# The Implications of a Greying Japan for Public Policy.

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*The views presented here are our own personal views and not those of the Federal Reserve System.

# Motivation: Abenomics

- Three Arrows.
  1. Monetary stimulus: end deflation and produce 2% inflation.
  2. Fiscal stimulus: boost growth in short-run.
  3. Structural reforms: promote long-run growth.
- These policies are already bearing fruit.
- But, an "800 pound gorilla" is obstructing Abenomics.

# What is an “800 pound gorilla?”

Fat Buu

# This 800 pound gorilla is large

- Public Debt-GDP ratio in 2012 (MOF).
  - Gross 219%.
  - Net 136%
- Government borrowing crowds out private capital formation.
- Government borrowing transfers resources from *younger* individuals to the *old*.
  - Those born in 1954 or before receive a subsidy. They receive more in benefits from the government than they paid in to the system. Net benefit exceeds 15 million yen for those born beween 1938 and1946.
  - Those born between 1979 and 2001 will pay out much more than they receive in benefits. We estimate that their lifetime net payments exceed net-benefits by over 30 million yen.

# The "800 pound gorilla" is growing

- Greying of Japan means that fiscal imbalances will increase in future years.

  1. Dependency ratio will rise to 0.9 by 2070.
  2. Government expenditures on Public Pensions will rise to 15% of GDP by 2050.
  3. Government expenditures on healthcare will rise to 14% of GDP by 2050.

# Fiscal Imbalances

- How can Japan stabilize the debt-GDP ratio in the short-run?
- How will taxes have to evolve in future years to cover current government commitments to the old?
- How does the fiscal situation change if these commitments are reduced?

# We use a model to answer these questions

- Rich demographic structure. Households with children and adult members. Adults are active from age 21 until age 114.
- Model reproduces IPSS population distribution projections through 2055.
- Households pay taxes on consumption, labor and asset income.
- Japan's public health program: medical expenditures, long term care.
- Public Pension reflects demographic (macroeconomic) adjustments legislated in 2004.
- Government debt. Government can borrow at a lower rate than private sector.

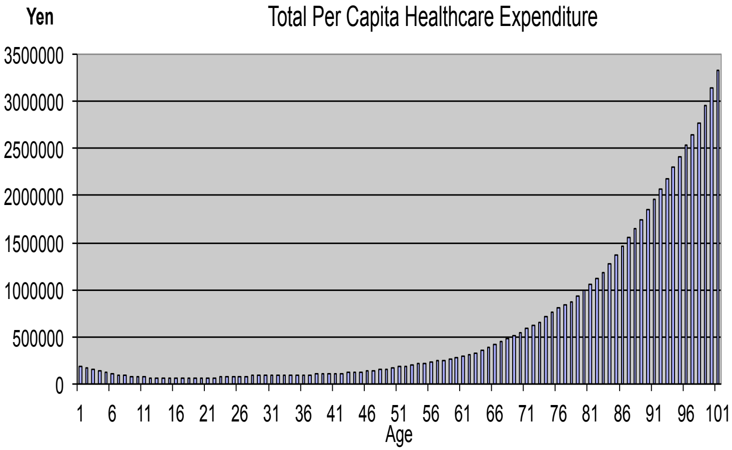
# Employees public pension program (Kosei Nenkin Hoken)

- Contributions increase at an annual rate of 0.354% to a peak of 18.3% of income in 2017.
- Benefits are linked to contributions using Japan's public pension formulas.
  1. real wage growth
  2. price growth (inflation)
  3. minus macroeconomic indexation adjustment for changes in number of contributors and life expectancy (average is -1.34% per annum, bet. 2008-2025)
- Benefits at age of retirement are not less than 50% of average wage.
- Funding gap covered out of general government revenue.

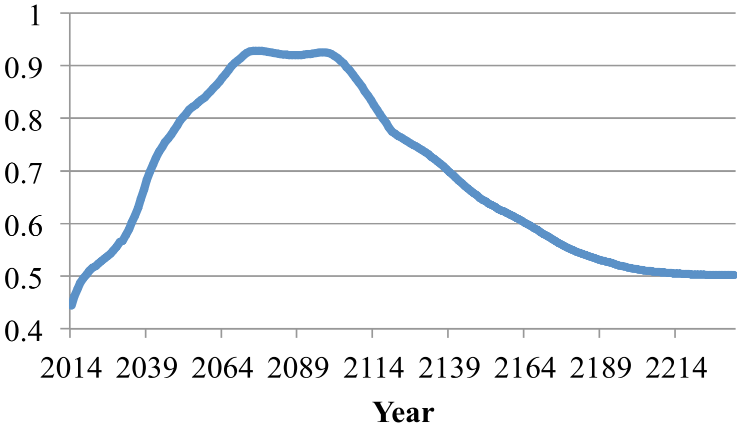
# Health care program

- Medical care
- Long term care
- Copayment depends on age of individual.
- Expenditures vary with age of individual.
- Source of data is Fukui and Iwamoto (2006).

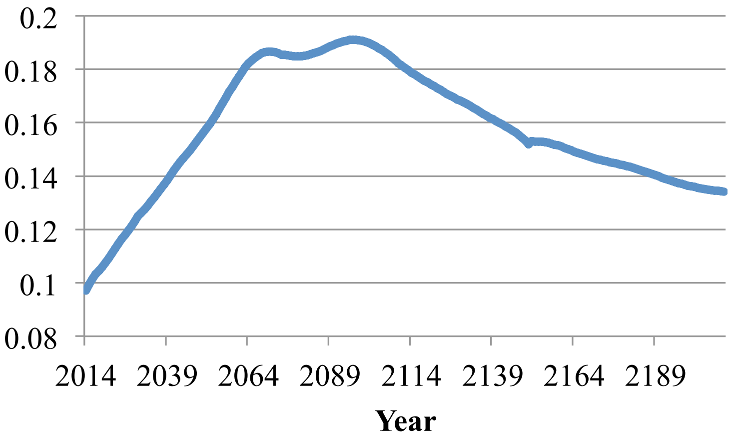
# Per capita total health expenditures by age in 2004 including long-term care



# Japan's demographic transition: dependency ratio



# Total health expenditures/GDP



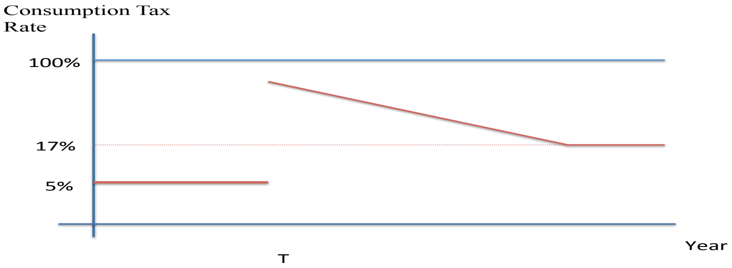
# Conditioning Assumptions

- Abenomics achieves the following
  - Inflation rate hits 2% in 2014 and remains at this level in future years
  - Combined effects of first two arrows maintain stable economic growth.
  - real per capita GDP growth is 2.5% in CY 2013 and 2% in 2014 and 2015.
  - In years thereafter technology grows at a rate consistent with annual GDP growth of 2% per year.

## Are the currently planned increases in consumption tax enough to stabilize the debt-GDP ratio?

- *2014 and 2015 Tax increases* (increase the consumption tax to 8% in 2014 and to 10% in 2015).
- Policy is not sustainable.
- Government choices:
    1. increase tax revenue in future years,
    2. lower expenditures,
    3. and/or default on government debt.
- I will focus on items 1 and 2 today. (see Braun and Nakajima (2012) for a discussion of the default option.)

# How far can the can be kicked down the road?




- The consumption tax must increase no later than (T= 2039).
- No changes in fiscal expenditures or revenue.
- Consumption tax rises to 100% to correct fiscal imbalances.

# Two faces of the gorilla.

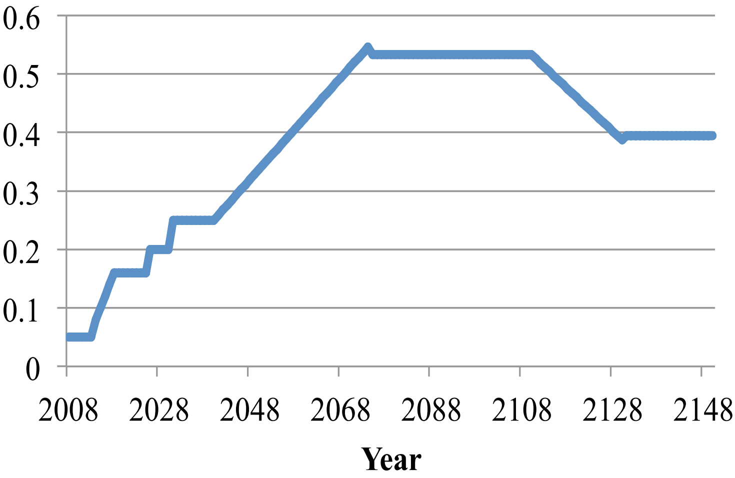
1. Stabilizing the debt-GDP ratio is a short-run priority.
2. The greying of Japan implies that government expenditures for long-term care and public pensions will continue to grow at rates that exceed the overall growth rate of the economy for many years.

- We next describe two alternative scenarios that resolve both problems.
    1. Maintain existing commitments to the old.
    2. Increase copayments for medical for those aged 65+.

# Confronting the gorilla with no change in retirement benefits

- Tailor future increases in consumption tax to reflect the profile of future expenditures for retirees over the medium term.
- Increase the consumption tax to 16% stabilize the debt-GDP 2016.
- Maximum value of the consumption tax is 53%.

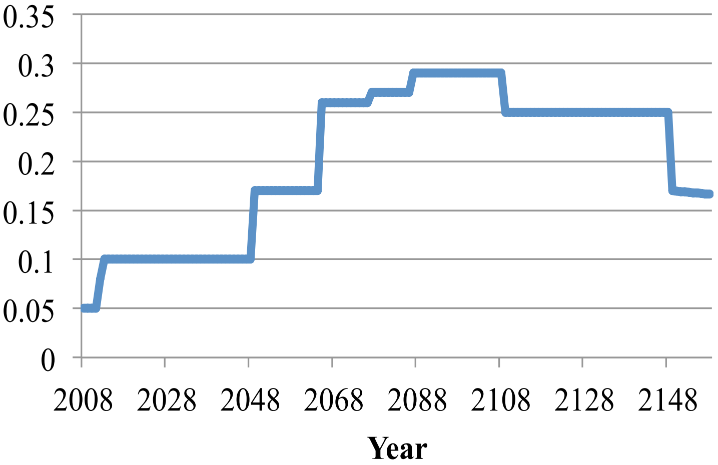
# Consumption tax rate trajectory



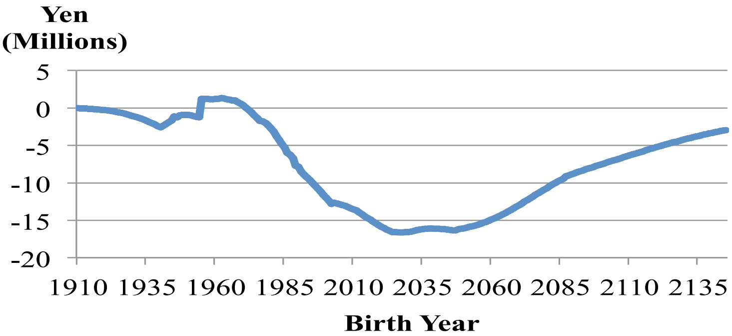
# Increase out-of-pocket payments for health care for retirees

- Pre-announce an increase in copayments to retirees to 30% in the year 2051.
- Tailor future increases in consumption tax to reflect the profile of future expenditures for retirees over the medium term.
- Consumption tax of 10% until 2051.
- Debt-GDP ratio stabilizes immediately and falls.
- Maximum value of the consumption tax is 29%.

# Consumption tax rate trajectory: Higher copayments by retirees



# Winners and losers by birth year




- Compare increase in consumption tax to 53% only with higher copayments and increase in consumption tax to 29%.
- Positive means they prefer higher copayments and lower tax.

# Concluding remarks

- Abenomics is off to a promising start.
- Stabilizing fiscal imbalances is the biggest obstacle.
- Japan has a very large funding gap and aging will increase the gap in future years.
- Even if
  - both increases in the consumption tax are implemented,
  - inflation rises to 2%,
  - Medium term GDP growth is 2%,
  - copayments for old are increased to 30%,

  taxes will still have to go up much more in future years to maintain social insurance commitments in Japan.

# Thank you!