



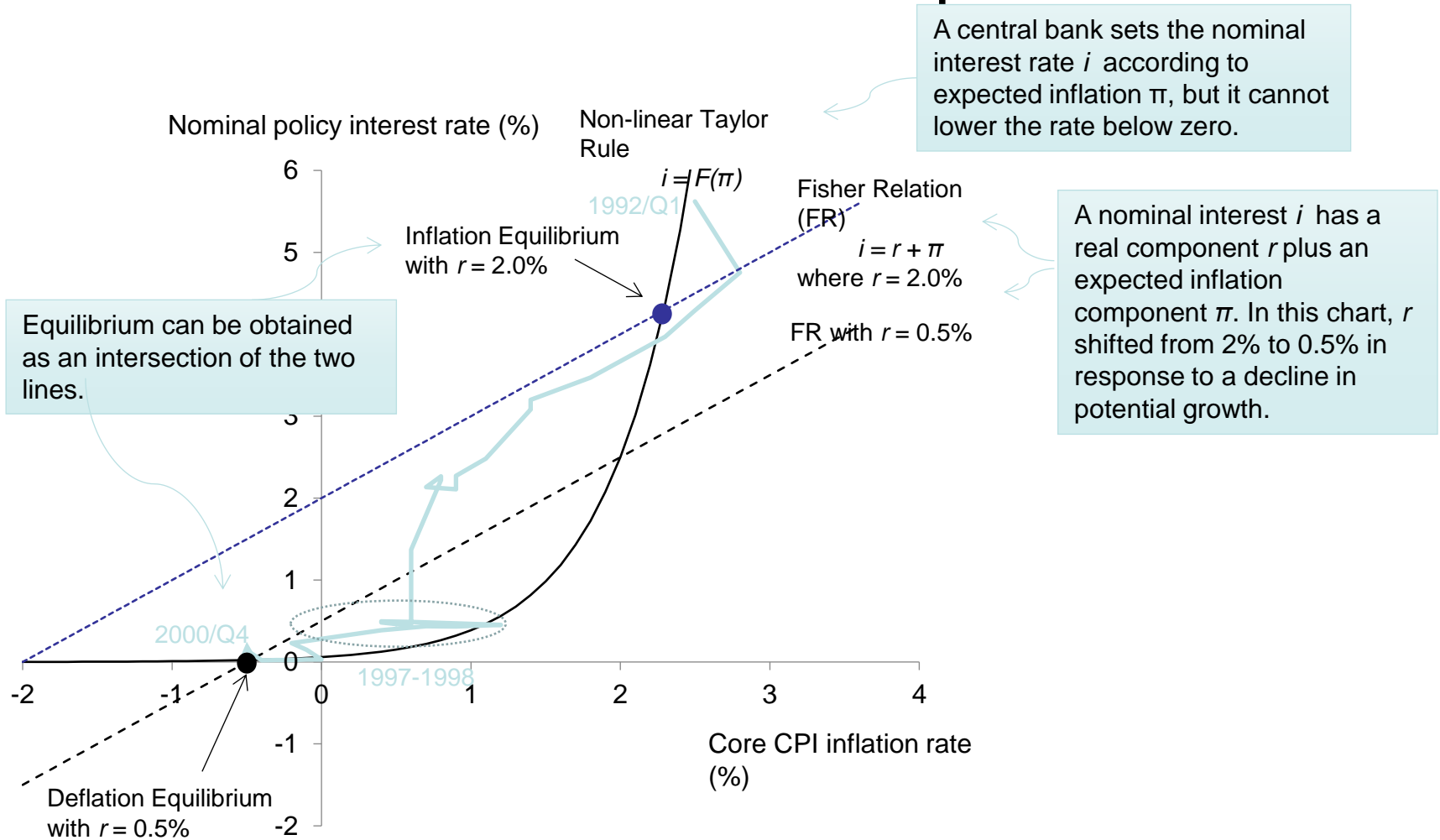
HITOTSUBASHI  
UNIVERSITY

一橋大学政策フォーラム  
「金利のある世界」  
パネル討論

2025年1月30日

関根敏隆  
一橋大学

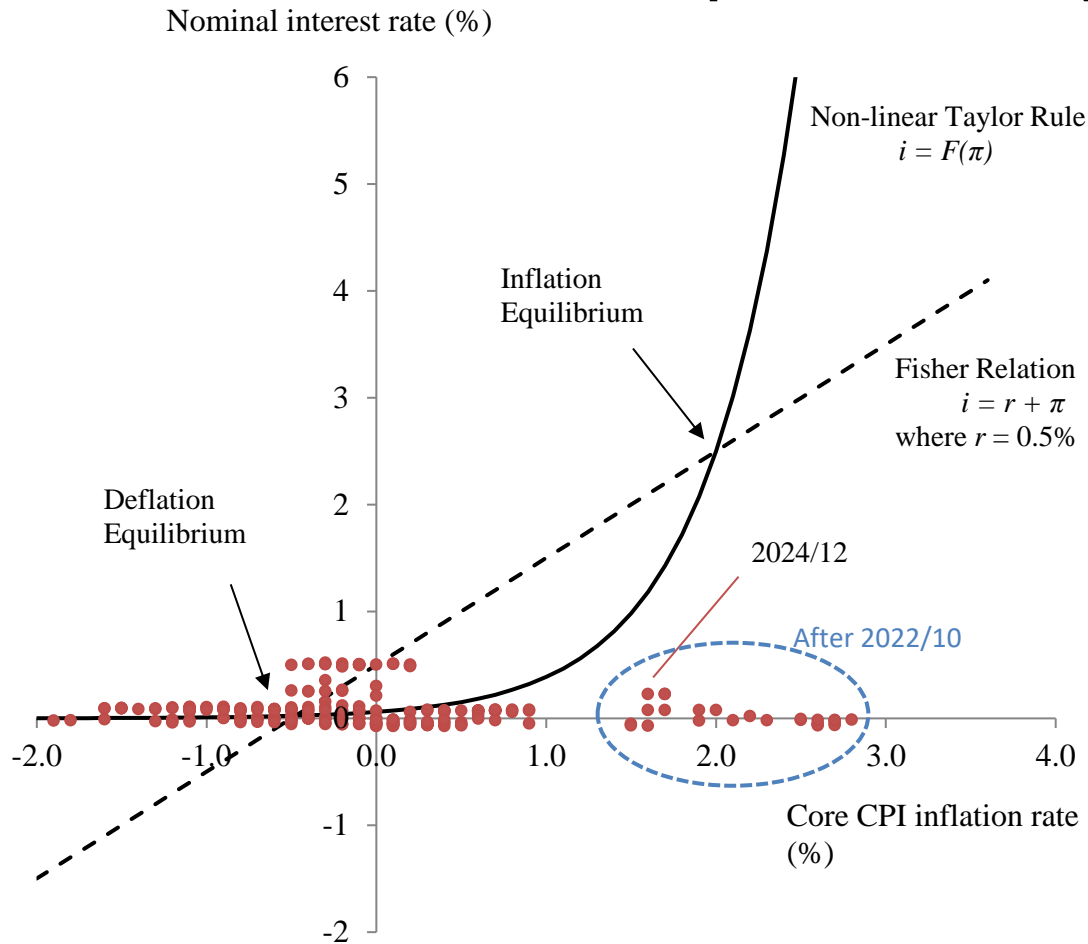
# Deflation and Inflation equilibrium



Note: Core CPI inflation rate, which is a proxy of expected inflation, is defined as CPI excluding food and energy.

Source: Bullard, J. (2010): "Seven Faces of 'The Peril'," *Federal Reserve Bank of St. Louis Review*, September/October, pp.339-352.

# Deflation and Inflation equilibrium (Update)



Note: Dots are data plots of nominal interest rate and core CPI inflation rate from January 2002 to the latest.

Core inflation is defined as CPI excluding food and energy. Consumption tax effects are excluded for Japan.

Source: Bullard, J. (2010): "Seven Faces of 'The Peril'," *Federal Reserve Bank of St. Louis Review*, September/October, pp.339-352.

# Original Taylor Rule

$$i_t = \pi_t + r_t^* + \alpha_\pi(\pi_t - \pi_t^*) + \alpha_y(y_t - y_t^*)$$

where  $r_t^*$  is the natural rate of interest and  $\pi_t^*$  is inflation target. Taylor finds that the following simple equation fits the actual FF rate well.

$$i_t = \pi_t + 2 + 0.5(\pi_t - 2) + 0.5(y_t - y_t^*)$$

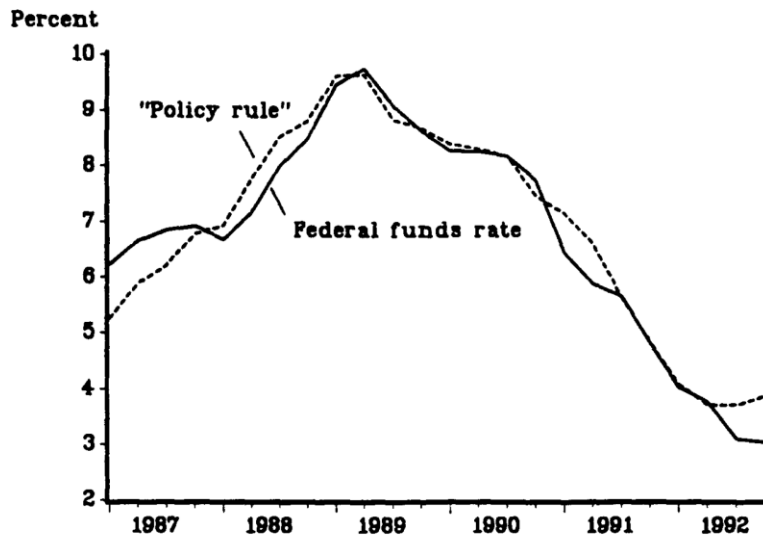
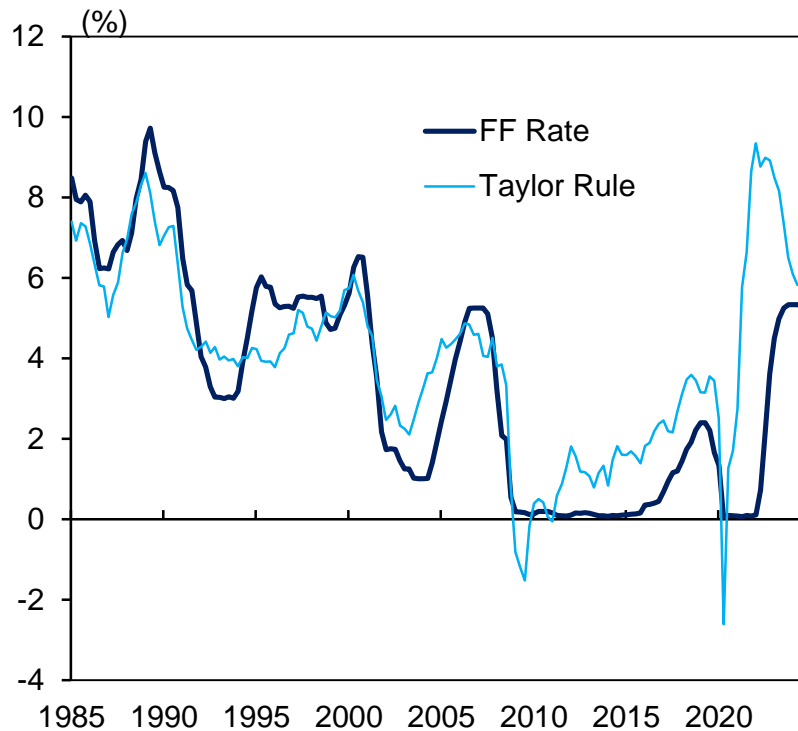


Figure 1. Federal funds rate and example policy rule.

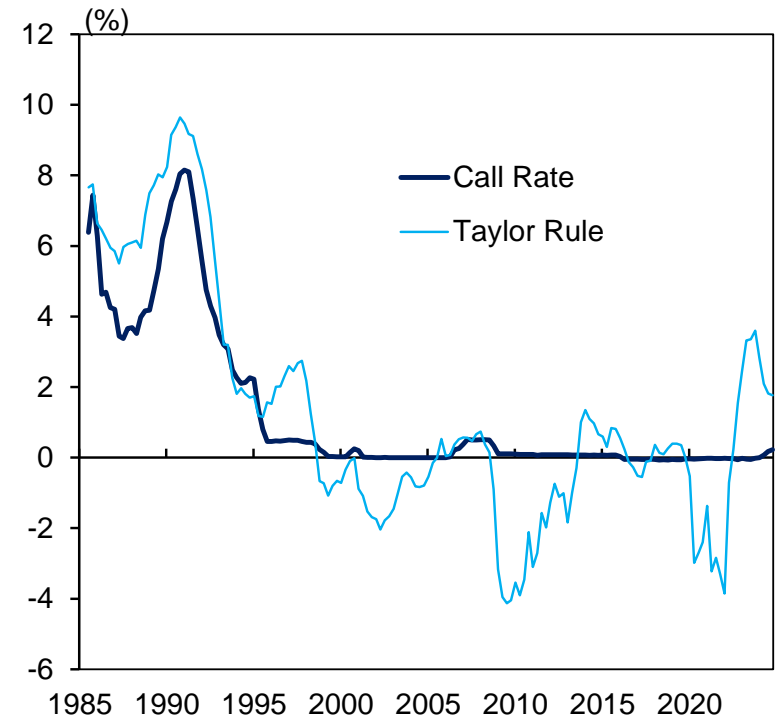
Taylor, J. (1993): "Discretion and Rule in Practice," *Carnegie-Rochester Conference Series on Public Policy*.

# Taylor Rule (Update)

United States



Japan

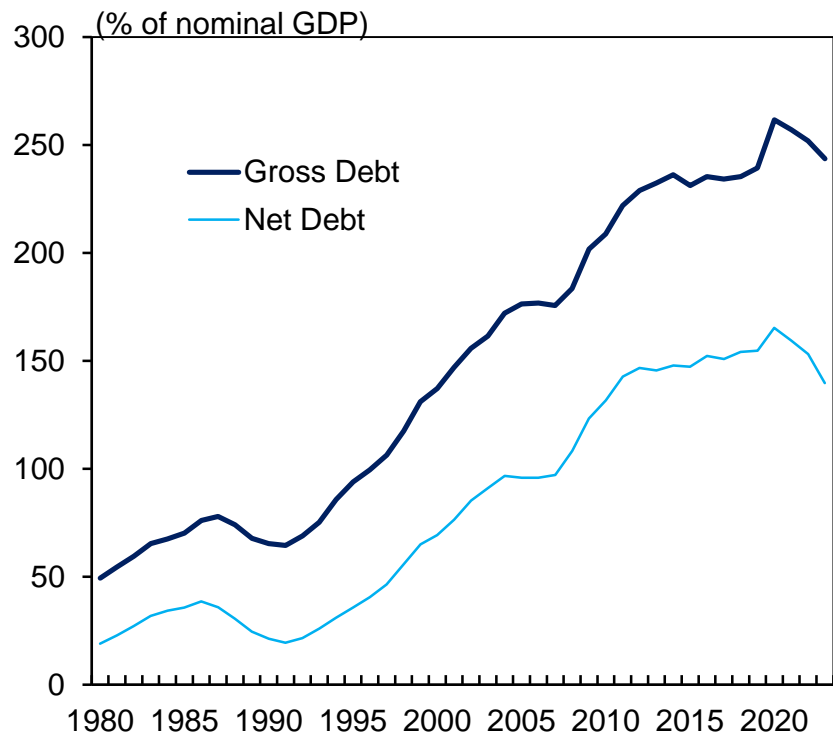


Note: Based on the original Taylor rule specification. BoJ's targeted inflation is assumed to be 1% prior to the adoption of 2% inflation target in 2013Q1. The natural rate of interest  $r_t^*$  is supposed to be equal to the potential real GDP growth rate. CPI inflation is measured by core (excluding food and energy).

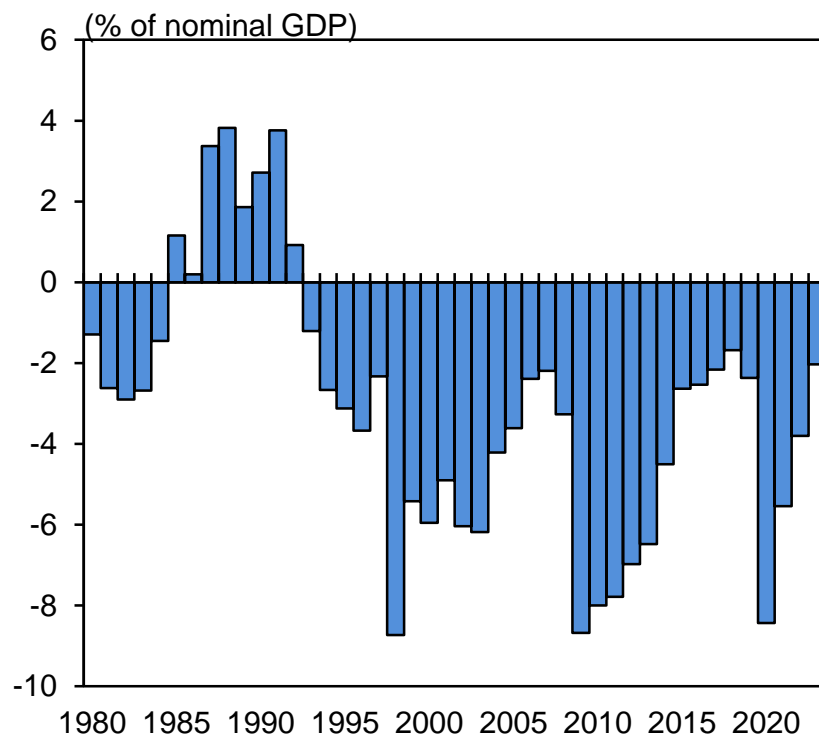
Source: FRED, Bank of Japan

# Fiscal Sustainability?

## 政府債務残高



## 基礎的財政収支



$$r < g$$

- By definition, government debt ( $D_t$ ) evolves

$$D_t - D_{t-1} = G_t - T_t + rD_{t-1}$$

where  $G_t - T_t$  is the primary balance ( $PB_t$ ), government expenditures ( $G_t$ ) minus tax revenue ( $T_t$ ), and  $rD_{t-1}$  is interest payments.

- Divide the both side by GDP  $Y_t$  and using  $Y_t = (1 + g_t)Y_{t-1}$  where  $g_t$  is GDP growth rate, then

$$\frac{D_t}{Y_t} - \frac{D_{t-1}}{Y_{t-1}} = \frac{r - g}{1 + g} \times \frac{D_{t-1}}{Y_{t-1}} + \frac{PB_t}{Y_t}$$

# 何故、政府債務残高のGDP比率は 拡大スピードを減じたのか

## 政府債務、財政収支、成長率、利子率

	(A)	(B)	(B) - (A)
	1995-2012	2013-2023	差分
	年平均	年平均	年平均
政府債務残高変化幅（対GDP比前年差、%pt）	8.0	1.3	-6.6
政府純債務残高変化幅（対GDP比前年差、%pt）	6.4	-0.6	-7.1
基礎的財政収支（対GDP比赤字幅、%）	5.2	3.8	-1.4
名目GDP成長率（前年比、%） (C)	-0.1	1.6	1.7
政府債務利子率（%） (D)	2.0	0.8	-1.2
純政府債務利子率（%） (F)	1.7	0.5	-1.2
10年物国債利回り（%）	1.6	0.2	-1.4
r-g (D) - (C)	2.1	-0.8	
r-g (F) - (C)	1.8	-1.0	

（出所）内閣府「国民経済計算」、FRED

（注）（純）政府債務利子率は（純）利払費を前年末の（純）債務残高で割って計算



# Active and Passive Policy Regimes

	Active MP	Passive MP
Active FP (non-Ricardian)	Explosive	Fiscal Regime Gov determined Price Level
Passive FP (Ricardian)	Monetary Regime CB determined Price Level	Non-determinant

- Active (Passive) Monetary Policy: CB raises the policy interest rate more (less) than inflation rate.
- Active (Passive) Fiscal Policy: Gov reduces (increases) surplus against real debt outstanding. Under passive FP, Gov repay debt by surplus, whereas under active FP, Gov uses inflation to reduce real debt outstanding.