

## Demography is Economic Destiny



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Regardless of your political stance or policy view, most of us can agree that the U.S. is currently experiencing an economy of uncertainty and disappointment. Sure, our most recent employment reports were not bad (a growth rate of nearly 200,000 new jobs a month), but, as Paul Krugman recently pointed out in an op-ed piece in the NY Times, we would “need more than five years of job growth at this rate to get back to the level of unemployment that prevailed before the Great Recession” (“Defining Prosperity Down,” July 7, 2013).

This lag is not exclusive to jobs either. There appears to be a general lack of performance in nearly all fiscal categories and financial markets based on the stimulus and monetary policies enacted by Congress and the Federal Reserves to date, which seems to suggest that there is a hidden drag on our economy. Clearly, something is holding the economy back—an unidentified hindrance on our economic growth of some kind—and Americans need to start asking ourselves, but what exactly? Since the effects are apparently universal, it would be wise for us to begin looking for answers in fundamental factors: the behavior of the increasing aging population that earns less and spends less that dampens demand; the reducing number of working age population that reduces economic growth. These are the root causes that will be explored in this paper.

Some might believe I speak only of the Baby Boomers. There have been recent reports and press articles in magazines, newspapers, and journals across the country about how the aging population is going to cause increases in healthcare and pension costs. This is certainly true, but it is also only the tip of the iceberg.

We should not ignore or underestimate the fundamental role of all age groups in the transformation of the economy. We need to ask ourselves:

- who are the American people,
- how are they changing over time, and
- how will this affect us financially in the years to come?

From 1976-2008, I served as Executive Director to the nation’s largest regional planning organization, the Southern California Association of Governments (SCAG). Throughout my tenure I was involved in the planning and building of California’s infrastructure - large-scale projects ranging from energy to transportation and extending from Calexico to Ventura. As anyone familiar with the recent history of California might guess, a wide array of revenue problems associated with these projects were met with—budgetary vulnerabilities, funding gaps, financial shortfalls, tax problems, and legislative obstacles. In short, lots of headaches over money. Despite this, I felt privileged to participate in the rapid development of my economic region and watched in wonder as the physical, human, and economic landscape grew and changed around me. Consider this: when I started at SCAG the population of Southern California was a little over 10 million, and by the time I left office it nearly doubled to 18 million (try planning for that).

More importantly, for my present purpose and out of necessity, I closely studied the U.S. economy for over three decades and continue that work as a Senior Fellow at the USC Sol Price School of Public Policy. I found the most useful tool to explain the bewildering growth in my region was my demographic staff because they looked at the people who actually caused it. Over the years with this group, I have done studies, run numbers, examined rises and falls in the economy and projections of regional growth, and predicted booms and declines of all shapes and sizes. What now stands out in clear relief is that the economic malaise we are in the midst of is the result of changes in who, the people, are. And, I don’t mean this in the way you might think.

Until we shift our perspective and reflect upon these questions, we will be unable to comprehend the past, evaluate our current circumstances, or accurately predict the future. We could find out too late that the light at the end of the tunnel is a train.

The beauty is we already have at our disposal a lens to see the economic picture more clearly—namely, the study of demography—which offers a solution to the problem precisely because it focuses on people. The very etymology of the word is grounded in this idea (from the Greek, *demos* = population + *graphia* = writing); and, in this sense, the essay before you is an example of it. For the objective of this article, simply put, is to demonstrate what happens when you closely examine U.S. demographics and compare them to the numerous annual and long term economic forecasts of the nation. You will quickly see that the demographic cycle—that is, the portrayal of us over time—has a substantial effect on incomes, taxes paid, employment, and GDP growth. Enough of an impact, perhaps, that our current inability to quickly escape the great recession and return to pre-recession growth rates may be largely due to it.

First, a note on the term demographic cycle: this is the statistical representation of people over time. Generally, the term refers to who we are, how we age, and what we do as we age; and, specifically, it is defined by our vital statistics (e.g., gender, age), population figures, employment and retirement rates, incomes and expenditures of every variety, all on a national-scale and over time. By shifting our focus to the demographic cycle, it should become clear that we are heading towards an economy which is changing in ways we might not suspect. I will include potential consequences of this change, possible problems to be confronted, and discuss preparations and policies we might want to consider to alter this course.

Now a few words on the approach in this paper: These findings are based on three very large surveys conducted by the Department of Commerce. First, the American Community Survey (ACS), which samples over 150,000 people to illustrate changes in individual and labor force behavior in the U.S. Second, the Current Population Survey (CPS), which samples 210,000 individuals who are representative of our country, in order to provide a clear picture of population and employment. Last, the remarkable Consumer Expenditure Index (CEX), which samples in incredible detail 7,000 households from 91 areas of the United States, collecting 14,000 diaries and 5 quarterly interviews from each household. These surveys provide a glimpse of the big picture—we can use them to evaluate the likely effects of demographic shifts in our population: both age and structure, on total consumer income, expenditures, and taxes paid. However, the CEX provides such impressively robust detail that the same method could be used to study any particular category of consumer expenditures (i.e., goods, services, health, education, or gifts).

## Time and the Demographic Shift

The problem, in essence, is time.

We learn from these surveys that over the course of our lives, as we age and change, our economic behavior changes too. Take income, for example. Our income, on average, initially increases as we age, almost triples between the ages of 25 and 45, and continues to rise until its eventual peak at age 55. Our income starts to decline after that, slowly at first between ages 55 and 65, but then drops by more than a fourth over the next decade and by more than a half after age 75. There is an even more significant correspondence between aging and taxes—the amount of taxes we pay follows a correlative pattern of change, rising at first and then falling, though the increases and decreases are even steeper. These natural shifts in the demographic cycle send ripples through the economy that can have far-reaching consequences.

For this reason, close examinations of changes in the demographic cycle are necessary, both to help clarify our current economic quandaries and inform our expectations for the future. Consider this: it is commonly understood that consumption makes up 70% of our economy, personal taxes are 85% of our government revenues, and labor force growth makes up over 60% of our GDP growth. In other words, a large shift in any of these areas which are totally determined by people in this country would have far-reaching economic consequences. In most cases, the effects are mitigated by the natural replacement of one age cohort (i.e., generation) with the next in the demographic cycle.

But, what would happen if one generation was economically irreplaceable or, in terms of financial contributions, “too big to fail”?

We are currently experiencing the answer to that question as a significant shift in the demographic cycle is already underway. The Baby Boomers, the generation born between 1946 and 1964, have begun to work less, earn less, pay less taxes, and retire from the labor force. While we should expect this transition as a natural part of the aging process and the demographic cycle, the problem is that the Baby Boomers represent the largest contributor to our economic growth over the past three decades. Even though they constituted only one-third of the U.S. population at the turn of the millennium, they were responsible for over half of the nation’s total income, total expenditures, and total taxes paid to all levels of government. The monetary reductions in these categories began to have an adverse effect on the economy when the Boomers turned 55 and reached their peak earning levels in 2001, a problem that only grew larger when their incomes and taxes declined as they turned 65 and started to retire in 2011.

This natural component of the demographic cycle, the rise and fall of income and taxes paid as we age, becomes more meaningful when we look at how many people are in an age cohort over time. During the last thirty years, for example, the number of U.S. residents in the working age population (25-65) increased each decade.

What is happening now, however, is that this number is getting smaller or growing at a slower rate. Beginning in 2010, the actual population size of two age cohorts (35-44 and 45-54), who were normally associated with the highest growth rates in income, expenditures, and taxes began to decline. So, basically, even though our population is increasing overall, those who contribute the most financially are decreasing. The reason for this is that the generation following the Baby Boomers the number of workers is smaller and, therefore, there are simply not enough workers to moderate the decline.

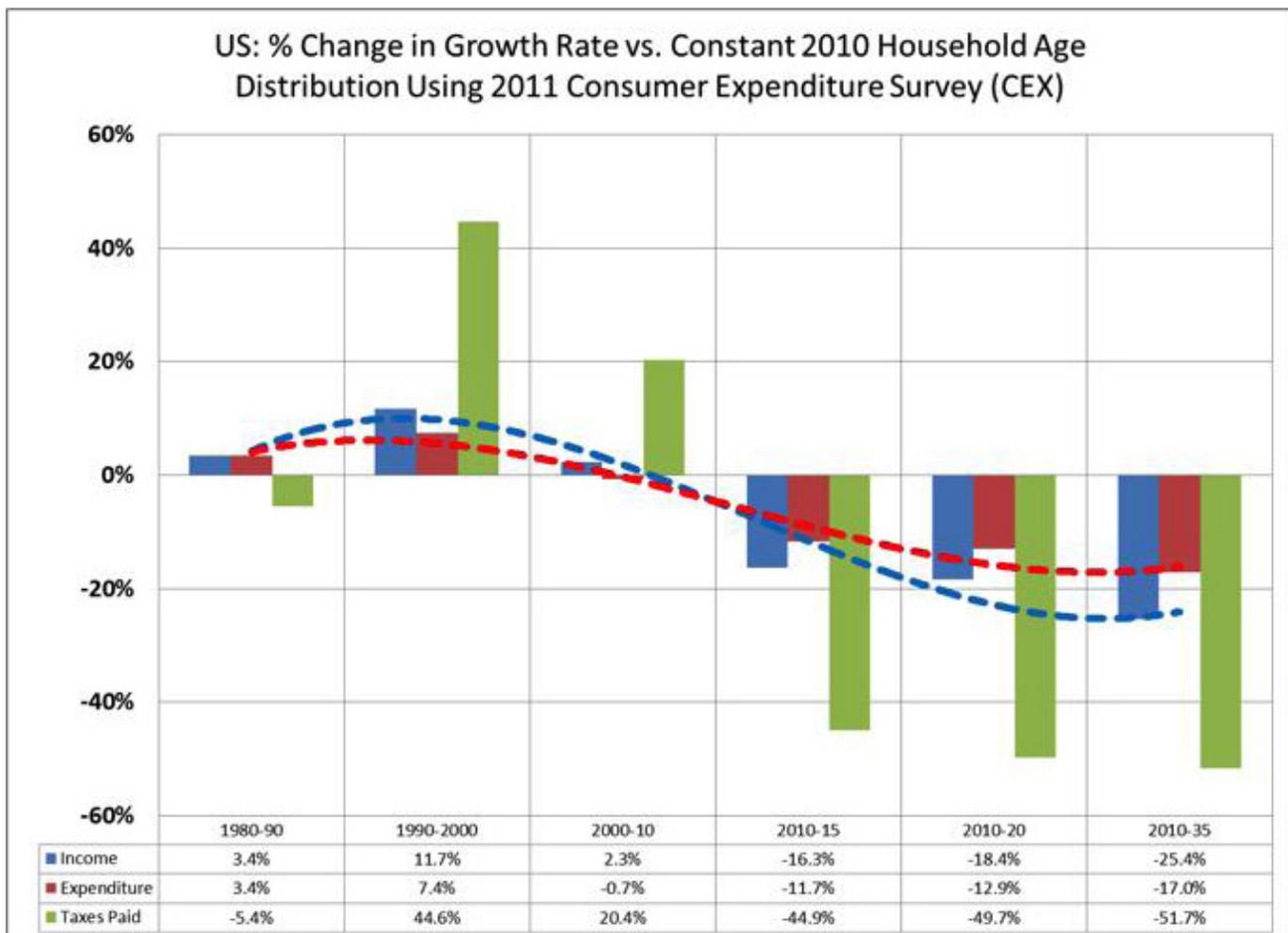
With fewer Americans entering the working age population relative to older residents 65 and above, there will be a negative impact on our economy and government revenues for a very long time to come. As mentioned earlier, the consequences of this were already felt in 2001 when Baby Boomers started to reach their peak earning age of 55 and then again in 2011 when some of the Baby Boomers turned 65 and retired. There are roughly 78 million Baby Boomers in the U.S. and, at that time, they covered 46% of the total income and 43% of the total expenditures of our country. As they continue to reach retirement age at a clip of about 3.6 million per year—that is 10,000 people every day for the next 25 years—there will be a major curtailment of economic activity.

## The Age Penalty

We know that if income, expenditures, and tax payments decline as we age and the growth of the number of elderly people is now greater than the growth of the number of working people, then nationally there will be reductions in all of these categories. Nevertheless, the question remains: how do we accurately determine the combined effect of these changes in income, expenditures and taxes our economy?

A methodology was developed to find an answer to this exact question using the surveys discussed earlier. The analysis covers the period of 1984-2035. The idea was to establish a wide scope, to look several decades into the past and the future, in order to view underlying economic patterns. The analysis included multiple simulations of what would happen using different base periods. An additional simulation was run using Internal Revenue data, to test whether there is an under reporting of upper income data in the CEX data base, a criticism of the data base, resulted in very similar conclusions. In each simulation a comparison was made between calculations using a base forecast and a forecast using changes in the demographic cycle. While our concern is certainly the future, analysis of past years by providing

FIGURE 1: AGE DIVIDENDS AND PENALTIES, 1984-2035



a comparison with historical data, attests to the accuracy of the method and tests for biases over time. Further, this historical analysis provides useful records of how consumers behaved in different economic conditions, such as the recessions of 1980, 1990, and the Great Recession of 2007-2009 and the fiscal stimulus and monetary easing policies to correct for these recessions, as well as during tax policy changes like the Tax Reform of 1986 and the Bush Tax Cuts of 2002.

The historical analysis from all five simulations persistently demonstrated that using different surveys and different base-years generated consistent results as responses to the policies in place at the time and the effects of different business cycles. The results of the analysis for the 2011 simulation are plotted in Figure 1.

As the chart demonstrates for the decades between 1980 and 2000, before the peaking of the Baby Boomers income and retirements, there is an “age dividend.” Expansion of the working age population with gains in income, expenditures and taxes paid made a positive contribution to growth in all these categories. It is important to note that the increases identified here are solely the result of changes in our population age structure and should be considered separately from the economic policies of the time. Simply stated, demographic changes in the population and the resultant economic behavior were the source of surprising and fortuitous gains which contributed to the high growth rates charted above.

This experience of growth and increases in tax revenues was a norm that was grounded in our public policy for the period. Policies for growth, for provision of services, for calculating pension, retirement and health benefit adjustments and budgeting reflected the results of this age dividend. Unfortunately these embedded policies continue for long periods into the future. After this period, starting around 2006, things change drastically - there is an “age penalty” with smaller growth in income, expenditures and taxes paid. This penalty has the inverse effect on the economy as the age dividend, and unfortunately it kicked in during the severe over-leveraging caused by the financial bubble and the start of the Great Recession.

## Implications for the Economy

The implications of the age penalty are numerous and far-reaching, and analysis of it can provide insight into our current circumstances and future economic health. Even though we have undertaken aggressive fiscal and monetary policies to stimulate the economy, it has grown much slower than expected. Why? The cumulative assessment of this demographic cycle resulted in a calculation of the age penalty of a 16% decline in the growth of incomes and a 12% decline in the growth of expenditures starting in 2010, (Figure 1). Even though business has accumulated large cash reserves and the Federal Reserve administered an easy money policy, this reduction in income and expenditures has dampened investment, production and employment. If consumption accounts for 70% of the GNP then these reductions will undoubtedly dampen growth as well. Furthermore, as the “age penalty” intensifies over the next 20

years as expected, the decrease in income growth will reach 25% and the decrease in expenditure growth 17% (Figure 1). This penalty helps explain the intensity of the Great Recession and the slow pace of recovery over the past five years and what is in store for the economy for a long period of time. Although the American consumer has been the driver of global economic growth over the past twenty years, things may change as the demographic shift unfolds over the next twenty years.

## Implications for Government Budgets

More troubling for the public sector are declines in the growth of tax revenues.

The growth rate of the economy and, even more importantly, the growth rate of future revenues are key assumptions in the budgeting process for all levels of government. Many of the costs are fixed in public budgets and revenue growth rates are used as the strategy for balancing budgets. Unfortunately, the reality of the age penalty challenges these assumptions.

Beginning in 2010, the growth rate of taxes paid by individuals to local, state, and federal governments was reduced by almost 45% (Figure 1) Since personal taxes account for 85% of all federal, state and local revenues and it is projected that over the next 20 years there will be a 50% reduction in the growth of public revenues, the age penalty could have a significant impact on government budgets, at all levels, for a very long time. The classic double jeopardy strategy of mitigating these decreases by tax increases presents a difficult proposition when the age penalty is considered. Are we to ask Americans to pay more taxes when the growth rate of their incomes is also slower?

The Federal Congressional Budget Office has considered these demographic assumptions in their long term federal debt calculation but did not make the revenue reductions caused by the age penalty explicit. The reductions in the growth rate of taxes paid by individuals over the next two decades could explain up to 30% of projected Federal debts. Those who suggest that normal growth, with a few adjustments in expenditure policies, will enable us to manage our future debts, are failing to recognize that a reduction in the growth rate of over 50% in personal taxes, which constitutes 85% of revenues for the next few decades, suggest the success of such an approach is highly unlikely.

Local and state budgets which do not consider the age penalty in calculating personal related tax revenues may also find that their forecasts are overestimated. The increasing costs of pensions and health care that we read about will be further complicated by annual revenue estimates that remain unrealized. Since most state and local revenue forecasts are short term, continual and gradual annual reductions caused by these losses combined with rising costs caused by increases in the retirement population and the built in annual increases in pension and health benefits, could be very difficult to manage.

## Long Term Growth Consequences

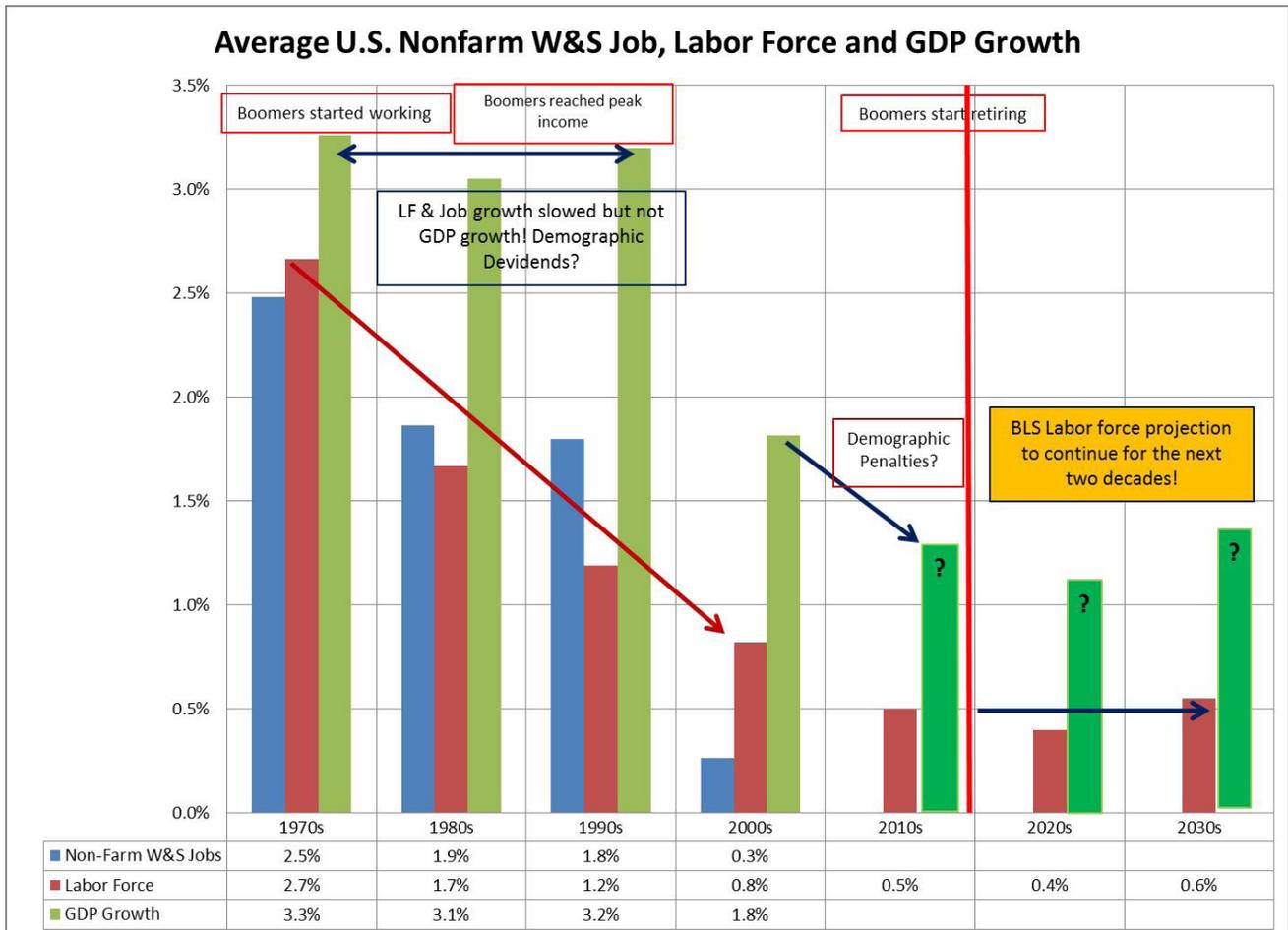
The demographic cycle will also dampen long term growth in the nation as well.

Think about this: our labor force primarily comes from our working age population. While our current policies are focused on the unemployment rate of this population, the demographic cycle is gradually changing the amount of working age population available in it. Since the number of people in the generations following the Baby Boomers is significantly smaller, the rapid retirement of the Boomers at a rate of roughly 10,000 people per day reaching retirement age, establishes a deficit in our labor force population. Figure 2 shows that real employment growth rates over the next few decades will be less than half the rate of the past several decades. Ironically the pressing issue in the near future will not be unemployment; rather the scarcity of available labor and the need to focus on reducing the structural unemployment and adding to the labor force population will be our challenge.

Even more problematic will be the effect that labor shortages will have on growth. Historically, labor force growth has contributed to over 60% of our GDP growth. From the years of 1970-2000, for example, as the Baby Boomers entered the labor force and the age dividend began—a larger percentage of our population at working age—led to higher GDP growth. There were other salient factors at play during this period, of course: the increase in the number of women who entered the labor force and the rise in popularity of tech products. Nonetheless, the influence of the age penalty on GDP growth can be seen in Figure 2.

As the chart shows, when Boomers entered the labor force, the U.S. had an annual labor force growth rate of 2.7%. Their high income growth years (35-55 years old) occurred between 1980 and 2000, during which the GDP growth rate rose to 3.1-3.2% range. The 2000-2010 labor force growth rate of .5% was the smallest since 1930 and, worse, it's predicted to crawl along even more slowly over the next two decades. As the labor force began to shrink and the age penalty arose resulting in declines in incomes and expenditures coupled with the de-leveraging of the Great Recession generated a 1.8% GDP growth rate for the decade.

FIGURE 2: GROWTH OF JOBS, LABOR FORCE AND GDP GROWTH



If the growth of the working age population is reduced by half in the next few decades and the age penalty continues to grow the GDP growth rate in the future could be even less. Without innovations in policy and strategy, the age penalty could generate even lower GDP growth. Those who suggest that we can return to the growth rates of the past without dealing with the demographic cycle are ignoring the real forces driving our economy.

## What can be done?

We are often told that “demography is destiny.” This is true for the simple reason that human behavior of births and deaths does not evolve quickly and, as a result, we mostly grow in ways that are mostly predictable. The notable exception is the effect of medical advances that has increase life expectancy, which is accelerating the adverse effects of the age penalty by increasing pension and health costs for longer periods of time. The most uncertain aspect of national demographic forecasting however is immigration, which is so policy-dependent it cannot be anticipated as easily as other factors.

Immigration is the most viable strategy that can be considered in the policy arena, but it is also the most controversial. The analysis contained in this article is based on the Census Bureau 2009 population forecasts which had assumed increasingly high immigration rates over the next several decades. The Census Bureau over the past year reduced this forecast by 40%, which would have a significant negative impact on available working age population in the country in the future. This reduction was not considered in the analysis in this paper and would increase the age penalty forecasted above and could further decrease GDP growth in the future. The current policy debate on immigration needs to consider the implications of the demographic cycle and the age penalty which would lead to a substantial increase in immigration. While there are short term disruptions and dislocations in the political debate surrounding immigration, our long term economic future requires that we consider the age penalty in the political debate. Throughout history, the attractiveness of the United States to immigrants has been a major source of our economic success and should not be ruled out as a solution.

Altering retirement behavior and working longer is another mitigating factor. Workers have begun to work longer over the past fifteen years as our labor activities have become on average less physically stressful. Recently, changes in retirement portfolios and pension policies are also encouraging working longer. Changes in Social Security retirement age could further incentivize people to work longer. Unfortunately, an analysis of labor force participation rates of future age cohorts concludes that working longer is not a significant enough mitigating strategy. So, even when we evaluate the possibility of higher labor force participation rates for older people, the gains that are made will not address the problem.

Another potential answer to this dilemma might be to establish a means to substantially increase productivity. A review of current thought in economics literature and press journals reveals that there is an extensive debate on

this strategy already underway. Some have also observed that productivity increases in the past will be difficult to replicate, let alone enhance. Some argue that declining educational attainment will substantially reduce our national productivity. Most writers conclude that we will be hard pressed to improve upon the rate of productivity growth of the past several decades. A possible new strategy is that most of our country’s needs for increased economic activity lay in the public goods areas of energy, infrastructure, education, and health. Public policy and regulation is the dominant driver in these areas and innovation is not easy to introduce. Policy changes that will alter the way that procurement is conducted in the public arena to allow innovation and not just existing specified goods and services is needed. The American character and brand is innovation and these need to be emphasized in our response to the demographic challenge we face.

## Conclusion

Demography is the real force underlying our economy. Changes in it exacerbated the Great Recession and led to the slow growing economy we are experiencing today. If we ever wish to escape this hidden drag on our prosperity, it can no longer be ignored.

Understanding how people change over time influences our economy and through developing strategies to deal with these basic forces, we can help policy makers carve out a clearer pathway to the future. Relying purely on aggressive monetary policies to stimulate the economy is a mistake because if the basic human resources are not present, increasing our financial liquidity will not grow the economy if there is not increased demand and if there are not workers to accelerate growth. Likewise, pretending that we can stimulate the economy through expenditures of borrowed public money with the hope that this will somehow accelerate our growth enough to then pay back the borrowings and increased debt is misguided. Without the actual capacity to grow by increasing labor or productivity, this is simply an endeavor in wishful thinking.

The sensitivity analysis used in this paper, looking at different base periods to assess the effects of different tax and expenditure policies and different recessions and recovery periods actually had a smaller impact on economic performance than did the changes in the demographic cycle. A change in cohort sizes and the age of people in cohorts, had a larger effect on increases and now decreases in the rate of growth of income, expenditures and taxes paid by individuals than business cycles and policy changes. Add to this the availability of working age population has a significant impact on GDP growth; and suffice to say, “demography becomes economic destiny”. Policies that deal with demography is the missing element we need to redirect the economic course of our nation. Remember: “We the People” have always been the source of power in the United States. It is time for us to clearly evaluate who we are as a people, how we are changing over time, and develop strategies to strengthen our capacity to contribute to the economy.