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Fiscal Research Center

Georgia's Incredible Shrinking Sales Tax Base

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Introduction

Georgia's total state tax revenues and revenues from its state sales and use tax both peaked, on an inflation-adjusted basis, in the fiscal year ending June 2001. Compared to the 2001 peaks, state sales and use tax revenues in fiscal 2014 are down 31 percent in real terms while total state tax revenues are down about 16 percent. Yet, even with the Great Recession of 2007-09, Georgia's economy was much larger in fiscal 2014 than in 2001. Real state gross domestic product (GDP) is up more than 14 percent over that time while real personal income is up more than 24 percent.

Had revenues grown at the same rate as state GDP since 2000, state sales tax revenues in fiscal 2014 would have been about \$2.2 billion higher than was actually collected. Had they grown at the same rate as personal income in the state since 2000, state sales tax revenues in fiscal 2014 would have been about \$2.8 billion higher.

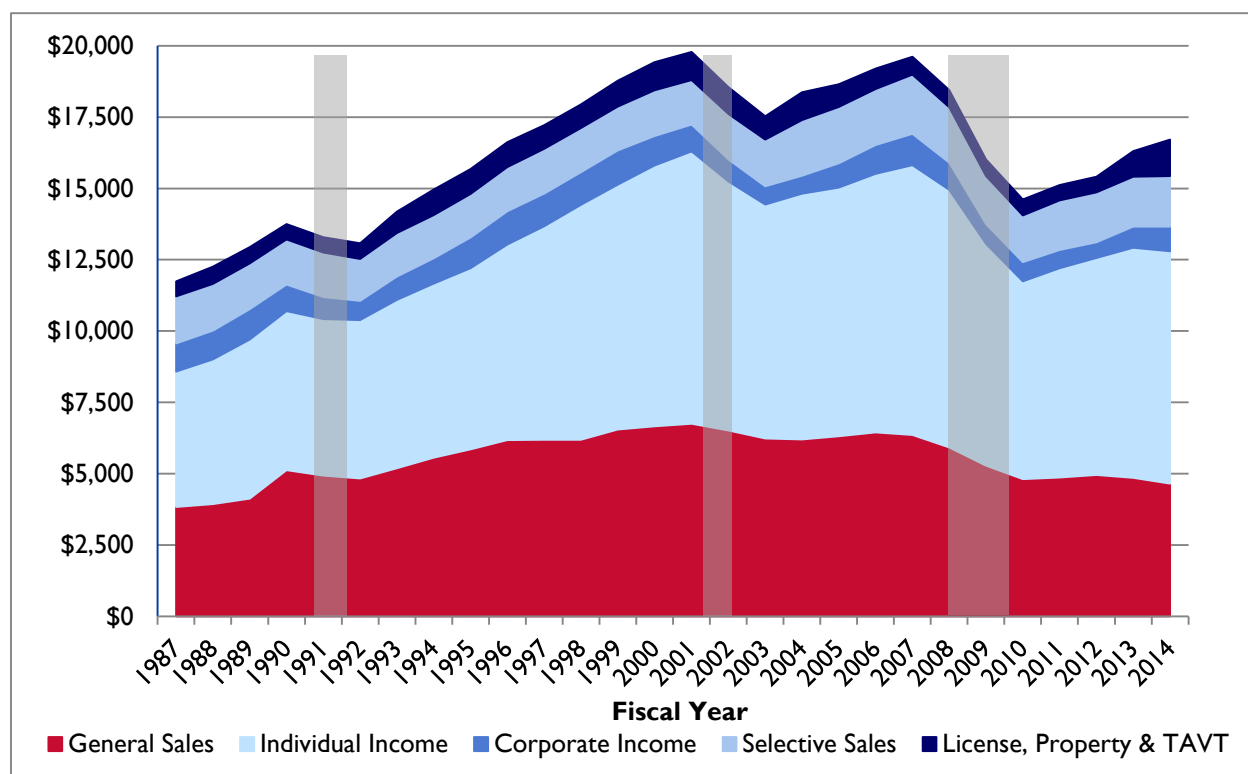
What might explain the dramatic shortfall in sales tax revenues, and their failure to recover from the 2001 and 2007-09 recessions along with personal income and the overall economy? State sales tax rates haven't changed since 1990, so the shortfall clearly must result from shrinkage of the sales tax base, but was that the result of legislative action to exempt certain goods or purchasers? Or might consumers have given themselves a tax cut by changing what they buy or where they buy it? Or could it instead be the result of general economic forces beyond the choices of consumers or actions of legislators? The short answer is all of the above; this report explains and attempts to estimate the contributions of each of these factors to the recent sales tax revenue shortfall.

Trends in Tax Collections

We begin with a look at slightly longer-term trends in Georgia tax collections, as shown in Figure 1 below. Again, on an inflation-adjusted basis, both Georgia's total tax revenues and the revenue from state general sales and use taxes peaked in fiscal year 2001, capping a nine-year expansion. As was the case with the 1990-91 recession, real revenues then contracted for two years before rising again after 2003 with resumed growth in the economy. However, the decline was more than twice as large on a percentage basis (11.4 percent in the 2001 recession versus 4.9 percent in the earlier recession) and the rebound in revenues was slower. One year after the 1992 revenue trough, 1993 revenues had already surpassed the 1990 inflation-adjusted peaks for general sales and total tax revenues. After four years of rising revenues from the 2003 trough, inflation-adjusted total tax revenues in 2007 were still 0.8 percent below the 2001 peak. Meanwhile, general sales tax revenues had already begun falling again after peaking in 2006 at 4.6 percent below the 2001 inflation-adjusted level.

The impact of the Great Recession, however, was far worse in terms of the size and duration of the revenue decline and the weakness of the rebound, especially in sales tax collections. From fiscal 2007 through 2010, general sales tax revenues fell by 24.4 percent, inflation-adjusted, while total tax revenues fell by 25.5 percent. Four years later, in fiscal 2014, real total tax revenues remained 14.8 percent below 2007 levels while general sales tax revenues were 26.8 percent below the 2007 level. Compared to their all-time peaks in 2001, inflation-adjusted sales tax revenues are down 31.1 percent and total tax revenues are down 15.5 percent.

Figure I. Georgia Tax Revenue by Type of Tax (Inflation-adjusted 2009 U.S. dollars, millions)



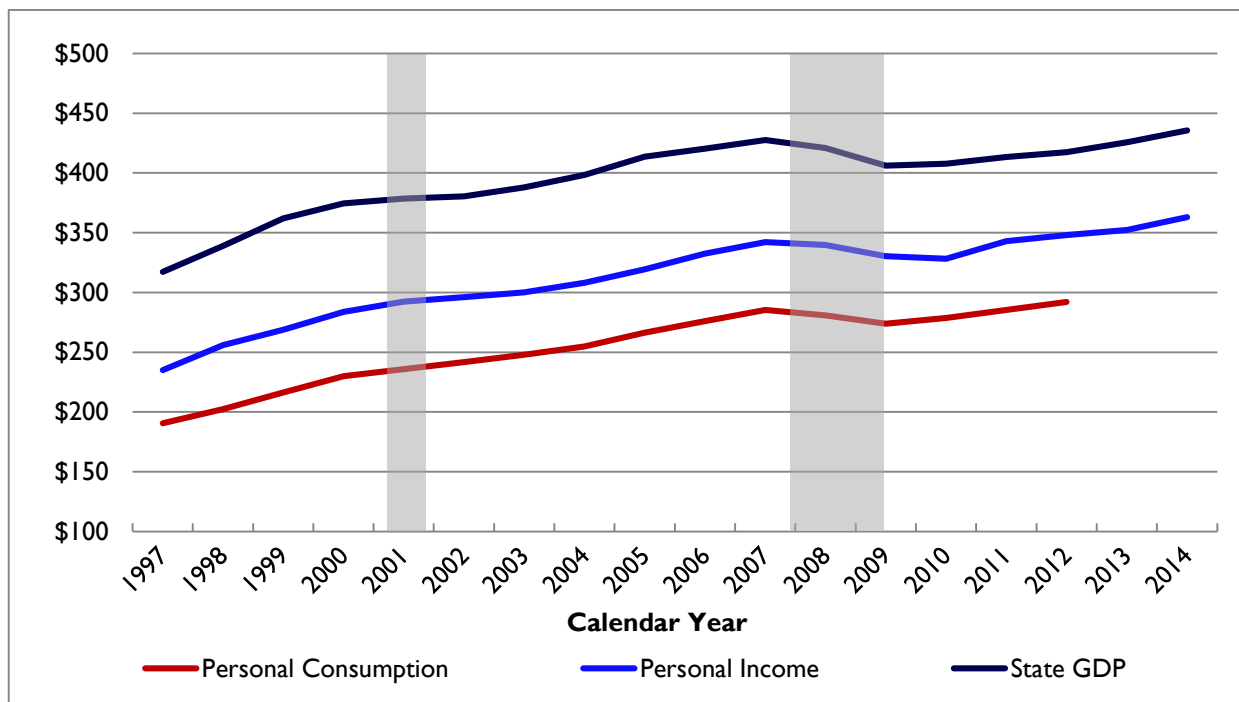
Source: U.S. Census Bureau Annual Survey of State Government Tax Collections.

Note: Recession periods shaded. Inflation-adjusted using the Bureau of Economic Analysis price index for state and local government expenditures.

Relating Sales Tax Collections to Economic Trends

The continued weakness of sales tax and total revenues is all the more surprising given the economic growth in the state since the 2001 revenue peaks. As Figure 2 shows, Georgia's state GDP, personal income, and personal consumption expenditures are all at historical highs, even on an inflation-adjusted basis. Each measure fell markedly during or soon after the most recent recession, but all have since recovered and surpassed their pre-recession highs. Compared to 2001, real state GDP is up 15.0 percent and real personal income is up 24.1 percent through 2014, while real personal consumption expenditures (PCE) are up 23.8 percent through 2012, the most recent data available.

Figure 2. Georgia Economic Indicators (Inflation-adjusted 2009 U.S. dollars, billions)



Source: U.S. Bureau of Economic Analysis (BEA).

Note: Recession periods shaded. State GDP is in chained (real) 2009 dollars; consumption and income series are inflation-adjusted using the BEA price index for personal consumption expenditures.

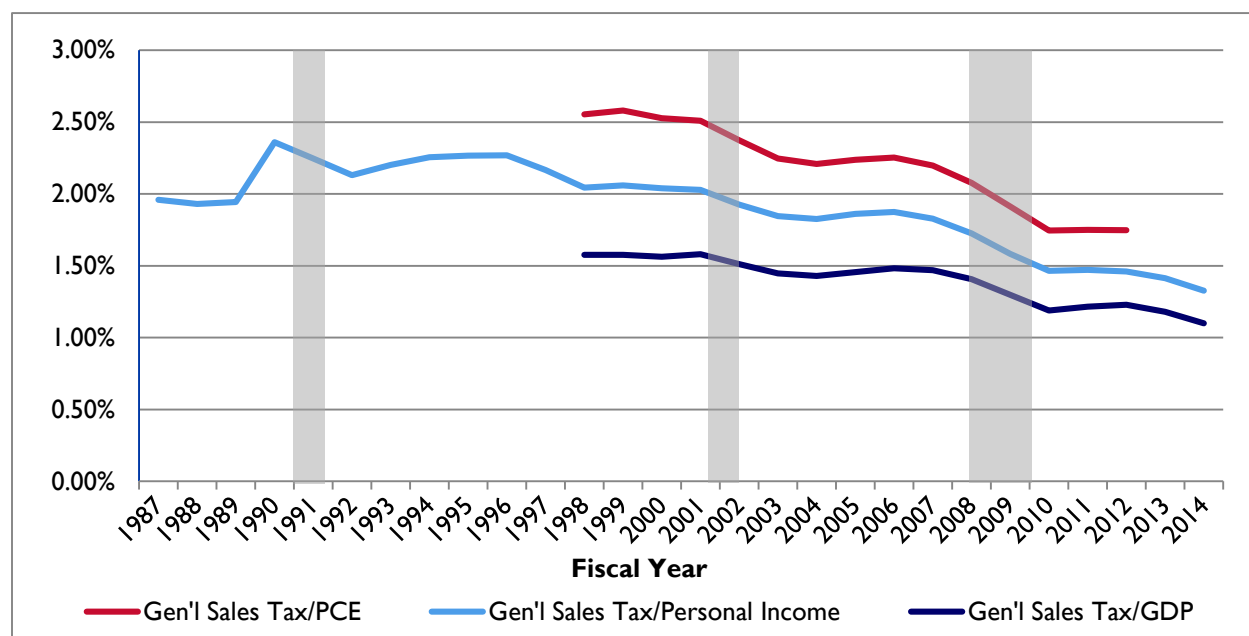
One would expect that, holding the tax structure constant, these aggregate measures of the state economy would be highly correlated with the tax base and thus imply higher sales tax revenues. Yet while inflation-adjusted sales tax revenues rose with these economic aggregates up through 2001, they have trended downward since in spite of economic growth. To illustrate the changing relationship between economic activity and sales tax revenues, Figure 3 shows the sales and use tax revenue as a percent of the three aggregate measures.¹ From fiscal 1990, when the state sales tax rate increased to 4 percent, through 1996, the relationship between state sales tax revenues and personal income was fairly stable, with revenue averaging 2.25 percent of aggregate personal income and ranging from 2.13 percent in 1992 to 2.36 percent in 1990. From 1999 through 2001, after a new exemption for groceries had fully taken effect, the ratio of sales tax revenue to personal income was lower than the earlier period, but still averaged 2.04 percent. By fiscal 2013, however, state sales tax revenue had fallen to 1.41 percent of personal income, a decline in yield of more than 37 percent from the earlier period average. In fiscal 2014, the ratio fell further to 1.33 percent due to a shift in taxation of motor vehicles from the sales tax to a new title ad valorem tax (TAVT). The pattern is essentially the same when measuring against PCE and GDP, though comparable data prior to calendar year 1997 was not available.²

¹ To adjust the calendar year measures of economic activity to state fiscal years, the two calendar years overlapping each fiscal year are averaged.

² Pre-1997 state GDP estimates from BEA were based on different methodologies and data sources, resulting in a discontinuity between pre- and post-1997 estimates. BEA prototype estimates of state level PCE are currently available only for calendar years 1997–2012.

Had the ratio of revenue to income remained the same as the average for 1990–96, state sales tax revenues would have been more than \$3.1 billion higher in fiscal 2013 and \$3.6 billion higher in 2014. At the lower ratio of 1999–2001, reflecting the exemption for groceries, fiscal 2013 and 2014 sales tax revenues would have been \$2.4 and \$2.8 billion higher, respectively, than was actually reported. Measuring similarly against state GDP, sales tax revenues in 1999–2001 averaged 1.57 percent of GDP, but by fiscal 2013 and 2014, the ratio had fallen to 1.18 and 1.10 percent, respectively. At the 1999–2001 average revenue-to-GDP ratio, state sales tax revenues would have been \$1.8 and \$2.2 billion higher in fiscal 2013 and 2014, respectively. For convenience, these differences between actual revenues and what revenues would have been had they kept up with income or GDP growth are referred to hereafter as “shortfalls,” with the fiscal 2014 shortfall estimated at a range of \$2.2 billion (measuring against GDP growth) to \$2.8 billion (measuring against personal income).

Figure 3. Sales and Use Tax Revenue as a Percent of Economic Aggregates



Sources: U.S. Census Bureau and U.S. Bureau of Economic Analysis.

Note: Recession periods shaded.

This phenomenon of sales tax revenues failing to keep up with economic growth is not unique to Georgia and it is not only a recent phenomenon. A report from the California Legislative Analyst’s Office (M. Taylor 2013) shows that, in spite of significant increases in sales tax rates in California over the period, state and local sales tax revenue growth has been 0.6 percent lower per year on average than growth in personal income since 1979.³ Compounded over 35 years through 2014, that seemingly small difference leaves sales tax revenues 19 percent below the level they would have reached had they grown at the same rate as incomes. Similarly, the ratio of sales tax revenue to personal income fell in Maryland from 1.7 percent in 1978 to 1.3 percent in 2005 (Gardner 2007). Finally, a report for the Kansas Department of Revenue documents erosion of that state’s sales tax base relative to personal

³ Historical California sales tax rates are available from the state Board of Equalization website at www.boe.ca.gov/sutax/taxrateshist.htm.

income as a long-term trend going back to the early post-World War II years, though several significant tax rate increases offset the base erosion and enabled the ratio of sales tax revenues to personal income to rise over the period (Wong and Hernandez 2006).

There are several possible explanations for this extended slide in Georgia sales tax revenues, the first being possible erosion of the tax base due to legislated tax breaks. This explanation is explored in the next section, followed by discussions of other possible explanations arising from economic trends affecting consumers and businesses.

Legislated Changes in the Sales Tax Base

The Georgia code section defining most of the exemptions from the state sales and use tax, O.C.G.A. §48-8-3, currently includes 79 exemptions for specified goods or specified purchasers. Two other code sections, §48-8-3.2 and §48-8-3.3, provide broad exemptions to manufacturers and agricultural producers, respectively, for purchases of machinery and equipment, energy, and other items. Other exemptions for certain government-created authorities are provided under Title 50 of the Georgia code.

Many of these exemptions existed before 2000, including the exemption for groceries, which was passed in 1996 and phased in over three years. The estimated tax savings to consumers from the exemption for groceries in fiscal 2014 was about \$439 million. Many more exemptions have been added or expanded since 2000. In legislative sessions from 2000 through 2014, the Georgia General Assembly passed at least 97 different changes to the sales tax base, including 54 new exemptions. Of those 54 new exemptions, 10 expired and one was repealed before 2014, one was repealed effective late in fiscal 2014, two expired at the end of fiscal 2015, and 40 remain in effect through at least fiscal 2016.⁴

The 43 exemptions created since 2000 that were still in effect in FY 2014 (and for which estimates are available) had a total value in terms of estimated tax savings on qualified purchases of around \$773 million. The 40 in effect through FY 2016 are projected to have a total value of about \$857 million that year. The largest of the 43 exemptions still in effect for FY 2014 are itemized in Table I.

⁴ For further information on exemptions passed since 2000 and on those still in effect, see the Georgia Department of Revenue's annual Summary of Enacted Legislation (various years) and the Official Code of Georgia, Annotated (O.C.G.A.), available online at www.lexisnexis.com/hottopics/gacode/Default.asp. Estimates are from the Georgia Tax Expenditure Report for FY 2016 or fiscal notes prepared at the time the legislation was passed to create or renew the exemption, or, in the cases of three smaller exemptions not itemized, are the author's estimates.

Table I. Summary of Sales Tax Exemptions Enacted Since 2000

(\$ AMOUNTS IN MILLIONS)	CALENDAR YEAR ENACTED	FY 2014 STATE REVENUE EFFECT*	NOTES
Gas used in production of electricity	2000	\$51.1	
Energy and other agricultural inputs	2000	\$27.2	Expanded 2003, 2004, 2005, and 2012
Sales tax holidays	2002	\$42.1	Held each year except 2010 and 2011
Jet fuel	2005	\$21.7	Repealed in 2015
Aircraft maintenance	2007	\$19.0	
Energy used in manufacturing	2012	\$34.0	Phased in through 2016
Projects of regional significance	2012	\$21.0	
Motor vehicles (replaced by TAVT)	2012	\$535.6	
Others enacted since 2000	Various	\$21.7	
Total enacted since 2000		\$773.4	

*See footnote 4 for sources of these estimates.

Notably, approximately \$536 million of sales tax revenue effects in 2014 are due to the exemption for motor vehicles, which are now subject to the TAVT instead. Analysis of the TAVT is beyond the scope of this report, but the net revenue effect at the state level to date has been positive. Excluding the motor vehicle exemption, the tax revenue loss from the remaining exemptions was an estimated \$238 million in fiscal 2014 and is projected at about \$280 million in fiscal 2016.

Though significant, new exemptions (including motor vehicles) explain only 28–35 percent of the estimated \$2.2–2.8 billion shortfall in sales tax revenues in fiscal 2014. In other words, the substantially slower growth in Georgia sales tax revenues than in GDP or personal income can only be partially explained by legislated tax breaks. Other factors have played a far larger role.

Economic Factors Limiting Sales Tax Revenue Growth

Subtracting the \$773 million of post-2000 new sales tax exemptions from the 2014 shortfall, measured against GDP or personal income growth, we are left with between \$1.4 and \$2.0 billion that must be attributable to other factors. Likely contributing factors include changes in the consumption mix of households, growth of untaxed online sales, higher household saving rates, lower investment in new homes, and changing business spending and investment patterns.

CHANGING CONSUMPTION MIX OF HOUSEHOLDS TOWARD UNTAXED SERVICES

It is estimated that household consumption spending accounts for around 63 percent or more of Georgia's state sales tax collections (Christie 2011). Thus changes in consumption patterns of households from generally taxable tangible goods to generally untaxed services could have a significant effect on revenues. Studies of other states' sales taxes have observed a long-running shift in household spending toward services and away from goods (Wong 2006). The goods share of consumption spending nationally peaked in the early post-World War II years, 1947–49, at around 61 percent of the total, according to data from the U.S. Bureau of Economic Analysis (BEA). By 2000, the goods and services shares had reversed, with services at about 63.9 percent and goods falling to 36.1 percent.⁵

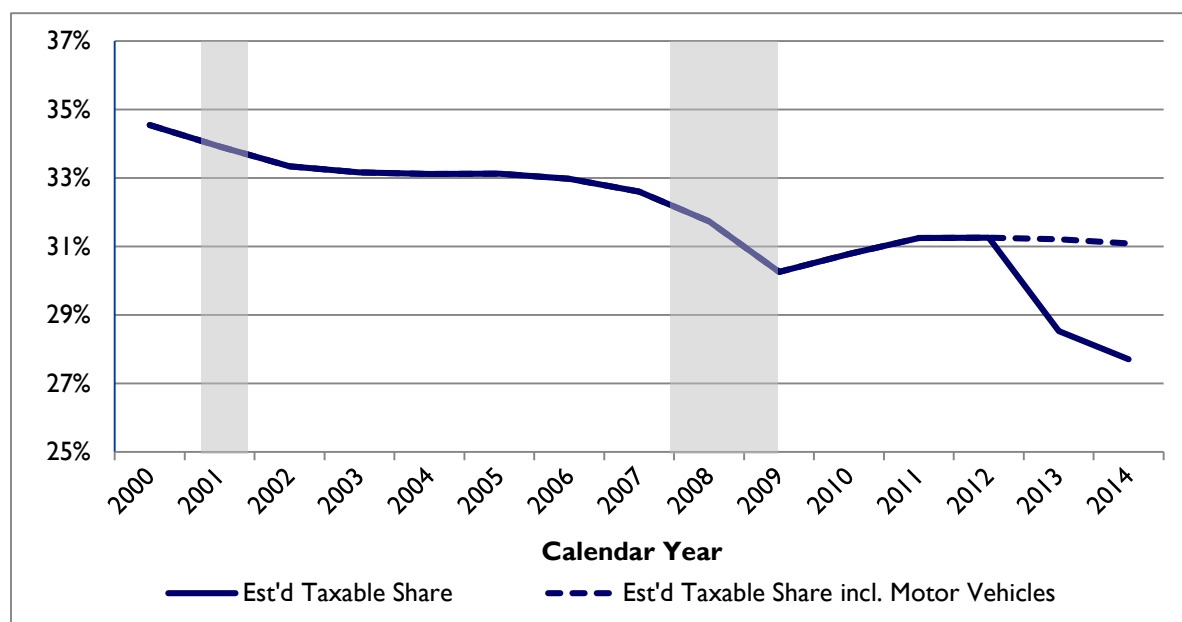
This trend toward a greater services share of household consumption continued after 2000, with the goods share nationally falling to 33.3 percent in 2014. The goods consumption share excluding food and non-alcoholic beverages purchased for off-premises consumption, which are generally nontaxable, fell from 29.3 to 26.9 percent, an 8.2 percent decline.⁶

In Georgia, a limited number of services are also taxable. Among services commonly consumed by households, those taxable include spending on electric and gas utilities, motor vehicle rental and leasing (until March 2013), local and cellular phone services, air and ground transportation services, and admissions to sporting/cultural events and amusements. Using national personal consumption expenditures (PCE) data from the BEA, the estimated taxable share of PCE including these services and excluding non-taxable goods is as shown in Figure 4. For the most recent two years, which are affected by the change from taxing motor vehicle purchases under the sales tax to taxing them under the TAVT, the figure also shows the estimated tax base as if this change had not been made. Excluding that change, the taxable share of PCE dropped by about 12.4 percent from 2000 to the recession in 2009 before rebounding slightly and then leveling off through 2014. That is, due to changes in consumption patterns just since 2000, sales taxes collected on household consumption spending in the post-recession years have been about 10 percent lower than they would have been had consumption patterns not changed. Measuring from fiscal 2001 to fiscal 2014, the estimated taxable share of PCE under 2001 tax laws has dropped from about 34.2 percent to 31.2 percent due to changes in consumption patterns alone.

To estimate the dollar impact of this shift in consumption on sales tax revenues in fiscal 2014, we first project the BEA estimates of Georgia PCE through 2012 forward to 2013–14 based on personal income growth, resulting in a Georgia PCE estimate for fiscal 2014 of about \$324 billion. The 3 percentage point drop in the taxable share of PCE (under 2001 law) would thus result in a roughly \$9.72 billion shrinkage of the sales tax base and an estimated state sales tax revenue loss of about \$389 million.

⁵ As Taylor (2013) points out, this dramatic reversal of goods and services shares was due less to changes in the quantities of goods and services consumed than to lower prices of goods relative to services. On a quantity basis, consumption of goods grew from 1949 through 2000 at an average annual rate of about 3.5 percent while consumption of services grew at about 4.0 percent annually. Had relative prices remained the same, the goods share in 2000 would still have been about 55 percent. However, while goods prices grew by about 2.7 percent annually (292 percent cumulatively) over the 1949–2000 period, services prices grew by more than 4.3 percent annually (770 percent cumulatively).

⁶ The pattern since 2000 is similar to that seen in the BEA prototype personal consumption expenditures data for Georgia, which shows the goods share of consumption declining from 37.9 to 35.8 percent by 2012, the latest year available. For this analysis, the national data are used because they include greater detail and cover more recent periods than do the prototype state-level data.

Figure 4. Estimated Taxable Share of PCE under Georgia Law

Sources: U.S. Bureau of Economic Analysis and author's calculations.

Note: Recession periods shaded.

GROWTH OF UNTAXED ONLINE SALES

Another likely factor in the erosion of Georgia's sales tax base is the growth of online retailing, particularly by firms that do not have nexus in the state and thus do not collect sales tax on sales to Georgia consumers. Though the largest online-only retailer, Amazon.com, began collecting sales tax on Georgia sales Sept. 1, 2013, and other online merchants certainly had nexus in the state and collected sales taxes before that, many online retailers still do not and the effect on revenues may be significant.

In 2014, according to U.S. Census Bureau estimates, online or e-commerce sales accounted for 6.4 percent of total U.S. retail sales or about \$297 billion. E-commerce sales by non-store retailers (those least likely to collect sales taxes in any given state, including mail order or online only retailers) in 2013, the latest year available, accounted for about 85 percent of total e-commerce sales. At this 85 percent share, e-commerce sales by non-store retailers in 2014 would account for about \$251 billion or 5.4 percent of U.S. retail sales. These 2014 estimates represent a dramatic increase from 2000, when total e-commerce sales accounted for 0.9 percent of U.S. retail sales and e-commerce sales by non-store retailers accounted for only 0.7 percent.

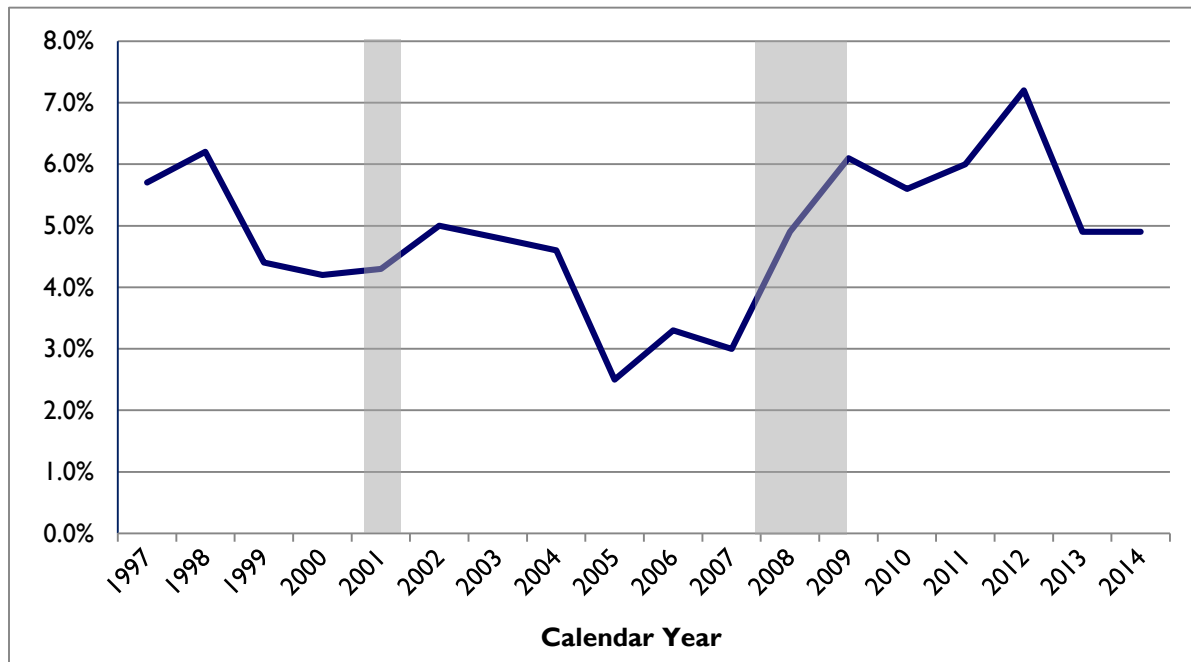
U.S. Economic Census estimates of Georgia retail sales for 2007, the latest year available, put Georgia's share of national retail sales at 3.00 percent. Georgia's share of internet users in 2012 is similar to its retail sales share; Census Current Population Survey estimates indicate that Georgia's share of the population in households with internet access was then about 3.15 percent of the U.S. total with internet access. Sharing national e-commerce sales down to Georgia based on these share estimates results in estimated Georgia e-commerce sales by non-store retailers of \$7.5 to \$7.9 billion in 2014. This range would suggest that, without Amazon.com collecting Georgia sales tax, online sales could have reduced state sales tax collections by more than \$300 million in calendar year 2014. With Amazon.com

collecting the tax, the potential revenue loss is likely reduced to around \$250 million.⁷ This potential loss would be reduced further to the extent other non-store retailers selling online into Georgia have nexus in the state and are thus also collecting the tax, and thus should be viewed as the estimated maximum revenue impact.

HIGHER HOUSEHOLD SAVING RATES

Another likely contributing factor, particularly to the sharp decline in real sales tax revenues from 2007, through the recession, to 2010 (see Figure 1) is that consumers were simply spending a smaller portion of what they earned, choosing instead to save and pay down debts. As shown in Figure 5, the BEA's national estimate of the personal saving rate had fallen from 5.0 percent of disposable income in 2002 to 2.5 percent in 2005, at least partially a result of rising home values and the ease of borrowing, and was still 3.0 percent in 2007. The housing collapse and recession, however, pushed the saving rate in 2009 back up to 6.1 percent, a level not seen since 1998, and by 2012 it had reached 7.2 percent, nearly three times the 2005 level.

Figure 5. U.S. Personal Saving Rate



Source: U.S. Bureau of Economic Analysis.

Note: Recession periods shaded.

⁷ Amazon.com does not report its retail sales for the U.S. market, only North America (the United States, Canada, and Mexico) and the rest of the world. The company reported North American revenues from retail activities in 2014 to be about \$50.1 billion. If the U.S. accounts for 90 percent of that figure (market researcher eMarketer.com estimates that Canada accounted for about 8 percent of the combined U.S. and Canada e-commerce market in 2014) and Georgia accounts for 3 percent of U.S. sales for the firm, then Amazon.com's Georgia sales, if all taxable, would generate about \$54 million of state sales tax revenues.

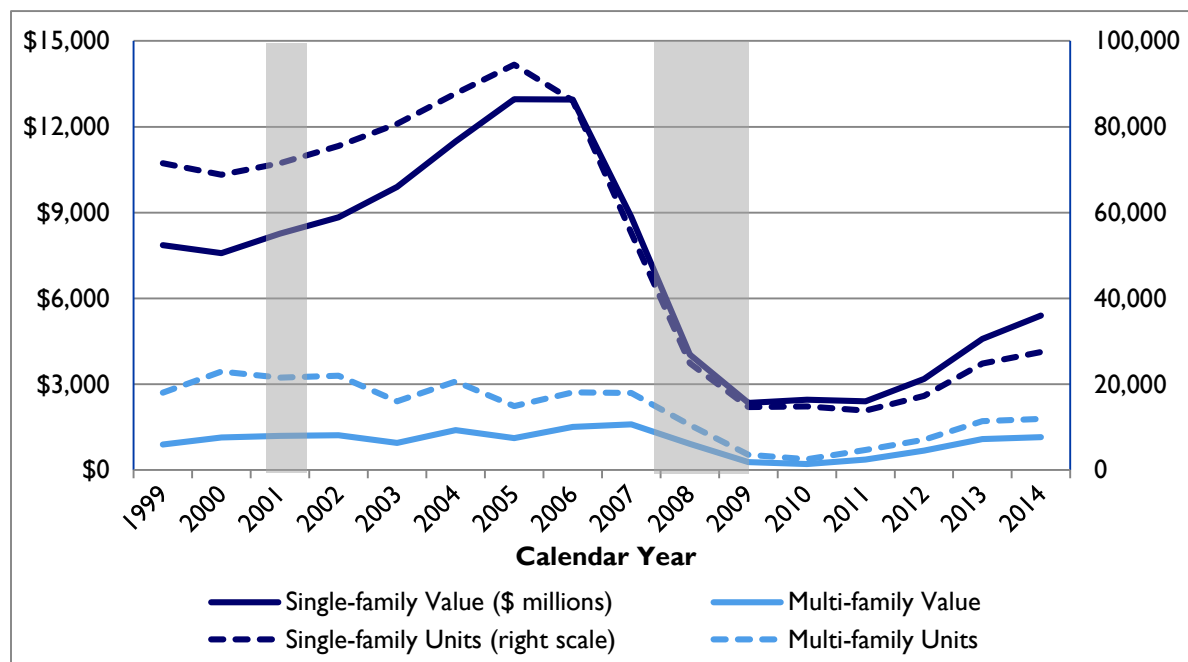
Saving rate estimates for Georgia residents are not available, but assuming a similar pattern here, a 4.7 percent of disposable personal income shift from consumption to saving by Georgians would suggest about \$15–16 billion lower consumption spending in 2010 than if the saving rate had remained at pre-recession levels. If 31 percent of that forgone consumption spending would have been taxable (see Figure 4), the state sales tax revenue loss would be \$186–198 million in 2012. However, the national saving rate has since fallen back to roughly 2002 levels, at 4.9 percent, so this factor offers little to explain the continuing failure in 2013–14 of Georgia sales tax revenues to keep pace with income growth or to rebound from the recession lows. With the U.S. saving rate in 2000–01 averaging 4.25 percent, the difference in 2013–14 is 0.65 percent, which equates to about \$2.24 billion of extra saving. Had this income been spent on consumption instead (again with 31 percent of it taxable), state sales tax revenues would have been about \$28 million higher in fiscal 2014.

LOWER INVESTMENT IN NEW HOMES

One clear consequence of the housing/mortgage crisis and resulting recession was a dramatic fall in new home construction; though home construction has started to rebound in the last two years, it remains far below pre-recession levels and significantly below the levels of 1999–2001. The materials that go into building new homes are subject to sales tax in Georgia at the time of sale to the contractor building the home, so the drop in new home construction has a direct impact on sales tax revenue.

Figure 6 shows Census measures of new home construction in Georgia from 1999 through 2014, including the number of new single family homes and multi-unit projects granted permits as well as the aggregate value of homes in each category, exclusive of land. In value terms, new home permits declined by about 81 percent overall from 2005 to 2009 and in 2014 were still 25 percent below 2000 levels (unadjusted for inflation).

Figure 6. New Home Construction in Georgia



Source: U.S. Census Bureau Building Permits Survey.

Note: Recession periods shaded.

Estimating the impact on revenues, however, is difficult as the portion of a new home's value that represents materials cost varies across time due to variation in the prices of those materials, in the size and features of new homes, and in housing market conditions. Engineering News-Record, a trade publication, tracks and reports on materials costs; its construction materials price index shows about a 10 percent drop in average materials prices from 2000 through 2003, followed by a sustained climb in prices through 2014, leaving materials prices about 36 percent higher than in 2000 (Engineering News-Record 2015). This rise, together with market conditions and other factors, has contributed to an increase in the ratio of construction cost to sales price of new homes nationally from 50.8 percent in 2002 to 61.7 percent in 2013, according to National Association of Home Builders (NAHB) estimates (H. Taylor 2014). Another NAHB report in 2003 suggests that materials generally accounted for about 60 percent of construction costs (materials and labor) on average for large home builders surveyed in 1999–2001 (Carliner 2003). Taking into account variations over the years in finished land costs, profits, and other factors included the NAHB reports, materials accounted for around 39 percent of new home values, excluding land, on average for 1999–2007 and the materials share likely rose to around 45 percent in 2008–13 as total construction costs rose relative to new home prices.

Applying these materials cost share estimates to the Census data depicted in Figure 6, revenues from sales tax on materials in new homes would have been around \$142 million at the peak of total sales tax revenues in fiscal 2001, around \$222 million at the home building peak in fiscal 2006. As a result of the mortgage crisis and its effect on home construction, sales tax revenues from home building fell to an estimated \$47 million at the homebuilding trough in fiscal 2010 before recovering to around \$110 million in fiscal 2014, roughly half the peak-level estimate and still 23 percent below the 2001 estimate.

CHANGING BUSINESS SPENDING AND INVESTMENT PATTERNS

Finally, with a few important exceptions, business spending on materials, energy, and investment goods are subject to sales taxes. Though consumer and business shares of state sales tax payments vary over time, Christie (2011) estimated that in 2009, consumer spending accounted for about 63 percent of collections, leaving 37 percent that was attributable to business spending.

Business spending on materials, energy inputs, and capital tends to be volatile at times, as shown in Figure 7. The estimates depicted in the figure are derived from BEA national GDP-by-Industry data combined with state level estimates made by Regional Economic Models, Inc. (REMI) and are adjusted for inflation using the BEA's GDP deflator. As the figure shows, spending on intermediate input materials makes up the largest portion of business spending on tangible goods, followed by investment spending, and both show a high degree of cyclicity. Energy inputs are a much smaller portion of spending, so fluctuations with energy prices or the business cycle are likewise smaller. As the figure shows, inflation-adjusted investment and materials spending followed similar patterns up through the 2007–09 recession, but since then materials spending recovered all the ground lost in the recession while investment did not.

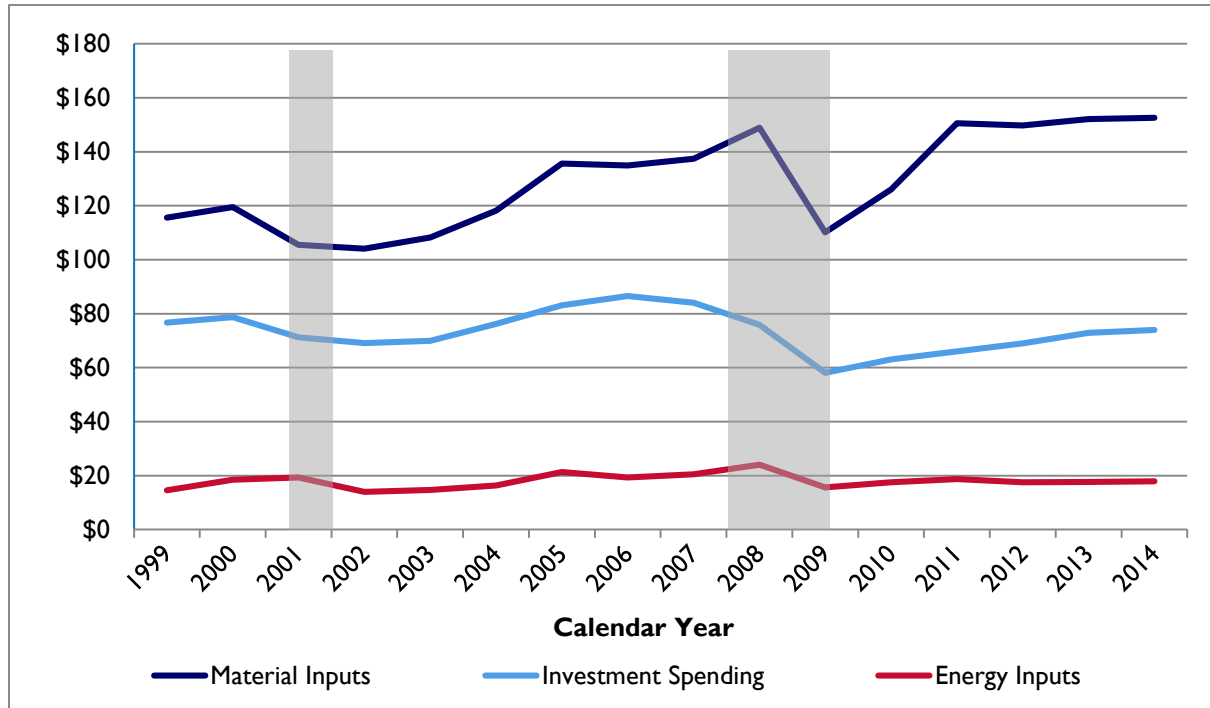
Measuring in nominal dollars from the 2000–01 average to approximate state fiscal year 2001 spending at the peak of real state sales tax revenue, investment spending grew by about 1.9 percent annually, on average, through fiscal 2014 while spending on materials grew by about 4.5 percent annually in spite of the recent recession. Spending on energy inputs grew by only about 1.6 percent annually, on average.

Perhaps due to rising commodities prices over this period, materials spending by itself outgrew personal income and GDP, about 76.4 percent cumulatively versus 59.8 percent for personal income and 50.2 percent for state GDP. Excluding the effects of exemptions, growth in this portion of the base added as much as about \$619 million of sales tax revenue compared to growing only as fast as income (\$978 million more than if it had only kept pace with GDP). This figure also reflects the impact estimated previously of the decline in new home construction, the materials for which are included in business spending on inputs. Adding that estimate back to avoid double-counting, the faster growth of materials spending other than for new homes may have added as much as \$651 million of revenue above that implied by income growth. The cumulative changes in investment and energy inputs spending, on the other hand, fell far short of both GDP and personal income growth at only 27.7 and 22.4 percent, respectively. Compared to growth keeping pace with personal income, the weakness in investment and energy inputs spending results in a sales tax revenue shortfall of up to \$798 million attributable to investment and \$234 million attributable to lower energy spending, again before accounting for exemptions.

Taken together, growth in business spending on goods that, if not for legislated exemptions, would generally be taxable was about 54 percent cumulatively compared to personal income growth in the state of 60 percent and nominal GDP growth of 50 percent cumulatively. Had it kept up with personal income growth, business spending on goods in fiscal 2014 would have been about \$10.4 billion higher, which, if taxable, would have meant an additional \$413 million of state sales tax revenue (\$381 million after adding back the loss from new home materials to avoid double-counting, as explained above).⁸ This business spending shortfall and resulting impact on sales tax revenue is attributable entirely to shortfalls in investment and energy inputs spending.

⁸ Compared to keeping pace only with GDP growth, the net contribution of business spending to the sales tax revenue shortfall is a somewhat smaller \$246 million.

Figure 7. Business Spending in Georgia (Inflation-adjusted 2009 U.S. dollars, billions)



Sources: U.S. Bureau of Economic Analysis, Regional Economic Models, Inc. (REMI), and author's calculations.
 Note: Nominal dollar estimates deflated using the BEA price index for GDP. Recession periods shaded.

Summary and Conclusions

In the preceding discussion, we estimated a shortfall in state sales tax revenue for fiscal 2014 of between \$2.2 and \$2.8 billion compared to what one would expect if sales tax revenues had just kept pace with GDP or personal income growth, respectively, since the fiscal 2001 revenue peak. The balance of the report attempted to explain this shortfall, first considering the impact of legislated tax changes since 2000 and then considering the impact of several economic factors related to consumer and business spending. Table 2 below summarizes the findings in terms of the contributions of legislative actions and economic factors to the shortfall (positive numbers indicate revenue gains). The estimates are in some cases rough because of data limitations, but nevertheless provide a measure of the relative degrees to which each factor likely contributed.

**Table 2. Georgia Sales and Use Tax Revenue Shortfall:
Summary of Contributing Factors**

(\$ MILLIONS)	ESTIMATED FY2014 EFFECT
<i>Legislative Actions:</i>	
Replace sales tax on motor vehicles with TAVT	-\$536
Permanent sales tax exemptions	-174
Temporary sales tax exemptions	-64
Total of Legislative Actions	-\$773
<i>Household Economic Factors:</i>	
Changing consumption mix toward services	-\$389
Growth of online sales (estimated maximum impact)	-250
Higher household saving rates	-28
Lower investment in new homes	-32
Household Factors Total	-\$699
<i>Business Economic Factors:</i>	
Input materials spending	\$651
Input energy spending	-234
Investment spending	-798
Business Factors Total (estimated maximum impact)	-\$381
All Factors Total	-\$1,853

Legislated changes to the sales tax code since 2000 resulted in a revenue loss in fiscal 2014 of about \$773 million. However, since motor vehicles sales are still taxed, just under the TAVT instead of the sales tax, the effect on overall tax revenues is much smaller. Temporary sales tax exemptions, the largest of which is the back-to-school sales tax holiday, carried a combined cost of about \$64 million in fiscal 2014 while those that do not expire totaled about \$174 million in foregone revenue.

Changes in household spending patterns appear to have had a much larger impact than temporary or permanent exemptions. The long-term trend of households shifting consumption from tangible goods toward largely untaxed services, which began in the 1960s, continued after 2000 and explains around \$389 million of the fiscal 2014 shortfall. The growth of online sales also appears to be a significant factor, even with Amazon.com now collecting Georgia sales taxes. Counting only estimated sales by non-store retailers other than Amazon.com, the impact on state sales tax revenues could be as high as about \$250 million, though the impact would be reduced to the extent any of these firms have nexus in Georgia.

Other household-related factors had limited effects. Higher household saving rates during and after the Great Recession likely had a large effect as late as 2012, but by fiscal 2014 the likely impact had diminished to about \$28 million. The decline in new home construction also had a larger impact during and shortly after the recession, as much as about \$95 million in fiscal 2010, but a partial recovery in home building reduced the impact in fiscal 2014 to around \$32 million.

Business spending patterns had mixed effects, with spending on input materials apparently boosting revenues above what would be expected based on income growth, but spending on energy inputs and

investment goods creating a drag on revenues. Investment spending alone has lagged income growth by enough to contribute about \$798 million to the sales tax revenue shortfall in 2014, but taken together, the business spending contribution to the shortfall is estimated to be around \$381 million.

The total impact of all identified factors, at close to \$1.9 billion, doesn't quite reach the original range estimate of the fiscal 2014 shortfall at \$2.2–2.8 billion, so other factors may have contributed or some estimates may be too low. Nevertheless, the relative importance of these factors in explaining the shortfall is clear and the results offer some insights into how much of the shortfall might cure itself with further economic growth, might never recover, or might be addressed through legislation, if so desired. The shifts in household consumption toward services and online sales, for example, are likely permanent, but both can also be added to the sales tax base through legislation. Household saving rates will fluctuate and either boost or drag on revenues at times, and new home construction will likely continue to rebound, but the impact of each is currently relatively small.

On the business side, the apparent boost from higher materials spending is subject to reversal if either materials prices or volumes fall sharply because of economic weakness, but neither seems an immediate risk. Business spending on energy inputs is of declining importance to state revenues because a growing portion of it is not subject to sales tax; natural gas is a rapidly growing fuel source for electric utilities, but it has been exempt from tax since fiscal 2001. By calendar year 2016, all energy used in manufacturing or agriculture will be exempt. Finally, while business investment has been slow to recover since the latest recession, it should continue to grow as the broader economy grows. However, its potential contribution to future revenues is limited by exemptions for machinery and equipment used in manufacturing and agriculture, so sales tax revenue growth would have to come from investment in other sectors. Of course, economic theory suggests that taxing business inputs is not optimal, so taxing this spending less could boost revenue from household consumption and income in the long run if it results in greater business investment.

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