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Fiscal Consolidation in Japan

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Introduction

Mr. Abe tries to stimulate the Japanese economy by monetary and fiscal policies.

- Forcing the Bank of Japan to adopt 2% inflation target
- Weaken the yen to expand exports
- Expand public-works expenditures

Fiscal conditions are very bad:

The gross debt-GDP ratio	236%
The net debt-GDP:	135%
The budget deficit:	10%

(IMF estimates for 2012, GDP ratios)

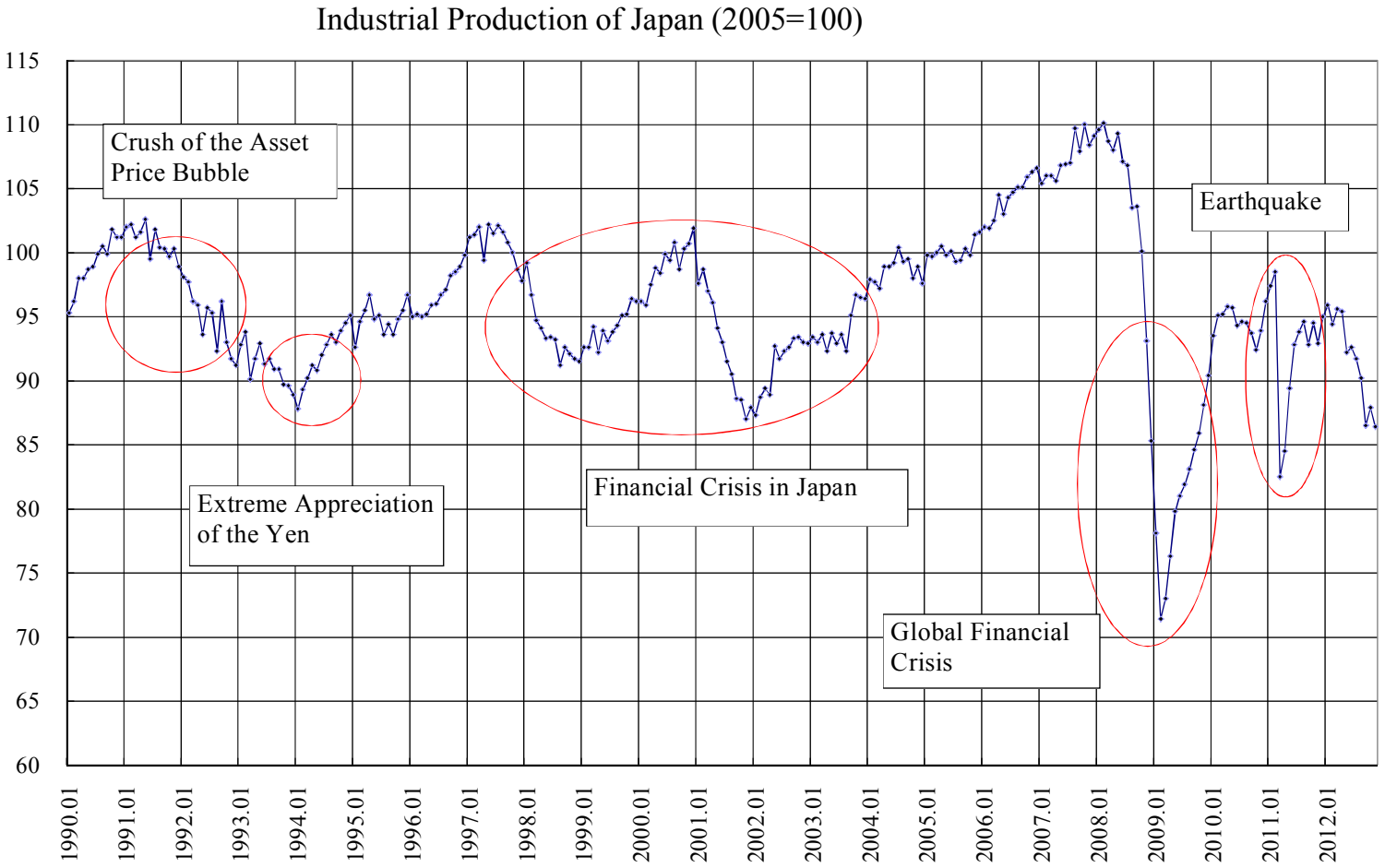
But long-term interest rates are very low: about 0.8% for 10-year JGB

Questions

- Why interest rates are low?
- Is five-point increase in consumption tax enough to stabilize national debt?
- If not, how Japan can consolidate fiscal positions?

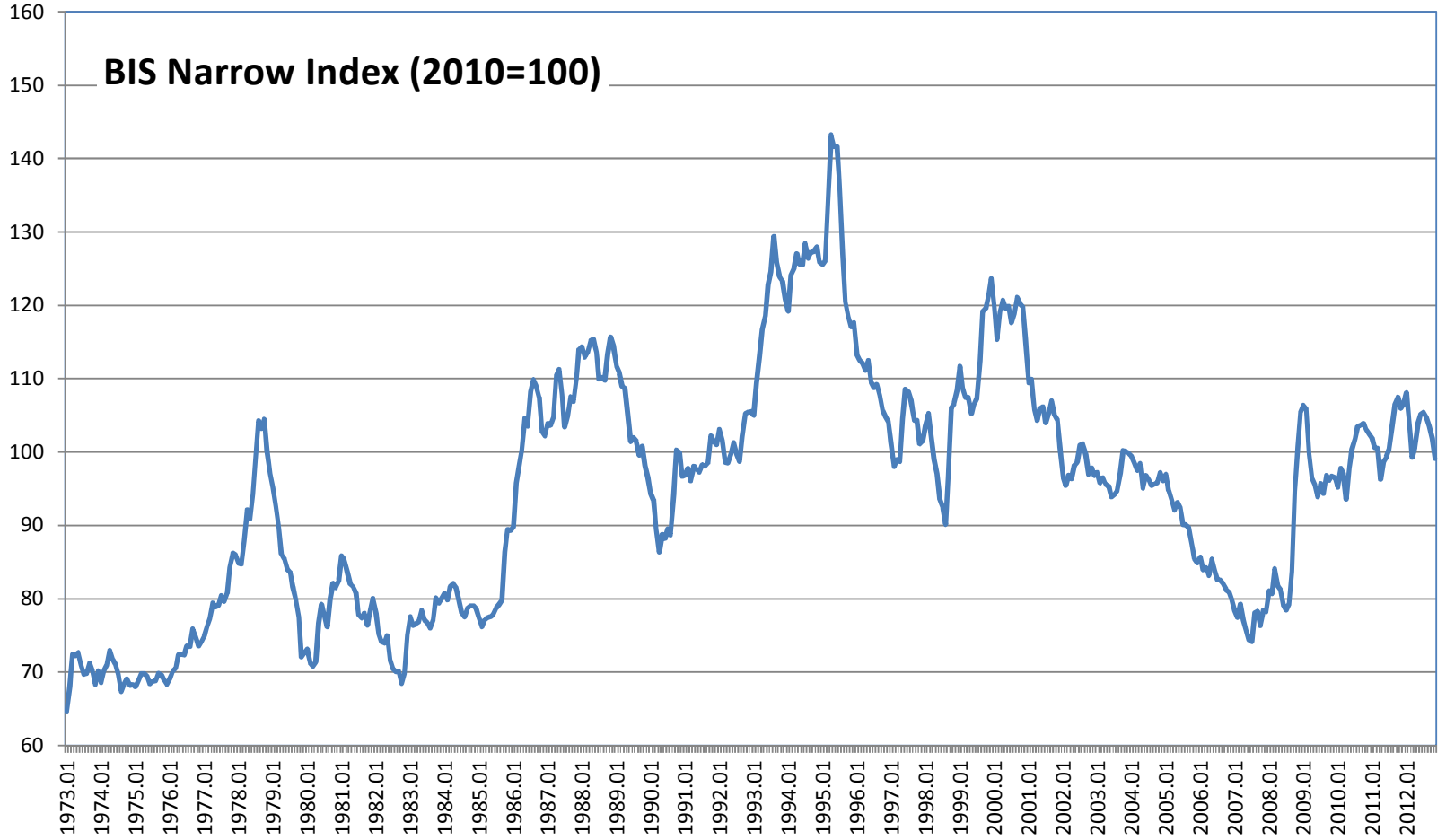
1. Long-term stagnation and deflation in Japan

Exhibit 1

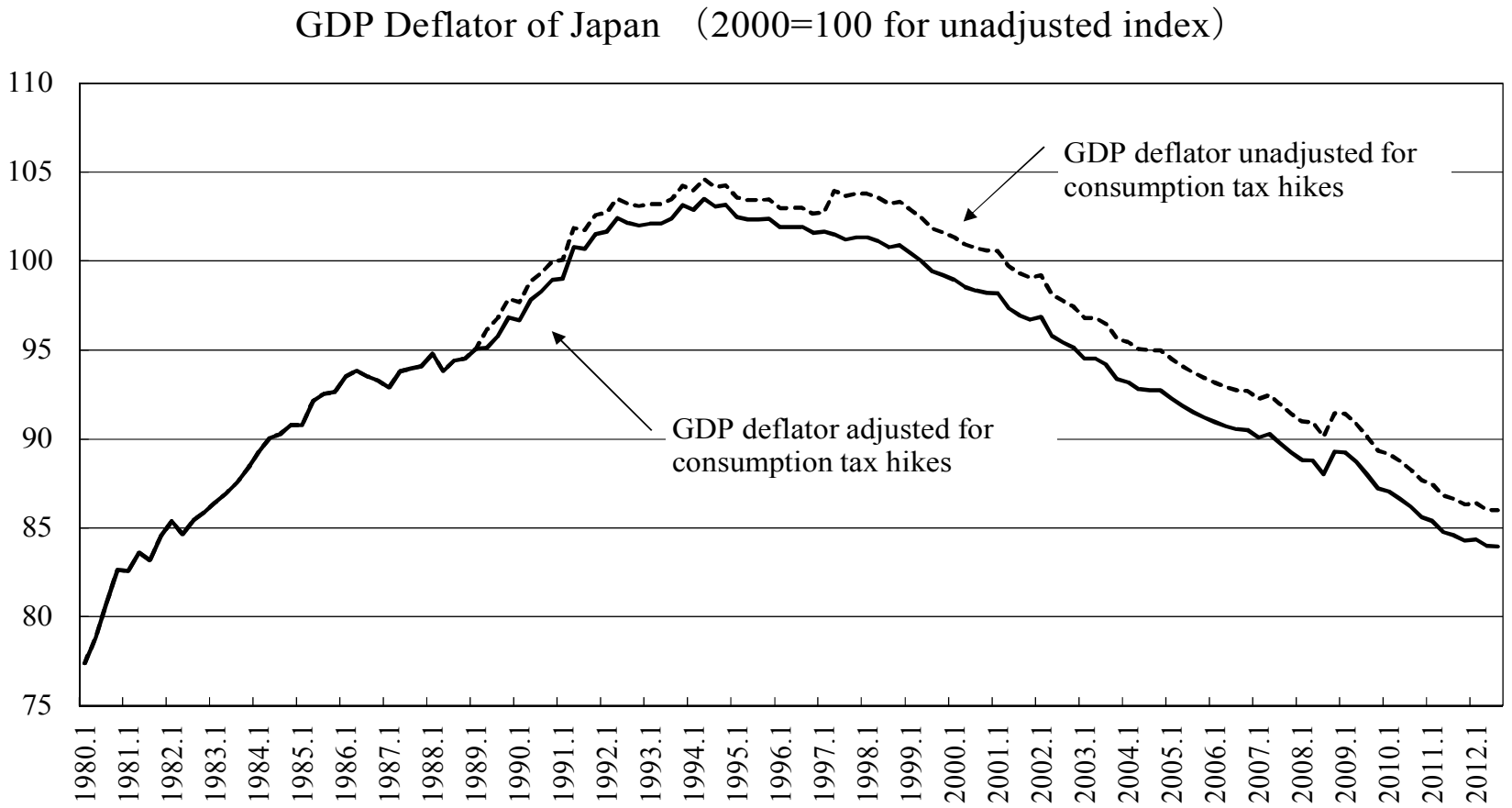


2. Very strong yen started Japan's deflation in 1994-95.

Exhibit 2 Real Effective Exchange Rate of Japan



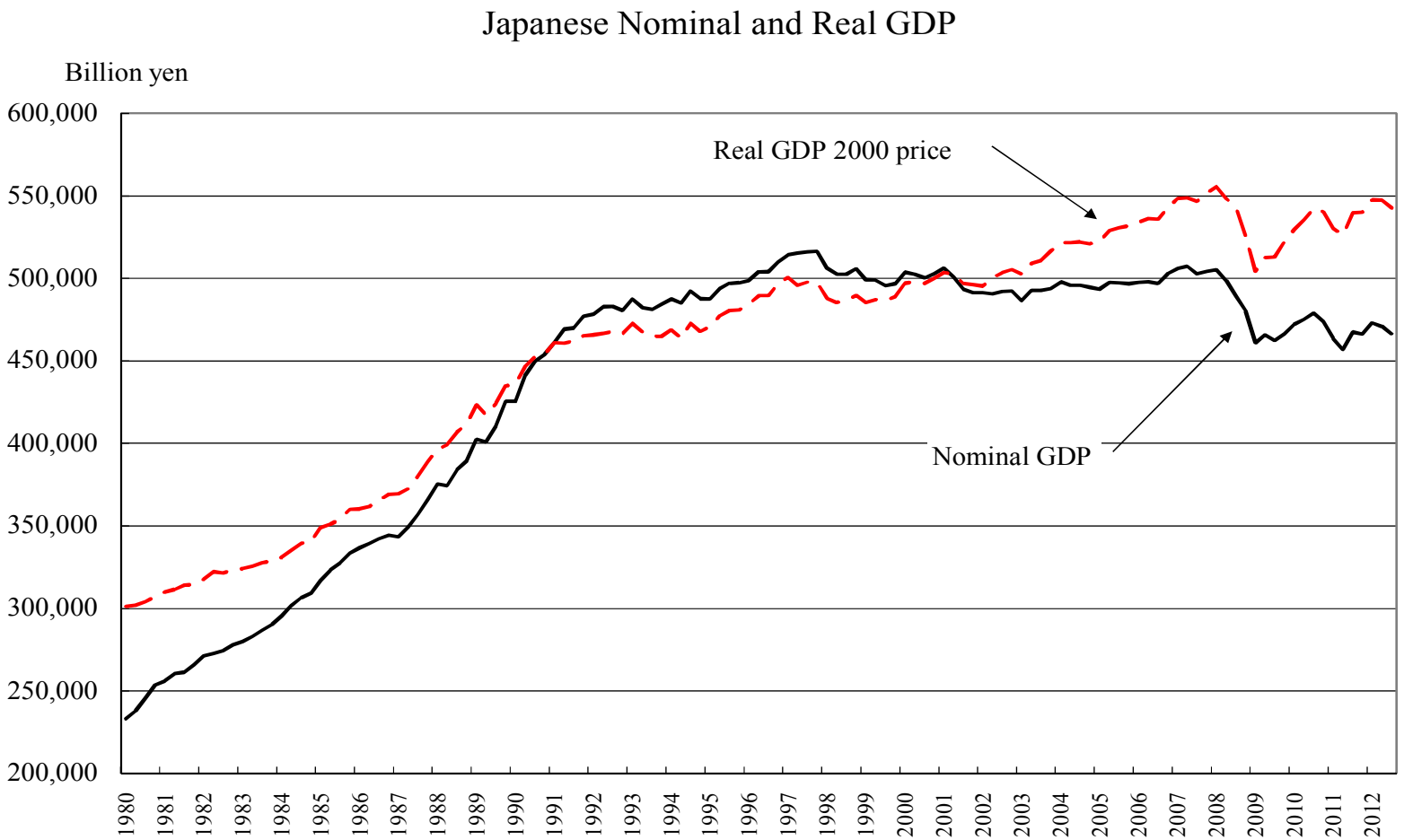
3. GDP deflator has fallen by almost 20 percent since mid 1990s
Exhibit 3



Note: Adjusted for changes in consumption tax increases in April 1989 and April 1997.

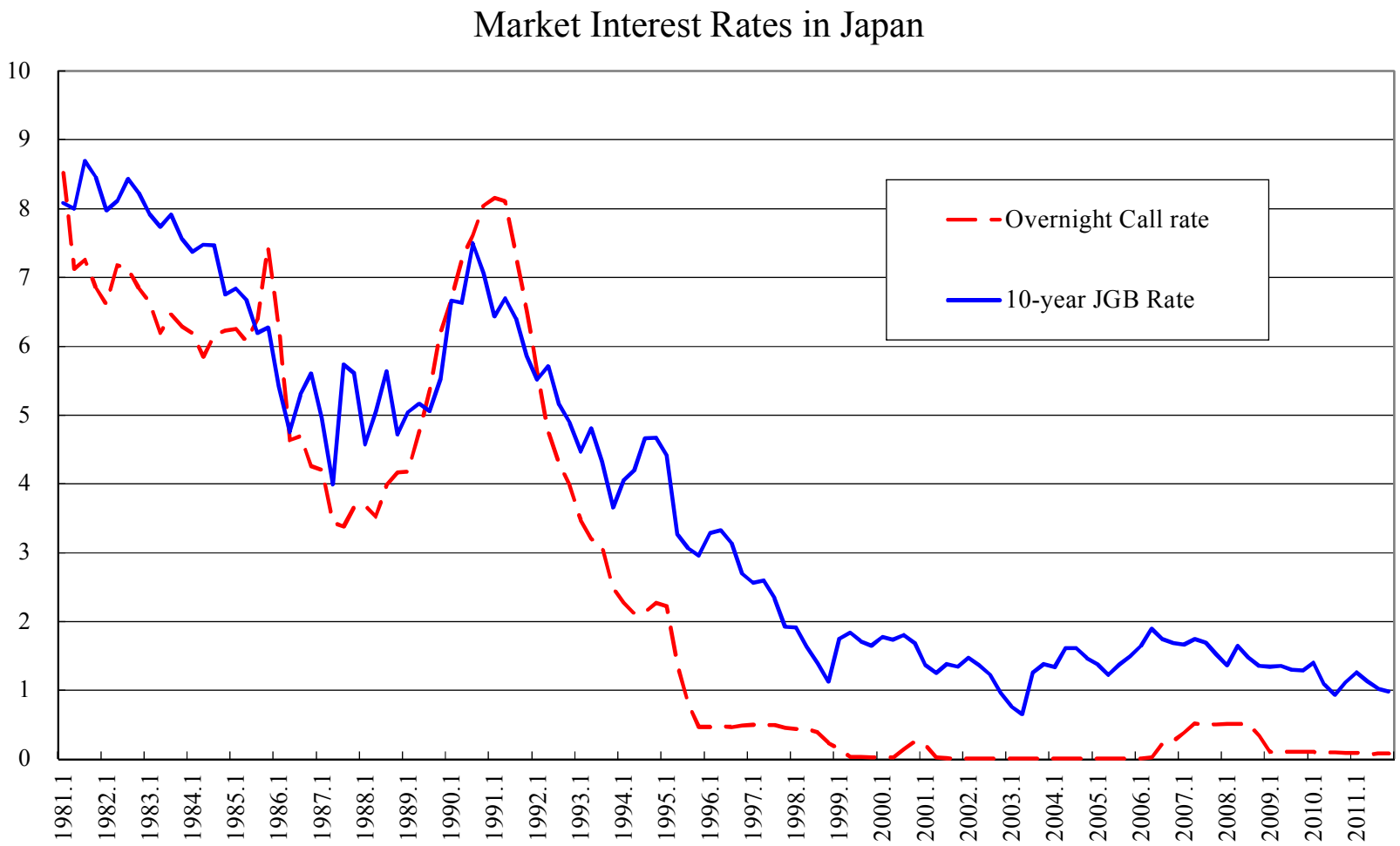
4. Nominal GDP in 2012 is at the level of 1991.

Exhibit 4



5. Short-term market rate has been less than 0.5 percent since 1995.

Exhibit 5



6. Long-term Interest Rates of Japan have been low and stable because

(1) Most market participants expect that zero-interest rate policy will continue for a very long time to come,

(2) The Ministry of Finance in Japan can issue zero-interest rate treasury bills as much as they want,

(3) Even if interest rates on long-term JGBs start to rise, the Ministry of Finance can issue short-term bonds to finance budget deficits,

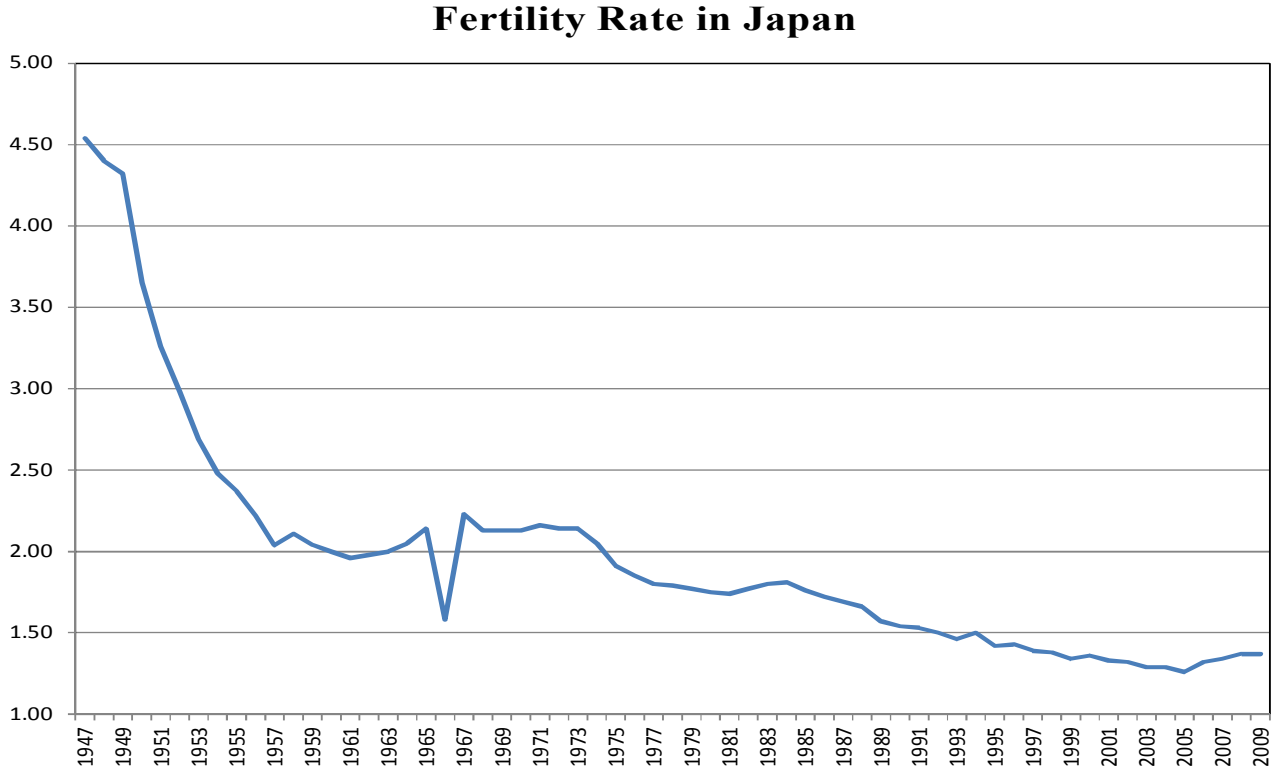
(4) Japan has an excess saving and most financial assets are held by old-age people, who are conservative in investment attitudes,

(5) Investors who moved assets from safe yen assets to stocks and foreign assets have lost money since 1990s.

7. Potential growth rate and GDP gap

In order to make projections on future fiscal conditions of Japan, it is necessary to estimate the potential growth rate of Japan. We have to take account of Japan's demography.

Exhibit 6 Low fertility rate means declining population in the future



8. Estimation of Potential GDP

Potential Growth Rate of Japan: about 0.5%

(1) A Cobb-Douglas production function.

$$\ln Y_t = 0.28 \ln K_t + 0.72 \ln L_t + \ln TFP_t$$

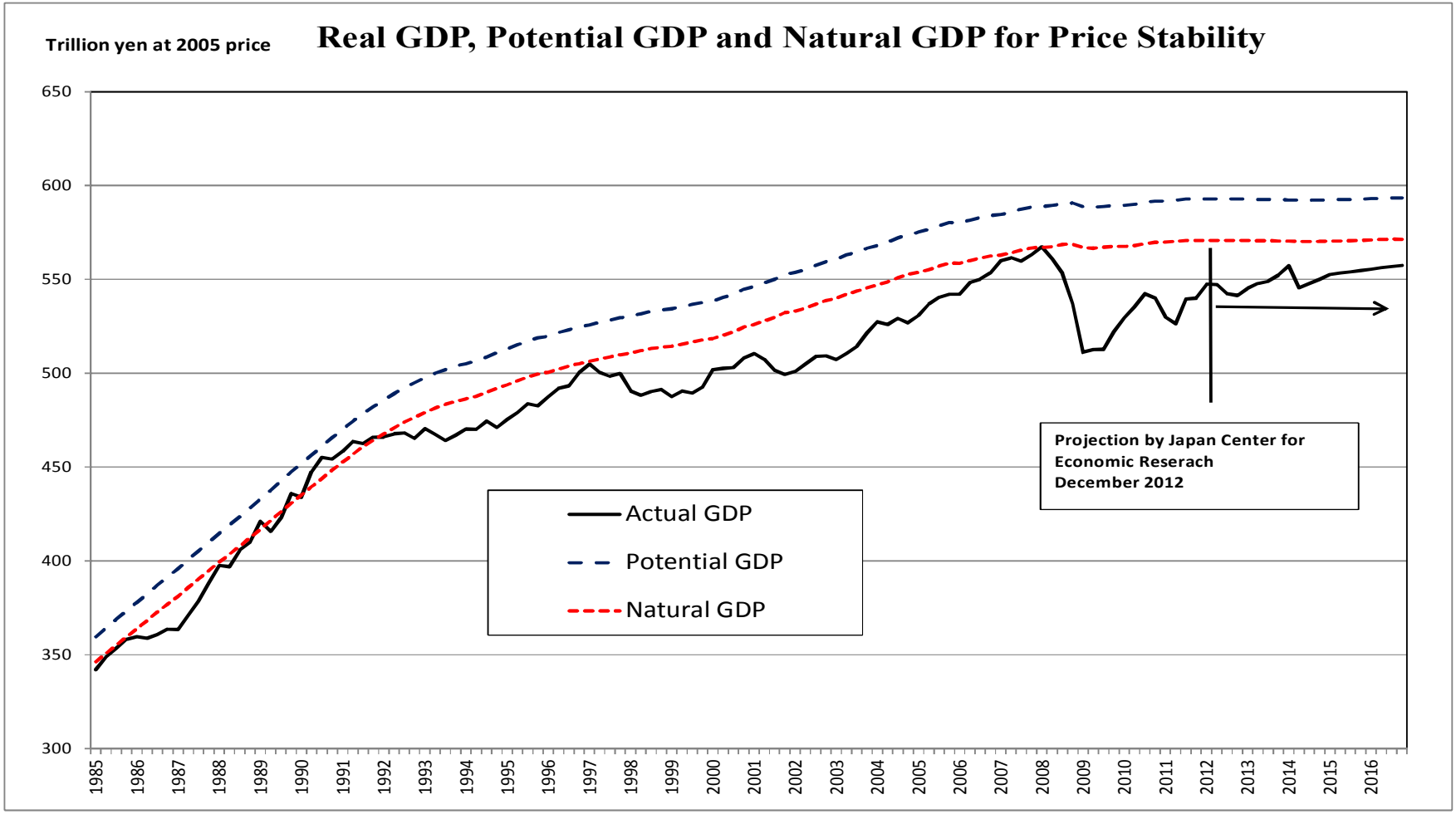
Y_t: Real GDP,
K_t: Capital input adjusted for capacity utilization,
L_t: Labor input measured by man-hours,
TFP_t: Estimated total factor productivity.

(2) Estimate the maximum inputs by connecting the cyclical peaks of the labor hour and capacity utilization.

(3) The maximum production potential is estimated from the production function in (1) and the maximum labor and capital inputs in (2).

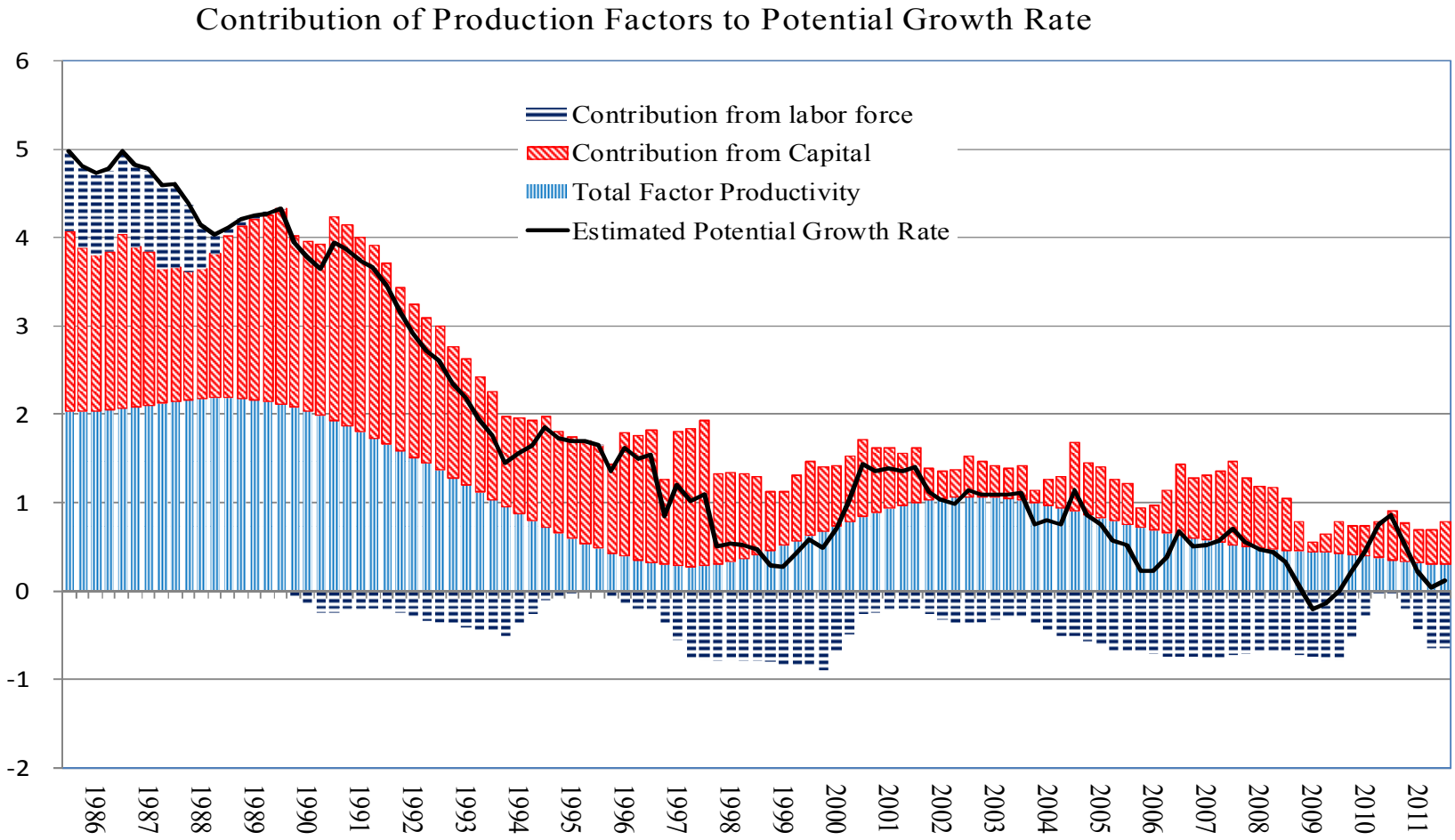
9. Natural GDP is estimated to be consistent with one-percent inflation target.

Exhibit 7



10. Estimate Potential Growth Rate is about 0.5 percent in recent years.

Exhibit 8



11. Natural GDP

(4) The "natural GDP" corresponds to the level of GDP that is consistent with the stable CPI inflation rate of 1 percent. The natural GDP was calculated with the estimated long-run Phillips Curve relationship.

$$\pi_t = 0.502*\Sigma^{4}_{i=1}\ \pi_{t-i}/4 + 0.242*\Sigma^{8}_{i=5}\ \pi_{t-i}/4 + 0.142*OR_t + 0.916 + e_t$$

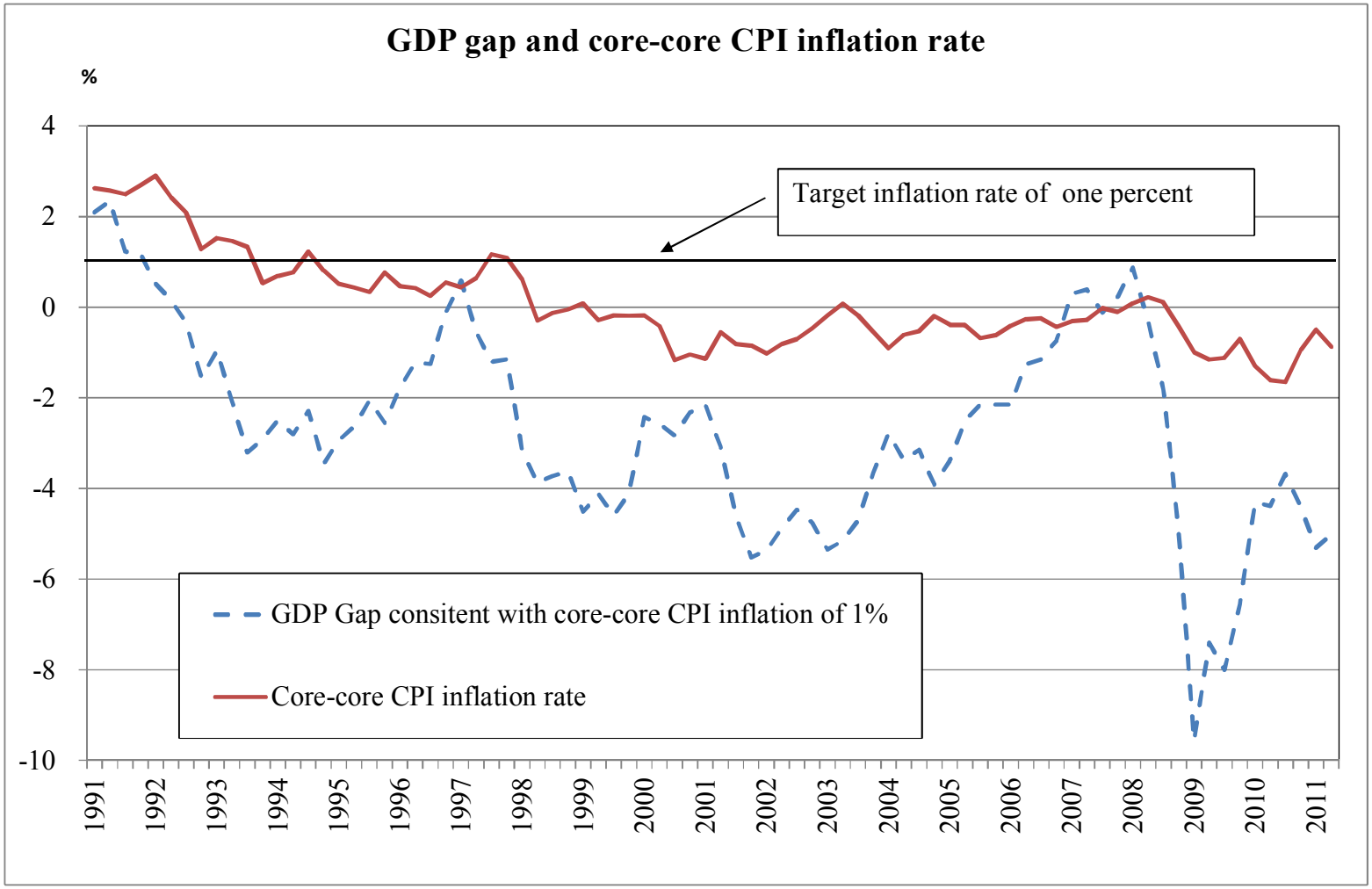
π_t: Core-core inflation rate
OR_t: Macro operating ratio defined as (Actual GDP - Potential GDP)
e_t: Error term.

The above equation is solved for macro operating ratio, OR, at $\pi = 1$. The result was -4.641. This means that when actual GDP is 4.641 percent below the potential GDP, the inflation rate converges to one percent.[1]

[1] Under the new Abe administration, the Bank of Japan is expected to adopt a new 2% target inflation rate. If we change the target inflation rate by one point, we have to increase the natural level of GDP by 1.80%. It means that the government and the Bank of Japan have to push up GDP by 1.80% beyond our natural GDP level in Exhibit 7 to achieve core-core inflation rate of 2%.

12. The natural GDP is estimated with the following data:

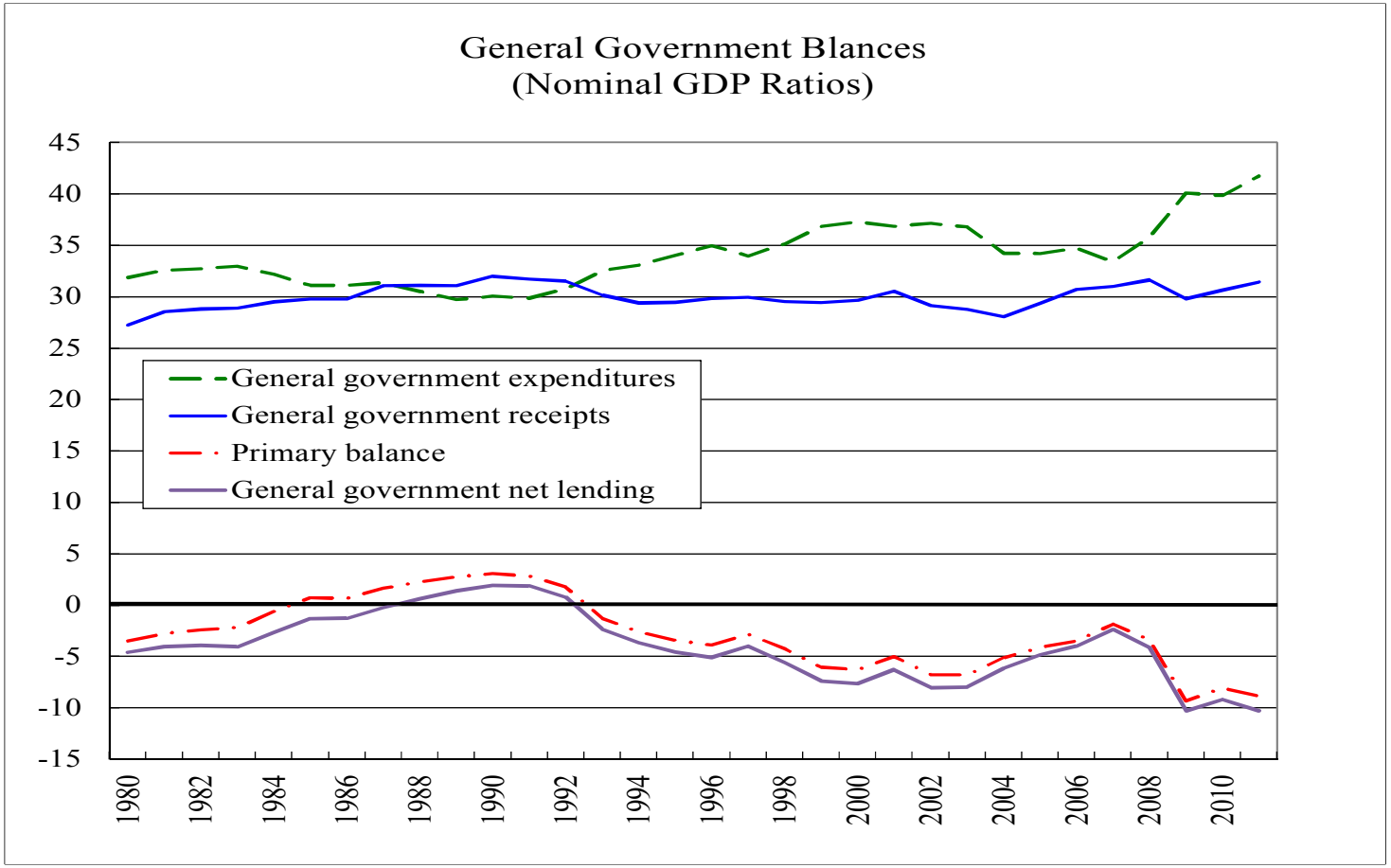
Exhibit 9



13. **The Budget Deficit continued because of increasing expenditures**

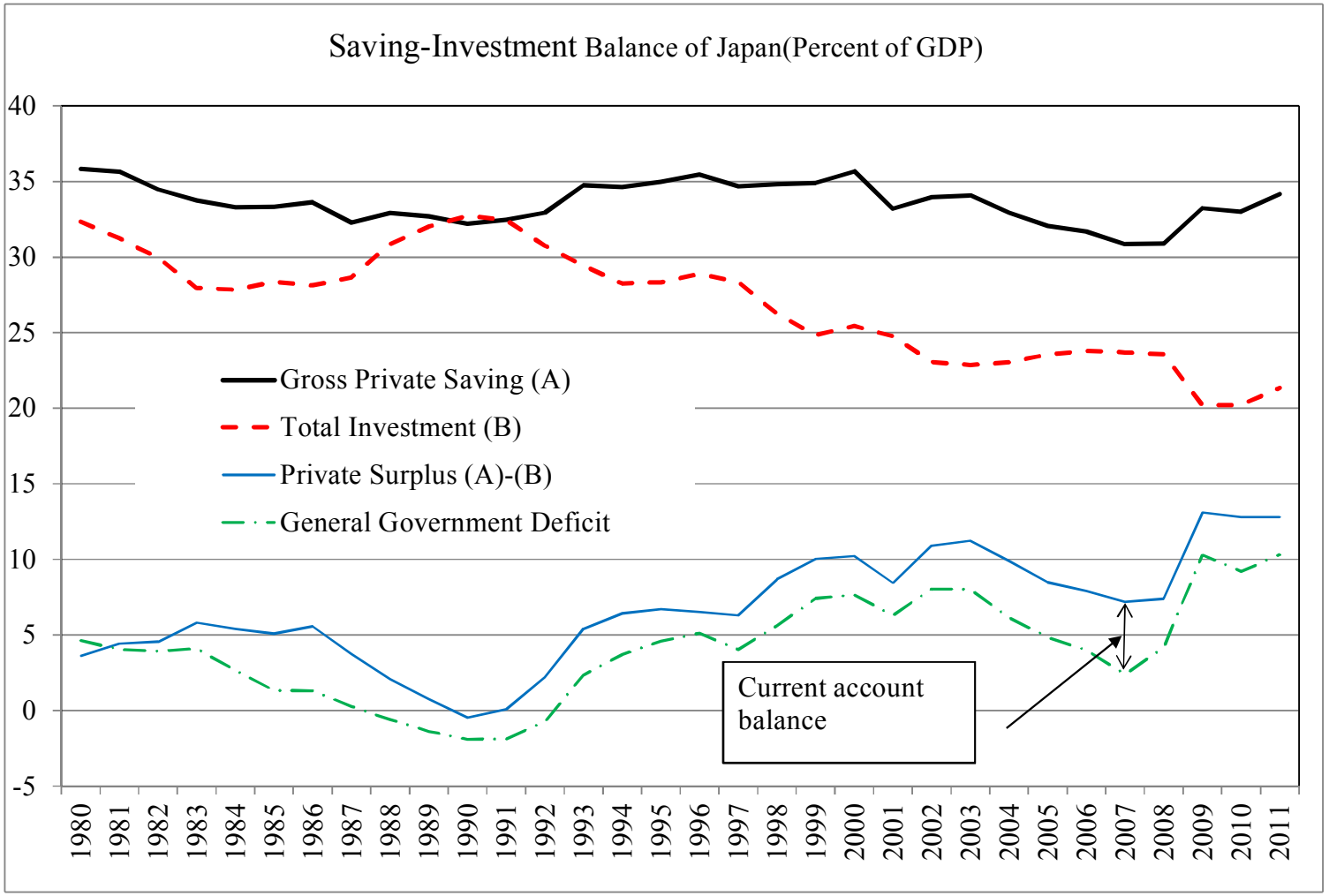
The general government has been running deficits since 1992.

Exhibit 10



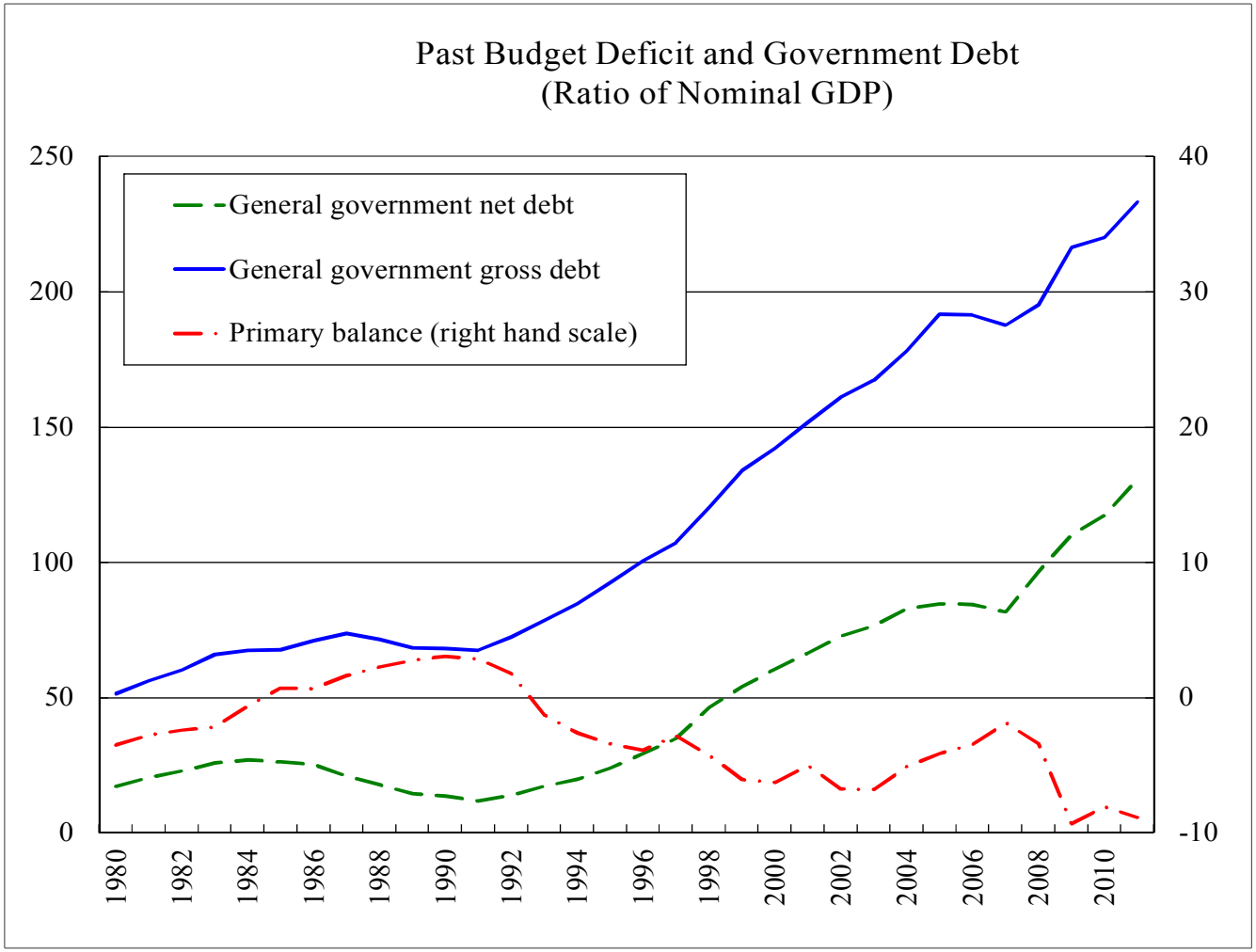
14. High saving rate allowed Japan to show surplus in current account.

Exhibit 11



15. Debt-GDP ratio shows an explosive growth

Exhibit 12



16. Projections of general government deficits and debt-GDP ratios

Assumptions:

(1) Japan's future real growth rate is based on the estimation of potential GDP growth rate by Rei Nishimura, Noritaka Hayashi and Chihiro Fujikawa. We assume that Japan's GDP reaches its potential level by 2014. Potential growth rate is estimated to be 0.5% after 2015 and 0.0% after 2031.

(2) GDP deflator inflation rate is project to reach zero in 2014. A zero deflator inflation rate is consistent with about 0.7% of core CPI inflation rate.

(3) Because of the exit from deflation, we assumed that the net interest rate on the net debt will rise from 1.1% in 2011 to 1.5% in 2016 and stable thereafter.

(4) The general government current revenue excluding consumption tax increases and investment revenue is assumed to be constant at 31.4% of GDP after 2013.

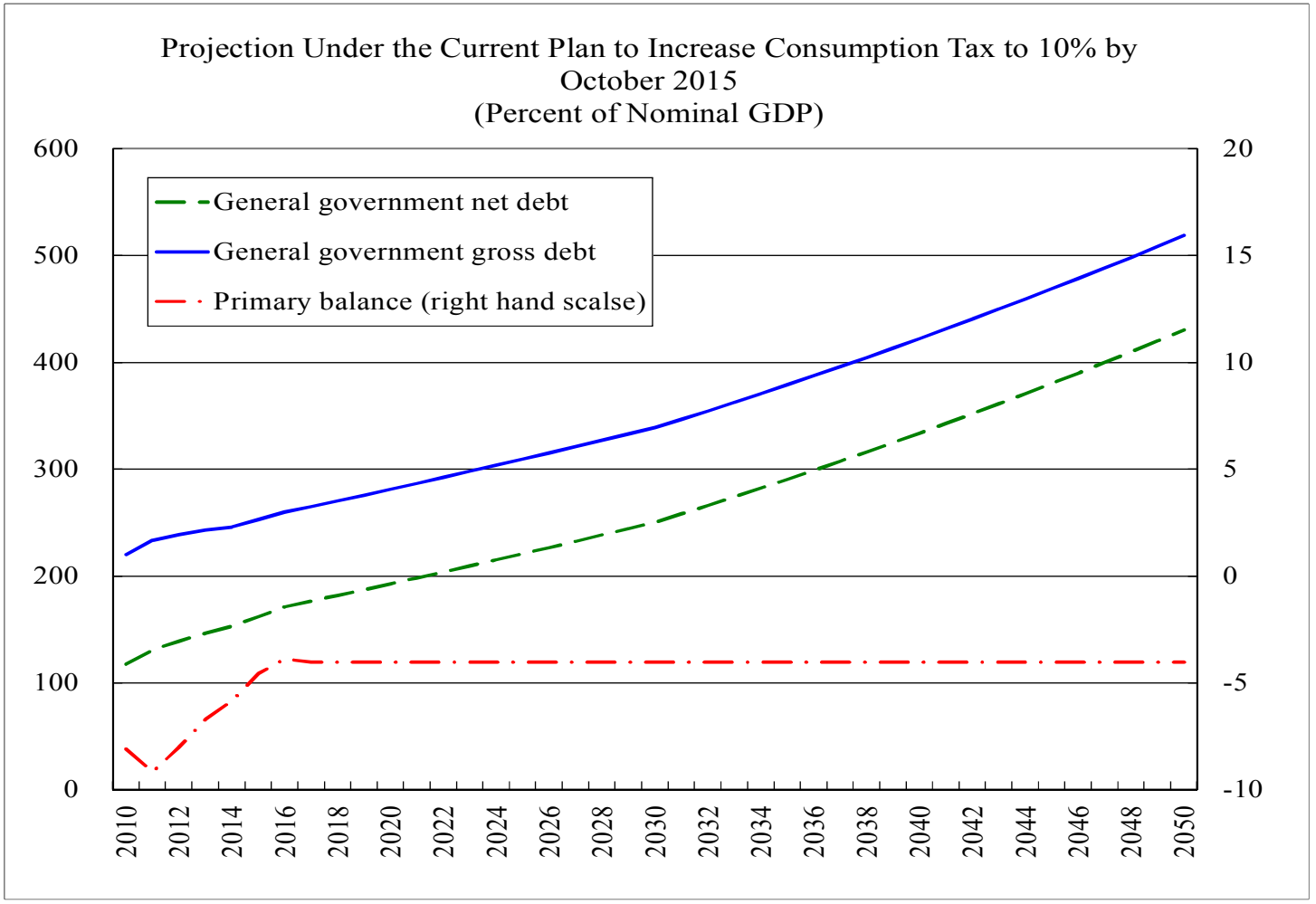
(5) The general government expenditures excluding interest payments are assumed to be constant at 37.1% of GDP after 2016.

(6) The tax revenue from one point of consumption tax is assumed to be 0.5 percent of nominal GDP.

(7) The gross financial asset of the general government is assumed to be constant at 88.6 percent of nominal GDP after 2016.

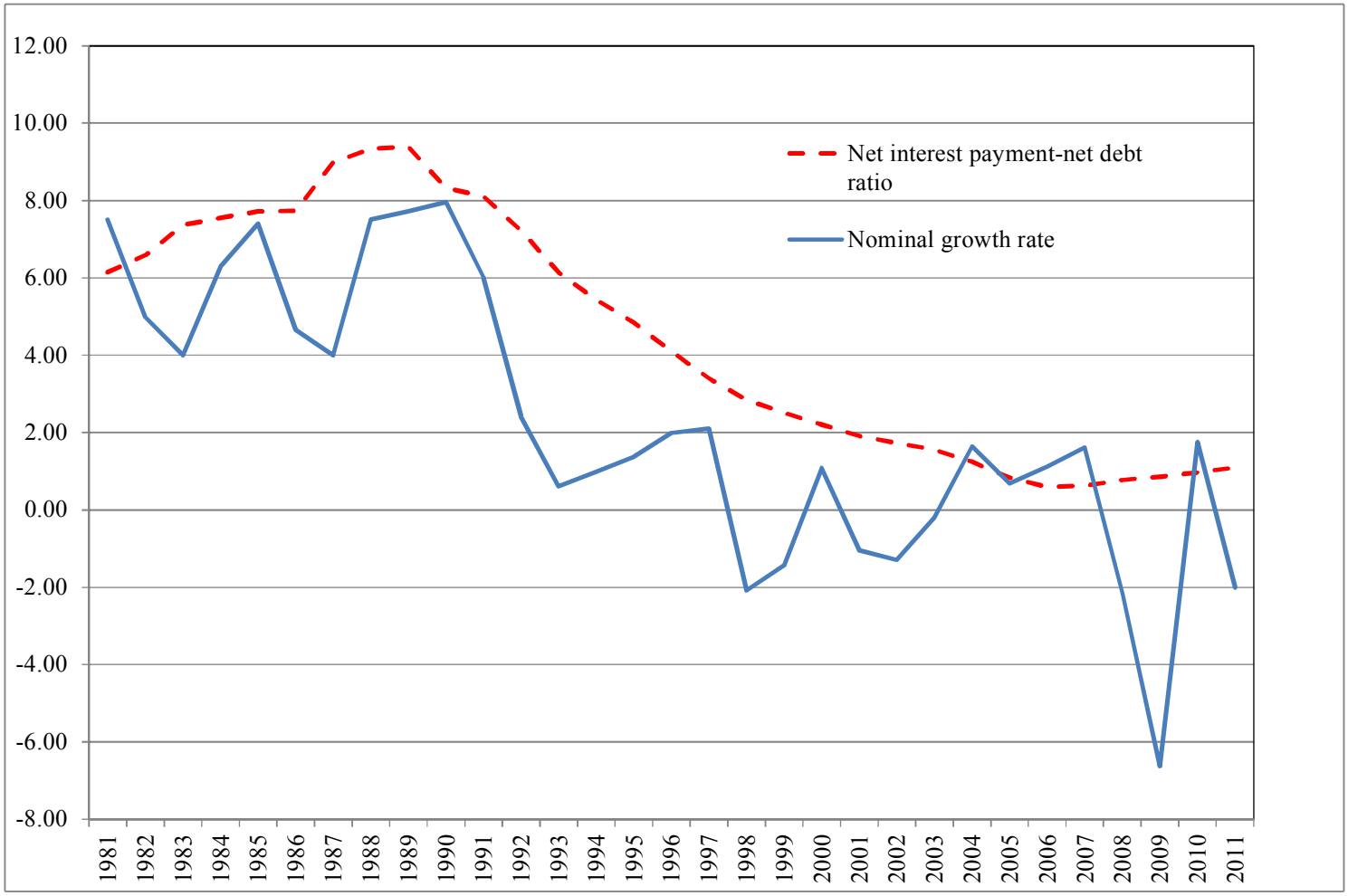
17. Projections under the current plan of tax increase

Exhibit 13



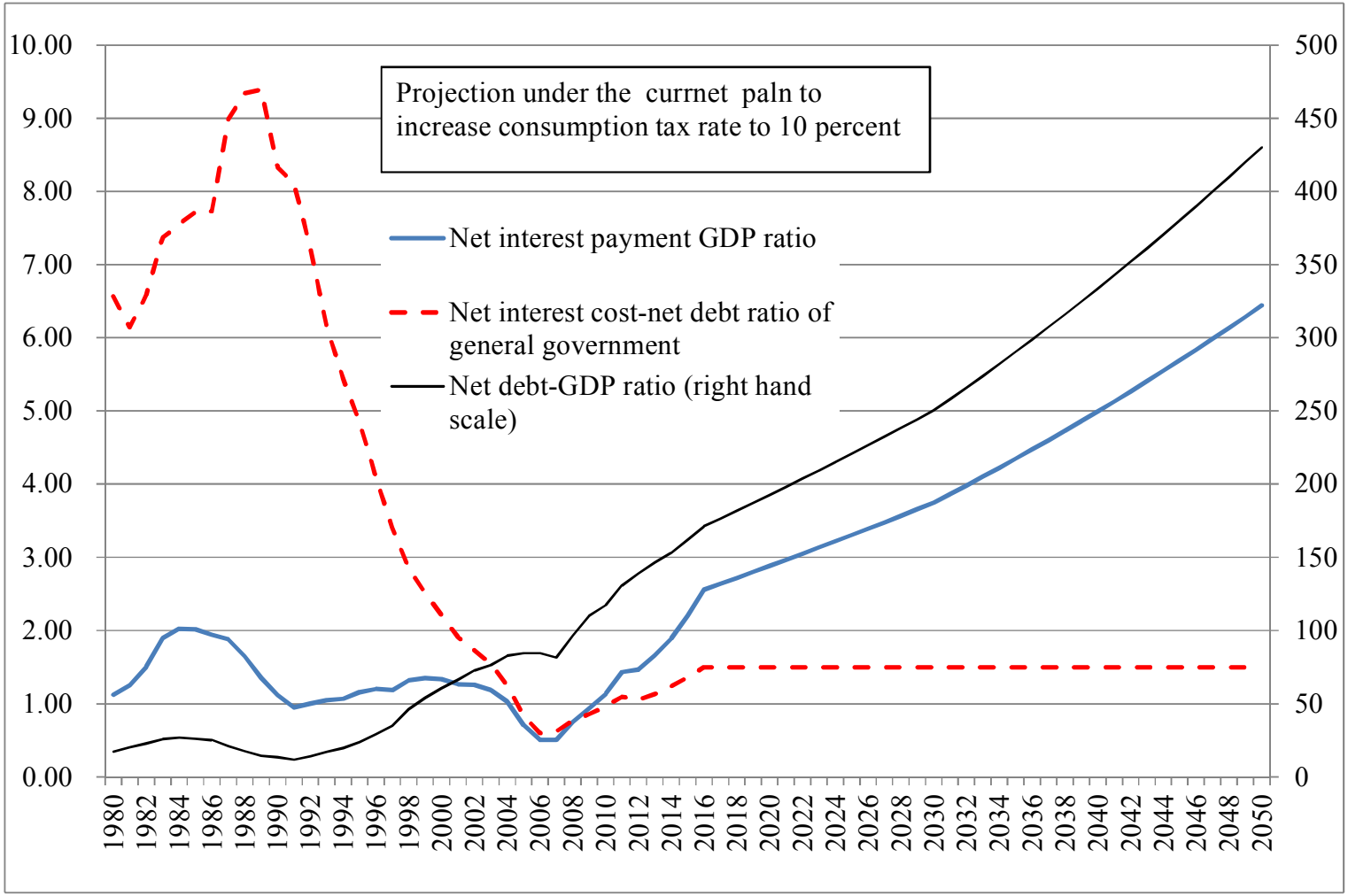
18. Past developments of nominal interest rate and nominal growth rate

Exhibit 14



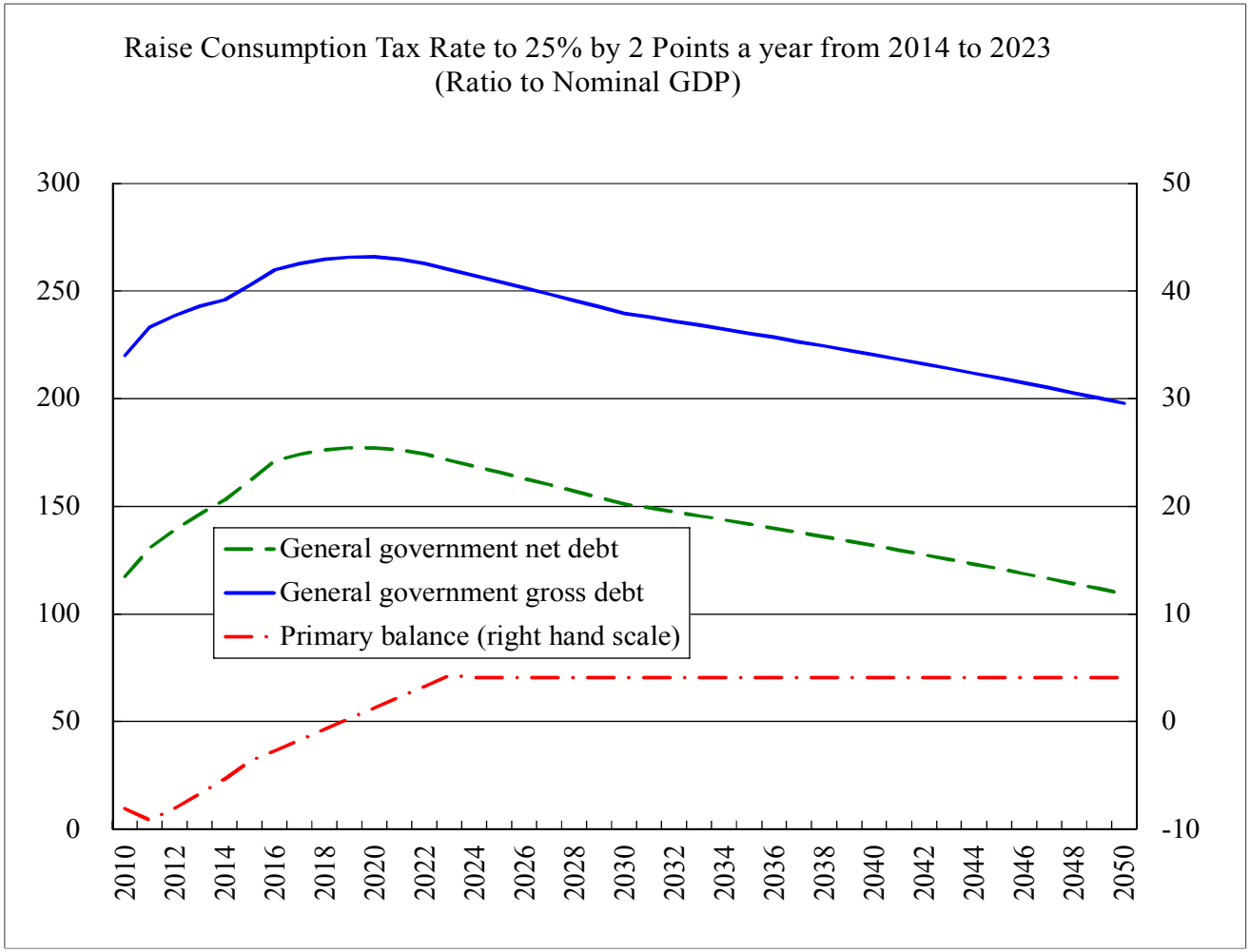
19. The interest cost of public debt is going to increase steadily

Exhibit 15



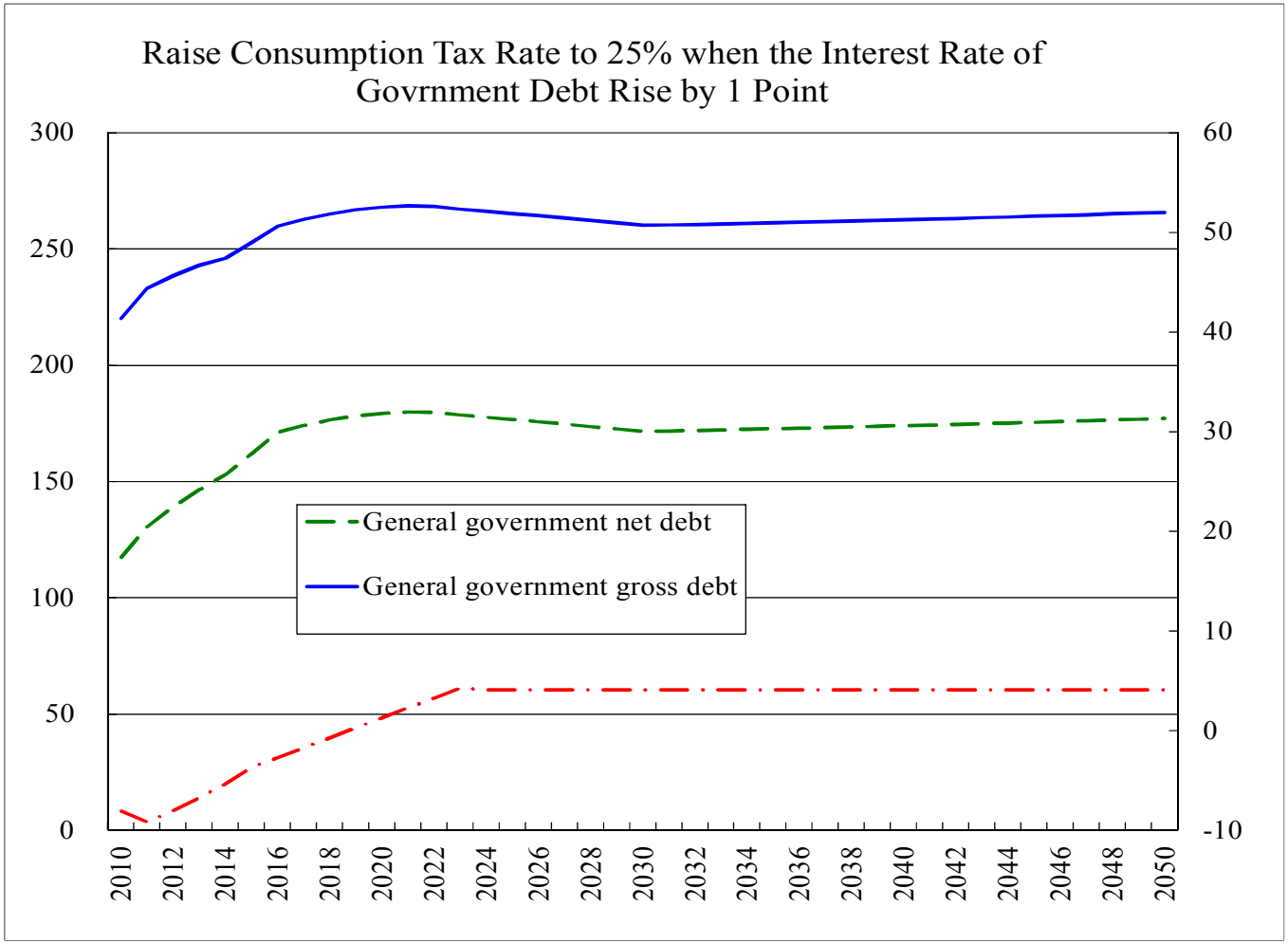
20. Consumption tax rate has to be raised to 25% to stabilize debt-GDP ratio

Exhibit 16



21. However, only one-point increase in interest will destabilize the budget.

Exhibit 17



22. A Scenario of Japanese Fiscal Crisis

(i) Bond prices will fall and market interest rates on JGB will rise.

(ii) The government will face a much higher cost of long-term debt and they try to minimize interest costs by shortening the term structure of national debt.

(iii) In view of the more fragile position of the government, the market participants will accelerate the sift from yen safe assets to real and foreign assets.

(iv) A very weak yen will stimulate the economy and push up wages and general prices. If the government can raise taxes and cut expenditures in this favorable economic situations, Japan can consolidate fiscal situations. However, if the government cannot tighten fiscal policy in a timely way, Japan will face the following bad scenario.

(v) The Bank of Japan tightens its monetary policy and interest rates will rise sharply.

(vi) The government has to pay much higher interest rate on its debts,

(vii) The interest payments may surpass tax revenues and public confidence will be eroded further.

(viii) Households with variable-rate mortgage start defaulting and banks that own large amount of long-term bonds will face possible bankruptcy.

23. Fiscal consolidation under deflation is difficult

Monetary policy is not so effective to support demand under fiscal consolidation.

(1) An open market purchase of short-term government papers by the Bank of Japan is no-longer effective because base money and zero-interest short-term government papers are almost perfect substitutes under zero-interest rate.

(2) Long-term bond yields have fallen to extremely low levels. A further injection of base money is not likely to push down long-term rates further.

(3) The Bank of Japan may buy real assets such as TOPIX based mutual funds and REIT (real estate investment trusts). This would stop the asset price deflation in the short run. However, as long as the steady deflation of goods and services continues, the net present value of future cash flow from these assets will decline and the short term positive effects of open-market purchase will disappear in the long run.

(4) One instrument that is effective under zero interest rate is the foreign exchange intervention. Unfortunately, the United States and the EU will object to such interventions.

24. Tax policies to stimulate the economy while increasing net tax revenue

(1) One possible way to raise tax is to use a part of the revenue to stimulate the expenditures.

One such policy is a combination of gradual increases in indirect taxes and gradual cut in direct taxes such as payroll tax for public pension plans, poll tax for national pension plan[2] and corporate income tax.

The government can also use carbon-emission tax to stimulate the economy. By pre-announcing a gradual increase in carbon-emission tax to cut greenhouse gas, the government can increase inflation expectations. Using a part of this tax revenue, the government can cut corporate income tax and provides subsidies for green investment.

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[2] Japanese public pension system for self-employed workers and part-time workers rely on fixed amount of contribution. Current pall tax is about 14,000 yen per month.

25. Possible use of Gesell tax

(1) Negative interest rate is not possible to achieve when there is a zero-interest safe asset; bank note.

(2) In General Theory, J. M. Keynes introduced an idea of Silvio Gesell, a stamp duty on bank notes.

(3) It is necessary to levy tax on all the outstanding safe assets to achieve a negative interest rate.

- The debtor government cuts its own debt by the amount of Gesell tax.
- The financial institutions that accept deposits have to levy Gesell tax on its liabilities and transfer the revenue to the government.
- In order to levy tax on cash, the Bank of Japan may introduce new banknotes and charge fees for exchange with old notes. The Bank can exchange 10,200 yen in old money with 10,000 yen in new money.
- A more elegant way to tax cash is to abolish cash completely and replace it with stored value cards issued by the Bank of Japan. At the beginning of a new year, the system can charge Gesell tax on each card when used.

26. The Effect of Gesell tax

(1) A pre-announced introduction of Gesell tax would encourage investments in stocks and real estate.

(2) This tax will stimulate bank lending and inter-corporate lending.
Banks' central bank deposits and government bonds will be taxed.
Companies also extend inter-corporate credits because cash will be taxed while receivables are not.

(3) The yen exchange rate would also depreciate against foreign currencies.

(4) The government will also benefit by the massive revenue from this tax. 2-percent tax would amount to about 30 trillion yen or six percent of Japan's GDP.

(5) Credit rating agencies will regard this tax as an event of partial default by the government even though the tax rate would be very low.

27. Concluding Comments: Policies to Improve Japanese Growth Rate

One possible policy option for Japan is the immigration policy. In order to partially offset the declining population, Japan may encourage intelligent foreign workers to migrate to Japan with the following policy measures:

(i) Give 5-year working visa to all foreign workers with good command of Japanese language and a job contract with a qualified Japanese company abroad or any company in Japan.

(ii) One simple screening method of Japanese proficiency is to require a foreigner to pass Japanese Language Proficiency Test. This test is carried out in 62 countries and more than 700,000 foreigners take this exam every year. About 50,000 pass the First Level each year. First Level is a fairly high score and it is usually required to study at Japanese Universities.

(iii) After 5 years of job experience either in Japan or abroad, Japanese government should give permanent working visa or allow naturalization.