

The Mistake of 1937: A General Equilibrium Analysis

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Discussion: Athanasios Orphanides
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The opinions expressed are those of the author and do not necessarily reflect the views of the Board of Governors
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Praise

- An attempt to tackle a controversial policy question of first order practical significance.
 - Experiences with deflation *and* the zero bound on short-term nominal interest rates have been rather uncommon.
 - But the observed experiences (e.g. U.S. during the 1930s and Japan in last several years) have been extremely costly.
- A rare mix of fancy theoretical footwork and serious look at history for validation and for drawing policy lessons.

Criticism

- An example of overinterpreting the limits of theoretical simplifications leading to:
 - a false interpretation of history.
 - potentially seriously misleading policy conclusions.

An Impossible Task for a Discussant

- Attempt to cover both the many reasons for praise and at least some of the many many reasons for skepticism in just 12 minutes.

Outline of Main Arguments: I

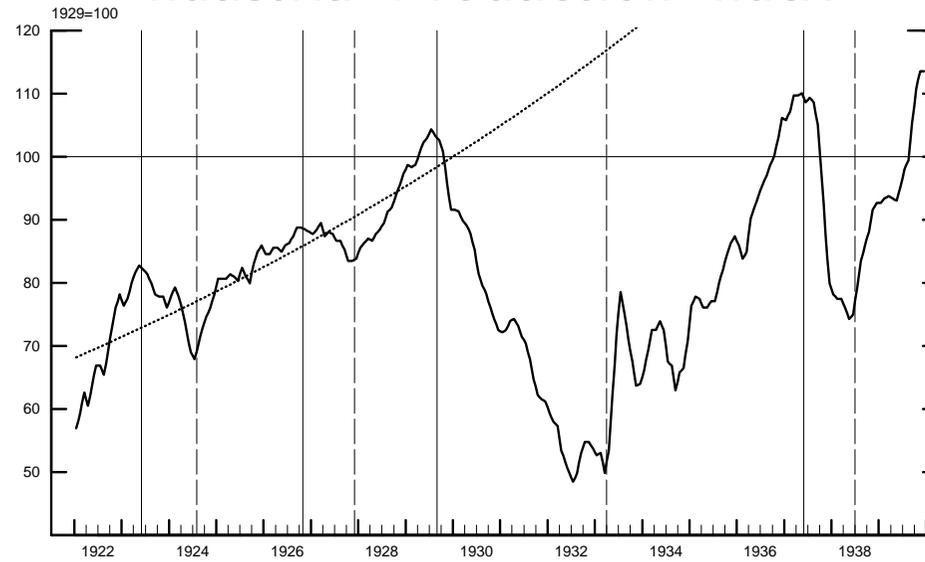
- Develop a general equilibrium New-Keynesian model of the liquidity trap.
- By construction, in this model CB **actions** are irrelevant when the short-term nominal interest is zero.
- In particular, “the evolution of monetary aggregates is completely irrelevant.” (p. 3.)
- By assumption, CB **words** alone constitute an effective mechanism to shape expectations, independent of CB actions regarding the money supply (or anything else for that matter).

Outline of Main Arguments: II

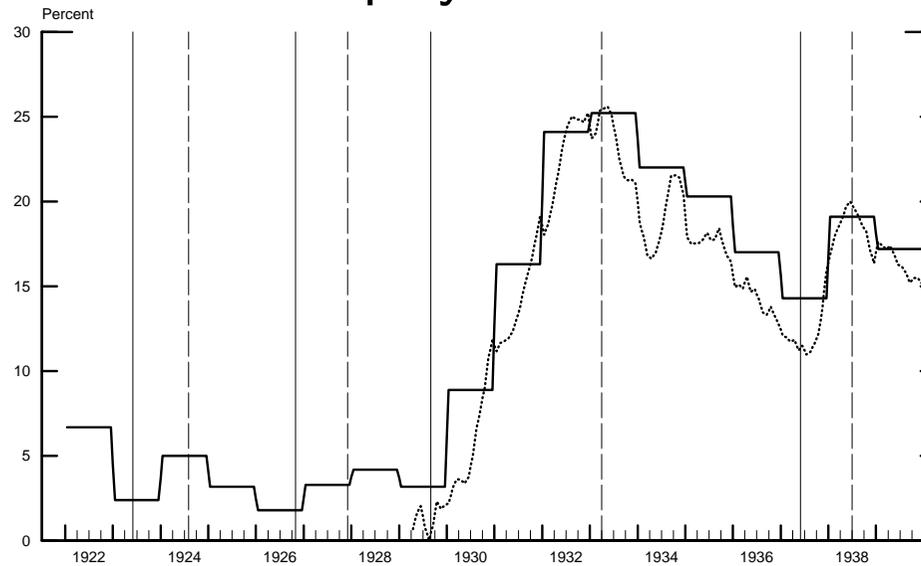
- CB communications is the only policy instrument at the zero bound. Consequently:
 - At the zero bound, good policy must be identified with “good communications”—that is shaping public expectations in a manner that delivers desirable economic outcomes.
 - Likewise, bad outcomes must be due to “poor CB communications”—that is communications that failed to shape public expectations in a favorable manner.
- The U.S. economy in 1937-38 offers an example of bad outcomes when interest rates were close to zero.

The Mistake of 1937

Industrial Production Index

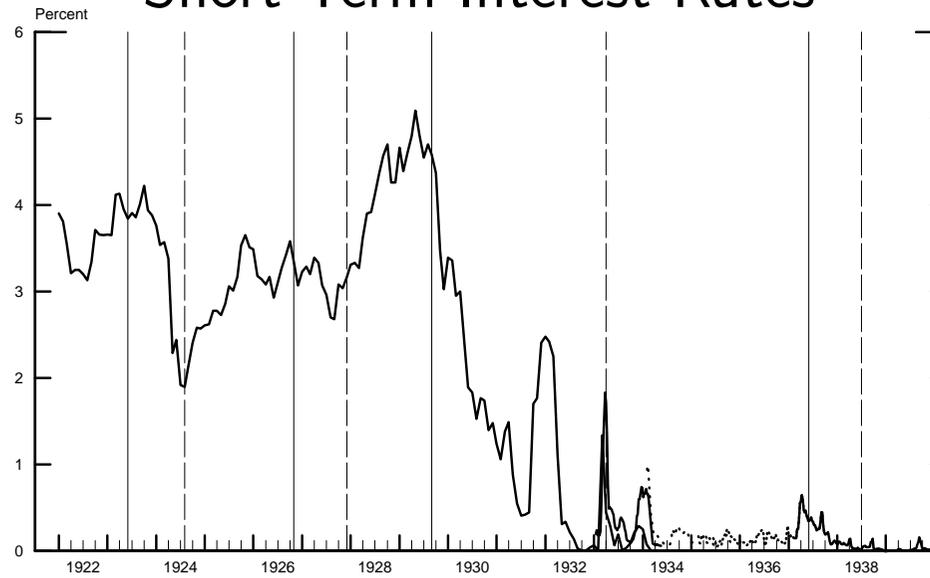


Unemployment Rate

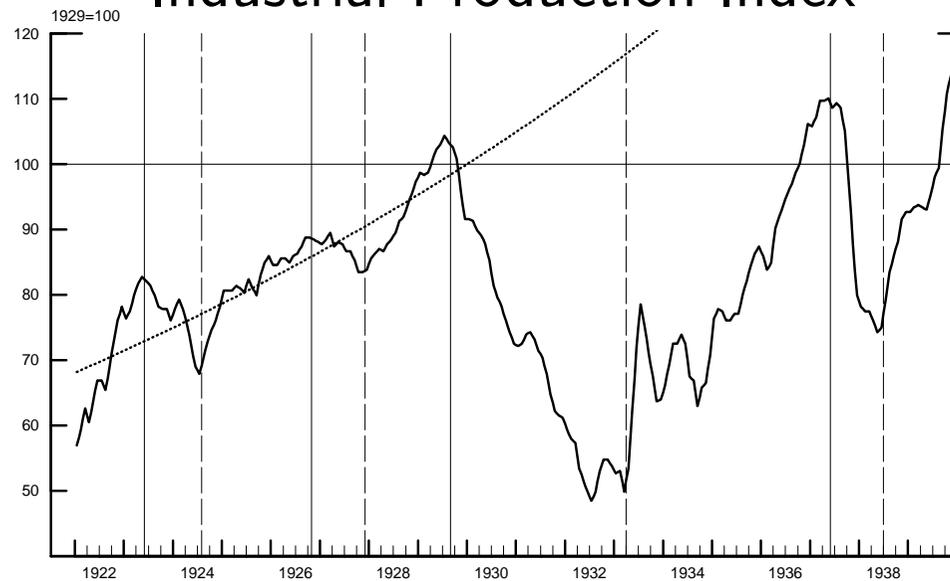


The Zero Bound and the Mistake of 1937

Short-Term Interest Rates



Industrial Production Index



Outline of Main Arguments: III

- Model can shed light on bad outcome of the U.S. economy in 1937-38, when short-term rates were close to zero.
- Assuming the model offers a reasonable approximation of reality, poor communications was the policy mistake leading to the 1937-1938 contraction.
- There are similarities between events and policies in the U.S. in 1937 and in Japan in 2006. In particular, the short-term interest rate in Japan has been close to zero. Therefore:
 - Communications is the only relevant policy instrument.
 - The quantity of monetary aggregates in Japan is irrelevant.
 - BoJ **actions** are irrelevant. BoJ **talk** is critical.

Focus on Four claims

Theory

- “A general equilibrium analysis”
- “Irrelevance of money supply” at the zero bound.
 - Irrelevance of CB **action**.
 - Exclusive relevance of CB **talk**.

History

- “Poor communications is the mistake of 1937”
- FRB in 1937 “similar” to BoJ in 2006.

Model Outline

- By construction, the only policy relevant variable in the model is the short-term **real** interest rate, $i_t - E_t\pi_{t+1}$.
- Given expected inflation, (say $E_t\pi_{t+1} = 0$, the ideal price stability outcome) the CB may adjust the **nominal** interest rate, i_t to counteract shocks to the natural rate:

$$i_t - E_t\pi_{t+1} = r_t^n$$

- Suppose policymaker observes a large negative shock, $r_t^n < 0$. What can policy do?
 - Cut i_t , as possible.
 - But $i_t = 0$ may be insufficient—the "liquidity trap."
 - No problem, simply assume CB talk can raise $E_t\pi_{t+1}$.

Link to CB Communications

“The way to make monetary policy effective, then, is for the central bank to *credibly promise to be irresponsible*—to make a persuasive case that it will permit inflation to occur, thereby producing the negative real interest rates the economy needs.”

(Paul Krugman, “Japan’s Trap,” May 1998.)

Is CB **talk** an independent policy instrument?

- CB communications strategy is certainly very important.
- CB **talk** can clarify and reinforce CB **action**.
- But it is dangerous to *assume* that communications can serve as an independent reliable policy instrument in practice.
- It is unclear if any empirical evidence supports this assumption.
- Policymakers cannot *choose* public expectations at will.
- Absent constant reenforcement with appropriate **actions**, credibility cannot be taken for granted.
- The suggested policy prescription that the CB should *credibly promise to be irresponsible* is itself an oxymoron.

Is CB **action** irrelevant at the zero bound?

- Even in the present model, a quantitative easing is actually expansionary *unless* the act of expanding the money supply curiously makes the public believe that the central bank will subsequently contract the money supply by at least as much as the original increase.
- More generally, *in general equilibrium*, expanding the money supply has *direct* expansionary effects on the prices and yields of other assets. (see e.g. Clouse et al (2003).)

General Equilibrium Analysis

- Relaxation of unrealistic simplifying assumptions regarding capital markets.
- Recognition of imperfect substitutability between various financial assets.
- Existence of multiple assets:
 - Long-term Government debt
 - Corporate bonds
 - Equity
 - Capital
 - Durable consumption goods
 - Housing

General Equilibrium Analysis

- Short-term interest rate no longer a sufficient statistic for “monetary policy”
- Monetary *quantities* (as opposed to short-term rate) become crucial for understanding monetary policy stance at zero bound.
- Quantitative easing an effective policy tool for easing monetary conditions for a wide range of assumptions regarding expectations, CB credibility and communications.

General Equilibrium Analysis

“When the supply of any asset is increased, the structure of rates of return, on this and other assets, must change in a way that induces the public to hold the new supply. ... If the [asset’s own rate] is fixed, the whole adjustment must take place through reductions in other rates or increases in prices of other assets. This is the secret of the special role of money.”

James Tobin, (1969).

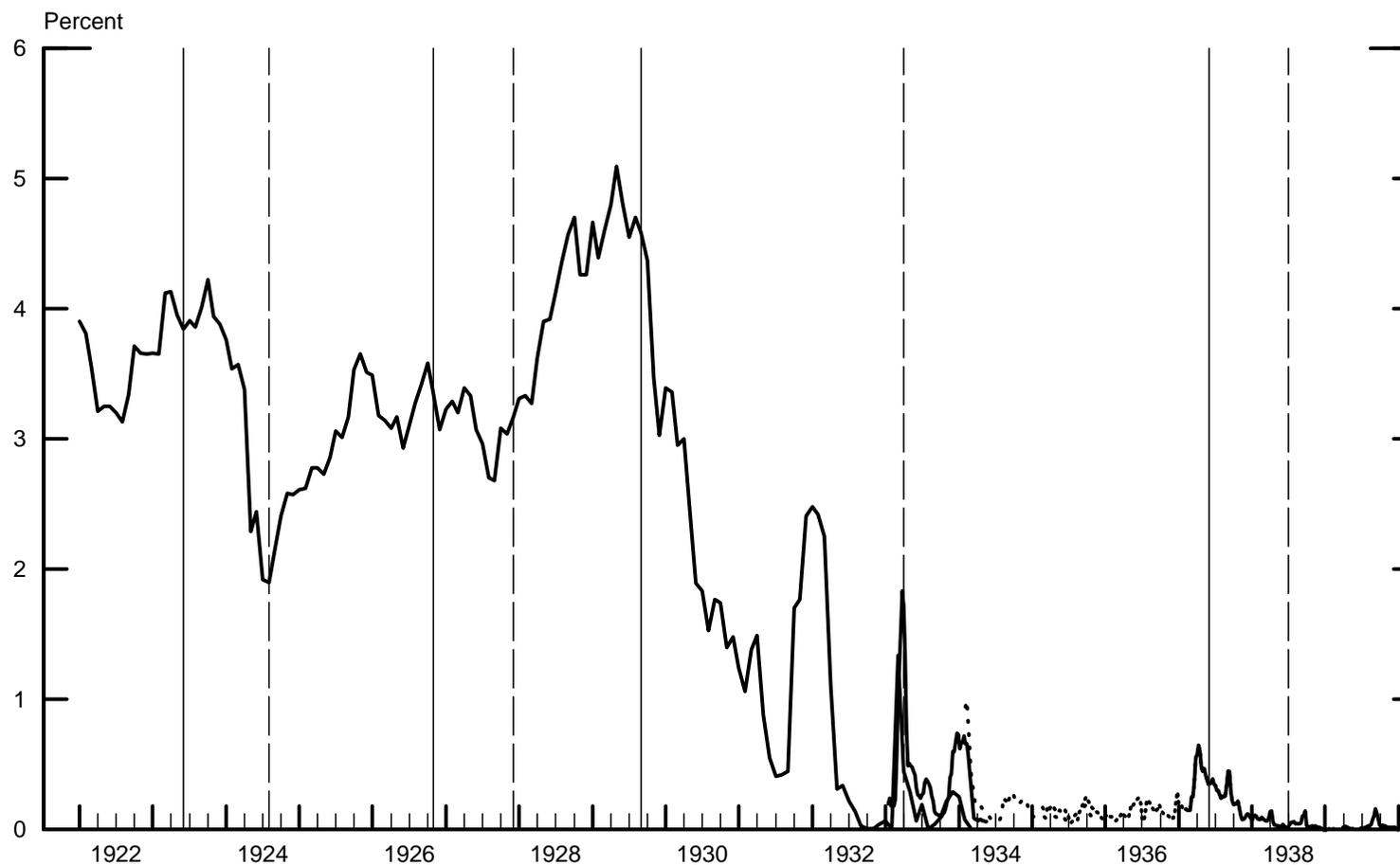
“A General Equilibrium Approach to Monetary Theory.”

See also Andres, Lopez-Salido, Nelson (2004) for a modern micro-founded restatement

What Was the Policy Mistake in 1937?

- Model interpretation requires:
 - No CB **action**
 - CB **talk** of a change in policy objective on inflation
- But historical evidence does not support either element:
 - FRB took policy action whose timing coincides with recession.
 - There was a lot of CB **talk** about economic conditions but no evidence of suggested change in ultimate policy objective.
- Historical evidence suggests alternative sources of policy errors:
 - Misinterpretation of current conditions.
 - Miscalculation of contractionary fiscal policy shock.
 - **Possibly inadvertent tightening action.**
 - Specifically, a reduction in the quantity of a key monetary aggregate (even though effect on interest rates was minimal)

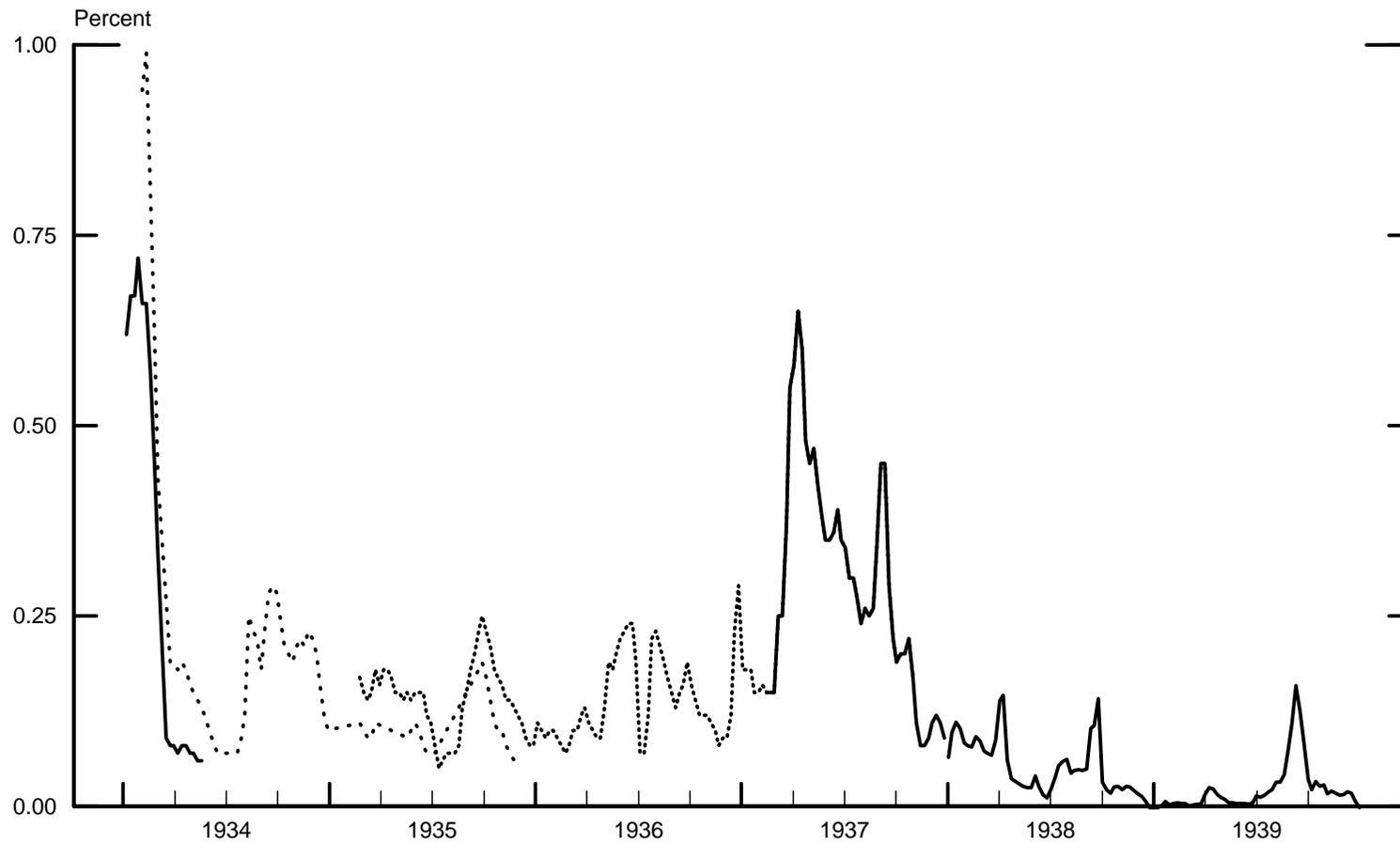
A Closer Look at Short-Term Interest Rates



Notes: Weekly data. Treasury bills or equivalents. Solid (dashed) vertical lines denote NBER peak (trough) dates.

Source: Orphanides (2004).

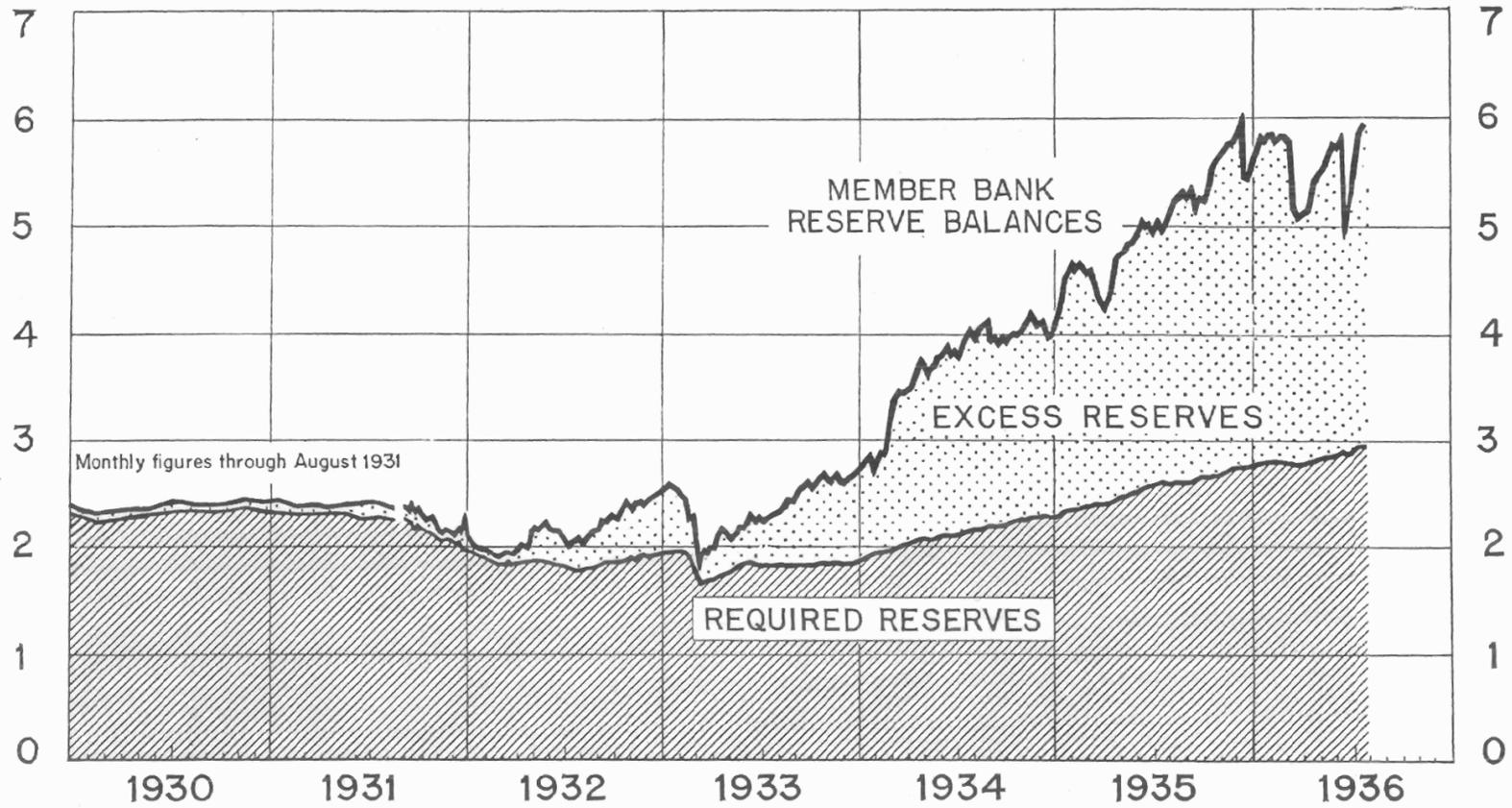
Treasury Bill Rates—Detail



Notes: Weekly data. The solid line denotes the yield on new issues of 3-month Treasury bills or equivalents. The dotted lines (from 1934 to 1937) reflect yields on new issues of 6- and 9-month Treasury bills.

Source: Orphanides (2004).

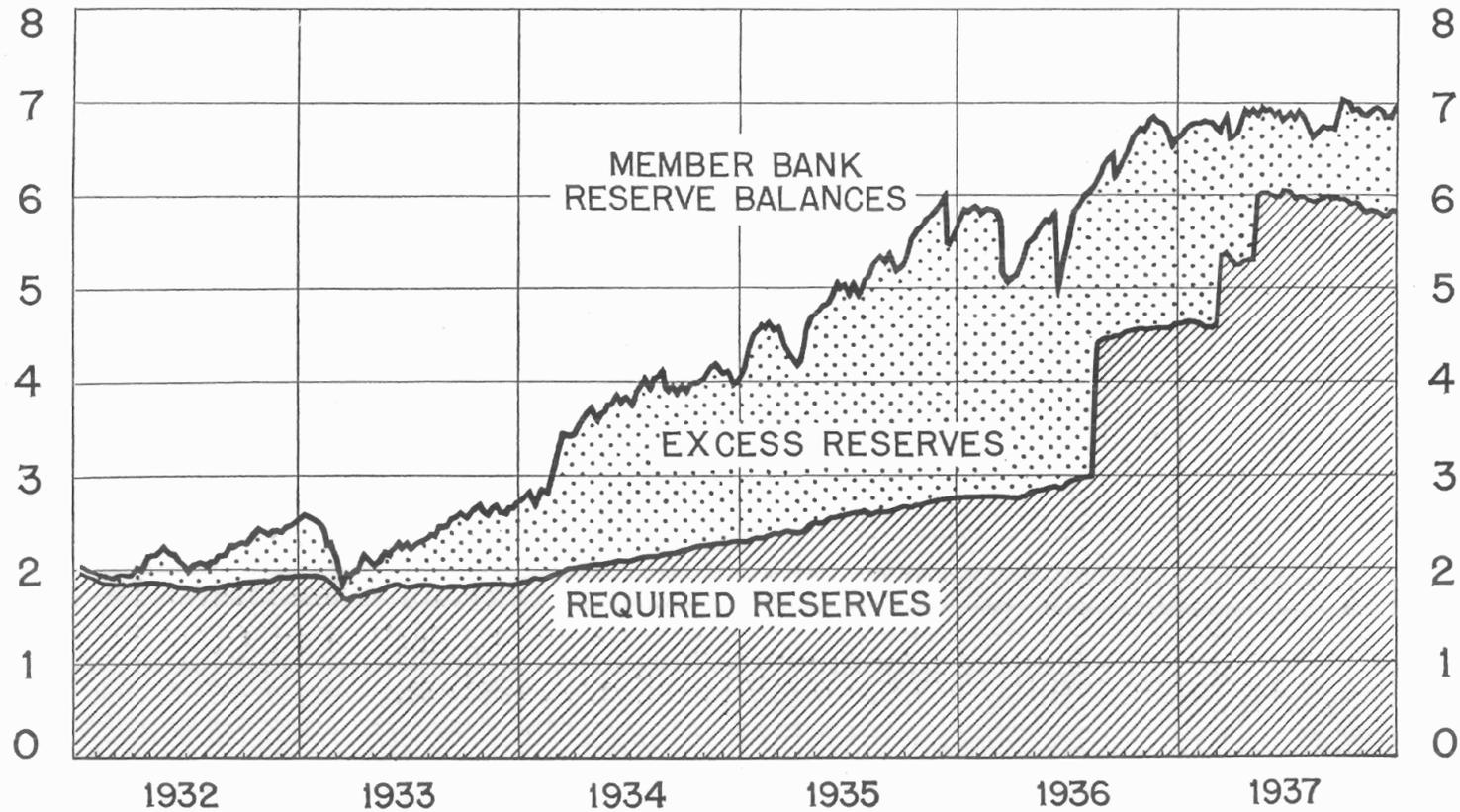
Reserves



Latest figures for July 22, 1936. See table on page 636.

Source: FRB Bulletin, August 1936

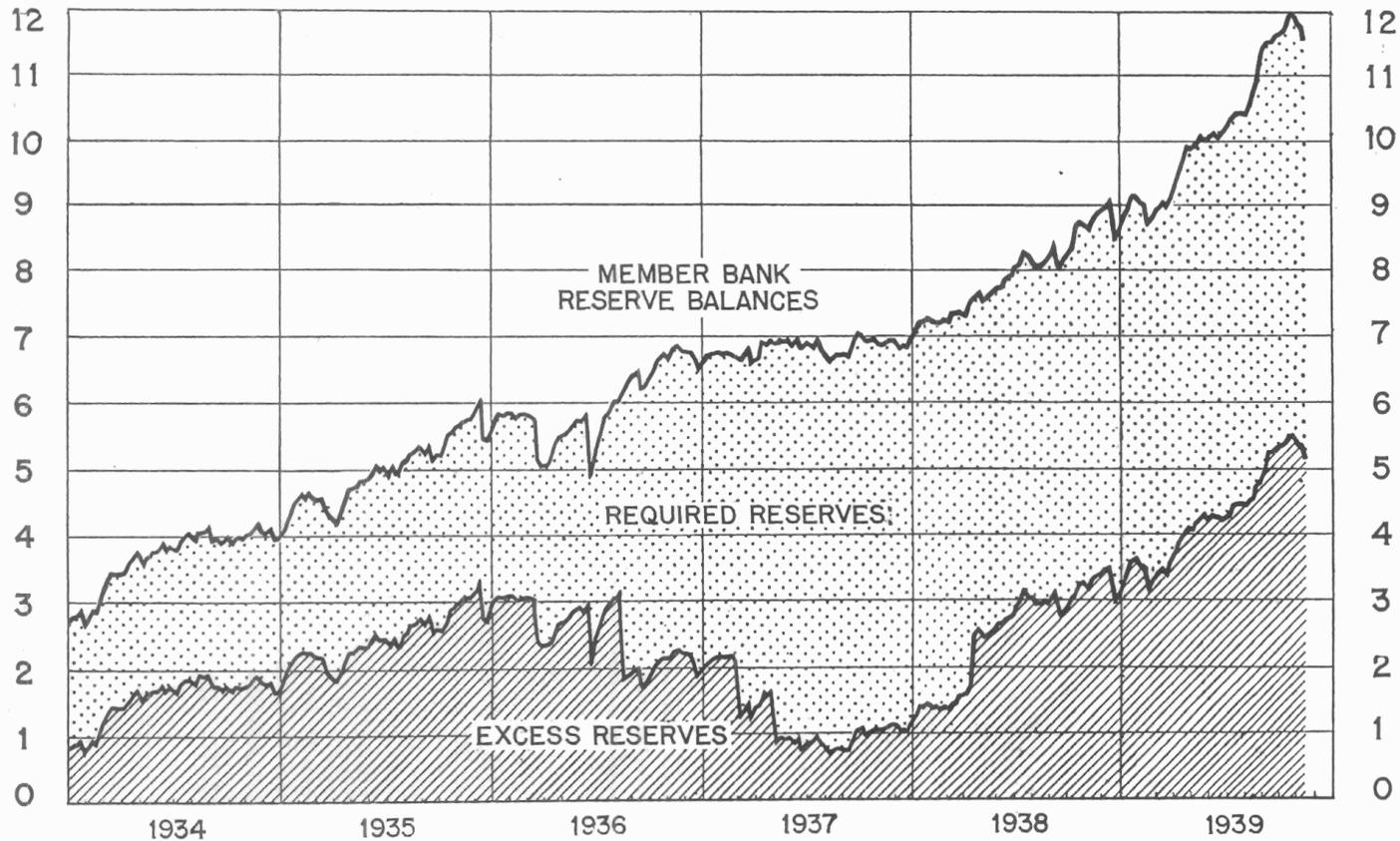
Reserves



Latest figures for December 29. See table on page 20.

Source: FRB Bulletin, January 1938

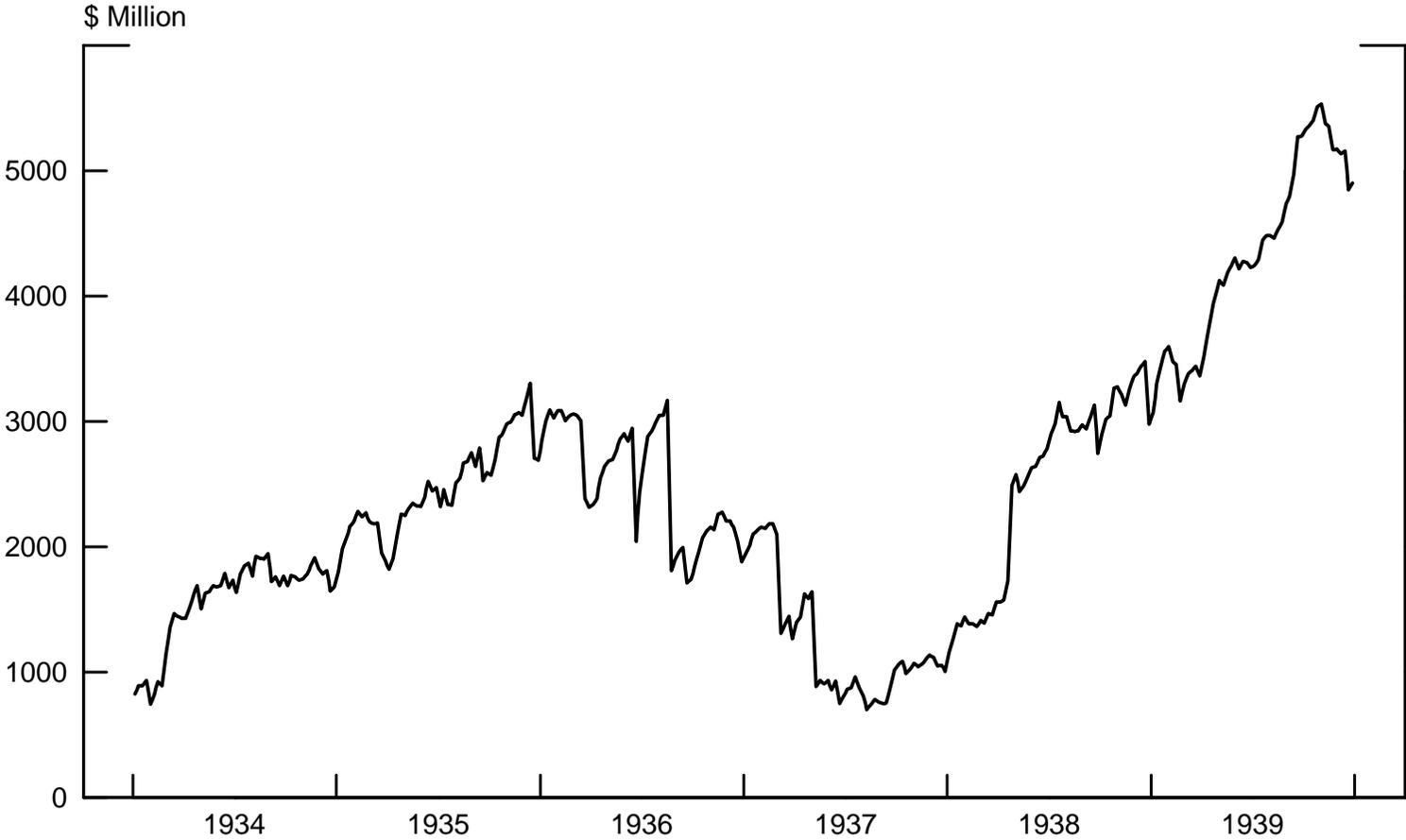
Reserves



Latest figures for November 15. See p. 1096.

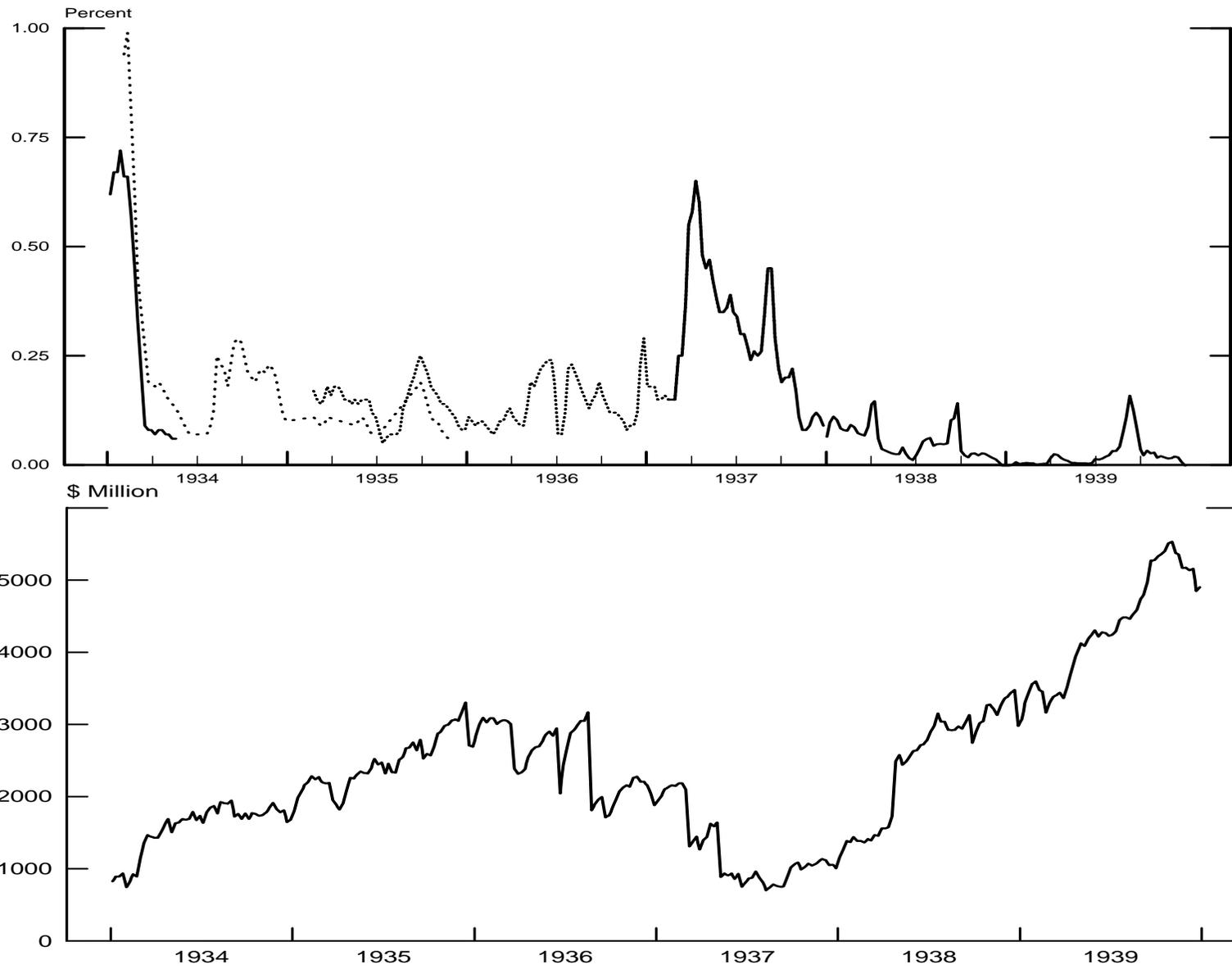
Source: FRB Bulletin, December 1939

Excess Reserves



Source: Orphanides (2004).

Treasury Bill Rates and Excess Reserves



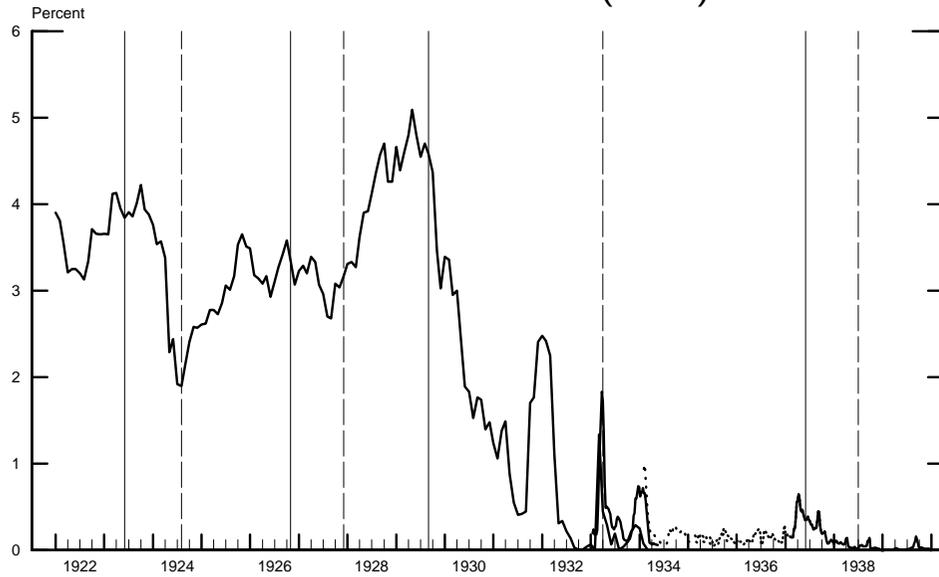
Source: Orphanides (2004).

Is FRB in 1937 “similar” to BoJ in 2006?

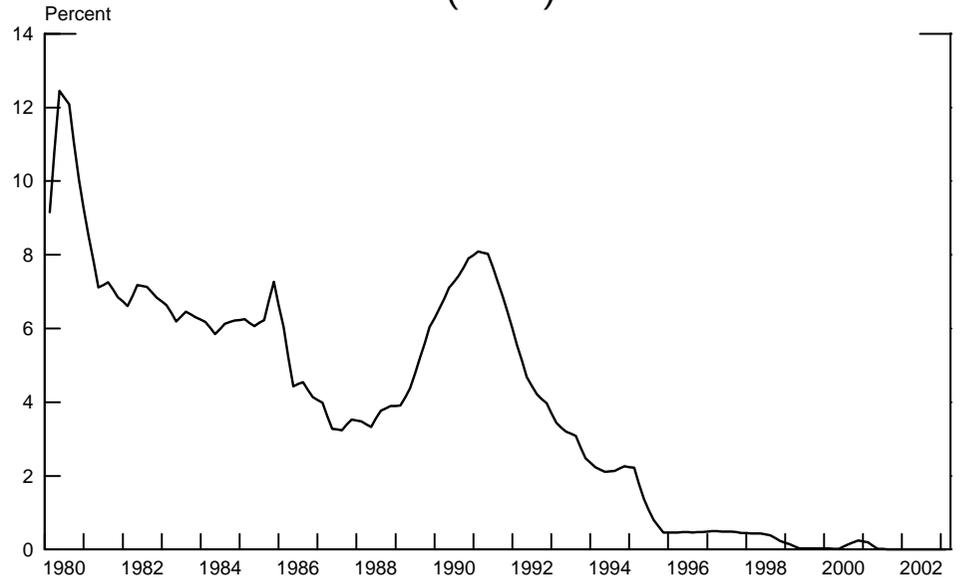
- Comparison appears valid but for a different year.
- Likely similarities are with BoJ in 2000:
 - Misinterpretation of current conditions.
 - **Possibly inadvertent tightening action.**
 - Misinterpretation of policy stance under “low nominal interest rates.”
 - Misunderstanding of the expansionary potential of quantitative easing.

The Zero Bound and Policy Mistakes: 1937 FRB and 2000 BOJ

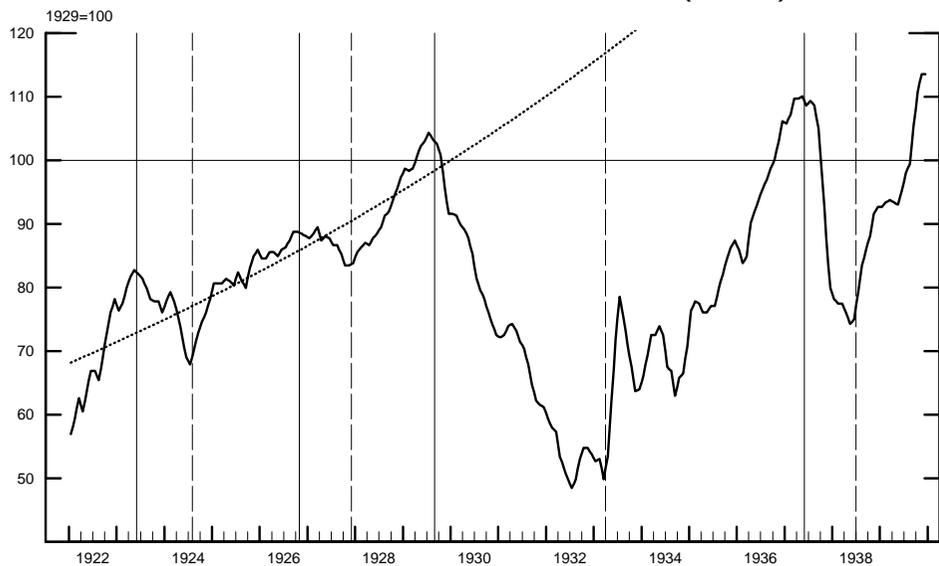
Short Rates (FRB)



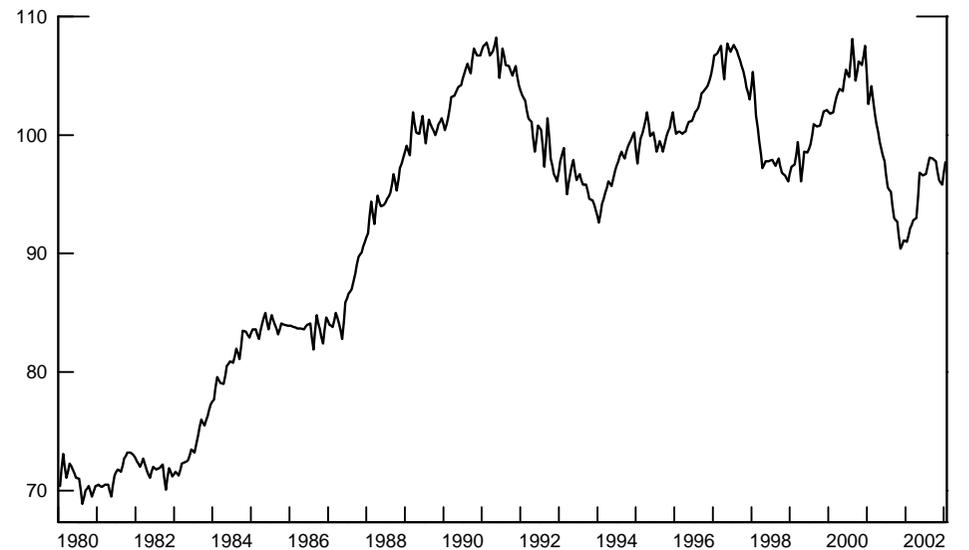
Short Rate (BOJ)



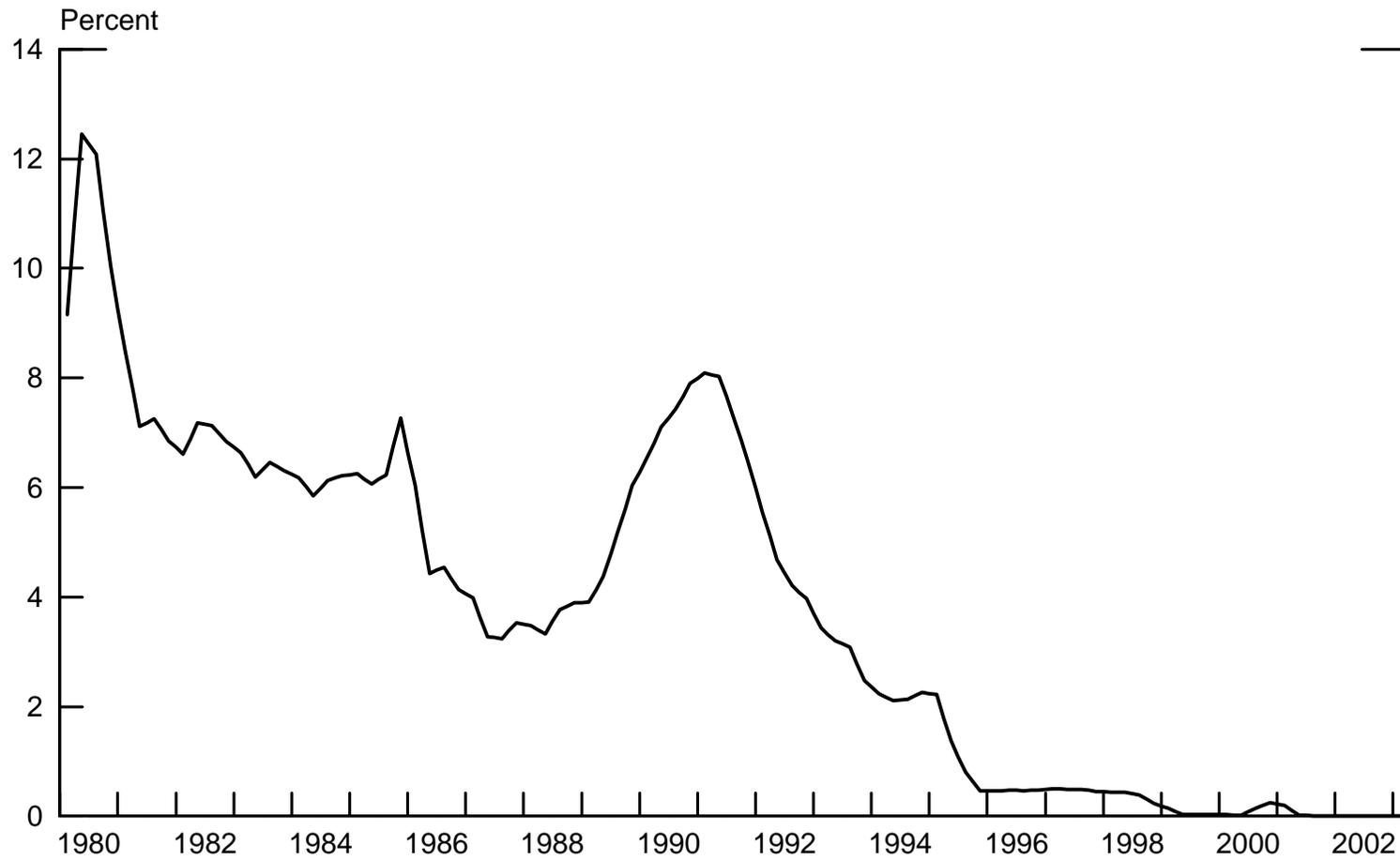
Industrial Production Index (USA)



Industrial Production Index (Japan)

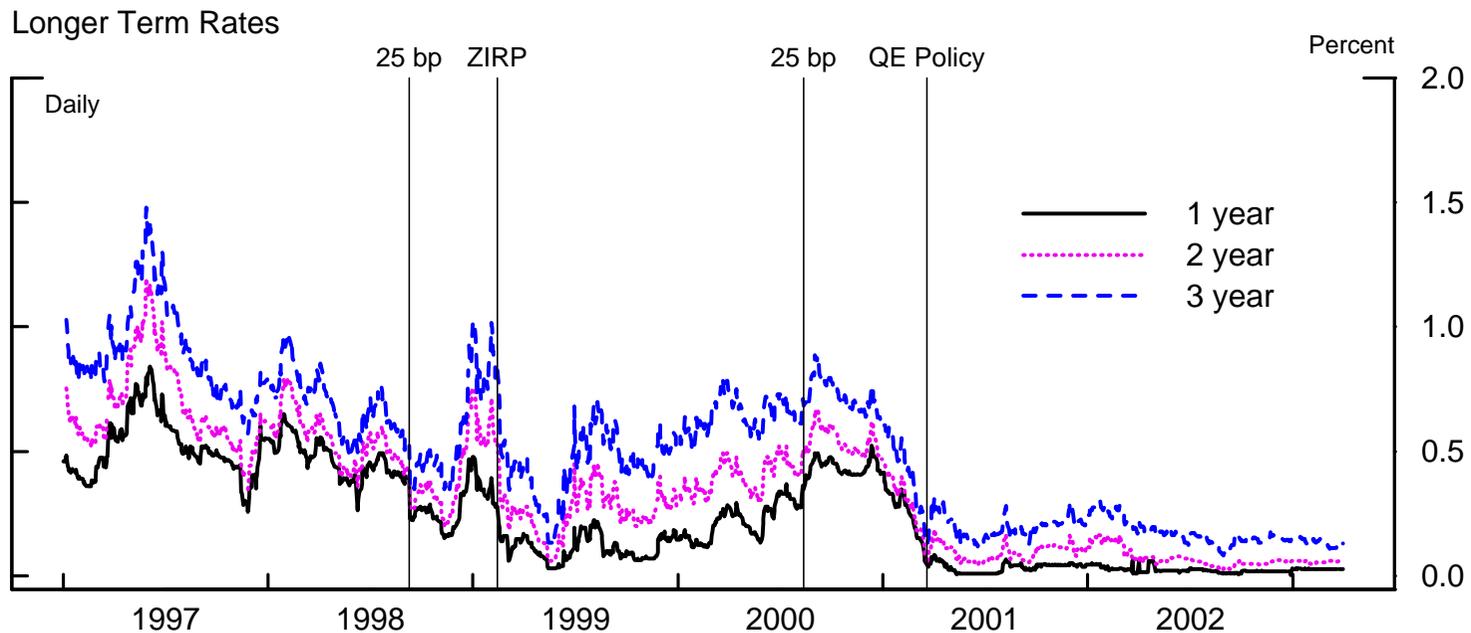
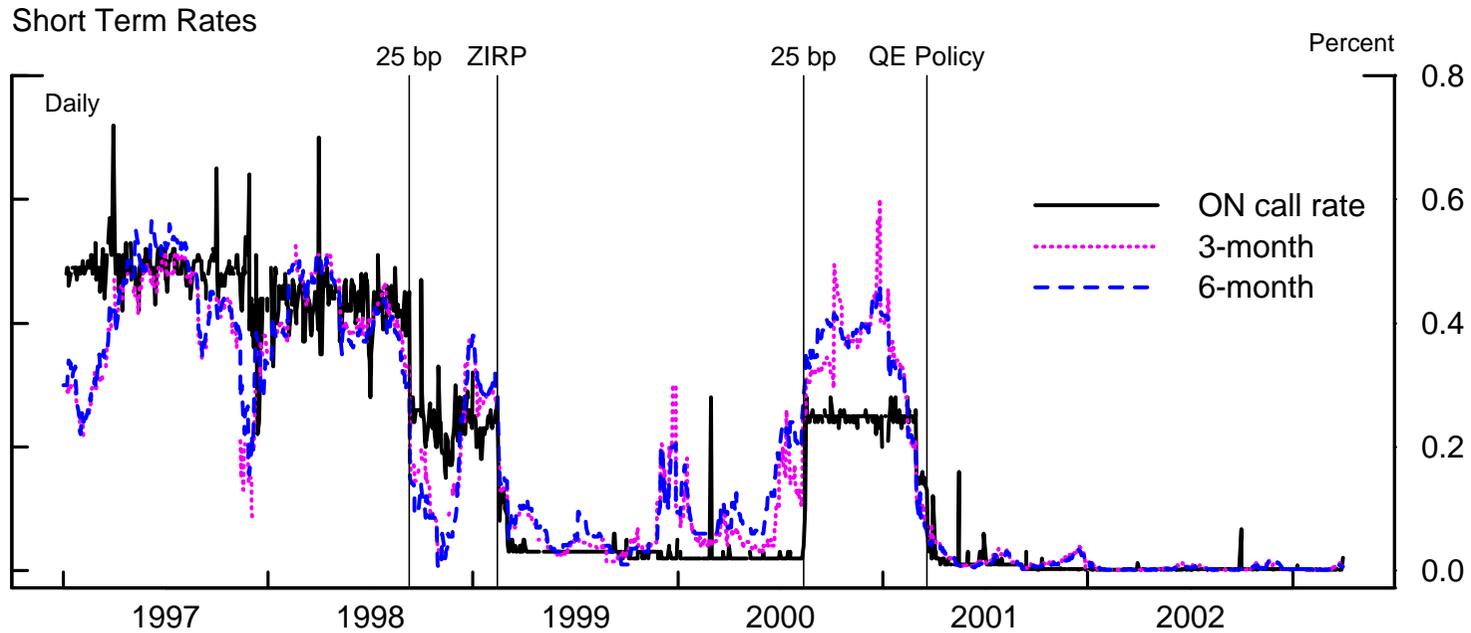


A Closer Look at the Overnight Interest Rate in Japan



Source: Orphanides (2004).

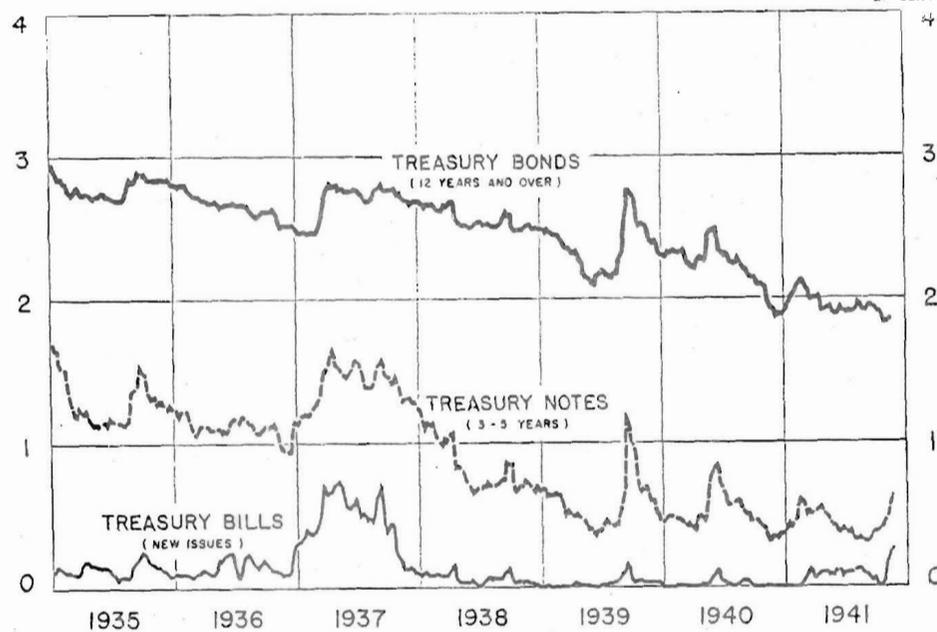
Interest Rates at Various Maturities in Japan: 1997-2003



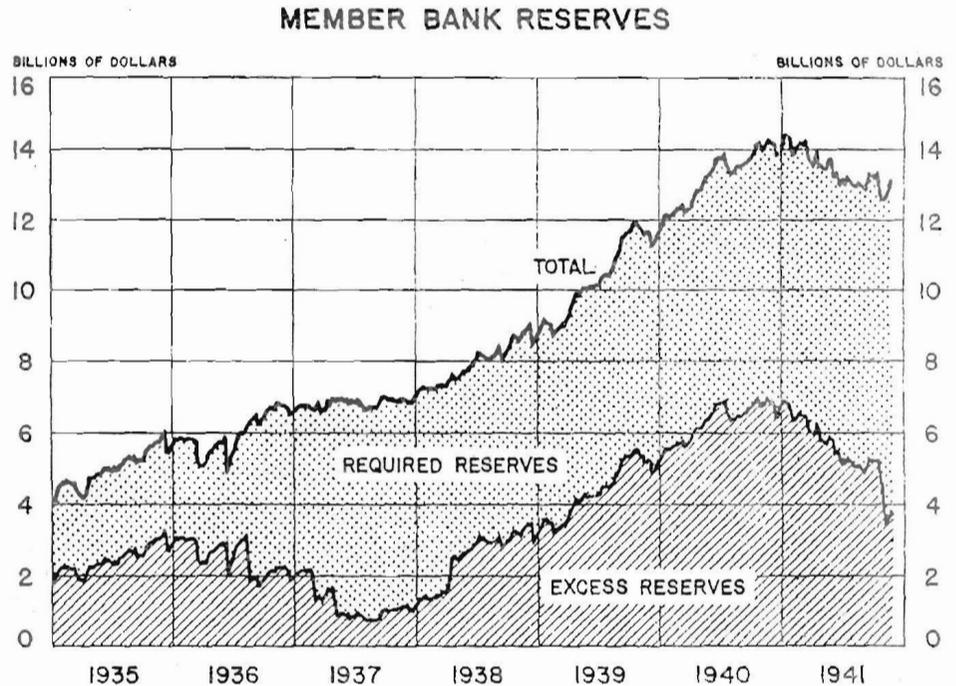
What similarities extend to 2006?

- BoJ in 2000 “similar” to FRB in 1937
- BoJ in 2006 “similar” to FRB in 1941

Interest Rates and Money Reserves: United States



Weekly averages of daily yields of 3- to 5-year tax-exempt Treasury notes, Treasury bonds callable after 12 years, and average discount on new issues of Treasury bills offered within week. For weeks ending January 5, 1935 to November 22, 1941.



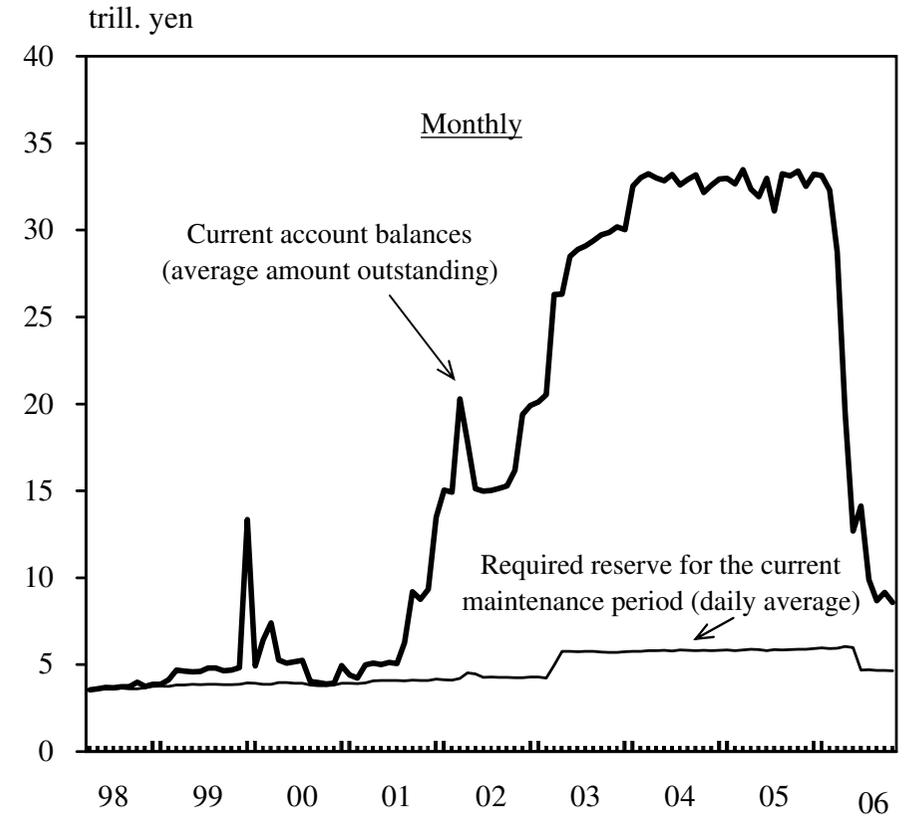
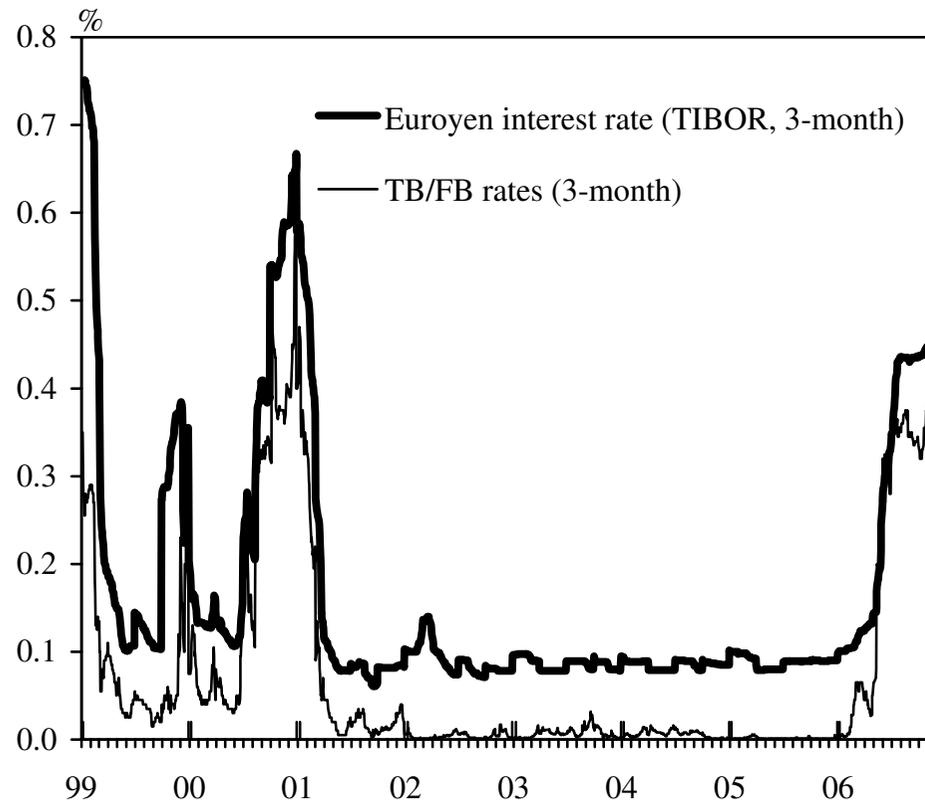
Wednesday figures, January 2, 1935 to November 26, 1941. Required and excess reserves, but not the total, are partly estimated.

DECEMBER 1941

1233

Source: FRB Bulletin, December 1941

Interest Rates and Money Reserves: Japan



Source: Bank of Japan Monthly Report, November 2006

Communications and the blunders of 1937 and 2000

- Did CB communications have a role after all?
- Arguably there was a communications failure in both instances.
- But not the one the authors identified.
- Rather, the communications failure was the attempt to comprehend and communicate the stance of monetary policy with a short-term nominal interest rate.
- That is the failure to comprehend the special role of monetary quantities at the zero bound.

On Old Fallacies

- Would outcomes in 1937 and 2000 have been as bad if policymakers were not misled by suggestions that monetary policy actions and the evolution of monetary aggregates are irrelevant?

“After the U.S. experience during the Great Depression ... I thought the fallacy of identifying tight money with high interest rates and easy money with low interest rates was dead. Apparently, old fallacies never die.”

Milton Friedman, “Rx for Japan: Back to the Future,” *WSJ December 17, 1997*

Advice that was not followed: BoJ

“The surest road to healthy economic recovery is to increase the rate of monetary growth ...

Defenders of the Bank of Japan will say, ‘How? The Bank has already cut its discount rate to 0.5%. What more can it do to increase the quantity of money?’

The answer is straightforward: The Bank of Japan can buy government bonds on the open market, paying for them with ... high powered money.

There is no limit to the extent to which the Bank of Japan can increase the money supply if it wishes to do so. Higher monetary growth will have the same effect as always.”

Milton Friedman, “Rx for Japan: Back to the Future,” *WSJ December 17, 1997*

Advice that was not followed: FRB

“It might be sufficient merely to produce a general belief in the long continuance of a very low rate of short-term interest. The change, once it has begun, will feed on itself...

The Bank of England and the Federal Reserve Board ... should pursue bank-rate policy and open-market operations *à outrance* ... [t]hat is to say, they should combine to maintain a very low level of the short-term rate of interest, and buy long-dated securities either against an expansion of Central Bank money or against the sale of short-dated securities until the short-term market is saturated.”

John Maynard Keynes, *A Treatise on Money*, 1930.