

Unbacked Fiscal Expansion: 1933 America & Contemporary Japan

Eric M. Leeper

Indiana University

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What I'll Do

- ▶ Illustrate Roosevelt's 1933 recovery efforts
 - ▶ differentiate between “unbacked” and “backed” fiscal expansion
 - ▶ departure from conventional Keynesian hydraulics
 - ▶ draws on “Recovery in 1933” with Maggie Jacobson & Bruce Preston
- ▶ Discuss how to extend fiscal theory reasoning to open economies
 - ▶ highlight features relevant to Japan
- ▶ Extract lessons for Japan

Recovery Narrative

- ▶ Roosevelt engineered an **unbacked fiscal expansion** to spur economic recovery
- ▶ In an unbacked fiscal expansion, government. . .
 1. increases spending—purchases or transfers
 2. issues nominal bonds to cover the deficit
 3. convinces people it will not raise taxes or cut spending in future to pay off the bonds
- ▶ New nominal debt is not expected to be “backed” by higher primary surpluses
 - ▶ agents see growth in nominal debt & no prospect of higher taxes/lower spending
 - ▶ higher inflation \Rightarrow nominal assets unattractive
 - ▶ shift out of assets into goods
 - ▶ raises aggregate demand: higher prices & output
 - ▶ Pigou-Keynes-Patinkin wealth effect

Recovery Narrative

1. Single-minded objectives

- ▶ “to restore commodity price levels. . .” & “get people back to work”
- ▶ once price level restored, maintain its constant value
- ▶ shift focus away from international to domestic concerns

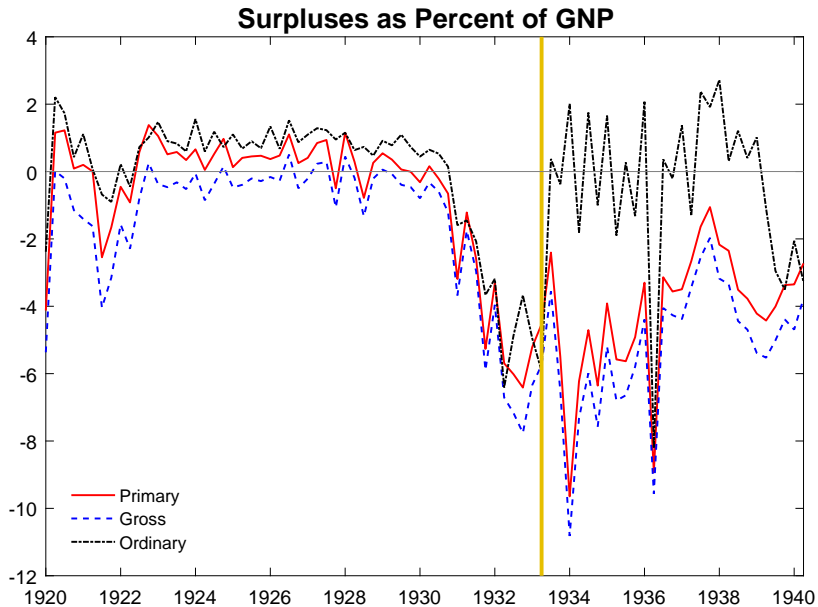
2. Leaving gold standard a necessary condition

- ▶ Congress abrogated gold clauses in all public & private debt contracts—present & past
- ▶ converted effectively real debt into *nominal* debt

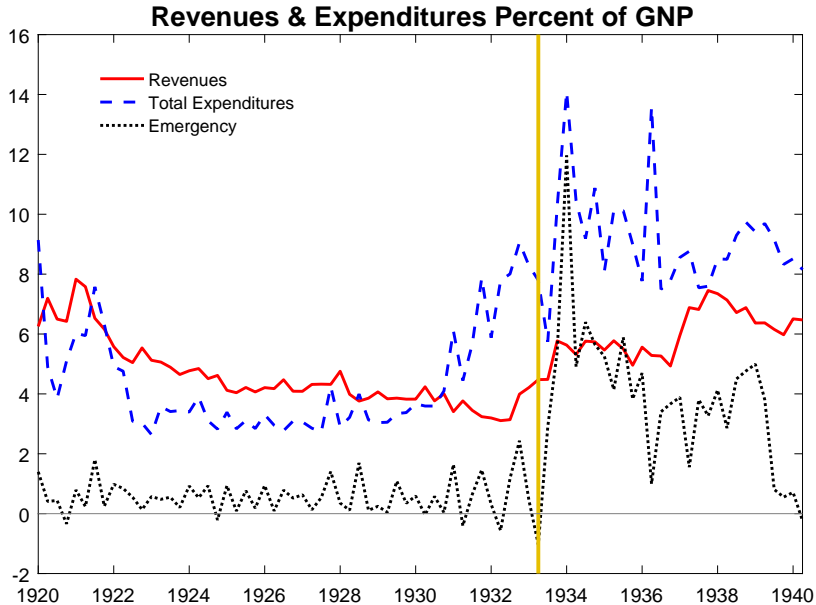
3. FDR kept citizens focused on recovery objectives

- ▶ committed to run “emergency deficits” until economy recovered
- ▶ making recovery *the* priority, shifted beliefs from orthodoxy that fiscal expansion begets consolidation

Fiscal Policy Behavior



Revenues & Expenditures



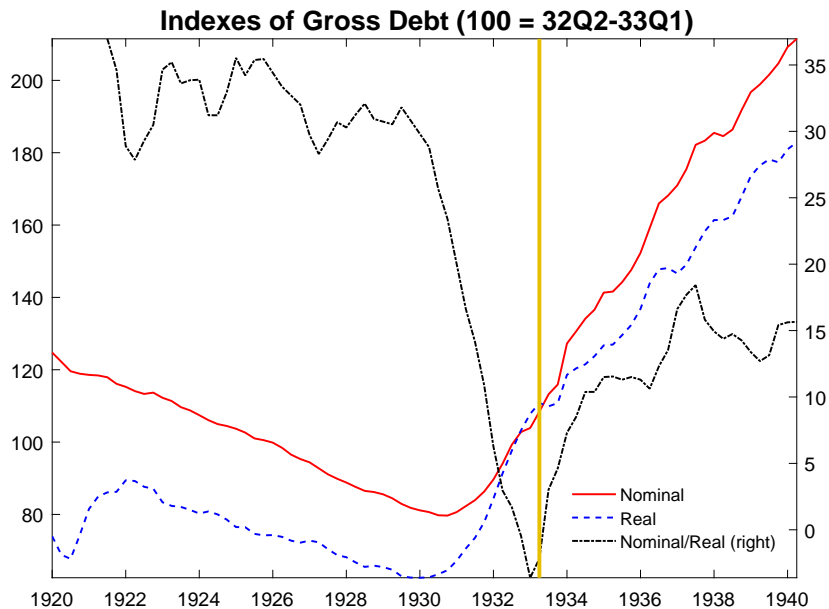
Recovery Narrative

4. Fiscal choices state-dependent & temporary
 - ▶ FDR: “the deficit of today makes possible the surplus of tomorrow”
 - ▶ fiscal stimulus *not* a one-off policy

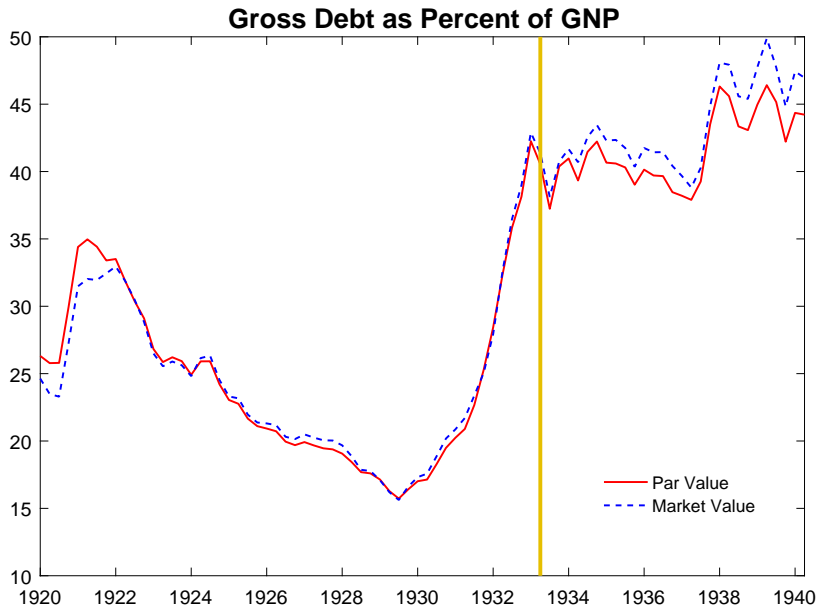
5. FDR framed argument for recovery in stark terms
 - ▶ fighting a “war for the survival of democracy”
 - ▶ choice between “. . . a rise in prices or a rise in dictators”
 - ▶ by making stakes high, he could credibly suspend his deeply-held beliefs in sound finance *temporarily*

6. Nominal debt financed deficits (doubled in 7 years)
 - ▶ pegged interest rate stabilized debt
 - ▶ ensures interest payments don't explode debt
 - ▶ with reflation & recovery, government credit grew stronger, interest rates on borrowing declined

Government Bond Valuation



Debt Stabilization

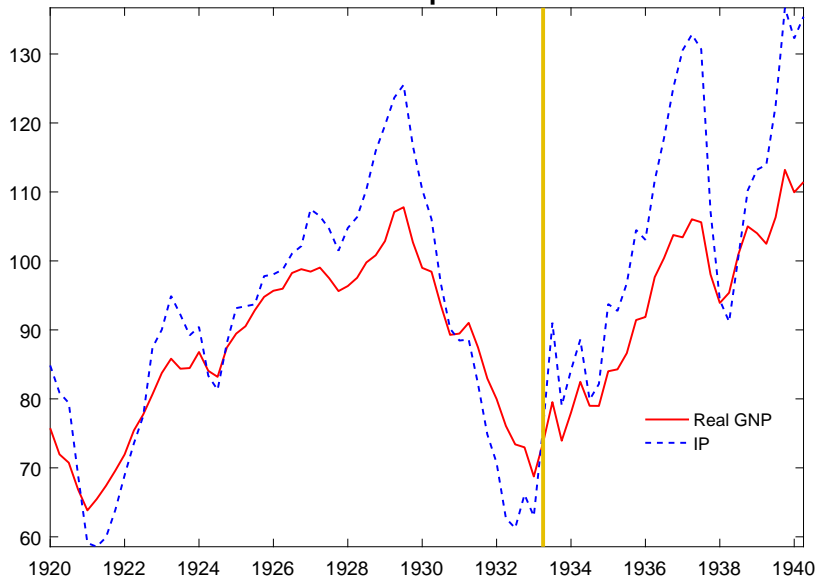


Recovery Was Stunning

- ▶ Remarkable timing of recovery: April 1933 the economy turned around
- ▶ Coincides with departure from gold
 - ▶ over course of 1933, Treasury & FDR steadily raised dollar price of gold from \$20.67 to \$30 an ounce
 - ▶ FDR was clear there would be no return to gold
- ▶ U.S. dollar depreciated sharply: from 3.3 to 5.1 \$/£ in the year starting December 1932
 - ▶ comparable to depreciation of sterling after U.K. left gold in 1931
 - ▶ ushered in commodity price increases
- ▶ Jalil-Rua: inflation expectations rose sharply 1933Q2

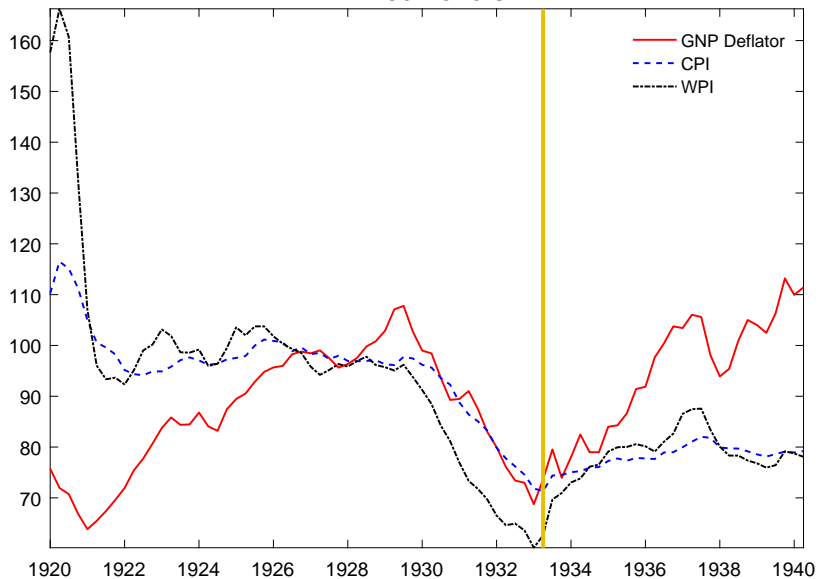
Real Economic Activity

Output



Nominal Economic Activity

Price Levels



Keynesian Hydraulics vs. UBFE

- ▶ Conventional thinking about fiscal stimulus
 - ▶ grounded in what Coddington calls “hydraulic Keynesianism”
- ▶ Textbook Keynesian: higher government spending. . .
 - ▶ raises *real* income/expenditures flows through multiplier mechanism
 - ▶ debt-financed deficits not part of the mechanism
 - ▶ reflected in most new Keynesian analyses
- ▶ Simple theory contrasts hydraulics with unbacked fiscal expansion
 - ▶ ask: what are the impacts of government spending increase?

Keynesian Hydraulics vs. UBFE: A Model

- ▶ Preferences: $c^{1-\sigma}/(1-\sigma) - n^{1+\xi}/(1+\xi)$
- ▶ Technology: $y_t = n_t$
- ▶ Representative household budget constraint

$$P_t c_t + P_t \tau_t + \frac{B_t}{i_t} = W_t n_t + B_{t-1}$$

- ▶ Government budget constraint

$$\frac{B_t}{i_t} + P_t \tau_t = B_{t-1} + P_t g_t$$

- ▶ Policy

Monetary Policy: $i_t = \phi(\pi_t)$

Tax Policy: $\tau_t = \psi(B_{t-1}/P_{t-1})$

Spending Policy: $g_t \sim i.i.d.$

- ▶ Flexible wages & prices (for this illustration)

Keynesian Hydraulics vs. UBFE: A Model

- ▶ Linearized dynamics (log deviations from ss)

$$\phi\pi_t = E_t\pi_{t+1} + \sigma_g g_t$$

$$b_t = \beta^{-1}(1 - \psi)b_{t-1} + (\phi - \beta^{-1})\pi_t + \beta^{-1}g_b g_t$$

$$\sigma_g = s_g/(\sigma^{-1}s_c + \xi^{-1}), \quad g_b \equiv g/b, \quad b \equiv B/P$$

- ▶ Two policy regimes deliver unique bounded equilibria

$$\text{Regime M: } \phi_M > 1 \quad \text{and} \quad \psi_M > 1 - \beta$$

$$\text{Regime F: } 0 \leq \phi_F < 1 \quad \text{and} \quad 0 \leq \psi_F < 1 - \beta$$

- ▶ Regime M: Keynesian hydraulics
 - ▶ akin to “balanced-budget multiplier”
 - ▶ debt-financed fiscal expansions backed by taxes
- ▶ Regime F: Unbacked fiscal expansion
 - ▶ Keynesian hydraulics + nominal debt dynamics
 - ▶ debt-financed fiscal expansions are unbacked

Keynesian Hydraulics vs. UBFE: A Model

- ▶ Real equilibrium identical in two regimes

$$r_t = i_t - E_t \pi_{t+1} = \sigma_g g_t$$

$$y_t = \xi^{-1} r_t$$

$$c_t = -\sigma^{-1} r_t$$

- ▶ Mechanism: higher g_t triggers
 - ▶ higher demand for goods today
 - ▶ higher real interest rate
 - ▶ substitute into work today
 - ▶ output rises by less than g_t
 - ▶ consumption crowded out
- ▶ With flexible prices, this is the neoclassical outcome

Inflation Effects Depend on Regime

► Regime M

$\phi_M \pi_t - E_t \pi_{t+1} = r_t \Rightarrow$ equilibrium inflation is

$$\pi_{t+j} = \begin{cases} \frac{1}{\phi_M} r_t, & j = 0 \\ 0, & j > 0 \end{cases}$$

► higher demand lasts only 1 period
government debt evolves as

$$b_t = \underbrace{\beta^{-1}(1 - \psi_M)}_{< 1} b_{t-1} + \underbrace{(\phi_M - \beta^{-1}) \frac{1}{\phi_M} r_t}_{\text{revaluation}} + \underbrace{\beta^{-1} g_b g_t}_{\text{debt accumulation}}$$

► hawkish monetary policy: revaluation can *raise* value of debt because future taxes assured

Inflation Effects Depend on Regime

- ▶ **Regime F** (set $\psi_F = 0$)
equilibrium inflation is

$$\pi_{t+j} = \begin{cases} b_{t-1} + \beta r_t + g_b g_t, & j = 0 \\ b_{t+j-1}, & j > 0 \end{cases}$$

- ▶ monetary policy cannot affect impact
- ▶ direct effect of debt
- ▶ separate effect of g_t : higher g/y or lower b/y amplifies government debt evolves as

$$b_t = \underbrace{\phi_F}_{< 1} b_{t-1} + \underbrace{(\phi_F - \beta^{-1})\beta r_t}_{\text{revaluation always } < 0} + \underbrace{\phi_F g_b g_t}_{\text{debt accumulation}}$$

- ▶ monetary policy propagates effects of g_t on inflation
- ▶ raising i with π increases debt service

Inflation Effects Depend on Regime

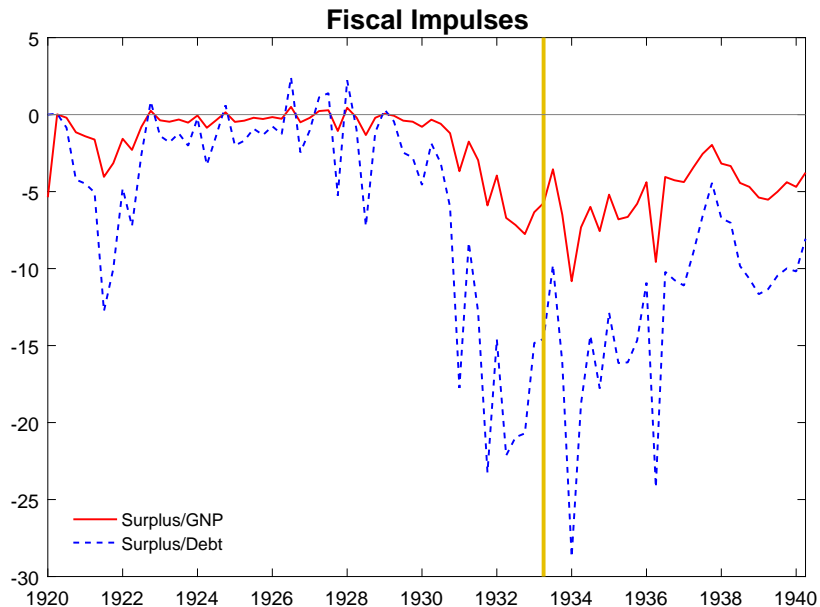
Impact effects ($j = 0$)

$$\pi_t = \begin{cases} \underbrace{\frac{1}{\phi_M} r_t}_{\text{Keynesian hydraulics}} & \text{Regime M} \\ \underbrace{\beta r_t}_{\text{Keynesian hydraulics}} + \underbrace{g_b g_t}_{\text{nominal debt dynamics}} & \text{Regime F} \end{cases}$$

Dynamic effects ($j > 0$)

$$\pi_{t+j} = \begin{cases} \underbrace{0}_{\text{Keynesian hydraulics}} & \text{Regime M} \\ \underbrace{\phi_F^j \beta r_t}_{\text{Keynesian hydraulics}} + \underbrace{\phi_F^{j-1} (\phi_F g_b - \sigma_g) g_t}_{\text{nominal debt dynamics}} & \text{Regime F} \end{cases}$$

Lower Debt \Rightarrow Bigger Fiscal Impulse



Implications

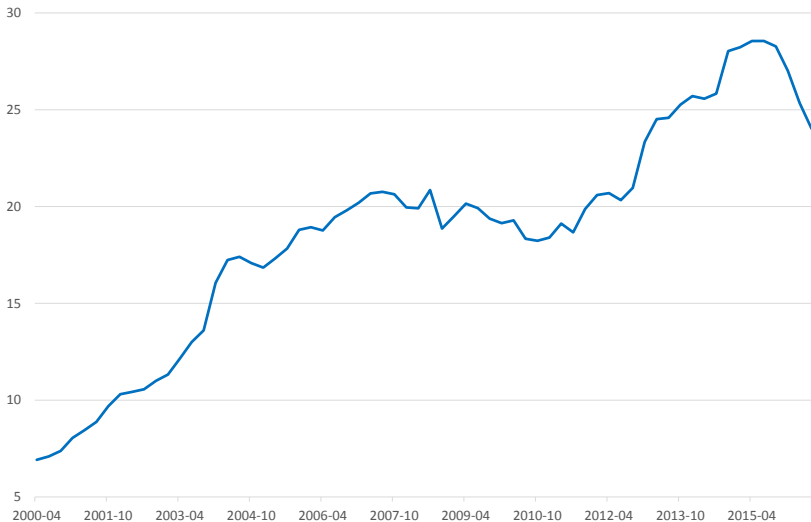
1. BoJ has been mostly living in regime F for decades
 - ▶ just as the Fed in the 1930s
 - ▶ less clear whether MoF has been living in regime F
2. Much bigger fiscal effects in regime F
 - ▶ eliminates negative wealth effect in regime M:
higher $g_t \Rightarrow$ higher τ_{t+k}
 - ▶ instead, nominal debt dynamics *raise* wealth
3. No conflict between stimulus & sustainability
 - ▶ debt stable in both regimes M & F
4. Need to anchor expectations appropriately
 - ▶ FDR convinced people policy was regime F until recovery
5. Level of government debt matters
 - ▶ g_t has more kick in low-debt economies
6. Regime F is not necessarily bad
 - ▶ elements of regime F generically part of optimal monetary/fiscal mix

Theoretical Extensions Important for Japan

1. Integrate price-level & exchange-rate determination
 - ▶ natural extension of intertemporal approach to CA
 - ▶ delivers equilibrium conditions for open economies
2. Special to Japan
 - ▶ financial sector heavily invested in government bonds (43%)
 - ▶ government owns sizeable international reserves (23% of GDP since 2000)
 - ▶ private sector holdings of foreign assets small relative to government's
 - ▶ central bank holds substantial government debt (38%)
 - ▶ chronic trade surpluses
 - ▶ little foreign ownership of government bonds (10%)
3. When government owns foreign assets, price level reflects present values of primary budget surpluses *and* trade balances

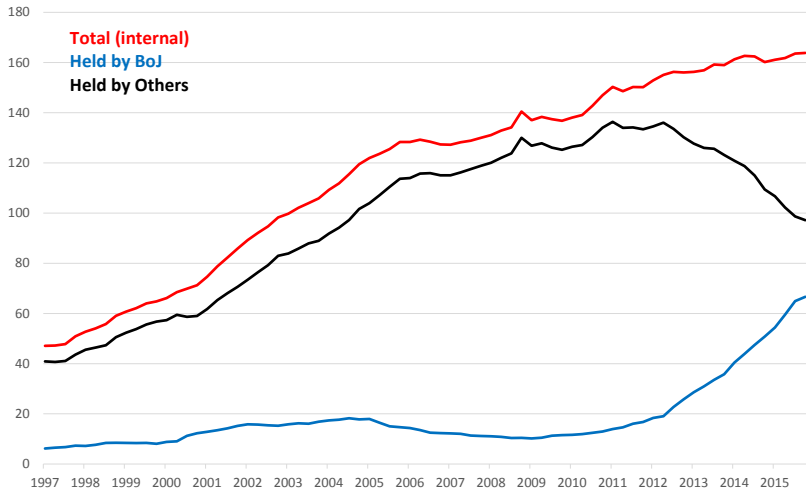
Sizeable Official Reserves

Japanese Official Reserves
Percentage of GDP



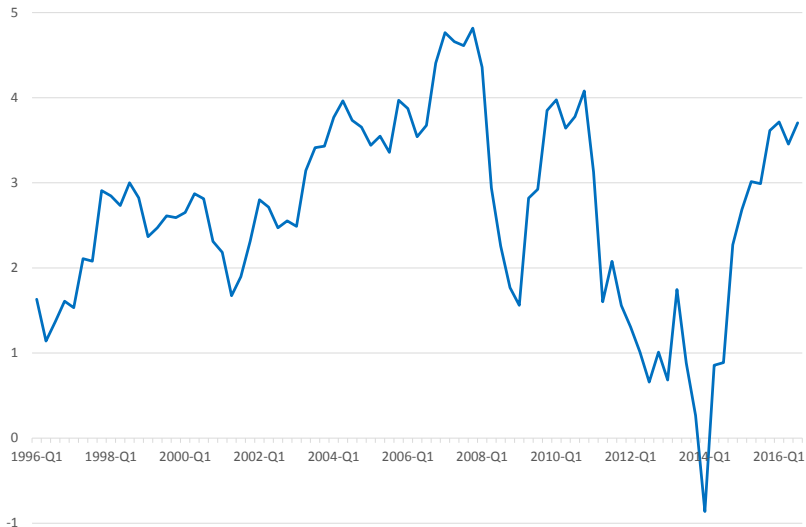
Growing BoJ Ownership of Bonds

Japanese Central Government Debt
Percentage of GDP



Persistent Trade Surpluses

Japanese Trade Balance
Percentage of GDP



Contrasts Between FDR & Japan

1. Japanese policies have lacked single-mindedness
 - ▶ BoJ raised rates in early 90s; again in 2006–08
 - ▶ governments have flip-flopped on fiscal policy
 - ▶ stimulus followed by consolidation
 - ▶ caved to IMF pressure to raise consumption tax
 - ▶ not engaging in unbacked fiscal expansion
2. Japanese policies not state-contingent
 - ▶ government spending typically one-off
 - ▶ consumption tax hikes permanent
3. Objectives have been confused
 - ▶ one day it's recovery; next day it's debt reduction
4. Policymakers perceive the hydraulics trade-off
 - ▶ tension between fiscal stimulus & sustainability
 - ▶ no such trade-off for unbacked expansions