Comments on "Defying Gravity: How Long Will Japanese Government Bond Prices Remain High?" by Takeo Hoshi and Takatoshi Ito

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Summary

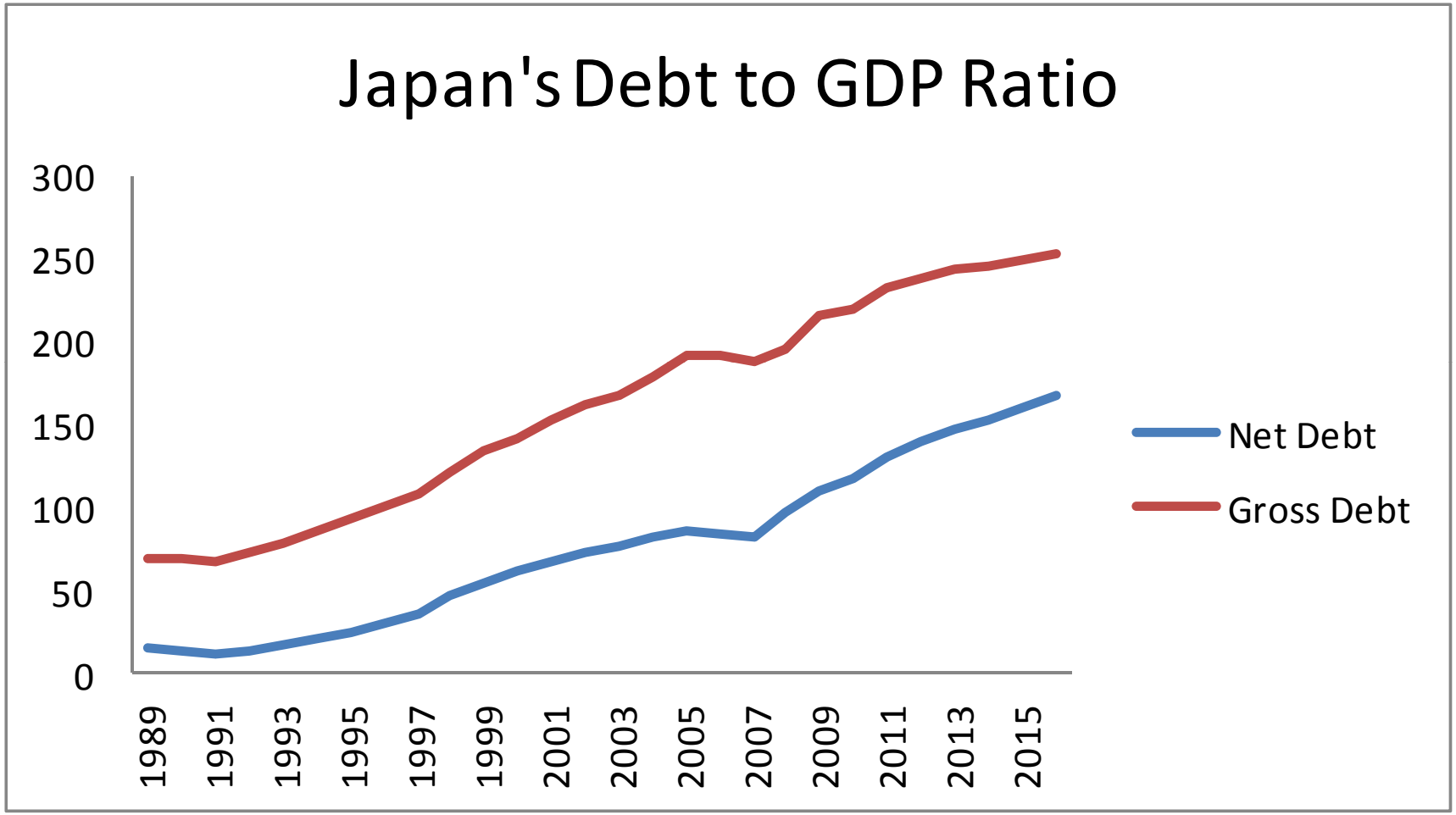
Japan's Debt to GDP ratio is the highest in the world, government budget deficits are large, yet interest rates on JGBs remain low.

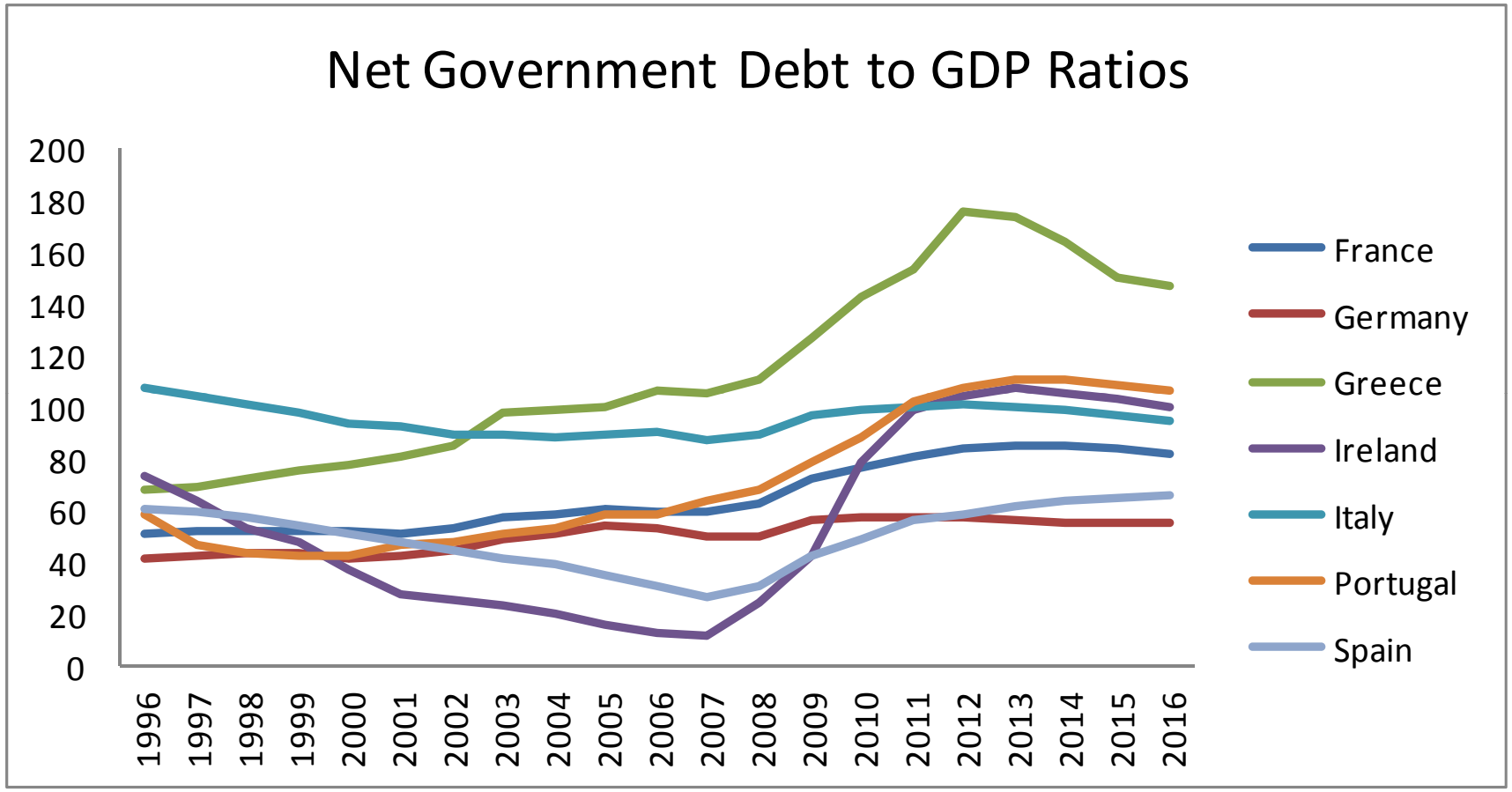
This situation is supported by home-biased domestic savings, a stagnant economy with low expected rates of return, and expectations of future fiscal consolidation.

But, a fiscal crisis is looming when debt hits the "ceiling on private sector assets." The stock of government bonds is thought to exceed the ability of the private sector to by the bonds.

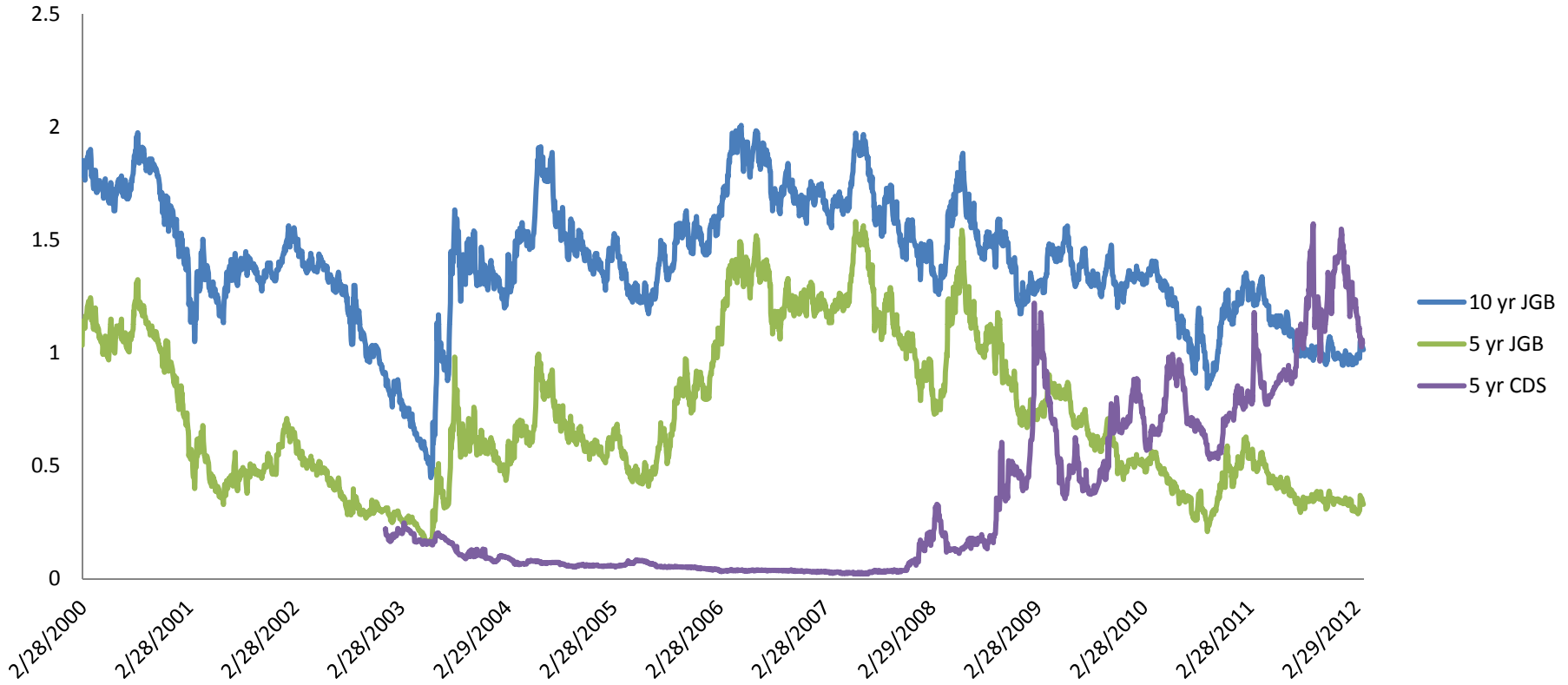
Financial markets appear to be unaware of this problem, but if they should realize its possibility, the crisis would start sooner.

Fiscal consolidation now can avoid the problem.


Japan's Debt to GDP Ratio
300
250
200
150
100
50
0
1989
1991
1993
1995
1997
1999
2001
2003
2005
2007
2009
2011
2013
2015
Net Debt
Gross Debt


Net Government Debt to GDP Ratios
200
180
160
140
120
100
80
60
40
20
0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
France
Germany
Greece
Ireland
Italy
Portugal
Spain

5 and 10 yr JGB Yields and 5 yr CDS



But, Japan's CDS rate is the 4th lowest of any country.

	5 yr CDS in % p.a.
US	0.31
UK	0.64
Germany	0.75
Japan	1.04
France	1.75
Belgium	2.30
Italy	3.81
Spain	4.30

The Government's Budget Constraint

$B_t =$ nominal debt, $G_t =$ nominal government spending,

$T_t =$ nominal taxes, $i_t =$ nominal interest rate

$$B_{t+1} - B_t = G_t + i_t B_t - T_t = \text{ the budget deficit}$$

Divide by $Y_t =$ nominal GDP.

$$\frac{B_{t+1}}{Y_{t+1}}\frac{Y_{t+1}}{Y_t} - \frac{B_t}{Y_t} = \frac{G_t}{Y_t} + i_t \frac{B_t}{Y_t} - \frac{T_t}{Y_t}$$

$$b_{t+1}(1+\eta_{t+1}) - b_t = g_t + i_t b_t - \tau_t$$

$\eta_{t+1} =$ the growth rate of nominal GDP

The Government's Primary Surplus to GDP ratio = $\tau_t - g_t$

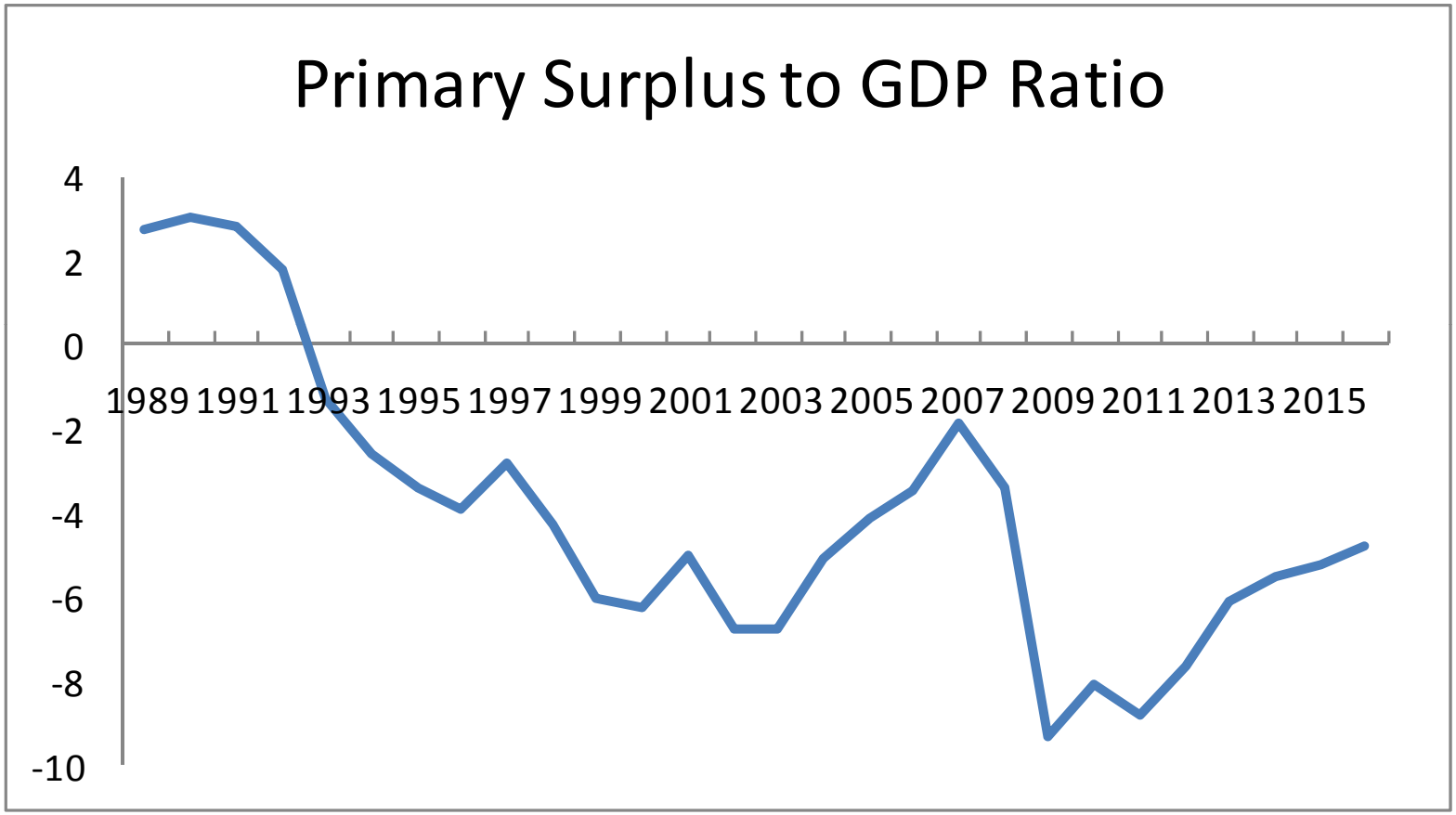
$$b_{t+1}(1+\eta_{t+1}) = (1+i_t)b_t - (\tau_t - g_t)$$

The Debt to GDP ratio stabilizes, $b_{t+1} = b_t$, when

$$\tau_t - g_t = (i_t - \eta_{t+1})b_t$$

The Debt to GDP ratio grows when

$$(\tau_t - g_t) < (i_t - \eta_{t+1})b_t$$

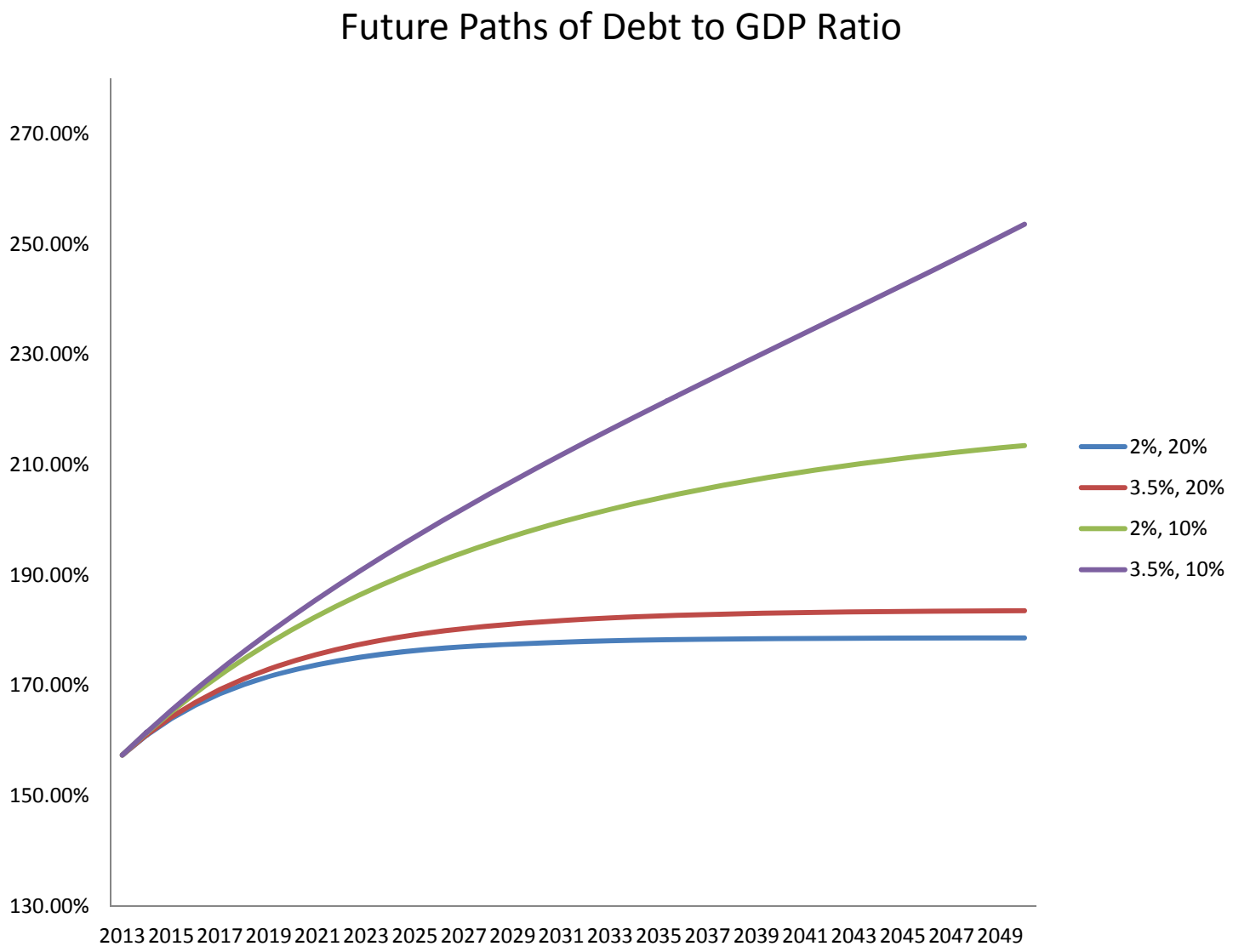

Primary Surplus to GDP Ratio
4
2
0
-2
-4
-6
-8
-10
1989 1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015

With one-period debt, unanticipated inflation helps only in the first period. With multi-period debt, changing the rate of inflation can reduce the debt to GDP ratio because interest is fixed for awhile.

Alternative scenarios:

$$i_{t+1} = 1\% + \beta(b_t - 1.53\%), \qquad \beta = 0.02, 0.035$$

$$\tau_t - g_t = -6\% + \delta(b_t - 1.53\%), \qquad \delta = 0.10, 0.20$$


Future Paths of Debt to GDP Ratio
270.00%
250.00%
230.00%
210.00%
190.00%
170.00%
150.00%
130.00%
2013 2015 2017 2019 2021 2023 2025 2027 2029 2031 2033 2035 2037 2039 2041 2043 2045 2047 2049
2%, 20%
3.5%, 20%
2%, 10%
3.5%, 10%

Limits on Debt

Hoshi and Ito argue that because 95% of JGBs are currently held by the Japanese public, any future increases in debt must also be held by the Japanese public. I disagree.

From National Income Accounting

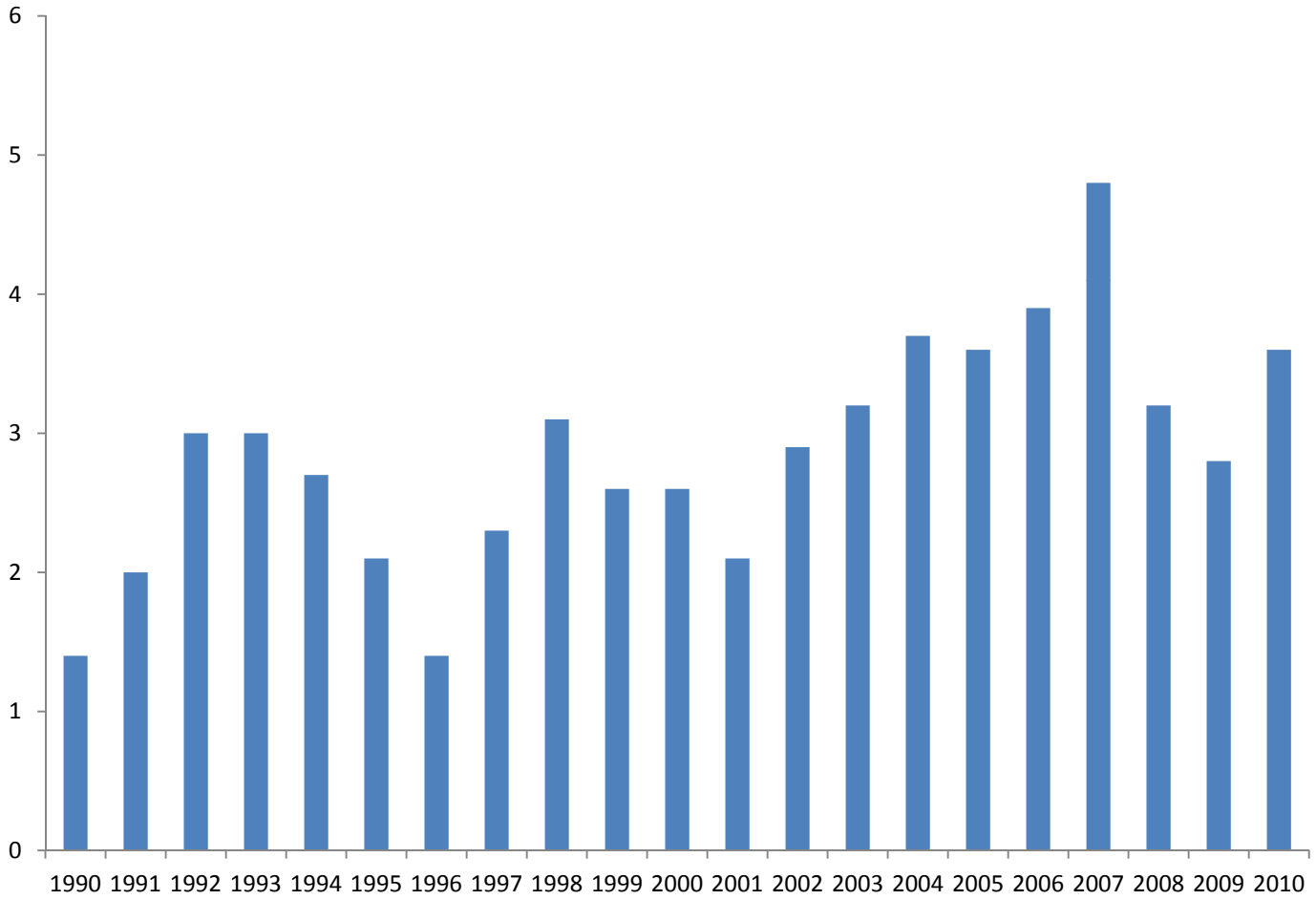
$$Y_t = C_t + I_t + G_t + CA_t$$

$$S_t^P = Y_t + i_t B_t - T_t - C_t$$

$$S_t^P = C_t + I_t + G_t + CA_t + i_t B_t - T_t - C_t$$

$$(S_t^P - I_t) + (T_t - i_t B_t - G_t) = CA_t$$

The Current Account as a % of GDP



Implications of Current Account Surpluses

In spite of the government's primary deficits, Japan runs current account surpluses that average 2.9% of GDP.

Current account surpluses imply the acquisition of Net Foreign Assets.

Japan currently has Net Foreign Assets equal to 60.5% of GDP.

Thus, Japan can run current account deficits equal to 3% of GDP for 20 years before any foreigner has to buy a JGB!

Hoshi and Ito conclude otherwise because they look at a very narrow definition of financial wealth. They exclude the value of equities.

On Ricardian Equivalence

Budget deficits imply future taxes to pay the interest on the debt. If the private sector is sufficiently rational and inter-connected through generational bequests, the time path of government taxation does not matter except as it creates distortions of incentives.

Japanese consumer/savers appear to be quite Ricardian. In the face of massive budget deficits, they save enough to have a current account surplus.

Conclusions

Both Japan and the U.S. face issues of fiscal consolidation.

Financial markets currently think that this will happen. They trust the politicians to compromise and avoid a crisis.

Often, crises arise when foreigners refuse to fund the government.

The magnitude of Japan's Net Foreign Assets implies that such a day is quite far in the future.

Since most of these assets are not yen denominated, a modest depreciation of the yen implies an increase in wealth. A depreciation also increases Japanese competitiveness.

Fiscal consolidation now would certainly be good, but a crisis in 2020 seems a very remote possibility. I think the bond vigilantes have got it right in both countries.