

THE CASE FOR UNENCUMBERING INTEREST RATE POLICY AT THE ZERO BOUND

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1.

Introduction



Facts about
the prevailing
interest rate in
advanced
world

-0.4% Euro area

June 2014

-0.75% Switzerland

December 2014

-0.5% Sweden

February 2015

Facts about the prevailing interest rate in advanced world



2.

Price Stability and the Evolution of Monetary Policy in the 20th Century



The Gold Standard and the gold price of goods

$$\text{Money / goods} = (\text{money / gold}) (\text{gold / goods})$$

- The gold standard was problematic...
- Caused serious deflation;
- Was abandoned completely in the early 1970s.

Fixed foreign
exchange rates
and the
international
terms of trade

International terms of trade:

$$\text{A good/B good} = [(\text{B money/B good})/(\text{A money/A good})]/(\text{A money/B money})$$

- Encumbers the monetary policy of international trade participants;
- Very costly to execute;
- Fixed exchange rates have been abandoned among many of the world's major currencies since the 1970s.

3.

The Zero Interest Bound and the Intertemporal Terms of Trade



A Model

Goodfriend (2002a)

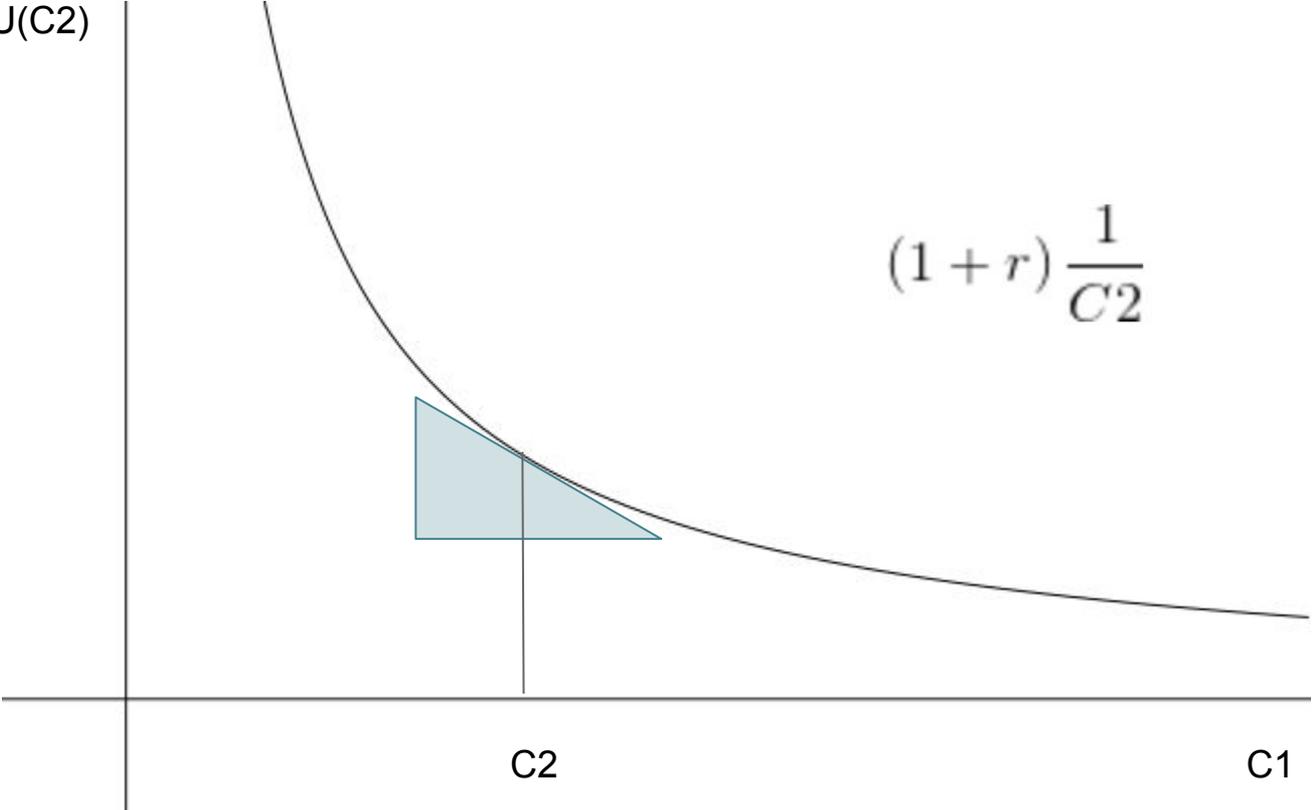
Consider an economy populated by households that live for two periods, the **present** and the **future**.

Households choose current and future consumption to maximize lifetime utility given an ex ante real interest rate “**r**” at which they can lend or borrow with certainty.

The “**intertemporal terms of trade**” is “ $1 + r$ ”.

Let $\rho > 0$ be a psychological rate of time preference. For concreteness, let utility $u(c) = \log c$, so that $u'(c) = 1/c$.

$U(C_2)$



$$(1+r) \frac{1}{C_2}$$

C_2

C_1

A Model

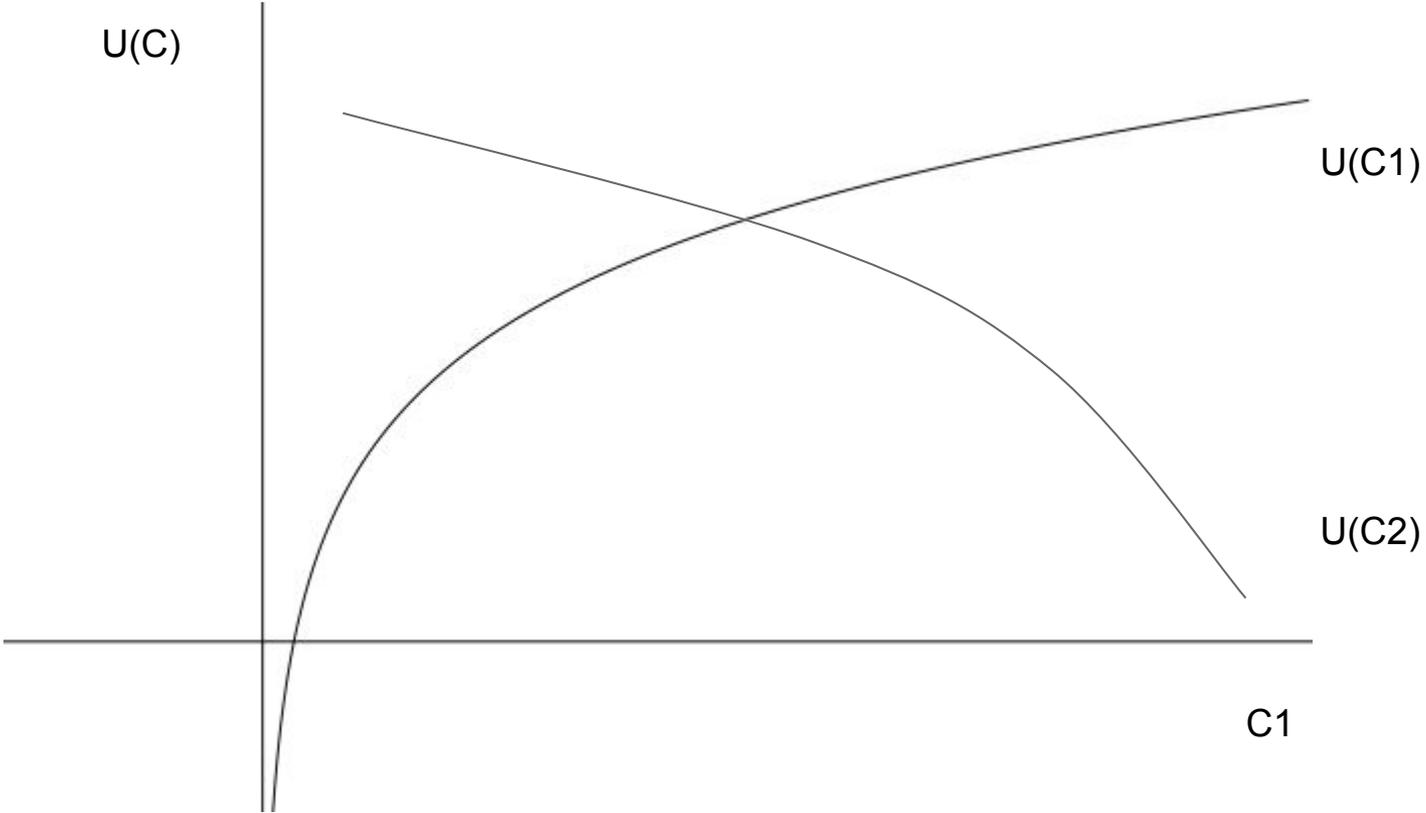
Goodfriend (2002a)

Let C_2 denote planned future consumption, the **present discounted** marginal utility value of foregoing one unit of current consumption for **future consumption** is

$$\left(\frac{1+r}{1+\rho} \right) \frac{1}{C_2}$$

Lifetime utility is maximized by equating the marginal utility of present and future consumption yielding the so-called **Euler Equation**

$$\frac{C_2}{C_1} = \left(\frac{1+r}{1+\rho} \right)$$



A Model

Goodfriend (2002a)

Denote future income prospects as $a_2/(1+\mu^2)$

a_2 — future labor productivity

$1/(1+\mu^2)$ — future hours worked; μ^2 captures future taxes, regulations, markups, or other distortions that reduce equilibrium hours worked

Presume that households plan to consume all future income, i.e.

$C_2 = a_2/(1+\mu^2)$, then **present aggregate demand** is

$$C_1^D = \frac{1 + \rho}{1 + r} \left(\frac{a_2}{1 + \mu^2} \right)$$

A Model

Goodfriend (2002a)

Let current “**potential output**” be

$$Y_1^P = \frac{a1}{1 + \mu1}$$

To express the natural interest rate in terms of its fundamental determinants, solve for the interest rate that equates $Yp = Cd$, and take logs, yielding

$$r^N = \rho + g + \mu_1^* - \mu_2^*$$

ρ is the rate of time preference

g is expected productivity growth

μ_1^* and μ_2^* capture taxes, regulations, markups, or other distortions adversely impacting current and expected future income, respectively

A Model

Goodfriend (2002a)

- How does very low or negative interest rate become exist?
 - Pessimistic expectations
Households foresee little productivity growth & expect hours worked to decline
 - **$rN < \rho$**

4.

Why the Zero
Bound
Encumbers
Interest Rate
Policy Today



Why the zero bound encumbers interest rate policy?

The problem for monetary policy is that the zero bound might prevent interest rate policy from accommodating a very low or negative natural rate of interest that pessimism about future relative to current income prospects may necessitate.

In this sense, the zero interest bound could encumber interest rate policy in a manner analogous to the gold standard and the fixed exchange rate encumbrances — by **exposing the price level and employment to fluctuations in a relative price over which monetary policy has little control**

5.

The **Urgency** of Unencumbering Interest Rate Policy



The urgency of unencumbering interest rate policy

Is the zero interest bound **really** an impediment to monetary policy in practice?

- Despite interest rate policy having been immobilized near the zero bound around the developed world for a prolonged period, there was **no deflation spiral**, and **inflation has stabilized reasonably well**, even if somewhat below various inflation targets, with the implication that the zero interest bound has not mattered very much.

The urgency of unencumbering interest rate policy

The Federal Reserve pursued unprecedented **balance sheet stimulus** to counteract deflation and contraction in the aftermath of the Great Recession of 2007-2009.

Meanwhile, however, expansive central bank balance sheet stimulus is increasingly ineffective. Based on the history, given the current 1 1/2% 10-year Treasury yield in the United States today, the federal funds rate would have to be taken down at least to **-1%** and more likely to **-2%** to stimulate recovery from the next cyclical downturn.

The urgency of unencumbering interest rate policy

Interest rate policy is **far superior** as a general-purpose stabilization policy

- Interest rate policy is necessary and possibly sufficient for countercyclical stabilization purposes.
- Interest rate policy can be managed decisively by an **independent central bank** reasonably free of politics because it makes little use of fiscal resources.

6.

Three Methods of Unencumbering Interest Rate Policy at the Zero Bound



Why is current environment not compatible?

- By acquiring securities or lending to particular institutions, the central bank forces enough bank reserves into the banking system to satiate the banks' demand for reserves.
- Banks attempting to lend excess reserves to each other put downward pressure on the interbank interest rate.
- The excess supply of reserves in the banking system presses the interbank interest rate down to the interest-on-reserves floor.

Why is current environment not compatible?

- The cost of handling, storing, and insuring paper currency is low;
- Deposits have great versatility, e.g. facilitating transactions;
- Banks are reluctant to pass through negative interest rates to retail deposit for fear of driving away legacy depositors.

- Policy to push nominal interest rates below zero is likely to encourage a run to paper currency.

Method A: Abolish Paper Currency

- Pros
 - Straightforward
 - Effective
 - No new technology
 - No institutional modifications

Method A: Abolish Paper Currency

- Cons

- The public is **VERY** likely to resist the abolition

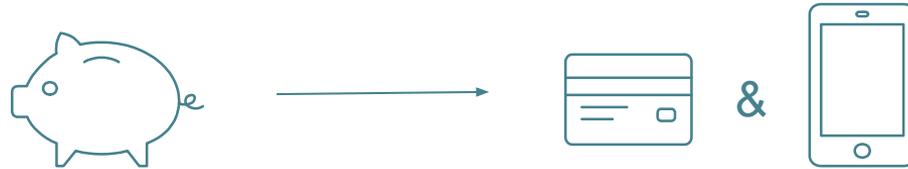


Method B: Introduce a Flexible Market-Determined Deposit Price of Paper Currency

- The central bank would no longer let the outstanding stock of paper currency vary elastically to accommodate the deposit demand for paper currency at par.
- Instead the central bank could grow the aggregate stock of paper currency according to a rule designed to make the deposit price of paper currency **fluctuate** around par over time.
- The regime completely removes the zero bound encumbrance with relatively few technological or institutional requirements;

Method C: Provide Electronic Currency (to Pay or Charge Interest) at Par with Deposits

- Currency card accounts could offer the payment services that paper currency provides



Method C: Provide Electronic Currency (to Pay or Charge Interest) at Par with Deposits

- Currency card accounts could offer the payment services that paper currency provides.
- And it's convenient to have deposit price of electronic currency **at par**.
- Because currency card accounts would access electronic balances at the central bank, the central bank could easily pay or charge interest on electronic currency just as central banks pay or charge interest today on electronic reserve balances held by commercial banks.

Method C: Provide Electronic Currency (to Pay or Charge Interest) at Par with Deposits

- Pros
 - The regime would completely remove the zero bound encumbrance on interest rate policy;
- Cons
 - Initial investment is required to make electronic currency available.

7.

Conclusion

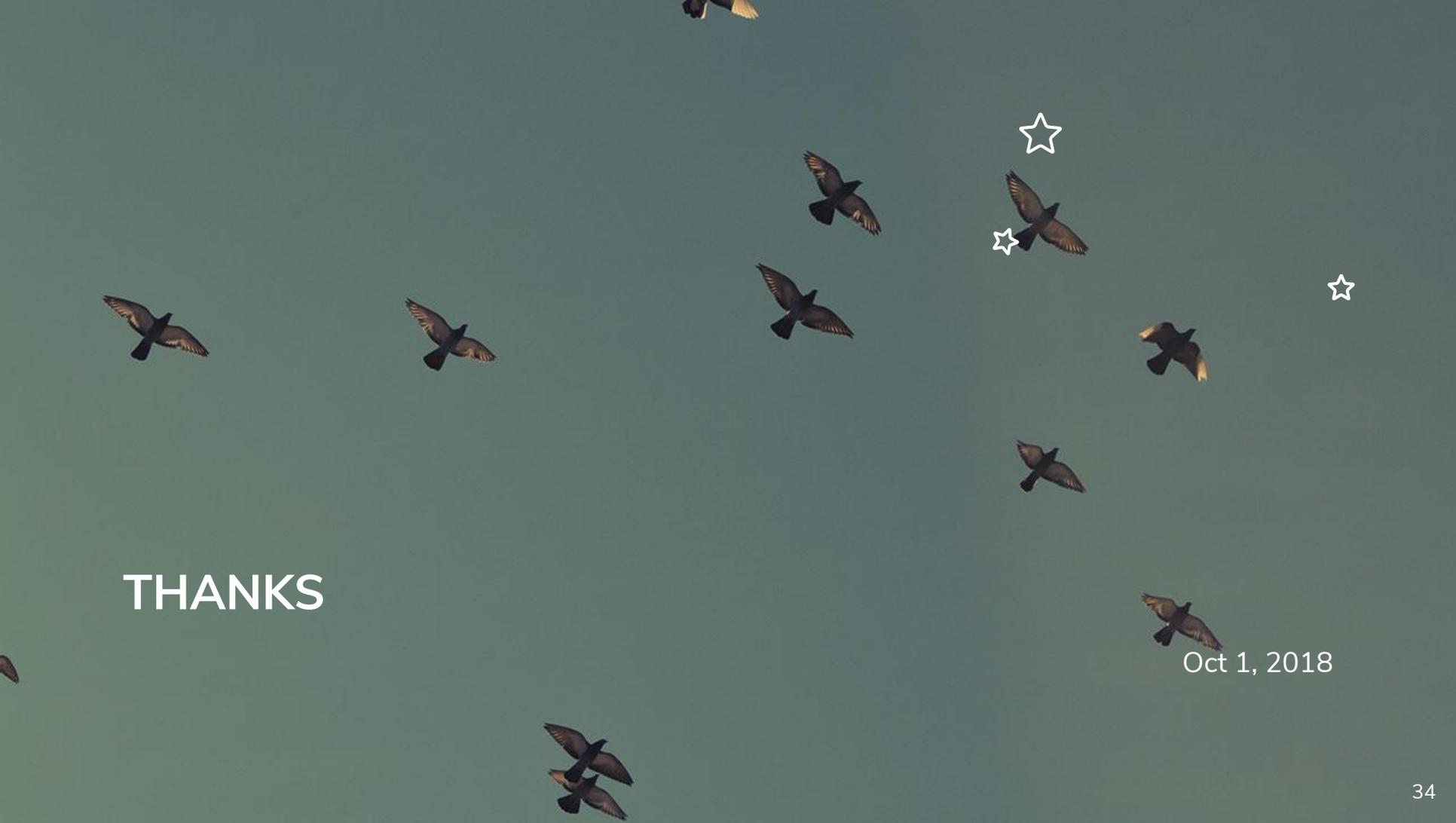


Conclusion

“The idea of negative nominal interest rates takes some getting used to, but it should be possible to persuade the public that such flexibility is well worth it to provide better employment security and more secure lifetime savings.”

If the zero bound were removed completely, then interest rate policy could enable the **public** to enjoy the benefits of a fully stable purchasing power of money.

The **central bank** is free to pursue negative nominal interest rate policy on occasion to act against a deflationary contraction in employment and output.

The background is a solid teal color. Scattered across the frame are approximately 12 birds in flight, their wings spread, moving in various directions. Three white, five-pointed stars are also scattered: one in the upper right, one in the middle right, and one further to the right.

THANKS

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