

Comment for “The Crisis that Wasn’t” by Dr. Weinstein

HISAKAZU KATO (MEIJI UNIVERSITY)



Purposes and Conclusions of the Paper

- Using the same method from **Broda and Weinstein(2005)**, this paper reassessed the Japan's fiscal condition in the future.

→ Broda and Weinstein (2005) gave strong influence to researchers who studied public finance.

- **Greenan and Weinstein (2017)**, this paper, pointed out that the government **holds down per capita expenditure on social security, raise taxes**, and Bank of Japan continues to holds the public debt to decline the liability. (p.2)
- They concludes that "If this approach continues, **Japan may very well avoid either a financial crisis or a major inflationary episode**". (p.23)
- Too Optimistic, or Rational Reality?

Definition of Fiscal Sustainability

- This study adopted the definition of **Blanchard (1990)** as sustainability of fiscal condition.
 - This definition does not include transversality condition explicitly. (Transversality condition require that the present value of debt should converge to zero towards infinity)
 - Blanchard's definition is more **realistic**. However, settings of "**Until When & How Much level**" is somewhat ambiguous.

$$b_n = \sum_{t=1}^n \left(\frac{1+i}{1+\eta} \right)^{n-t} (g_t + h_t - \tau_t - \lambda_t m_t) + \left(\frac{1+i}{1+\eta} \right)^n b_0 \quad \text{given} \quad \{g_t, h_t, \tau_t\}_{t=1, \dots, n}$$

$$\rightarrow b_n = b_0$$

Method and Assumption

- Assumption:

- 1) Expenditure for Young, Elderly, and other expense (including interest payment).

- 2) **Gap rate between economic growth and interest rate.**

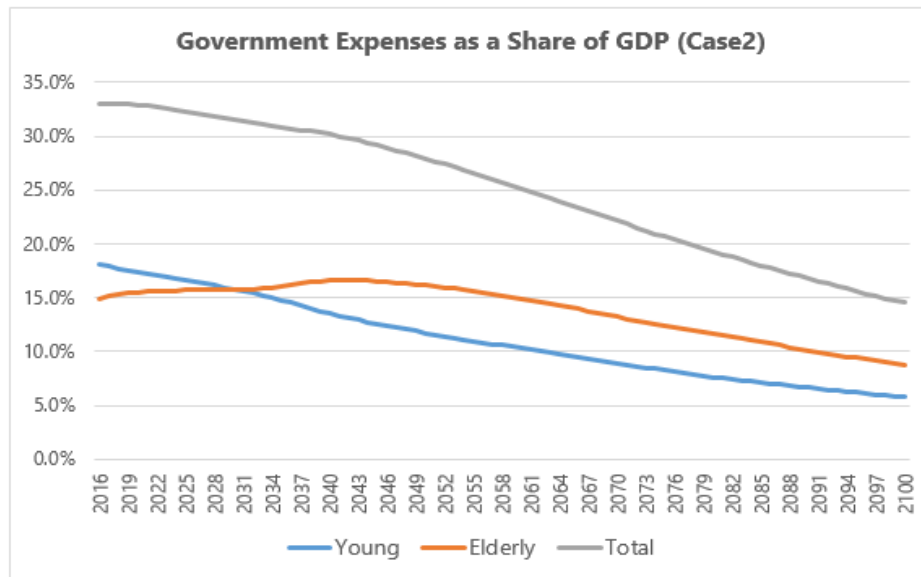
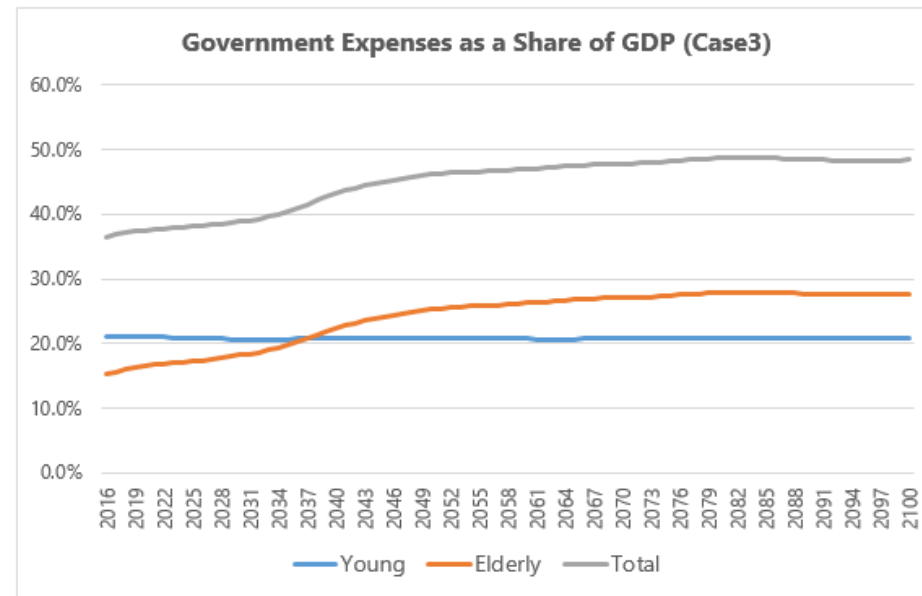
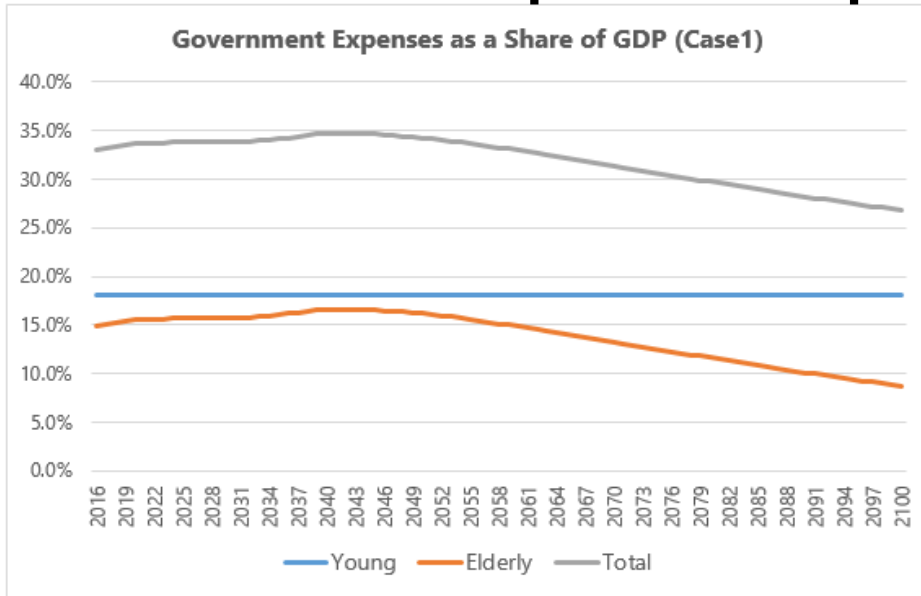
(Gap rate: 0~4%)

- 3) Population Projection

- Calculation of Sustainable Tax Rate using Broda and Weinstein(2005)

$$\tau^* = \frac{i - \eta}{1 + \eta} \left[b_0 + \left(1 - \left(\frac{1 + \eta}{1 + i} \right)^n \right)^{-1} \sum_{t=1}^n \left(\frac{1 + \eta}{1 + i} \right)^t (g_t + h_t - \lambda_t m_t) \right]$$

Assumption and Reproduction of Fig.8 ~ Fig.10



- **Case1: Base Scenario** (per capita expenditures on the elderly were assumed to rise at the same rate as GDP growth while total expenditures on the remaining population were assumed to be a constant share of GDP)
- **Case2: Austerity Scenario** (per capita expenditures were assumed to always be proportional to GDP)
- **Case3: Generous Scenario** (per capita expenditures were assumed to rise with GDP per worker)

About Definition of Sustainability

- I agree that “a government’s fiscal situation is not sustainable does not necessarily mean that a crisis is imminent”. (page 2)

→ However, even if the government is not facing fiscal crisis now, the government should satisfy sustainability condition, that is intertemporal budget constraints, and **must not postpone the improvement of fiscal deficits.**

- Despite of the definition of fiscal sustainability by Branchard (1990) and Broda and Weinstein (2005), under the condition of higher expenditure by aging in the future, **we should make primary equilibrium to avoid divergence of debt accumulation.**

- In the future, from the point of view of time inconsistency, there might be possibility that **we will refuse what we should for maintaining fiscal sustainability do such as raising taxes.**

Gross Debt and Net Debt

- After selling asset and canceling out of the government debt, **can functions of the government be maintained without physical and monetary assets?**
- The **government's assets do not intended to be used as a repayment source** for government debt. In other words, what is the purposes of government assets, only just for debt repayment?
- It may be impossible to **offset the government's assets according to the government debt repayment schedule.**

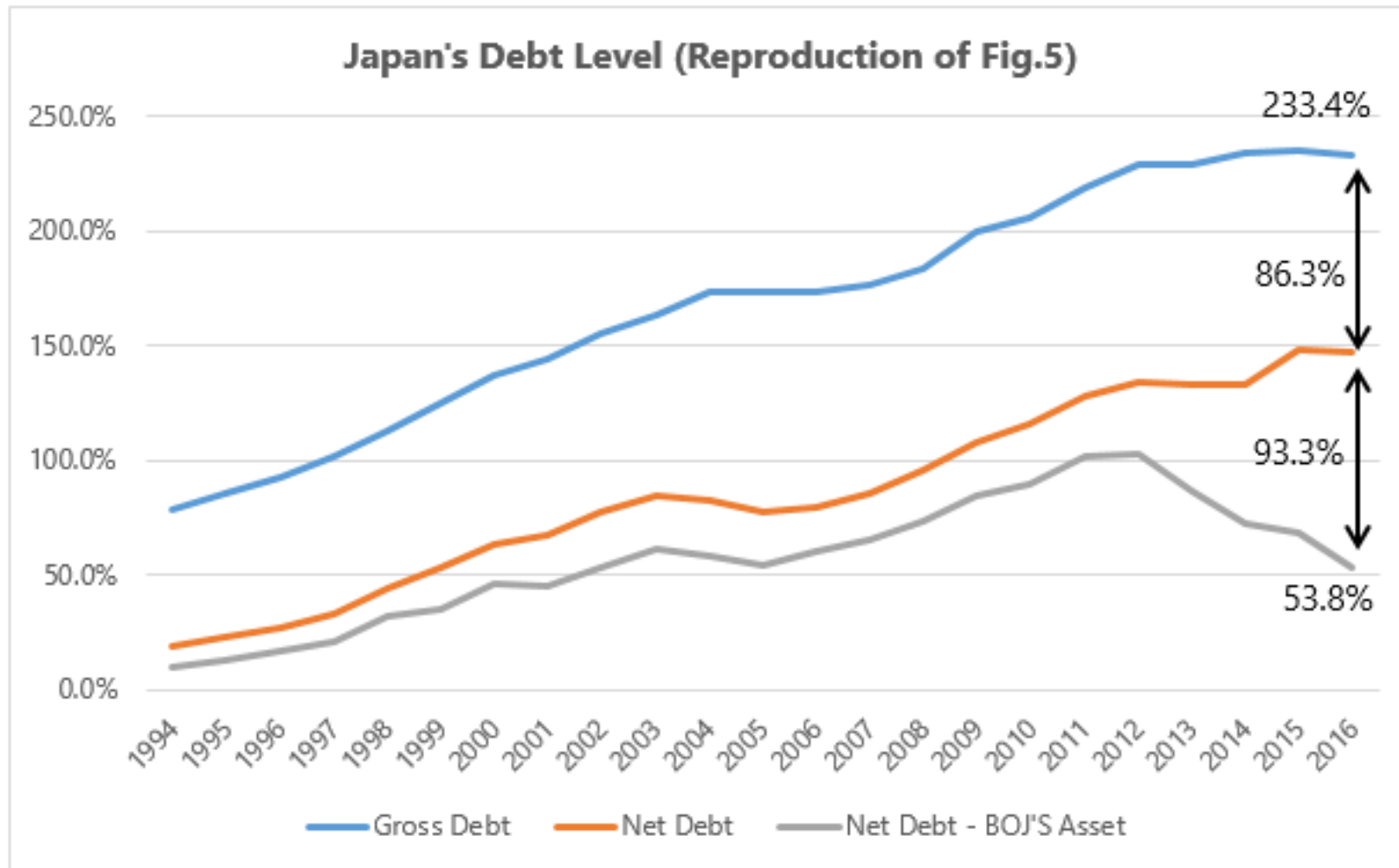
Gross Debt and Net Debt (Cont.)

- Social Security Fund (pension) has implicit debt of 680 trillion yen (128% of GDP), which has already promised to pay benefits in the future. Including this debt, total debt of the government further may expand. It may be better that **we calculate debt and assets only for central government** (i.e. exclude other institutions, in particular special accounts).
- Even though using net debt, the generation that utilized the debt is different from the generation that repays. Although Greenan and Weinstein (2017) pointed out that generational inequality was not an immense crisis, **it is a serious problem in Japan.**

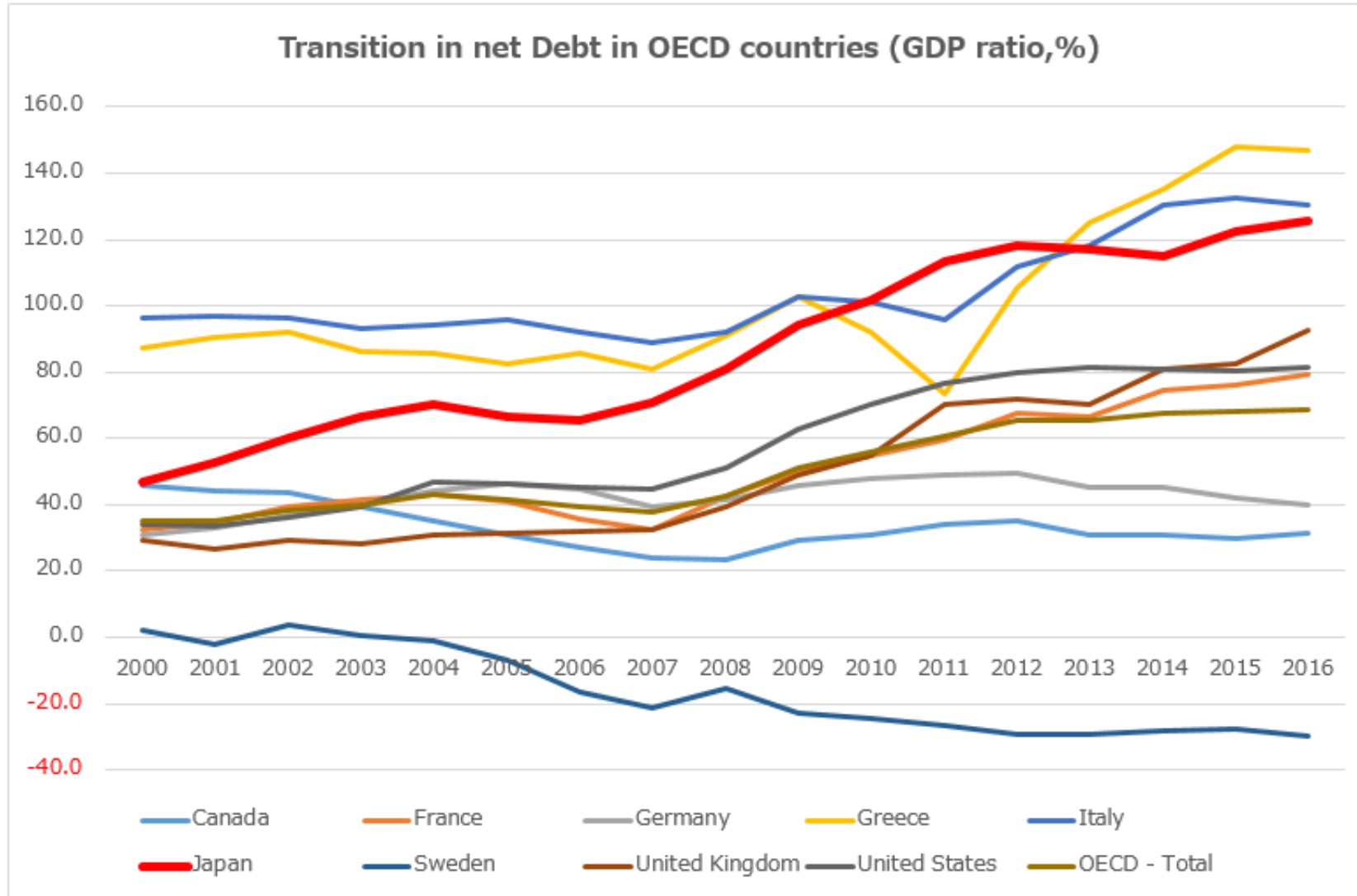
Consolidated with BOJ?

- Is it possible to consolidate with the Government and BOJ? **We don't need to consider the independence of BOJ?** Is there possibility that liquidate of BOJ occur simultaneously with government bankruptcy?
- **Participants in the private market has not consider to offset government debt with BOJ's assets.** They recognize them as a different one. I think that consolidation with BOJ is only an imaginary trick.
- The purchase of government bonds by BOJ means an increase in circulation of money. There is possibility of hyperinflation far beyond inflation target. **Greenan and Weinstein (2017) states that the government is doing well, is it really so?**

Net debt is increasing as same as gross debt in recent years.



Japan's net debt is increasing rapidly compared with other OECD countries.



Source: OECD Database

Main Result of Greenan and Weinstein (2017)

Table 1

Forecasts	Sustainable Tax Rates					
	Case 1		Case 2		Case 3	
	2016	2003	2016	2003	2016	2003
Rate Gap						
0	33.5	33.6	25.8	27.0	45.1	42.5
1	34.5	34.5	27.8	28.9	44.6	42.1
2	35.4	35.3	29.6	30.7	44.1	41.5
3	36.2	36.0	31.3	32.1	43.7	41.1
4	36.9	36.6	32.7	33.4	43.4	40.7
2003 Tax Rate	29.1					
Current Tax Rate	35.6					

Entries are percentages of GDP.

In Case 1, *per capita* expenditures on the elderly are proportional to GDP while expenditures on the young are proportional to GDP.

In Case 2, *per capita* expenditures (both on the young and on the elderly) are proportional to GDP.

In Case 3, *per capita* expenditures (both on the young and the elderly) are proportional to GDP per worker.

Both 2003 and 2016 results use population forecasts from NIPSSR.

"Updated 2003" is the sustainable tax rate in 2003 calculated using the realized expenditures through 2015 and the updated forecasts thereafter.

- Greenan and Weinstein (2017), "Cases 1 and 2, we find that Japan's tax rate is already at a sustainable level". (page 22)
- **1) Current debt level is not serious problem?**
- **2) The goal of fiscal reform is not necessary?**
- **3) This conclusion depends mostly on the definition of fiscal sustainability?**

Table 1 Reproduction of Sustainable Tax Rate by Dr. Weinstein

Rate Gap	Sustainable Tax Rate								
	Case1			Case2			Case3		
	W(2016)	W(2003)	My cal.	W(2016)	W(2003)	My cal.	W(2016)	W(2003)	My cal.
1	34.5	34.5	33.4	27.8	28.9	28.7	44.6	42.5	42.3
2	35.4	35.3	34.4	29.6	30.7	30.7	44.1	41.5	41.4
3	36.2	36.0	35.2	31.3	32.1	32.5	43.7	41.1	40.7
4	36.9	36.6	35.9	32.7	33.4	33.9	43.4	40.7	40.2
2003 Tax Rate	29.1								
2015 Tax Rate	35.6								

Note: Prdected periods are from 2000 to 2100

W(2016):Greenan & Weinstein(2016)

W(2003):Broda & Weinstein(2003)

Table 2 Original Calculation of Sustainable Tax Rate (Net & Gross Debt)

Rate Gap	Sustainable Tax Rate								
	Case1			Case2			Case3		
	Net Debt	Con. Debt	Gross Debt	Net Debt	Con. Debt	Gross Debt	Net Debt	Con. Debt	Gross Debt
1	33.9	33.0	34.8	27.9	27.0	28.8	45.4	44.5	46.2
2	35.8	33.9	37.5	30.7	28.8	32.3	45.9	44.0	47.6
3	37.5	34.8	40.0	33.2	30.4	35.7	46.4	43.7	48.9
4	39.2	35.5	42.5	35.5	31.8	38.8	47.1	43.4	50.4
2015 Debt Ratio(Net)	1.479								
2015 Debt Ratio(Gross)	2.334								

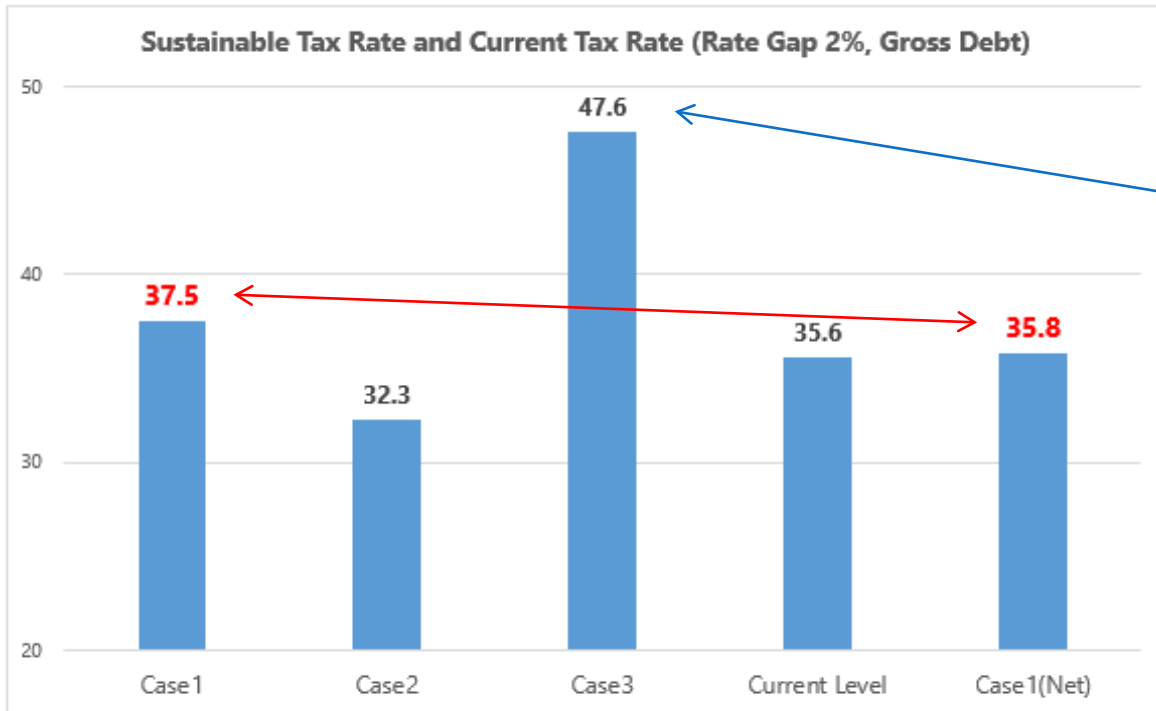
Note: Prdected periods are from 2016 to 2100

Con. Debt: Consolidated Debt (Net Debt-BOJ's net Asset)

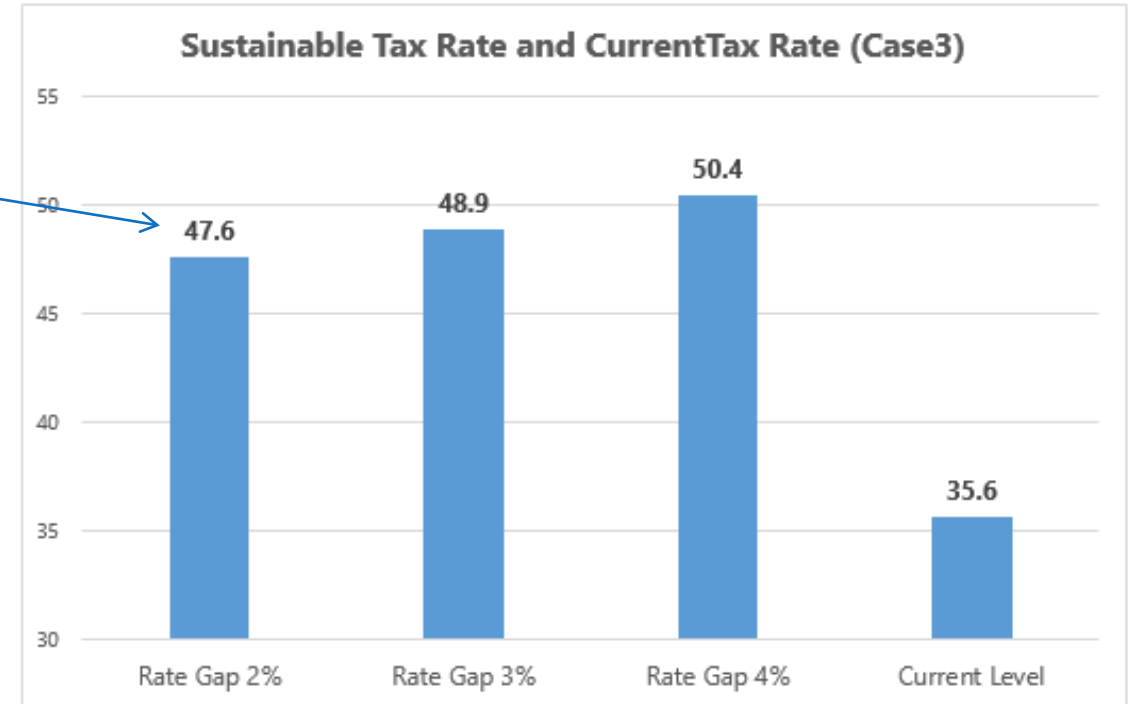
Note: My cal. In Table1 and Table2 are from author's calculation using the same method by Greenan and Weinstein (2017) . However, I could not reproduce original results perfectly.

Sustainable Tax Rate using Gross Debt

- Choice of **gross debt or net debt** affects calculation of sustainable tax rate.
- Generous scenario (Case 3) with gross debt case requires **higher tax rate**.



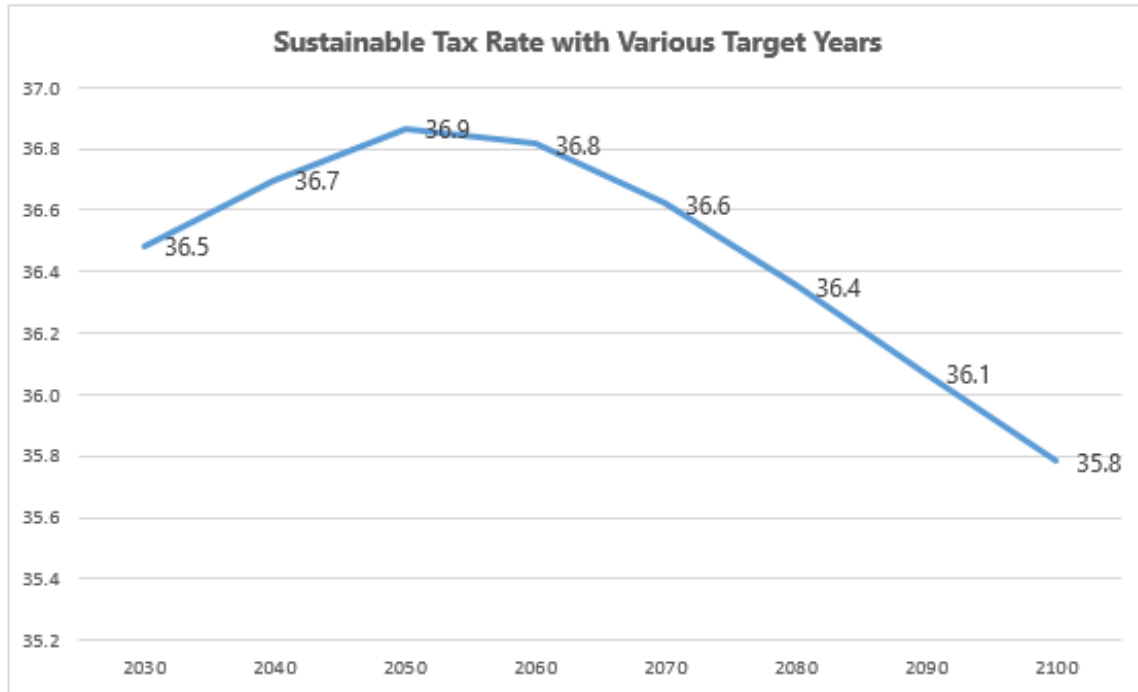
Calculation by Author



Note: These results are from author's calculation using the same method by Greenan and Weinstein (2017).

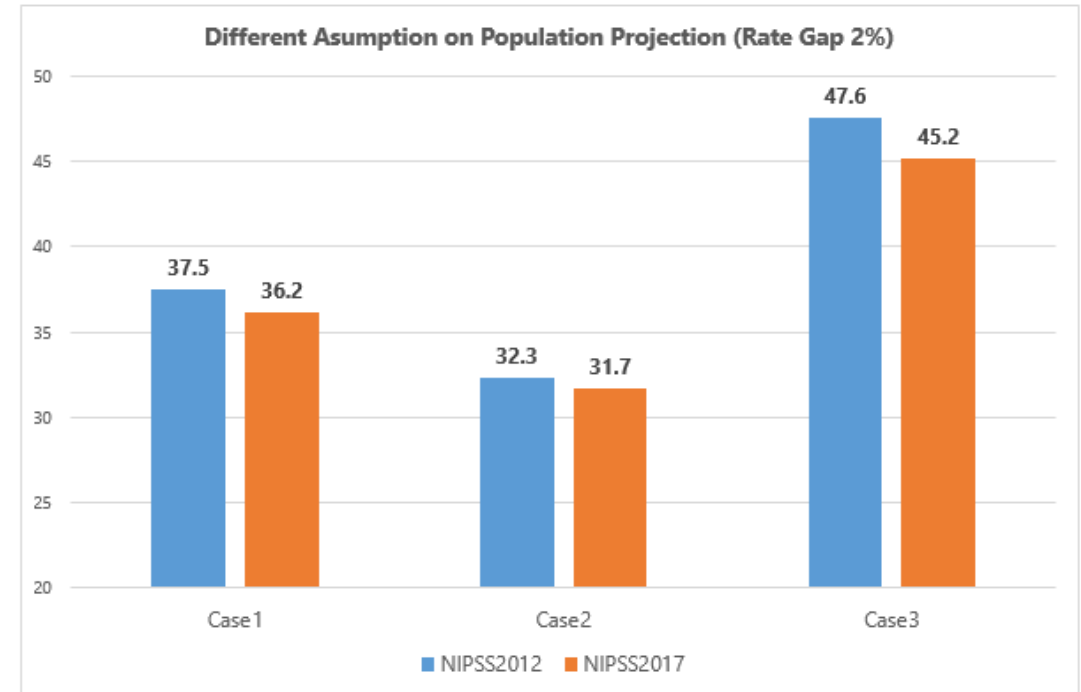
Sustainable Tax Rate by Another Assumptions

- Change of **target year** affects the level of sustainable tax rate.



Calculation by Author
Note: Case1, Net Debt, Gap rate 2%

- New **population projection** generates lower sustainable tax rate.



Note: Population Projection by National Institute of Population and Social Security Research

Note: These results are from author's calculation using the same method by Greenan and Weinstein (2017).

Questions

- Does Blanchard's definition or concept of sustainable tax rate calculation mean to **approve the current debt level**?
- Before reaching a sustainable tax rate level, by debt to GDP ratio rises, **is there possibility that it leads to defaults**?
- Does the setting of the long term period such as 100 year later **become temptation to postpone the fiscal reform**?
- Why we don't face default or rapid increase of interest rate? Because the government is doing well to avoid that? Or is it due to the **decline of natural interest rate** due to Secular Stagnation theory?
- Even if Japan's government has already achieved the sustainable tax rate as you shown in Case1, **is it necessary to hold a goal of equilibrium of primary balance** in 2020?