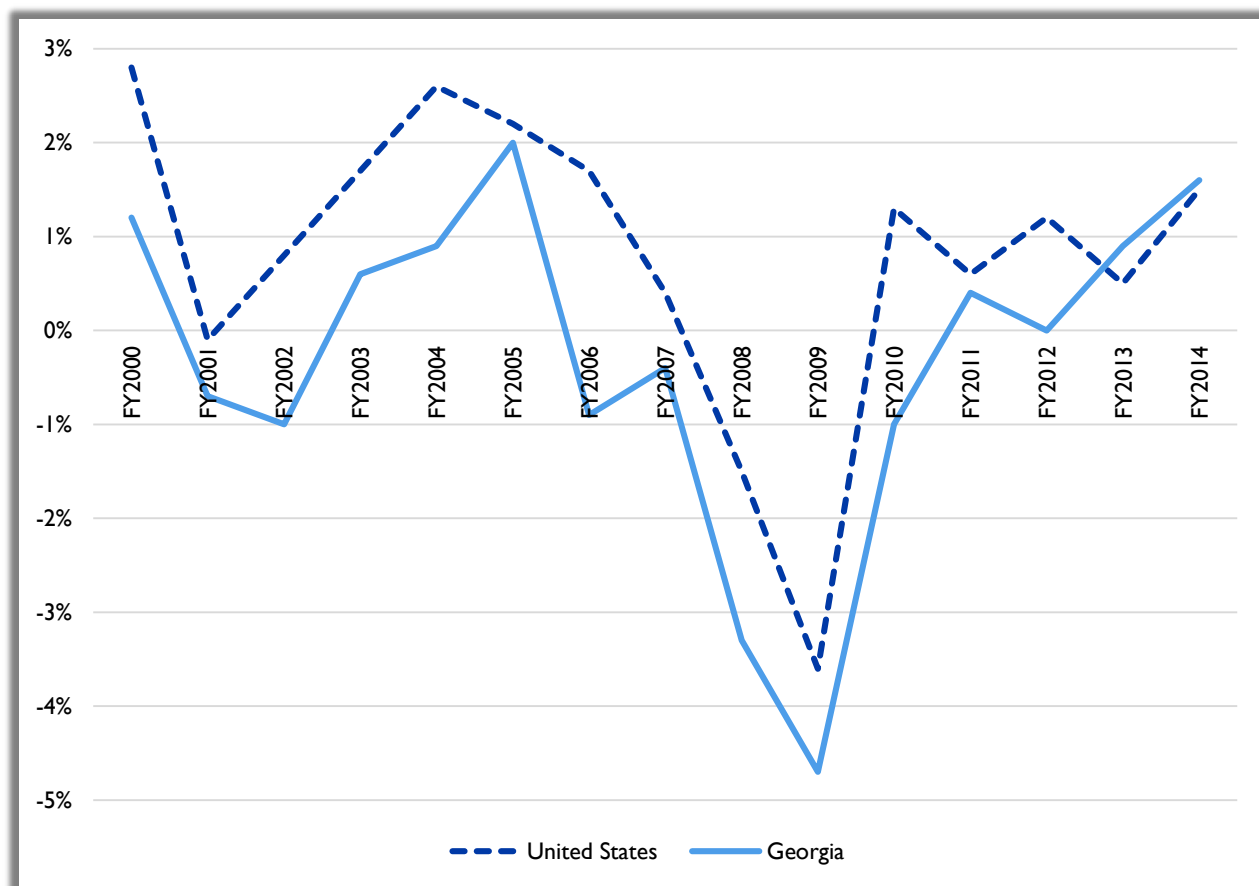


Source: Bureau of Economic Analysis, Regional Product Division

Over the last decade, Georgia has seen moderate growth compared to most of its neighbors. The slowdown in Georgia's economy began even before the Great Recession, and the real per capita GDP declined during 2005-06, a period when the U.S. economy grew by 1.7 percent. The effect of the recession on Georgia was visible as early as 2007-08, when real per-person GDP declined by 3.3 percent, compared to the national decline of only 1.5 percent.

In the Southeast, the adverse effect of the recession on state domestic product was relatively higher in Georgia and Florida. Overall, Georgia's growth during the last decade was weaker than the national average, but Georgia mirrors the national growth trend during the past 15 years (Figure 11). However, the state's economy is recovering from the recession, and it has seen positive per capita growth since 2011. In fact, real per capita GDP in Georgia grew faster than the national average for the first time in last 15 years during 2012-13 and 2013-14. According to the forecasting centers at Georgia State University and the University of Georgia, the Peach State continued to surpass national GDP growth in 2015, fueled by the increase in manufacturing and construction that is likely to continue in 2016. However, low business investment may lead to a more fragile recovery in successive years (Economic Forecasting Center 2016, Terry College of Business 2016).

Figure 11. Annual Growth in Real Per Capita Product, the United States, and Georgia, 2000-14



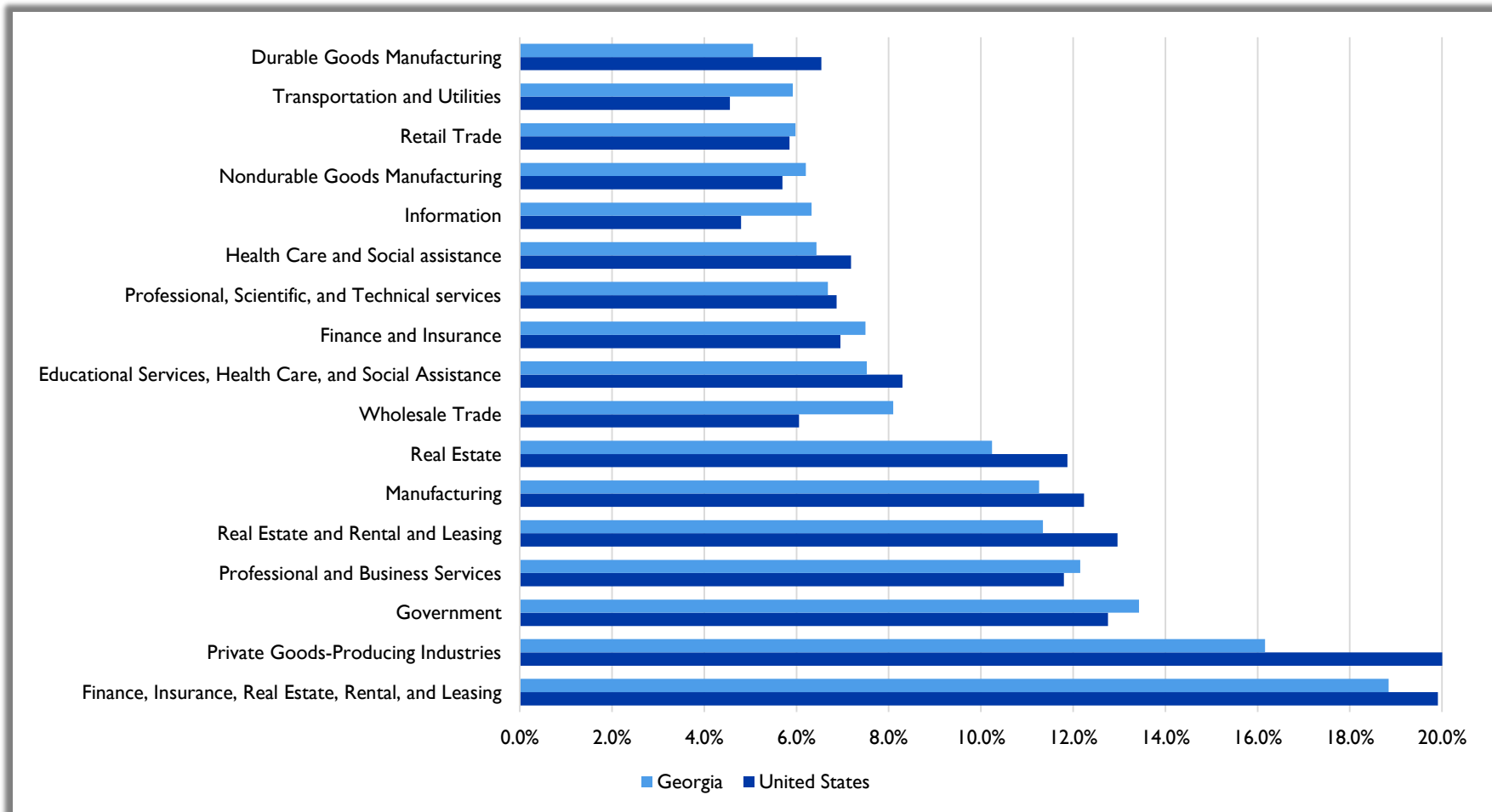
Source: Bureau of Economic Analysis, Regional Product Division

THE INDUSTRIAL COMPOSITION

The industrial composition of Georgia's GDP is broadly similar to the structure of national GDP (Figure 12). Finance, insurance, real estate, rental and leasing is the largest industrial category in both Georgia and the United States. In 2013, government activities comprised 13.4 percent of state GDP compared to the national average of 12.4 percent. According to the Bureau of Economic Analysis, professional and business services constitute around 12 percent of the total GDP in both Georgia and the United States (Bureau of Economic Analysis 2016). The contribution of industries such as wholesale trade, broadcasting and telecommunications, information services, transportation and utilities, and food and beverage manufacturing to Georgia's GDP is substantially higher than the national average. On the other hand, the contribution of manufacturing, real estate, health care, social assistance and natural resources-based industries is significantly smaller than the national average. Over the years, the contribution of different industries to state GDP has remained mostly stable with the exception of manufacturing (Table 10). Manufacturing contributed around 16 percent to state GDP in 2000 but declined to 11.3 percent in 2013.

Accompanying the erosion of manufacturing was a concomitant decrease in the share of construction and trade. These industries have been replaced by an increased share of health care, professional and technical services, and finance and insurance. As the economy is recovering from the Great Recession, there has been a marginal improvement in the share of manufacturing and construction. However, this trend may dissipate as the economy fully recovers from recession, both at a regional and national level, due to global economic factors (Sjoquist 2016). Section 5 of the report discusses the role of factors such as globalization and technology in greater detail.

Figure 12. Share of Major Industrial Classifications in Georgia's Gross Domestic Product, 2013



Source: Bureau of Economic Analysis, Regional Product Division

Note: The industrial classifications reported above contributed more than 5 percent to Georgia's GDP in 2013.

Table 10. The Distribution of Gross State Domestic Product across Industries in Georgia, 1997-2013, Percent

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Trade	14.6	14.8	14.6	14.7	14.3	14.0	13.9	14.1	14.3	14.6	14.3	14.3	13.7	14.0	13.9	14.1	14.1
Government	12.6	12.2	11.9	11.9	12.3	13.0	13.4	13.2	13.2	13.1	13.0	13.2	14.0	14.4	14.2	13.8	13.4
Real Estate, Rental and Leasing	10.8	10.5	10.7	10.8	11.4	11.7	11.8	11.4	11.3	11.3	11.6	12.0	12.1	11.8	11.7	11.6	11.3
Manufacturing	15.8	15.9	16.1	15.1	14.4	13.9	13.0	13.1	12.6	11.8	11.5	11.0	11.1	11.2	11.4	11.3	11.3
Finance and Insurance	6.4	6.4	6.4	7.0	7.2	6.9	7.1	6.6	6.9	7.2	7.4	7.2	7.4	6.9	7.3	7.2	7.5
Professional and Technical Services	5.2	5.4	5.6	5.7	5.7	5.8	5.9	5.8	5.9	6.1	6.3	6.8	6.6	6.6	6.7	6.9	6.7
Health Care and Social Assistance	4.8	4.6	4.6	4.6	4.7	5.0	5.2	5.3	5.3	5.4	5.4	5.8	6.2	6.3	6.3	6.3	6.4
Information Services	6.7	7.0	7.2	7.0	7.4	7.6	7.1	7.0	6.8	6.6	6.7	6.7	6.2	6.1	6.0	6.0	6.3
Transportation and Warehousing	3.9	4.0	3.9	3.9	3.6	3.6	3.7	3.8	3.7	3.6	3.8	3.8	3.7	3.9	4.0	4.1	4.1
Administrative and Waste Management	2.6	2.7	2.7	2.9	2.9	2.9	3.0	3.2	3.4	3.4	3.5	3.5	3.4	3.5	3.6	3.6	3.6
Construction	4.5	4.8	5.0	5.0	5.0	4.8	4.9	5.2	5.3	5.5	5.3	4.6	4.0	3.6	3.4	3.4	3.5
Accommodation and Food Services	2.6	2.6	2.6	2.7	2.6	2.7	2.8	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.8	2.8
Other Services, Except Government	2.4	2.4	2.3	2.4	2.1	2.3	2.2	2.2	2.2	2.2	2.1	2.1	2.1	2.1	2.1	2.1	2.1
Management of Companies/Enterprises	1.9	1.8	1.7	1.7	1.7	1.6	1.5	1.7	1.8	1.7	1.7	1.6	1.6	1.7	1.7	1.8	1.9
Utilities	2.1	1.9	2.0	1.9	1.9	1.8	1.8	1.8	1.8	1.9	1.8	1.8	2.0	2.1	2.2	1.9	1.8
Agriculture, Forestry, Fishing, Hunting	1.3	1.2	1.1	1.0	1.0	0.8	1.0	1.1	1.0	0.8	0.8	1.0	0.9	0.9	0.9	1.0	1.1
Educational Services	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8	0.8	0.9	0.9	1.0	1.1	1.1	1.1	1.1	1.1
Arts, Recreation and Entertainment	0.6	0.6	0.6	0.7	0.7	0.7	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.7	0.7	0.7	0.7
Natural Resource and Mining	0.4	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.3	0.3

Source: Bureau of Economic Analysis, Regional Product Division

EMPLOYMENT AND WAGES

The changes in industrial output and composition are correlated with changes in employment and the labor market. As noted in an earlier section, the most significant decline in recent years has occurred in the manufacturing and construction sectors. From 1979 to 2014, the number of full-time and part-time manufacturing jobs in the country declined at an average rate of 1.43 percent per year, with most jobs lost during the 2000s (Sjoquist 2016). In Georgia, the trend was slightly different: Manufacturing jobs increased during the 1980s and remained stable during the 1990s. However, the number of manufacturing jobs sharply dropped during the 2000s. Georgia had 553,974 manufacturing jobs in 1996, declining to 389,819 in 2014 — a drop of around 30 percent. Sjoquist (2016) estimated that between 2014 and 2035, Georgia may witness a further decline ranging from 36 to 67 percent, depending on different assumptions about the relationship between the past and future trends.

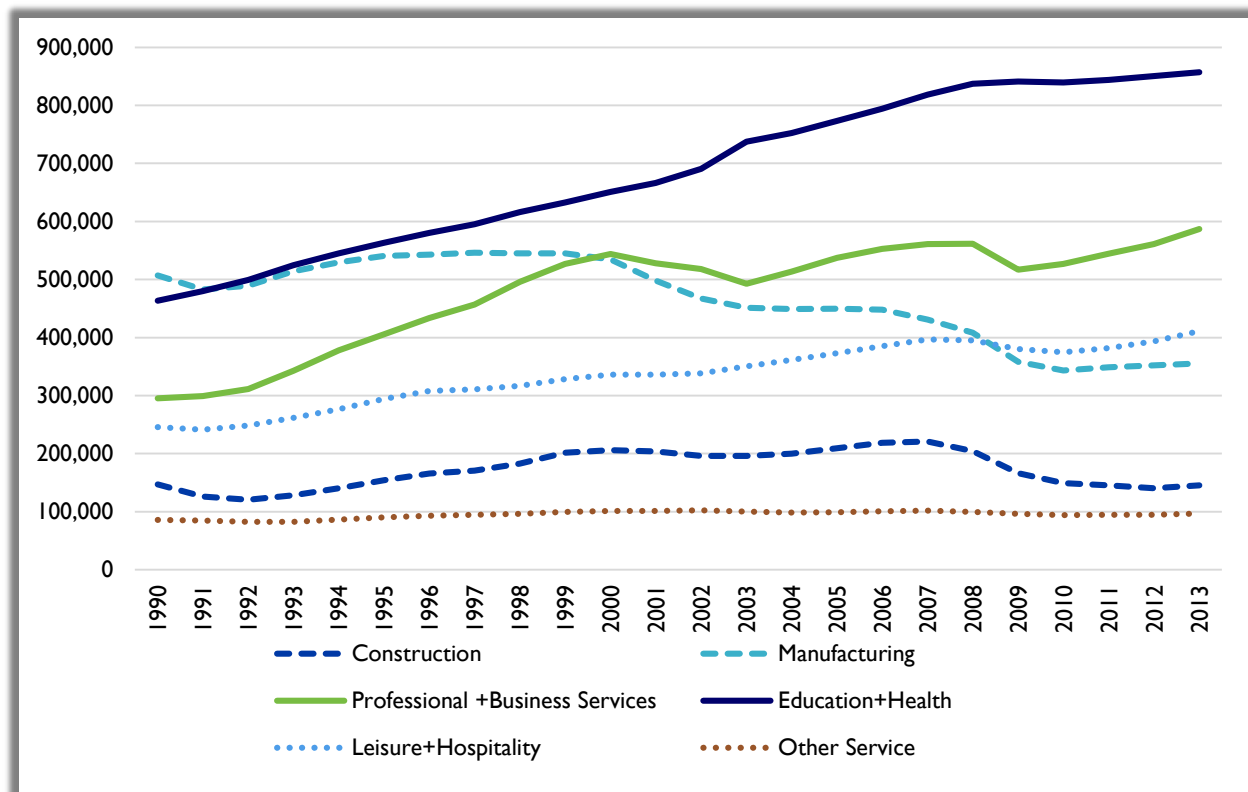
Construction jobs increased significantly during the early 2000s. They peaked at 5.43 percent in 2006, followed by a sharp drop to 3.66 percent of total jobs during the recession (Figure 13). According to employment estimates by industry from the Bureau of Labor Statistics, Georgia lost more than 58,000 construction jobs between 2001 and 2011.⁵ The construction sector registered a marginal increase in jobs in 2014, suggesting that the sector might be picking up momentum, but it is unclear whether growth in construction will continue after the economy has fully recovered from the recession (Sjoquist 2016). The manufacturing and construction sector employment share has been replaced by service sector jobs in industries such as professional and business services, education and health, and leisure and hospitality (Figure 13).

Recent Evidence on the Manufacturing Decline in the United States

The decline in manufacturing across the United States has been triggered by various factors related to globalization, technology and offshoring. Pierce and Schott (2016) argued that there is a significant relationship between the decline in U.S. manufacturing in the 2000s and the granting of permanent normal trade relations to China, which was passed by the Congress in 2000 and became effective in 2001 after China became a member of the World Trade Organization. The authors suggested that in addition to an increase in Chinese imports, offshoring by U.S. firms and a shift toward less labor-intensive production processes may have contributed to the decline in manufacturing jobs. Acemoglu et al. (2016) also confirmed the employment effects of import competition from China. Some scholars have also suggested that existing data classifications do not adequately capture the complex manufacturing processes in a multinational production economy. Bernard and Fort (2015) highlighted the case of “factoryless goods producers” (FGPs) in the U.S. economy, which are outside the government’s manufacturing sector according to official statistics but are heavily involved in the manufacture of goods (Apple Inc. is a plausible example). They suggested that reclassifying FGPs as part of manufacturing sector would shift substantial numbers of workers from the wholesale to the manufacturing category.

⁵ The Bureau of Labor Statistics includes part-time workers in the employment estimates. See www.bls.gov/cew/cewbultncur.htm.

Figure 13. Annual Average Employment in Manufacturing and Service Sectors, Georgia, 1990-2013



Source: Bureau of Labor Statistics

OPB estimates that service sector jobs increased by around 172,000 over the last decade, with a consistent increase even during the Great Recession. A large proportion of jobs in the education and health, and leisure and hospitality sectors have relatively low wages. Consequently, the increase in the employment shares of these sectors have a relatively lower impact on the revenues and public finances of the state. Furthermore, a substantial number of these jobs are vulnerable during recessionary periods, and job losses can be sharp during adverse economic times (e.g., see the trend for professional and business services in Figure 14). Thus, overreliance on these jobs within a state weakens its ability to counter business cycle fluctuations in the short run. Table 11 summarizes the employment changes in Georgia within selected occupational categories. Occupations related to management and to business and financial operations have recovered substantially in the last four years. Furthermore, knowledge- or skill-based sectors have seen noticeable growth in recent years, including jobs in the life, physical and social sciences; the arts, design, entertainment, sports and media; computers and mathematics; architecture; and engineering. Atlanta is increasingly becoming a prominent urban center that is attracting young students and workers who hold promise for Georgia's future.⁶ As noted earlier, jobs in construction and production have also started to recover, but losses during the recession were so high that the growth is still compensating for previous losses. In manufacturing, employment growth has been highest in industries such as leather and allied products, transportation equipment, primary metal and

⁶ Atlanta is consistently ranked as an attractive destination for Millennials. In 2015, money.com ranked Atlanta as the second top city for Millennials. See <http://www.bizjournals.com/atlanta/news/2015/09/30/atlanta-no-2-top-city-for-millennials.html>.

fabricated metal, and plastic and rubber products (Table 12). This pattern may partly be related to substantial growth in the auto and ancillary industry in Georgia and the Southeast (Georgia Power 2014). Department of Labor data indicate substantial growth in the number of firms in these industries (Table 12). On the other hand, the state continues to lose jobs and firms in industries such as textiles and apparel, paper and printing, and nondurable goods. This trend is projected to continue (Table 13). Lastly, the average growth in the service sector (10.9 percent) has been much higher than in manufacturing (6.3 percent), but most of the recent growth in the service sector is in low-wage occupations. Employment projections also suggest that this trend is likely to continue in the future.

Table 11. Annual Employment Growth (Percent) in Georgia by Occupations, 2005-15

OCCUPATIONS	NUMBER OF JOBS IN 2005	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Management	231,930	-1.5	-3.1	1.5	-2.0	-3.4	-4.6	1.1	3.4	3.5	5.7
Business and Financial Operations	153,650	8.8	4.7	4.0	0.6	2.3	0.4	7.2	5.9	0.9	4.0
Computer and Mathematical	93,520	-0.7	-3.2	5.8	0.1	2.1	2.7	4.0	10.1	6.1	7.1
Architecture and Engineering	54,050	0.2	5.1	2.7	-4.3	-6.7	-2.0	2.9	5.4	1.0	9.1
Life, Physical, and Social Science	22,570	-3.4	-2.6	14.2	4.7	-23.9	-4.7	-0.8	1.1	9.8	4.6
Community and Social Services Occupations	39,310	9.4	-1.1	0.9	-1.6	1.8	-0.4	-3.3	0.6	3.3	5.6
Legal Occupations	24,680	-1.3	6.1	5.6	-2.5	0.6	2.8	3.9	-1.3	-0.9	-3.2
Education, Training and Library Occupations	242,570	3.6	6.2	3.3	0.1	-2.7	-1.4	-1.4	-1.4	-1.8	0.9
Arts, Design, Entertainment, Sports, Media	33,560	6.4	14.2	-0.9	-1.0	-8.9	6.4	6.4	4.0	3.7	11.3
Health Care Practitioners and Technical	178,520	3.4	2.8	2.9	0.4	0.9	2.1	3.6	3.7	1.8	2.4
Health Care Support	79,660	-0.6	-0.6	5.0	2.0	1.5	1.4	2.6	2.6	2.3	1.4
Protective Service	94,370	-3.1	3.6	2.1	0.3	-1.4	5.3	-0.7	1.9	0.5	4.0
Food Preparation and Serving Related	325,270	2.7	4.1	1.9	-4.8	-3.9	1.1	4.0	3.2	3.6	3.8
Building and Grounds Cleaning & Maintenance	116,990	4.5	-1.2	2.9	-6.4	-6.0	1.5	0.5	-0.1	0.5	0.8
Personal Care and Service	84,400	-1.3	-4.9	-2.1	1.8	-7.5	6.4	1.8	7.5	4.3	3.8
Sales and Related Occupations	411,990	2.6	1.7	-1.2	-4.3	1.2	4.2	0.6	-1.9	2.4	3.8
Office and Administrative Support	688,980	3.1	3.4	-0.5	-4.1	-5.9	-1.0	-1.5	-1.8	0.8	1.0
Farming, Fishing and Forestry	13,650	-1.3	1.8	-13.2	-21.2	-9.2	3.6	14.0	-0.6	-6.6	-6.3
Construction and Extraction	173,670	1.2	1.0	-4.2	-14.2	-12.2	-4.6	-4.2	3.1	6.1	6.1
Installation, Maintenance and Repair	178,130	5.7	-0.6	-3.8	-6.7	-3.6	2.4	-1.1	-0.4	4.1	1.8
Production Occupations	338,810	2.1	-4.5	-4.5	-12.9	-8.8	3.6	2.4	3.9	4.7	3.2
Transportation and Material Moving	323,740	2.3	0.6	-0.1	-7.3	-4.6	1.6	0.0	4.0	7.0	2.8
All Occupations	3,904,020	2.5	1.4	0.2	-4.4	-3.7	0.9	1.0	1.7	2.7	3.1

Source: Bureau of Labor Statistics

Table 12. Post-Recession Growth in Georgia in the Number of Firms and Average Monthly Employment by Industry (2010-14)

	GROWTH IN THE NO. OF ESTABLISHMENTS	GROWTH IN AVERAGE MONTHLY EMPLOYMENT
Apparel	0.0%	-21.9%
Beverage and Tobacco Product	29.4%	23.4%
Chemical	14.1%	2.4%
Computer and Electronic Product	10.1%	-1.3%
Electrical Equipment, Appliance and Component	2.6%	14.4%
Fabricated Metal Product	0.1%	22.7%
Food	9.0%	1.6%
Furniture and Related Product	-13.2%	4.6%
Leather and Allied Product	88.9%	97.8%
Machinery	-3.0%	9.2%
Miscellaneous	-0.3%	2.8%
Nonmetallic Mineral Product	-10.1%	-3.6%
Paper	-6.0%	-1.7%
Petroleum and Coal Products	-9.8%	-7.6%
Plastics and Rubber Products	4.0%	8.2%
Primary Metal	15.5%	24.9%
Printing and Related Support Activities	-5.9%	-4.6%
Textile Mills	4.2%	1.5%
Textile Product Mills	-3.1%	-6.4%
Transportation Equipment	9.9%	26.2%
Wood Product	-6.6%	11.4%
All Manufacturing	-0.2%	6.3%
Utilities	8.15%	-0.05%
Wholesale Trade	2.62%	6.46%
Retail Trade	1.37%	7.36%
Transportation and Warehousing	8.20%	9.88%
Information	8.99%	5.34%
Finance and Insurance	3.34%	10.31%
Real Estate and Rental and Leasing	3.63%	6.48%
Professional, Scientific & Technical Svc	9.21%	16.38%
Management of Companies and Enterprises	10.33%	16.62%
Admin., Support, Waste Mgmt., Remediation	7.23%	19.21%
Education Services	13.98%	7.52%
Health Care and Social Assistance	10.01%	9.42%
Arts, Entertainment, and Recreation	11.64%	12.00%
Accommodation and Food Services	8.71%	14.63%
Other Services (Except Public Admin.)	3.76%	6.18%
All Services	6.02%	10.90%

Source: Labor Market Explorer, Georgia Department of Labor (explorer.gdol.ga.gov/industrymix/)

Table 13. Projections for Growing and Declining Industries in Georgia, 2014-24

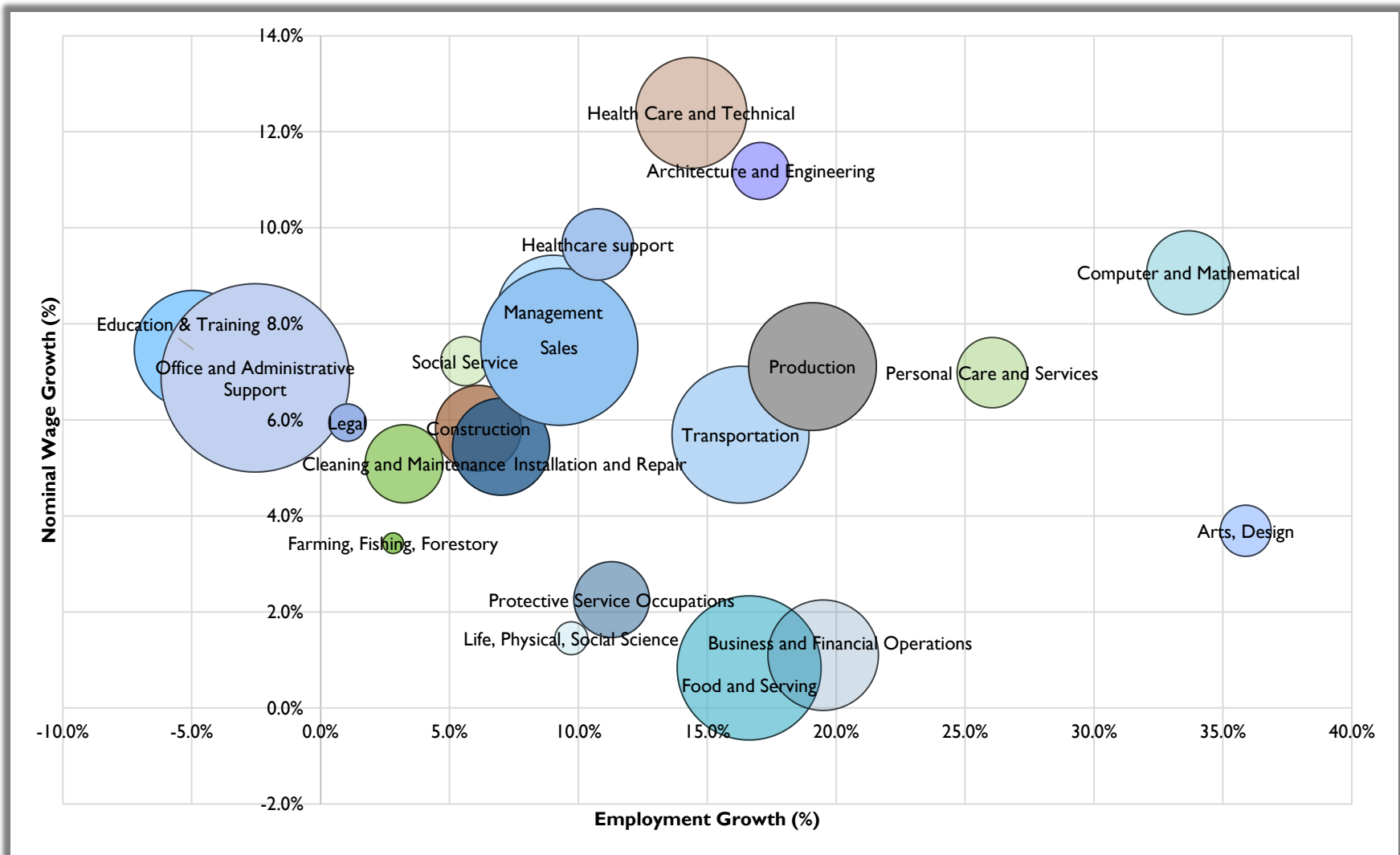
	2014 EMPLOYMENT	2024 PROJECTION	PERCENT CHANGE
INDUSTRIES WITH HIGHEST PROJECTED EMPLOYMENT GROWTH			
Other General Merchandise Stores	64,360	113,490	76.3
Employment Services	130,960	178,390	36.2
Elementary and Secondary Schools	258,640	301,440	16.6
Restaurants and Other Eating Places	318,640	358,590	12.5
Offices of Physicians	81,200	116,390	43.3
Local Government, Excluding Education and Hospitals	140,890	156,590	11.1
General Medical and Surgical Hospitals	145,780	161,130	10.5
Accounting, Tax Preparation, Bookkeeping, Payroll Services	45,260	58,910	30.1
Home Health Care Services	22,280	35,440	59.1
Wholesale Electronic Markets and Agents and Brokers	46,560	58,360	25.3
Building Equipment Contractors	51,950	62,810	20.9
Child Day Care Services	31,620	42,010	32.9
Computer Systems Design and Related Services	60,480	70,770	17.0
Individual and Family Services	20,680	30,220	46.2
Assisted Living Facilities for the Elderly	15,870	25,240	59.0
Building Material and Supplies Dealers	34,040	42,680	25.4
Offices of Other Health Practitioners	18,960	27,330	44.2
Management, Scientific and Technical Consulting Services	31,130	39,210	26.0
Outpatient Care Centers	12,820	20,640	61.0
Colleges, Universities and Professional Schools	76,620	83,560	9.1
INDUSTRIES WITH HIGHEST PROJECTED EMPLOYMENT DECLINE			
Department Stores	39,110	13,020	-66.7
Federal Government, Excluding Post Office	80,720	73,850	-8.5
Clothing Stores	29,030	22,530	-22.4
Private Households	17,430	11,260	-35.4
Newspaper, Periodical, Book and Directory Publishers	8,760	4,030	-54.0
Wired Telecommunications Carriers	29,120	24,560	-15.7
Textile Furnishings Mills	23,700	19,380	-18.2
Fabric Mills	7,040	2,840	-59.7
Fiber, Yarn, and Thread Mills	9,680	6,560	-32.3
Psychiatric and Substance Abuse Hospitals	7,580	4,710	-37.9
Management of Companies and Enterprises	60,610	58,450	-3.6
Electric Power Generation, Transmission and Distribution	16,780	15,070	-10.2
Commercial Equipment & Supplies Merchant Wholesalers	22,390	20,700	-7.5
Cut and Sew Apparel Manufacturing	2,540	960	-62.3
Miscellaneous Nondurable Goods Merchant Wholesalers	7,750	6,240	-19.5
Drycleaning and Laundry Services	8,490	7,010	-17.4
Other Electrical Equipment & Component Manufacturing	3,050	1,590	-48.0
Office Supplies, Stationery and Gift Stores	8,430	7,100	-15.8

	2014 EMPLOYMENT	2024 PROJECTION	PERCENT CHANGE
Technical and Trade Schools	8,010	6,690	-16.5
Pulp, Paper, and Paperboard Mills	7,620	6,330	-16.9

Source: Long-term industry outlook, Georgia Department of Labor (explorer.dol.state.ga.us/gsipub/index.asp?docid=386)

The employment growth in a particular sector does not provide a complete picture from the public finance perspective because employment and wages together determine the revenues that governments can collect. In the next section, we discuss earnings and income in detail, but Table 14 and Figure 14 provide a snapshot of wage trends across occupations. Figure 14 covers 2010-14, a period when the nominal wages in Georgia increased marginally for workers in low-wage occupations such as food services and protective services. The earnings of employees in low-wage occupations in Georgia have changed negligibly in the last decade. Such wage stagnation can increase the demand for social safety net expenditures (Ross and Ertas 2011). On the other hand, the wages of workers in health care and technology-based occupations such as architecture and engineering increased substantially. As noted earlier, the manufacturing sector in Georgia has started to recover, and employment and wages in the production-based occupations have seen balanced growth. Total employment in two occupational groups declined over this period: education and training, and office and administrative support. However, nominal wages for the workers in these fields increased by around 7 percent. The knowledge-based occupations have become an important component of Georgia's labor market and have grown substantially in recent years. The wages of these workers have also consistently increased during the last decade, suggesting that these occupations are relatively less affected by the business cycle. Jobs in occupations such as computers and mathematics, architecture and engineering, and art and design will be critical in the future because these high-income workers not only contribute to state income and consumption taxes but also will contribute to economic growth by improving the innovation ecosystem and competitiveness of the state.

Figure 14. Percentage Growth in Employment and Wages in Georgia by Occupation, 2010-15



Source: U.S. Bureau of Labor Statistics

Note: The size of the bubble indicates the occupation's share of total employment in 2015. Detailed tables are available upon request.

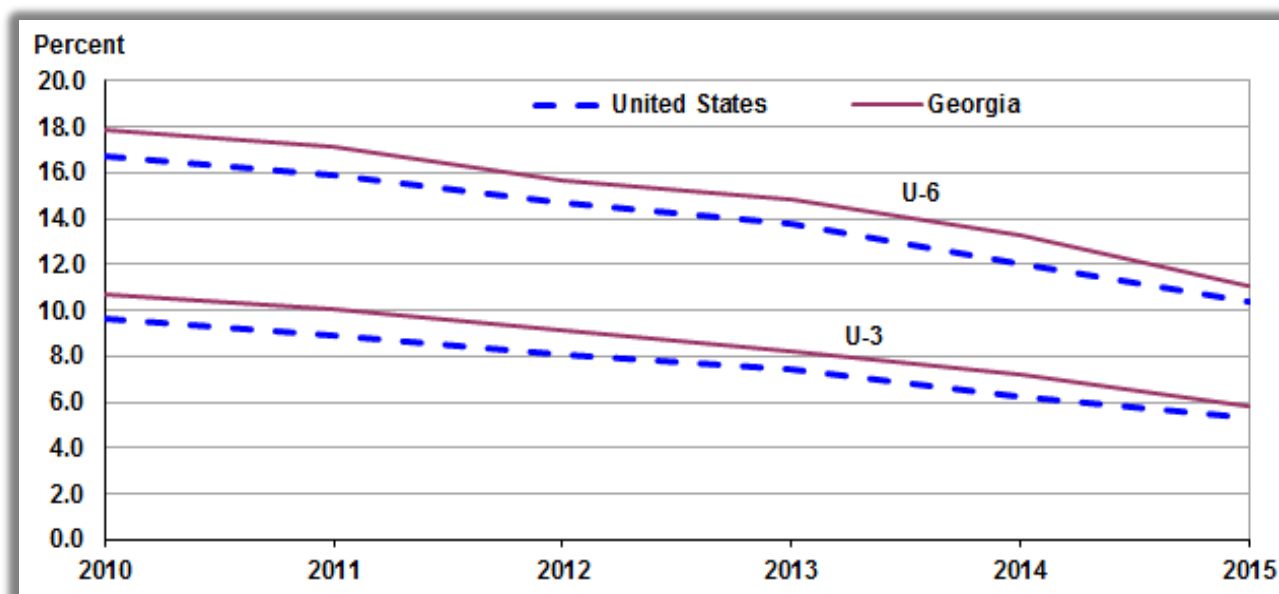
Table 14. Annual Growth in Hourly Wages in Georgia by Occupation, 2005-15

OCCUPATIONS	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Management Occupations	1.6	3.5	5.1	3.7	3.6	2.9	0.8	1	0.9	2.5
Business and Financial Operations Occupations	3.7	5.2	4.7	5.2	1.3	0.3	-0.7	0.7	1.1	-0.3
Computer and Mathematical Occupations	2.2	3.8	6.9	2.4	0.9	-0.7	3	2.7	3.4	0.4
Architecture and Engineering Occupations	2.3	5.5	2.9	5	1.9	4.6	1.8	1.6	1.6	1.2
Life, Physical and Social Science Occupations	0.1	5.6	-1.1	3.3	2.2	-1.7	-0.4	0.8	1.5	1.3
Community and Social Services Occupations	6.2	-1	2.4	4.3	0.3	-0.4	2.1	1.6	0.6	3.1
Legal Occupations	7.9	11.6	-1.5	5.1	-4.5	3.4	1.1	2.9	-2.9	1.3
Education, Training, and Library Occupations	-0.9	0.7	5	1.8	0.7	0	2.6	1.2	3	0.4
Arts, Design, Entertainment, Sports and Media Occupations	5.4	10	0	0.9	1	1.2	-3.6	1.3	2.8	2.1
Health Care Practitioners and Technical Occupations	6.9	4.1	5.1	0.2	2.1	2.8	1.6	2.7	1.8	2.9
Health Care Support Occupations	4.3	4	3.2	0.7	2.5	2.3	1.5	0.6	2	2.9
Protective Service Occupations	4.6	2	1.7	2.9	1.5	0.2	-1.4	-0.1	0.5	3.1
Food Preparation and Serving Related Occupations	5.3	5.1	4.2	4.5	2.6	0.7	-1.7	-0.4	0.8	1.4
Building and Grounds Cleaning and Maintenance Occupations	2	4.9	2.2	3	2.7	0.7	0.3	1.3	0	2.7
Personal Care and Service Occupations	4.5	8.5	-0.5	-4.9	-5.2	-1.2	-0.9	3	2.6	3.4
Sales and Related Occupations	2.9	2.4	4.4	-0.1	0.6	0.3	2.5	1.3	2.8	0.4
Office and Administrative Support Occupations	2.3	3.1	4.5	2	1.1	1	1.3	0.7	1.6	2.2
Farming, Fishing, and Forestry Occupations	6.5	5.5	1.8	8	4.4	0.7	-4.3	1.1	5.4	0.7
Construction and Extraction Occupations	1.8	2.1	4.1	1.7	2.2	2.3	2.3	0.1	0.1	0.9
Installation, Maintenance and Repair Occupations	1.7	0.1	4.3	1.9	2.1	0.5	0.7	0.9	1.5	1.8
Production Occupations	0.1	1.9	3.3	3.5	1.5	1.6	1.3	0.5	1.8	1.6
Transportation and Material Moving Occupations	2	4.2	1.4	0.4	2.3	2	5.6	0.5	0.2	-2.6
All Occupations	2.3	3.1	4.6	3.2	2.2	0.8	1.7	1.7	1.5	1.7

Source: Georgia Department of Labor

The process of structural adjustment in Georgia's industrial composition continues, mainly characterized by a decline in manufacturing. Overall, production and employment in Georgia went through a turbulent period during the last decade; however, most of the indicators are now improving. The unemployment rate in Georgia has been consistently declining since 2010 and much more sharply since 2012. Figure 15 reports two alternative measures of unemployment for Georgia by the Bureau of Labor Statistics (U-3: Official unemployment measure; U-6: Includes part-time workers and those marginally attached to the labor force), and both indicate improvement in state employment. The broadest measure of labor underutilization (U-6) for 2015 shows that the Georgia labor market is underperforming compared to the national trend, but it outperformed most of its regional neighbors (Bureau of Labor Statistics 2016). Declining unemployment and growth in the share of high-wage occupations may eventually contribute to growth in personal income and improvements in the state's fiscal health.

Figure 15. Measures of Labor Underutilization, the United States and Georgia, 2010-15



Source: Bureau of Labor Statistics (2016)

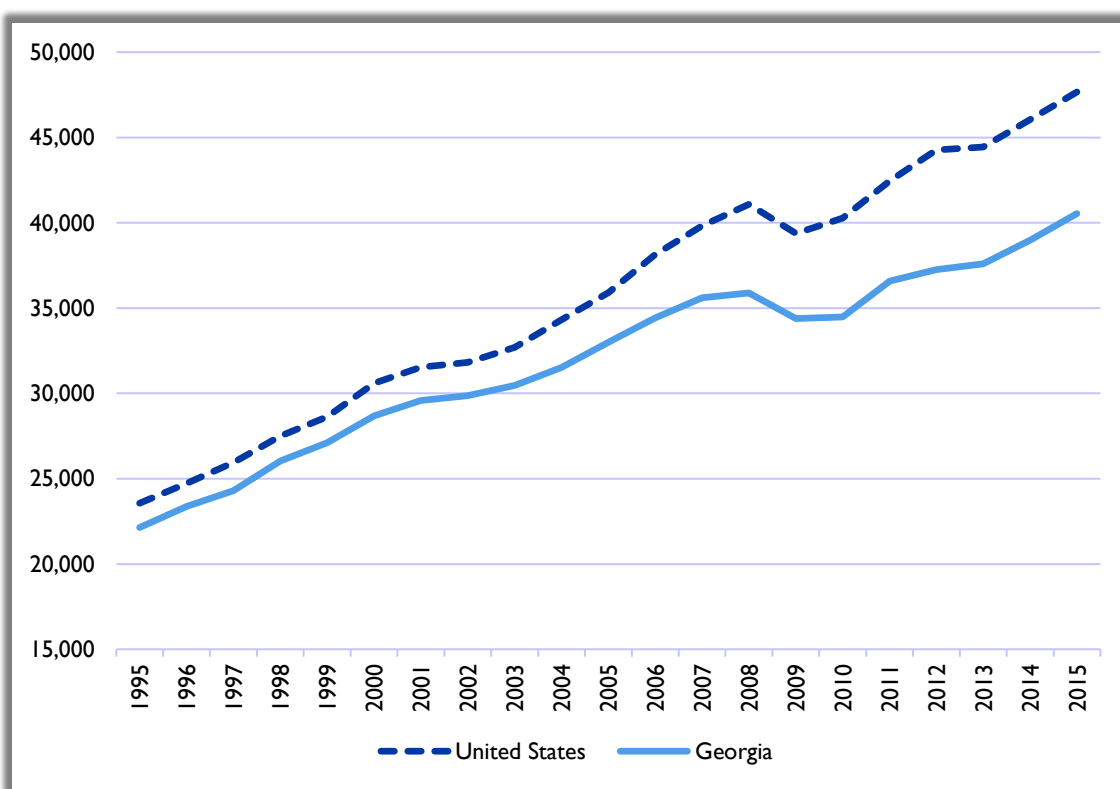
IV. Income and Consumption

Personal income is the most important determinant of the tax base because it directly affects revenues that are generated from taxes and through taxable consumption. The distribution of income is also an important factor that determines the buoyancy of the tax system and influences variation in the demand for public services. This section builds on the discussion on the economy from the previous section and provides an overview of the personal income trends in Georgia compared to other southeastern states and the country as a whole. Further, we examine changes in the income distribution in Georgia over the last 10 years and end with a brief account of consumption trends and their revenue implications.

PERSONAL AND HOUSEHOLD INCOME

In 2015, Georgia had an average personal income of \$40,551, which was significantly lower than the national average of \$47,669, and ranked 40th amongst all states.⁷ However, the state has a relatively lower cost of living compared to the national average. According to Office of Planning and Budget, it had the 14th-lowest cost of living among the 50 states (Office of Planning and Budget 2013). The income gap between the national average and Georgia's average has increased substantially in the last decade (Figure 16). Toward the turn of the millennium, the average income of a Georgian was almost 95 percent of that of an average American; however, this ratio declined sharply to 84.2 percent in 2012 but had recovered marginally to 85.1 percent by 2015 (Figure 17).

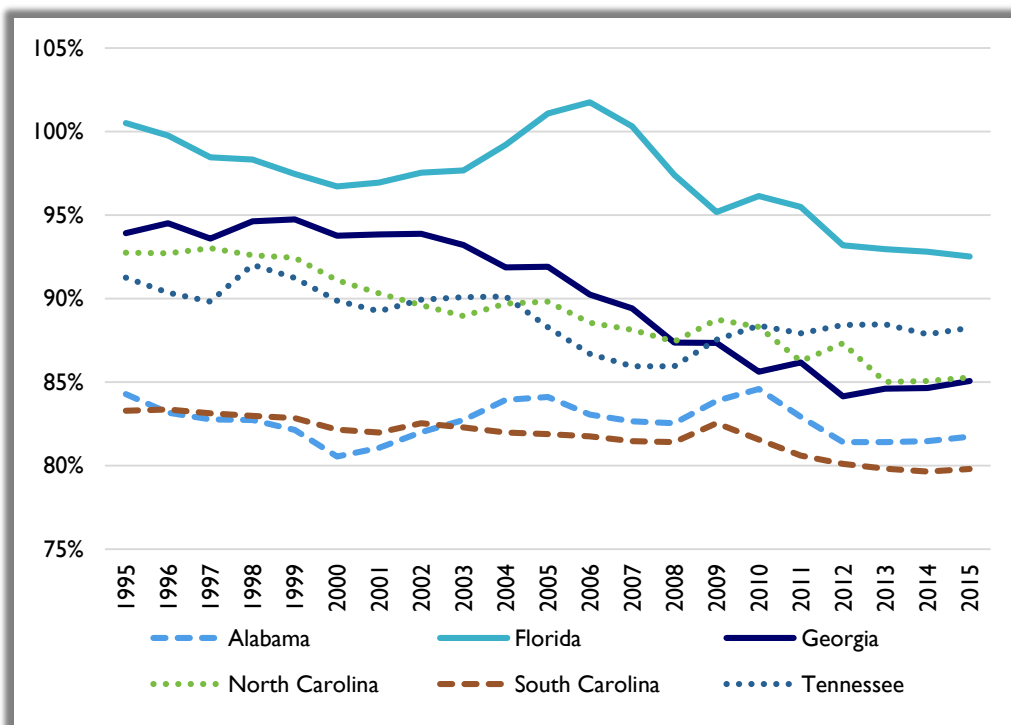
Figure 16. Changes in Nominal per Capita Income in Georgia and the United States, 1995-2015



Source: Bureau of Economic Analysis

⁷ The Bureau of Economic Analysis defines personal income as the “sum of wages and salaries, supplements to wages and salaries, proprietor’s income, dividends, interests, and rent, and personal current transfer receipts, less contributions for government social insurance.” Therefore, the personal income estimates and trends differ substantially from the per capita GDP estimates discussed earlier in this report. For a detailed methodological note, see Bureau of Economic Analysis (2015).

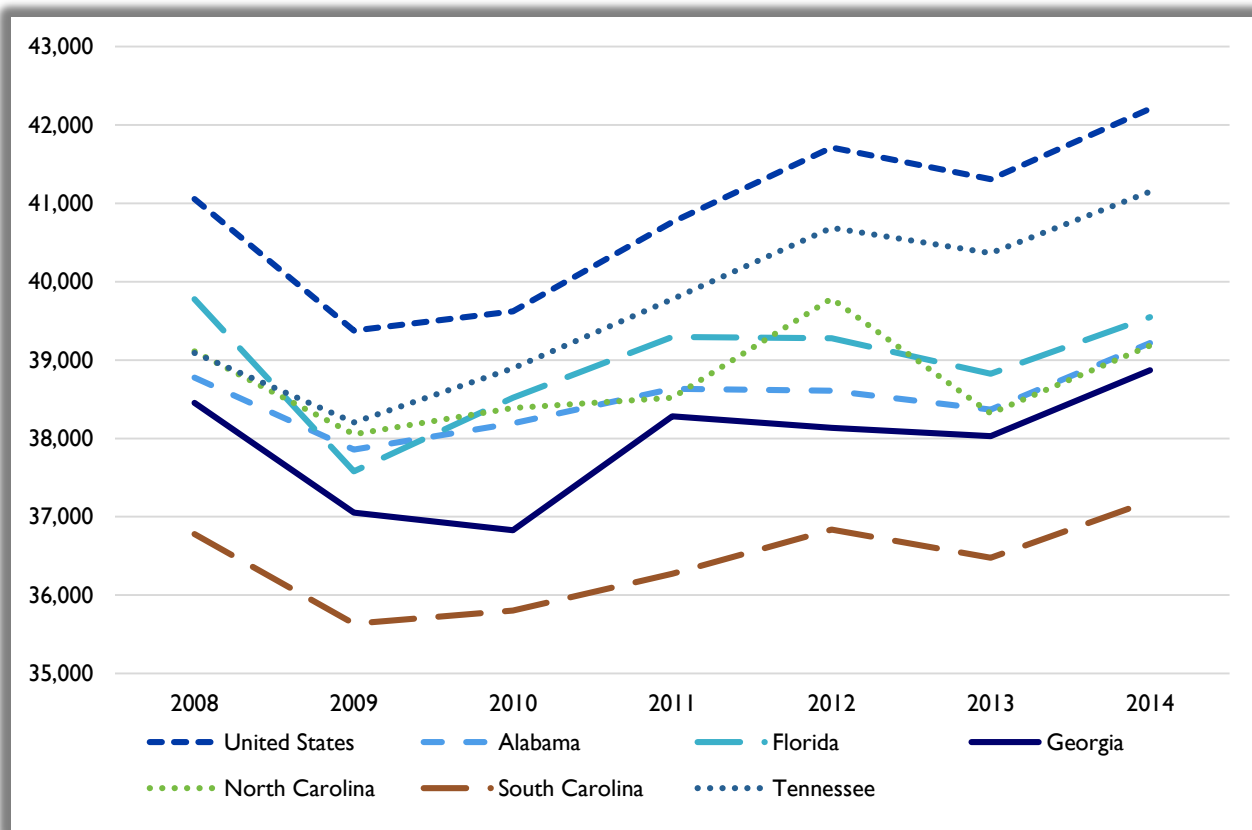
Figure 17. Per Capita Income as a Percentage of U.S. Income, Georgia and Neighboring States, 1995-2015



Source: Bureau of Economic Analysis

The decline in Georgia's per capita personal income is perhaps the sharpest of all southeastern states except Florida. Georgia's per capita personal income was only less than Florida's until 2008; however, North Carolina and Tennessee surpassed Georgia during the recession (Figure 17). In regard to real per capita personal income in recent years, Georgia is ahead of only South Carolina (Figure 18). In the post-recession period, the real income of Georgians declined until 2010 but has recovered marginally in the following years.

Figure 18. Real per Capita Income for Georgia, Neighboring States, and the United States, 2008-14

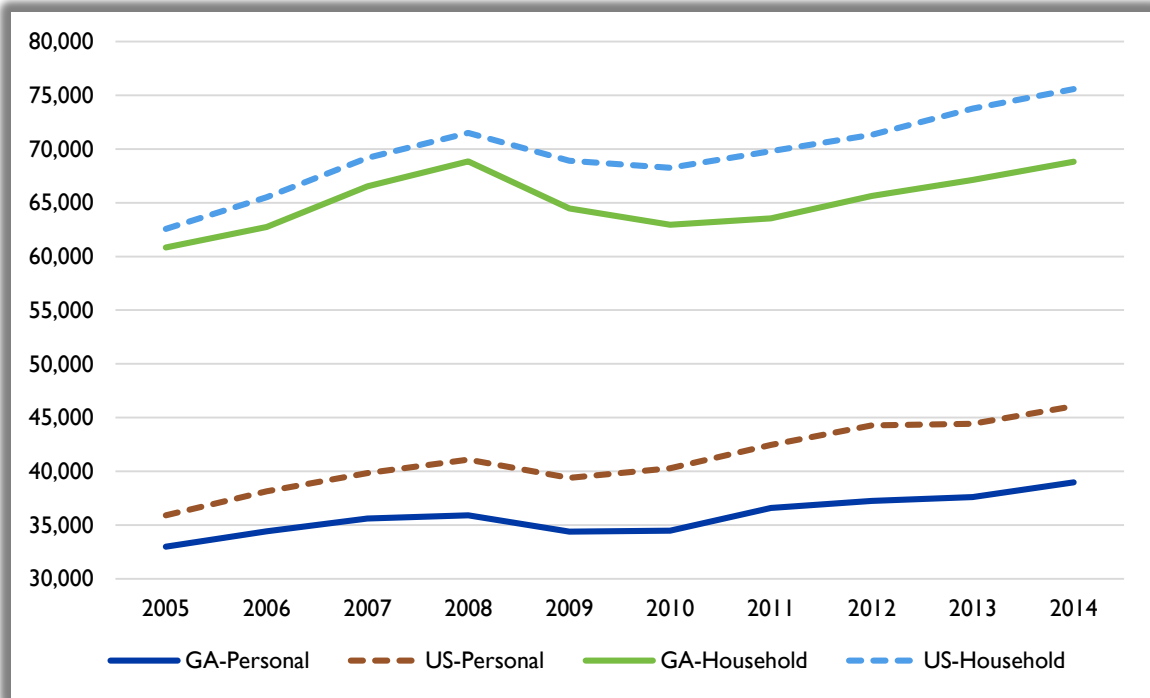


Source: Bureau of Economic Analysis

Note: Estimates in chained (real) 2009 dollars. Real personal income for states is personal income divided by the RPPs and the national PCE price index. The result is a chained dollar (using 2009 as the base year) estimate of the personal income. Per capita income is total real personal income divided by total midyear population

Patterns in household income and personal income should not vary substantially unless certain economic or demographic fluctuations affect the optimal behavior or composition of households. Figure 19 shows the personal and household income trends in Georgia and the United States during last 10 years. The patterns are relatively consistent except for a significant drop in Georgia's average household income during the recession years. During 2008 and 2009, household income in Georgia declined by 6.4 percent compared to a 4.2 percent decline in personal income. The parallel decline in national personal income was also 4.2 percent, but the drop in household income was just 3.6 percent. During 2009-10, Georgia's personal income recovered by 0.3 percent, but household income declined by an additional 2.3 percent. By 2010-2011, these patterns had begun to change: Personal income increased 6.1 percent and household income increased a meager 0.9 percent. The trend has started to converge since 2012.

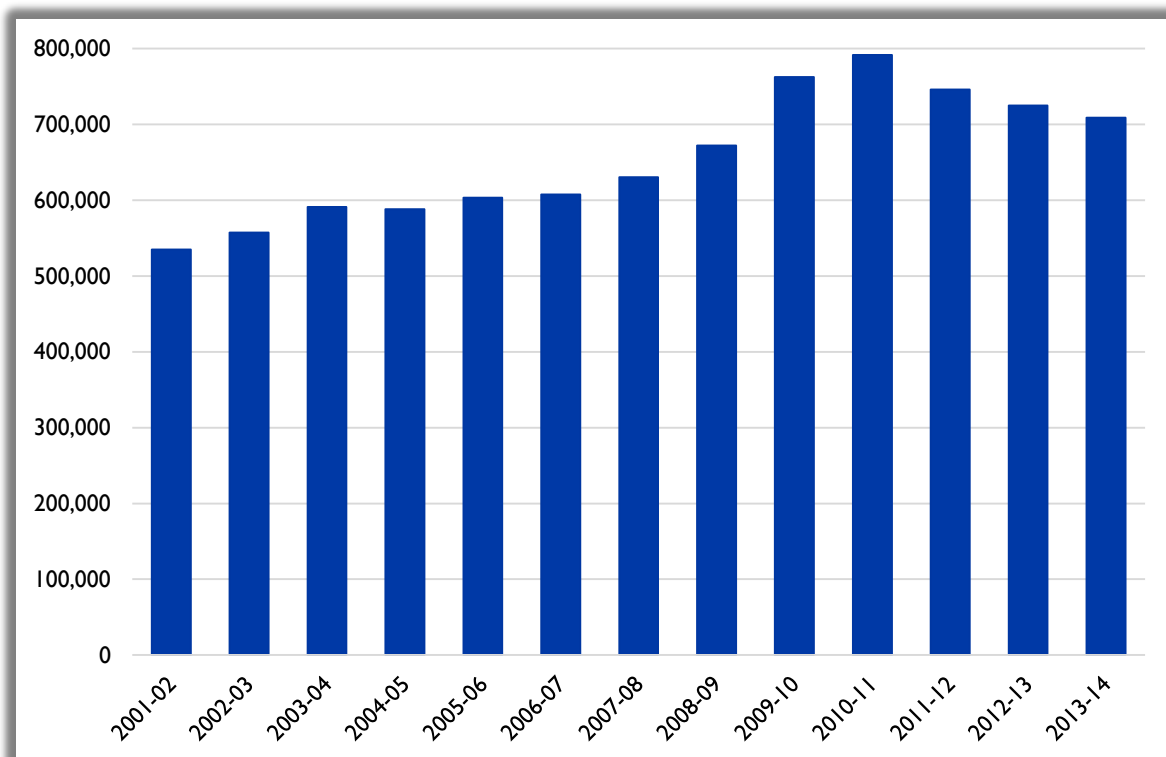
Figure 19. Personal and Household Income, Georgia and the United States, 2005-14



Sources: Personal Incomes: Bureau of Economic Analysis; Household Incomes: American Community Survey

Further investigation is needed to uncover the exact reasons for this trend, but a few issues are noteworthy. Section 2 of this report showed that the Great Recession influenced household decisions related to marriage and child-bearing that could affect family size and household income. Further, the recession may also have affected household decisions related to labor market participation and investment in human capital. The literature on the effect of recessions on postsecondary education suggests that college enrollment rises when the unemployment rate increases, particularly among 16-24 year olds, because of lack of jobs (Bell and Blanchflower 2011, Long 2004). Long (2015) found that the Great Recession also had a significant effect on the demand and supply of higher education and that college enrollment increased, especially among older students. It is possible that these dynamics prompted investment in human capital and more college enrollment during this period in Georgia (Figure 20), a factor that could be beneficial for Georgia's economy in the coming years.

Figure 20. Number of Students Enrolled in Postsecondary Institutions in Georgia, 2001-14



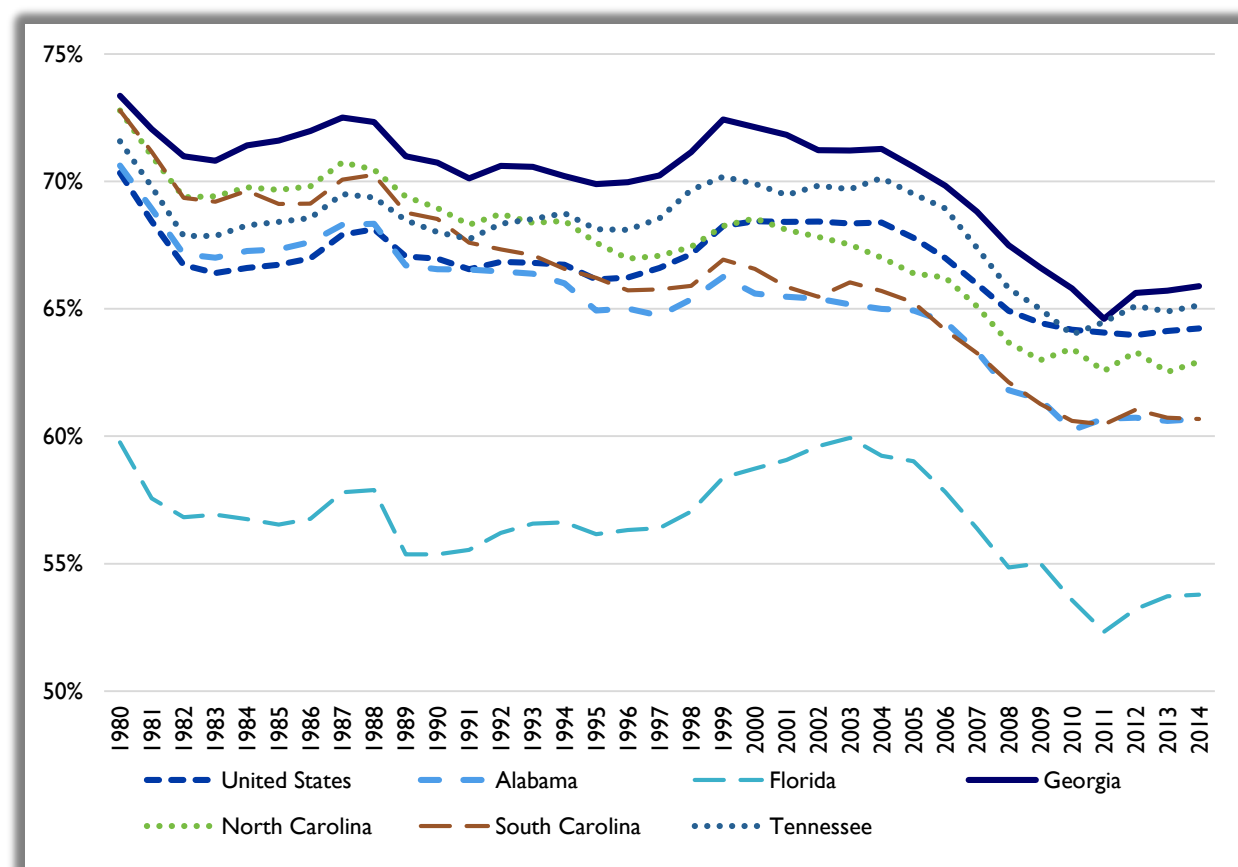
Source: 12-month enrollment component, IPEDS, National Center for Education Statistics (nces.ed.gov/ipeds/trendgenerator/default.aspx)

DECOMPOSITION OF PERSONAL INCOME

The Bureau of Economic Analysis provides information on the composition of personal income by various categories such as wages and transfers. The earnings trend indicates a decline in the share of wage income over last three decades in the country and across most of the states (Figure 21). In Georgia, the proportion of wages in personal income has been higher than the national average and those of its neighboring states; however, the share has converged because of the precipitous decline in the share of wages during last 10 years. An increase in the proportion of transfer receipts and capital income has replaced the declining share of earnings. Between 1980 and 2010, current transfer receipts (Social Security, Medicaid, TANF, etc.) as a percentage of personal income almost doubled in Georgia and most other states. In 1980, transfers constituted 11 percent of the personal income of Georgians, but the share increased to 18.5 percent in 2010, followed by a minor decline in recent years (Figure 22). The national trend resembles the trend in Georgia and most other states. The relative share of transfers in Georgia's personal income has been lower than the national average during the last three decades. However, since 2011 the state has surpassed the national average.

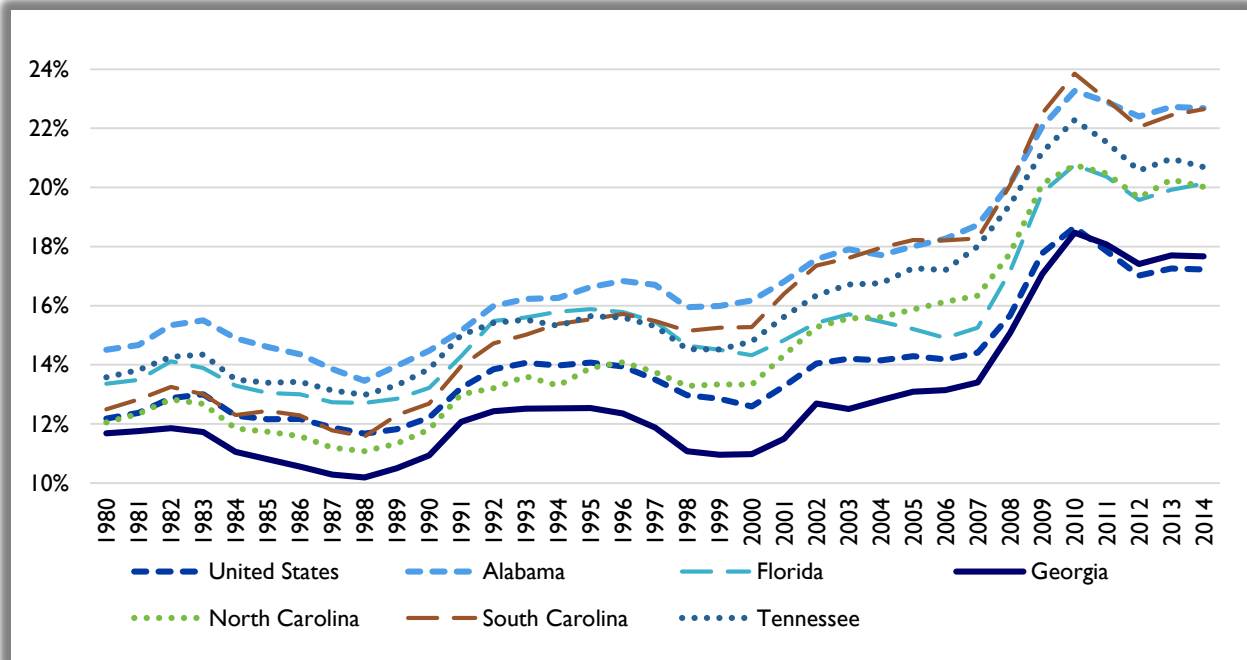
Capital income from dividends, interest and rent as a share of personal income increased consistently until the 1990s, followed by a marginal decline during the last two decades (Figure 23). In 1980, capital income under this category was 15 percent of the personal income in Georgia, and it peaked at 18.5 percent in 1989, followed by a subsequent decline to 16.4 percent in 2014. The share of capital income in Georgia's personal income portfolio has been consistently lower than the national average, but very similar to most neighboring states, except Florida. The state of Florida is an outlier on this metric given its large population of retired residents. Capital income will be an important component of Georgia's revenue as the share of elderly residents in the state increases over next 20 years and as metro Atlanta becomes an increasingly important retirement destination. The Atlanta Regional Commission (2011) estimated that the 65+ population in the 20-county Metro-Atlanta region was 8.9 percent in 2010 but is expected to increase to 12.8 percent by 2020, to 17.0 percent by 2030 and to 19.5 percent by 2040. This increase in the share of elderly residents will have significant implications for the composition of personal income and may pose significant fiscal challenges given that Georgia offers tax breaks to seniors on their retirement and Social Security income.

Figure 21. Net Earnings as a Percentage of Personal Income, Georgia, Neighboring States, and the United States, 1980-2014



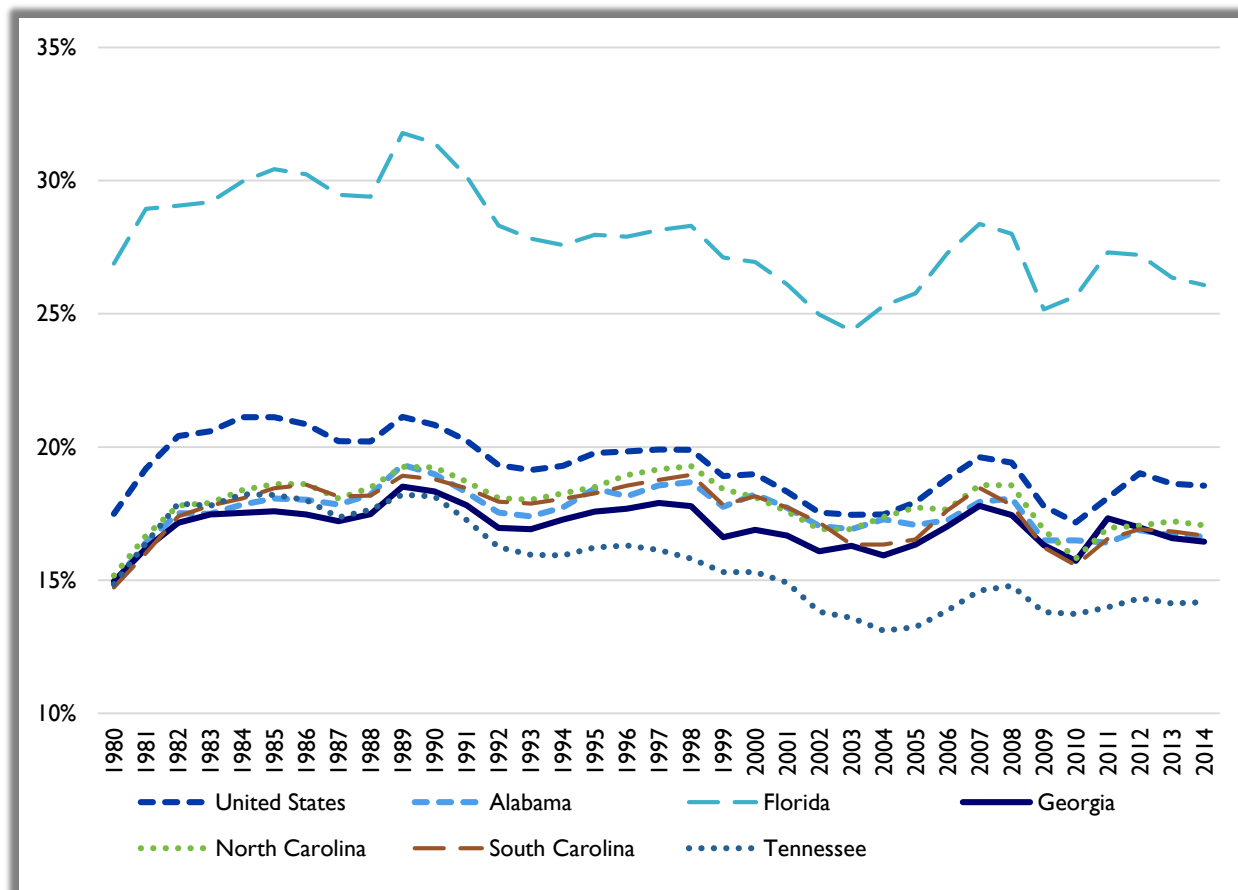
Source: Bureau of Economic Analysis

Figure 22. Current Transfer Receipts as a Percentage of Personal Income, Georgia, Neighboring States, and the United States, 1980-2014



Source: Bureau of Economic Analysis

Figure 23. Dividend, Interest, and Rent as a Percentage of Personal Income, Georgia, Neighboring States, and the United States, 1980-2014



Source: Bureau of Economic Analysis

INCOME INEQUALITY

The changes in income and employment discussed earlier in this report have a significant bearing on the distribution of income in Georgia. Over the last 10 years, the income distribution in Georgia as well as in the country has changed significantly, characterized by rising income inequality. Table 15 shows the distribution of households in Georgia and the United States across income groups during the 2005-14 period. In 2005, around 15.5 percent of households in Georgia earned more than \$100,000 (wealthy households), and 15.4 percent of households earned less than \$15,000 (poor households). In 2014, the share of wealthy households increased to 20.1 percent (a 4.7 percentage point increase), but the proportion of poor households declined to only 14.1 percent (a 1.3 percentage point decrease). The average annual growth rate in the share of households with six-digit incomes has been substantially larger than the average annual decline in the proportion of low- and middle-income households. The average gap between the mean and median household income in Georgia increased from \$15,245 in 2005 to \$19,499 in 2014, an increase of around 28 percent.

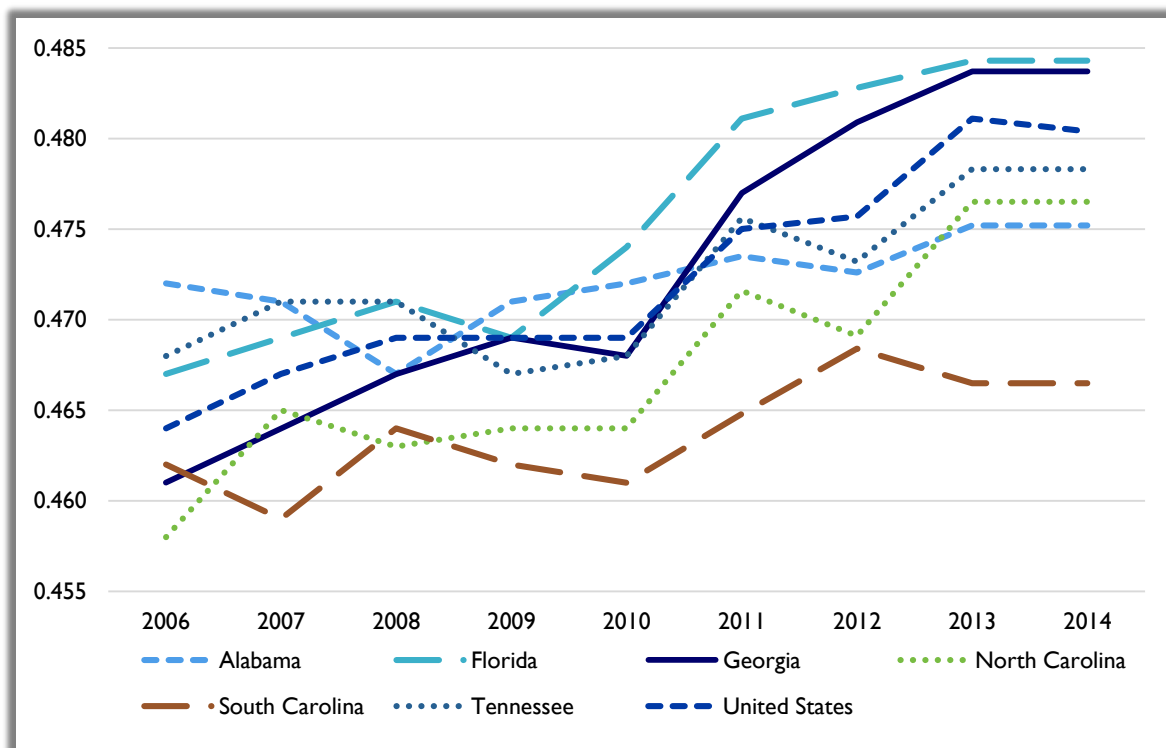
Table 15. The Distribution of Households in Georgia and the United States by Income Groups and Central Tendencies of Income, 2005-14

	GEORGIA										AVG. GROWTH
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	
Less than \$10,000	9.5%	8.8%	8.0%	7.8%	8.9%	9.2%	9.6%	9.3%	9.2%	8.5%	-1.0%
\$10,000 to \$14,999	5.9%	6.0%	5.5%	5.7%	6.3%	6.1%	6.2%	6.1%	5.7%	5.6%	-0.4%
\$15,000 to \$24,999	11.6%	11.4%	10.9%	10.6%	11.7%	12.2%	12.1%	11.8%	11.5%	11.4%	-0.1%
\$25,000 to \$34,999	11.6%	11.5%	11.0%	10.5%	11.0%	11.4%	11.0%	10.9%	11.1%	10.6%	-0.9%
\$35,000 to \$49,999	15.5%	15.1%	15.3%	14.5%	14.6%	14.2%	14.5%	14.0%	14.0%	14.4%	-0.8%
\$50,000 to \$74,999	19.1%	19.0%	19.2%	19.4%	18.2%	18.2%	18.2%	18.0%	17.8%	17.9%	-0.7%
\$75,000 to \$99,999	11.4%	11.5%	11.8%	12.0%	11.6%	11.1%	10.7%	11.1%	11.5%	11.6%	0.2%
\$100,000 to \$149,999	9.5%	10.3%	11.0%	11.5%	10.6%	10.7%	10.7%	10.9%	11.2%	11.3%	2.0%
\$150,000 to \$199,999	3.1%	3.4%	3.7%	4.1%	3.7%	3.7%	3.7%	3.9%	4.1%	4.4%	4.2%
\$200,000 or more	2.9%	3.0%	3.5%	4.1%	3.4%	3.3%	3.3%	4.0%	3.9%	4.4%	5.4%
Median Income (\$)	45,604	46,832	49,136	50,861	47,590	46,430	46,007	47,209	47,829	49,321	0.9%
Mean Income (\$)	60,849	62,744	66,521	68,850	64,461	62,967	63,554	65,623	67,134	68,820	1.4%
Median-Mean	15,245	15,912	17,385	17,989	16,871	16,537	17,547	18,414	19,305	19,499	2.9%
	UNITED STATES										AVG. GROWTH
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	
Less than \$10,000	8.7%	8.0%	7.3%	7.2%	7.8%	7.6%	7.8%	7.7%	7.6%	7.3%	-1.8%
\$10,000 to \$14,999	6.2%	5.9%	5.6%	5.4%	5.7%	5.8%	5.8%	5.6%	5.4%	5.3%	-1.7%
\$15,000 to \$24,999	12.0%	11.4%	11.0%	10.7%	11.2%	11.5%	11.4%	11.1%	10.8%	10.5%	-1.4%
\$25,000 to \$34,999	11.5%	11.2%	10.7%	10.4%	10.7%	10.8%	10.6%	10.4%	10.3%	10.0%	-1.5%
\$35,000 to \$49,999	15.1%	14.8%	14.5%	14.2%	14.4%	14.2%	13.9%	13.8%	13.6%	13.5%	-1.2%
\$50,000 to \$74,999	18.9%	19.0%	18.9%	18.8%	18.3%	18.3%	18.0%	18.0%	17.9%	17.8%	-0.7%
\$75,000 to \$99,999	11.4%	11.8%	12.2%	12.4%	12.0%	11.8%	11.7%	11.9%	11.9%	12.0%	0.6%
\$100,000 to \$149,999	10.1%	10.9%	11.7%	12.3%	11.7%	11.8%	12.1%	12.4%	12.7%	13.1%	3.0%
\$150,000 to \$199,999	3.2%	3.6%	4.0%	4.4%	4.1%	4.2%	4.4%	4.6%	4.9%	5.2%	5.7%
\$200,000 or more	3.0%	3.4%	4.0%	4.3%	3.9%	3.9%	4.3%	4.6%	5.0%	5.3%	6.8%
Median income (\$)	46,242	48,451	50,740	52,029	50,221	50,046	50,502	51,371	52,250	53,657	1.7%
Mean income (\$)	62,556	65,527	69,193	71,498	68,914	68,259	69,821	71,317	73,767	75,591	2.2%
Median-Mean	16,314	17,076	18,453	19,469	18,693	18,213	19,319	19,946	21,517	21,934	3.4%

Source: American Community Survey, One-Year Samples, American FactFinder

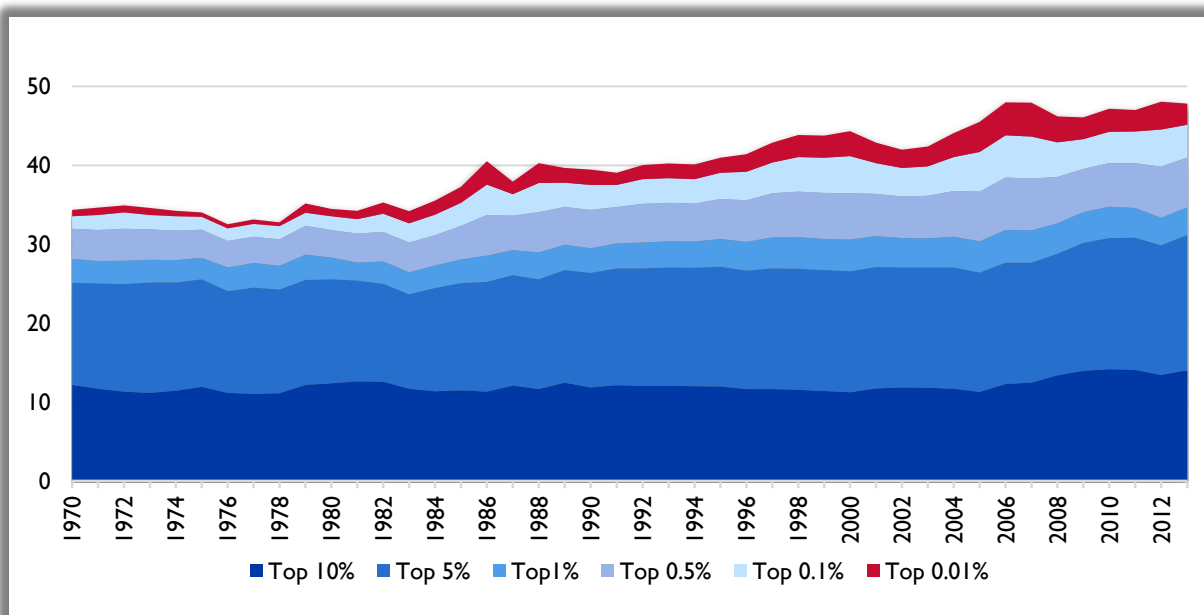
This trend of increasing income inequality is also reflected in formal measures of income inequality such as the Gini index (Figure 24). The Gini index equals zero if a society achieves perfect equality, meaning each decile of the population holds 10 percent of income. A Gini index of 1.0 signifies complete inequality, with the highest income earners “owning” virtually all of the income. Income inequality as measured by the Gini index increased substantially in Georgia during the last 10 years. In fact, just before the recession, the Gini index for Georgia was smaller than the national average and all neighboring states except North Carolina. By 2014, that had changed: The Gini index for Georgia was higher than the national average and all neighboring states except Florida. However, the rising inequality in Georgia does not seem to be driven by the “super-rich.” Figures 25 and 26 display data from the World Top Income Database, which uses IRS tax return data to estimate the income shares of the top 10 percent of Georgia and U.S. households. Figure 25 and 26 show the distribution within the top 10 percent; thus, the combined area shows the income share of the top 10 percent, but the blue area shows the income share of those between the 90th and 95th percentiles of the income distribution. The households in the top 10 percent in Georgia control a relatively smaller share of wealth compared to the national average, and the share of the top 1 percent is also relatively smaller in Georgia. However, the increase in the share of those who are in the 90-99th percentiles in Georgia since 2004 is noteworthy (blue and orange areas of the graph). This may be the group that is contributing to the increase in Gini index since 2005. These are perhaps the high paid executives in occupations (for example, health care and technical occupations and architecture and engineering occupations) discussed in the previous section. The increase in the share of high-income taxpayers is a welcome development from the perspective of state revenues, but a key challenge for Georgia is the limited social mobility of the middle- and low-income groups. Chetty et al. (2014) estimated the intergenerational mobility in the 50 largest community zones in the country, and metro Atlanta ranked at the bottom (49th) of the list. Rising income disparities will increase pressure on the social safety net, as is already evidenced by increasing SNAP (Supplemental Nutrition Assistance Program) participation rates in Georgia (Mullins et al. 2015). In summary, over the last decade, Georgia has witnessed substantial changes in employment and incomes, and the taxes and expenditures in the state are expected to respond to these changes in the next few years.

Figure 24. Gini Index for Georgia, the United States, and Neighboring States, 2006-14

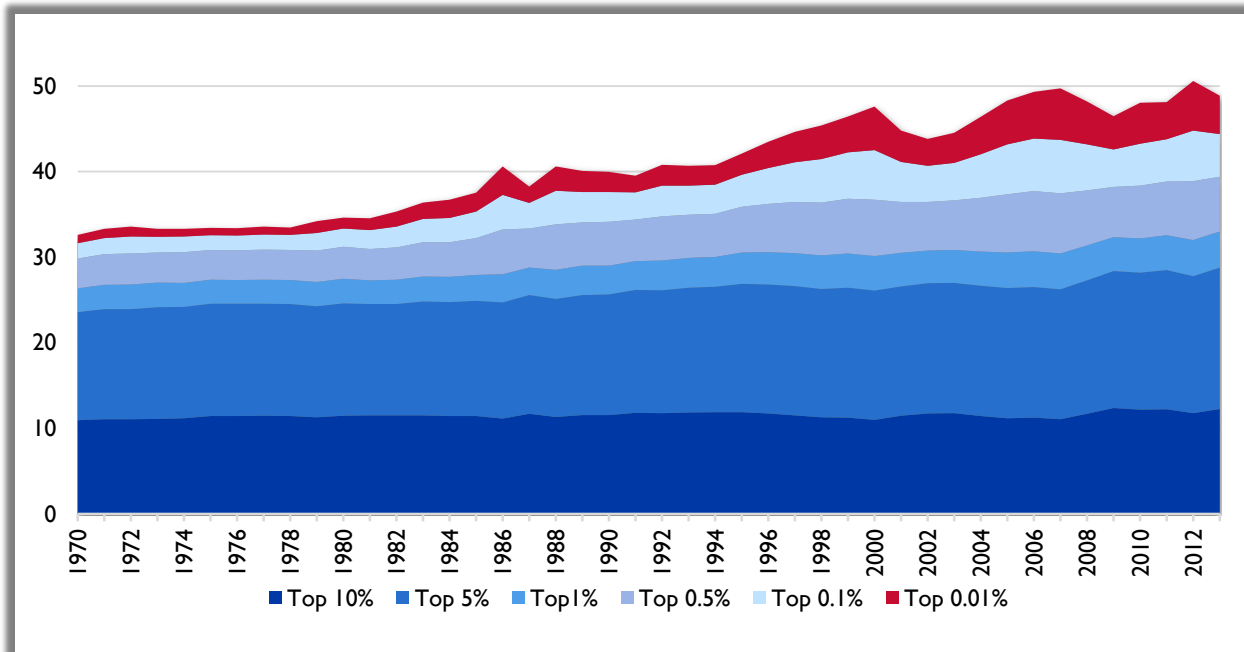


Source: American Community Survey, One-Year Samples

Figure 25. Income Shares of the Top 10 Percent of the Georgia Population, 1970-2013



Source: World Top Income Database (www.wid.world - Country:2)

Figure 26. Income Shares of the Top 10 Percent of the U.S. Population, 1970-2013

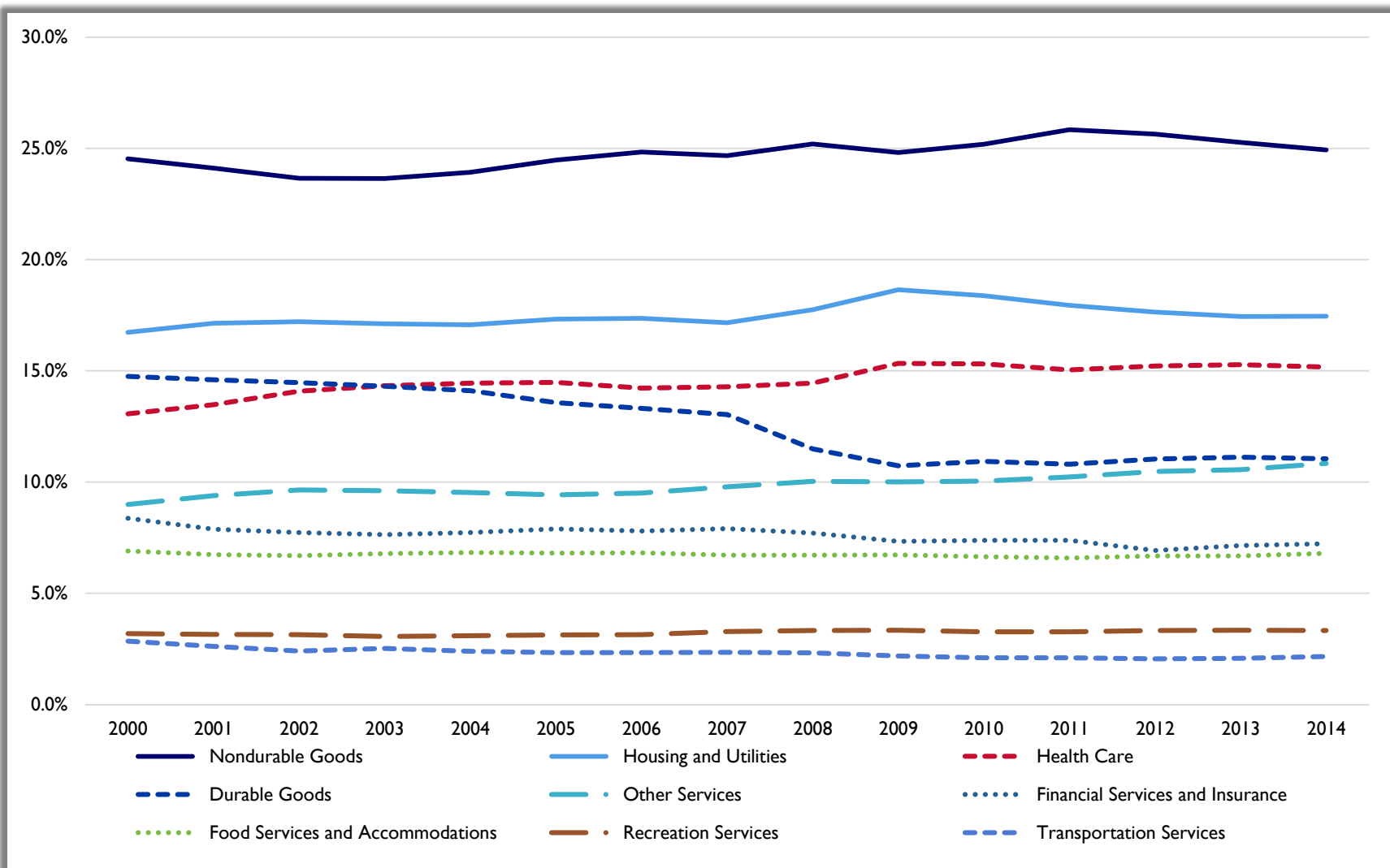
Source: World Top Income Database (www.wid.world - Country:2)

CONSUMPTION PATTERNS AND SALES TAX REVENUES

Consumption patterns are an important component of the fiscal architecture that typically affect state revenues through sales and use taxes. Figure 27 plots the changes in the consumption profile of Georgians during the 2000-14 period. Nondurable goods such as food, clothing and gasoline constitute the largest consumption category, and the share has remained relatively stable given the relatively inelastic demand for these products. Similarly, the proportion of housing and utilities has also remained fairly stable over the years. Three consumption categories have changed significantly over time: health care, durable goods and other services (highlighted with dashed lines). The share of health care increased from 13.1 percent in 2000 to 15.2 percent in 2014, which can have significant implications for revenues given the nontaxable status of most of the health care services. The share of durable goods (such as motor vehicles, furnishings and household equipment) declined from 14.8 percent in 2000 to 11.0 percent in 2014. This change is expected to negatively affect sales tax revenues because most of these items are taxed at regular rates and contribute significantly to the state revenue. Further, the share of other services and other nondurable goods has increased. The tax status of the “other” category is usually not clear, and many of these goods and services remain outside the ambit of sales and service tax. Recent tax reform commissions in states such as Georgia and South Carolina have recognized this challenge and have brought a range of new goods and services under the ambit of sales and service taxes (Special Council on Tax Reform and Fairness for Georgians 2011, Taxation Realignment Commission 2010).

These consumption patterns, along with other factors such as an increase in legislated exemptions, have led to a substantial decline in Georgia's sales tax revenue, a trend that is true in several other states as well (Buschman 2015, Taylor 2013, Wong 2006). Buschman (2015) examined factors that may explain the declining sales tax revenue in Georgia and found that sales tax exemptions and more consumption of services have contributed significantly to this decline. In addition to consumers, a substantial share of the sales tax revenue comes from producers. According to an estimate by Christie (2011), consumers paid approximately 63 percent of Georgia's total state sales tax in 2009, with the remainder having been paid by producers. Buschman (2015) also showed that growth in the sale tax from producers has not kept pace with growth in personal income and production during the last 15 years. In the future, this shrinking sales tax base may pose a significant challenge to Georgia's fiscal health.

Figure 27. Trends in Consumption Expenditures in Georgia, 2000-14



Source: Bureau of Economic Analysis

V. Additional Economic Issues

In addition to demographic and key economic factors discussed in the previous sections, other processes have long-term public finance implications for Georgia. In this section, we focus on three key processes: globalization, technology and innovation. Globalization has altered the cost structure associated with labor and capital mobility and can have a substantial impact on future economic activity and revenues at the state and local levels. Similarly, technology is transforming production processes, revolutionizing information flows and creating new market structures. State and local governments must face the challenge of “catching up” with this new environment. Lastly, innovation is the centerpiece of current economic development strategies around the globe and is the key to future jobs, business growth and revenues. Subnational jurisdictions that are not paying adequate attention to these factors may find it difficult to remain competitive in the long run.

GLOBALIZATION

Over the past two decades, policymakers have been concerned that globalization and associated changes would lead to intense intergovernmental competition for economic activity and revenues. The enhanced mobility of factor inputs may make it difficult for governments to sustain the tax base required for the optimum provision of local public goods. The literature on tax competition suggests that the proverbial “race to the bottom” has not completely panned out at the national level (except maybe in the European Union) due to several factors, including the lack of perfect capital mobility and appropriate adjustments by countries in regard to their expenditure and revenue streams (Devereux and Loretz 2012, Troeger 2013).

At the state and local levels, the evidence is mixed. Some observers point to the decline in capital taxes and the adoption of incentives to suggest that states may be engaging in a race to the bottom. Others provide contrary evidence (Chirinko and Wilson 2013, Deskins 2010, Leiser 2015). Although it is plausible that interstate competition may not be hampering state and local revenues in a major way, some studies have suggested that the factors associated with globalization are shaping the fiscal dynamics. For instance, Chirinko and Wilson (2013) argued that the decline in state capital taxes may not be driven by competition but rather by aggregate shocks such as macroeconomic conditions, and tax rate and input costs abroad. There is also increasing discussion about the impact of globalization on the middle and working classes in industrialized economies (Milanovic 2016, Stiglitz 2016). Stiglitz (2016) suggested that the benefits of globalization have mostly gone to the top 1 percent in the industrialized economies and to a section of the middle class in developing economies. Milanovic (2016) identified globalization as one of the factors that has led to the stagnation of real wages of the middle class in countries such as the United States, a key component of the tax bases of state and local governments. However, the forces associated with globalization are here to stay as governments work toward trade agreements such as the Trans-Pacific Partnership. State summaries produced by the federal government suggest that sectors such as transportation and agriculture in Georgia will benefit from the trade deal (Department of Commerce 2015, U.S. Department of Agriculture 2016), but its actual impact on the economy and finances is still unknown. However, in the long run, such policies and programs are expected to make state and local finances more susceptible to international factors, and the states need to prepare.

TECHNOLOGY

Technology is affecting production and governance in a variety of ways. State and local governments will have to adapt to changes in production processes and service delivery, and prepare for corresponding changes in revenues and expenditures. Two key technological trends have substantial revenue implications and have received some attention during the last decade: the increase in e-commerce and new types of Internet-based services, and changes in the capital-labor mix brought on by technology. The impact of e-commerce on state sales tax revenue has been widely debated. The sales tax streamlining movement began in the 1990s, and the issue has received substantial attention ever since. The current nexus rules require that a business have a physical presence in the state before sales tax can be collected, preventing several states from collecting sales and use taxes on rapidly growing e-commerce sales. In Georgia, Amazon.com has collected sales tax since September 1, 2013, but several online merchants still do not collect the tax. According to a Fiscal Research Center estimate, Georgia lost approximately \$250 million in revenue during calendar year 2014, and the total would have been around \$300 million if Amazon.com had not started collecting tax (Buschman 2015). Other studies have suggested that online customers are highly responsive to variations in sales tax and that avoiding sales tax collection provides a competitive advantage to firms that is reflected in their stock prices (Bruce et al. 2015, Einav et al. 2014, Hoopes et al. 2015). The pending Marketplace Fairness Act may alter the current scenario and will enable state governments to collect more sales tax on such transactions. However, the growing complexity of the goods and services that are being provided through the Internet is likely to continue. The rise of the sharing economy and app-based services are examples of e-commerce challenges. The commerce associated with conduits such as Uber, Airbnb and Craigslist is an issue that governments around the world are struggling with. The tax treatment of virtual currencies such as Bitcoin or crowdfunding-based income (e.g., Kickstarter) is still unclear. Similarly, several tax reform commissions have struggled with the rise of subscription-based services such as Netflix or software service agreements (Pathak et al. 2016). Broadly, the digital economy presents challenges related to the identification and valuation of commerce as well as locating the transactions (Nellen 2015). These challenges are likely to become more complex as the digital economy expands to uncharted territories.

Technological changes also have significant implications for the mix of labor and capital in the economy. Advances in technology can reduce the cost of capital inputs, placing labor at a substantial disadvantage. Karabarounis and Neiman (2014) used data from 59 countries and found a statistically significant reduction in the labor share in 37 countries and an increase in only nine countries during the 1975-2012 period. They suggested that changes in technology, particularly those associated with computers and information technology, were one of the key factors driving this change. They also ran additional analyses for U.S. states and found a decline in labor share in 34 states. Georgia fell almost in the middle in their calculations, with a small decrease in labor share.

Technology is also causing substantial changes in the labor market and has implications for future jobs and earnings. Increased adoption of artificial intelligence is changing how goods and services are provided (e.g., automobiles), which will likely affect wages and state revenues. In addition, the automation of several occupations in retail, hospitality and food services may affect employment at the lower end of the wage distribution. Pierce and Schott (2016) suggested that factors associated with globalization may also accelerate the adoption of technology. For example, they found evidence that

China's export competition influences the labor-capital mix in U.S. manufacturing. Technology has also made outsourcing and the offshoring of jobs much easier, and geographical boundaries no longer limit production processes. The challenge is particularly relevant for the Georgia economy, which increasingly relies on the service sector. High-end service industry jobs are much more mobile than manufacturing jobs, and continuous efforts to maintain competitiveness are essential to retain these jobs. Appropriate investments in education and human capital are necessary to maintain regional competitiveness.

INNOVATION

Economists have recognized the link between innovation and economic growth for a long time, but the connection between innovation and regional development has garnered increasing attention during the last two decades (Asheim and Gertler 2009, Tödtling and Trippel 2005). In recent years, there has been substantial emphasis on innovation at the federal and state levels, with a focus on both public sector and private sector innovation.⁸ Public sector interventions typically involve direct government spending on innovation or tax credits for the private sector; the latter is becoming an increasingly important policy tool at the state level. The innovation ecosystem in Georgia is relatively weak, which may help explain the decline in manufacturing in the state. The recent Georgia Manufacturing Survey revealed that fewer than 10 percent of manufacturers in the state use innovation as their primary business strategy (Youtie et al. 2014). Georgia also lags in other measures of innovation such as patents and research and development (R&D) expenditures. Table 16 lists selected indicators for Georgia and the neighboring states. In 2010, the ratio of patents to 10,000 residents for Georgia (2.3) was substantially lower than the national average (3.9) and behind North Carolina and Florida. During 2000-10, the state-to-national ratio declined by around 5 percentage points. The state produces a moderate number of STEM (science, technology, engineering and mathematics) PhDs and is behind North Carolina and Florida among its neighbors. Georgia also spends less on R&D than its neighbors and is more reliant on the universities and academic institutions for R&D expenditures (Liu 2013).

As innovation becomes critical to retaining manufacturing and service sector jobs in the global economy, state and local governments will have to foster innovation through investments in R&D, higher education and innovation infrastructure such as incubation centers and facilitating university-industry partnerships. Further, R&D tax credits are becoming increasingly popular among states, and some studies suggest that they may foster innovation and improve private R&D expenditures (Wilson 2009, Wu 2005). In summary, Georgia will have to consider more strategies and possibly spend more to foster innovation in the coming years. This is particularly important given the challenges arising from increased competition for economic activity among the states and other emerging economies.

⁸ See National Innovation Council and Office of Science and Technology Policy. 2015. A Strategy for American Innovation, http://www.whitehouse.gov/sites/default/files/strategy_for_american_innovation_october_2015.pdf.

Table 16. Patents and STEM PhDs in Georgia, the United States, and Neighboring States, 2000 and 2010

	DESIGN PATENTS	UTILITY PATENTS	TOTAL PATENTS	PATENTS PER 10,000	STEM PHDs
2000					
Georgia	214	1,312	1,541	1.882	453
Alabama	58	337	395	0.888	277
Florida	491	2,605	3,129	1.957	567
Mississippi	29	184	213	0.749	125
N Carolina	340	1,845	2,196	2.729	603
S Carolina	97	531	629	1.567	193
Tennessee	156	782	963	1.693	286
Total U.S.	11,284	85,068	97,011	3.00	19,787
2010					
Georgia	257	1,905	2,194	2.285	739
Alabama	87	444	538	1.133	339
Florida	670	2,978	3,724	1.993	1,173
Mississippi	24	145	172	0.582	187
N Carolina	271	2,636	2,922	3.102	973
S Carolina	124	517	652	1.425	255
Tennessee	105	925	1,037	1.647	397
Total U.S.	12,612	107,792	121,179	3.95	27,001

Source: Liu (2013)

VI. Fiscal Structure and Institutions

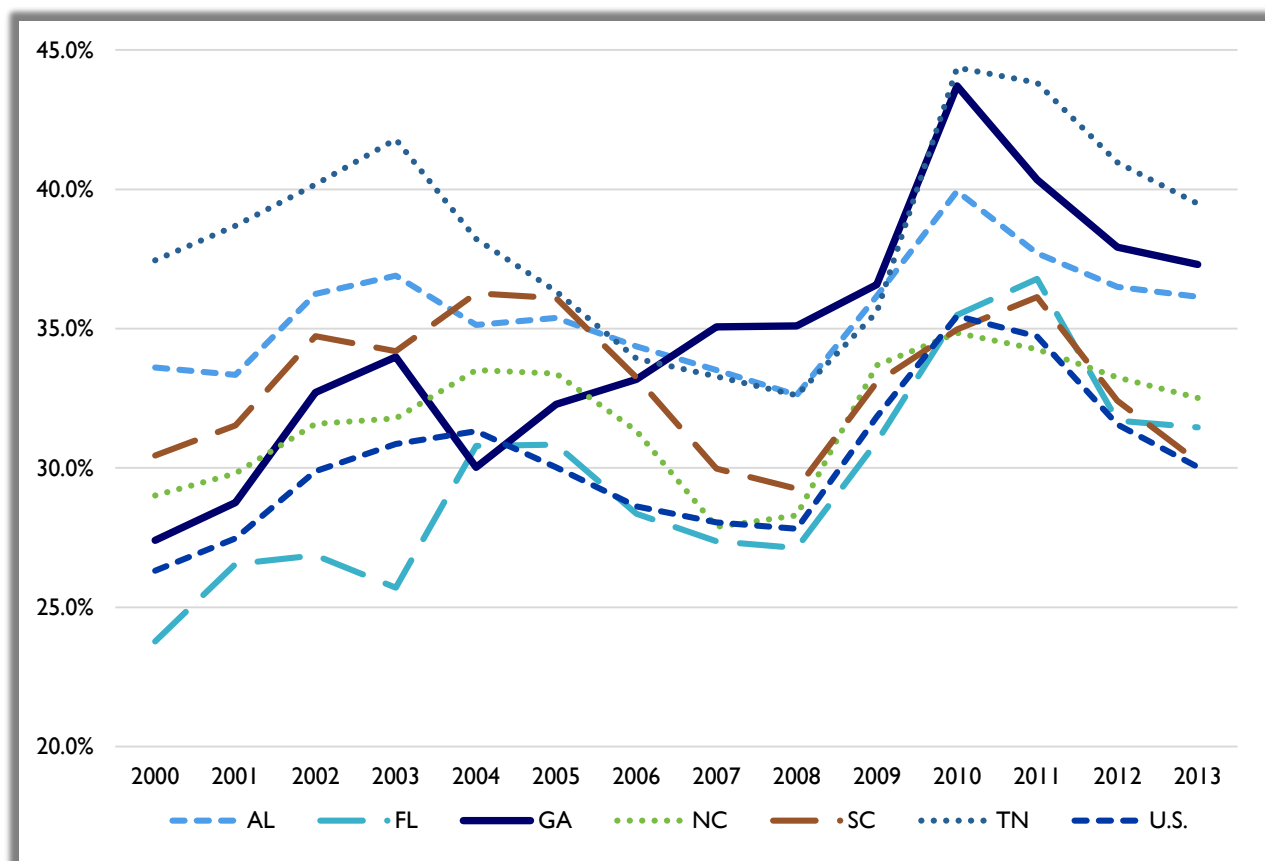
Structural changes in Georgia's economy have significantly affected state finances. The state has experienced fiscal problems throughout the last decade, brought on by these structural changes as well as by inefficiencies in the revenue system.⁹ This section provides an overview of the fiscal structure of Georgia and then highlights some key problems and areas of improvement. State policymakers expect future economic growth to counteract some of the pressures that the state is currently facing. However, a long-term fiscal reform strategy is essential to address the key challenges.

⁹ The state fiscal institutions are not a major issue in Georgia because the state only has a balanced budget requirement and does not have statutory or constitutional limits on taxes and expenditures.

REVENUES

Georgia's revenue structure depends on a combination of general funds, intergovernmental revenue from the federal government and other funds (e.g., lottery, tobacco settlement, intrastate funds). Almost one-third of state revenue comes from the federal government and is used for a variety of public programs. Most federal funds are spent on health care (Medicaid and PeachCare), education (students with disabilities, low-income students, etc.), social assistance (TANF, child and elderly services) and transportation. Figure 28 shows the federal share of state revenue during 2000-13 as a percentage of Georgia's general revenue. Georgia's share of federal revenue was almost the same as the national average in 2000 but has increased since the mid-2000s. The Great Recession and subsequent stimulus package caused a spike in the federal share across the states and especially in Georgia. Federal funds have tapered in recent years. Compared to neighboring states, Georgia has the highest share of federal revenues after Tennessee. The increase in the share could be partly due to an increase in poverty and relatively lower state spending. For FY 2016, OPB estimated that individual income tax will contribute around 44 percent to state funds (Table 17). General sales tax constitutes almost a quarter of total state revenue, followed by other taxes and corporate income tax.

Figure 28. Federal Share of State Revenue, 2000-13



Data Source: Pew Charitable Trusts' analysis of U.S. Census Bureau Data (<http://www.pewtrusts.org/en/multimedia/data-visualizations/2014/fiscal-50-ind1>)

Notes: The indicator divides the total amount of federal revenue to the state by the state's total general revenue.

Table 17. Revenue Sources of the State of Georgia, FY 2016, Estimates

REVENUE SOURCE	REPORTED FY 2015 (\$)	SHARE (%)	ESTIMATED FY 2016 (\$)	SHARE (%)
Income Taxes-Individual	9,678,524,026	44.3	10,084,280,366	43.9
Income Taxes-Corporate	1,000,536,425	4.6	985,335,000	4.3
Sales Tax -General	5,390,353,066	24.7	5,432,889,000	23.6
Motor Fuel Tax	1,025,819,044	4.7	1,599,051,300	7.0
Other Taxes	2,013,626,917	9.2	2,218,577,601	9.6
Interest, Fees and Sales	1,325,883,555	6.1	1,303,764,138	5.7
Lottery Funds	982,460,046	4.5	1,008,098,562	4.4
Tobacco Settlement Funds	138,441,332	0.6	138,630,751	0.6
Miscellaneous	307,052,230	1.4	219,847,078	1.0
Total Revenues	21,862,696,643	100.0	22,990,473,796	100.0

Source: The Governor's Budget Report, FY 2017

(opb.georgia.gov/sites/opb.georgia.gov/files/related_files/site_page/FY%202017%20Governor%27s%20Budget%20Report.pdf)

In regard to state revenues, Georgia's performance has lagged behind most other states during the last decade. The real per capita general fund revenue of the state peaked in 2000 and has declined ever since, particularly after 2008. After a brief recovery, the estimated FY 2016 per capita revenues are still 14 percent below the 2001 peak (Bourdeaux 2015). In FY 2013, the state government collected \$2,381 per capita, substantially less than the pre-recession \$2,630 per capita in FY 2005. Georgia is ranked at the bottom of all states for per capita own-source general revenue (Tables 18 and 19). However, revenues from income tax provide a consistent fiscal stream that helps to maintain the state's credit ratings despite overall low revenues (Table 20). One of the reasons for low revenues is a decline in state taxes as a percentage of income, but more research is required to clearly identify the factors that have led to this recent decline. On average, Georgia taxed around 5.9 percent of personal income during 1989-2001 but only 4.8 percent during 2009-15 (Bourdeaux 2015). The economic growth of the 1990s supported the tax cuts, but the slowdown during the 2000s characterized by the two recessions has led to a deterioration in state finances.

Table 18. Georgia's State Revenue Portfolio (2013 dollars)

	1995		2005		2010		2013	
	PER CAPITA	RANK	PER CAPITA	RANK	PER CAPITA	RANK	PER CAPITA	RANK
General Revenue from Own Sources	\$2,344	44	\$2,630	49	\$2,206	50	\$2,381	50
Taxes (i)	\$1,869	40	\$2,042	42	\$1,608	50	\$1,783	49
Property Tax	\$6	24	\$9	24	\$9	21	\$6	22
General Sales Tax	\$697	23	\$692	34	\$529	40	\$528	41
Selective Sales Tax	\$182	50	\$216	50	\$180	50	\$213	49
Individual Income Tax	\$757	19	\$954	19	\$763	26	\$878	28
Corporate Income Tax	\$129	23	\$93	38	\$74	35	\$80	41
Motor Vehicle License Tax	\$41	46	\$37	46	\$31	46	\$46	42
Other Taxes	\$57	45	\$41	50	\$21	50	\$32	49
Charges and Miscellaneous Revenue	\$475	44	\$588	49	\$598	48	\$598	49
Current Charges	\$262	45	\$325	45	\$384	45	\$368	47
Miscellaneous General Revenue	\$213	42	\$263	47	\$214	49	\$230	48
Intergovernmental Revenue	\$1,029	36	\$1,284	46	\$1,762	39	\$1,463	41
Federal Government	\$1,017	32	\$1,264	46	\$1,734	37	\$1,433	39

Source: Bourdeaux (2015)

Table 19. Georgia's State and Local Revenue Portfolio (2013 dollars)

	1995		2005		2010		2013	
	PER CAPITA	RANK	PER CAPITA	RANK	PER CAPITA	RANK	PER CAPITA	RANK
General Revenue from Own Sources	\$4,650	33	\$5,158	44	\$4,953	47	\$4,960	49
Taxes (i)	\$3,141	32	\$3,580	38	\$3,282	44	\$3,323	47
Property Tax	\$885	33	\$1,070	34	\$1,149	34	\$1,011	33
General Sales Tax	\$955	13	\$998	22	\$917	27	\$916	26
Selective Sales Tax	\$275	48	\$322	47	\$289	49	\$322	47
Individual Income Tax	\$757	23	\$954	21	\$763	29	\$878	33
Corporate Income Tax	\$129	24	\$93	39	\$74	35	\$80	42
Motor Vehicle License Tax	\$41	46	\$37	49	\$31	48	\$46	48
Other Taxes	\$101	45	\$106	51	\$59	50	\$71	51
Charges and Miscellaneous Revenue	\$1,509	25	\$1,578	46	\$1,671	44	\$1,637	44
Current Charges	\$1,042	16	\$1,075	36	\$1,225	34	\$1,184	28
Miscellaneous General Revenue	\$467	43	\$503	48	\$446	49	\$452	47
Intergovernmental Revenue	\$1,099	34	\$1,378	47	\$1,873	41	\$1,578	42
Federal Government	\$1,099	34	\$1,378	47	\$1,873	41	\$1,578	42

Source: Bourdeaux (2015)

Table 20. State and Local Government General Revenue for Georgia, the United States, and Neighboring States, FY 2013

	OWN SOURCE											
	TOTAL	FEDERAL	TAXES									ALL OTHER
			TOTAL	TOTAL	PROPERTY	SALES (G)	SALES (S)	INCOME (I)	INCOME (C)	OTHER	CHARGES	
MILLIONS OF DOLLARS												
Alabama	34,987	9,187	25,800	14,725	2,645	4,358	2,644	3316	382	1,379	8,907	2,168
Florida	136,743	28,094	108,649	66,200	23,818	22,623	12,042	0	2,072	5,645	29,175	13,274
Georgia	65,351	15,775	49,576	33,215	10,100	9,156	3,219	8,772	797	1,170	11,839	4,522
North Carolina	73,758	17,692	56,065	35,539	8,892	7,830	4,401	11,068	1,286	2,062	15,973	4554
South Carolina	35,189	7,108	28,081	15,242	5,138	3,571	1,531	3,358	387	1,257	9,859	2,981
Tennessee	42,606	11,598	31,008	20,178	5,445	8,099	2,972	263	1,256	2,142	7,479	3,352
All States	2,690,427	584,652	2,105,775	1,455,499	455,442	327,066	169,373	338,471	53,039	112,107	444,153	206,124
SHARE OF TOTAL REVENUES (ROW PERCENT)												
Alabama	100.0	26.3	73.7	42.1	7.6	12.5	7.6	9.5	1.1	3.9	25.5	6.2
Florida	100.0	20.5	79.5	48.4	17.4	16.5	8.8	0.0	1.5	4.1	21.3	9.7
Georgia	100.0	24.1	75.9	50.8	15.5	14.0	4.9	13.4	1.2	1.8	18.1	6.9
North Carolina	100.0	24.0	76.0	48.2	12.1	10.6	6.0	15.0	1.7	2.8	21.7	6.2
South Carolina	100.0	20.2	79.8	43.3	14.6	10.1	4.4	9.5	1.1	3.6	28.0	8.5
Tennessee	100.0	27.2	72.8	47.4	12.8	19.0	7.0	0.6	2.9	5.0	17.6	7.9
All States	100.0	21.7	78.3	54.1	16.9	12.2	6.3	12.6	2.0	4.2	16.5	7.7

Sources: State & Local Government Finance Data Query System (slfdqs.taxpolicycenter.org/pages.cfm). The Urban Institute-Brookings Institution Tax Policy Center. Data from the U.S. Census Bureau, Annual Survey of State and Local Government Finances

EXPENDITURES

In FY 2016, Georgia budgeted \$21.8 billion in spending from the state fund, an increase of around 3.4 percent over the previous fiscal year. The state also spent \$13.3 billion in federal funds and \$9.6 billion from other funds, for a total appropriation of \$44.73 billion (Office of Planning and Budget 2016). The majority of state funds in Georgia are spent on education. In FY 2016, estimated state fund expenditure on education is \$12 billion (\$8.5 billion on K-12 education; \$2 billion on the University System of Georgia; \$339 million on the Technical College System of Georgia, and the remainder on other categories such as Early Care and Learning and the Student Finance Commission). The next major expenditure category is health care, with around 22 percent of total state funds allocated to health care in FY 2016 (Table 21). Corrections and interest payments on debt are the next two major state expenditures, followed by transportation and general government.

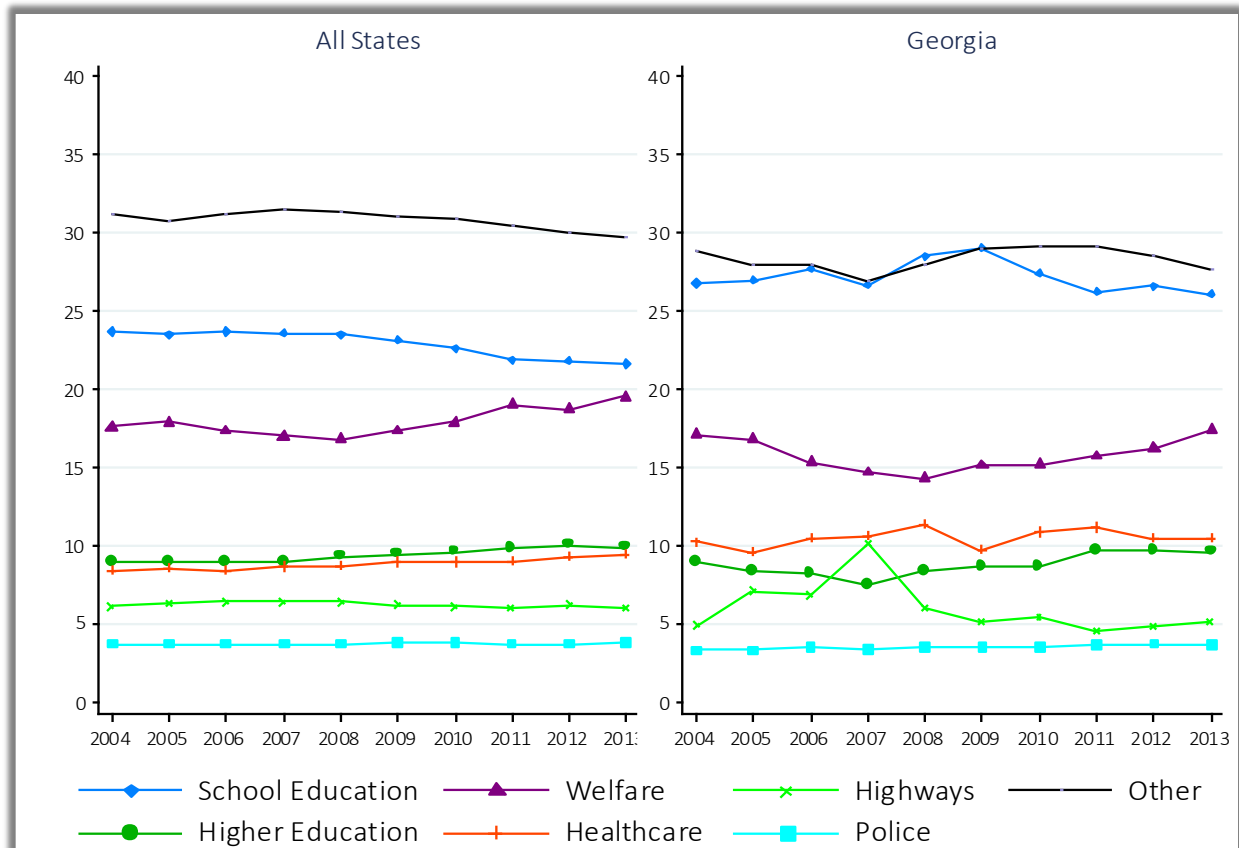
Table 21. Georgia State Fund Appropriations by Policy Areas

	AMENDED FY 2015 (\$)	SHARE (%)	ESTIMATED FY 2016 (\$)	SHARE (%)
Education	11,419,524,931	54.09	11,956,761,632	54.8
Health Care	4,869,113,430	23.06	4,852,226,376	22.2
Corrections	1,755,305,650	8.31	1,835,577,882	8.4
General Government	761,626,329	3.61	790,521,587	3.6
Transportation	868,459,318	4.11	890,537,224	4.1
Debt Service	1,083,144,820	5.13	1,215,517,701	5.6
Other	355,731,618	1.68	287,647,005	1.3
Total State Funds	21,112,906,096	100.00	21,827,979,507	100.0

Source: Office of Planning and Budget (2016)

Figure 29. State and Local General Expenditures for Georgia and the United States, Percentage Distribution

SHARE OF SELECTED CATEGORIES, FY 2004-13



Note: (1) Excludes intergovernmental expenditures. (2) Estimates are obtained from the Tax Policy Center Database and are based on the Census of State and Local Government. (<http://www.taxpolicycenter.org/statistics/state-and-local-general-expenditures-percentage-distribution>)

U.S. Census Bureau data provide sector-wise insight into state and local general expenditures, and enable broad interstate comparisons. The distribution of general expenditures of state and local governments in Georgia and the national average are somewhat similar, except for two categories: education and public welfare (Figure 29). In 2013, the Georgia general expenditure on elementary and secondary education was around 5 percentage points higher than the national average, and the state spent about 2 percentage points less than the national average on public welfare. During the last decade, the share of state and local health care expenditures in Georgia has remained relatively constant compared to its neighbors, which perhaps contributes to the poor health outcomes for the state population discussed earlier (Figure 30). Georgia also spends less than the national average on the “other” category, which includes general government expenditure such as wage bills. In the aftermath of the recession, Georgia’s public employees have received almost no pay increases, and disparities between public sector and private sector workers in Georgia have widened substantially. Lewis and Pathak (2014) examined the pay differences between comparable public sector and private sector

workers in Georgia and found that the public-private pay differences for state and local government workers were highest in Georgia among all the 50 states during 2009-12 (Table 22). On this metric, Georgia ranked 39th in 1980 and 1990, so these differences have widened mostly since the 2000s. State policymakers have to pay attention to this issue because large pay disparities may limit state and local governments' ability to attract qualified workers when competing with the private sector. Going forward, the expenditure categories such as wage bills, health care and welfare may have significant fiscal implications as the state addresses the underspending in these categories along with rising demand for health care and welfare brought on by demographic changes. Increasing pension liabilities will be another component to look out for and is discussed in greater detail in the last part of Section 6.

Figure 30. State and Local General Expenditures, Percentage Distribution for Georgia and Neighboring States, 2004-13

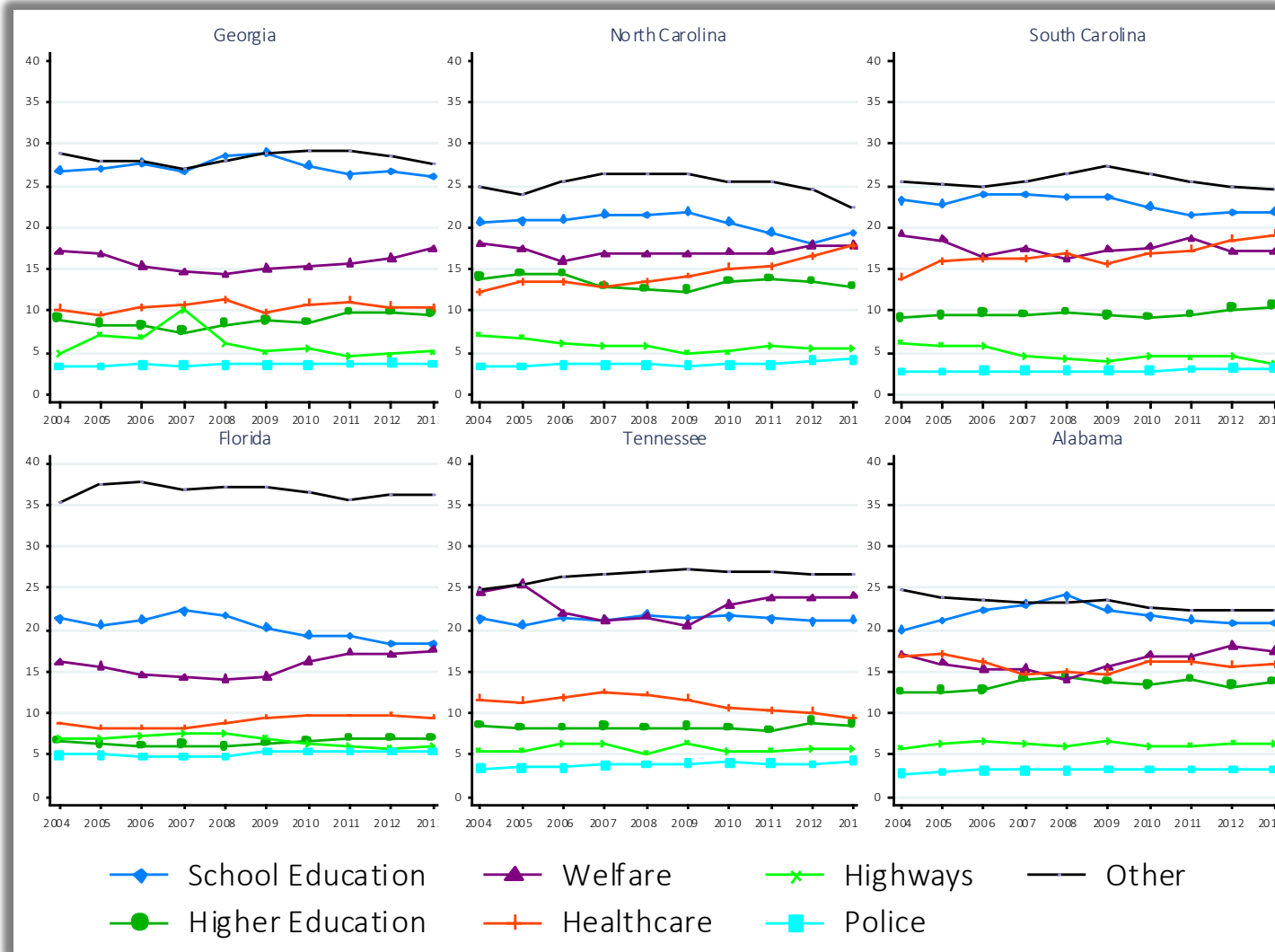


Table 22. Expected Percentage Pay Difference between State and Local and Comparable Private Sector Workers

	1980	1990	2000	2005-08	2009-12
Nevada	2.5 ^{N.S.}	6.0	10.0	7.1	9.5
New York	-5.6	-1.7	-3.4	-1.7	-0.1 ^{N.S.}
New Jersey	-11.7	-7.1	-1.7	-1.4	-0.6 ^{N.S.}
Rhode Island	-4.0	-3.0	-0.7 ^{N.S.}	-0.9 ^{N.S.}	-1.6 ^{N.S.}
District of Columbia	13.0	2.5*	-3.0*	-4.4	-1.8 ^{N.S.}
Wyoming	-14.6	-10.7	-12.9	0.8 ^{N.S.}	-1.8 ^{N.S.}
Alaska	9.2	4.1**	2.8 ^{N.S.}	-4.0**	-2.9 ^{N.S.}
Michigan	-8.1	-7.1	-6.9	-5.3	-3.1
Iowa	-9.1	-5.3	-4.3	-3.6	-3.5
California	-5.0	-4.0	-5.3	-3.0	-3.7
Hawaii	-5.3	-4.7	-4.1	-5.1	-3.9
Ohio	-12.6	-9.8	-6.5	-4.7	-4.2
Pennsylvania	-8.8	-7.7	-3.3	-4.0	-4.7
Florida	-6.3	-3.9	-5.8	-4.2	-4.8
Oregon	-6.5	-4.9	-6.5	-4.6	-5.3
Wisconsin	-8.8	-4.7	-5.3	-5.5	-5.5
Illinois	-10.2	-11.2	-10.1	-7.2	-6.6
Montana	-6.4	-9.2	-5.1	-5.0	-7.0
Vermont	-5.6	-10.1	-10.0	-8.5	-7.4
Connecticut	-13.7	-6.1	-2.7	-6.4	-7.6
Maryland	-5.4	-4.5	-8.8	-6.8	-8.2
Maine	-8.6	-9.9	-7.2	-7.0	-8.4
Washington	-5.4	-6.0	-6.5	-7.9	-8.8
North Dakota	-5.2	-7.3	-14.4	-10.0	-9.0
United States	-9.6	-8.5	-9.6	-9.0	-9.4
Arizona	-9.6	-6.5	-11.3	-9.4	-10.0
Nebraska	-12.0	-9.2	-10.8	-9.6	-10.1
New Mexico	-8.0	-7.2	-9.1	-12.8	-10.1
South Dakota	-8.9	-9.0	-8.3	-9.8	-10.4
Alabama	-9.0	-8.5	-9.9	-11.0	-10.5
Louisiana	-13.2	-16.3	-14.4	-12.4	-11.2
Minnesota	-7.7	-7.2	-10.3	-11.2	-11.3
Idaho	-12.2	-14.4	-12.1	-13.1	-11.6
Mississippi	-10.2	-13.4	-13.6	-12.0	-11.9
Indiana	-18.8	-17.6	-13.8	-13.3	-12.2
Arkansas	-11.4	-12.3	-10.2	-12.5	-12.6
Massachusetts	-7.9	-8.8	-9.3	-10.5	-12.6
Delaware	-16.2	-14.8	-14.1	-11.3	-12.7

	1980	1990	2000	2005-08	2009-12
Colorado	-8.6	-7.8	-13.8	-12.2	-12.9
South Carolina	-7.3	-9.6	-11.9	-12.3	-12.9
West Virginia	-20.9	-20.8	-13.7	-11.5	-13.5
Tennessee	-11.6	-11.9	-12.9	-12.8	-13.7
Kentucky	-14.1	-15.3	-12.3	-11.8	-13.8
New Hampshire	-11.3	-12.3	-13.8	-12.9	-13.8
North Carolina	-6.7	-9.5	-13.8	-14.5	-14.3
Utah	-10.9	-14.8	-12.7	-11.4	-14.3
Oklahoma	-19.1	-15.4	-14.9	-15.6	-15.9
Kansas	-16.2	-13.6	-15.3	-16.1	-16.5
Missouri	-16.3	-15.2	-16.0	-16.1	-16.8
Texas	-13.7	-15.8	-18.4	-17.3	-17.6
Virginia	-10.7	-7.2	-13.0	-14.9	-18.0
Georgia	-12.4	-13.0	-17.5	-18.5	-18.7

Notes: (1) Reproduced from Lewis and Pathak (2014). (2) Census and American Community Survey data. (3) The regressions control for education, age and other demographics. All differences are significant at the .01 level, unless otherwise indicated ** .05 level, * .10 level, N.S. not significant. See Lewis and Pathak (2014) for a detailed methodological appendix.

TAX EXPENDITURES

State and local governments often offer tax incentives to businesses and individuals to promote certain behaviors and to extend benefits to certain populations. With more states publishing state tax expenditure reports, these hidden incentives have started to receive more attention. While some expenditures such as Social Security benefits and low-income housing credits primarily have an equity motivation, several tax expenditures are business incentives to attract economic activity. For example, Georgia is one of the 44 states (plus the District of Columbia) that offer a film tax credit, but Georgia's credit is relatively generous and has grown over the years (Sewordor and Sjoquist 2016, Small and Wheeler 2016). Similarly, Georgia is one of the 45 states that offer some form of tax incentives for job creation and one of 42 states that provide R&D credits (Burnett 2011). Evidence on the success of such incentives is mixed (Chirinko and Wilson 2014, Faulk 2002), and the positive effects are mostly observed in the long run (Chirinko 2016). In Georgia, several of these tax expenditures have increased in recent years. The Film Tax Credit in Georgia doubled between 2013 and 2017, from \$154 million to \$308 million (Table 23). The quality jobs tax credit that was enacted in 2009 to create or relocate high-wage jobs increased from \$5 million to \$38 million between 2012 and 2017.¹⁰ The growth in tax expenditures is happening across the states, and the trend is likely to continue. However, it is essential that adequate analysis of cost (such as publication of Georgia's Tax Expenditure Budget), benefits and equity considerations inform the continuation of these incentives. Similarly, more analysis and transparency when adopting new incentives is paramount.

¹⁰ A quality job is defined as one that was not located in the state, has 30 hours a week of regular work, and pays at or above 110 percent of the average wage of the county in which it is located.

Table 23. Selected Tax Expenditures in Georgia (in millions of dollars)

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017
Social Security Benefits (Code: 1.4.003) (actuals through 2013)	142	139	146	151	158	165
Low-Income Housing Credit (Code: 1.6.028/2.6.017/5.00700) (actuals through 8/10/2016)	N/A	168	176	190	203	218
Research Tax Credit (Code: 1.6.021/2.6.010) (actuals through 8/10/2014)	12	12	31	34	22	23
Georgia Job Tax Credit (Code: 2.6.001, 2.6.003/1.6.012, 1.6.014/5.00200) (actuals through 8/10/2014)	64	69	68	70	71	73
Quality Job Tax Credit (Code: 2.6.002/1.6.013) (actuals through 8/10/2014)	5	15	25	30	35	38
Film Tax Credit (Code: 1.6.020/2.6.009) (actuals through 8/10/2014)	N/A	154	228	243	272	308

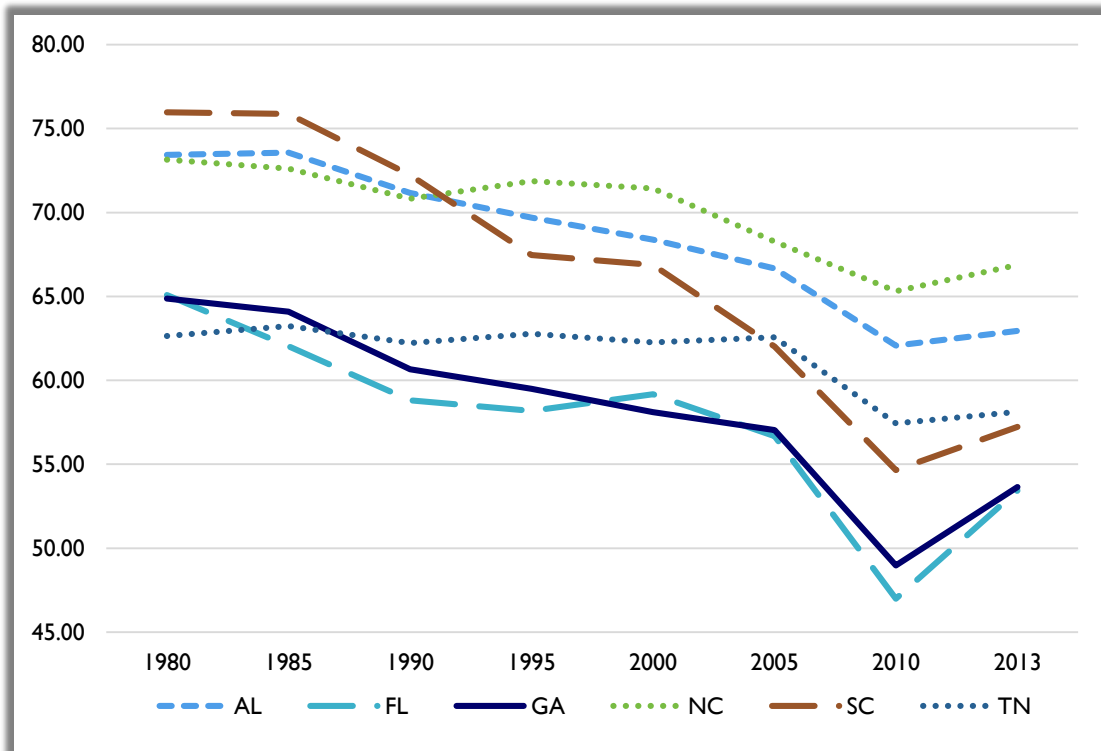
Source: Tax Expenditure Reports, Various Years

THE INTERGOVERNMENTAL LANDSCAPE

Intergovernmental relations between state and local governments have important implications for public finances. According to the latest estimate from the U.S. Census Bureau, Georgia has 1,378 local governments (including school districts) and is ranked 23rd among the states for the number of local governments (Census Bureau 2012). In Georgia, local governments can levy a property tax, they are allowed to adopt a sales and use tax (set at 1 percent), and they can impose a special-purpose local-option sales tax (SPLOST) for up to five years.¹¹ The total number of local governments in Georgia declined between 2002 and 2012, but local governments have become increasingly important because the state government generates a smaller share of total revenues than in the past (Figure 31). In the last few years, the local governments have contributed almost half of the total state and local revenue in Georgia compared to around a one-third contribution in 1980.

¹¹ Some exceptions and extra conditions also exist. For details, see Sjoquist et al. (2007)

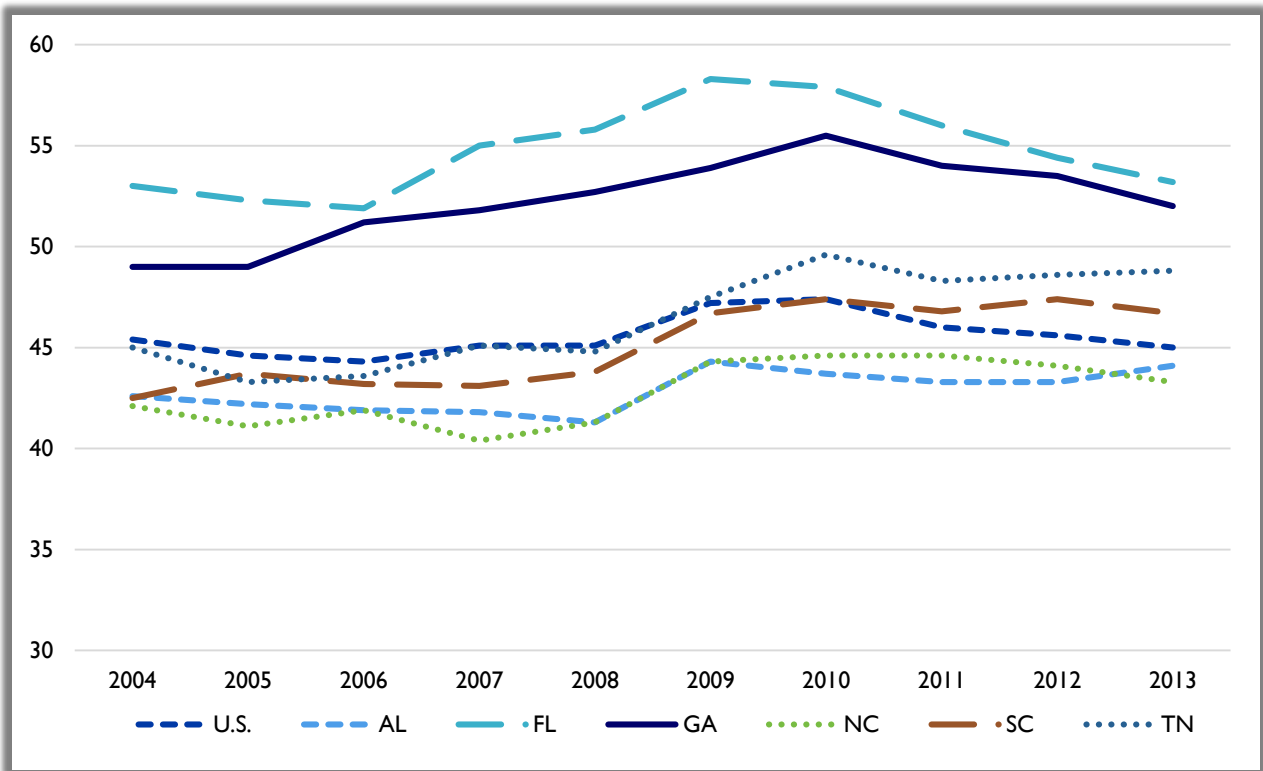
Figure 31. State Percentage of State and Local Tax Revenue for Georgia and Neighboring States, Selected Years 1980-2013



Source: State and Local Finance Data Query System, Tax Policy Center

One of the most important issues from a fiscal perspective is the amount of autonomy accorded to the local governments, particularly whether they can change revenues and expenditures to meet their requirements. Wolman et al. (2010) analyzed the relative autonomy of local governments in each state. They ranked the states according to the degree of autonomy using parameters such as the importance of local governments, discretionary authority and local government capacity. Georgia ranked 19th among the 50 states on this autonomy measure, with a score of 0.166. Kansas ranked at the top with a score of 0.861. Georgia ranked behind Alabama (10), Florida (12) and South Carolina (17). This autonomy is reflected in the higher share of own-source general revenue of local governments compared to the national average (Figure 32). In the next few years, local governments are expected to play an even greater role in the fiscal architecture of Georgia.

Figure 32. Own-Source General Revenue of Local Governments in Georgia, the United States, and Neighboring States, 2004-13

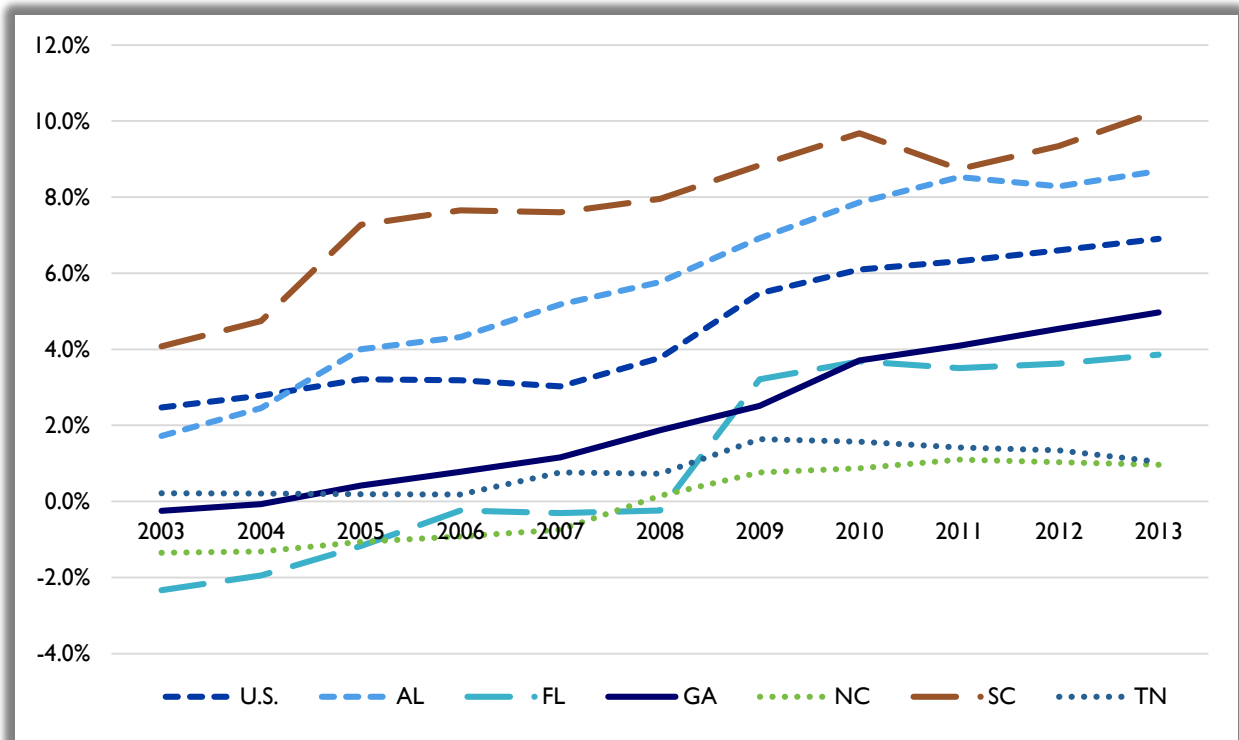


Source: State and Local Finance Data Query System, Tax Policy Center

DEBT AND LIABILITIES

Public debt and pension liabilities are another significant institutional consideration in the medium to long term. Georgia performs substantially better than the national average in terms of unfunded pension liability (Figure 33). In 2013, the funds-to-liabilities ratio for the state was around 80 percent, and Georgia ranked 16th among the 50 states. Despite performing relatively better than the national average, Georgia's ratio has declined substantially over the last decade compared to an overall surplus in 2003 and 2004. Among the neighboring states, only Florida, North Carolina and Tennessee outperform Georgia on this metric. The relative demographic dividend in the state has assisted Georgia on this front to date. However, state and local finances will be under pressure as the population continues to age and pension costs increase.

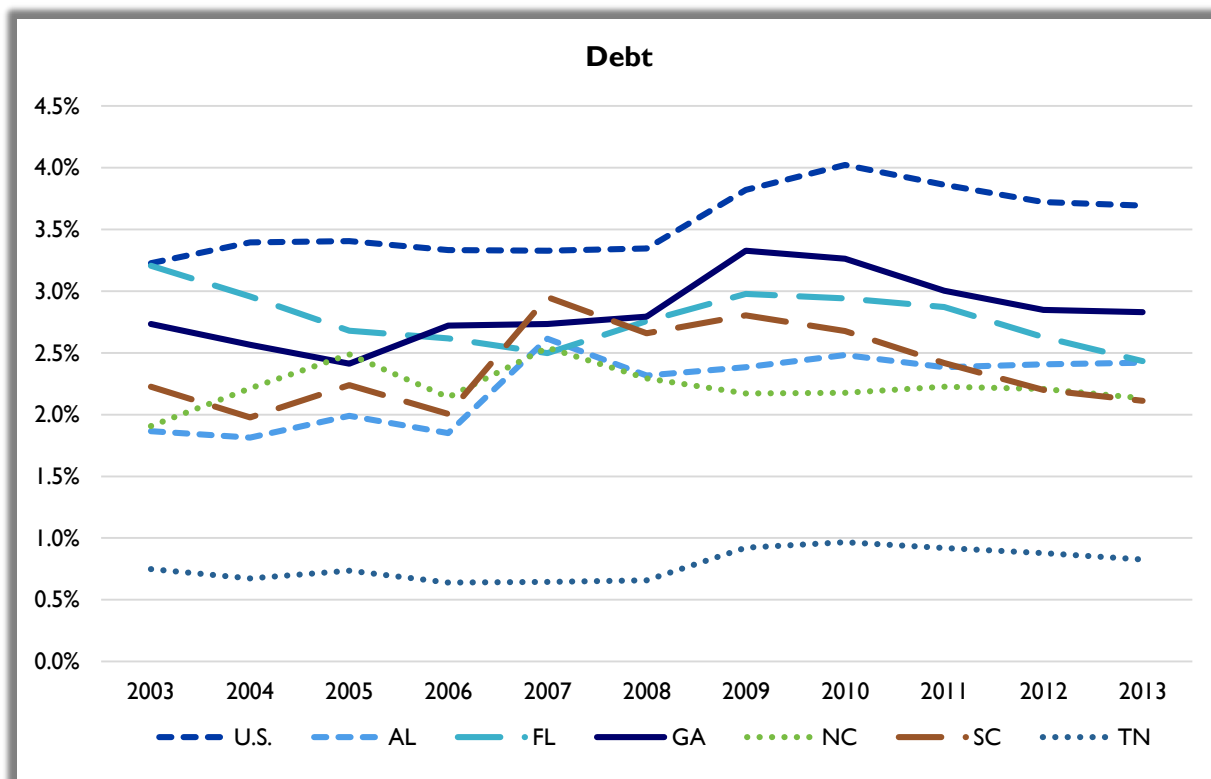
Figure 33. Unfunded Pension Costs as a Share of State Personal Income in Georgia, the United States and Neighboring States, 2003-13



Source: Pew Charitable Trust

In addition to pension costs, the Pew Charitable Trust provides data on net tax-supported debt. Georgia had a debt obligation of around 2.8 percent of personal income in 2013 compared to the national average of 3.7 percent (Figure 34). Among the 50 states, in 2013, Georgia ranked 29th on the public debt-to-personal income ratio and had the highest net tax-supported debt among its neighbors. The public debt in Georgia increased sharply during the Great Recession period. Even after some decline in recent years, the state has a higher debt obligation than its neighbors.

Figure 34. Debt Obligations as a Percentage of State Personal Income in Georgia, the United States and Neighboring States, 2003-13



Source: Pew Charitable Trust

VII. Conclusion

This report has outlined the key factors and processes that will shape the fiscal architecture of Georgia over the next few years. The economic and demographic trends discussed are likely to have measurable effects on the fiscal architecture of the state. However, there is a degree of uncertainty in most of these future trends. Below is a summary of the major trends and their fiscal implications. Subsequently, we highlight a few key themes that require attention from state policymakers.

Key Trends and Implications:

- Population growth in Georgia is higher than the national average and is likely to continue.
 - Tax base will continue to expand
- Georgia's relative age advantage will shrink as the population ages at a faster pace than it has till now.
 - A reduction in the buoyancy of income tax and sales tax
 - Increased demand for social services and pressures related to pension liabilities
- Georgia has seen a long-term decline in manufacturing jobs. Some low-wage occupations have shown a positive recovery. Also, the state is seeing an increase in employment as well as wages in some technology- and knowledge-based sectors.

- Manufacturing decline and employment growth in low-wage occupations would reduce tax handles
- Positive boost to taxes from development of some knowledge-based sectors
- Increased global competition for economic activity and new technologies will change the production process and employment patterns, and will complicate economic transactions.
 - Increasingly difficult to tax corporate and business income
 - Taxing Internet-based or electronic transactions is increasingly complex and would require improvements in tax administration
- The underperformance of the state on health indicators is a cause for concern.
 - More investments and expenditures in health care, particularly in rural Georgia
 - Aging population means increased health care expenses and other social benefits
- The state faces increasing pension liabilities and large public-private pay disparities.
 - Aging-related expenditures likely to increase; wage bills may also increase if public-private disparities are addressed

Major Themes for Policy Action:

- **DEMOGRAPHIC CHANGES:** The major demographic theme in Georgia is the aging of the workforce. A detailed study of this aging trend and its implications might shed more light on the subject, but the state needs to pay more attention to the impact of pension liabilities, increasing demand for services and elderly migration on state finances. Given that the state offers substantial tax incentives to the elderly, balancing equity considerations with long-term commitments will be a challenge.
- **CONSUMPTION TAXES:** A variety of factors are contributing to the shrinking sales tax base in Georgia, including legislative actions and changing consumption patterns. Federal action on taxing e-commerce transactions and covering new goods and services may assist in this area. However, restoring the sales and use tax revenues without changes in tax rates will continue to be a significant challenge.
- **MANUFACTURING, R&D AND INNOVATION:** The decline in manufacturing is not a Georgia-specific phenomenon, and other states are also grappling with this challenge. If Georgia has to sustain manufacturing jobs, it should focus on indigenous innovation and development rather than only attempting to attract new plants. Improving state investment in R&D, fostering more innovation and maintaining the recent growth in knowledge-based jobs will be critical to the economy and state finances.
- **REVENUES:** Stagnant per capita own-source revenues and the erosion of the tax base characterized by a decline in Georgia revenue as a share of personal income will continue to be a major challenge. The decision to enact exemptions and deductions (e.g., retirement income) without any substantial changes in the tax structure adds to Georgia's woes. Optimistic economic growth forecasts may provide a cushion in the short term, but in the long-term tax reforms may be necessary.
- **EXPENDITURES:** Rising pension liabilities, high wage disparities and expected increases in the demand for health care and welfare spending will be key challenges that Georgia is expected to face in the future. The policy challenges listed previously become even more pertinent in the context of increasing expenditures. Periodic reviews of the public finance system and corresponding reforms will be integral to maintaining the fiscal health of the state and meeting long-term expenditure commitments.

References

- Acemoglu, Daron, David Autor, David Dorn, Gordon H. Hanson, and Brendan Price. 2016. "Import Competition and the Great U.S. Employment Sag of the 2000s." *Journal of Labor Economics* 34 (S1): S141–98.
- Asheim, Bjørn T., and Meric S. Gertler. 2009. "The Geography of Innovation: Regional Innovation Systems." In *The Oxford Handbook of Innovation*, edited by Bjørn T. Fagerberg and Meric S. Gertler. New York: Oxford University Press.
- Atlanta Regional Commission. 2011. "Plan 2040: Demographics and Population Appendix." [documents.atlantaregional.com/plan2040/docs/Appendix_Population %28P1%29.pdf](http://documents.atlantaregional.com/plan2040/docs/Appendix_Population%28P1%29.pdf).
- Badertscher, Nancy. 2015. "Is Georgia Tax-Friendly State for Retirees?" *PolitiFact*. www.politifact.com/georgia/statements/2015/nov/13/Kiplinger-com/georgia-tax-friendly-state-retirees/.
- Bakija, Jon, and Joel Slemrod. 2004. "Do the Rich Flee from High State Taxes." NBER Working Paper No. 10645. www.nber.org/papers/w10645.
- Bell, David N. F., and David G. Blanchflower. 2011. "Young People and the Great Recession." *Oxford Review of Economic Policy* 27 (2): 241–67. doi:10.1093/oxrep/grr011.
- Bernard, Andrew B., and Teresa C. Fort. 2015. "Factoryless Goods Producing Firms." *American Economic Review* 105 (5): 518–23. doi:10.1257/aer.p20151044.
- Bourdeaux, Carolyn. 2015. "A Briefing on Georgia's Budget: The Big Picture." Center for State and Local Finance, Georgia State University. cslf.gsu.edu/files/2015/11/Georgias-Budget-The-Big-Picture-Presentation_November-2015.pdf.
- Bruce, Donald, William F. Fox, and LeAnn Luna. 2015. "E-Tailer Sales Tax Nexus and State Tax Policies." *National Tax Journal* 68 (3S): 735–66.
- Bureau of Economic Analysis. 2016. "BEA Regional Factsheet-Georgia." www.bea.gov/regional/bearfacts/pdf.cfm?fips=13000&areatype=STATE&geotype=3.
- . 2015. "State Personal Income and Employment: Concepts, Data Sources, and Statistical Methods." www.bea.gov/regional/pdf/spi2014.pdf.
- Bureau of Labor Statistics. 2016. "Alternative Measures of Labor Underutilization in Georgia." www.bls.gov/regions/southeast/news-release/pdf/laborunderutilization_georgia.pdf.
- Burnett, Jennifer. 2011. "State Business Incentives: Trends and Options for the Future." The Council of State Governments. knowledgecenter.csg.org/kc/system/files/StateBusinessIncentives2011.pdf.
- Buschman, Robert. 2015. "Georgia's Incredible Shrinking Sales Tax Base." Fiscal Research Center, Georgia State University. frc.gsu.edu/files/2015/10/Georgias-Incredible-Shrinking-Sales-Tax-Base_October-2015.pdf.
- Census Bureau. 2012. "2012 Census of Governments, Individual State Descriptions." www2.census.gov/govs/cog/2012isd.pdf.
- Chetty, Raj, Nathaniel Hendren, Patrick Kline, and Emmanuel Saez. 2014. "Where Is the Land of Opportunity? The Geography of Intergenerational Mobility in the United States." *Quarterly Journal of Economics* 129 (4): 1553–1623. doi:10.1093/qje/qju022.Advance.
- Chirinko, Robert S. 2016. "Job Creation Tax Credits, Fiscal Foresight, and Job Growth: Evidence from U.S. States." Federal Reserve Bank of San Francisco. www.frbsf.org/economic-research/files/wp10-25bk.pdf.

- Chirinko, Robert S., and Daniel J. Wilson. 2013. "Tax Competition among U.S. States: Racing to the Bottom or Riding on a Seesaw?" Federal Reserve Bank of San Francisco. www.frbsf.org/economic-research/files/wp08-03bk.pdf.
- . 2014. "Job Creation Tax Credits: Still Worth Consideration?" *Employment Research* 21 (3): 4–6. research.upjohn.org/cgi/viewcontent.cgi?article=1222&context=empl_research.
- Christie, Tamoya A.L. 2011. "Consumer's Share of General Sales Tax." Atlanta: Fiscal Research Center, Georgia State University. cslf.gsu.edu/files/2014/06/consumers_share_of_georgias_general_sales_tax.pdf.
- Cohen, Roger, Andrew Lai, and Charles Steindel. 2014. "State Income Taxes and Interstate Migration." *Business Economics* 49 (3): 176–90. doi:10.1057/be.2014.25.
- Conway, Karen Smith, and Jonathan C. Rork. 2008. "Income Tax Preferences for the Elderly." *Public Finance Review* 36 (5): 523–62. doi:10.1177/1091142108316441.
- . 2012. "No Country for Old Men (or Women)- Do State Tax Policies Drive Away the Elderly?" *National Tax Journal* 65 (2): 313–56.
- Department of Commerce. 2015. "Georgia: Supporting Made in America Exports and Jobs." trade.gov/fta/tpp/states/pdfs/georgia.pdf.
- Deskins, John. 2010. "Have State Tax Interdependencies Changed Over Time?" *Public Finance Review* 38 (2): 244–70.
- Devereux, Michael P., and Simon Loretz. 2012. "What Do We Know about Corporate Tax Competition?" Working Paper 12/29. eureka.sbs.ox.ac.uk/4386/1/WPI229.pdf.
- Economic Forecasting Center. 2016. "Domestic-Based Sectors Drive Georgia's Economy." efc.robinson.gsu.edu/2016/05/26/efc-may2016/.
- Edwards, Barbara, and Sally Wallace. 2004. "State Income Tax Treatment of the Elderly." *Public Budgeting & Finance* 24 (2): 1–20.
- Einav, Liran, Dan Knoepfle, Jonathan Levin, and Neel Sundaresan. 2014. "Sales Taxes and Internet Commerce." *American Economic Review* 104 (1): 1–26. doi:10.1257/aer.104.1.1.
- Faulk, Dagny. 2002. "Do State Economic Development Incentives Create Jobs? An Analysis of State Employment Tax Credits." *National Tax Journal* 55 (2): 263–80.
- Feldstein, Martin, and Marian Wrobel. 1998. "Can State Taxes Redistribute Income?" *Journal of Public Economics* 68 (4785): 369–96. doi:10.3386/w4785.
- Foster, Ann C. 2015. "Consumer Expenditures Vary by Age." *Beyond the Numbers: Prices and Spending* 4 (14). www.bls.gov/opub/btn/volume-4/consumer-expenditures-vary-by-age.htm.
- Gates, Alexandra, Robin Rudowitz, Samantha Artiga, and Laura Snyder. 2016. "Two Year Trends in Medicaid and CHIP Enrollment Data: Findings from the CMS Performance Indicator Project." Kaiser Commission on Medicaid and the Uninsured. files.kff.org/attachment/Issue-Brief-Two-Year-Trends-in-Medicaid-and-CHIP-Enrollment-Data.
- Georgia Department of Community Health. 2015. "2015 Annual Report." dch.georgia.gov/sites/dch.georgia.gov/files/AnnualReport-2015.pdf.
- Georgia Power. 2014. "Automotive Manufacturing-Georgia: The Epicenter of Growth in the Southeast Auto Corridor." selectgeorgia.com/publications/Automotive-Industry-Report.pdf.
- Glaeser, Edward L. 2011. *Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier*. New York: Penguin Books.
- Hoopes, Jeffrey L., Jacob R. Thornock, and Braden Williams. 2015. "Does Use Tax Evasion Provide a Competitive Advantage to E-Tailers?" papers.ssrn.com/sol3/papers.cfm?abstract_id=2403952.

- Humphreys, Jeffrey M., and P. George Benson. 2002. Georgia's Economic Outlook for 2003, Terry College of Business, University of Georgia.
www.terry.uga.edu/media/documents/selig/GBEC024Q.pdf
- Institute on Taxation and Economic Policy. 2015. "Who Pays? A Distributional Analysis of the Tax Systems in All 50 States." <http://www.itep.org/pdf/whopaysreport.pdf>.
- Karabarbounis, Loukas, and Brent Neiman. 2014. "The Global Decline of the Labor Share." *Quarterly Journal of Economics* 129 (1): 61–103. doi:10.1093/qje/qjt032.
- Kiplinger. 2015. "State-by-State Guide to Taxes on Retirees." www.kiplinger.com/tool/retirement/T055-S001-state-by-state-guide-to-taxes-on-retirees/index.php?map=&state_id=11&state=Georgia.
- Lachman, M.L., and D.L. Brett. 2015. "Gen Y and Housing: What They Want and Where They Want It. Urban Land Institute." uli.org/wp-content/uploads/ULI-Documents/Gen-Y-and-Housing.pdf.
- Landers, Glenn, Clare S. Richie, David Sjoquist, Sally Wallace, and Angelino Viceisza. 2005. "Georgia's Aging Population: What to Expect and How to Cope?" Fiscal Research Center, Georgia State University.
cslf.gsu.edu/files/2014/06/georgias_aging_population_what_to_expect_and_how_to_cope.pdf.
- Leiser, Stephanie. 2015. "The Diffusion of State Tax Incentives for Business." *Public Finance Review*. doi:10.1177/1091142115611741.
- Lewis, Gregory B., and Rahul Pathak. 2014. "The State and Local Government Workforce: Trends and Patterns in Georgia, the South, and the United States." cslf.gsu.edu/files/2014/10/CSLF2_FIN.pdf.
- Liebig, Thomas, and Alfonso Sousa-Poza. 2006. "The Influence of Taxes on Migration: Evidence from Switzerland." *Cambridge Journal of Economics* 30 (2): 235–52. doi:10.1093/cje/bei057.
- Liu, Cathy Yang. 2013. "Georgia's High-Technology Industry and Innovation Capacity." Fiscal Research Center, Georgia State University. cslf.gsu.edu/files/2014/06/georgias_high-technology_industry_and_innovation_capacity.pdf.
- Long, Bridget Terry. 2004. "How Have College Decisions Changed over Time? An Application of the Conditional Logistic Choice Model." *Journal of Econometrics* 121 (1-2): 271–96. doi:10.1016/j.jeconom.2003.10.004.
- . 2015. "The Financial Crisis and College Enrollment: How Have Students and Their Families Responded?" In *How the Financial Crisis and Great Recession Affected Higher Education*, edited by Jeffery R. Brown and Caroline M. Hoxby, 2009–2233. University of Chicago Press.
- Milanovic, Branko. 2016. *Global Inequality: A New Approach for the Age of Globalization*. Cambridge: Harvard University Press.
- Mullins, Brett, Mark Rider, David Sjoquist, and Sally Wallace. 2015. "Trends in TANF and SNAP Participation in Georgia." Fiscal Research Center, Georgia State University.
frc.gsu.edu/files/2015/10/SNAP-TANF-Trends-Report_October-2015.pdf.
- Nellen, Annette. 2015. "Taxation and Today's Digital Economy." *Journal of Tax Practice and Procedure*.
- Office of Planning and Budget. 2013. "Georgia in Perspective." [opb.georgia.gov/sites/opb.georgia.gov/files/related_files/site_page/Georgia in Perspective 2013 2 8 2013.pdf](http://opb.georgia.gov/sites/opb.georgia.gov/files/related_files/site_page/Georgia%20in%20Perspective%202013.pdf).
- . 2016. "The Governor's Budget Report: Amended Fiscal Year 2016." opb.georgia.gov/governors-budget-reports.
- Onder, Ali Sina, and Herwig Schlunk. 2015. "State Taxes, Tax Exemptions, and Elderly Migration." *The Journal of Regional Analysis and Policy* 45 (1): 47–67.
- Ottaviano, Gianmarco I P, and Giovanni Peri. 2006. "The Economic Value of Cultural Diversity: Evidence from US Cities." *Journal of Economic Geography* 6 (1): 9–44. doi:10.1093/jeg/lbi002.

- Pathak, Rahul, Carolyn Bourdeaux, Sally Wallace, and Sarah Larson. 2016. "State Tax Reform Efforts-2010-2015." *State Tax Notes* 79 (12): 91–105.
- Penner, Rudolph. 2000. "Tax Benefits for the Elderly." www.urban.org/sites/default/files/alfresco/publication-pdfs/309529-Tax-Benefits-for-the-Elderly.PDF.
- Pew Research Center. 2014. "Record Share of Americans Have Never Married: As Values, Economics and Gender Patterns Change." www.pewsocialtrends.org/2014/09/24/record-share-of-americans-have-never-married/.
- Pierce, Justin R., and Peter K. Schott. 2016. "The Surprisingly Swift Decline of US Manufacturing Employment." *American Economic Review* 106 (7): 1632–62.
- Quigley, John M. 1998. "Urban Diversity and Economic Growth." *Journal of Economic Perspectives* 12 (2): 127–38. doi:10.1257/jep.12.2.127.
- Ross, Glenwood, and Nevbahar Ertas. 2011. "Recent Changes in Occupations in Georgia's Labor Force." Fiscal Research Center Report No. 225. cslf.gsu.edu/files/2014/06/recent_changes_in_occupations_among_georgias_labor_force.pdf.
- Schaller, Jessamyn. 2013. "For Richer, If Not for Poorer? Marriage and Divorce over the Business Cycle." *Journal of Population Economics* 26 (3): 1007–33. doi:10.1007/s00148-012-0413-0.
- Selig Center for Economic Growth. 2013. "Evaluating Retiree-Based Economic Development in Georgia." www.terry.uga.edu/media/documents/selig/golden-rules-2013.pdf.
- Sewordor, Emeffa, and David Sjoquist. 2016. "Lights, Camera, Action: The Adoption of Film Tax Credits." *Public Budgeting & Finance* 36 (2): 5–25.
- Sjoquist, David L. 2016. "Employment and Wage Trends in Manufacturing." Center for State and Local Finance, Georgia State University. cslf.gsu.edu/files/2016/08/Employment-and-Wage-Trends-in-Manufacturing_August-2016.pdf?wpdmdl=7676.
- Sjoquist, David L., John Stavick, and Sally Wallace. 2007. "Intergovernmental Fiscal Relations in Georgia." Fiscal Research Center, Georgia State University. cslf.gsu.edu/files/2014/06/intergovernmental_fiscal_relations_in_georgia.pdf.
- Sjoquist, David, Sally Wallace, and John Winters. 2007. "Selected Fiscal and Economic Implications of Aging." Fiscal Research Center, Georgia State University. cslf.gsu.edu/files/2014/06/selected_fiscal_and_economic_implications_of_aging.pdf.
- Small, Oronde, and Laura Wheeler. 2016. "A Description of Film Tax Credit and Film Industry in Georgia." Fiscal Research Center, Georgia State University. frc.gsu.edu/files/2016/02/Georgia-Film-Tax-Credit-February-2016.pdf.
- Special Council on Tax Reform and Fairness for Georgians. 2011. "2010 Special Council on Tax Reform and Fairness for Georgians: Report." frc2.gsu.edu/TaxCouncil/index.htm.
- Stiglitz, Joseph. 2016. "Globalization and Its New Discontents." Project Syndicate. www.project-syndicate.org/commentary/globalization-new-discontents-by-joseph-e--stiglitz-2016-08.
- Sweeny, Tim. 2016. "Prescribing Remedies for Georgia's Medical Provider Shortage." Georgia Budget and Policy Institute. gbpi.org/wp-content/uploads/2016/06/Medical-Provider-Shortage.pdf.
- Taxation Realignment Commission. 2010. "South Carolina Taxation Realignment Commission." scstatehouse.gov/archives/citizensinterestpage/TRAC/FinalDocuments/TRACFinalReport.pdf.
- Taylor, Mac. 2013. "Why Have Sales Taxes Grown Slower Than the Economy." Legislative Analyst's Office, California Legislature. www.lao.ca.gov/reports/2013/tax/Sales-tax/Sales-tax-080513.pdf.
- Terry College of Business. 2016. "2016 Georgia Economic Outlook." www.terry.uga.edu/media/documents/Economic_Outlook/2016-georgia-economic-outlook-presentation.pdf.

- Tödtling, Franz, and Michaela Tripl. 2005. "One Size Fits All?: Towards a Differentiated Regional Innovation Policy Approach." *Research Policy* 34 (8): 1203–19. doi:10.1016/j.respol.2005.01.018.
- Troege, Vera. 2013. "Tax Competition and the Myth of the Race to the Bottom." www2.warwick.ac.uk/fac/soc/economics/research/centres/cage/onlinepublications/briefing/0213bp_troege1.pdf.
- U.S. Department of Agriculture. 2016. "Georgia: Trans-Pacific Partnership." www.fas.usda.gov/sites/default/files/2016-04/tpp-georgia-04-2016.pdf.
- Wallace, Sally. 2002. "The Effect of State Income Tax Structure on Interstate Migration." Fiscal Research Center, Georgia State University. cslf.gsu.edu/files/2014/06/effect_of_state_income_tax_structure_on_interstate_migration.pdf.
- West, Loraine A., Samantha Cole, Daniel Goodkind, and He Wan. 2014. "65+ in the United States: 2010." www.census.gov/content/dam/Census/library/publications/2014/demo/p23-212.pdf.
- Wheeler, Laura. 2000. "The Effect of the Growth in Elderly Population on Georgia Tax Revenues." cslf.gsu.edu/files/2014/06/effect_of_the_growth_in_elderly_population_on_state_tax_revenues.pdf.
- Wilson, Daniel J. 2009. "Beggar Thy Neighbor? The In-State, Out-of-State, and Aggregate Effects of R&D Tax Credits." *Review of Economics and Statistics* 91 (May): 431–36. doi:10.1162/rest.91.2.431.
- Wolman, Harold, Robert McManmon, Michael Bell, and David Brunori. 2010. "Comparing Local Government Autonomy Across States." In *The Property Tax and Local Autonomy*, edited by Michael Bell, David Brunori, and Joan M. Youngman. Lincoln Institute of Land Policy.
- Wong, John. 2006. "Sales Tax Erosion in Kansas." Kansas Public Finance Center. webs.wichita.edu/depttools/depttoolsmemberfiles/hugowall/Documents Library/Sales Tax Erosion in Kansas.pdf.
- Wu, Yonghong. 2005. "The Effects of State R&D Tax Credits in Stimulating Private R&D Expenditure: A Cross-State Empirical Analysis." *Journal of Policy Analysis and Management* 24 (4): 785–802. doi:10.1002/pam.20138.
- Young, Cristobal, Charles Varner, Ithai Lurie, and Richard Prisinzano. 2016. "Millionaire Migration and the Taxation of the Elite: Evidence from Administrative Data." *American Sociological Review* 81 (3): 41–446.
- Youtie, Jan, Philip Shapira, Luciano Kay, Stephen Carley, and J.J. O'Brien. 2014. "Innovation in Manufacturing: Needs, Practices, and Performance in Georgia-2012-2014." Georgia Institute of Technology. www.gms-ei2.org/wp-content/uploads/2016/07/GMS-2014-report-of-survey.pdf.

About the Authors

RAHUL PATHAK is a graduate research assistant with the Center for State and Local Finance and the Fiscal Research Center and a doctoral candidate in public policy at the Andrew Young School of Policy Studies. He has a master's degree in development studies from the Tata Institute of Social Sciences, Mumbai. Prior to joining the Andrew Young School, Pathak worked as research associate at the Center for Policy Research, New Delhi and Indian Institute of Management, Ahmedabad. His key research interests include issues related to state and local finance and public financial management.

SALLY WALLACE is associate dean of research and strategic initiatives, professor of economics, and director of the Fiscal Research Center of the Andrew Young School of Policy Studies at Georgia State University. She is also Extraordinary Professor for the African Tax Institute, University of Pretoria, Republic of South Africa. Her previous positions include provost and associate vice president of the International University of Grand Bassam, resident chief of party of the GSU/USAID Tax Reform Project in the Russian Federation, fiscal economist at the U.S. Department of Treasury, and chair of the Georgia State University Department of Economics. Wallace's areas of expertise include behavioral aspects of domestic and international taxation, evaluation of public programs, and fiscal decentralization.

About the Fiscal Research Center

Established in 1995, the Fiscal Research Center (FRC) provides nonpartisan research, technical assistance and education in the evaluation and design of state tax and economic policy. FRC's responsibilities include developing estimates for tax-related fiscal notes, writing the Georgia State Tax Expenditure Budget, supporting the state's economist, and conducting policy and academic research on a variety of topics associated with state tax policy issues.

FRC Reports, Policy Briefs, and other publications maintain a position of neutrality on public policy issues in order to safeguard the academic freedom of the authors. Thus, interpretations or conclusions in FRC publications should be understood to be solely those of the author(s).

For more information on the Fiscal Research Center, visit our website at: frc.gsu.edu.