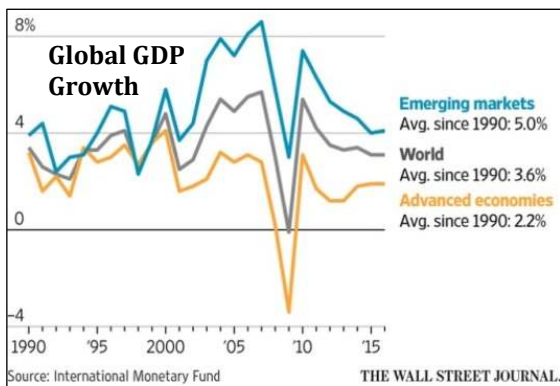


## Fourth Quarter 2016 Outlook and Commentary

*From time to time, instead of devoting these pages to a recap of recent events in the economy and capital markets, we take a deeper dive into a specific issue. This quarter we examine the connection between aging populations and slowing global economic growth.*

As we enter the final quarter of 2016 it appears that the global economy will decelerate for the fifth time in the last six years. Since 2012 global GDP growth has averaged around 3.2%, almost half a point lower than the 3.6% post-1990 average. While the shortfall is modest, it has been

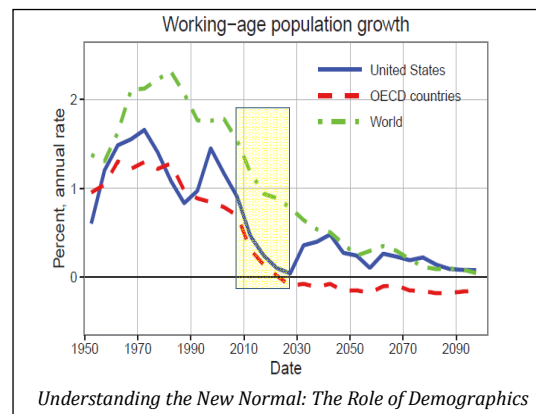
persistent and it's worth trying to understand why.



One might be tempted to ascribe the slowdown in the world economy to a series of crises, some of them economic and financial—the Greek debt crisis (parts one, two and three), the bursting of the Chinese stock bubble last summer, the collapse in the price of oil at the end of last year—and some of them more geopolitical in nature—the rise of ISIS, the refugee crisis in Europe, and nagging fears, fueled most recently by Brexit, that the European Union is coming apart.

All of these crises have had an impact to be sure, but a very significant element of the slowdown is demographic and carries long-term implications. In short, the world is getting older. As a result of aging, growth in the global working-age population is sharply decelerating. That means a smaller labor force and lower economic output. Population dynamics play out in different

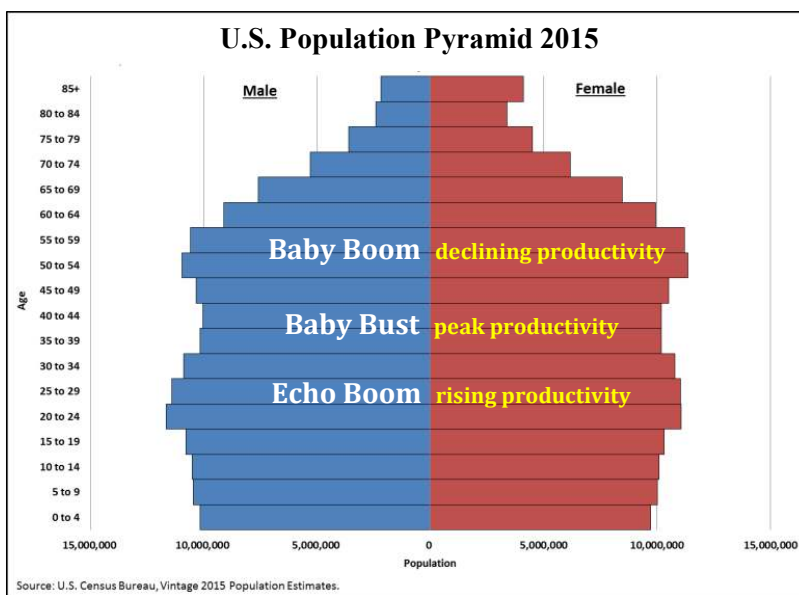
ways in different countries, but the chart on the right, taken from a paper published just last week<sup>1</sup> illustrates the general trend. The shaded area begins with the financial crisis and extends into the late 2020s when the decline begins to ease. Most of the developed world experienced a post-World War II baby boom. That generation began to reach retirement age several years ago causing sharply lower growth of the developed markets labor pool. The picture is a bit better in the U.S. as compared to Europe and Japan; thus the blue line (the U.S.) in the chart sits higher than the red-dashed line (developed countries overall). In China, the one-child policy, only recently softened, is now creating an outright decline in the working-age population. In India and Africa the demographics are much better, helping to offset aging in the developed world and China.



<sup>1</sup> *Understanding the New Normal: The Role of Demographics* by Etienne Gagnon, Benjamin K. Johannsen and David Lopez-Salido. We added the shaded box.

With growth in the working-age population nearly a full percentage point below what it was ten years ago and continuing to decelerate, perhaps the question shouldn't be, why is global economic growth so weak, but rather, why isn't it weaker? For example, according to an estimate by the authors of the paper above, demographic factors have lowered U.S. GDP growth by around one percentage point since 1980 with most of the decline coming after the turn of the century. The bottom line is that it's wise to reset expectations for global GDP. Barring a massive surge in productivity or a prolonged period of double digit GDP growth in India (akin to China in the 1990s and early 2000s), sustained global GDP growth significantly above 3% may be a thing of the past.

Speaking of productivity, demographics in the U.S. offer a ray of hope in a discouraging picture. The population pyramid below (one year out of date but you get the idea) illustrates the baby boom, whose aging is a major contributor to slower working-age population growth around the world. You can also see the "baby bust" that resulted from declining birthrates in the late 60s



into the 70s, and the "baby boom echo<sup>2</sup>" that kicked in when boomers began to have kids.

The current age ranges spanned by these three generations is significant with respect to productivity. Common sense suggests a strong correlation between worker output and age. Definitive economic data on this subject are hard to come by but the consensus seems to be that productivity rises sharply in the 20s, peaks in the 30s and 40s and declines after that. If that's right, then

the age distribution illustrated in the pyramid is a perfect recipe for low productivity. We have too many low-output workers in their 20s (echo boomers) and 50s or 60s (baby boomers) and too few high-output workers in their 30s and 40s (baby busters).

The good news is that echo boomers, who currently range in age from 21 to 36, are getting older. While most millennials are in their 20s (low productivity), as a group they are beginning to barrel into the peak productivity years, which should increasingly boost productivity over the next ten years. More generally, the next ten years will constitute a gradual but hugely important transition in which baby boomers, who have dominated the culture and the economy for so long, will fade in significance compared to millennials, who will represent an increasing share of the work force and the economy.

In addition to lifting productivity in coming years, echo boomers will also provide a boost to home construction. With the home ownership rate declining significantly after the Great Recession, it has often been noted that millennials are more amenable than previous generations to renting. While there's likely something to that idea, its significance has probably been

<sup>2</sup> Echo boomers are also known as "millennials." Because the latter term is sometimes used in more of a cultural sense, the exact demarcation is a bit fuzzier. We use the terms interchangeably but always in a purely demographic sense to refer to Americans born between 1980 and 1995 (give or take a year on either end).

exaggerated. Echo boomers are just now beginning to reach the typical age—early 30s—of first-time homeownership. This too will positively impact the U.S. economy in the years ahead<sup>3</sup>.

While millennials in the U.S. provide some basis for optimism, the persistent and widespread decline in growth of working-age populations will constrain economic growth in most regions of the world for the foreseeable future. Some of the decline could be offset by increased labor force participation (not so likely given recent trends) or by workers deciding to push off retirement (more likely). Innovation-driven productivity gains are also a possibility, but economist Robert Gordon, in an influential new book, *The Rise and Fall of American Growth*, argues that massive economic benefits from innovation may be a thing of the past<sup>4</sup>.

The picture that emerges is more of the same: continued low growth, with Europe and Japan faring the worst, the U.S. somewhat better and developing markets better still in aggregate, but with a very mixed picture from one country to the next. Looking out beyond the next few years, China, burdened by the inexorable consequences of a one-child policy that long ago outlived its purpose, may fare the worst.

The long-term downshift in GDP growth goes a long way to explaining the super-low interest rates that now prevail. Although largely driven by central banks, these institutions may simply be responding to downward pressure on “equilibrium rates” caused largely by demographics. Rates are likely to rise gradually over the next several years but with a relatively low ceiling.

As we’ve emphasized in these pages on numerous occasions, low growth combined with low interest rates is not a bad combination for stocks and bonds. Weaker GDP growth does translate into slower growth in corporate profits, but the impact is modest, perhaps one percentage point going forward. With stocks historically returning nine to ten percent annually, investors may want to ratchet back expectations to eight to nine percent. Bonds, of course, have significantly lower returns, and in light of current rates and yields, that seems certain to remain the case for the foreseeable future.

*October 12, 2016*  
*Boston, MA*

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<sup>3</sup> We have long touted the benefits from a long-term rebound in home construction. The impact is real and important, but only partially offsets the overall drag from an aging population—a problem we have probably underappreciated.

<sup>4</sup> Gordon argues that the hundred years from 1870 to 1970 was a unique period in economic history with rapid growth fueled by a series of great inventions—electricity, urban sanitation, chemicals and pharmaceuticals, the internal combustion engine, and modern communication--and their gradual integration into everyday life. He is pessimistic that the sort of productivity gains achieved pre-1970 can be repeated. Optimists point to the ongoing impact of the internet and smartphones, arguing either that the bulk of productivity benefits lies ahead or suggesting that current methods for calculating GDP underestimate economic output, in part because so many services are now free.

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