Who Wears the Diapers? A discussion about the economic implications of global demographic trends

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“The most recent projections from the OMB indicate that, if current policies remain in place, the total unified surplus will reach $800 billion in fiscal year 2011, including an on-budget surplus of $500 billion. The CBO reportedly will be showing even larger surpluses. Moreover, the admittedly quite uncertain long-term budget exercises released by the CBO last October maintain an implicit on-budget surplus under baseline assumptions well past 2030 despite the budgetary pressures from the aging of the baby-boom generation, especially on the major health programs.”

Alan Greenspan, *Outlook for the federal budget and implications for fiscal policy*  
Before the Committee on the Budget, U.S. Senate  
January 25, 2001
Who wears the diapers?

Demographic shifts are an opportunity for some and a challenge for others

Demographics

- Increasing life expectancy, declining fertility rates and in some countries a post-war baby boom
- A growing aging population changes the denominator for home ownership rates, labor force participation rates and support ratios
- A smaller working age population decreases the household formation rate and changes consumption patterns

Source: Global Diaper Market Report 2013 edition, Koncept Analytics
Demographics are destiny

A falling working age population in the OECD means lower potential GDP

- Fewer households formed
- Fewer contributors to pensions
- Fewer new tax payers & workers each year
- Potential for labor shortages
- Gradual shift to portfolio de-risking and greater bond allocation

Developed Country Working Age Population as a Percent of Total Pop...

Source: Haver Analytics
Demographics are Destiny

The percentage of those over age 65 in OECD projected to grow

- Downward pressure on inflation
- Pressure on pensions to pay out for longer than planned – assets need to last longer
- Pressure on governments that have yet to reform old-age benefits
- Large voting block

Source: Haver Analytics
The U.S. is already on the upward slope of the increasing population of people aged 65+

Demographics

- Percent of population over the age of 65 doubles from 1980 to 2030
- Greater retired population with fixed incomes reduces potential GDP forecasts
- Lower potential GDP coupled with lower CPI and lower rates creates vicious circle on retiree incomes

Source: Haver Analytics
The U.S. is in a relatively strong position

Demographics

- Census data from 2000 to 2050 suggests that the U.S. working age population is expected to grow 31%
- Due to falling fertility rates, Asia and Europe are going to experience a major decline in their working age populations
- In Korea, the ratio of 20-64 year-olds to those over 65 is forecast to plummet to 1.4 in 2050 from 8.7 today

CHANGE IN WORKING AGE POPULATION FROM 2000-2050

Source: U.S. Census and U.N. Population Statistics

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The ratio of working age to retired workers is shifting

<table>
<thead>
<tr>
<th>Ratio of 20-64 year olds to 65+ by country</th>
<th>2000</th>
<th>2025</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>3.7</td>
<td>2.8</td>
<td>2.1</td>
</tr>
<tr>
<td>Italy</td>
<td>3.4</td>
<td>2.3</td>
<td>1.4</td>
</tr>
<tr>
<td>U.S.</td>
<td>4.8</td>
<td>3.0</td>
<td>2.8</td>
</tr>
<tr>
<td>China</td>
<td>8.8</td>
<td>4.6</td>
<td>2.4</td>
</tr>
<tr>
<td>South Korea</td>
<td>8.7</td>
<td>3.2</td>
<td>1.4</td>
</tr>
<tr>
<td>World</td>
<td>7.7</td>
<td>5.5</td>
<td>3.6</td>
</tr>
</tbody>
</table>

Demographics
- Little fundamental change to pensions over the last 30 years
- Need to improve levels of advice individuals receive
- Need to improve risk management within the product to increase certainty
- Need to enhance the current decumulation product offering to improve the simplicity and transparency of current offerings

Source: Adair Turner, Impact of Population Aging on Financial Markets; UN Data November 2014
U.S. working age population is growing at a slower rate

The “Latino Lift” begins to increase the growth rate of the working age population in 2025

Demographics

- Working age population contribution to potential output begins rising in 2025
- Shifts in preferences for Millennials also drives changing demand and growth prospects
- U.S. growth will increasingly need to come from productivity gains and/or positive shocks such as the oil/gas boom

Source: United Nations/Haver Analytics
The UK is in one of the strongest demographic positions

Steady immigration helps the UK demographic picture

- The UK, like the U.S., sees some benefits from immigrants having more children than native born
- Potential output is still reduced due to slower growth of the working age population
- Shifts in retirement age and participation are needed

U.K.: Working Age Population 15-64

Change - Year to Year  Thous

375 -
300 -
225 -
150 -
75 -
0 -
-75 -

Source: United Nations/Haver Analytics
Declining working age population comes at a bad time

Working age population began falling in 2010 just as Europe’s debt crisis peaked

Demographics

- The bursting of the debt bubble combined with a falling working age population is a tough recipe for policymakers as seen in Japan circa 1995-2005
- The fine balance between austerity and growth is especially critical in Europe

Western Europe: Working Age Population 15-64
Change - Period to Period  Thous

Source: United Nations/Haver Analytics
Japan has seen two decades of working age population fall

The debt bubble burst at the same time as the working age population declined

Demographics

- Japan started its crisis with a fiscal surplus but high debt to GDP ratios
- Persistent slow growth finally led to fiscal stimulus
- Increasing the participation rate amongst women will help temporarily
- Raising the retirement age is important but will only postpone the problem

Source: United Nations/Haver Analytics
IMF Report on Women in the Workforce

• Would raise GDP and living standards
• Higher FLFP would reduce budget deficits
• Gender gap large even in OECD economies
• Japan gender gap similar to South America at 25 percentage points
• Middle East is the highest gender gap at 50 percentage points
• Literacy rates for women continue to lag those for men
• Wage gaps persist even when controlling for occupation/education

Source: IMF, Women, Work and the Economy: Macroeconomic Gains from Gender Equity, September 2013, KPMG analysis
Japan GDP if female participation equaled male participation

By 2019 Japan’s GDP could be 1.6% higher than the IMF’s baseline if there were G7 FLFP

Japan GDP: IMF baseline vs. FLFP

Growth Prospects

- Japan’s FLFP is 66.6% vs 85.2% for men
- The annual potential growth rate could rise by about ¼ percentage point if the female labor participation rate were to reach the average for the G7 countries
- Japan is a prime example of a country that suffers from a falling working age population

Source: IMF, Women, Work and the Economy: Macroeconomic Gains from Gender Equity, September 2013, KPMG analysis
Raising the retirement age to 74 helps.

Source: Bloomberg
Younger generations will be supporting more older people

As each generation retires they will see a greater percent of those over age 65

<table>
<thead>
<tr>
<th>Generation</th>
<th>Born</th>
<th>Building Assets</th>
<th>Drawing Down Assets</th>
<th>% of U.S. Population 65+ in start year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baby Boomers</td>
<td>1945–1965</td>
<td>1965-2035</td>
<td>2015 - 2055</td>
<td>13.6%</td>
</tr>
<tr>
<td>Generation X</td>
<td>1960s-1980s</td>
<td>1980s-2050s</td>
<td>2030 - 2070</td>
<td>19.9%</td>
</tr>
<tr>
<td>Generation Y/ Millennial Generation</td>
<td>1980s-2000s</td>
<td>2000-2070</td>
<td>2050 - 2090</td>
<td>27.6%</td>
</tr>
<tr>
<td>Generation Z/ Digital Natives</td>
<td>1995-2010</td>
<td>2015-2085</td>
<td>2065 - 2100</td>
<td>29%</td>
</tr>
<tr>
<td>Generation Alpha/ Google Kids</td>
<td>2010 +</td>
<td>Starting in 2030</td>
<td>Starting in 2080</td>
<td>33.3%</td>
</tr>
</tbody>
</table>

**Fiscal Balances**

- Greater dependency ratios over the next century

Living longer, while great, is not free

<table>
<thead>
<tr>
<th>Percentage of GDP</th>
<th>2013</th>
<th>2024</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Security</td>
<td>4.9%</td>
<td>5.6%</td>
</tr>
<tr>
<td>Medicare</td>
<td>3.0%</td>
<td>3.2%</td>
</tr>
<tr>
<td>Total:</td>
<td>7.9%</td>
<td>8.8%</td>
</tr>
</tbody>
</table>

Fiscal Balances
- All countries are forecast to have a greater percentage of elderly people in 2050 vs. 2000.
- Concerns about future fixed costs due to population living longer in retirement
- Increased fixed costs reduce or limit governments’ ability to respond to new shocks

Source: Congressional Budget Office Projections 2014-2024
Tax payers and transfer recipients shift due to aging

U.S. wages and salary are no longer the dominant source of personal income

**Personal Income Sources in 1980**

- Transfers: 12.10%
- Proprietors Income: 7.40%
- Rental Income: 10.90%
- Supplements to Wages: 16.70%
- Receipts on Assets: 0.90%
- Wages and Salary: 59.30%

**Personal Income Sources 2013**

- Transfers: 17.30%
- Proprietors Income: 9.50%
- Rental Income: 4.20%
- Supplements to Wages: 12.10%
- Receipts on Assets: 14.20%
- Wages and Salary: 50.50%

Source: CBO Budget Projections 2014 - 2024
Government debt expanding

Can GDP grow faster than costs of supporting the elderly?

Germany: General Government Debt as a Percentage of GDP (%)
U.S.: General Government Debt as a Percentage of GDP (%)
Japan: General Government Debt as a Percentage of GDP (%)

Fiscal Balances
- Aging population means action must be taken on
  - Participation rate
  - Retirement age
  - Productivity
- Only 3 ways out of debt
  - Growth
  - Inflation
  - Default/restructure

Sources: Bbk/H, FRB/H, BoJ/H /Haver
Government bond yields falling for 30+ years

Lower yields due to multiple factors

- Increasing “Real Money” holders
- The decline in long-term U.S. rates in 2004-05, despite rising policy rates, was driven by a rising preferred-habitat demand linked to foreign official holdings
- A 10 percentage point change in foreign ownership equates to a yield change of 32-43bp

Sources: Kaminska, Vayanos and Zinna (2011), IMF working Papers: WP/12/158, WP/13/254
Unfavorable demographics not aligned with asset allocation

Compared to U.S. and European investors most of the world is already “derisked”

Asset Allocation by Investor (2010)

- Scope for even greater bond market allocation from emerging markets
- Japanese pension fund recently announced greater diversification into foreign bonds and other risk assets

Fiscal Balances

What is Debt Sustainability?

Ultimately Debt Sustainability is the ability to sell debt – now and in the future

- Fiscal Balances
- Growth Prospects
- Ability to Raise Taxes
- Who Holds Debt
Several IMF studies shed light on the importance of “real money” investors

- So-called “real money” investors are unleveraged holders of government debt such as pensions, retail and central banks
- Liability and maturity matching tend to drive allocation as much as returns accounting for stability of “real money”
- The growth of emerging market savings since the 1990s has helped pushed down developed markets debt
- Demographics and macro-prudential regulation have contributed to increasing real money demand

Source: IMF working papers: WP/12/158, WP/13/254, KPMG Economics – Hunter
Negative feedback loops develop quickly if debt becomes too high

- Debt service costs cannot be so high that fiscal adjustment is only obtainable via restructuring or default – à la Greece
- Interest rates higher than the nominal growth rate by two percentage points or more are, ultimately, unsustainable
- When greater resources go to debt service potential output is reduced. (Reinhart and Rogoff 90% tipping point)
- Higher dependency ratios due to lower births and longer lives put strain on growth and fiscal revenue collection

Source: IMF working papers: WP/12/158, WP/13/254, KPMG Economics – Hunter
Fiscal agility tied to growth prospects and demand for debt

Debt Sustainability

- High domestic demand from real money allowed Japan to amass significant debt—despite austerity & growth it may be too late

- Europe is not out of the woods and problem countries face issues of growth, dependency ratios and debt ownership

- The UK’s austerity has put the fiscal picture on track. The key to maintaining sustainability comes down to growth.

- Good demographics and recent austerity has helped the U.S.. High real money holders and oil/gas growth may save the day

- The global challenge of an aging population & falling birth rates is the economic and social conundrum that needs solving

Source: IMF working papers: WP/12/158, WP/13/254, KPMG Economics – Hunter
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