Challenges for inflation control

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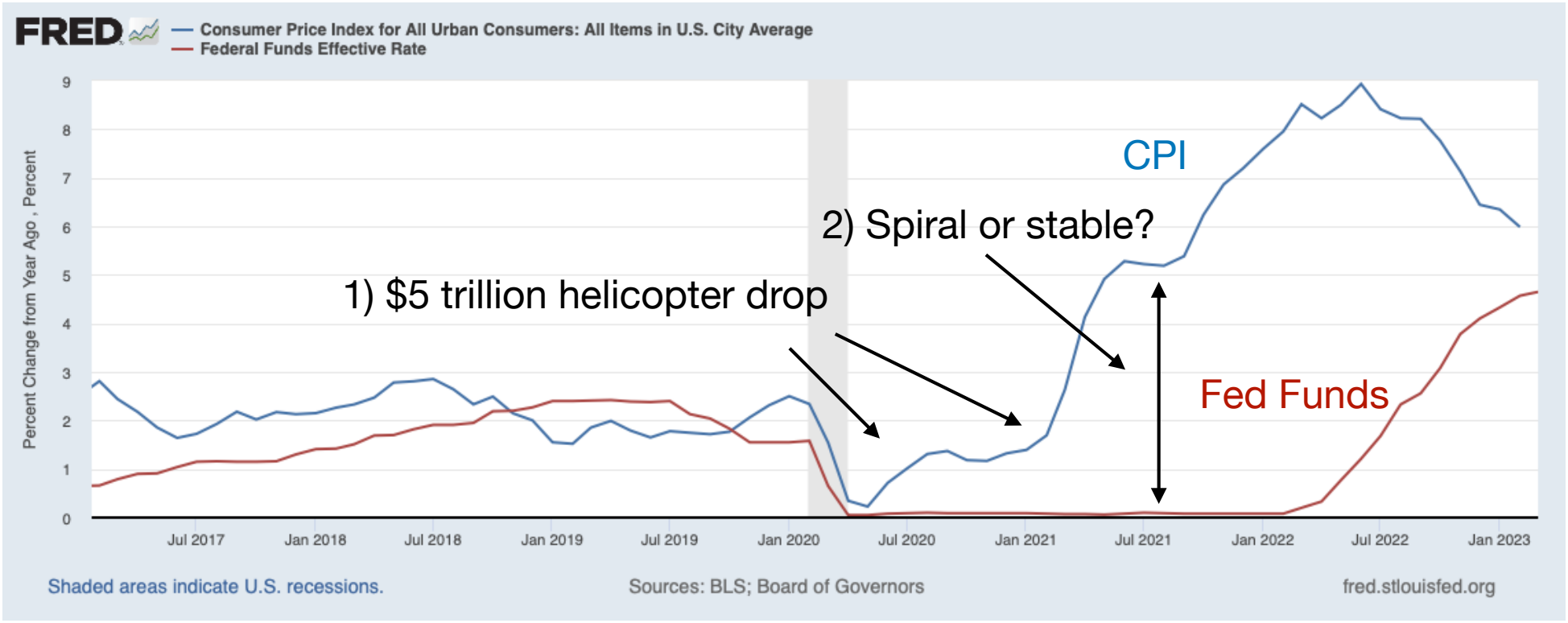
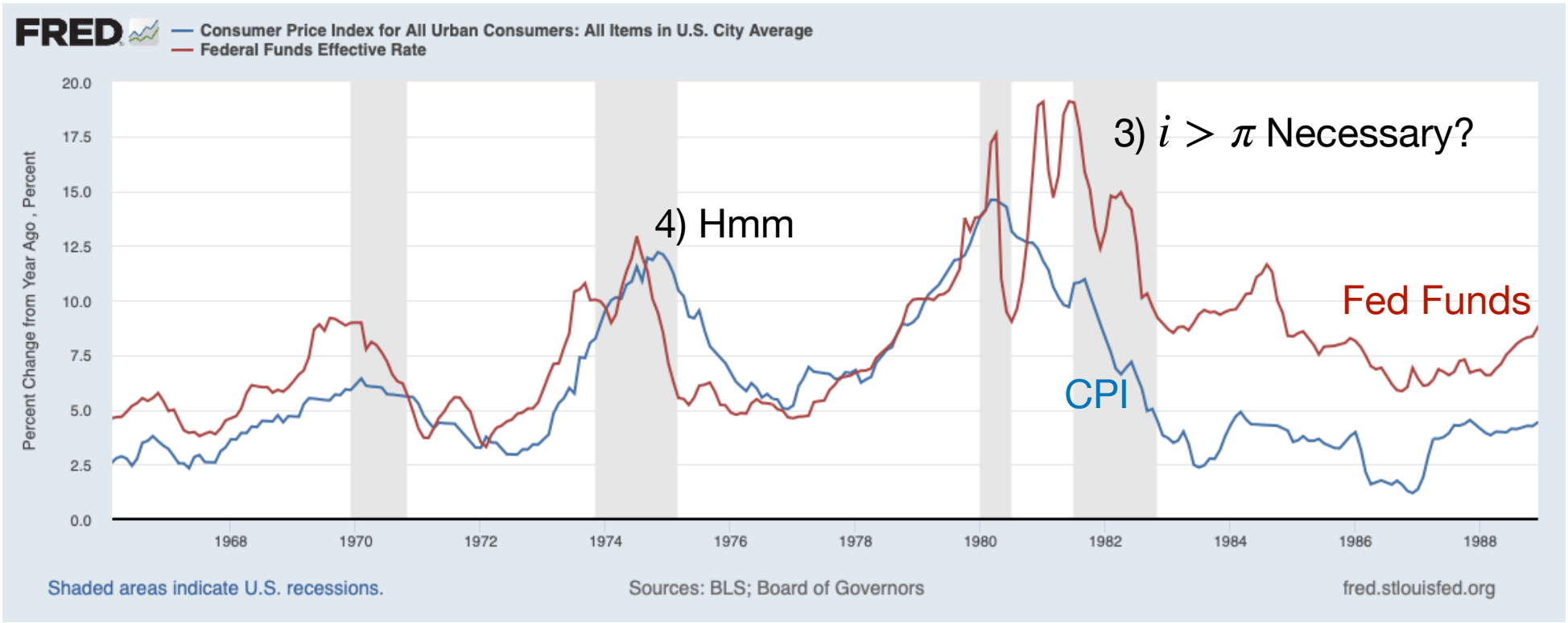
FAR meeting, New York Fed

Background

- *The Fiscal Theory of the Price Level* (book)
- “Expectations and the Neutrality of Interest Rates" (Easy article, how do interest rates lower inflation?)
- “Fiscal Histories" (Easier article, fiscal background to inflation and inflation control in recent US history.)
- https://www.johnhcochrane.com/


FRED
Consumer Price Index for All Urban Consumers: All Items in U.S. City Average
Federal Funds Effective Rate
Percent Change from Year Ago , Percent
9
8
7
6
5
4
3
2
1
0
Jul 2017
Jan 2018
Jul 2018
Jan 2019
Jul 2019
Jan 2020
Jul 2020
Jan 2021
Jul 2021
Jan 2022
Jul 2022
Jan 2023
CPI
2) Spiral or stable?
1) $5 trillion helicopter drop
Fed Funds
Shaded areas indicate U.S. recessions.
Sources: BLS; Board of Governors
fred.stlouisfed.org


FRED
Consumer Price Index for All Urban Consumers: All Items in U.S. City Average
Federal Funds Effective Rate
Percent Change from Year Ago , Percent
20.0
17.5
15.0
12.5
10.0
7.5
5.0
2.5
0.0
1968
1970
1972
1974
1976
1978
1980
1982
1984
1986
1988
3) $i > \pi$ Necessary?
4) Hmm
Fed Funds
CPI
Shaded areas indicate U.S. recessions.
Sources: BLS; Board of Governors
fred.stlouisfed.org

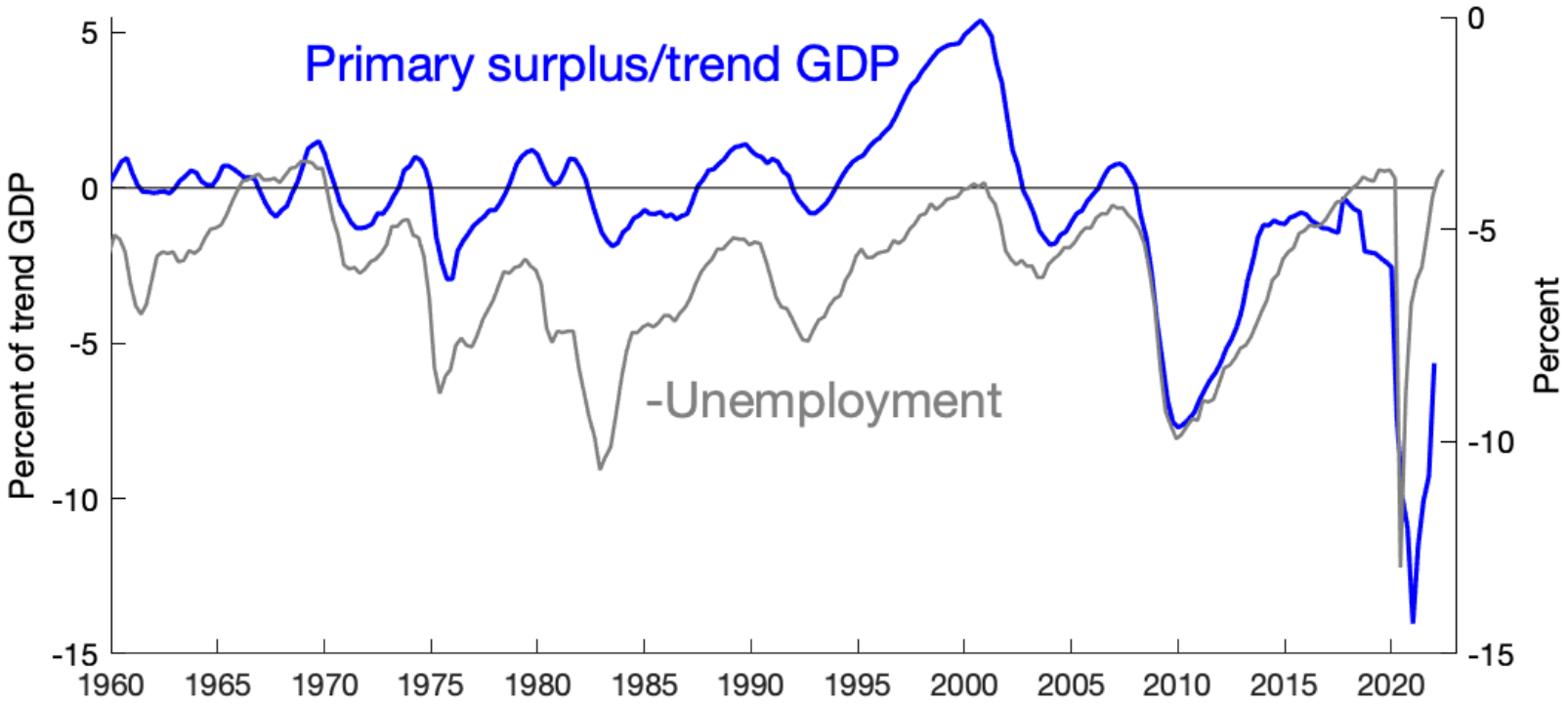
Can higher interest rates lower inflation without fiscal help?

Background:

- Fiscal inflation
- Continuing large full employment primary deficits, unresolved long run, next crisis?

Raise interest rates to lower inflation?

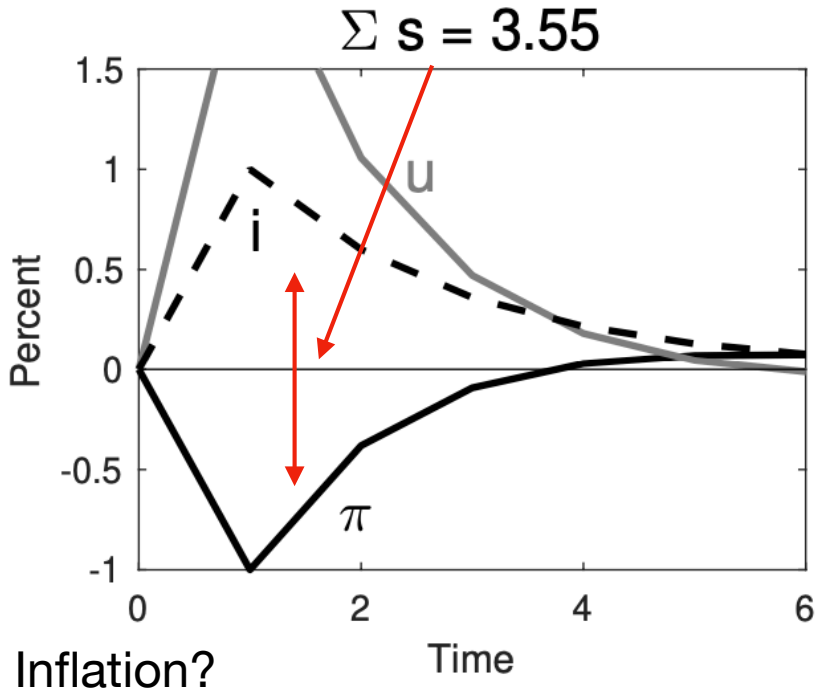
- Each 1% rise in real rates = 1% more interest cost = 1% of GDP deficit.
- Higher rates →less activity→automatic stabilizers, stimulus, bailout.
- Lower inflation = windfall to bondholders.
- 1980 was a joint fiscal (present value) - monetary stabilization. And D/Y=25%. Now?



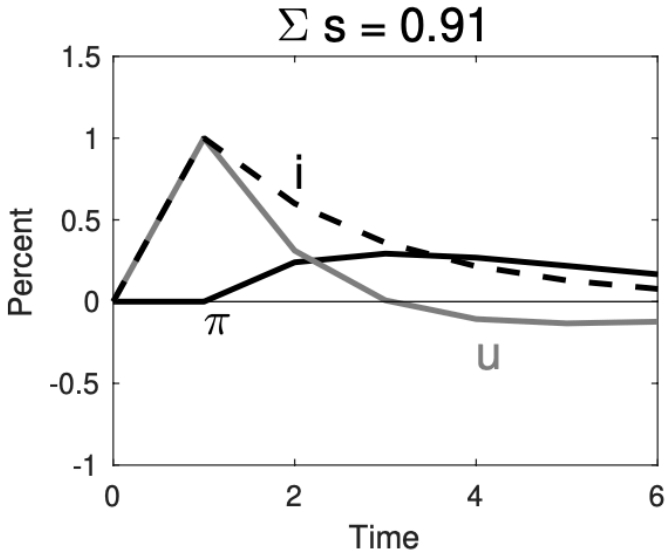
Can (&how) higher interest rates lower inflation (without fiscal help)?

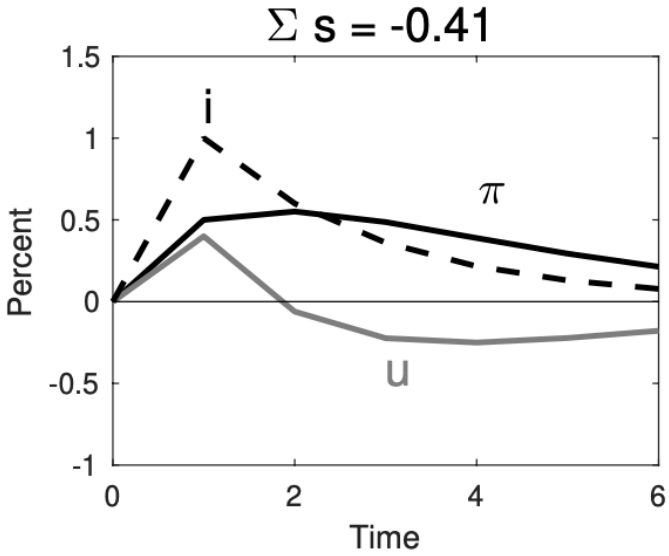
1) New Keynesian Model

$$x_t = E_t x_{t+1} - \sigma(i_t - E_t \pi_{t+1})$$
$$\pi_t = \beta E_t \pi_{t+1} + \kappa x_t$$
$$i_t = \phi \pi_t + u_{i,t};\ \phi > 1$$
$$(\rho v_{t+1} = v_t + i_t - \pi_{t+1} - \tilde{s}_{t+1})$$



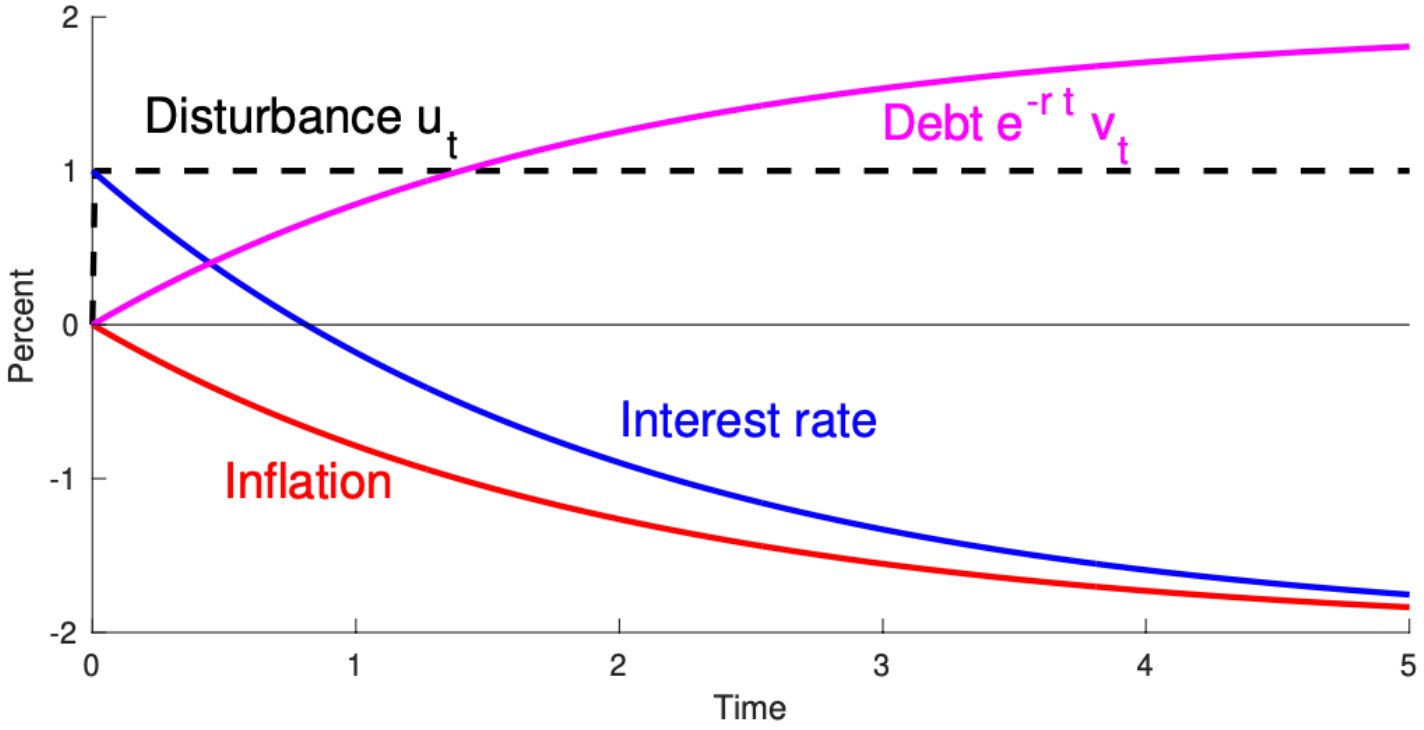
2) Same i, different u, no change in fiscal policy. Inflation?





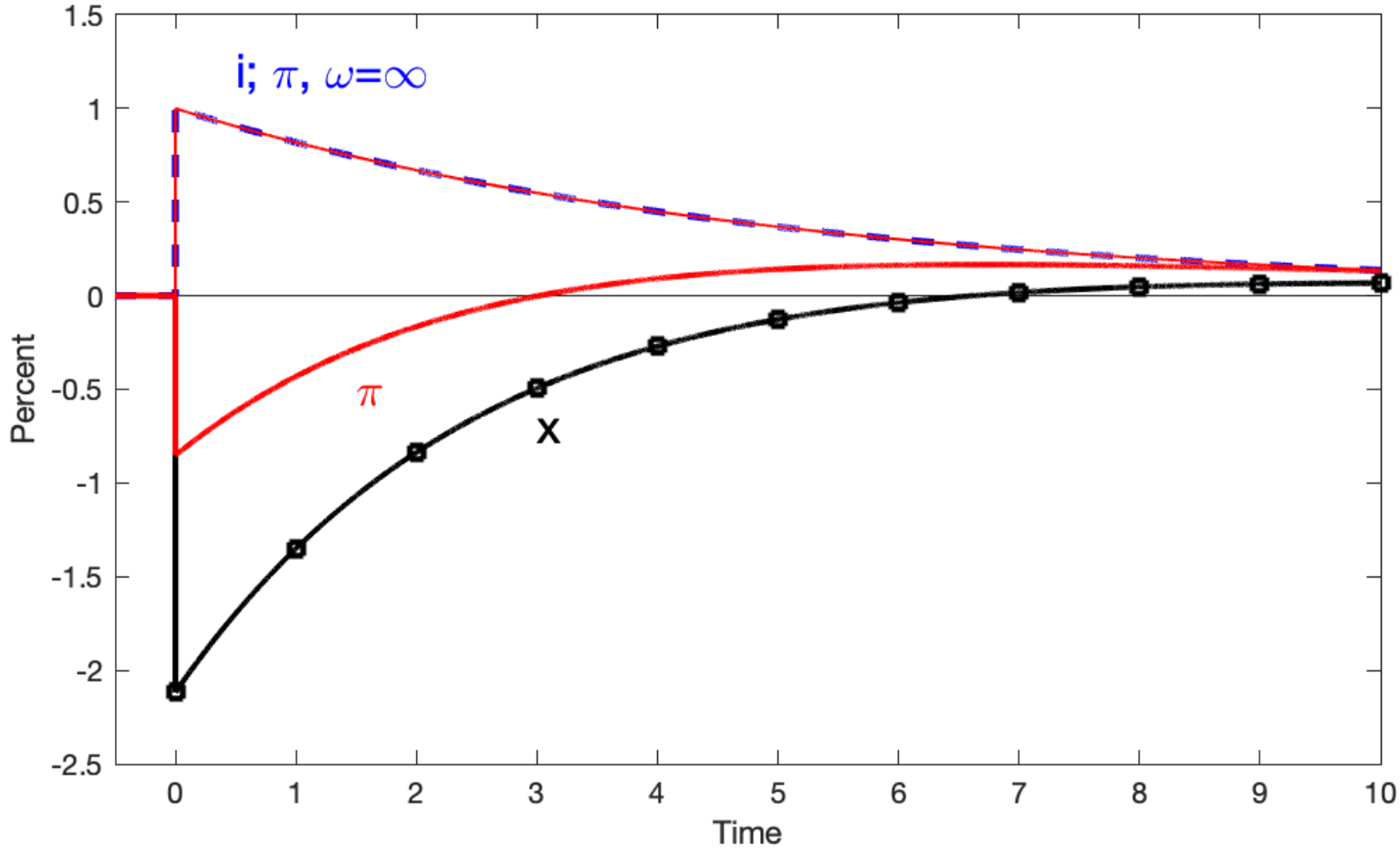
3) Without fiscal tightening, in NK, higher interest rates *raise* inflation.
NK always: higher interest rates *raise* future inflation. Hope for a jump down.

Can (&how) higher interest rates lower inflation (without fiscal help)?



- Old-Keynesian (adaptive expectations, $\pi_t = \pi_{t-1} + \kappa x_t$, Taylor rule $i_t = 1.5\pi_t + u_t$).
- Standard policy intuition, 1980s story.
- Disinflation still requires fiscal contraction to pay higher interest costs & windfall!
- Without fiscal contraction, higher interest rates cannot lower inflation in this OK model.

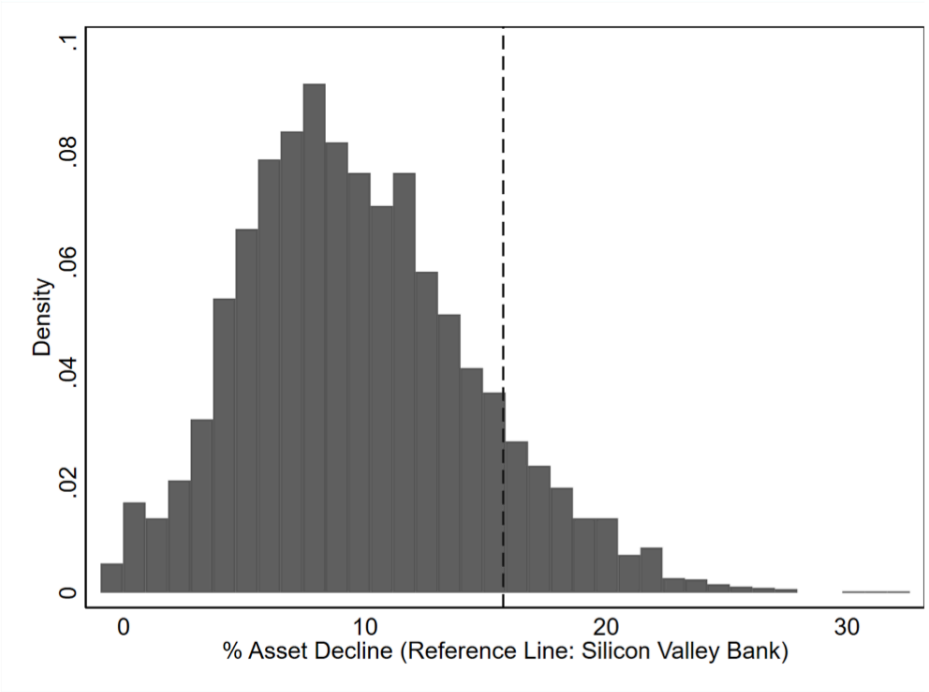
Can (&how) higher interest rates lower inflation (without fiscal help)?



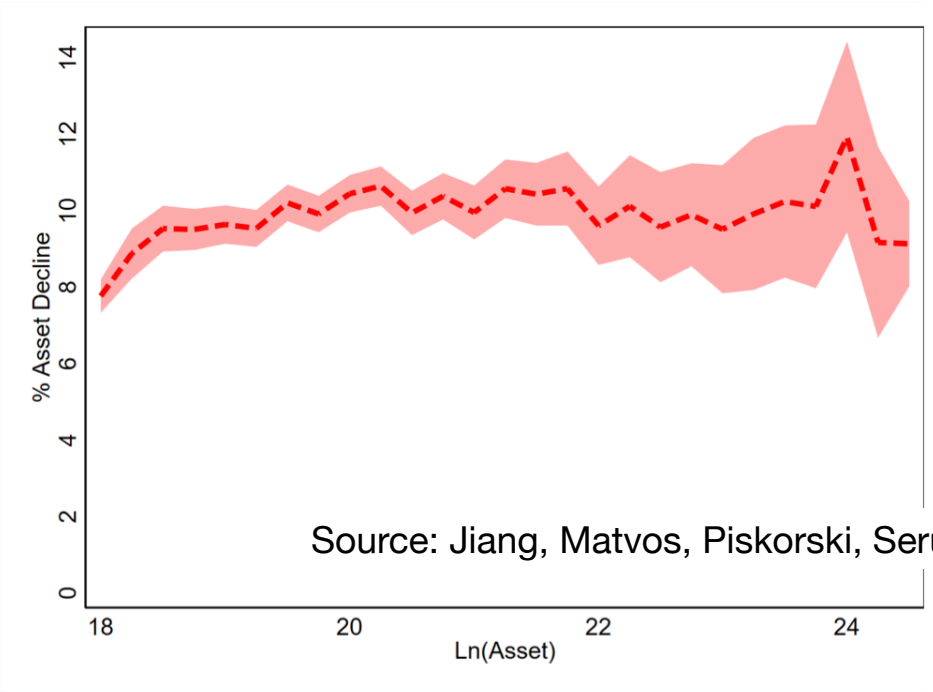
- Best so far: NK model, long term debt. No change in fiscal policy.
- Unpleasant arithmetic. A good thing to do, but limited.
- Rearrange payoffs to nominal bondholders. Far from standard intuition!
- Weak point in whole analysis: Phillips curve. $i \to x \to \pi$. Causal $x \to \pi$? Employment?

"Financial conditions" and monetary policy

- "4. Are there lessons we can learn thus far about implementation (e.g., IOR, ON RRP) and efficacy of policy rates as it relates to financial markets?"
- Higher interest rates lower inflation without fiscal help? A finance channel?
- No current worked out model that I know of. Beware intuition. Great project!
- Higher rates → "Tighter financial conditions" → less output → Phillips → less inflation?
- If so, a feature not a bug; a mechanism not a constraint! History: recessions = finance!
- Beware: Higher rates → IS → less output → Phillips → less inflation does not work.
- When invited: "Low rates sparked asset price bubbles." Level of nominal rates → risk premium??? Borrow 1%, lend 3% = Borrow 6% lend 8%. Like QE academia vs. Wall St.
- Now: Higher rates → duration risk in TBTF banks → credit contraction? Fiscal response!
- How in the world did the Fed allow simple duration risk to build up so badly?



(a) Histogram



(b) Asset Decline by Size

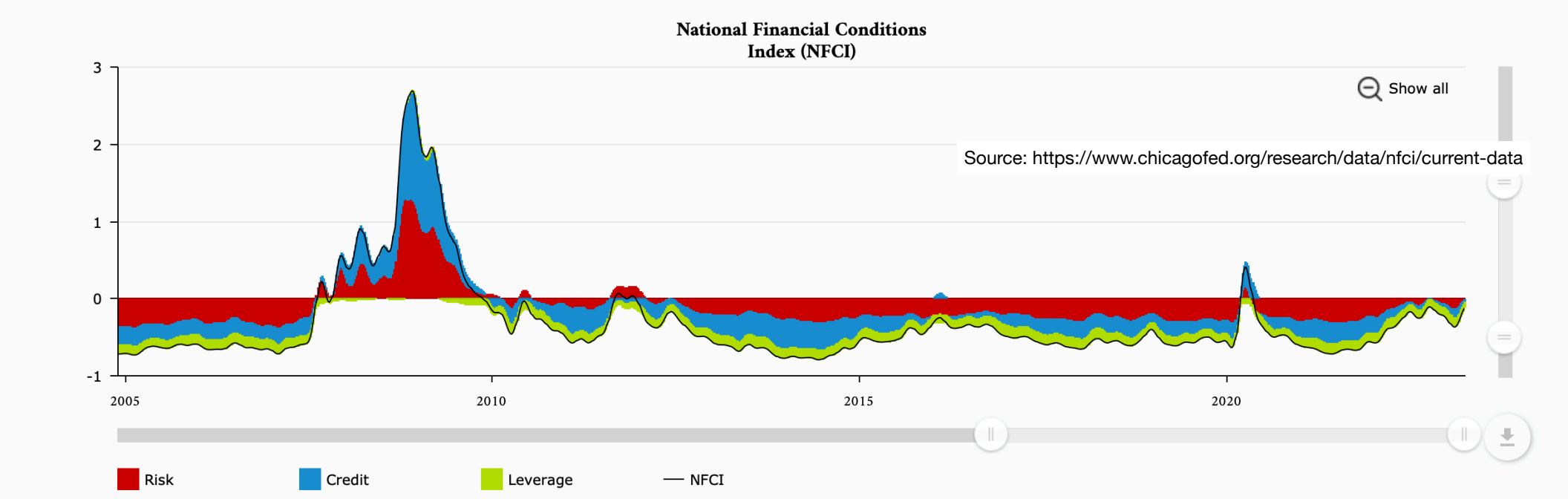
Source: Jiang, Matvos, Piskorski, Seru (2023)

Financial conditions

"1. How have financial conditions responded to the elevated rate environment and recent events in the banking sector?

2. How should Central Banks interpret and use financial conditions indicators? What are the implications for forecasting economic activity and deciding monetary policy stance? How does tightening the policy rate differ from a reduction in lending supply?"

- Economist vs. Banker, "Financial conditions"?



the NFCI and ANFCI, which are the weighted averages of 105 measures of financial activity.

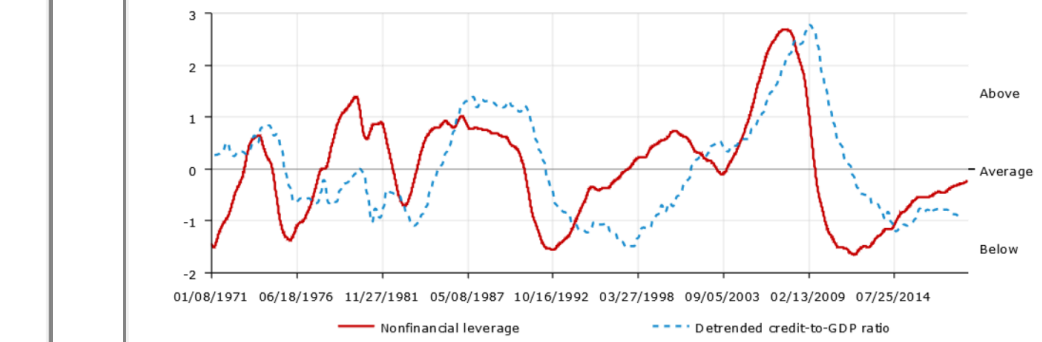
The National Financial Conditions Index (NFCI)

Weekly update on U.S. financial conditions at chicagofed.org/nfci

- Weighted average of 105 indicators of financial activity
- Weights capture relative importance to historical fluctuations
- Estimated by mixed frequency dynamic factor analysis
- Broad coverage of the financial system
  1. Money markets
  2. Debt and Equity markets
  3. Traditional and "Shadow" banking systems

Useful in monitoring financial stability and forecasting

- Brave and Butters (2012)
- Brave and Butters (2011)



Nonfinancial leverage is a leading indicator of financial stress and recessions

Detecting Early Signs of Financial Instability

Credit Indicators in the NFCI and ANFCI

Financial Indicator[1]
1-mo. Nonfinancial commercial paper A2P2/AA credit spread
Markit Investment Grade (IG) 5-yr Senior CDS Index[8]
BofAML High Yield/Moody's Baa corporate bond yield spread
30-yr Jumbo/Conforming fixed rate mortgage spread
Markit High Yield (HY) 5-yr Senior CDS Index[8]

Risk Indicators in the NFCI and ANFCI

Financial Indicator[1]
BofAML 3-5 yr AAA CMBS OAS spread[4]
ICE BofAML ABS/5-yr Treasury yield spread
2-yr Interest Rate Swap/Treasury yield spread[7]
ICE BofAML Financial/Corporate Credit bond spread
CBOE Market Volatility Index VIX
BofAML Home Equity ABS/MBS yield spread
3-mo. BofAML Swaption Volatility Estimate Index

- Designed as current factors, not forecast.
- Do they forecast? Best forecast?
- Many "credit measure x forecasts financial crises" claims.
- Forecast or cause? What if Fed monitors, controls?
- Danger of reacting informally to too many unproven signals, no robust model.
- $i_t = \phi_\pi E(\pi_{t+1} \mid I_t) + \phi_x E_t(x_{t+1} \mid I_t)$, a robust part of forecast?
- Given state of the art (duration miss), unsure how to react to yield curve, reacting to volatility, risk premiums, seems ambitious.