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## BUOYANCY OF GEORGIA'S SALES AND USE TAX

### Introduction

Sales and Use Tax revenue in Georgia accounts for the second largest share of state tax revenue, only the personal income tax generates a higher share. In FY2008, total sales tax revenue was \$5.8 billion—out of \$17.7 billion in net tax revenue collections for the state—accounting for 32.8 percent of state net tax revenue. In addition, local government raised 4.8 billion from local sales taxes in FY2008.

As seen in Figure 1, state sales tax revenues have grown over the period FY1977 to FY2008, but the growth rates have not been steady. The growth pattern was influenced by two major policy changes and five economic recessions. In 1989, the state increased the sales tax rate from 3 percent to 4 percent, which resulted in a substantial growth in revenue. In 1996, the state began a three-year phase-in of an exemption for food-for-home consumption, which resulted in reduced revenue growth. During the recessions of the early 1980s (January 1980 to July 1980 and July 1981 to November 1982) and 1990s (July 1990 to March 1991), revenue growth stalled. But, sales tax revenue actually fell as a result of the 2001 (March 2001 to November 2001) recession. Sales tax receipts rebounded and grew steadily until the most recent economic downturn, which started in

December 2007, when sales tax revenue again fell. Monthly receipts for the first seven months of FY2009 are down -3.7 percent over the first seven months of FY2008. The post-1999 period has seen increased volatility of sales tax revenue.

The fluctuation in tax revenues with respect to the growth in the economy is referred to as the *buoyancy* of a tax. Buoyancy is measured as the percent change in tax revenues divided by the percent change in economic activity. The latter might be measured by personal income or gross state product. Personal income is somewhat closer to the tax base for sales taxes, and it is therefore used in this analysis. Buoyancy is also often referred to as income elasticity of tax revenue.

How tax revenues move with the economy (measured as buoyancy) is one criterion for evaluating a tax since it indicates whether the tax “keeps up” with growth in the economy. Year to year, buoyancy also measures the volatility of the tax and the ability of government to meet the demands of their constituents. As an economy grows (and income of taxpayers grows), the demands for public services tends to increase. (Some researchers argue that the demand for public services increase faster than income.) If tax revenues grow less quickly than the economy, then the public sector

will not be able to meet increased demands for better schools and roads, more trash collection, additional parks, greater security, etc. Low tax buoyancy suggests that governments may face increased public pressure for better and/or more services but with slower growing revenue sources. It is also important to know the buoyancy of specific revenue sources when forecasting revenues—if personal income is expected to grow, but tax buoyancy is less than one, we would not forecast revenues to grow at the same rate as the economy.

Figure 2 provides a long-term view of the buoyancy of Georgia's sales and use tax from FY1978 to FY2007. The figure shows a downward trend in the buoyancy of the sales tax. Another way of seeing this trend is to consider how sales tax revenue per \$1,000 of income has changed over the period. Figure 3 shows that sales tax revenue, adjusted for the increase in the tax rate in 1989, per \$1,000 of income has declined over this period, from \$21.2 to \$13.9.<sup>1</sup> This represents a decrease of 34.4 percent. Figure 2 also illustrates that the variation in buoyancy has increased over the period. The objective of this policy brief is to review the trend in sales tax revenue and provide some insight regarding recent patterns of sales tax revenue growth in Georgia. In particular the policy brief discusses possible reasons for the decrease in buoyancy and in sales tax revenue per \$1,000 of income.

### Georgia's Sales and Use Tax

To understand the growth and volatility of the sales tax revenue, it is useful to review the basic structure of the sales tax. The sales tax was adopted by many states in the 1930s. When Georgia adopted its sales tax in 1951 the state followed the design adopted by other states, which was to tax the purchase and lease of tangible personal property unless explicitly exempt, and to tax services only if they are explicitly enumerated. While the sales tax is often thought of as a retail sales tax, it in fact applies to more than retail purchases. In particular many purchases by businesses are taxed; it has been estimated that 36 percent of Georgia's sales tax revenue comes from purchases by business (Ring 1999). When the state adopted the sales tax, very few exemptions were specified. However, over the past 58 years, the state has exempted the purchase of many tangible personal products and the purchases made by several organizations.<sup>2</sup>

Legally, the liability for paying the sales tax is upon the individual or business making the purchase. However, the state requires the seller to collect the sales tax from the customer and remit the taxes collected to the state.

The state sales tax is applied to taxable purchases made in the state unless the product will be shipped out of state. There is a corresponding 4 percent use tax that is applied to out-of-state purchases of goods which are used in Georgia. For example, purchases made through the internet and shipped to Georgia are legally subject to the use tax. If the out-of-state vendor does not have nexus (i.e., physical presence) in Georgia, Georgia cannot force the vendor to collect the tax. Thus, it is believed that a substantial percentage of mail order and internet sales go untaxed.

### Sales Tax Buoyancy

The buoyancy of any revenue source is typically described as the percent change in tax revenue divided by the percent change in the underlying level of income. "Income" could be measured many ways, but we often use personal income, as reported by the Bureau of Economic Analysis, as the underlying measure of income. Personal income includes income received from all sources.

If personal income is a good approximate measure of the tax base, then we would expect tax revenues to increase as personal income increases. However, over time, if the tax rate was increased, that would increase tax revenues relative to personal income. But it might lead consumers to shift some of their purchases to non-taxed goods and thus reduce the growth rate of revenue. If exemptions are added, the tax base would shrink and tax revenues would fall. If the sales of products that are exempted grow slowly, than the growth rate (i.e., buoyancy) of the remaining tax base would grow faster. Tax revenue growth is also related to how efficiently taxes are collected. If the tax administration is doing a good job, we expect that tax revenue growth will be higher—all else held constant. Finally, tax revenue growth is linked to tax compliance. Taxpayers may become more or less compliant over time or over economic conditions—which would affect the growth in tax revenue.

The growth in tax collections is dependent on these several factors. Thus, we can decompose tax revenue as a share of income into the product of several ratios. Equation 1 presents a simple decomposition of these effects.

$$T_C/Y = [T_C/T_L] \times [T_L/P_T] \times [P_T/P] \times [P/C] \times [C/Y] \quad (1)$$

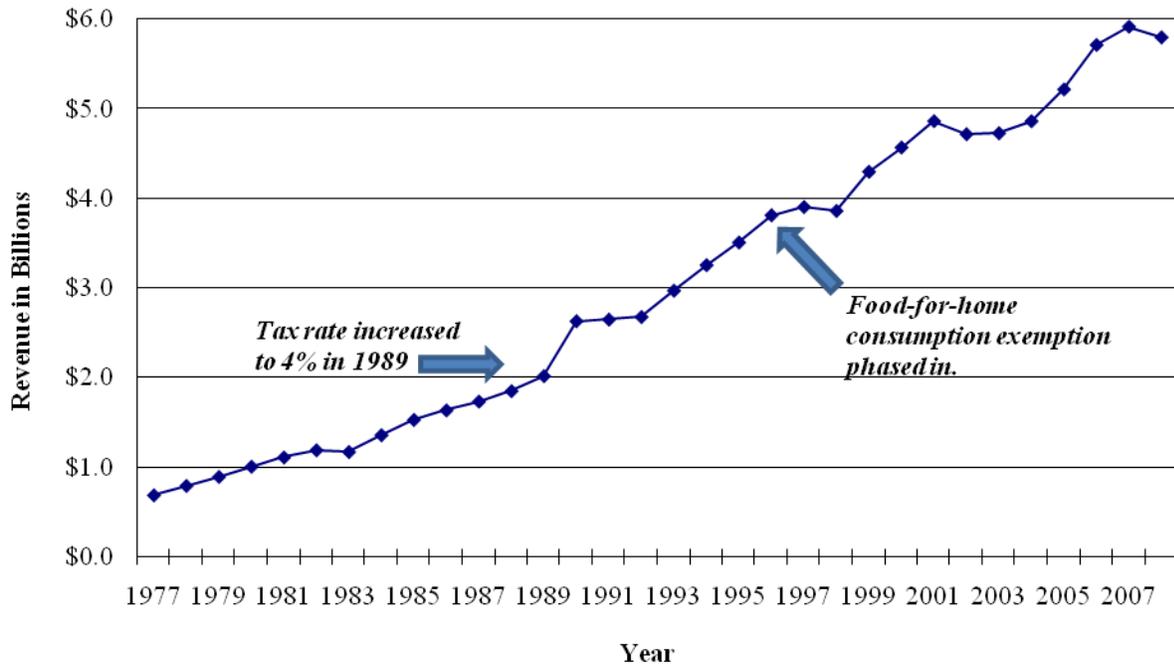
Where:

$T_C$  = Sales Tax Collections

$Y$  = Personal Income

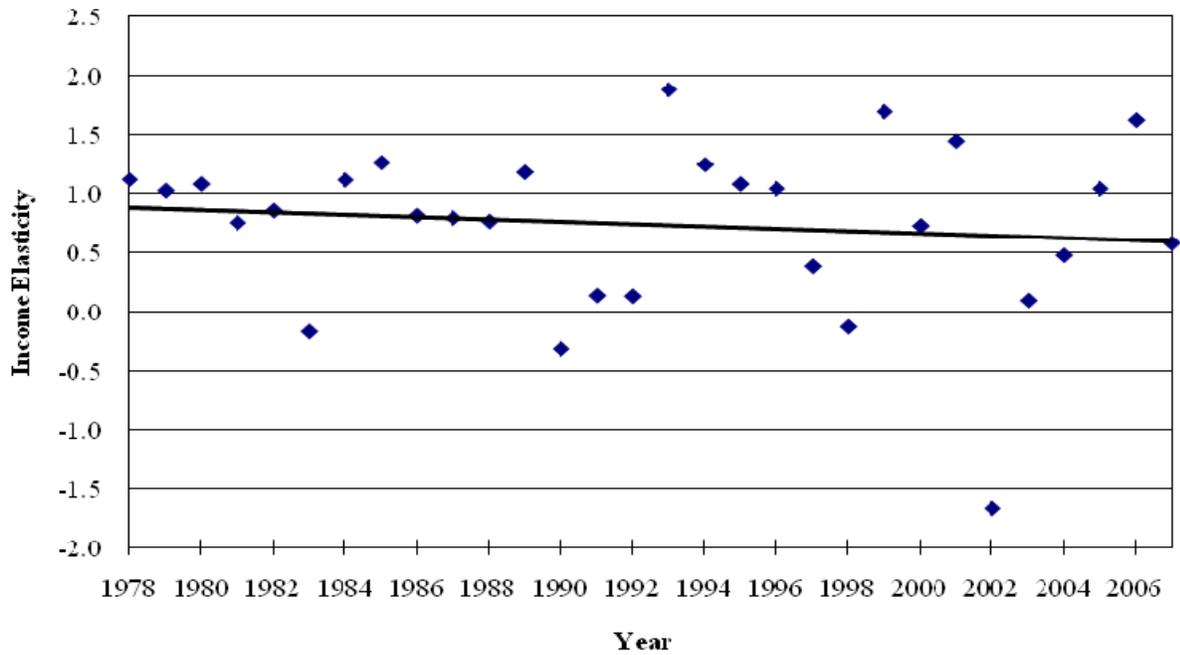
$T_L$  = Sales Tax Liability

**FIGURE 1. ANNUAL SALES AND USE TAX REVENUE, FY 1977-2008**



Source: Governor's Budget Report, various years.

**FIGURE 2. BUOYANCY OF SALES TAX**



$P_T$  = Taxable Purchases

$P$  = Purchases of Potentially Taxable Goods

$C$  = Consumption of Goods and Services.

In this simple expression relating the tax revenue to income, a change in tax collections as a share of income  $[T_C/Y]$  is made up of (in order of the right hand side of equation 1):

- $[T_C/T_L]$ : the collection ratio (affected by compliance and administration);
- $[T_L/P_T]$ : the tax rate (affected by changes in the rate);
- the tax base as a share of income, which is comprised of two elements:
  - $[P_T/P]$ : share of potentially taxable items actually taxed (affected by exemptions)
  - $[P/C]$ : share of consumption on potentially taxable items (affected by consumption pattern)
  - $[C/Y]$ : share of income spent (affected by saving decisions and other taxes paid).

To better understand and potentially explain the sales tax buoyancy in Georgia, it is useful to look into each of these pieces. To begin that analysis, Figure 2 documents Georgia's sales tax buoyancy from 1977 to 2007. As seen there by the trend line, the buoyancy in general has fallen over time. The buoyancy is also less than one, on average, so that sales tax revenue as a share of income will fall over time, as seen in Figure 3. Furthermore, in the most recent years the buoyancy has become quite erratic due to the changes in levels of income associated with the 2001 and 2008 recessions and resulting changes in taxable sales. The most recent 18 months of data on sales tax receipts shows a decline in collections, but we do not have personal income data for 2008 in order to compute buoyancy for these recent months. Overall, the long-term trend seems to suggest that the buoyancy is declining and has gotten more variable. We turn next to a discussion of possible reasons for the long-term trend.

### Factors Affecting Sales Tax Buoyancy

Personal consumption expenditure as a share of income  $[C/Y]$  increased between 2000 and 2007 (the most recent data available). The potential tax base consists of purchases and leases of tangible personal products, i.e., goods. The upper line in Figure 4 shows that purchases of goods as a share of personal consumption  $[P/C]$  declined from 53.1 percent in 1997 to 40.3 percent in 2007. Expenditures on services have increased as a share of personal consumption. The bottom line shows that purchases of goods as a share of personal income  $[C/Y] \times [P/C]$  has declined over time, falling from 41.5

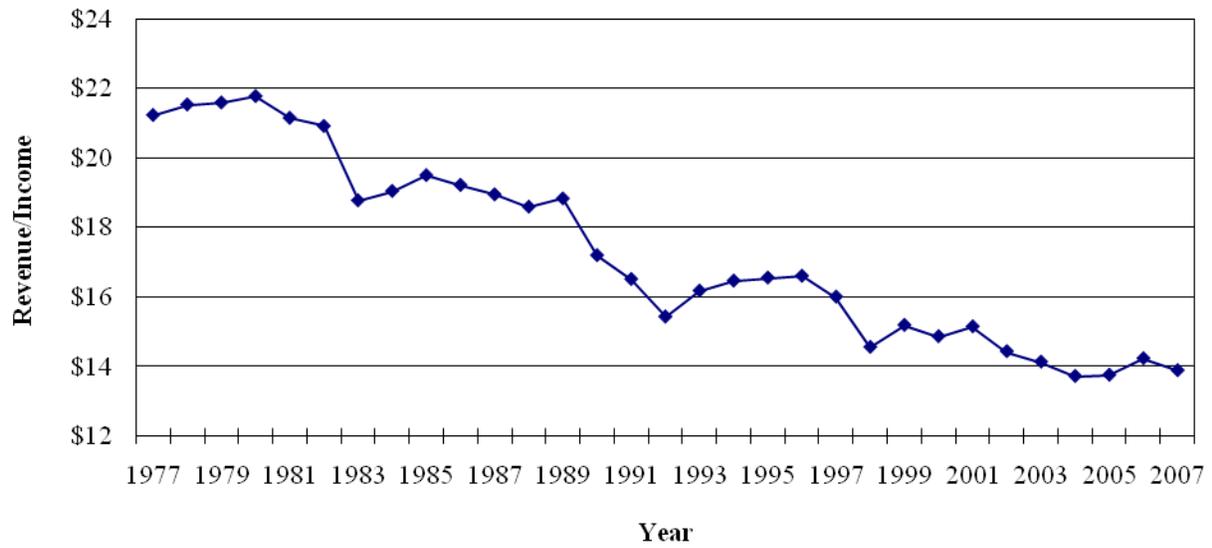
percent in 1977 to 33.6 percent in 2007, although there has been little change in the share since 1996. This is a 19.0 percent decline in the expenditures on goods as a share of income over the period 1977 to 2007. So, the shift of consumption to services explains part of the decrease in sales tax revenue as a share of personal income.

The second factor concerns the share of expenditures on goods that are subject to the tax  $[P_T/P]$ . The difference between taxable good and potentially taxable goods are the exemptions from the sales tax. Two of the major exemptions date from the adoption of the sales tax in Georgia, namely purchases by government and the exemption of raw materials used in the production process. However, over time the state has adopted an increasing number of exemptions of specific products or for purchases made by specific organizations. During the period 1977 to 2008, the exemption that has had the largest effect on revenue is the exemption for food-for-home consumption. This exemption is estimated to have reduced sales tax revenue by \$567.1 million in FY2008, or 9.8 percent of FY2008 sales tax revenue. A 2002 estimate (Edmiston, et al 2002) of the sales tax exemptions adopted between 1987 and 2002, exclusive of the exemption for food-for-home consumption, suggest they account for an estimated \$93 million in lost revenue. Given inflation and the other exemptions that have been adopted, more than 2 percent and perhaps as much as 4 percent of sales tax revenue has been lost because of the exemptions, other than for food-for-home consumption, adopted since 1977.

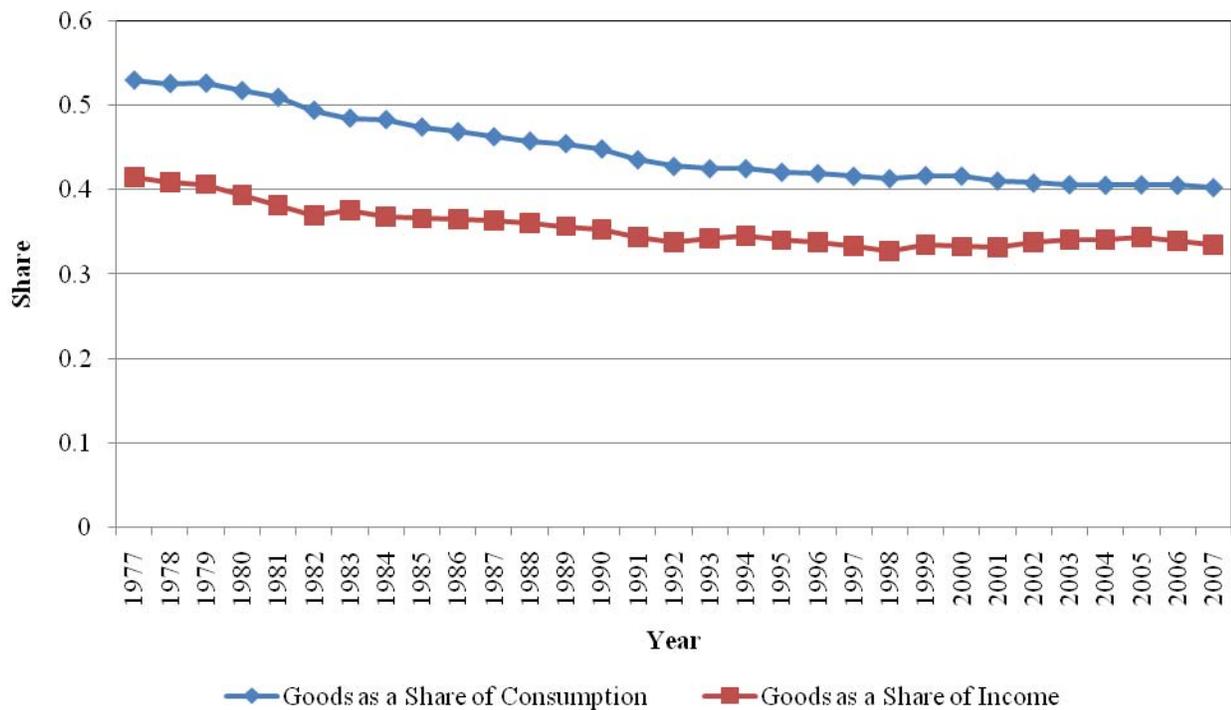
The sales tax rate  $[T_L/P_T]$  was increased from 3 percent to 4 percent effective April 1, 1989. Figure 3 adjusts for this change in the tax rate; in 2007, actual sales tax revenue per \$1,000 of personal income was \$18.5.

Finally, there are the issues of compliance and administration and their impact on the sales tax buoyancy in Georgia. It is difficult to obtain data on either issue. If compliance or administration were the cause of the falling buoyancy, we would say that more people were evading or avoiding the sales tax and/or the tax administration was doing less well in terms of its collection efforts. There are two major sources of evasion. First, there may have been an increase in cross border shopping. As the total sales tax rate (state plus local) has increased, this has provided an incentive for Georgia residents to shop out of state, and for non-Georgia residents to reduce shopping in the state. The second source of evasion is internet and mail order shopping. Because the state cannot require remote vendors to collect the sales tax on purchases by Georgia residents and businesses, the state must rely on the purchasers to pay the use tax. It is estimated that a

**FIGURE 3. SALES TAX PER \$1,000 OF PERSONAL INCOME (ADJUSTED FOR TAX RATE INCREASE)**



**FIGURE 4. GOODS PURCHASES AS A SHARE OF PERSONAL INCOME**



substantial percentage of the use tax that should be paid is not. Bruce and Fox (2004) predicted that lost state sales tax revenue for 2008 due to e-commerce would be \$705.9 million, or 12.2 percent of FY2008 sales tax revenue. Furthermore, internet sales have been increasing, 210.3 percent between 2001 and 2006 based on data from the Bureau of the Census.<sup>3</sup>

The Georgia Department of Revenue (DOR) now publishes statistics on the number of accounts processed by the Compliance Division and the resulting collections by the Division (FY2000 forward). There has been a marked increase in the number of accounts processed—growing from 7 percent annual growth in 2000-02 to over 14 percent by 2004, before dropping off to 3 percent in 2006. While this activity applies to all revenue sources, it does suggest increased administrative activity that might boost sales tax revenues from 2002 to 2004. The compliance/administrative link to explain the sales income tax buoyancy is yet another area for further analysis.

## Conclusions

The growth in sales and use tax revenues in Georgia has, over time, lost ground relative to the increase in personal income. As detailed above, there are many reasons for the reduction in sales tax buoyancy, as well as reasons for the increased variability of the buoyancy. In this policy brief, we started an investigation of some of the likely factors that might explain this change in buoyancy over time. By decomposing the base and administrative/compliance issues related to sales tax revenue growth, we attempted to isolate reasons for the reduction in buoyancy since 1977. A number of possible explanations were isolated:

- Reduction in purchases of goods as a share of personal income; which might account for 19 percent of the decrease in revenue per \$1,000 of income. This reflects the original design of the sales tax that excluded services from the sales tax base, and the implicit policy decision to not alter that design.
- Increase in exemptions; which might account for at least 13 percent of the decrease in revenue per \$1,000 of income. This reflects on-going policy decisions to provide exemptions to selected products and organizations.
- Increase in evasion, particularly from internet sales; which might account for over 12 percent of the decrease in revenue per \$1,000 of income. The changing structure of the economy, in concert with judicial decisions, has made it difficult to tax certain transaction. While there are national efforts to address the barriers to taxing these transactions, Georgia has not played a role in these efforts.

- Administrative measures by the DOR; no estimate of the effect is feasible at this point.

These and other possible explanations need further investigation to better understand their current and future impact on the growth of Georgia's sales tax revenue. However, it does appear that policy decisions such as to exempt more and more items from the sales tax and to not include services in the tax base explains a sizable portion of the reduced buoyancy.

## Notes

<sup>1</sup>We reduced post-1989 revenues by 25 percent to adjust for the increase in the tax rate to 4 percent.

<sup>2</sup>Smith and Walker (2006) have a list of exemptions and an estimate of the revenue lost from each. The Department of Revenue has a list of exemptions that can be found at [http://www.etax.dor.ga.gov/BusTax\\_SalesTax.aspx](http://www.etax.dor.ga.gov/BusTax_SalesTax.aspx).

<sup>3</sup>These data are available at <http://www.census.gov/eos/www/2006/historical/2006ht.html>.

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