What Does Population Aging Mean for Growth and Investments?
What Does Population Aging Mean for Growth and Investments?

Global populations are aging – on this there is little debate. However, what that means for growth, investment and social cohesion has been less often discussed.

Profound demographic and technological changes are transforming the societies where we live and work globally. On the one hand, the large post-World War II generation is retiring and working age populations are shrinking in many countries. This demographic shift alone will likely translate into slower growth, lower interest rates, and subpar financial returns unless nations increase the size of their labor forces and/or improve productivity. At the same time, the Fourth Industrial Revolution is redefining key industries and the meaning of work. While nations can leverage the productivity-enhancing advances of this digital revolution or increase immigration to stimulate growth, both tactics can be controversial and disruptive. Indeed, unless there are reforms to the social contract between governments, employers and employees, immigration, technological innovation and other factors can reinforce social, economic and industrial disorder, fuel populist backlash, and build opposition to pro-growth solutions to these demographic headwinds.

In this paper, we address the economic implications of aging, the levers countries may pull to counteract these challenges and the investment opportunities that arise as a result. In particular, in this global “new normal”, which Henry McVey, KKR’s Head of Global Macro & Asset Allocation and Markets Risk and CIO of the KKR Balance Sheet, has described in prior publications, we believe investors may consider:

- Seek investment products that offer income or yield in a lower return environment. Henry McVey expects slowing working age population growth, lower rates, and full valuations to lead to lower expected nominal returns in the future. Given this view, he believes that this backdrop will continue to fuel demand for yield-oriented investments such as infrastructure and asset-based lending as well as for certain global private equity investments.

- Lean in globally to long-term themes consistent with these demographic changes like health and wellness, urban renter-ship, travel and leisure, digital content and media, productivity enhancing technology and the search for income yielding financial products. The aging of the population, rise of millennials and the sharing economy driven by an increasingly mobile youth cohort support these trends.

- Monitor and heed political attitudes and geopolitical risks, particularly focused on possible reactions to high levels of social, economic and technological disruption, high inequality and economic stagnation. Public distrust in key business and political institutions is high. The Fourth Industrial Revolution, radical transparency of the Internet and social media, combined with high inequality and rising immigration are producing political volatility and populism in
many nations. Investors must pay attention to these factors as they may impact how well nations can develop policies to counteract the demographic economic headwind.

In the first section of this paper, we delve further into the impact of demographic shifts on the economy and investments. In particular, we look at aging and its impact on growth, consumption, urbanization and consumer preferences. Following this global review, we consider steps nations have and may continue to take to counteract these demographic headwinds, including leveraging technological innovation and immigration to build larger and more productive workforces. We then delve deeper into demographic trends in six countries—Mexico, China, U.S., U.K., Germany and Japan.

The Impact of Aging on Economic Growth and Investing

Per the United Nations, population aging – the increasing share of older individuals in the population – is one of the most significant social transformations of the twenty-first century. At a high level, we expect global population aging to result in slower economic growth, lower financial returns, lower interest rates, increased urbanization as well as shifts in consumption and housing patterns. Each of these will have important investment implications.

The median age of the population will rise in many countries globally as fertility rates – the average number of children born per woman, decline – while longevity increases, just as the massive generation born after World War II retires. Between 2015 and 2030, the global population aged 65 and older is projected to grow by more than 60% (Exhibit 1) compared to working age population growth of 14%. By 2020, for the first time in human history, people aged 65 and over will outnumber children under age five (Exhibit 2).

EXHIBIT 1
The Global Population Continues to Grow Older...

Per the United Nations, population aging – the increasing share of older individuals in the population – is poised to become one of the most significant social transformations of the twenty-first century.
While Europe has historically been the oldest region as measured by the over 65 proportion of the population, Asia and Latin America are rapidly progressing through this demographic transition. Indeed while less than eight percent of Asians were aged 65 and over in 2015, that number is expected to increase to 12.1% in 2030. Europe will remain the oldest region for the next 15 years and North America will rank second oldest, with their over 65 population shares rising to 22.8% and 20.7%, respectively. By country, China’s prior one-child policy had accelerated the aging demographic. We expect China’s elderly share to rise to 17.1% in 2030, from 10.1% in 2015. And Japan is and will remain home to the world’s most aged population with 30.3% of the population aged over 65 by 2030.¹

Importantly, improved longevity and the need to fund higher retirement and health expenses have led much of this older generation to work longer in recent years. For example, in Japan the labor force participation rate has increased as those aged 55 or older are increasingly concerned about their finances.² In the U.S., Americans on average now retire later at age 63 up from age 59 in 2002. And the


² Data as at January 31, 2017. Source: Japan Ministry of Internal Affairs and Communications, World Bank, Haver Analytics.
official retirement age in the U.S. will rise from 65 to 67. However, delayed retirement (even to 75) would be insufficient to counteract the combination of the retirement of the large Baby Boomer generation, increased longevity and the decline in fertility rates since the 1950s.

EXHIBIT 5

In Japan, the Labor Force Participation Rate Has Increased Slightly as Concerns About Finances Grow


EXHIBIT 6

Working Age Population Growth Rates Are Declining, Which Has Implications for Economic Growth

Note: The above analysis depicts the growth rate of the global working age population under three definitions: 15-69, 15-64 and 15-74. In all cases, growth in the size of the global working age population will continue to slow in coming decades. Data as at June 23, 2017. Source: United Nations, Haver Analytics.

EXHIBIT 7

Holding Productivity Constant, Demographics Alone Will Pressure GDP Growth to Slow


---

Note: About half of Americans exit the workforce between ages 61 and 65 while 18% retire even earlier. By age 75, 89% of Americans have left the labor force. Full retirement age had been 65 for many years. However, beginning with people born in 1938 or later, that age gradually increases until it reaches 67 for people born after 1959. The 1983 Social Security Amendments included a provision for raising the full retirement age beginning with people born in 1938 or later. The Congress cited improvements in the health of older people and increases in average life expectancy as primary reasons for increasing the normal retirement age. Data as at December 2016. Source: Gallup Poll.

Data as at September 12, 2017. Source: American Community Survey, U.S. Census.
What does this mean for growth and markets? What are the relevant investment implications?

1. The Impact of Demographic Shifts on Economic Growth

Slower Growth

The long-term drivers of real GDP growth (inflation-adjusted economic growth) are labor force growth and productivity, i.e., an increase in the number of people within the productive population and the amount of goods and services each person produces. As the global retiree proportion of the population rises from 8.5% in 2016 to 12% in 2030, and global birth rates continue to fall, annual global working age population growth will slow to 0.9% from 1.5%. Holding productivity constant, demographics alone can slow GDP growth.

Compounding the impact of challenging demographics, aggregate productivity growth has also been softer in the past decade as corporate capital investments have slowed amid weak demand in a slower growing global population. However, some countries like China and India are investing significantly to increase labor productivity amid emerging demographic pressures. Indeed, over the past ten years, annual productivity growth in China has averaged 8.5% versus a more modest 0.9% in the U.S., or 0.3% in Germany.

On net, while working age and total populations are shrinking in Japan, Germany and Spain, U.S. and U.K. populations will continue to grow.

Indeed, Japan’s working age population peaked in 1995 and is today 13% below peak. By 2040 it will be 31% below peak. The result has been a steady deceleration in real GDP growth in Japan – from a five-year average peak of 5.2% in 1989, to the current average of 1.2%.

EXHIBIT 8
A Shrinking Working Age Population in Japan Has Led to a Steady Deceleration in Real GDP Growth

In the U.S., the large, diverse millennial population — which includes a Hispanic segment with above-average fertility rates— is an important tailwind to growth. Growth in the U.S. working age population will continue to rise, albeit at the slower pace of 0.2% year-over-year in 2030 versus 0.4% in 2015, which should be sufficient to sustain GDP growth rates of 1.5% to 2.0% over the next decade. Further, productivity gains can drive GDP above that range.

EXHIBIT 9
In Contrast, a Large, Diverse Millennial Population in the U.S. Is an Important Tailwind to Growth

In a slower growth environment, we caution investors to be wary of paying high valuations for investments that rely on above average GDP-per-capita growth, particularly when that nation’s working age population growth is in decline.

---

5 All told, millennial women (those born from 1981 to 1997) accounted for about eight-in-ten (82%) U.S. births in 2015 according to Pew Research Center analysis of the Census Bureau’s Current Population Survey data as at 2015.
In the U.S., Millennials Help to Offset Retiring Baby Boomers

2017 U.S. Demographics as % by Age Group

Baby boomers begin to retire...

mitigated by large millennial cohort

Male
Female


Mexico and India’s Working Age Populations Are Increasing Rapidly

Size of Working-Age Population, 2015=100

Germany
U.K.
China
India
Japan
Brazil
U.S.
Mexico
Spain


Investment Implications:

- In a slower growth environment, we caution investors to be wary of paying high valuations for investments that rely on above average GDP-per-capita growth, particularly when that nation’s working age population growth is in decline.
- Investors should reset expectations for consumption growth as well as home price appreciation as both measures are closely tied to working age population growth, which we expect to slow over the next decade.

Demographics and Interest Rates

In addition to slowing growth, population aging also lowers the natural rate of interest, which is the rate that neither stimulates nor cools down the economy. Monetary policymakers estimate the natural rate of interest when making decisions about raising rates to prevent inflation. Lower rates reduce yield and boost financial asset prices, which has implications for investors seeking to achieve certain return targets. Indeed the OECD has noted that over the past five years many pension funds and insurance companies have been on the hunt for higher returns as yields on safer government bonds have hit lows. In order to match the level of returns promised to policyholders, they have had to adjust their asset allocation strategies while continuing to maintain risk management prudence.

There are two demographic drivers of lower interest rates: increased longevity and declining population growth rates. With increases in life expectancy and longer average retirements, individuals have a greater incentive to save to fund retirement rather than to spend, particularly given current pension underfunding concerns. The overall boost to savings at the expense of current consumption puts downward pressure on interest rates. Based on the model developed by the Federal Reserve Bank of San Francisco, this negative effect dominates the modest positive impact from an increasing share of population with higher average consumption rates during retirement. Slower population growth also results in a moderation in aggregate growth in consumer spending, which also leads to lower interest rates.

Demographic Shifts Will Likely Have a Net Negative Effect on the Natural Rate of Interest

Note: The above depicts three scenarios of the impact of demographics on the neutral rate: The yellow line depicts the total decline in the neutral rate from 3% in 1990 to 1% by 2016. The purple line corresponds to the impact driven only by the decline in population growth from 1% in 1990 to 0.3% in 2100. The blue line corresponds to what the neutral rate would be if we accounted only for the increase in life expectancy from 75 to 91 years over that period, while holding population growth constant.

Data as at March 2016. Source: Carlos Carvalho, Andrea Ferrero, and Fernanda Nechio, “Demographics and Real Interest Rates: Inspecting the Mechanism,” Federal Reserve Bank of San Francisco.


7 Pension Markets in Focus, OECD 2015.
The Expected Increase in the Dependency Ratio Will Likely Lead to Increased Healthcare and Social Security Costs

Further, population aging will increase the dependency ratio, which could raise deficits and reduce public investment. The dependency ratio compares the number of individuals aged 0-14 and 65 and older, relative to the number of individuals who are working age. An increase in the dependency ratio means that the working age population supports a greater number of non-working individuals in the economy. A larger proportion of non-working individuals reduces the tax base and increases the demand for pension, retirement, healthcare and other services from the public sector, which would likely lead to deficit increases. Further, increased deficits could result in a shortage of public capital available to invest in areas like infrastructure or education.

Investment Implications:

- Amid lower interest rates and returns, the global search for yield in aging societies will drive continued demand for wealth management products offering income.
- Particularly in a lower yield environment where government budgets are likely to be increasingly constrained, infrastructure may become more attractive to private investors.

Increased Urbanization Globally

These demographic trends will also accelerate urbanization. India, China and Nigeria are examples of economies already undergoing a process of rapid urbanization as locals move to cities in search of economic opportunity. In addition, the large aging global baby boomer population (estimated 75 million) will continue to seek access to the services and community that cities provide. Indeed, between 2000 and 2015, the aged 60 or older population increased by 68% in urban areas versus 25% in rural areas, globally. The 60 or older population living in cities increased from 51% in 2000 to 58% in 2015, and the over 80 population living in urban areas increased from 56% to 63% over that timeframe. Further, in many nations the rising millennial generation favors urban living. As a result of these dynamics, many cities specifically seek to attract a large baby boomer/millennial mix.

Overall, today, more people live in urban areas than in rural areas with 54% of the world’s population residing in urban areas. Today
the most urbanized regions include North America (82% urban), Latin America and Caribbean (80%) and Europe (73%). By 2030, we expect 60% of the global population to live in urban areas. While all regions are expected to urbanize further over the coming decades, most of the world’s fastest growing cities are in Asia and Africa.\(^{10}\)

**Investment Implications:** As the urban proportion of the global population increases, investors may consider the following trends in infrastructure and real estate themes:

- **Amid rapid urbanization, countries will need to expand urban floor space, which will require tens of trillions of dollars in investment. Higher budget deficits from increased pension, retirement and healthcare spending will hamper the government’s ability to meet the growing demand for infrastructure which may create opportunities for private investors.**

- **Globally, the demand for apartments should continue. A higher proportion of millennials versus prior populations will likely opt to stay in the city amid fewer tax incentives to own and lower household income growth.**

- **The migration of older populations to the city to meet mobility, access and community needs should persist, particularly as longevity continues to improve. This movement should drive demand for urban senior living properties.**

- **In the U.S., investors may consider to invest in Southern and Western cities that have been able to attract millennials. Over the past 10 years, college student migration has been highest to Texas, Georgia, Arizona and North Carolina. Housing affordability, employment opportunities and warmer climate have driven**

---


11 “The grey market,” The Economist, April 7th, 2016.

12 Survey of Consumer Finances, Federal Reserve Board.
growth as previous generations retire, which has important implications for any global consumer business. Indeed much of future consumption growth we anticipate will be driven by Asian millennials, with U.S. millennials following thereafter.

This younger generation is highly educated and technologically savvy, but millennials earn less than prior generations at the same age. They also have very different consumption patterns when compared to other generational cohorts. For example, millennials are critical drivers of the sharing economy as they use technology to get improved service, more customization and better value. Indeed, millennials are generally more focused on value, experiences, sustainability and technology. Further, because they are more likely to move around given less job security and the rise of "gig" economy – where freelance workers and short-term contractors are more prevalent, they are also less likely to marry or own homes and cars. Asian millennials in particular are heavy tech consumers, over-indexing versus the global average on smartphone, PC and tablet ownership. They were also among the earliest to adopt streaming TV services.

The U.S. will benefit from the coming of age of the largest millennial cohort (75 million consumers or approximately 25% of total) among developed countries. This population has the potential to drive significant economic growth as household formation and wage growth improve, and they inherit the wealth of their baby boomer parents. Importantly, the U.S. Hispanic population, 26% of whom are millennials, is set to grow from 18% of the population in 2015 to 22% in 2030, and have above average labor force participation, earnings growth as well as low savings rates. Taken together, growth in the over 65, millennial and Hispanic cohorts will likely drive above-average spending on healthcare, rent and food at home in the U.S.

In some countries, we anticipate some diminished consumption in areas such as autos and hotels as well as weakness in traditional single family housing. The millennial-driven sharing economy is encouraging new business models and consumer-to-consumer buying which are negatively impacting vehicle licensing rates and spending on traditional hotels. Further, amid shrinking working age population growth, countries like Japan already face a housing overcapacity problem for single family homes. On the other hand, demand for modern high-rises has increased in central Tokyo. A more specific country-by-country analysis of investment trends from demographic change can be found in the third section of this document.

Investment Implications: Invest in consumption categories that will benefit from demographic shifts, e.g., retiree spend on healthcare and grocery, as well as spending by Asian and U.S. millennials on technology and rentership.

• Healthcare – Retirees allocate more of their income to healthcare versus other cohorts. As longevity increases and the proportion of retirees rises, we expect substantial growth in healthcare spend. Amid rising costs, strapped government budgets, as well as an increased focus on self-care, lower cost approaches to healthcare and personal healthcare management solutions will increase in popularity. Additionally, the growing middle class in Asia will also drive demand for affordable healthcare.

• Rentership - We expect demand for apartments to continue as a higher proportion of millennials versus prior populations opt to stay in the city amid fewer tax incentives to own and slower income growth for a large segment of the population (in the US).

• Grocery - Globally there is an increased focus on healthy and/or higher quality food. In the U.S., both the over 65 and Hispanic populations have above average allocations to eating in. The Hispanic population also exhibits a preference for organic foods.

• Digital Content and Media – The tech savvy millennial cohorts in Asia and the U.S. will continue to drive spending on devices, content, particularly online.

• In general, there has been increased interest in supporting companies with sustainable business practices, but millennials in particular are leading the charge. We expect further growth in Environmental, Sustainable, and Governance (ESG) oriented investing as a result.

Technological Innovation Can Enhance Growth and Counter Demographic Economic Headwinds

Demographics need not be economic destiny. Nations have important tools to stimulate growth in spite of less favorable demographics. One standard approach to stimulating growth is to enhance productivity via technological advances. And today, we are in the midst of a global technological revolution. Historically, technological innovation has enhanced economic growth and improved quality of life for populations around the world. The First Industrial Revolution used water and steam power to mechanize production. The Second used electric power to create mass production. The Third used electronics and information technology to automate production.

We are now in the middle of the Fourth Industrial Revolution - the digital revolution, which is characterized by a fusion of technologies which are blurring the lines between the physical, digital, and biological spheres. Like the revolutions that preceded it, the Fourth Industrial Revolution, e.g., emerging technologies such as artificial intelligence, robotics, autonomous vehicles, 3-D printing and nanotechnology, are enhancing quality of life, longevity, learning, community and raising living standards.

However, like in prior industrial revolutions, we are also likely to experience increased economic, social and technological disruption during the transition years. Each technological revolution has resulted in a redefinition of the meaning and practice of work, the displacement of workers and the disruption of industries and communities.

13 “Where are the Global Millennials?,” AT Kearney, July 2016.
14 “Demographic Strategies For Real Estate,” John Burns Real Estate Consulting LLC, 2016.
This is particularly true for this Fourth Industrial Revolution. A recent study by the McKinsey Global Institute estimated that 10% to 50% of job tasks in the U.S. could be automated using existing artificial intelligence and robotic technology. In about 60% of the 800 occupations surveyed, at least 30% of activities could be replaced by software, with some jobs (such as driver, retail worker and fast-food employee) becoming entirely obsolete.

While new jobs and industries have been and will be created, the transition will likely be disruptive and add tremendous uncertainty and economic instability into the lives of millions of citizens and communities. Absent comprehensive retraining programs or the development of a new social contract with workers, the Fourth Industrial Revolution is likely to perpetuate job disruption which could increase social and economic disorder—particularly in regions that were home to the industrial economy. Indeed, much of our social safety net was created after World War II for an industrial society where people worked for much of their lives in the same company or industry. However, lifetime employment for a company that also provides healthcare, retirement and training is less applicable for millions of workers today. Just as many nations reformed their policies and societies during the transition between the agricultural and industrial eras, the development of reforms that provide worker training, ensure health care and retirement and broad based economic opportunity will be critical to mitigating tensions in this new era.

An example of the scope of this challenge is the transformation of U.S. manufacturing as machines have taken the place of labor. Manufacturing employment has declined considerably, even as manufacturing output – the value of goods and products manufactured in the U.S. – has grown strongly. China’s absorption of manufacturing explains only part of the story. Technology has been the dominant driver of the decline in manufacturing employment in the U.S. Indeed, for decades there has been a structural shift in advanced countries away from production, driven by two core factors: increased demand for services as per capita income increases, and increased technology-driven productivity in the industrial sector which reduces the demand for labor.

In general, there has been increased interest in supporting companies with sustainable business practices, but millennials in particular are leading the charge. We expect further growth in Environmental, Sustainable, and Governance (ESG) oriented investing as a result.

The high point for American manufacturing jobs was 19.4 million in 1979. Since then and through several downturns and recoveries the numbers have drifted down by approximately 36%. But, this is not just a U.S. story; manufacturing employment has declined by 25% in Germany, 33% in France and Sweden, 34% in Japan and 49% in the U.K.18

EXHIBIT 16
Manufacturing’s Share of Real GDP and Employment Has Declined

EXHIBIT 17
The High Point for American Manufacturing Jobs Is 1979. Since Then and Through Several Downturns and Recoveries, the Numbers Have Drifted Down

17 “The manufacturing jobs delusion: Manufacturing jobs have disappeared and they are not coming back in significant numbers,” The Economist, January 4, 2017.
18 Ibid.17.
One key element of this new social compact must be to update retraining programs to support workers following job displacement, which have become all too common. In France, slightly more than one percent of GDP is devoted to spending on labor market adjustment programs versus 0.1% in the U.S., where the labor market is most volatile. Compared to France, nearly triple the proportion of displaced workers in the U.S., remain unemployed in the following year. Also perhaps more important than spending, many training programs are antiquated. Some were designed for an industrial versus digital era and do not assume a need for continuous learning. The result is that a high proportion of displaced workers in the U.S. remain unemployed a year after a displacement occurs. Even once workers gain employment, earnings do not recover to prior levels even after five years.

EXHIBIT 18

In Some Countries, the Lack of Comprehensive Retraining Programs Exacerbates the Labor Market Disruption Driven by Technology

EXHIBIT 19

Worker Displacement Is High in the U.S. and the U.K.

Countries with shrinking working age populations are likely to prioritize productivity-enhancing technologies such as robotics or artificial intelligence, which may present opportunities for investors. Investors should take note of nations with high productivity growth as such investment will be supportive of broader GDP growth.

Investment Implications:

- **Countries with shrinking working age populations are likely to prioritize productivity-enhancing technologies such as robotics or artificial intelligence, which may present opportunities for investors. Investors should take note of nations with high productivity growth as such investment will be supportive of broader GDP growth.**

- **Increased capital intensity of production and employers seeking to substitute routine, repetitive tasks with technology will drive continued job dislocations at the mid-to-low skill level, e.g., drivers, retail workers and fast-food employees. Job losses have significant impacts on the employees and their families, as well as demand for goods and services.**
2. Immigration as a Double-Edged Sword

Another tool to lessen the demographic drag of an aging population is to increase immigration and attract new workers. Indeed, the rise in the share of foreign-born populations is an international phenomenon among more developed countries. International migration reached 243 million in 2015, up from 172 million in 2000.19

While empirical research suggests that the net impact of immigration is positive on the economy, rising flows may have disparate short-term impacts on growth, wages in some areas, employment and fiscal spending. And those short-term impacts may not be evenly distributed. Communities with large populations of lower-skilled workers may face more temporary challenges from high levels of immigration. Amid the existing disparities in economic opportunities that persist across the world, it is no surprise then that increased migration has become a major policy issue, and one that will likely endure. Further, the recent European migrant crises increase the complexity of immigration in the public discourse. Challenges will be particularly acute in nations and regions less effective at assimilating large immigrant populations.

Just as nations need to develop effective programs to help workers transition into the Fourth Industrial Revolution, successful immigration too will entail policy optimization. To harness the benefits of immigration, it is critical for governments to: ensure that native workers have access to high potential employment opportunities, attract the right mix of immigrants that support the country’s economic and social needs, adopt policies to welcome and absorb these newcomers, and make sure borders are protected.
Currently, One in Four Americans Is a First or Second Generation Immigrant


In the U.S., the proportion of the immigrant population has increased significantly—from 10 million (about five percent of the population) in 1970 to 45 million (about 14% of the population) in 2015 while the native-born population increased by only about 20 percent over the same period. Now, roughly one in four Americans is a first or second generation immigrant.

Economic Growth

Immigration has been integral to economic growth in the U.S. – helping the nation to avoid some of the stagnation issues facing economies like Japan, which has a shrinking workforce. The infusion of high-skilled immigrants has boosted the nation’s capacity for innovation, entrepreneurship, and technological change. Research also suggests that immigrants increase patenting rates, which ultimately contributes to productivity growth. At mid and lower skilled levels, immigrants have supported industries such as construction, which now faces labor shortages and wage pressure amid immigration constraints.

Immigrants also contribute to consumer demand for products, services and housing, which in turn further supports economic growth. In general, the prospects for long-run economic growth in the United States would be considerably lower without their contributions.

Wages and Income Inequality

When measured over the long term, the overall impact of immigration on the wages of native-born Americans has been small. However, dynamics differ for lower-skilled versus higher-skilled workers. An increase in the supply of lower-skilled immigrant workers tends to put downward pressure on wages for the native-born population without a high school degree as well as for existing immigrant populations. In the past four decades in the U.S., a disproportionate share of immigrants has had relatively low education. The result has been an increase in income inequality as depicted by the analysis below compiled by the London School of Economics.20

An Increase in the Supply of Lower-Skilled Immigrant Workers Tends to Put Downward Pressure on Wages for the Lower-Skilled Native-Born Population and Existing Immigrant Populations


However recently, immigration flows have shifted towards high skilled migrants to the United States. As Exhibit 24 shows, H1-B and other visa programs have contributed to a rapid rise in the inflow of professional foreign-born workers, which has positive wage effects. In addition, the knowledge and skills transfer that occurs as a result of interactions among workers and skilled immigrants leads to an increase in productivity.

“Immigration has been integral to economic growth in the U.S. – helping the nation to avoid some of the stagnation issues facing economies like Japan, which has a shrinking workforce.”

Recently, Immigration Flows Have Shifted Towards High Skilled Migrants in the U.S.

**Trend of H-1B Petitions Filed By Annual Compensation**

- $>150k
- $100k to $150k
- $50k to $100k
- $<50k

Despite the many benefits of immigration, history shows periodic backlashes following long periods of wide scale immigration. We caution investors to take note of countries where inequality is high, assimilation is low and immigration is increasing. We plot a handful of these countries against those dimensions and several of the countries in the upper, right high risk quadrant have already experienced significant political backlash/disruption, e.g., the U.K. or the U.S.

**Employment**

While immigration may not significantly impact the employment levels of native-born workers as a whole, there is evidence that there may be significant impact at lower and middle skill levels. For one, immigration may reduce the number of hours worked by native teens (though not their employment rate). Moreover, as with wage impacts, there is some evidence that recent immigrants reduce the employment rate of prior immigrants.

With respect to the workforce, immigrants have been key drivers of labor force growth. Over the past 20 years, the foreign-born portion of the labor force in the U.S. has risen to a peak of 16.9 percent from 11 percent (Exhibit 26). And immigrants and their children will account for the vast majority of future net workforce growth as fertility rates decline and the median age increases in the native-born population.

Immigration may also help to increase labor market efficiency. To be sure, evidence suggests that immigrants locate in areas with relatively high labor demand and are more willing than natives to relocate in response to labor market shifts. To the extent that immigrants flow disproportionately to where wages are rising and local labor demand is strongest, they help equalize wage growth geographically, thereby making labor markets more efficient.

**Fiscal Spending**

The fiscal impact is also nuanced. According to the London School of Economics, first generation and lower-skilled immigrants may initially earn and contribute less to the tax base, but the children of those immigrants become the strongest economic and fiscal contributors in the population. To be sure, immigrants themselves are often at a disadvantage due to restricted access to federal benefits. However, today’s immigrants have more education than earlier immigrants and, as a result, are more positive contributors to government finances.

---

**EXHIBIT 25**

We Caution Investors to Take Note of Countries Where Inequality Is High and Immigration Is Increasing

**Data as at July 27, 2017. Source: U.S. Citizenship and Immigration Services.**

**EXHIBIT 26**

Data as at 2016. Source: OECD.
Over the Past 20 Years, the Foreign-Born Portion of the Labor Force in the U.S. Has Risen

U.S. Foreign Born Proportion of the Labor Force, %

<table>
<thead>
<tr>
<th>Year</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>15.7%</td>
</tr>
<tr>
<td>2008</td>
<td>15.6%</td>
</tr>
<tr>
<td>2009</td>
<td>15.5%</td>
</tr>
<tr>
<td>2010</td>
<td>15.8%</td>
</tr>
<tr>
<td>2011</td>
<td>15.9%</td>
</tr>
<tr>
<td>2012</td>
<td>16.1%</td>
</tr>
<tr>
<td>2013</td>
<td>16.3%</td>
</tr>
<tr>
<td>2014</td>
<td>16.5%</td>
</tr>
<tr>
<td>2015</td>
<td>16.7%</td>
</tr>
<tr>
<td>2016</td>
<td>16.9%</td>
</tr>
</tbody>
</table>


The ultimate impact and resultant implications of immigration will depend on both the context of the receiving country as well as the profile of the immigrant.

**Investment Implications:**

- **Immigration of lower-skilled workers to countries facing high and rising inequality may result in wage compression, job losses and political backlash** – particularly in countries that are less effective in integrating immigrants. We caution investors to monitor geopolitical and social developments in the U.S., U.K., Germany, and Mexico.

- **Immigration of higher-skilled workers has the potential to drive innovation, productivity improvements, improved economic and wage growth.**

3. **Global Investment Themes in Six Countries**

Based on the trends discussed in the above section, we have identified seven global investment themes emanating from demographic changes. These themes fall into the following buckets: Healthy Living, Digital Content and Media, Urbanization and Rentership, Travel and Leisure, Productivity-Enhancing Technology, Education as well as Financial Services. The Global Macro & Asset Allocation as well as Global Public Affairs teams at KKR outline country-specific demographic trends and specific investment thoughts for six countries – Mexico, China, U.S., U.K., Germany and Japan.

"Despite the many benefits of immigration, history shows periodic backlashes following long periods of wide scale immigration. We caution investors to take note of countries where inequality is high, assimilation is low and immigration is increasing."
Mexico

According to Brian Leung, who covers Latin America for the Global Macro & Asset Allocation team, Mexico has one of the more compelling demographic stories in the Western Hemisphere. It currently has one of the youngest populations in the world (with a median age of just 28 versus 38 for the U.S.\textsuperscript{22}). Its working-age population is projected to keep growing for the next 30 years and its dependency ratio should keep improving over the next 15 years. Credit penetration is in its infancy and overall household leverage is very low at 19% of disposable income (versus 110% for the U.S.). On the other hand, the labor market has struggled. Inequality remains high, labor productivity is among the lowest in the world, and real wages have stagnated recently due to high inflation.

Neil Brown, the Director of Policy and Research for KKR’s Global Institute, highlights that structural reforms shepherded by the current government with support from mainstream opposition can amplify demography-led opportunities. For example, telecommunications prices are rapidly decreasing and service is improving to enable the digital economy, media, and e-commerce. Mexican industry is also starting to see the benefit of low-priced U.S gas to cut high power costs and domestic investment, which will support advanced manufacturing. Moreover, despite current risks on NAFTA renegotiations, over time Mexico’s inter-connectedness with the U.S. through the economy and culture has been a tailwind compared to other emerging markets. Nonetheless, growing popular disenchantment – driven by inequality, corruption, and a worsening security situation – is stoking populism, and those factors have resulted in a drag on foreign investment in some regions of Mexico.

<table>
<thead>
<tr>
<th>Secular Theme</th>
<th>Description</th>
</tr>
</thead>
</table>
| Healthy Living               | • Mexico may become a larger healthcare tourism destination (as it already is for dentistry).  
• Healthcare is only four percent of the Mexican consumer wallet spend today, but it is expected to grow at 4.4% CAGR over the next 10-15 years. In particular, obesity-related health issues could loom large. Mexicans drink 163 liters of soft drinks per year (highest in the world), with sugary beverages contributing greater than 50% of total sugar consumed. Obesity is thus a big problem, with heart disease and diabetes the largest cause of mortality. Healthier alternatives such as non-sugar sweetened beverages and bottled water should gain market share. |
| Digital Content and Media    | • Mexico’s working-age population is expected to keep growing for the next 30 years and over 40% of its population will be less than 25 years old until 2025.\textsuperscript{22} Its urbanization rate is also high at close to 80%. Such a combination is fertile ground for e-commerce to thrive in Mexico. As Internet penetration grows and the cost of smartphones falls, retailers that can tap into this online marketplace should outperform. Note that NAFTA renegotiations could potentially impact the e-commerce industry dynamics. |
| Travel and Leisure           | • A growing middle class will support consumption of discretionary goods and services including dining out and travel.                                                                                       |
| Urbanization and Rentership  | • A growing middle class and continued urbanization trends will lead to increased demand for infrastructure and housing especially on the west coast directing toward Asia.  
• The National Population Council estimates that Mexico’s housing deficit will grow to 1.1 million homes by 2030 from 0.9 million today. Average household size is projected to fall toward 3.0 persons by 2030 from 3.9 persons today. Single-person households are also expected to grow at 3.3% CAGR from 2017-2030.\textsuperscript{23} Said differently, there will be more houses demanded on a per capita basis, which favors high-rise residential apartments in urban areas. Overall, focus on higher-end housing in Mexico City and lower-income housing outside of Mexico City. |
| Productivity-Enhancing Tech  | • Increased focus on advanced manufacturing by maquiladoras, for example, particularly in automotive, aerospace and robotics industries should serve to boost productivity. Advanced manufacturing uses some type of innovation in product design, function or in the production process itself. |
| Education                    | • A big skills and education gap exists in Mexico. Post-secondary education enrollment is among the lowest globally at 30%. A large percentage of Mexican firms are citing “lack of skills” as a major constraint on their operations. Increased investment via vocational education and training is needed; quality of secondary and tertiary education also needs improving. |

\textsuperscript{22} Data as at 2015. Source: United Nations.  
\textsuperscript{23} Ibid. 22.
China

Frances Lim, who leads our Macro effort in Asia, highlights that China has an extremely large and rapidly aging population. The one child policy, which was phased out in 2016, has accelerated the aging demographic and also skewed its population towards more males than females. Vance Serchuk notes that China’s large and rapidly aging population is particularly challenging given less robust safety nets as well as smaller families because of the one child policy.

China’s working-age population peaked in 2014, but unlike most advanced economies, which are small open economies, China cannot solve its labor shortage by inward migration as it accounts for 19% of world population. China also accounts for a third of global growth and it already accounts for 10% of global private consumption. The larger and older it grows, the less it can rely on exports or migration to solve its demographic headwind. As such, it is imperative that China continue on the path of productivity enhancing measures to maintain growth at a reasonable pace. That said the big offset to its shrinking labor force is urbanization and its growing middle income consumer, which should dampen the deceleration in growth for now until urbanization gets closer to 75%.

Investment opportunities are detailed in the table below.

<table>
<thead>
<tr>
<th>Secular Theme</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy Living</td>
<td>• Healthcare: Access to affordable healthcare and higher quality services will expand as the middle class grows and poverty declines. In 2016 the government announced the “Healthy China 2030” plan, which pledged to promote initiatives geared toward diet, exercise, and access to healthcare services.</td>
</tr>
<tr>
<td></td>
<td>• Food: The growing middle class consumer has a focus on safe/high-quality (environmentally-safe) food products.</td>
</tr>
<tr>
<td></td>
<td>• Beauty: Beauty needs expand as the middle class grows and as the society ages (rapidly).</td>
</tr>
<tr>
<td>Digital Content and Media</td>
<td>• China’s millennials are expected to drive meaningful growth in the e-commerce, digital and social media areas. Underpinning this trend is increasing demand for a build-out of digital infrastructure.</td>
</tr>
<tr>
<td>Urbanization and Rentership</td>
<td>• As China continues to move up the GDP-per-capita curve and urbanize, there will be demand for housing in urban centers, however the pace of increase in household formation is slowing as we have passed peak urbanization. That said, we think there are interesting pockets of demand as the trend is for single family homes, in areas where there is job growth and accessibility to services.</td>
</tr>
<tr>
<td>Travel and Leisure</td>
<td>• The increase in China’s middle class buying power with likely focus on experiences over things. 26% of all international travel originates in Asia, of which China is a key driver.</td>
</tr>
<tr>
<td>Productivity-Enhancing Tech</td>
<td>• As manufacturing transitions from heavy industry and low-end manufacturing economy to a more tech-oriented and service economy, robotics and other efficiency enhancing technologies will play an important role amongst the aging and millennials. Urbanization-wise, there are still over 200 million people in agriculture, so there is a lot of room for productivity and income growth as these people migrate and move up the GDP-per-capita curve.</td>
</tr>
<tr>
<td>Financial Services</td>
<td>• As China moves up the GDP-per-capita curve, there will be continued demand for accessible, digital financial service platforms including digital payments, mobile wallets, and e-finance systems to serve the under penetrated segments in the country. As there is still lack of a safety net, the aging population will also need wealth management solutions.</td>
</tr>
<tr>
<td>Education</td>
<td>• Rise in GDP-per-capita also fuels demand for access to better education. Currently, the college completion rate, which is a key government priority, for China is at 22%, behind India at 27% and Brazil at 43%. 26 At the October 19th Party Congress this year, President Xi Jinping said that priority should be given to education in China to speed up its modernization and to develop education that satisfies people, and the Education Minister hopes China will play a leading role in worldwide education and become a study destination for students worldwide.</td>
</tr>
</tbody>
</table>

---

24 Ibid. 22.
25 Data as at 2016. Source: UNWTO.
While the U.S. has an aging population, declining fertility rates and a rising dependency ratio, the large millennial population will mitigate some of the economic headwinds arising from the retiring baby boomers. Growth in the working age population is set to slow to 0.2% year-over-year in 2030 from 0.4% year-over-year in 2015, but should be sufficient to sustain GDP growth rates of 1.5%-2.0% over the next decade. Further, productivity gains can drive GDP above that range. In addition, increases in the over 65, millennial, Hispanic and Asian cohort proportions of the U.S. population will also create opportunities:

- The over 65 population will increase from 14.9% of the population in 2015 to 20.6% in 2030 and older Americans hold the majority of U.S. household wealth, have rising incomes, longer life expectancy, higher labor force participation rates and exhibit stronger spending growth than millennials.
- Of course, the U.S. will also benefit from the coming of age of the largest millennial cohort by country (75 million consumers or 25% of total) among developed countries.
- The U.S. Hispanic population, 26% of whom are millennials, is set to grow from 18% of the population in 2015 to 22% in 2030, and have above average labor force participation, earnings growth as well as low savings rates.
- The Asian population in the U.S. is expected to increase from 5.5% of the population in 2016 to 6.7% in 2030. This cohort is among the wealthiest cohorts and has experienced the fastest pace of income growth.

Shifts in immigration patterns may create challenges for some industries, while yielding opportunities for others. Immigration rates have declined in recent years and the composition of workers has shifted towards higher skill levels and Asia. The impact will vary by industry, but sectors such as construction that have relied on low-skilled immigrant labor certainly face risks. On the other hand, an increase in skilled labor can improve productivity and economic growth.

Sectors facing secular tailwinds include: healthcare, rental and senior living properties, food at home, telecom and media, entertainment, health and wellness and personal care. Sectors warranting caution include: autos. More details are in the table below.

<table>
<thead>
<tr>
<th>Secular Theme</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy Living</td>
<td>• Healthcare: Older populations with increased longevity will continue to allocate more to healthcare. In addition, personal health and wellness is an increasing priority for consumers, particularly millennials, which should support consumption of related products and services, e.g., fitness, nutrition.</td>
</tr>
<tr>
<td></td>
<td>• Food: Overall shift towards healthy, higher quality food. In particular, both the over 65 and Hispanic populations have above average allocations to eating in. The Hispanic population also exhibits a preference for organic foods.</td>
</tr>
<tr>
<td></td>
<td>• Beauty: Women are likely to play a greater role in the workforce and have an above average allocation to spending on personal care and beauty. Women now earn 58% of all of the college degrees in the country and earn more than their spouses 38% of the time.</td>
</tr>
<tr>
<td>Digital Content and Media</td>
<td>• Increased demand for digital content amid mobile penetration, on-demand services as well as increased idle time, e.g., due to impact of ridesharing/autonomous vehicles.</td>
</tr>
<tr>
<td>Urbanization and Rentership</td>
<td>• The U.S. urban population is projected to grow steadily from 81.6% of the population today to 87.4% by 2050.</td>
</tr>
<tr>
<td></td>
<td>• Rentership will increase as the sharing economy continues to de-emphasize owning, affordable housing supply remains limited, mortgage credit constraints persist, and household preferences shift.</td>
</tr>
<tr>
<td></td>
<td>• The large aged 80 and over population, increased life expectancy, wealth and desire for communal living should continue to drive demand for senior housing.</td>
</tr>
<tr>
<td>Travel and Leisure</td>
<td>• As nations advance demographically, there is a natural consumption shift towards services.</td>
</tr>
<tr>
<td></td>
<td>• Demand for leisure items often outpaces growth in per capita income in more demographically advanced countries.</td>
</tr>
<tr>
<td>Productivity-Enhancing Tech</td>
<td>• Robotics and other efficiency enhancing technologies will play an important role amongst the aging and millennials.</td>
</tr>
<tr>
<td>Financial Services</td>
<td>• The global demand for yield for aging societies and fear of insolvency will drive demand for wealth management products.</td>
</tr>
</tbody>
</table>

We also highlight areas of caution. Demographics and a shift in preferences are driving vehicle licensing rates lower which will continue to threaten traditional business models, particularly with the diffusion of autonomous vehicle technologies. Demographics and the sharing economy are also driving licensing rates lower. Ridesharing may lead to further softening of new auto demand as the large millennial and Hispanic cohorts prefer used cars. However, the penetration of new car technology has the potential to mitigate some of these trends.
Aidan Corcoran, who leads our Macro efforts in Europe, notes that the working age population in the U.K. will continue to grow over the next decade albeit at a slower pace. Overall, U.K. population growth remains positive, but – importantly for investments exposed to younger consumers – growth of younger cohorts is turning negative. Employment growth in the U.K. has been strong, but recent growth has been tilted to immigrant laborers and the “gig” economy. Elevated shelter costs are driving pent-up housing demand, visible in the rising number of adults per household.

Our European Public Affairs lead, Ludo Bammens, points out that increased immigration, along with the economy, were the two most prominent drivers of the polarized Brexit vote. On the one hand, densely populated urban areas with large youth cohorts voted overwhelmingly to remain in the European Union.27 There was a sharp increase in the number of younger people voting, according to analysis from Ipsos MORI. Their assessment was that almost two-thirds (64%) of young people (18-24) voted in the 2017 General Election, the highest for a quarter of a century and has resulted in this traditionally low participation age group now voting at a level comparable to the 25-34 and 35-44 age groups. On the other hand, older cohorts with generally lower average income and education levels voted to Leave, which as we now know was the winning referendum vote in the end.

In recent years, locations that have been reliant on international inflows, e.g., London, have seen domestic outflows within the U.K. In fact, U.K.-born residents have also had net outflows from the U.K., even amidst strong overall net immigration to the U.K. The evolution of these flows will be one of the key outcomes of Brexit for investors, and this is something we are watching very closely.

Below is a summary of the core investment themes we’ve identified for the U.K.:

<table>
<thead>
<tr>
<th>Secular Theme</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy Living</td>
<td>• The aging U.K. population will have greater need for affordable and accessible healthcare. U.K. spend on healthcare is below the OECD average and considerably less than countries such as France and Germany.</td>
</tr>
<tr>
<td>Digital Content and Media</td>
<td>• Millennials are expected to drive meaningful growth in the e-commerce, digital, social media and communication areas.</td>
</tr>
<tr>
<td>Urbanization and Rentership</td>
<td>• Amid high home prices, weak income growth and tight lending standards, there has been increased demand for rental apartments.</td>
</tr>
<tr>
<td></td>
<td>• The rising proportion of home renting versus ownership has strong implications for many sectors, including household durables, renovation and building products.</td>
</tr>
<tr>
<td></td>
<td>• With an aging population and increased life expectancy, lack of affordable housing should fuel a desire for communal living and continue to drive demand for senior housing with access to services.</td>
</tr>
<tr>
<td>Travel and Leisure</td>
<td>• Focus on experiences over things, including products that focus on fitness and health.</td>
</tr>
</tbody>
</table>

27 “The areas and demographics where the Brexit vote was won,” The Guardian 2016.
Germany

Aidan Corcoran cautions that demographics in Germany are becoming less supportive of growth. Save for the recent rise in immigration, long-term population growth trends in Germany are negative and getting worse and will likely be a headwind for investments that are linked to the absolute level of population. Importantly for investors, labor force growth is positive and employment rates are the highest in Europe.

German household formations are still in positive growth, but do not bank on any cyclical uptick. Discretionary spend has lost wallet share in Germany over the last decade, across almost all categories. Health and education spend has been resilient or gained share across all age groups. Other bright spots include communications spend by those sixty years old or older. German wallet share evolution has been remarkably stable in recent years, highlighting Germany’s overall macro stability, which is attractive to investors at this point in the cycle.

Ludo Bammens identifies migration as the decisive factor in recent elections. Further, the critical median voter is already of retirement age which has impacted the political agenda. The major parties are increasingly catering to pensioners and their interests by promising stable pensions, increasing pensions for specific groups, and limiting prescription co-payments for retirees. In the short term, Ludo expects to see pressure to increase funding (out of the general budget and/or from individual contributions of the working population) for pensions and social security systems, and mid-term a gradual decrease in benefits for future beneficiaries.

Core investment themes are detailed in the table below:

<table>
<thead>
<tr>
<th>Secular Theme</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy Living</td>
<td>• The aging German population (second oldest after Japan) will have greater needs for affordable and accessible healthcare than most peers.</td>
</tr>
<tr>
<td>Digital Content and Media</td>
<td>• Younger generation is expected to drive meaningful growth in the e-commerce, digital, social media and communication areas.</td>
</tr>
<tr>
<td>Urbanization and Rentership</td>
<td>• Senior Living: An aging population, increased life expectancy, wealth and desire for communal living should continue to drive demand for senior housing with access to services.</td>
</tr>
<tr>
<td></td>
<td>• Infrastructure: Upgrading and/or replacement of existing and development of new infrastructure to relieve congestion, improve efficiency and autonomy.</td>
</tr>
<tr>
<td>Travel and Leisure</td>
<td>• Clear focus on experiences over things, products that focus on fitness and health.</td>
</tr>
<tr>
<td>Productivity-Enhancing Tech</td>
<td>• Robotics and other efficiency enhancing technologies will play an important role as the labor force ages. This is key to remedying skilled labor shortages.</td>
</tr>
<tr>
<td>Financial Services</td>
<td>• The global demand for yield among aging societies will drive demand for wealth management products and technological convenience.</td>
</tr>
<tr>
<td>Education</td>
<td>• Internationalization of higher education is a government strategic objective, opening up interesting opportunities for accommodation facilities geared to international students. Germany is the third most popular destination amongst international students, with more than 12% of students at university from abroad.</td>
</tr>
</tbody>
</table>
Japan

Frances Lim notes that Japan is home to the world’s most aged population and presents an example of what may lie in the future for countries like Germany and Spain. Japan’s total population peaked in 2011. By 2050 the population will shrink by 20%, and by 2065, it will be 31% below its highest point. Japan’s working age population peaked even earlier in 1995 and is now 12% below that level. By 2040 it will be 31% below peak. Between 1997 and 2009, nominal GDP in Japan fell 8.4%. The massive stimulus program in Japan has only brought nominal GDP back to 1997 levels. In other words, over the past 20 years, Japan’s economy has not grown.

So what does an aging economy really look like? Prisons have been converted into nursing homes. Adult diapers outsell baby diapers. Longevity has increased and social security costs are high. A fast-shrinking working age population is struggling to support a large, growing older population.

Vance Serchuk, who is the Executive Director of the KKR Global Institute, highlights that that the number of foreign workers in Japan has actually already started growing in recent years and the Japanese government is now considering an increase in immigration to offset the effects of its demographics. Less than two percent of the population is of foreign origin, a proportion far below that of other rich countries.

Given the aging population, urbanization, a tech savvy youth cohort, investment opportunities exist in TMT, healthcare, urban infrastructure, digital technology, food and beverages, senior living, leisure and wellbeing, productivity enhancing technology and financial services (low-risk yielding). See additional details in the table below.

<table>
<thead>
<tr>
<th>Secular Theme</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy Living</td>
<td>• Healthcare: The rapidly aging Japanese population will have greater demand for affordable and accessible healthcare and nursing services. Also, end-of-life products, ease of living are also important themes.</td>
</tr>
<tr>
<td></td>
<td>• Fitness: As the population ages, there will be a shift in products offered to the elderly including health centers that cater to elderly fitness. This would include leisure and sport activities that are tailored for the elderly (e.g., lighter golf clubs, skis for seniors)</td>
</tr>
<tr>
<td></td>
<td>• Food: As the female participation rate has risen quite dramatically, females emerge as a new class of income earners and household spenders more focused on healthy consumer options. As they have less time at home, convenience emerges as a theme. Also, the aging consumer spends more disposable income on higher quality, health beneficial and convenience products.</td>
</tr>
<tr>
<td></td>
<td>• Beauty: As the society ages, the focus on anti-aging products will continue.</td>
</tr>
<tr>
<td>Digital Content and Media</td>
<td>• Asia’s tech savvy and gadget-obsessed younger generation is expected to drive meaningful growth in the e-commerce, digital gaming, and social media areas.</td>
</tr>
<tr>
<td></td>
<td>• In addition, as Japan opens itself to more immigration, demand for foreign language programming, translation services, and translation applications may grow.</td>
</tr>
<tr>
<td></td>
<td>• Digital video content penetration is likely to continue taking share from traditional media.</td>
</tr>
<tr>
<td>Urbanization and Rentership</td>
<td>• Continued upgrading of existing and development of new infrastructure to facilitate the aging society.</td>
</tr>
<tr>
<td></td>
<td>• As household size continues to shrink, there is a trend towards single family homes.</td>
</tr>
<tr>
<td></td>
<td>• The large aged 80 and over population, increased life expectancy, wealth and desire for communal living should continue to drive demand for senior housing with access to services.</td>
</tr>
<tr>
<td></td>
<td>• While the adoption of sharing economy in Japan has been slow, it is advancing with policy support. For example, Prime Minister Abe removed restrictions on home sharing.</td>
</tr>
<tr>
<td>Productivity-Enhancing Tech</td>
<td>• The shortage of labor will result in further investment in productivity enhancing technologies including automated functions in manufacturing, warehousing, logistics, and retail. Importantly, Japan is at the forefront of robotic technology. While the use of robotics has traditionally been in manufacturing, its use has now expanded towards schools, hospitals, nursing homes, airports, and train stations.</td>
</tr>
<tr>
<td>Financial Services</td>
<td>• The global demand for yield for aging societies and fear of insolvency will drive demand for wealth management, life insurance and testamentary trust services.</td>
</tr>
<tr>
<td></td>
<td>• Digital payments is a growing area driven by the growth in digital gaming.</td>
</tr>
<tr>
<td>Education</td>
<td>• The elderly work force will need retraining services to continually upgrade their skills for the evolving environment.</td>
</tr>
<tr>
<td></td>
<td>• As Japan opens its doors to immigration, there will be a need for onboarding programs to train foreign workers as well as provide support and services for foreigners living in Japan.</td>
</tr>
</tbody>
</table>

28 TMT refers to Technology, Media and Telecommunications.
Conclusion

Globally, demographic change is producing a slower growth, lower rate, government budget constrained environment. We suggest investors lean into seven long-term secular trends being enhanced by aging in key markets (U.S., U.K., Germany, Japan, China and Mexico):

- Healthy Living
- Travel and Leisure
- Digital Content and Media
- Urbanization and Renterhip
- Productivity-enhancing technology
- Financial Services
- Education

That said, we are cautious about paying high valuations for investments that rely on GDP-per-capita growth in nations where working age population growth is negative, e.g., autos. An aging and shrinking population, coupled with the growth of autonomous vehicles, is likely to result in a smaller, less specialized domestic market for automobiles and greater emphasis on exports.

Finally, we note that nations where both income inequality is high and/or rising and immigration is increasing without commensurate efforts to train workers, update healthcare and pension policies and assimilate new citizens could present greater geopolitical risk. Indeed, in the coming decades, nations will attempt to counteract the profound effects of population aging via technological innovation, immigration, as well as other tools. Without reforms that offer workers opportunity and security relevant for this disruptive era, and smart policies to assimilate immigrants, these solutions could in the short term enhance social and economic disruption and risk political backlash.

Important Information

References to “we,” “us,” and “our” refer to Mr. Mehlman and Ms. Campbell Roberts and/or KKR’s Global Macro and Asset Allocation team, as context requires, and not of KKR. The views expressed reflect the current views of Mr. Mehlman and Ms. Campbell Roberts as of the date hereof and neither Mr. Mehlman and Ms. Campbell Roberts nor KKR undertakes to advise you of any changes in the views expressed herein. Opinions or statements regarding financial market trends are based on current market conditions and are subject to change without notice. References to a target portfolio and allocations of such a portfolio refer to a hypothetical allocation of assets and not an actual portfolio. The views expressed herein and discussion of any target portfolio or allocations may not be reflected in the strategies and products that KKR offers or invests, including strategies and products to which Mr. Mehlman and Ms. Campbell Roberts provides investment advice to or on behalf of KKR. It should not be assumed that Mr. Mehlman and Ms. Campbell Roberts has made or will make investment recommendations in the future that are consistent with the views expressed herein, or use any or all of the techniques or methods of analysis described herein in managing client or proprietary accounts. Further, Mr. Mehlman and Ms. Campbell Roberts may make investment recommendations and KKR and its affiliates may have positions (long or short) or engage in securities transactions that are not consistent with the information and views expressed in this document.

The views expressed in this publication are the personal views of Mr. Mehlman and Ms. Campbell Roberts and are not the views of Kohlberg Kravis Roberts & Co. L.P. (together with its affiliates, “KKR”) and do not necessarily reflect the views of KKR itself or any investment professional at its affiliates, “KKR”) and do not necessarily reflect the views of Kohlberg Kravis Roberts & Co. L.P. (together with its affiliates, “KKR”) and do not necessarily reflect the views of Ken Mehlman and Paula Campbell Roberts or any other person as to the accuracy and completeness or fairness of the information contained in this publication and no responsibility or liability is accepted for any such information. By accepting this document, the recipient acknowledges its understanding and acceptance of the foregoing statement.

The MSCI sourced information in this document is the exclusive property of MSCI Inc. (MSCI). MSCI makes no express or implied warranties or representations and shall have no liability whatsoever with respect to any MSCI data contained herein. The MSCI data may not be further redistributed or used as a basis for other indices or any securities or financial products. This report is not approved, reviewed or produced by MSCI.

References to “we,” “us,” and “our” refer to Mr. Mehlman and Ms. Campbell Roberts and/or KKR’s Global Macro and Asset Allocation team, as context requires, and not of KKR. The views expressed reflect the current views of Mr. Mehlman and Ms. Campbell Roberts as of the date hereof and neither Mr. Mehlman and Ms. Campbell Roberts nor KKR undertakes to advise you of any changes in the views expressed herein. Opinions or statements regarding financial market trends are based on current market conditions and are subject to change without notice. References to a target portfolio and allocations of such a portfolio refer to a hypothetical allocation of assets and not an actual portfolio. The views expressed herein and discussion of any target portfolio or allocations may not be reflected in the strategies and products that KKR offers or invests, including strategies and products to which Mr. Mehlman and Ms. Campbell Roberts provides investment advice to or on behalf of KKR. It should not be assumed that Mr. Mehlman and Ms. Campbell Roberts has made or will make investment recommendations in the future that are consistent with the views expressed herein, or use any or all of the techniques or methods of analysis described herein in managing client or proprietary accounts. Further, Mr. Mehlman and Ms. Campbell Roberts may make investment recommendations and KKR and its affiliates may have positions (long or short) or engage in securities transactions that are not consistent with the information and views expressed in this document.

The views expressed in this publication are the personal views of Ken Mehlman and Paula Campbell Roberts of Kohlberg Kravis Roberts & Co. L.P. (together with its affiliates, “KKR”) and do not necessarily reflect the views of KKR itself or any investment professional at KKR. This document is not research and should not be treated as research. This document does not represent valuation judgments with respect to any financial instrument, issuer, security or sector that may be described or referenced herein and does not represent a formal or official view of KKR. This document is not intended to, and does not, relate specifically to any investment strategy or product that KKR offers. It is being provided merely to provide a framework to assist in the implementation of an investor’s own analysis and an investor’s own views on the topic discussed herein.

This publication has been prepared solely for informational purposes. The information contained herein is only as current as of the date indicated, and may be superseded by subsequent market events or for other reasons. Charts and graphs provided herein are for illustrative purposes only. The information in this document has been developed internally and/or obtained from sources believed to be reliable; however, neither KKR nor Mr. Mehlman and Ms. Campbell Roberts guarantees the accuracy, adequacy or completeness of such information. Nothing contained herein constitutes investment, legal, tax or other advice nor is it to be relied on in making an investment or other decision.

There can be no assurance that an investment strategy will be successful. Historic market trends are not reliable indicators of actual future market behavior or future performance of any particular investment which may differ materially, and should not be relied upon as such. Target allocations contained herein are subject to change. There is no assurance that the target allocations will be achieved, and actual allocations may be significantly different than that shown here. This publication should not be viewed as a current or past recommendation or a solicitation of an offer to buy or sell any securities or to adopt any investment strategy.

The information in this publication may contain projections or other forward looking statements regarding future events, targets, forecasts or expectations regarding the strategies described herein, and is only current as of the date indicated. There is no assurance that such events or targets will be achieved, and may be significantly different from that shown here. The information in this document, including statements concerning financial market trends, is based on current market conditions, which will fluctuate and may be superseded by subsequent market events or for other reasons. Performance of all cited indices is calculated on a total return basis with dividends reinvested. The indices do not include any expenses, fees or charges and are unmanaged and should not be considered investments.

The investment strategy and themes discussed herein may be unsuitable for investors depending on their specific investment objectives and financial situation. Please note that changes in the rate of exchange of a currency may affect the value, price or income of an investment adversely.

Neither KKR nor Mr. Mehlman and Ms. Campbell Roberts assumes any duty to, nor undertakes to update forward looking statements. No representation or warranty, express or implied, is made or given by or on behalf of KKR, Mr. Mehlman and Ms. Campbell Roberts or any other person as to the accuracy and completeness or fairness of the information contained in this publication and no responsibility or liability is accepted for any such information. By accepting this document, the recipient acknowledges its understanding and acceptance of the foregoing statement.

The MSCI sourced information in this document is the exclusive property of MSCI Inc. (MSCI). MSCI makes no express or implied warranties or representations and shall have no liability whatsoever with respect to any MSCI data contained herein. The MSCI data may not be further redistributed or used as a basis for other indices or any securities or financial products. This report is not approved, reviewed or produced by MSCI.