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Overcoming the Zero Bound on Interest Rate Policy

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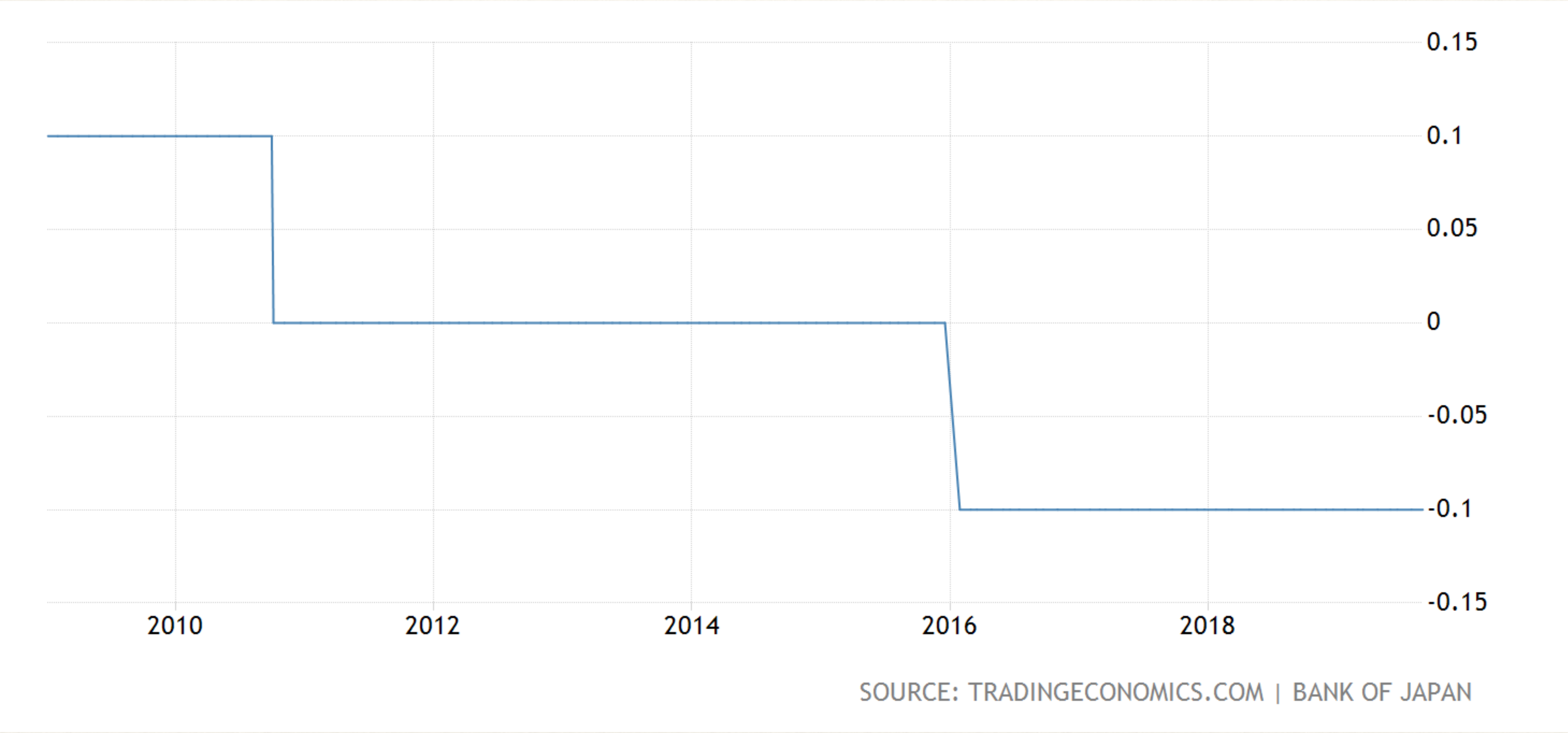
Motivation

- Expansionary Monetary Policy -> Lower Interest Rate.
- Zero Bound in interest rate: would rather keep cash.
- When Interest rate approaches Zero, Fed need new method to stimulate the economy.

Why Do We Need to Breach Zero Bound

- Negative real interest rates may have helped the economy to recover from recessions in the past.
- Deflation expectations in economic downturns can actually raise expected real interest rates when nominal rates are at the zero bound.

Academic Concern or Reality?



Review of Alternative Methods

- Fischer and Summers: Set inflation target. Supported by Macroeconomic Data.
- Krugman: Hold nominal rate down and keep a moderate rate of inflation -> make real interest rate negative
- McCallum: Peg foreign exchange rate as its policy instrument
- Clouse et al: Purchases of private sector debt and extensive discount window lending

Fisher Equation

- $i \approx r + \pi$
- π stands for inflation, r stands for real interest rate and i stands for nominal interest rate.

Summers and Fischer's Proposal

- Suggest that the central bank should target an inflation around 3%, which is supported by the historical data.
- Reason: longer-lasting and more frequent recessions are usually associated with lower or zero inflation.
- Objections: The costs of sustaining high inflation are high.

Krugman's Proposal

- If the zero bound is hit, Central Bank should hold the nominal rate down and target a moderate rate of inflation -> make real interest rate negative
- Objection: 1. a central bank with power to create inflation would have the power to stimulate spending.
- 2. Inflation Scares: highly variable inflation expectations.

McCallum's Proposal

- Adopt Foreign exchange rate: pegged its currency in a depreciation state -> high net exports.
- Objection: 1. interest of trading partners
- 2. US might export delation and recession without helping itself much.

Clouse et al's Proposal

- Purchases of private sector debt and extensive discount window lending
- Objections: 1.Crowding Out Effect.
- 2. Tough Decisions and Potential Moral Hazard.

Marvin Goodfriend's Proposal

- Carry Tax on Money
- Open Market Operations
- Monetary Transfers

Carry Tax on Money

- Consider an Economy without bank
- If Net Marginal Service Yield on Money asymptotes to zero and money is costless to carry, then the nominal interest rate asymptotes to zero.
- If we add bank to the system, which provide monetary services without fees (No User Fee)
- With the Diminishing Marginal Service Yield assumption, It is possible to have Zero Bound.

Details in the Second Model

- Central Bank have the right to set interbank rate and they choose to set it at 0.
- Commercial Banks would respond by acquiring other sources of loanable funds(CD) with a lower rate.
- Commercial Banks would also trim cost by charging fees to customers.
- Public would then hold currency to a level which marginal service yield, net of fee, was zero.

What would happen with Carry Tax

- What if a central bank were to impose user fee, named Carry Tax, when the interbank interest rate was pressed to zero?
- Competition among banks would force the interbank interest rate below zero by the cost of carry.
- Zero Bound is Breached.
- Only qualification is cost of carry can not exceed the cost of storing cash.

Technological Feasibility

- Goodfriend proposes that by imbedding a magnetic strip in each bill, bank can impose tax by subtracting appropriate amount from face value.
- Since most currency is received by merchants, merchants would take the trouble to collect carry tax on currency. Price would increase

Open Market Operations

- Purposes: 1. Keep the nominal rate to zero
- 2. prevent contractions of monetary asset.
- Reasons: 1. Liquidity provided by monetary asset is an attribute of an asset.
- 2. The Premium charged for Liquidity service is negatively related with the net worth.

Monetary Transfer

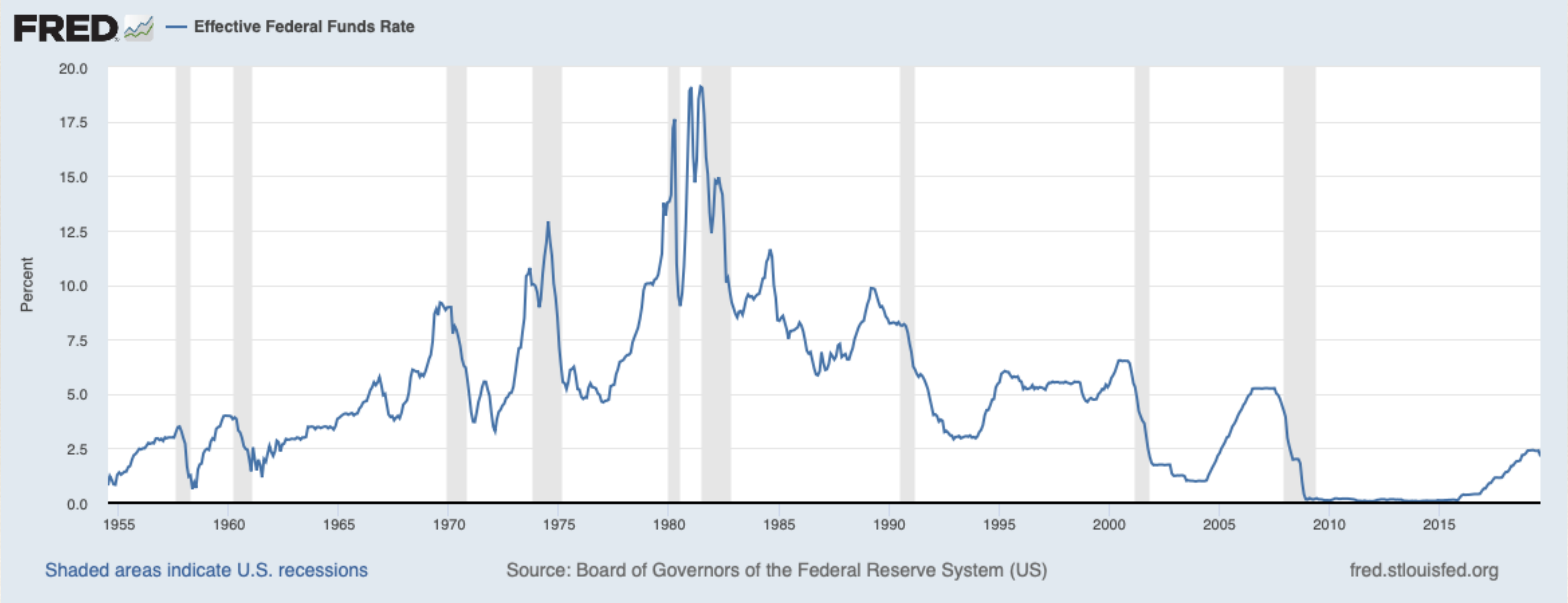
- It serves as a complement as liquidity injection.
- However, by permanent income theory, spending will only increase in the case that people believe the injection is permanent, otherwise they would save the money for future.
- It means that when reversing the policy, government would take on more debts.

Conclusion

- Goodfriend proposed and developed three options for overcoming the zero bound on interest rate policy.
- Despite the fact that the money drained by central bank could be huge and increased debt in government, Goodfriend still recommended these methods when depressed economy surfaced.

A few thoughts

- 1. paper was written at Nov. 2000. We did not see the first method approved.
- 2.



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More Thoughts

- 3. Goodfriend did not estimate the magnitude of cost, either for new bill and the potential debt, which is important for a policy analysis.

Thank You!