

## The Impact of an Aging Population on State Tax Revenues

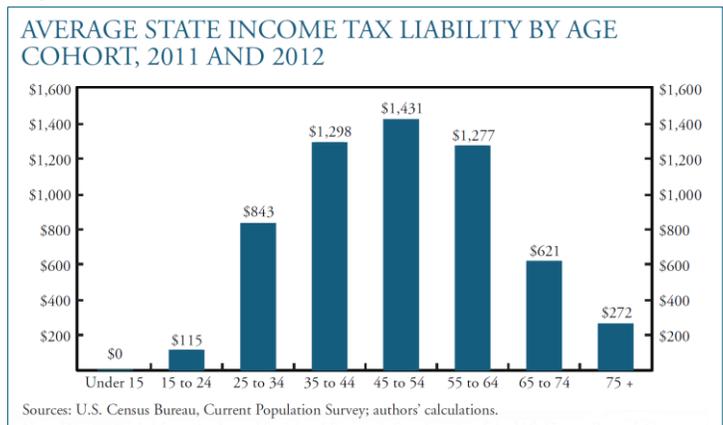
By [Alison Felix](#) and Kate Watkins

*As the baby boom generation retires, the nation's labor force participation rate is expected to decline. And since most people earn less and spend less during retirement, the aging of the U.S. population could reduce income and sales tax revenue significantly for state governments. Our analysis suggests that had the population's age composition in 2011 already resembled what is projected for 2030—that is, a greater proportion of retirees—state tax revenue would have been reduced by \$8.1 billion, or 1.1 percent.*

By 2030, almost 19 percent of all Americans will be 65 or older, up from just over 13 percent today. To assess the effect of this shift on state tax revenue, we draw from data on different age groups' earning and spending patterns. Taxes on earning and spending—that is, income taxes and sales taxes—constitute more than 80 percent of total state tax collections, so changes in these sources of revenue can have significant impact. Nationwide, in 2011, individual income taxes contributed 34.1 percent to total state tax revenue, while sales taxes (including both general and selective sales taxes) contributed 48.4 percent.

Our analysis focuses first on income taxes, then on sales taxes, and then combines the two to assess the overall impact on state tax revenues.\* Income taxes vary as taxpayers age, because their incomes and rates of labor force participation change over time. Thus average income tax revenue from individuals varies across age cohorts. Part of the variation stems from the typical rise in wages and salaries, on average, over the course of workers' careers. Early in their working lives, many people move from part-time jobs to full-time jobs that make better use of their growing skills and education. Over the course of their lifetimes, through promotions and through switching into higher-paying jobs over time, average salaries usually rise until retirement—and then income declines as retirees shift to part-time work or leave the workforce. Labor force participation rates peak among middle-aged cohorts and fall off sharply at retirement.

As a result, and as shown in this chart, income tax collections tend to follow a similar pattern: they are lowest for young workers, increase for older workers and then fall as workers retire. Using population projections for the year 2030, along with state-level data about different age cohorts' average income tax liability per capita, our analysis projects the effect of demographic change on individual state income tax revenues. By isolating the impact of an aging population, and holding constant such factors as income growth, tax structures and other variables, we find that on average—across all states and the District of Columbia—demographic change from 2011 to 2030 is likely to reduce state income tax revenue per capita by 2.4 percent. Note that in most states, although *per capita* income tax collections are projected to fall, *total* income tax revenues are projected to increase due to overall population growth.



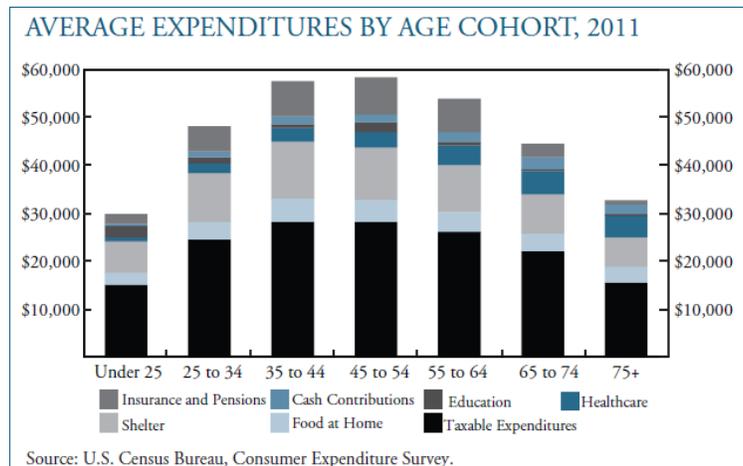
# THE MACRO BULLETIN

Macroeconomic research from the FEDERAL RESERVE BANK of KANSAS CITY

DECEMBER 5, 2013

Sales tax collections are also affected by age demographics. As with income patterns, consumer spending tends to rise and then fall as people age. This is true even though consumers typically smooth their consumption across their lifetimes to some extent, by borrowing early in life and spending from savings later. As shown in the chart below, spending typically peaks for middle-aged cohorts and is lower for both younger and older cohorts. The dramatic decline among older cohorts has important implications for sales tax revenues.

Based on population projections and current spending patterns, demographic change alone—holding other factors constant—is projected to reduce sales tax revenue per capita from 2011 to 2030 in all but one state: Idaho, where strong population growth is projected for the high-spending age cohort aged 35-54. Across all states, average taxable expenditures per capita are expected to be reduced by 0.5 percent from what they would have been absent the aging of the population. Note that despite declining sales tax revenue *per capita*, most states will see a higher *total* due to population growth.



By combining the projected effects of demographic change on state individual income taxes and sales taxes, we arrive at the finding cited above: Had the U.S. population in 2011 already had the age composition projected for 2030, state tax revenue would have been reduced by \$8.1 billion, or 1.1 percent. However, care must be taken in interpreting such results. This analysis artificially isolates the effect of demographic change, and it relies heavily on several assumptions: that taxable expenditures are consistent across states; each age cohort's income tax liabilities, labor force participation and average income will remain constant over time; and state tax policies will not change.\* The results also depend on the accuracy of population projections.

States vary in the degree to which they rely on income taxes and sales taxes. Any given state's revenue will be affected by this as well as other factors, including tax structures, migration rates and their population's current age compositions. For example, for Tennessee and New Hampshire, where individual income taxes are limited to capital gains and inheritance, both of which generally rise with age, tax revenue per capita is projected to increase slightly from 2011 to 2030. In Arizona and Colorado, population growth is expected to drive strong growth in tax collections. Maine and Pennsylvania, where little population growth is expected, face a projected decline in total income tax revenue.

\* For more, see Felix, Alison and Kate Watkins, 2013. "The Impact of an Aging Population on State Tax Revenues." *Federal Reserve Bank of Kansas City, Economic Review, fourth quarter*. The views expressed are those of the authors and do not necessarily reflect the positions of the Federal Reserve Bank of Kansas City or the Federal Reserve System.