

Headwinds and Turbulence since 1990s: Japan's Economic and Fiscal Performance over the Next Decade

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December 22, 2014 Canon Institute for Global Studies

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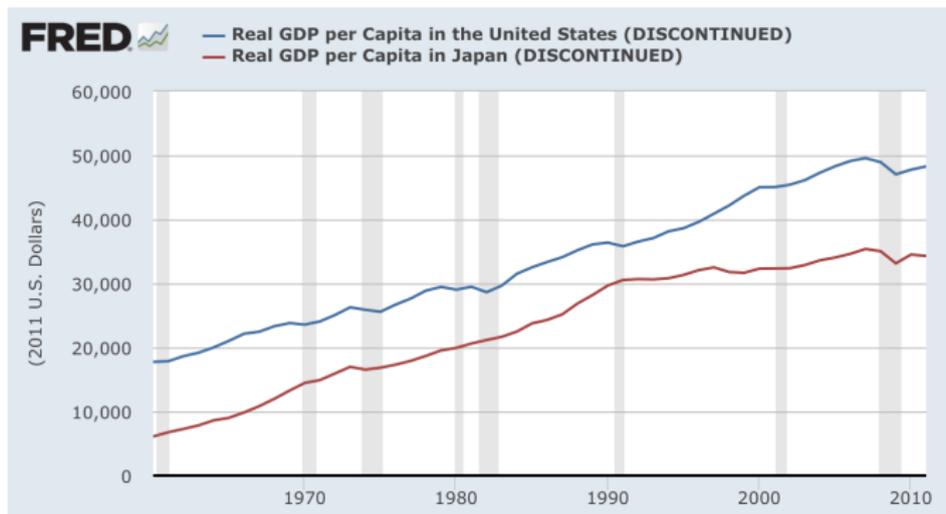
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23 Years of Slowdown in Economic Growth

Real GDP per capita in the U.S. and Japan



- Catching up until 1990
- Lost decade
- Slightly worse since then

Macroeconomic Outlook in United States: CBO Estimates

Summary Indicators CY 2014

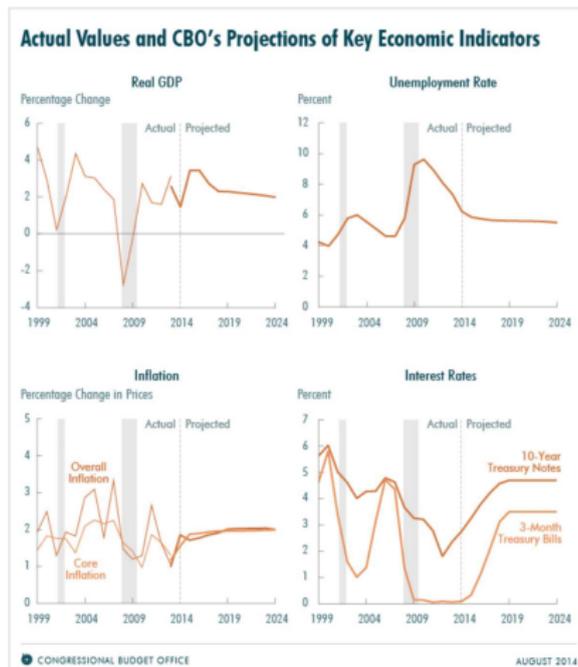
ECONOMIC PROJECTIONS FOR CY 2014

(As of August 2014)

REAL GDP GROWTH (Q4/Q4)	1.5%
INFLATION (PCE Price Index, Q4/Q4)	1.9%
UNEMPLOYMENT RATE (Q4)	5.9%
INTEREST RATE (3-Month Treasury Bills)	0.1%

Macroeconomic Outlook in United States: CBO Estimates

Key Indicators to 2024



Macroeconomic Outlook in United States: CBO Estimates

Debt to GDP: 1790-2039

Federal Debt Held by the Public

Percentage of Gross Domestic Product



Source: Congressional Budget Office. For details about the sources of data used for past debt held by the public, see Congressional Budget Office, *Historical Data on Federal Debt Held by the Public* (July 2010), www.cbo.gov/publication/21728.

Macroeconomic Outlook in United States: CBO Estimates

Projected Spending and Revenues

Projected Spending and Revenues in Selected Years Under CBO's Extended Baseline

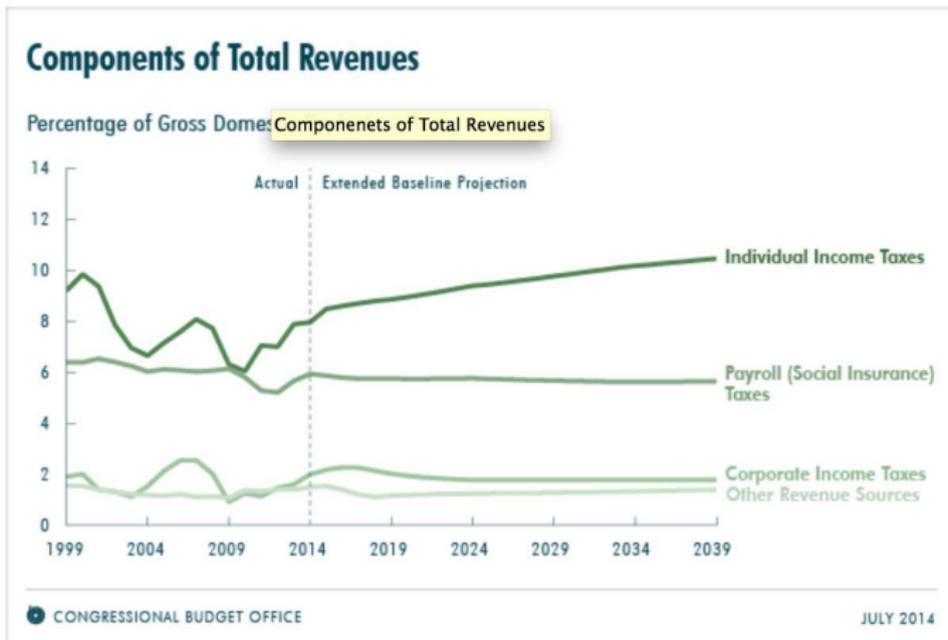
Percentage of Gross Domestic Product

	2014	2024	2039
Spending			
Noninterest			
Social Security	4.9	5.6	6.3
Medicare (Net of offsetting receipts) ^a	3.0	3.2	4.6
Medicaid, CHIP, and exchange subsidies	1.9	2.7	3.4
Other mandatory	2.5	2.2	1.7
Discretionary	6.8	5.1	5.2
Subtotal	19.1	18.8	21.2
Net interest	1.3	3.3	4.7
Total Spending	20.4	22.1	25.9
Revenues			
Individual income taxes	8.0	9.4	10.5
Payroll taxes	6.0	5.8	5.7
Corporate income taxes	2.0	1.8	1.8
Excise taxes, estate and gift taxes, and other sources of revenues	1.5	1.3	1.4
Total Revenues	17.6	18.3	19.4
Deficit			
Excluding net interest	-1.5	-0.5	-1.7
Total	-2.8	-3.7	-6.4
Debt Held by the Public at the End of the Year	74	78	106
Memorandum:			
Gross Medicare Spending ^a	3.5	3.9	5.7

Source: Congressional Budget Office.

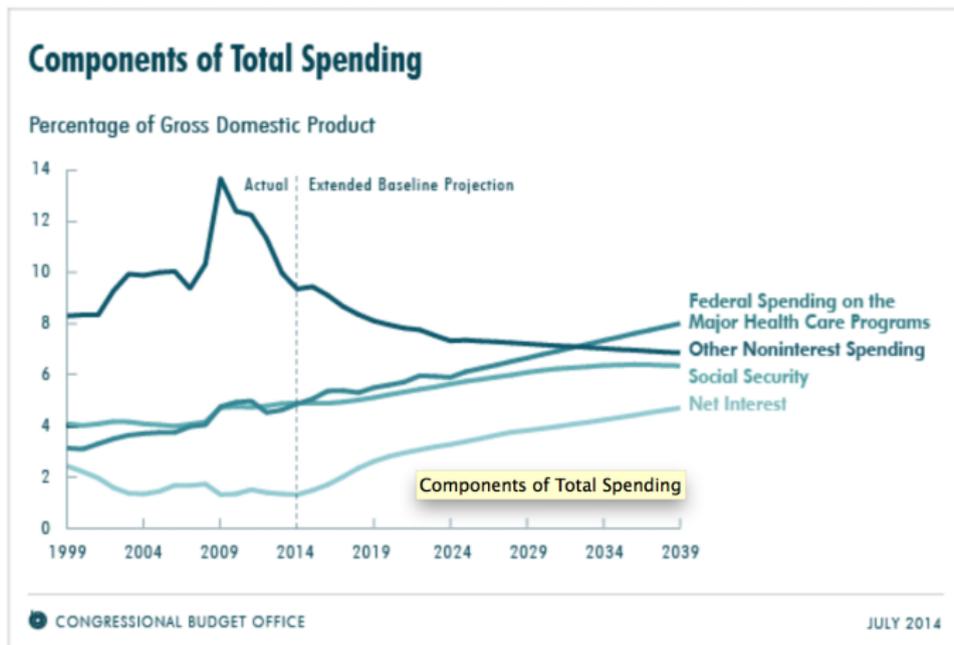
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Components of Total Revenues



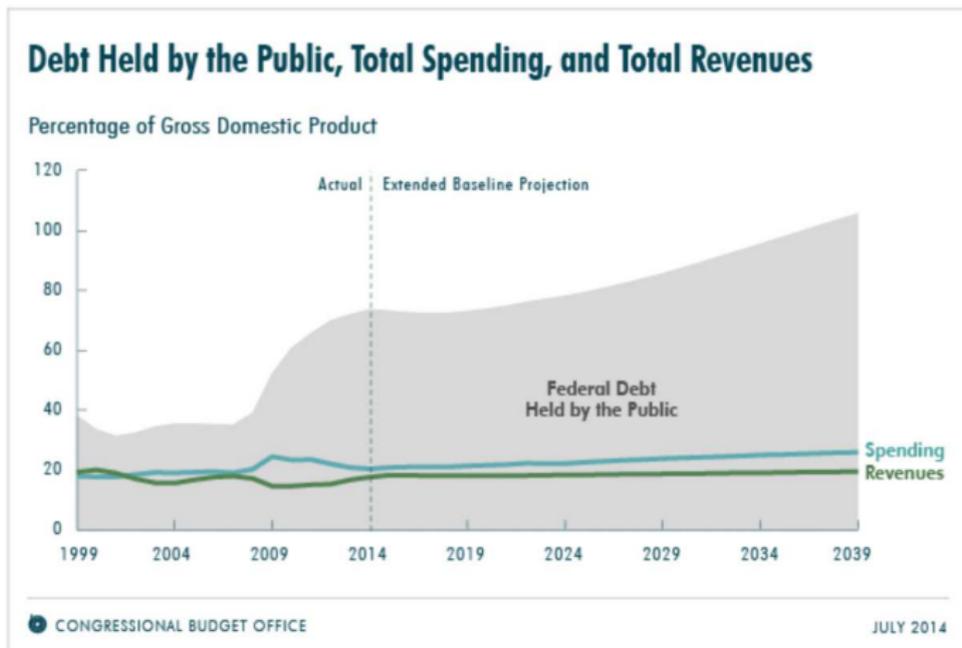
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Components of Total Spending



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Debt in the Long Term



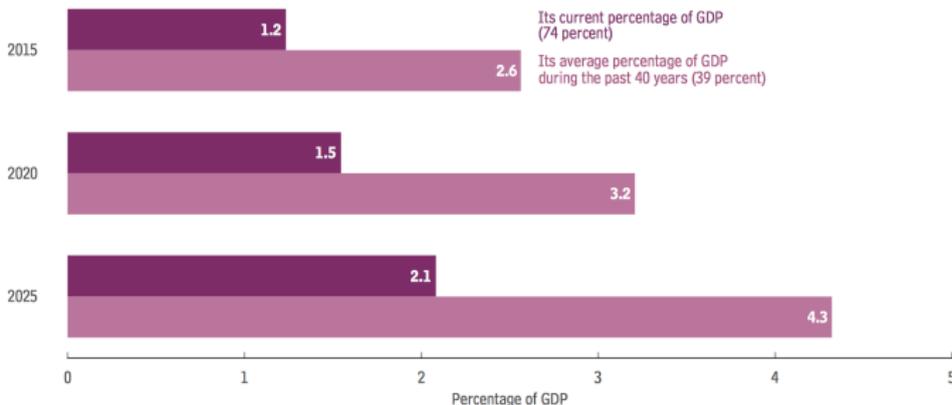
Macroeconomic Outlook in United States: CBO Estimates

Timing is Everything

The Timing and Size of Policy Changes Needed to Make Federal Debt Meet Two Goals

If action begins in ... The annual reduction in noninterest spending or increase in revenues would need to be this percentage of GDP...

To make federal debt held by the public in 2039 equal ...



Source: Congressional Budget Office.

Note: GDP = gross domestic product.

Social Security in the United States

According to the 2013 Social Security Trustees Report

- Projected rise in the dependency ratio from 24% to 44% by 2088
- Long run actuarial balance can be achieved by
 - an immediate, additional 2.66% payroll tax, on top of the 12.4% current OASDI tax rate (HI 2.9%)
 - a 16.5% permanent reduction in benefits, starting with the 2014 eligibles (from the current average replacement rate of about 42%)

Preliminary Findings: Long Run

- When current social security arrangements are maintained and a consumption tax is used to raise funds to finance the fiscal burden due to aging, a new federal consumption tax rate of nearly 10% is required.
- Raising the payroll tax by 2.66% is insufficient to bring about actuarial balance. An additional consumption tax rate of 7.76% is required.
- Reducing benefits by 16.5% is insufficient to achieve actuarial balance. An additional consumption tax rate of 6.42% is needed.
- Actuarial balance is achieved either by a 8.25% increase in the payroll tax rate or a 38.8% decrease in benefits.

23 Years of Growth Slowdown in Japan

Growth Accounting $Y = AK^{0.36}L^{0.64}$

Average Growth Rates				
	1972-1990	1991-2000	2001-2013	1991-2013
Y	4.42%	1.27%	0.84%	1.03%
K	2.31%	2.39%	1.25%	1.74%
L	0.44%	-0.82%	-0.46%	-0.62%
A	3.31%	0.94%	0.69%	0.80%
Y/N	3.58%	1.00%	0.82%	0.90%

Y : Real GDP

A : Total Factor Productivity

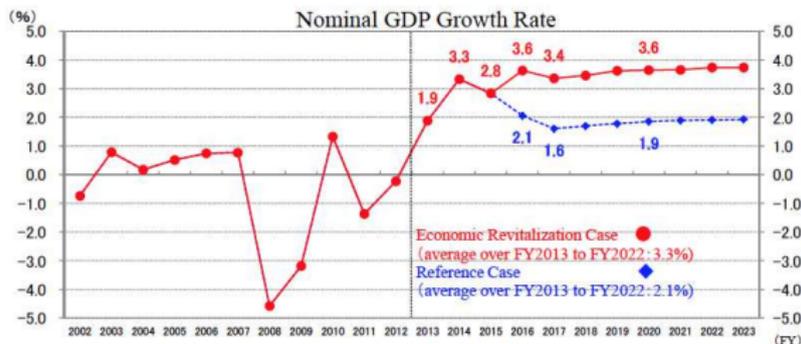
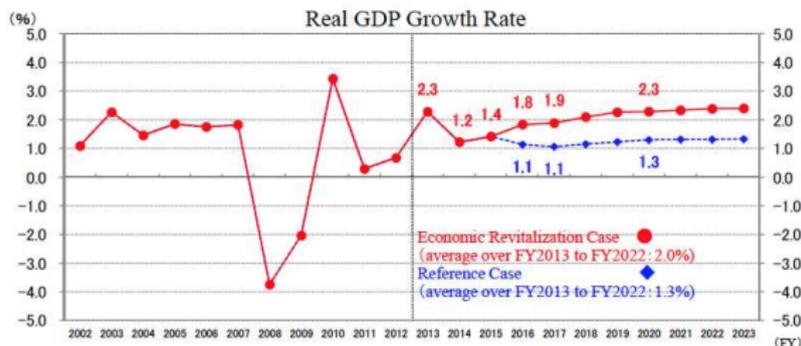
K : Private Capital Stock

L : Total Hours Worked

N : Total Population

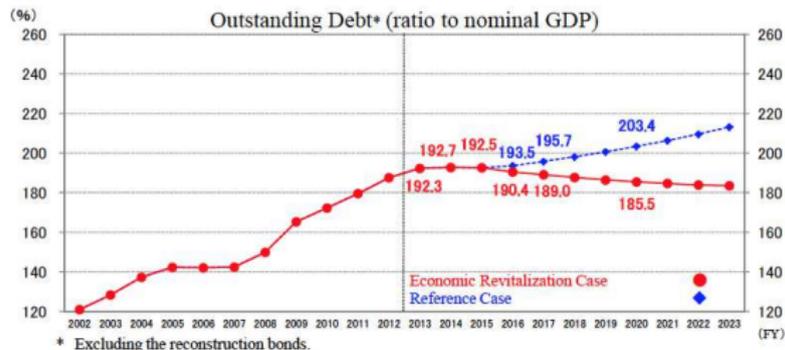
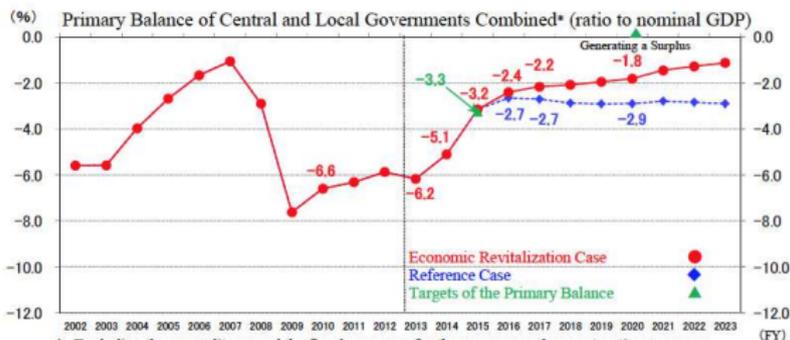
Macroeconomic Outlook in Japan: ESRI Estimates

Growth: Reference vs Vitalization



Macroeconomic Outlook in Japan: ESRI Estimates

Deficits: Reference vs Vitalization



Basic Issue: Why 25 Years of Slowdown in Economic Growth?

Explanations

- Policy mistakes
- Delay in bank recapitalization
- Lack of structural reform

23 Years of Slowdown in Economic Growth

A Large Literature: Very Good Analysis

- Beason and Weinstein (1996) on industrial policy
- Blomström, Corbett, Hayashi, and Kashyap (2003) (Eds.) **Structural Impediments to Growth in Japan**, Chicago, IL: University of Chicago Press
- Ito, Patrick, and Weinstein (2005) (Eds.) **Reviving Japan's Economy**, Cambridge, MA: MIT Press
- Hoshi and Kashyap (1999, 2010, 2014) on banking recapitalization
- Hamada, Kashyap, and Weinstein (2011) on long term stagnation
- Aoki (2012) on sectoral misallocation in Japan, Italy, France and U.S.
- Fujii and Nozawa (2013) on misallocation of capital

23 Years of Slowdown in Economic Growth

Caballero, Hoshi, and Kashyap (2008) American Economic Review

- Firm-level regressions that show that the increase in 'zombies' depressed the investment and employment growth of 'non-zombies'
- Idea: Zombies created congestion by NOT shedding labor and capital
- Growth slowdown especially significant in non-manufacturing where there were more zombies (construction, real estate, services)
- This reduced the overall total factor productivity
- Evergreening or zombie-lending prevented the efficient working of the job destruction/creation process
- Not a structural model, but quite convincing about the potential role of misallocation

23 Years of Slowdown in Economic Growth

Güner, Gustavo, and Xu (2008) Review of Economic Dynamics

- Macroeconomic implications of size-dependent policies
- When establishments differ in size, restricting size-expansions or encouraging small-shops leads to distortions
- With subsidies to small establishments or taxes on large foot-print establishments (Walmart, Costco), the number of 'mom-and-pop' shops rises and per-establishment output falls
- As a result, size-dependent policies generate microeconomic and allocative inefficiencies

23 Years of Slowdown in Economic Growth

Buera, Moll, and Shin (2013) Review of Economic Dynamics

- Well intended policies when managerial ability differs across individuals or firms
- Wouldn't it be great to identify which ideas/abilities are good and subsidize them?
- If the government wants to maximize current productivity and output, it may want to 'bet' on ideas or industries or firms to subsidize; there will be gains in the short term
- If the ideas/abilities dissipate (randomly distributed over time) or if the receiving firms/managers no longer have incentive to innovate, then there will be losses in the long term
- Capital and labor will be misallocated → low TFP

Where is Japan Now?

2014 Bonenkai

Recent Annual Economic Growth		
	U.S.	Japan
2011	1.6%	-0.5%
2012	2.3%	1.8%
2013	2.2%	1.6%
2014	> 2%	< 0%

Where is Japan Now?

2014 Bonenkai

Recent Quarterly Economic Growth

	Real GDP		Nominal GDP	
	U.S.	Japan	U.S.	Japan
2014 Q2	4.6%	-6.7%	6.6%	0.4%
2014 Q3	3.9%	-1.9%	5.3%	-3.5%

Where is Japan Now?

Political Focus

- Abe government with super majority in the lower house
- New economic stimulus measures to be announced shortly
- 'Drastic' deregulation measures expected in agriculture, health care, and energy

Where is Japan Now?

What are the fundamental economic problems?

- Recession: immediate problem
- High debt to output: medium term problem
- Aging related fiscal adjustments: fourth arrow
- Third arrow: the most important problem

Where Should Japan Do?

Reform Business, Workplace, and Banking/Corporate Governance Practices

ECONOMY OVERVIEW				PRINT	EXCEL
REGION	OECD high income	DOING BUSINESS 2015 RANK	DOING BUSINESS 2014 RANK***	CHANGE IN RANK	
INCOME CATEGORY	High income	29	27	↓ -2	
POPULATION	127,338,621	DOING BUSINESS 2015 DTF** (% POINTS)	DOING BUSINESS 2014 DTF** (% POINTS)	CHANGE IN DTF** (% POINTS)	
GNI PER CAPITA (US\$)	46,140	74.80	74.94	↓ -0.14	
CITY COVERED	Tokyo, Osaka				

Rankings	Distance to Frontier	Distance to Frontier - Tokyo	Distance to Frontier - Osaka
TOPICS	DB 2015 Rank	DB 2014 Rank	Change in Rank
Starting a Business	83	78	+ -5
Dealing with Construction Permits	83	83	No change
Getting Electricity	28	29	+ 1
Registering Property	73	70	+ -3
Getting Credit	71	67	+ -4
Protecting Minority Investors	35	35	No change
Paying Taxes	122	114	+ -8
Trading Across Borders	20	20	No change
Enforcing Contracts	26	27	+ 1
Resolving Insolvency	2	2	No change

Where Can Japan Do?

Relatively Easy and Practical Administrative Changes

- Haidar and Hoshi 2014 'Implementing Structural Reforms in Abenomics: How to Reduce the Cost of Doing Business in Japan'
- Implement reforms that are administrative in nature (no new laws required) and unlikely to face strong opposition from special interests
- Easy to be # 9 among high-income OECD economies but difficult (needs new laws) to become # 3

Fourth Arrow

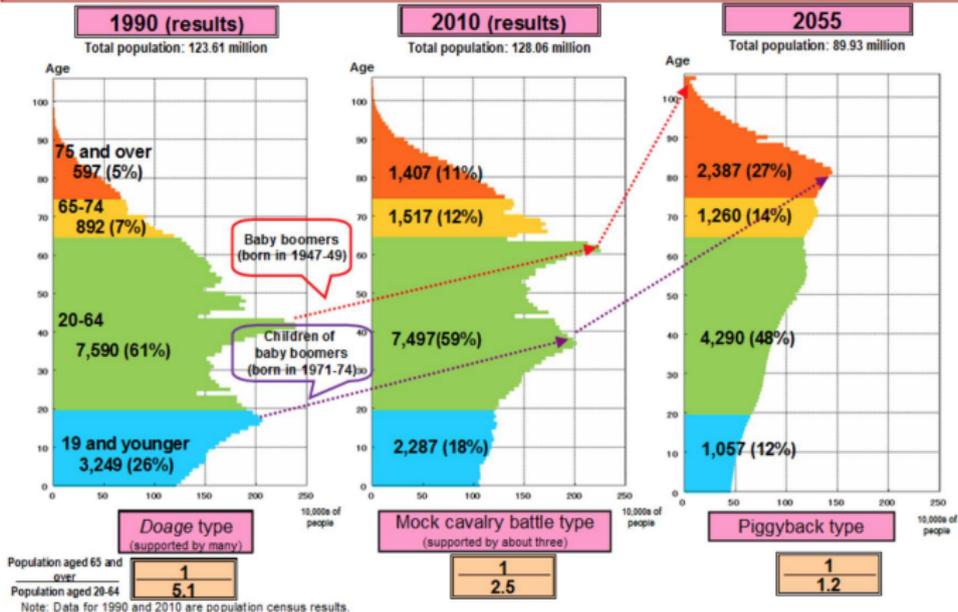
Financing Aging Related Expenditures

- Two significant challenges faced by Japan
 - High (net) debt to output ratio (about 150%).
 - Projected increase in government expenditures due to aging population.
 - Spending to output projected to rise by **7% of GDP** due to increases in pension and health expenditures.
- Need to explore size and consequences of fiscal responses to this problem.

Fourth Arrow

Population Pyramids from the Ministry of Health, Labor and Welfare

Change in the population pyramid (1990, 2010, 2055) - 2006 medium variant projection



What should Japan do?

Demographic Changes and Macroeconomic Performance: Japanese Experiences
by Masaaki Shirakawa, 2012 May BOJ-IMES Conference

"The current difficulties come not from the continued population aging itself, but from the delayed response to it. On that ground, I emphasize that, if society correctly recognizes the challenges coming from demographic changes, and if society judges that changes in the systems are needed, we should find remedies in our hands. I offer a couple of options for possible changes if Japanese people are determined to take action."

- 1 Increase the working age population (labor force): fertility, female labor force participation, older workers, foreign workers
- 2 Re-orient resources (capital and labor) toward the goods and services consumed by the elderly
- 3 Re-orient resources (business) to raise productivity with the help of globalization. I interpret this as a re-haul of workplace practices and microeconomic reforms?

The Standard Growth Model

Hansen and İmrohorođlu (2013)

- Featuring:
 - Infinitely lived representative household makes consumption, labor supply and bond holding decisions
 - Cobb-Douglas production function
 - Government taxes income from labor, capital, bond holdings, and consumption, to finance expenditures on government purchases, transfer payments (including pensions) and interest payments on outstanding debt.
 - Markets are complete
 - Compute equilibrium transition paths under alternative fiscal policies

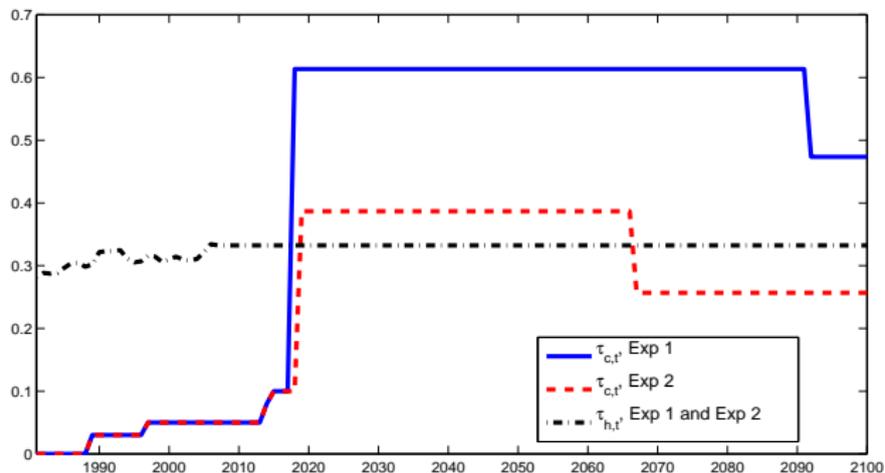
The Standard Growth Model

Hansen and İmrohorođlu (2013)

- Nature of the experiment
 - When JGB/GNP goes above a threshold (250%), then a fiscal rule raises a tax rate (consumption or labor income or both) or implements an expanding the tax base (reduction in exemptions and deductions) for as long as necessary until a steady state is reached in the far distant future in which there is fiscal balance

The Standard Growth Model

Hansen and İmrohorođlu (2013): Needed Consumption Tax



The Standard Growth Model

Hansen and İmrohorođlu (2013): Main Message

- Adjusting the consumption or labor income tax rate to achieve this, however, requires that taxes be set to unprecedentedly high levels—tax rates of 40-60%.
- The lower end of this range is made possible if revenue equal to 8% of output can be raised through broadening the tax base.

Achieving Fiscal Balance in Japan

İmrohoroğlu, Kitao, and Yamada (2013) forthcoming in *Internat'l Econ. Review*

- Large scale overlapping generations model
- Individuals live from 1 to 111 years old
- Individuals differ in terms age, gender, job type, number of children, earnings, pensions
- Jobs: Regular, contingent, self-employed, unemployed
- Individuals' earnings (for both male and females and for each job type) are estimated from Japanese data
- Individuals' age-consumption profile also estimated from micro data
- Follow Japanese pension rules and tax policy closely
- Assume that markets are complete

Achieving Fiscal Balance in Japan

İmrohoroğlu, Kitao, and Yamada (2013)

- Consumptions are then given by Permanent Income Hypothesis: at each age, consumption is a fraction of present value of discounted disposable income
- Asset holdings are computed as a residual from the individual's flow budget constraint
- Aggregation done using the number of individuals in category
- Government budget and debt implications are calculated from 2010 to 2100
- Per capita GDP grows slower than GDP per working age population

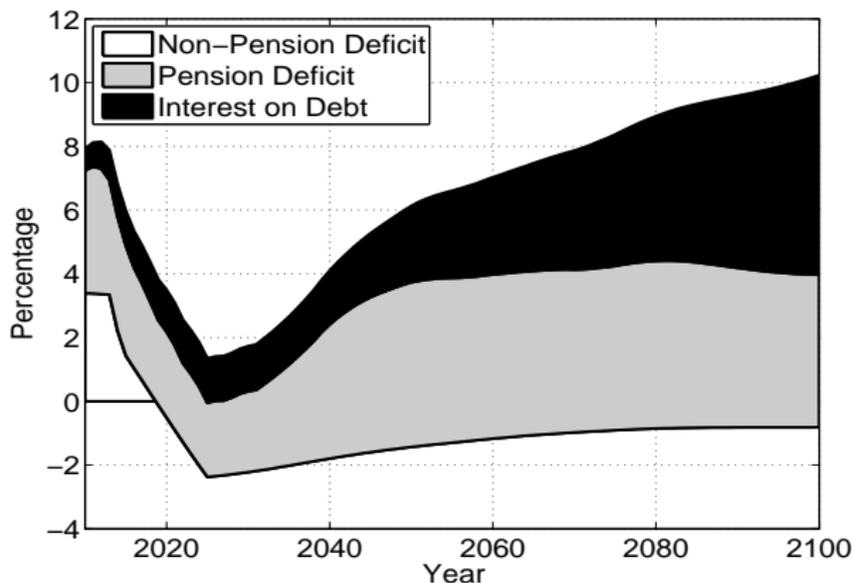
Achieving Fiscal Balance in Japan

Pension Reform: Retirement at Age 70 and 10% Benefit Cut

	$\frac{(B_t - F_t)}{Y_t}$	$\frac{(G_t + TR_t - T_t)}{Y_t}$	$\frac{(P_t - PR_t)}{Y_t}$	$\frac{(r_{b,t}B_t - r_{f,t}F_t)}{Y_t}$
2010	1.042	0.034	0.024	0.007
2020	1.487	0.014	0.014	0.011
2030	1.744	0.014	0.005	0.012
2040	2.022	0.017	0.005	0.013
2050	2.470	0.021	0.018	0.015
2060	3.013	0.024	0.019	0.018

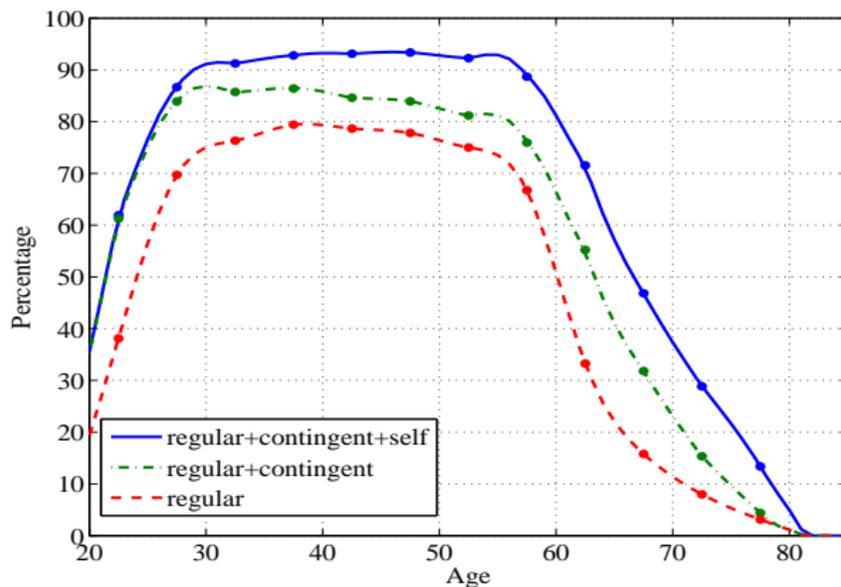
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Sources of New Borrowing with a 20% Consumption Tax



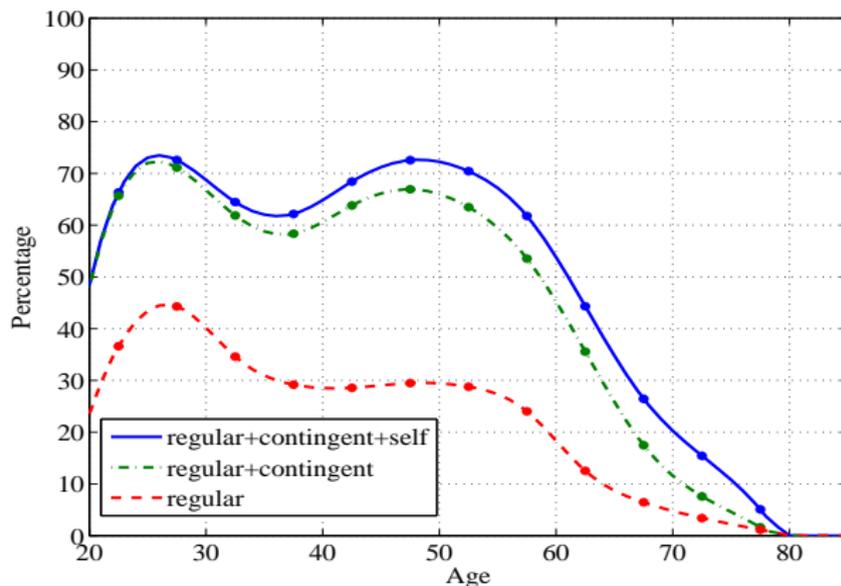
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Male Labor Force Participation in Japan (Labor Force Survey)



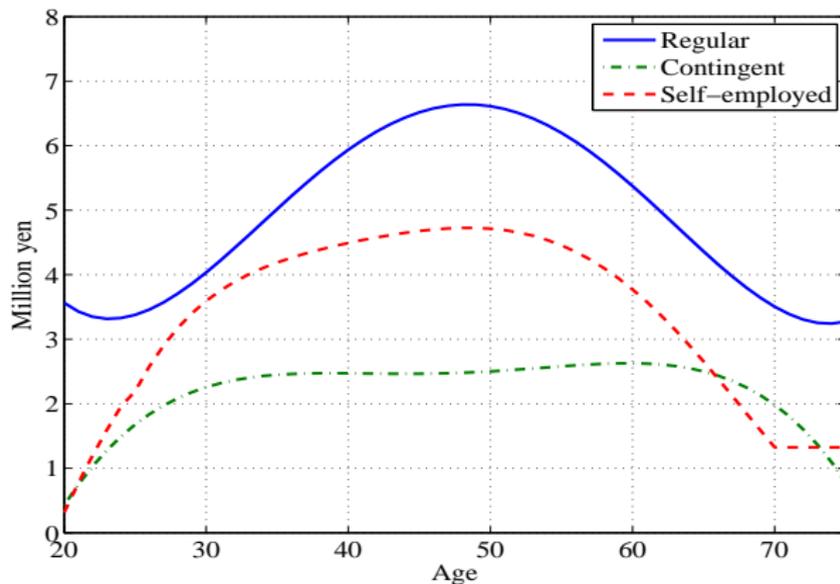
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Female Labor Force Participation in Japan (Labor Force Survey)



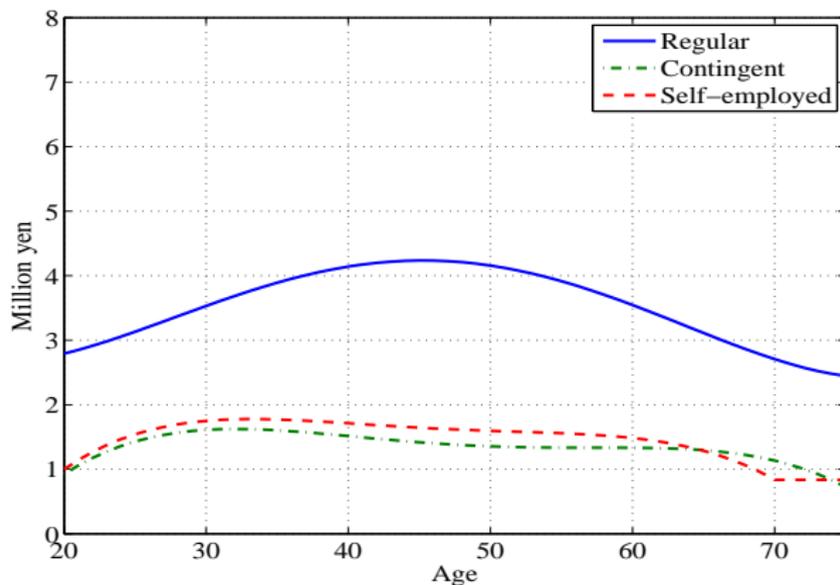
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Male Earnings in Japan (BSWS)



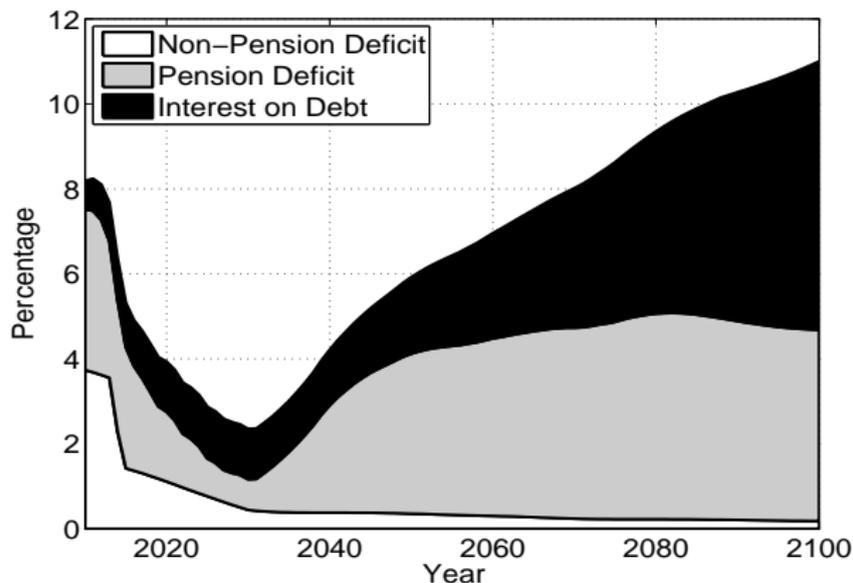
Achieving Fiscal Balance in Japan

Female Earnings in Japan (BSWS)



Achieving Fiscal Balance in Japan

Sources of New Borrowing with Higher FLFP



Achieving Fiscal Balance in Japan

İmrohoroğlu, Kitao, and Yamada (2013)

- Among the alternative scenarios employed:
 - Pension reform (retirement age to 70 and benefits cut by 10% reduces the pension deficit significantly)
 - An increase in the consumption tax from the scheduled 10% to 20% turns the non-pension deficit into a surplus immediately and for several decades
 - An increase in the female labor force participation (both the participation rates and employment types of females similar to those of males) has a large impact
 - Only a combination of these and other outcomes may accomplish the task of achieving fiscal balance in Japan
 - Braun and Joines (2014): Overlapping Generations Model with optimizing agents gives similar results; raising the co-pay for the retirees to that of workers generates significant revenue

Immigration

- An overlapping generations model that measures the tax revenue implications of a guest worker program
- Use (scarce) data on immigrants in Japan to calibrate
- Assume an age and ability distribution of guest workers
- Assume that there is annual inflow of X number of guest workers of a given age and ability distribution who work for Y number of years
- Calculate the fiscal impact, with varying values of X and Y

Female Labor Force Participation

- Develop a general equilibrium model with age, gender, job type as key state variables including time use in market activities and home production by males and females
- Use micro data in Japan to calibrate the model to produce observed FLFP and other macro indicators
- Conduct experiments on the extent and size of government subsidies that reduce the cost of FLFP in many dimensions (child care, schooling, social norms, etc) like in France
- Calculate the effects of the increased FLFP on macro indicators and on fiscal issues

Misallocation of Resources

Third Arrow

- Identify the reasons for and the sources of misallocation of capital and labor
- Implement policies and develop institutions to minimize/eliminate these inefficiencies
- Only these reforms will deliver long run growth gains the effects of the increased FLFP on macro indicators and on fiscal issues

Abenomics: Focus on Third Arrow & Fourth Arrow

The Japan Times Explains



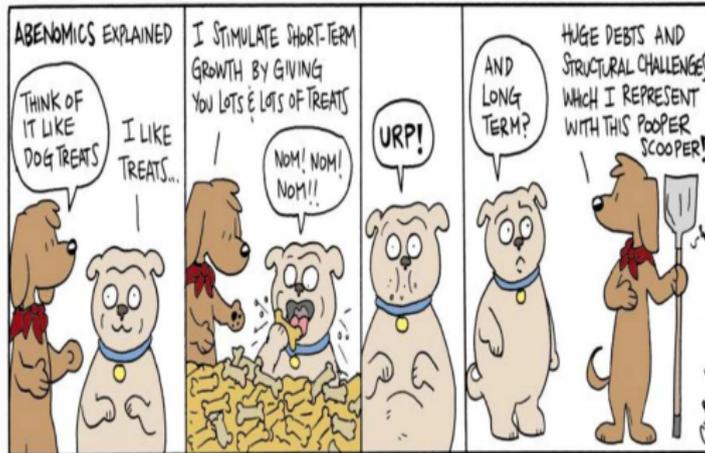
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TOKYO (3 p.m.)
MARKETS 118.48 ¥/\$ (3 p.m.)

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