September 29, 2014

# Economics Group

## Special Commentary


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# Changing Demographics and the Federal Budget Part I: Population Trends Alter the Growth of Federal Revenues

One of the key themes that has emerged in recent years is the effects of the aging U.S. population on the economy and the federal budget. The time period from 1946 and 1964 led to an explosion in the birth rate in America, which came to be known as the baby boomer generation. This large cohort played a role in everything from increasing the labor force participation rate (Figure 1) to helping provide the federal government with a higher tax base for which to expand the size of the federal budget (Figure 2). In essence, this large demographic cohort played a significant role in prosperity and federal finance over the past several years.

**Figure 1**

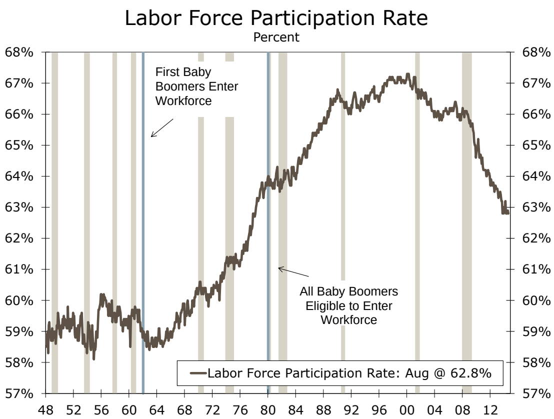
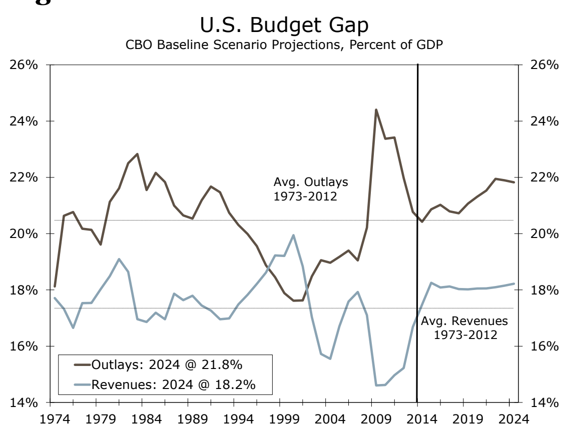



**Figure 2**




**Source: U.S. Dept. of Labor, U.S. Dept. of Commerce, CBO and Wells Fargo Securities, LLC**

However, today the story is beginning to change. The baby boomer generation is beginning to retire at the pace of 10,000 individuals per day, a pace that is expected to continue through 2030.[1] The effects of this demographic shift have been masked by the residual effects of the Great Recession, but the longer-term trend of a shrinking labor force continues to be the dominant story. Beyond the effects on the economy, this large shift in the demographic profile of America also has profound effects on the federal budget for both revenues and expenditures. The structural shifts in demographics translate into a more modest pace of potential economic growth going forward, which adversely affects federal revenue growth. Furthermore, as the baby boomer generation retires, it will begin to draw upon federal entitlement programs such as Medicare and Social Security, which boosts federal outlay growth. This net budget result prompted the Congressional Budget Office, The Board of Trustees for Social Security and Medicare and others to warn about the dire fiscal issues facing the nation in the years ahead.[2]

***The baby boomer generation is beginning to retire at the pace of 10,000 individuals per day.***

[1] **Cohn, D. and Taylor, P. (2010). "*Baby Boomers Approach 65 - Glumly*." Pew Research Social & Demographic Trends.**

[2] **See Congressional Budget Office. (2014). *The 2014 Long-Term Budget Outlook* and Social Security and Medicare Boards of Trustees. (2014). *Status of the Social Security and Medicare Programs: A Summary of the 2014 Annual Reports*.**

In this first of two reports on demographics and the federal budget, we take a look at the changing profile of America's demographic makeup. We then turn to how this changing profile will affect federal revenues and federal outlays in the years ahead, using the framework provided by the Congressional Budget Office's latest Long Term Budget Outlook. We then conclude describing the concerns about future revenue growth for wage-based revenues for entitlement programs such as Social Security in light of the increased demand for these programs as the population ages.

## The Current and Future Demographic Profile of America

***Today, the Baby Boom cohort accounts for 16 percent of the population and many of these baby boomers are currently in or are entering retirement.***

Toward the end of the 1940s through the 1960s there was a short-term surge in the birth rate following the end of World War II and the Great Depression (Figure 3). By 1964, the birth rate had fallen back to rates prior to the surge; however, the population had jumped by 55 million in a 20-year period (more than double the growth seen in the previous 20 years). This surge in population became known as the "Baby Boom," with the "Baby Boomer" cohort accounting for 27 percent of the population at its peak in 1964 (Figure 4). Today, the Baby Boom cohort accounts for 16 percent of the population and many of these baby boomers are currently in or are entering retirement. The exodus of this cohort from the workforce has had numerous effects on the economy, including a decline in workforce participation rates.

**Figure 3**

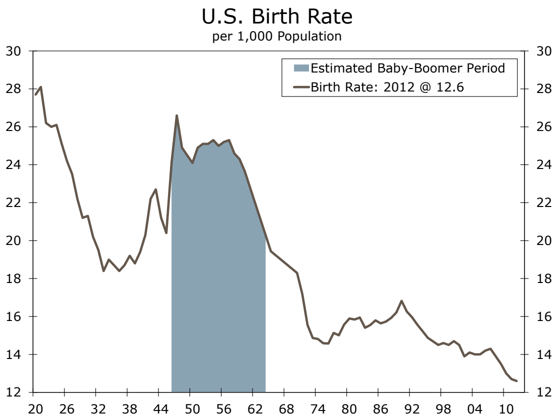
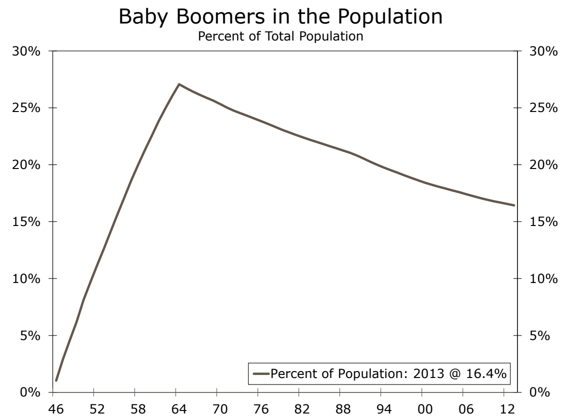



**Figure 4**




**Source: U.S. Department of Commerce and Wells Fargo Securities, LLC**

Over the past few decades, the composition of the population has changed significantly as the baby boomers have aged and their role in the work force has evolved. The population age 65+ is currently 16.4 percent of the total, but is expected to grow significantly over the next 25 years, according to the CBO (Figure 6).

**Figure 5**

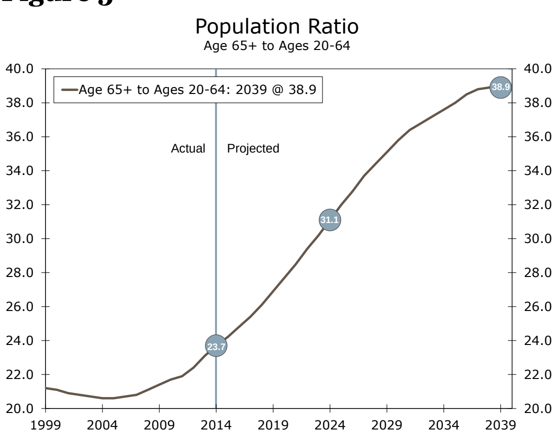
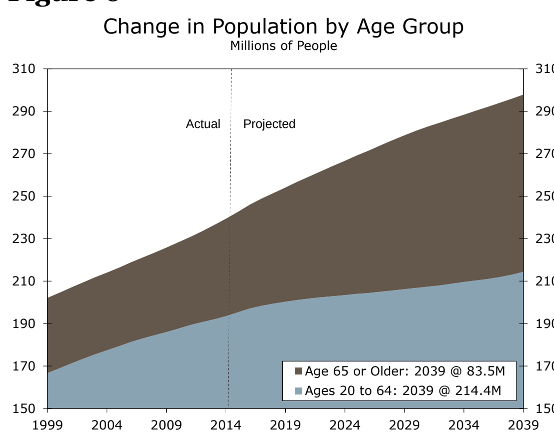



**Figure 6**




**Source: Congressional Budget Office and Wells Fargo Securities, LLC**

In fact, over the next 25 years, the population age 65 or older, those tending to draw an entitlement, is expected to grow by 37.6 million, while the subset aged 20-64, those paying taxes to support entitlement, is expected to grow only 20.9 million.

When looking at the current composition of the population, there are two broad categories that help us understand the effects of aging on the economy and the federal budget. The first category, those aged 20-64, represents the bulk of the working age population. The second category is those aged 65 and older, which traditionally represents the retirement age population. At present, the population older than age 65 accounts for 6 percent of all earners. As the percentage of the population age 65+ increases, this share is likely to rise (especially given the projections for a rise in labor force participation rates for citizens over age 65 by 2022).[3] In addition, educational attainment levels have risen by generation. In fact, 27 percent of earners age 65+ have a bachelor's degree or higher—far below the 35 percent attainment in the cohort ages 40-64 or the 40 percent attainment in the cohort ages 25-39 (Figure 3).

Given the link between educational attainment levels and income growth, it stands to reason that the generation set to retire may experience a rather dramatic downshift in income growth, which could have adverse effects on economic activity. While workers in this generation had greater earning potential through their prime working age given their higher skill sets, they have also experienced a dramatic loss of wealth in the wake of the recent recession. In addition, there is quite a bit of evidence to suggest that this cohort may not have enough savings from their working years to support higher levels of consumer spending in retirement especially in light of increases in life expectancy.[4]

***The aging of the population is not a trend specific to the United States alone.***

The aging of the population is not a trend specific to the United States alone. As can be seen by Figure 8, the median age in the United States is expected to rise to 39 by year 2050. This shift in median age is representative of the dramatic aging of the population expected in the United States. In addition, the median age for the world population has risen six years since 1990, and is expected to rise another five years by 2050 (note Japan, Germany and Italy in Figure 8). The effect of an aging global workforce and shifts in the composition of the labor market may place some headwinds on global growth moving forward.[5] We explore the link between an aging population and its role in affecting economic activity more in the next section.

**Figure 7**

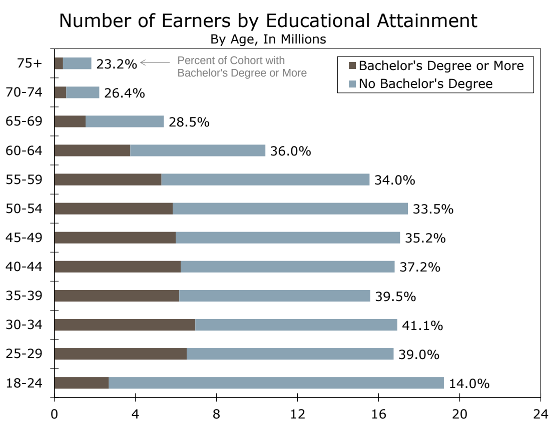
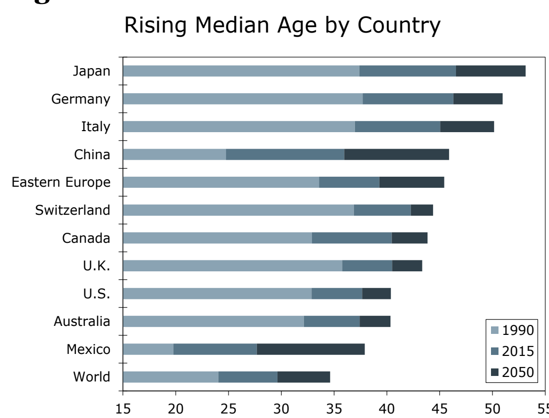



**Figure 8**




**Source: U.S. Census Bureau, United Nations Statistics Division and Wells Fargo Securities, LLC**

[3] **Bureau of Labor Statistics. "*Labor Force Projections to 2022: the labor force participation rate continues to fall.*" December 2013. http://www.bls.gov/opub/mlr/2013/article/pdf/labor-force-projections-to-2022-the-labor-force-participation-rate-continues-to-fall.pdf**

[4] **2013 Wells Fargo Retirement Study. (2013). Wells Fargo. https://www08.wellsfargomedia.com/downloads/pdf/com/retirement-employee-benefits/insights/2013-retirement-study.pdf**

[5] **Orginisation for Economic Co-operation and Development. "*Looking to 2060: Long-Term Global Growth Prospects*" December 2012. http://www.oecd.org/eco/outlook/2060%20policy%20paper%20FINAL.pdf**

## Effects of an Aging Population on Federal Revenues

With the aging of America comes a unique set of challenges for the federal government. Revenues and expenditures are affected by an aging population. In this report, our focus is on the revenue side of the equation and how the interaction between the size of the labor force interacts with federal revenues and the broader economy.

***When evaluating the effect of an aging population on federal revenue collections, the key economic factor is the labor force participation rate.***

When evaluating the effect of an aging population on federal revenue collections, the key economic factor is the labor force participation rate, which represents the number of individuals actively working or looking for work. The size of the labor force plays a critical role in individual income tax collections from wage and salary income as well as contributions to Social Security and federally sponsored medical care programs (mostly Medicare). The reason labor force participation rates play such an important role is related to the potential for labor force declines to weigh on federal revenue collections as well as the negative economic feedback effects that result from a reduction in the size of the labor force.

As can be seen in Figure 9, average income for individuals tends to rise through their mid-50s, after which earnings begin to slow as more of these individuals leave the labor force to retire. Thus, an aging workforce in the aggregate translates into lower labor force participation rates and lower average income, even after accounting for retirement income.[6] There is already clear evidence that the decline in labor force participation is having an effect on the labor market as the Baby Boomer cohort begins to retire. Figure 10 highlights the change in the share of the population by age along with the labor force participation rate for each age group. Not only is the population aging, but, as we have previously explored, the demographic shifts account for roughly half of the decline in labor force participation since 2007.[7] A detailed look at the composition of earnings across age groups also provides insight into the potential effect to federal revenues. In particular, for those under age 65, 80 percent reported some wage and salary income. For those individuals over age 65, 87 percent reported some income from Social Security, while only 19 percent reported some income from wages and salaries. Thus, from a federal budget perspective, as the population ages and the large cohort of baby boomers enters retirement, the income that is taxed moves from wage and salary income to primary income from retirement savings. In other words, income tax collections may only be slightly affected; however, revenues dependent on wage income, such as taxes for the Social Security Program, would be adversely affected by a large retiring cohort.

**Figure 9**

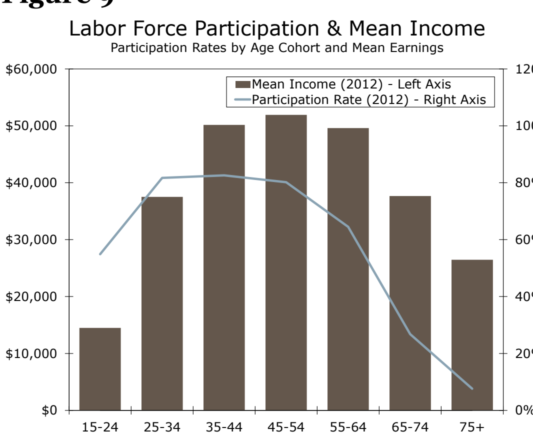
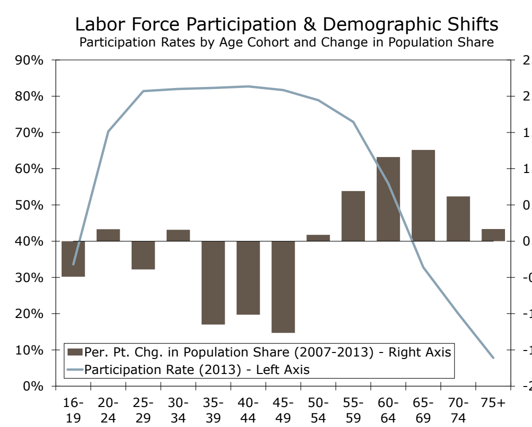



**Figure 10**




**Source: U.S. Department of Labor, U.S. Department of Commerce and Wells Fargo Securities, LLC**

**[6] The mean earnings data in figure 9 includes all sources of income including retirement income.**
**[7] Silvia, J.E. and House, S.W. (2014). "*Labor Force Participation: Where to Now?*" Wells Fargo Economics Group. Report available by request.**

Aside from a decline in taxable income, there are economic effects that can also have negative feedback effects on federal revenue collections when labor force participation declines. As the size of the labor force declines, all else equal, income growth tends to slow. This slower income growth in turn leads to a reduced rate of growth in consumer spending. Given that the bulk of economic activity in the U.S. economy is tied to consumer spending, the overall rate of GDP growth slows. The result is that the slower overall growth environment leads to more modest job growth and business investment. The net result is that more moderate economic growth limits the growth rate of federal tax collections, even beyond the direct effects of lower individual tax collections. This negative economic feedback effect is one of the key assumptions underlying the CBO's estimate of potential GDP growth (Figure 11).

The current and projected composition of federal revenues is presented in Figure 12 below. Individual income tax revenues presently account for the bulk of total revenues at 47 percent, followed by social insurance taxes, which capture individual contributions for Social Security and Medicare and account for 34 percent of federal revenues.[8] This composition has important implications for federal government operations and the future sustainability of entitlement programs as we will discover in part II of this report series. As the population of America ages, the composition of federal revenues will begin to evolve away from the current composition.

***As the population of America ages, the composition of federal revenues will begin to evolve.***

Individual income taxes are expected to grow as a share of total federal revenues as retirees begin to withdraw from retirement savings vehicles such as 401ks and IRAs. These withdrawals are subject to individual tax rates; however, they are not subject to additional social insurance taxes, which is where the structural shift in the composition of revenues begins.[9] Thus, the Congressional Budget Office, in its latest Long-Term Budget Outlook, shows federal revenues from individual income taxes rising to 10.5 percent of GDP by 2039 from 8.0 percent of GDP in 2014. Conversely, revenues from social insurance programs are estimated to decline to 5.7 percent of GDP by 2039 from 6.0 percent of GDP in 2014 (Figure 12).

**Figure 11**

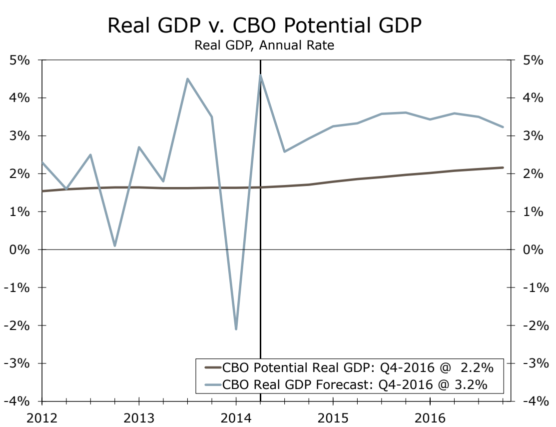
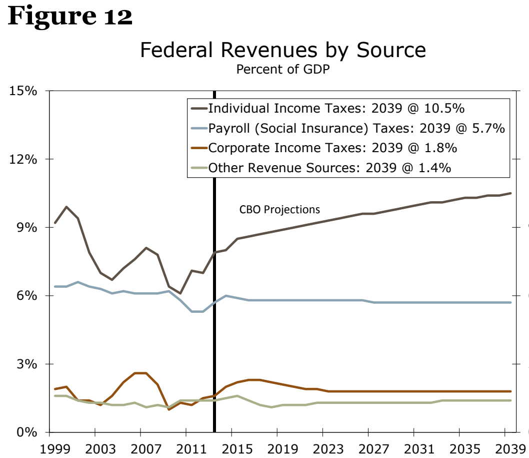



**Figure 12**




**Source: Congressional Budget Office and Wells Fargo Securities, LLC**

## Conclusion: More Modest Revenue Growth, Greater Benefits Demand

As we have highlighted, the changing composition of America's population and workforce due to the aging of the population has rather dramatic effects on economic growth and the federal budget. Economic activity is held back by a smaller working age population and results in a reduced level of aggregate income as the population ages. In addition, the decline in the size of the labor force as more of the population retires also shifts the composition of federal revenues from wage-based tax revenues to more general income tax revenue as retirees withdraw from

***The changing composition of America's population and workforce due to the aging of the population has rather dramatic effects on economic growth and the federal budget.***

**[8] Congressional Budget Office (2013). The Budget and Economic Outlook: 2014 to 2024.**
**[9] As individuals contribute to retirement accounts, their wages are subject to social insurance withholding at the time wages are earned. However income taxes are differed for eligible accounts.**

investment and savings vehicles. As such, revenues designated for federal entitlement programs such as Social Security, Medicare and Medicaid are projected to experience slower growth in lock step with the reduced size of the labor force as more and more baby boomers retire. At the same time, the demands on these entitlement programs are expected to expand rapidly as retirees begin drawing upon these benefits resulting in shortfalls for these programs. In part II of our report series, we will turn to the topic of how the changing demographic profile of America will influence federal spending in the years ahead and the implications for personal wealth management and retirement planning.

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