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cutting through complexity

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

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Pro-Cyclical nature of fiscal balances wildly underestimated

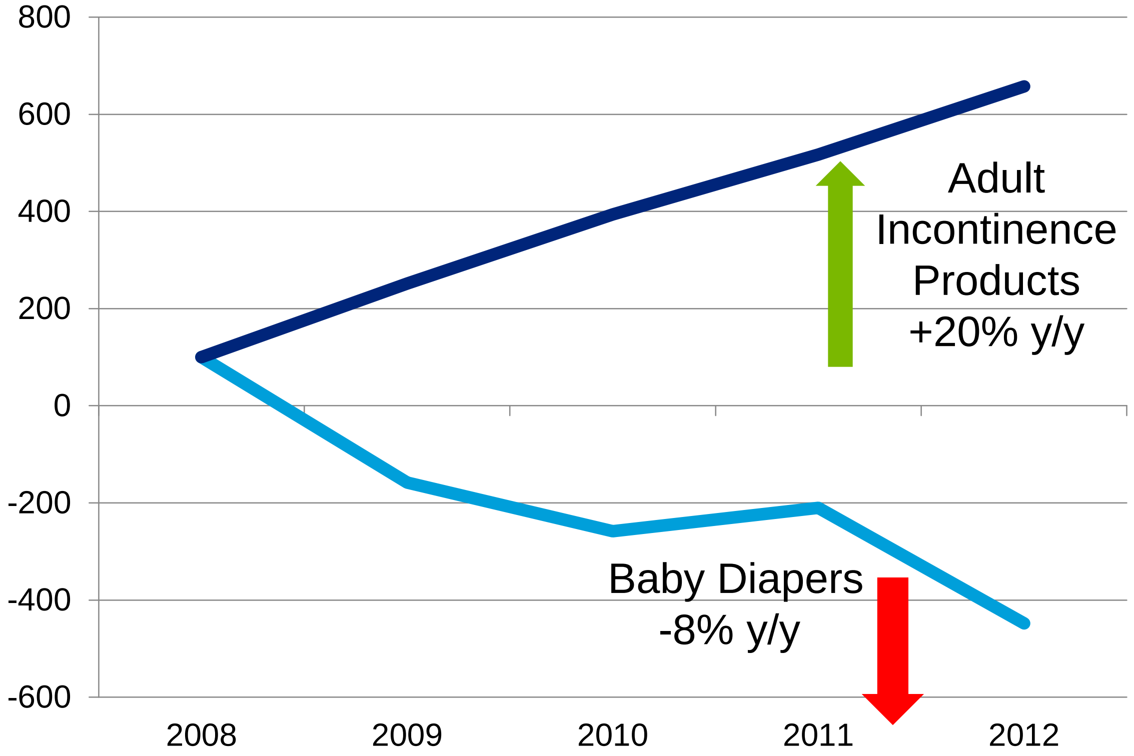
"The most recent projections from the OMB indicate that, if current policies remain in place, the total unified surplus will reach $800 billion in fiscal year 2011, including an on-budget surplus of $500 billion. The CBO reportedly will be showing even larger surpluses. Moreover, the admittedly quite 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

North American Diaper Consumption (Index 2008=100)



Source: Global Diaper Market Report 2013 edition, Koncept Analytics

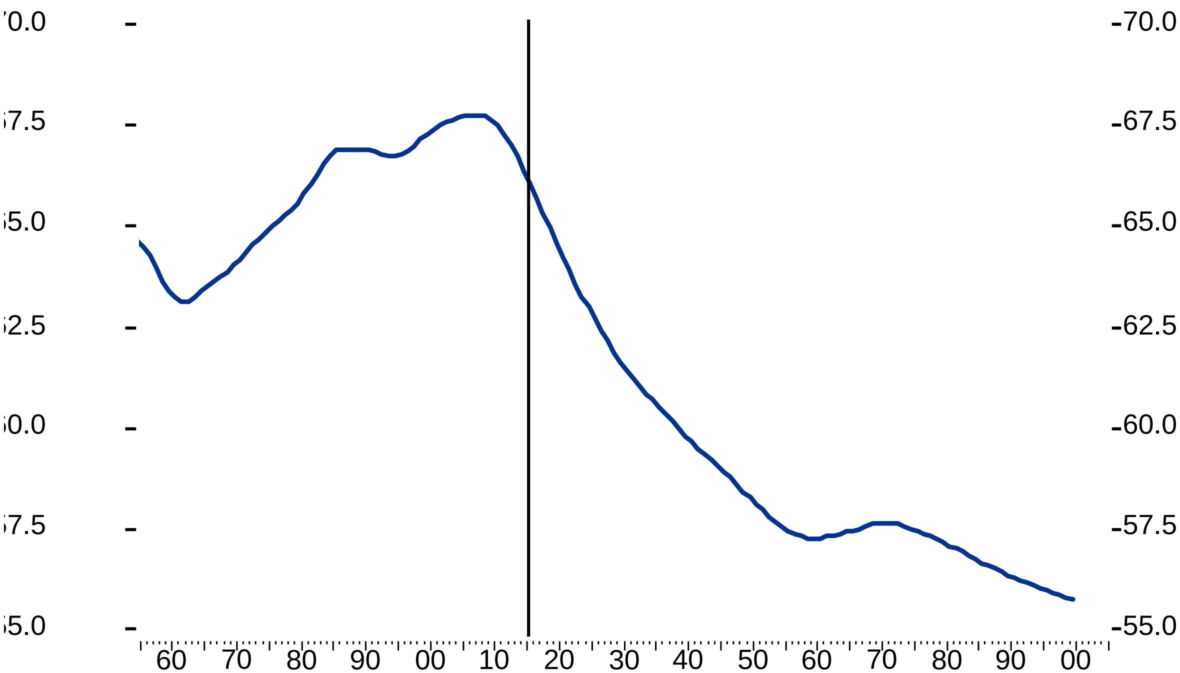
Demographics

- 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

Demographics are destiny

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

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



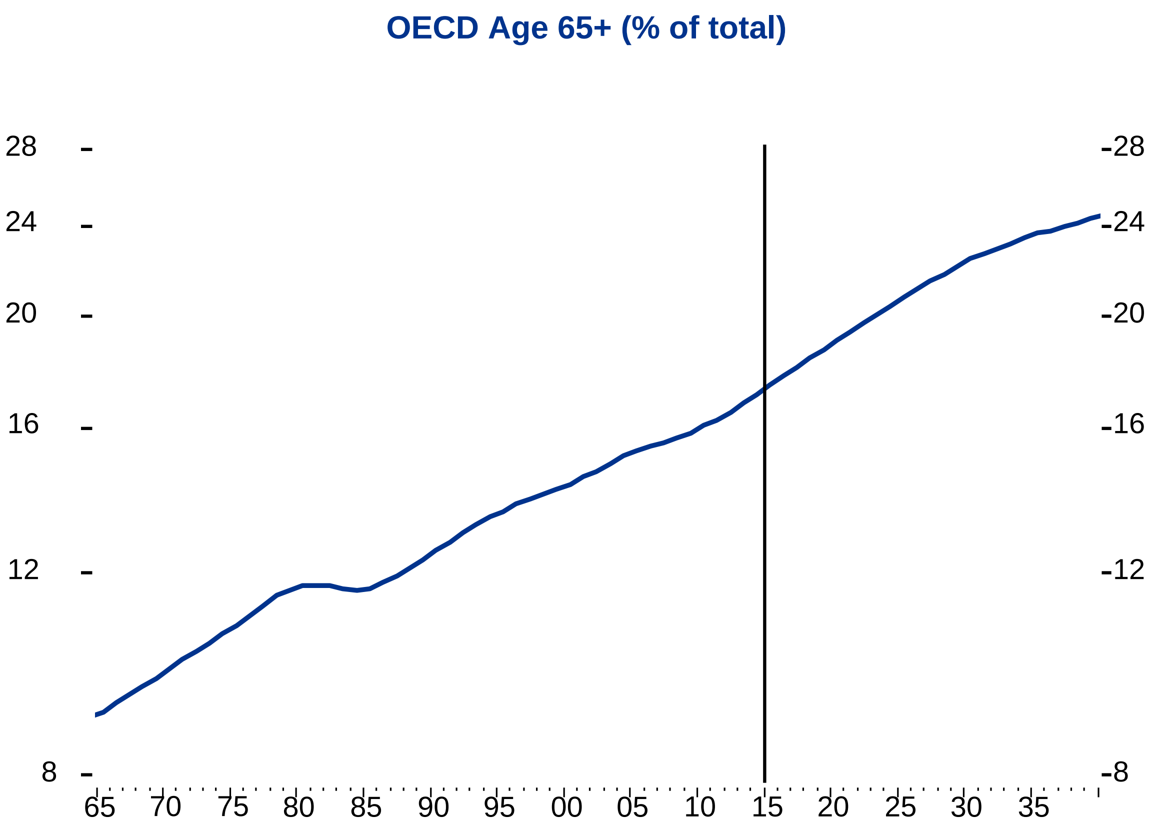
Source: Haver Analytics

Demographics

- 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

Demographics are Destiny

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



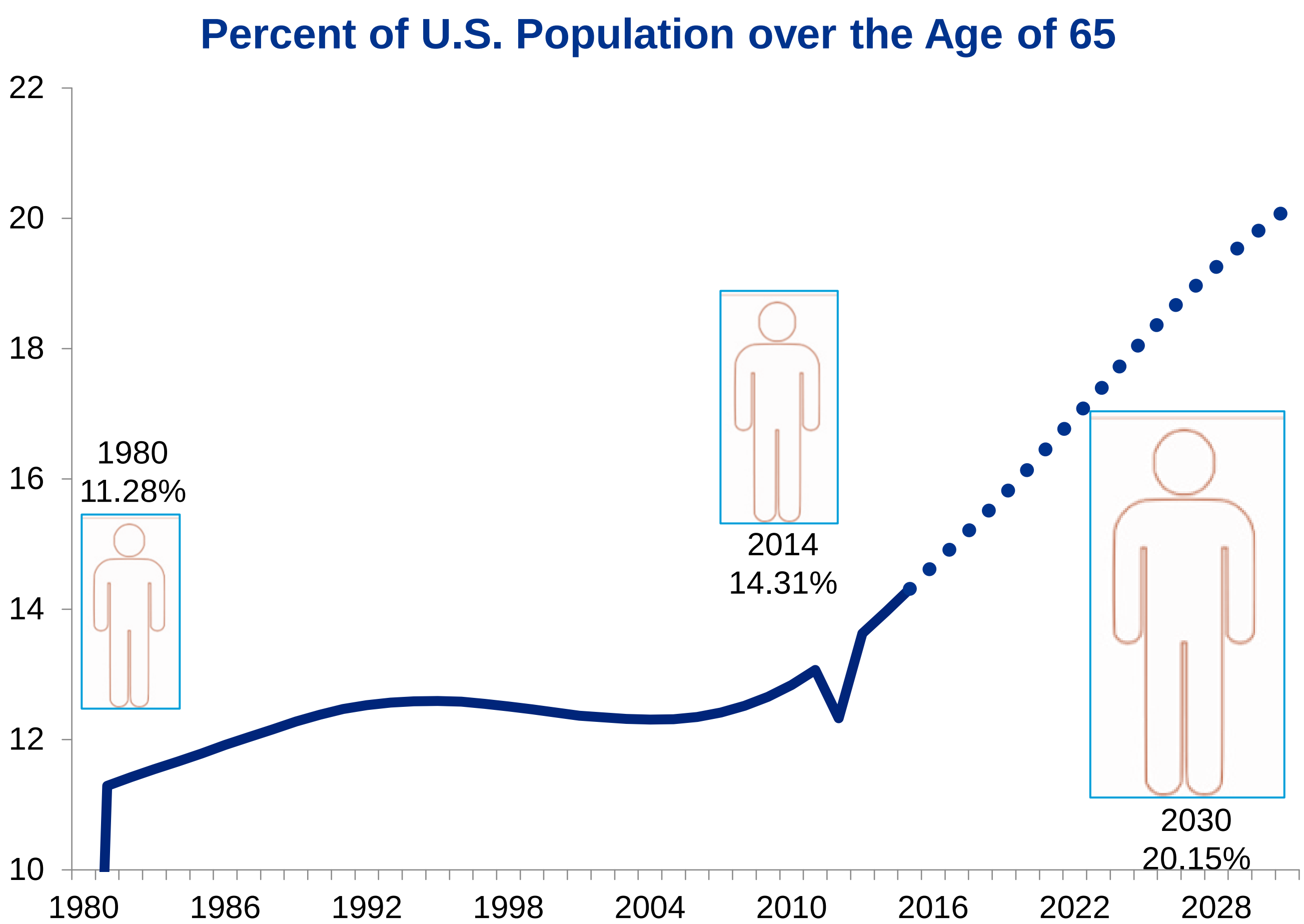
Source: Haver Analytics

Demographics

- 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

Demographics

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

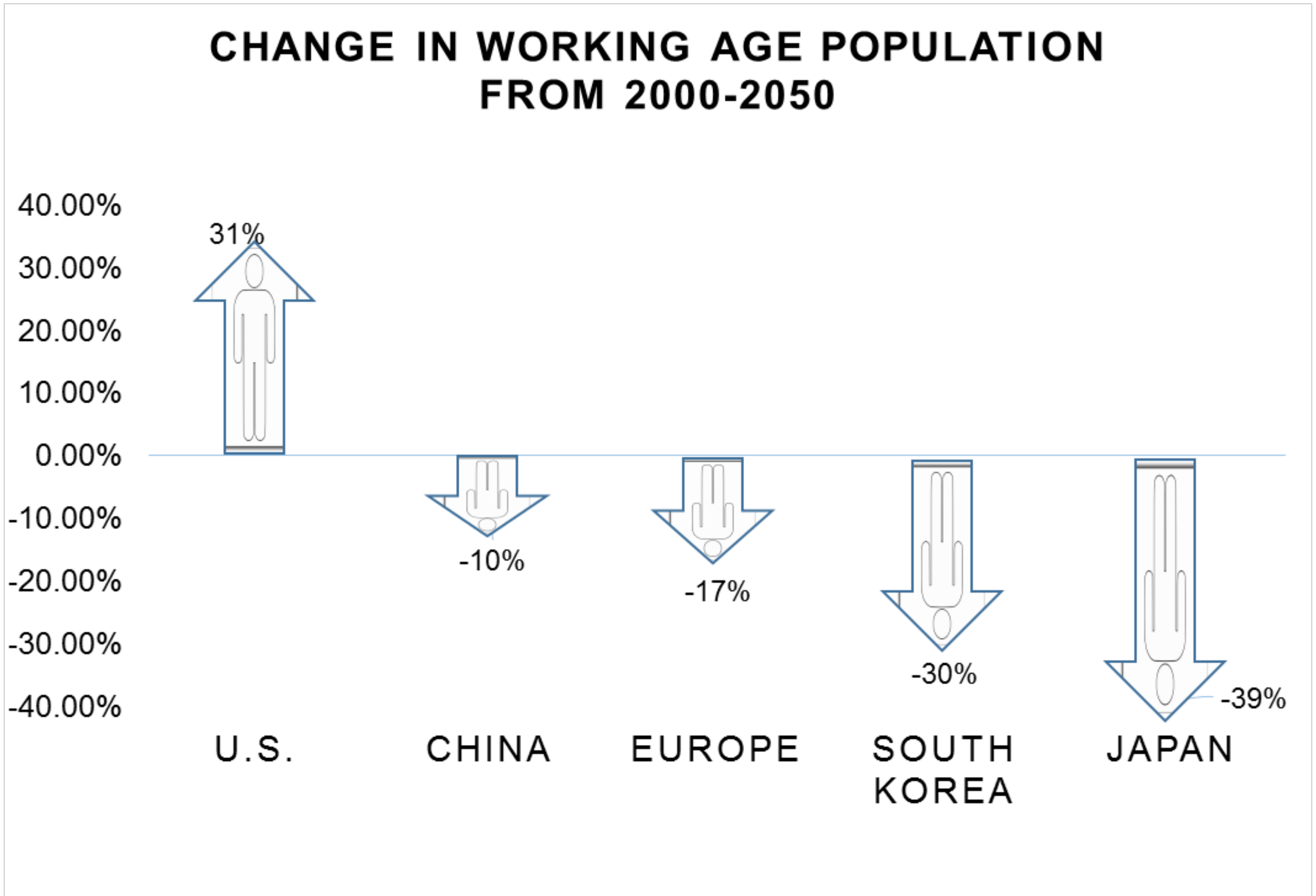


Source: Haver Analytics

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

The U.S. is in a relatively strong position



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

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

The ratio of working age to retired workers is shifting

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

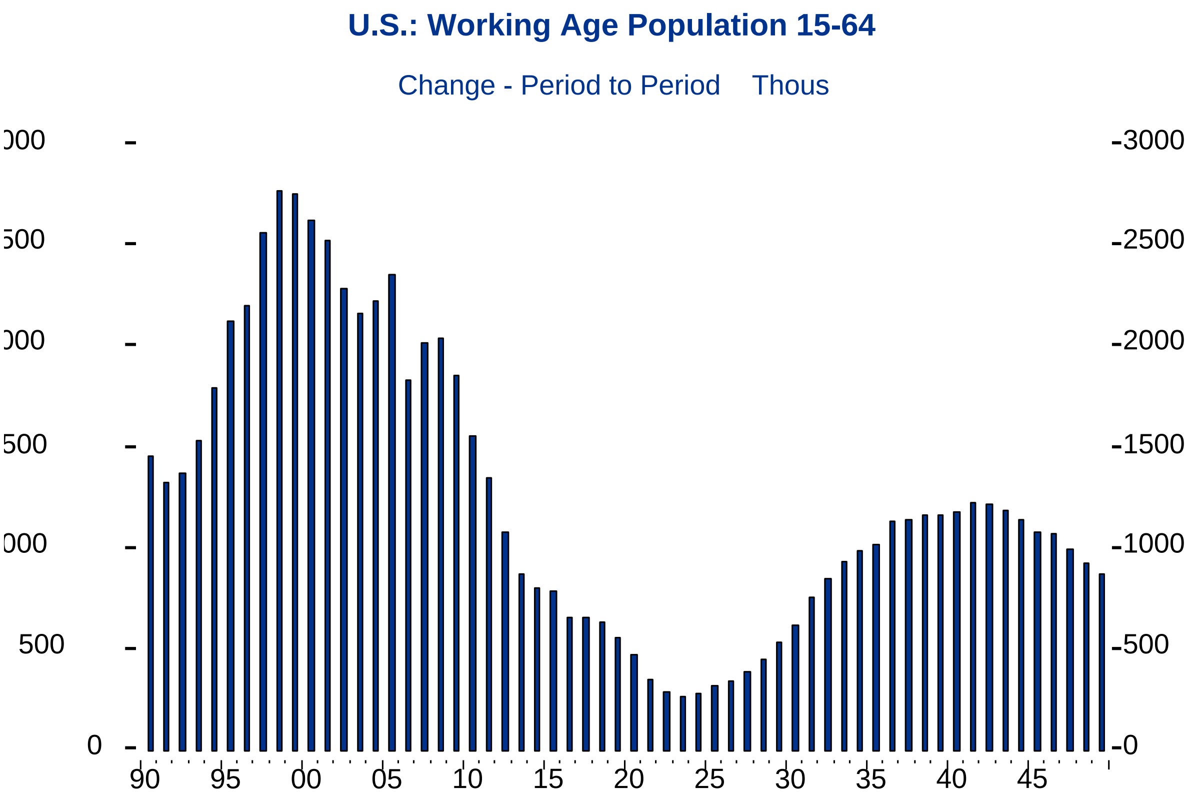
Demographics

- 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



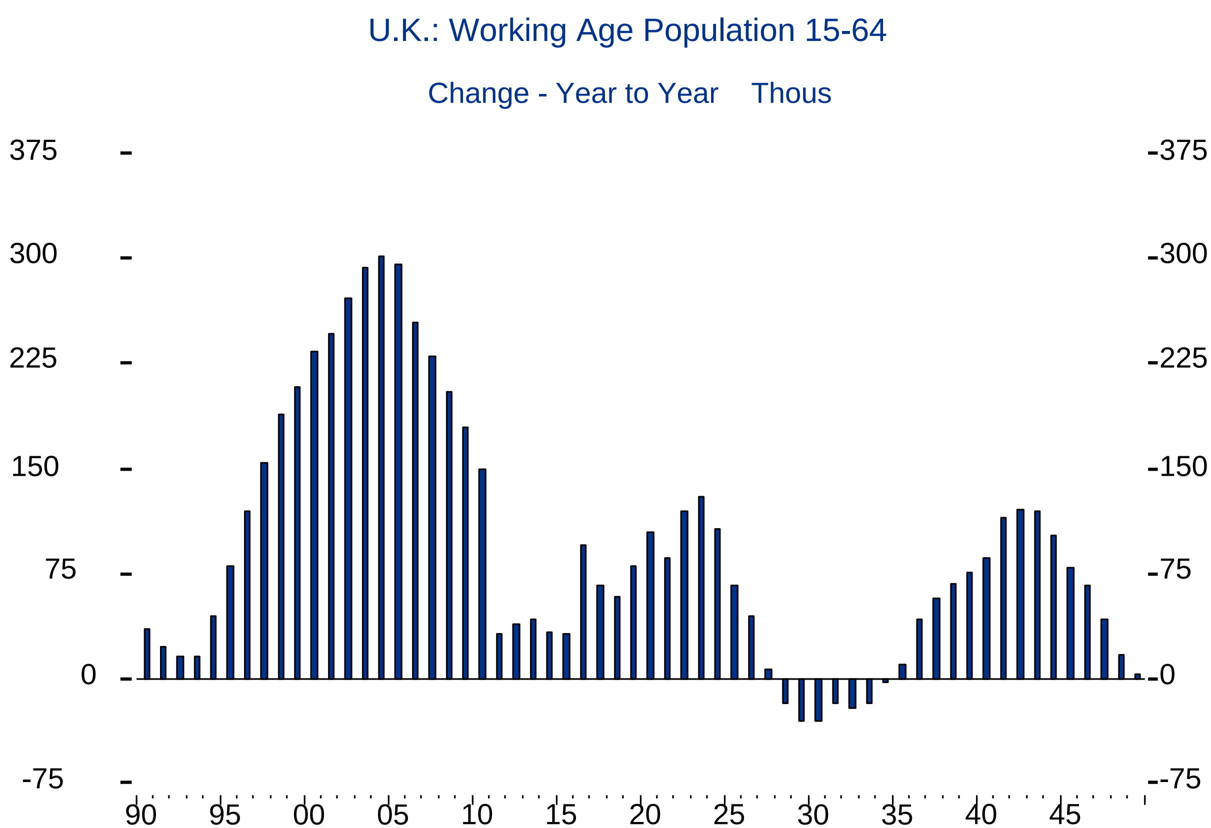
Source: United Nations/Haver Analytics

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

The UK is in one of the strongest demographic positions

Steady immigration helps the UK demographic picture



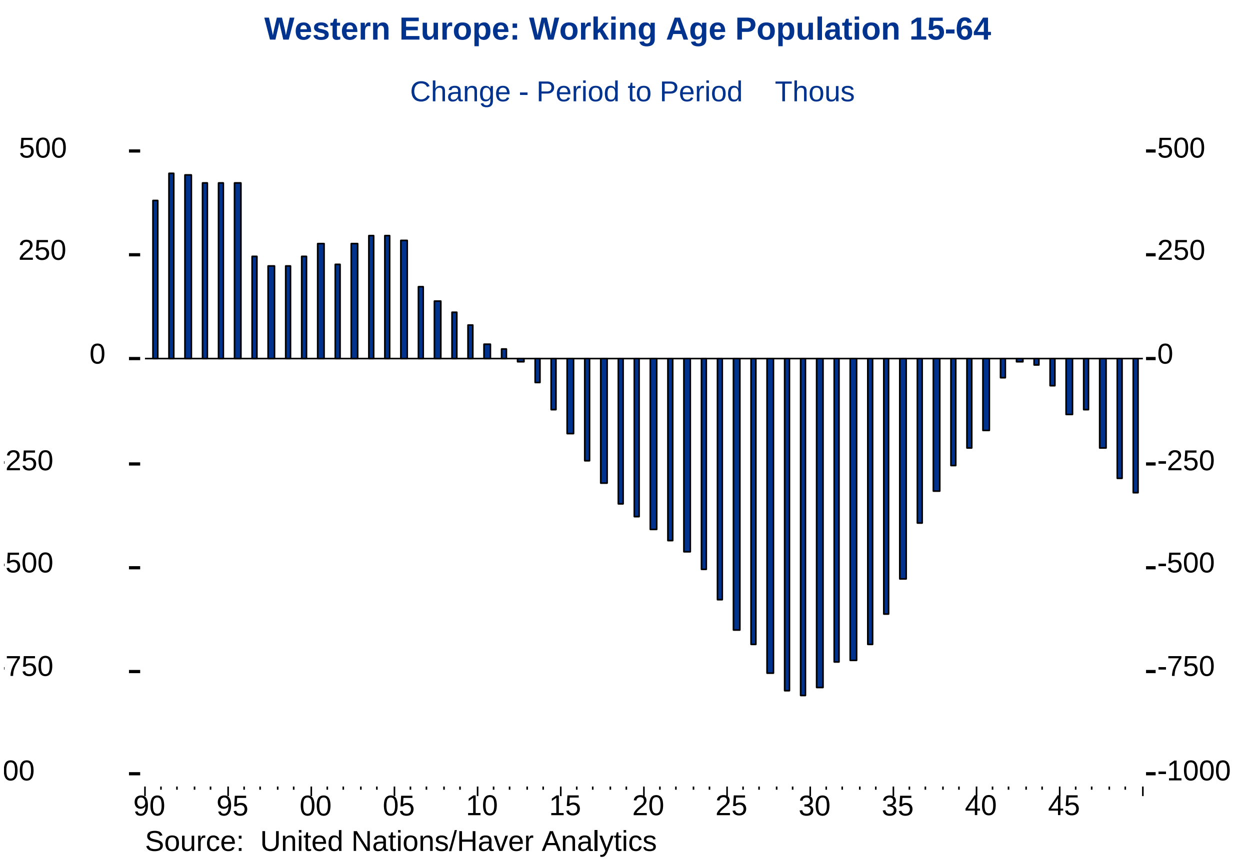
Source: United Nations/Haver Analytics

Demographics

- 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

Declining working age population comes at a bad time

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

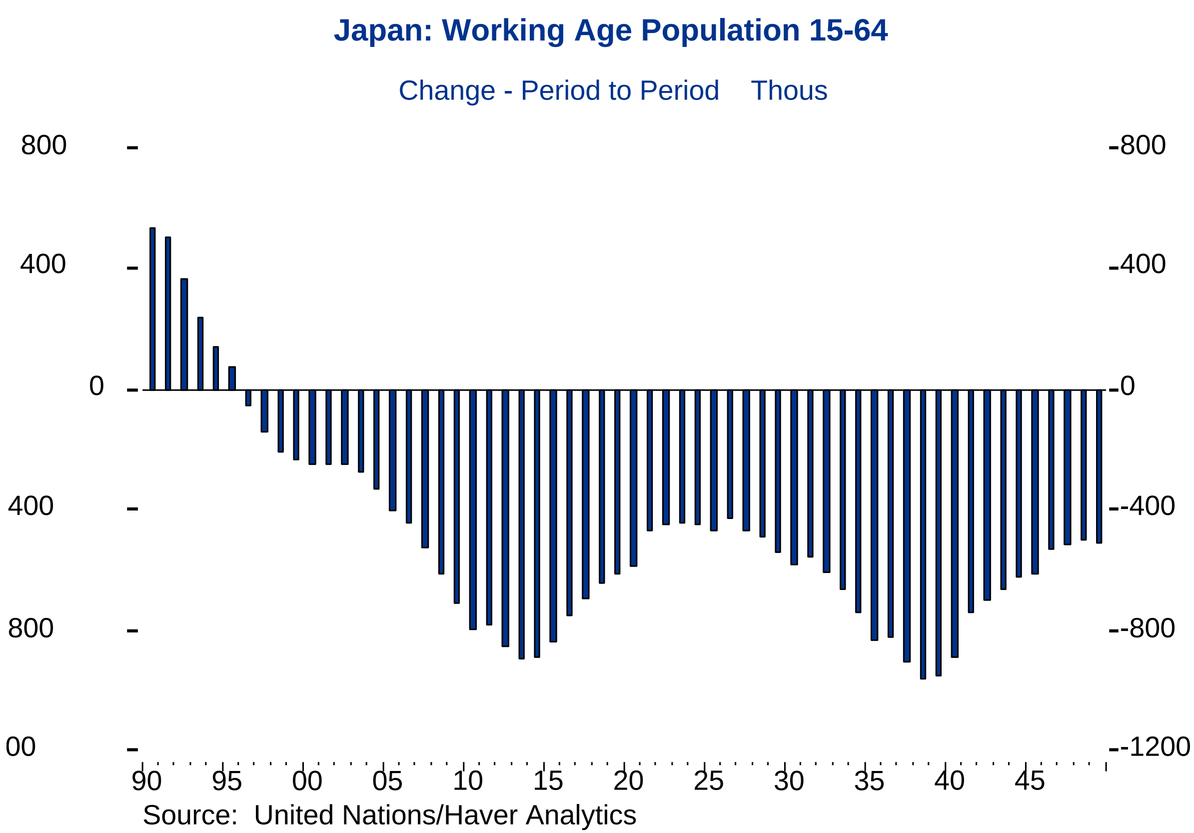


Demographics

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

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

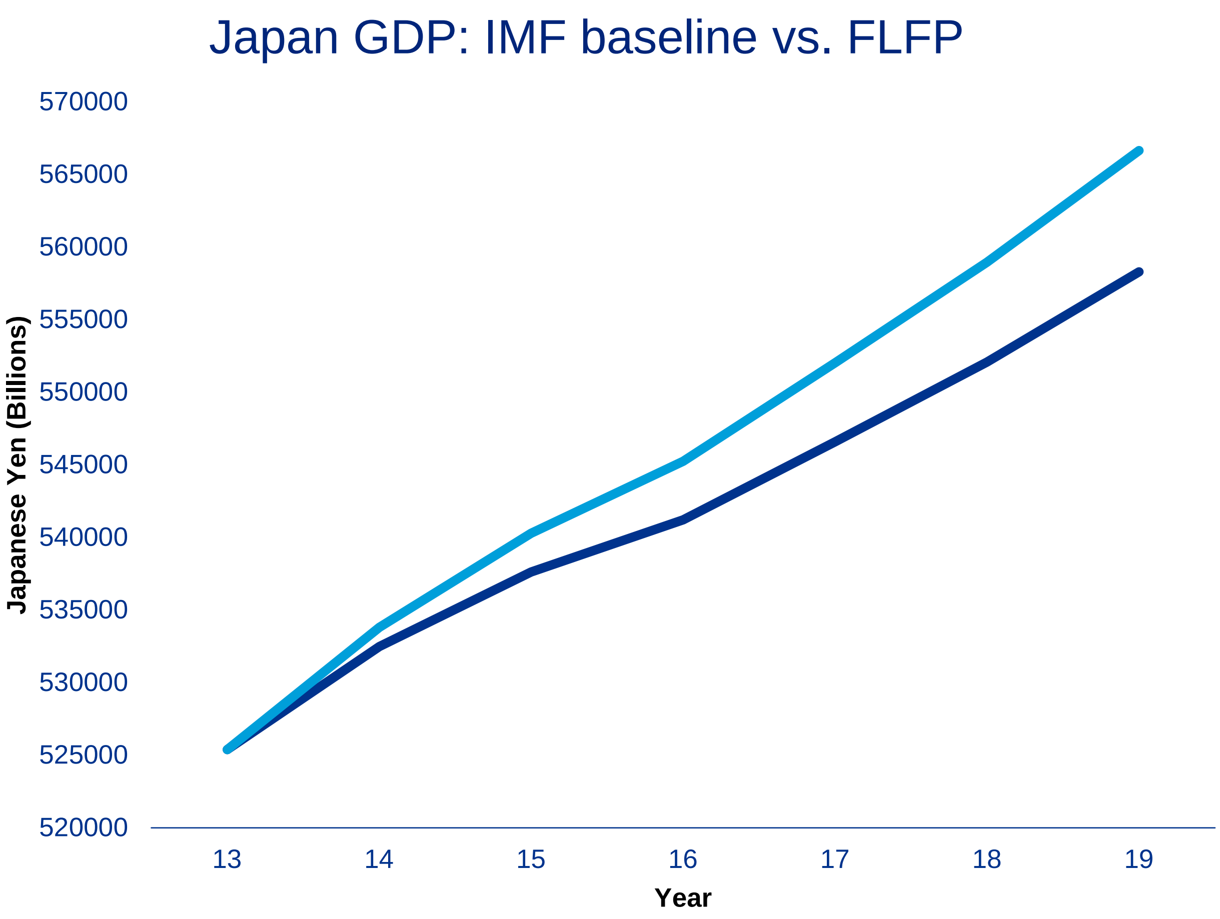
IMF Report on Women in the Workforce

- 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
- Wag 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

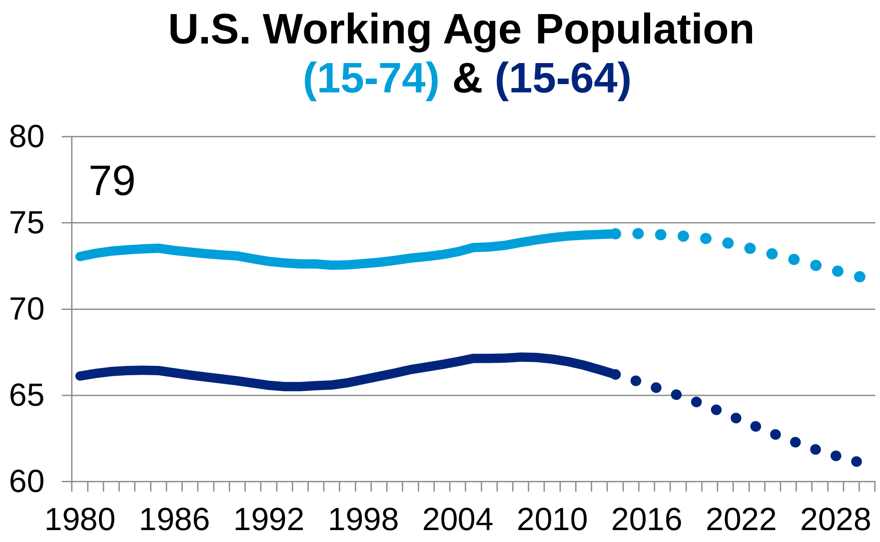


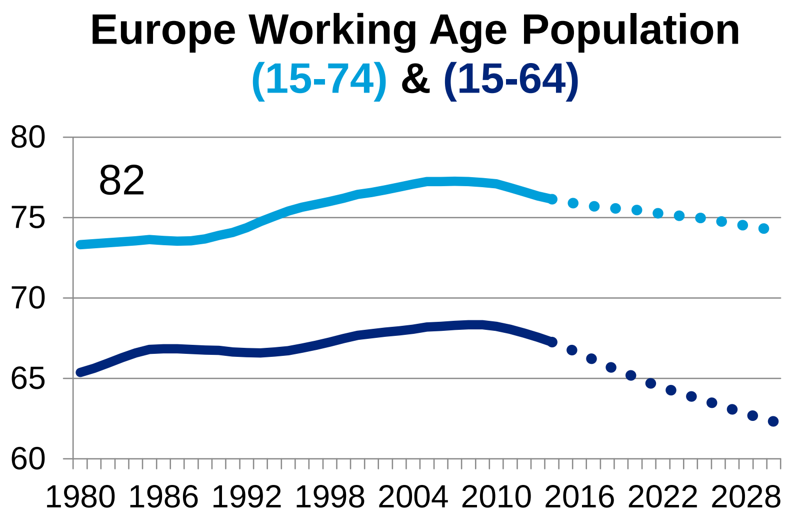
Growth Prospects

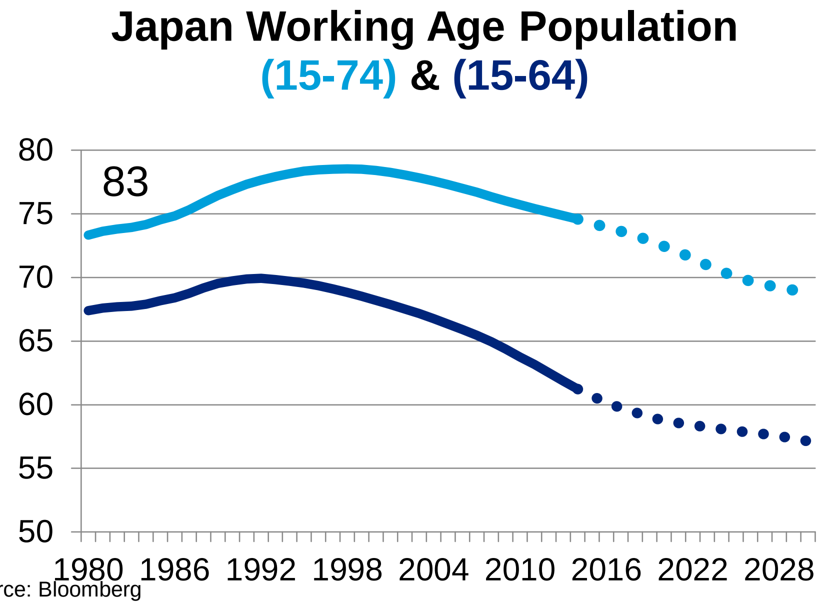
- Japan's FLFP is 66.6% vs 85.2% for men
- The annual potential growth rate could rise by about ¼ percentage point if the female labor participation rate were to reach the average for the G7 countries
- Japan is a prime example of a country that suffers from a falling working age population

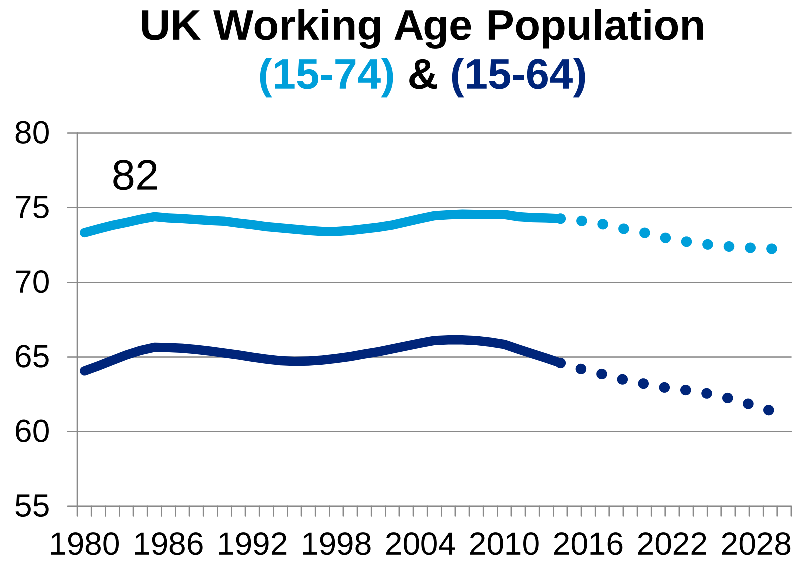
Source: IMF, Women, Work and the Economy: Macroeconomic Gains from Gender Equity, September 2013, KPMG analysis

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

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

Fiscal Balances

- Greater dependency ratios over the next century

Source: KPMG Investing in the Future, U.N. Population Statistics, Haver Analytics

Living longer, while great, is not free

Percentage of GDP	2013	2024
Social Security	4.9%	5.6%
Medicare	3.0%	3.2%
Total:	7.9%	8.8%

Fiscal Balances

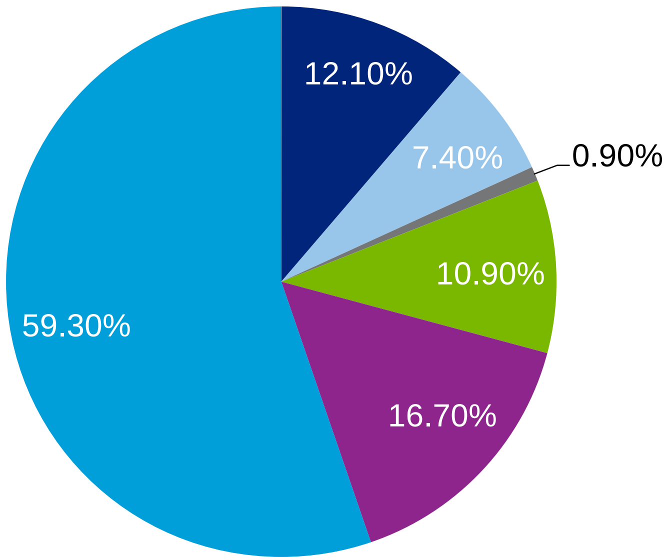
- All countries are forecast to have a greater percentage of elderly people in 2050 vs. 2000.
- Concerns about future fixed costs due to population living longer in retirement
- Increased fixed costs reduce or limit governments' ability to respond to new shocks

Source: Congressional Budget Office Projections 2014-2024

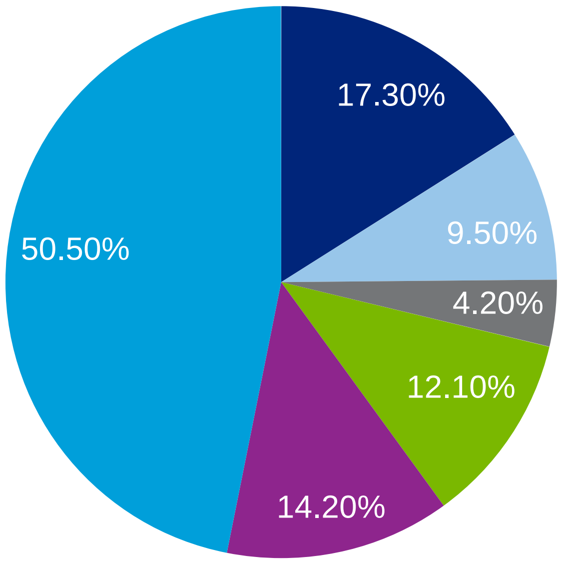
Tax payers and transfer recipients shift due to aging

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

Personal Income Sources in 1980



Personal Income Sources 2013

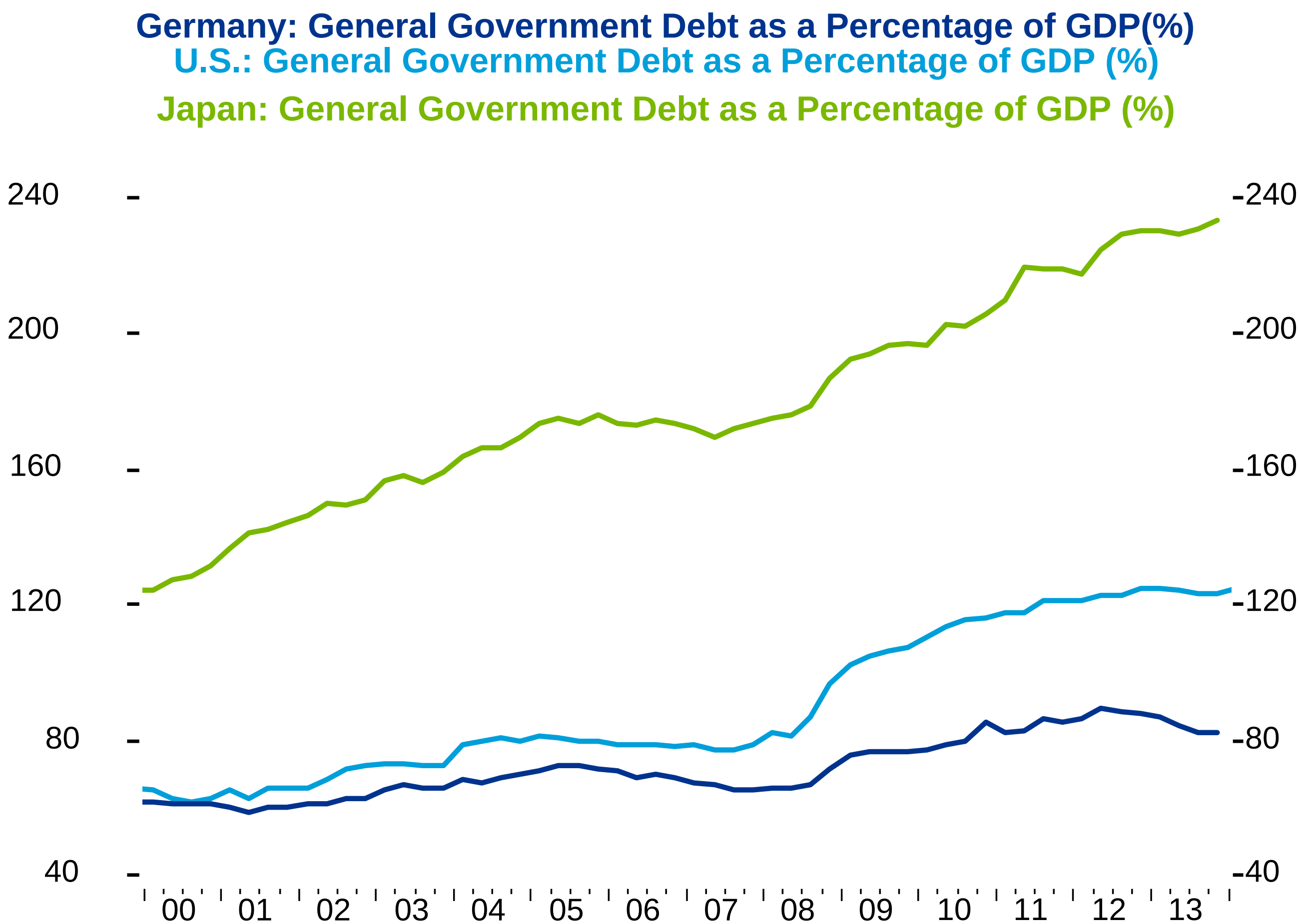


Transfers | Proprietors Income | Rental Income | Supplements to Wages | Receipts on Assets | Wages and Salary

Source: CBO Budget Projections 2014 - 2024

Government debt expanding

Can GDP grow faster than costs of supporting the elderly?



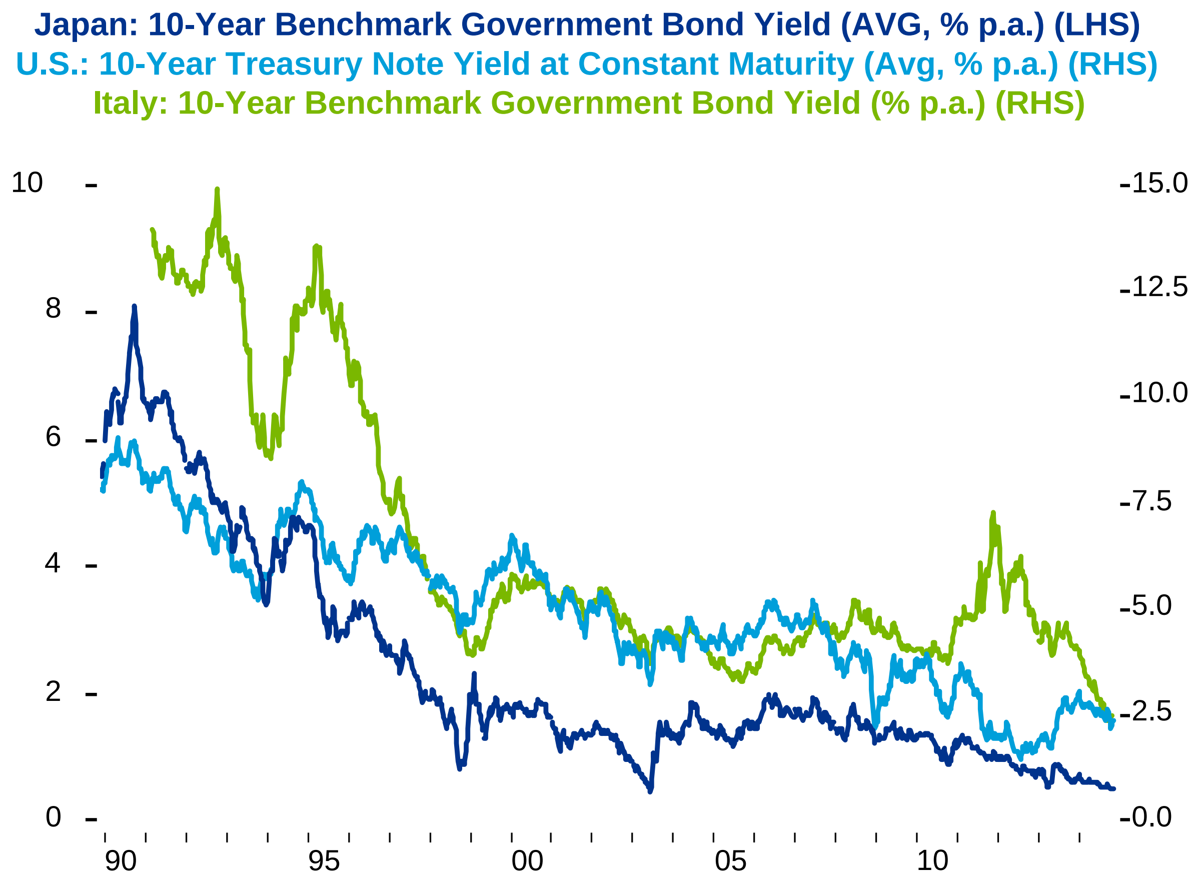
Sources: Bbk/H, FRB/H, BoJ/H /Haver

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

Government bond yields falling for 30+ years

Lower yields due to multiple factors



Sources: MoFJ, FRB, BdIt /Haver

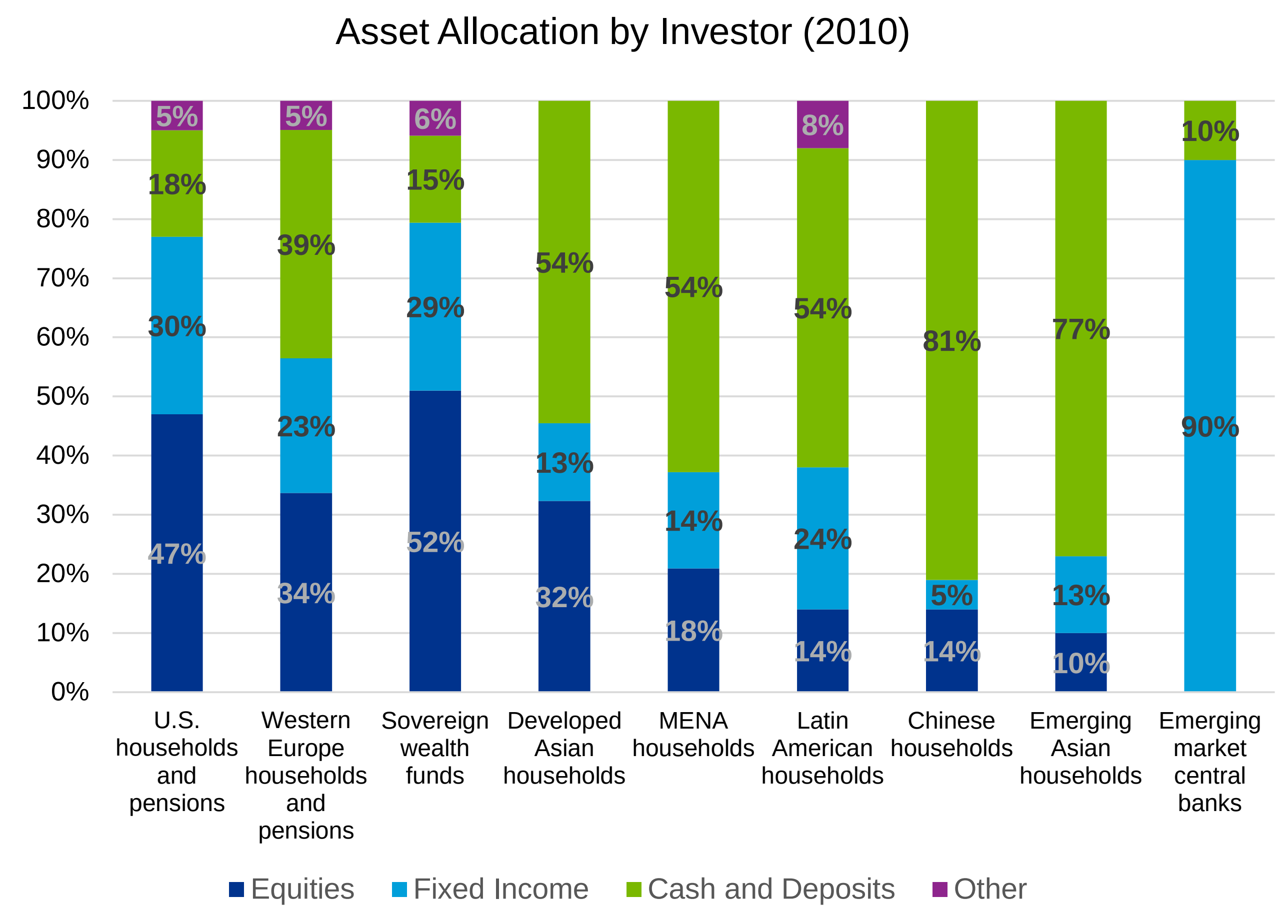
Fiscal Balances

- 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"



Fiscal Balances

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

Source: McKinsey, The Impact of Demographic Shifts on Financial Markets, June 2012; Note: excludes retirement assets

What is Debt Sustainability?

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

Debt Sustainability

- Fiscal Balances
- Growth Prospects
- Ability to Raise Taxes
- Who Holds Debt

Are factors other than fiscal soundness important?

Several IMF studies shed light on the importance of “real money” investors

Who holds the debt

- 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

Few countries well prepared for future shocks

Negative feedback loops develop quickly if debt becomes too high

Debt Sustainability

- Debt service costs cannot be so high that fiscal adjustment is only obtainable via restructuring or default – a 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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