# The Return of Inflation

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June 2022

# “Inflation Is Always and Everywhere a Monetary Phenomenon”

- Milton Friedman, 1963. Idea is that inflation results from too much money chasing too few goods.

- Expressed as Quantity Theory of Money, MV = PQ. Q related to real GDP. V is velocity of money; ratio of nominal spending to quantity of money.

- V reflects quantity of real money demanded. Assumed to be stable function of nominal interest rate, i, Q, etc.

# Determinants of Price Level

- Focus on paper money system in U.S. context. Not analyzing gold standard or other commodity standard.

- Given determinants of Q, quantity theory implies mapping from M to P. Inflation rate, π, involves complicated dynamics for $\pi^e$, Q, working through V(·).

- In practice, unstable V(·) (money demand) implies P, i volatile for given M. Good to allow M to adjust endogenously for given P. Seasonal pattern in M as example.

# Control Nominal Interest Rate

- Today, poorly defined demand for any real monetary aggregate—monetary base, M1, M2, etc.

- At least when nominal interest rate positive, Fed has focused on controlling i to impact P. Then let M adjust endogenously. Applies in U.S. at least since Chair Volcker, 1980-81.

- Set i in response to observed P; idea of inflation targeting. Formal rule in New Zealand late 1980s, then other countries.

# Taylor Rule

- Interest rate response formalized as Taylor Rule for setting i in response to inflation, unemployment (or real GDP), etc.

- Taylor Principle says i adjusts more than 1-to-1 to π. Then higher π implies higher real interest rate to reduce π. Shift in i over what horizon? Principle violated dramatically of late.

- Volcker early 1980s tamed high & volatile π by moving i in "whatever it takes" fashion, as reprised by ECB Chair Draghi 2012 for maintaining Euro. U.S. i early 1980s reached 20%, then π fell fast, as did $\pi^e$. Lower $\pi^e$ anchored inflation mid 1980s to early 2020 in magical achievement, U.S. & elsewhere.

# Financial Crisis

- Low U.S. π, around 2%, maintained even when i down to zero under Chair Bernanke in 2008-2009 Great Recession/Financial Crisis.

- Introduced vast Q.E. where Fed balance sheet up from $1 trillion to $3-4 trillion. π stayed around 2%.

- With interest paid on reserves held at Fed, not clear Q.E. matters for inflation. Reserves and Treasury Bills perfect substitutes. Q.E. involving short-term Treasuries should not matter for anything.

# Quantitative Easing

- Q.E. with long-term Treasuries amounts to lengthening maturity of outstanding U.S. debt. Might matter for something but probably not inflation.

- Q.E. with other assets, such as mortgage-backed securities, might matter for mortgage/housing market. Probably not much for inflation.

- Maybe this is why U.S. $\pi$ stayed low even with i=0, lots of QE, presence of recovery, 2010- .

# Fed Policy after 2010

- Bernanke recent book says Fed did not raise i after end of Great Recession, 2010- , because labor-market recovery slow and π did not rise.  No tendency for i up to return to "normal."  Tentative attempt to reduce Fed balance sheet had problems with "taper tantrum" of 2013.

- i also kept near zero under Yellen, 2014- , until one increase 2018. Basically, i kept at zero for 10 years, starting 2008.

# Why Did π Stay Low 2010- ?

- Reputation kept $\pi^e$ anchored at low level even with i fixed.
- QE does not matter much for inflation.
- I had expected π up, because of expansionary monetary policy, but it did not happen.  Return to this.

# COVID Recession & Powell Policy

- i up under Powell 2018-19 to 2.5%, then maintained.
- i back to zero with COVID recession April 2020. Aggressive QE implied Fed balance sheet up to $9 trillion.
- $\pi$ began to rise with economic recovery late 2020. No response of i until March 2022—failure to raise i, by more than rise in $\pi$, violated Taylor Rule. Aggressive QE maintained.
- Powell used multiple excuses to avoid monetary contraction. High $\pi$ only transitory, OK to react to high $\pi$ with lag, changed definition of $\pi$.

# Fed's Reputation

- Failure of monetary policy to react led to loss of Fed reputation for maintaining low π; $\pi^e$ up. Fed no longer appeared committed to raising i to reduce π.

- Problem because inflation has real costs. Threat of stagflation.

- One potential problem is imposition of forms of price controls, as with Nixon 1970s These interventions more costly than open inflation.

# Criticism of Fed Chairs

- U.S. needs new, credible Fed chair—image of Volcker—to have chance of restoring credibility. In 1979, Pres. Carter kicked Chair G. William Miller upstairs (to U.S. Treasury), brought in Volcker from NY Fed. Biden could do something similar? Not likely.

- Criticism of Powell surprisingly muted. Past criticisms high for Miller and Arthur Burns, who supported Nixon's price controls in 1970s. Best Fed Chairs were Volcker 1979-87, Greenspan 1987-2006. Unsure about Bernanke 2006-14, who failed to restore normalcy after 2010.

# Why Did 2020- Differ from 2010- ?

- Why inflation in 2020-22, after COVID Recession, not 2010- , after Great Recession?
- Monetary policies similar. Both periods highly expansionary.
- Faster recovery 2020- , after larger downturn. Probably not key difference for inflation.
- Main difference is probably extraordinary fiscal expansion for 2020- . Some under Trump up to 2020 but transfers under Biden 2021- much larger than Trump or 2010- . Appears to be complete lack of fiscal discipline.
- Fiscal Theory of Price Level is Right? What matters here is nominal quantity of government debt outstanding along with prospective future primary deficits. These went up a lot in 2020- .

# Mystery of Inflation

- In paper money system, determining P and, therefore, $\pi$ mysterious.
- No intrinsic value for paper money (unlike gold standard), no stream of real earnings, though there is real service flow associated with holdings of M/P.
- System can work if nominal M somehow controlled, as under classical quantity theory of money?

# Analogous to Crypto Currency?

- Is paper money system analogous to crypto currency, such as Bitcoin? Bitcoin system does feature clever system for control of quantity of bitcoin. But has problem with almost free entry of alternative crypto currencies. Seems in the end to be a temporary bubble with eventual loss of all value?

- Maybe our paper monetary system with reasonable price stability was also a temporary bubble? If so, it was great while it lasted.