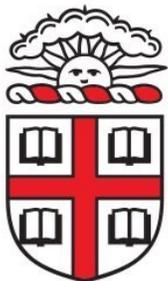


The Secular Stagnation Hypothesis and the Inflation Surge of 2020s

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Brown University



BROWN

Federico Caffè Lecture
December, 2023

Outline

Part I

- i. Introduce myself: Why am I here?
- ii. What we have been seeing in past several years
- iii. Why is today a major inflection point in macroeconomic policy?

Battle of two broad narratives

Largest uncertainty about macro-outlook

I can recall in my lifetime

Part II: The Secular Stagnation hypothesis

Its history, and how it made a comeback and changed the policy framework of the US central bank, the Federal Reserve.

Part III The unexpected and rapid rise in inflation .

What did we miss?

Part IV: What is the new normal?

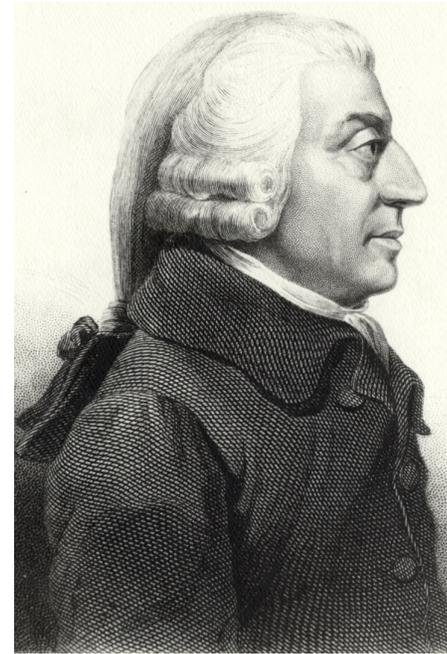
Part V Conclusions

Part I
Introduction:
Myself and
the battle of two
meta-narratives

Why economics?

Growing up in Iceland:

- Interested in politics, history, philosophy, mathematics and physics.
- Mathematics and physics seemed to lack urgency.
- More interested in doing politics, but not studying it.
- Philosophy: Mostly arguing about what somebody said.
- History: About the past not forward looking.



Read a small book on Adam Smith when 17 in high-school:
Main project, was trying to establish laws about human behavior akin to Newton that could be used to make prediction about policy

Coming to America

I was miraculously picked from complete obscurity from the University of Iceland, after only 3-years of undergraduate education. Went straight to Princeton in 1997 in a big rush in my early 20's. My first trip to USA!



Main observation early on:

- What area of economics is it where one can have the largest impact?
- Monetary policy is being done by Ph.D. economists.
- Other areas of economics fascinating.
- But in terms of probability of marginal impact:
 - Monetary Economics

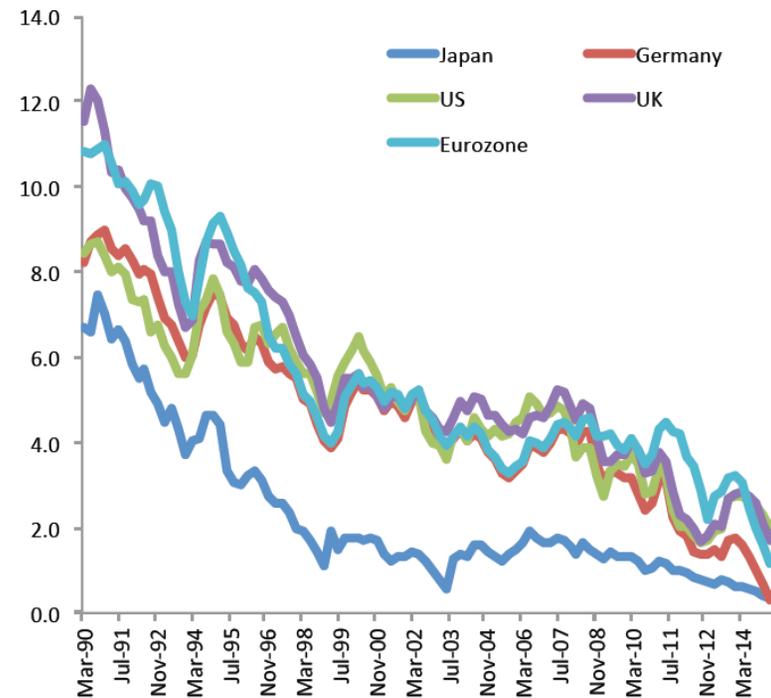
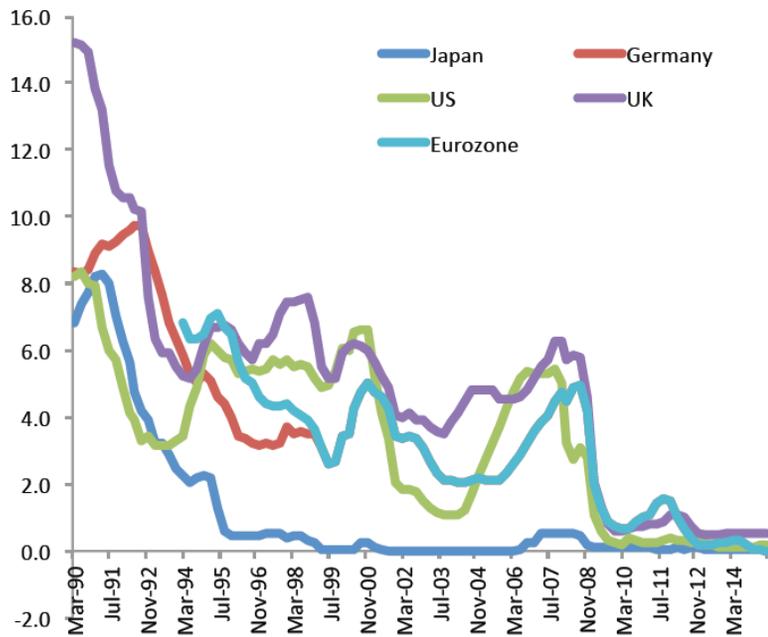
We are at a major inflection point



Trend 1: Secular Stagnation

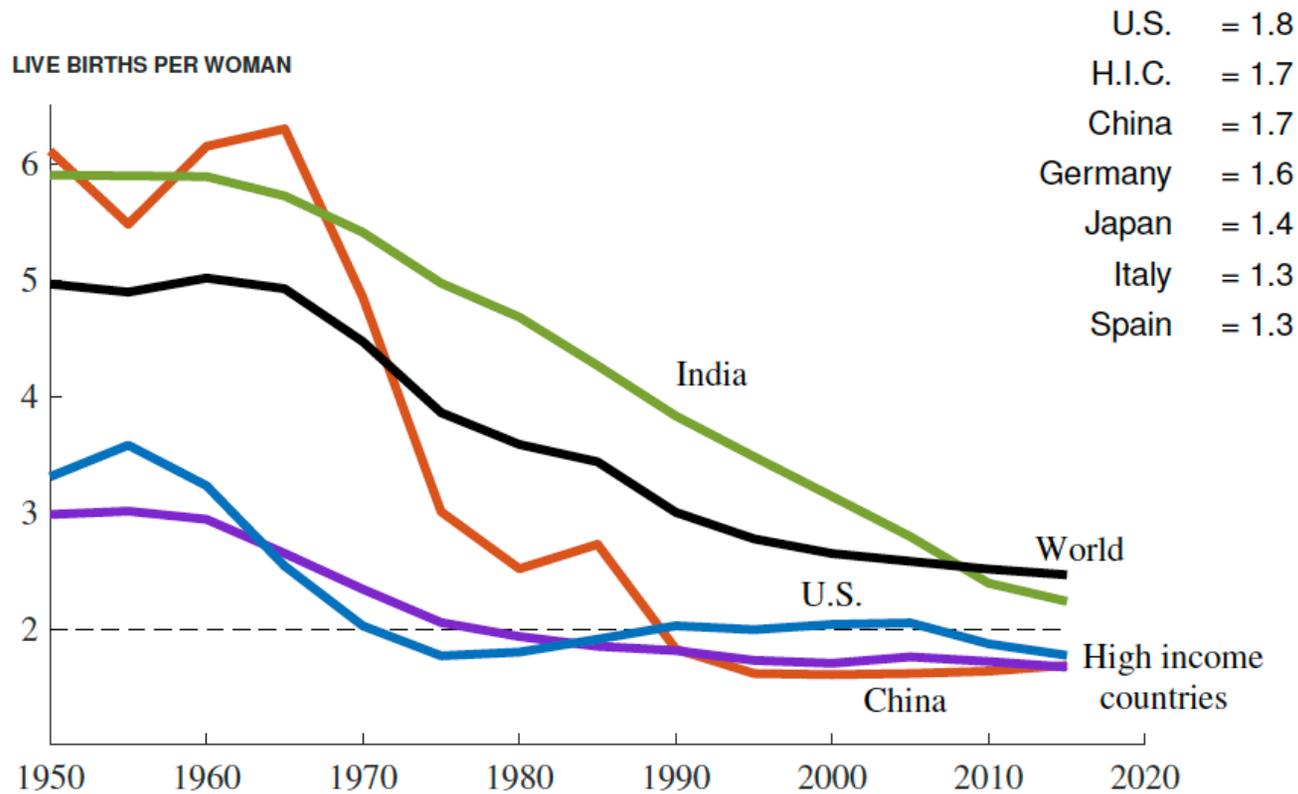
LOW GLOBAL INTEREST RATES

NOMINAL SHORT-TERM AND LONG-TERM RATES, 1990-2015



Trend 1: Main Explanation

The Total Fertility Rate (Live Births per Woman)

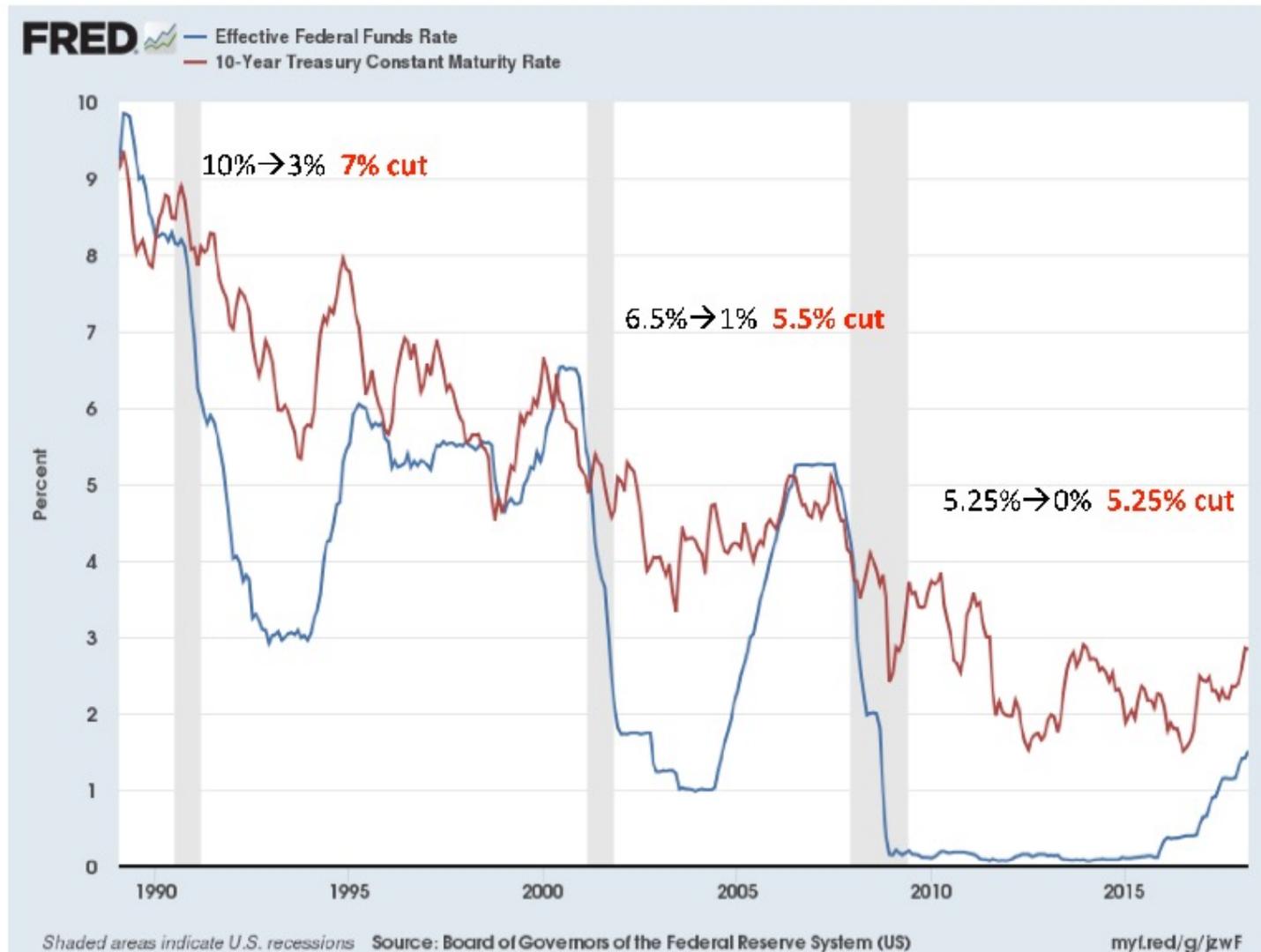


Other explanations

Essential issue imbalance in relative savings vs investment opportunities.

- ❖ Aging societies trigger this (fewer "natural" borrowers, which are typically young people).
- ❖ Increase in inequality if rich save relatively more.
- ❖ Reduction in investment opportunities, slowdown in productivity.

Trend 1: Main Problem, no room to cut rates

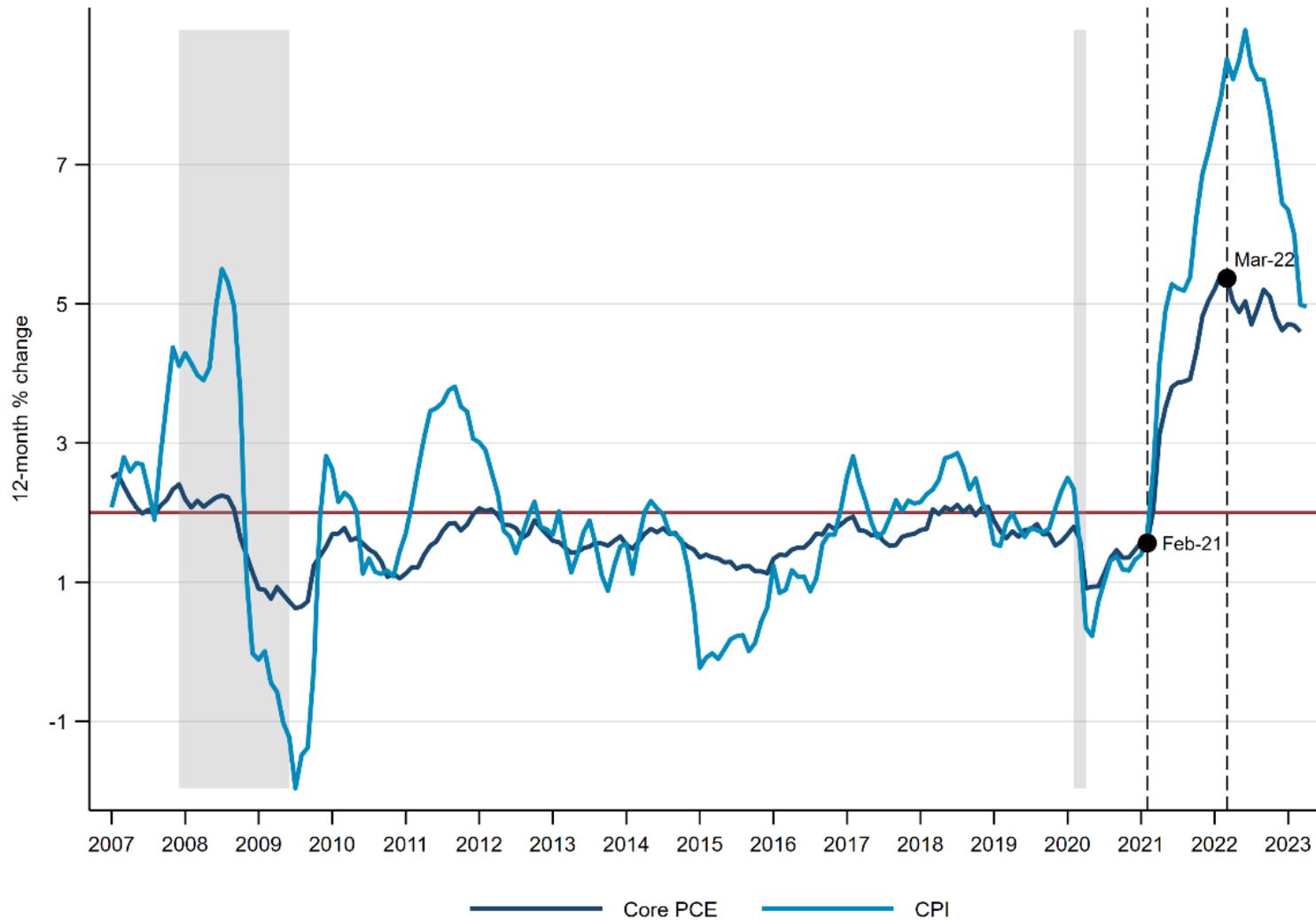


Trend 1: The US Central Bank, The Federal Reserve, issued a new policy framework in August 2020

- New Policy Framework, 2020

The Committee judges that the level of the federal funds rate consistent with maximum employment and price stability over the longer run **has declined relative to its historical average**. Therefore, the federal funds rate is likely to be **constrained by its effective lower bound** more frequently than in the past. Owing in part to the proximity of interest rates to the effective lower bound, the Committee judges that **downward risks to employment and inflation have increased**.

Trend 2: Inflation came back!



Its baaaack! Biggest surge in inflation since the 1970s

- Was the whole concern about permanently low interest rate and danger of persistent and low inflation misguided?
- Why where almost *everybody completely surprised* by the inflation surge?
- What does it mean about future policy?
- Are we back to some new normal, and secular stagnation hypothesis just as wrong in 2014 as in 1938 when first proposed.

Surprise! Including me

September, 2021

Translation: Inflation? Not a problem! Nothing to see here!

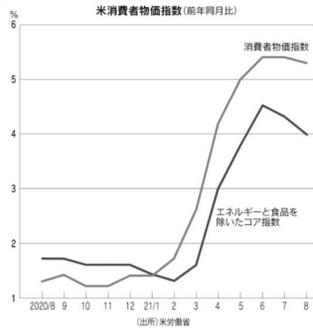
Gauri B. Egertsson
アロンソン大学博士
(経済学)。専門は
マクロ経済学、国際金
融



ガウティ・エガートソン ブラウン大学教授

米インフレの行方

懸念少なく金利正常化に益



ポイント

- 一時的な供給不足が原因、いずれは解消
- FRBの適切な対応で70年代の再現ない
- バイデン政権の積極財政もリスク小さい

米のインフレは、70年代の供給不足が原因、いずれは解消される。FRBの適切な対応で70年代の再現はない。バイデン政権の積極財政もリスクは小さい。

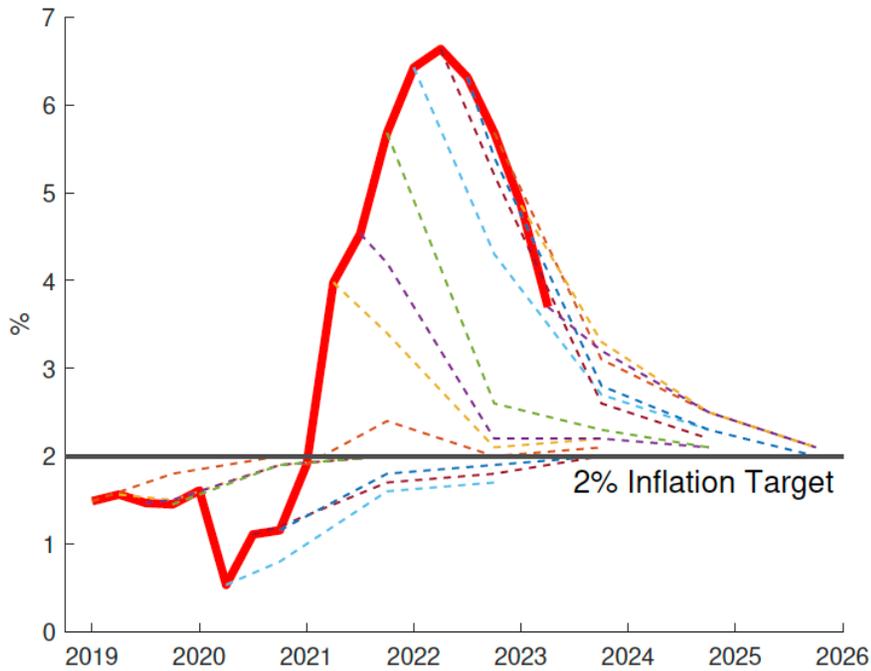
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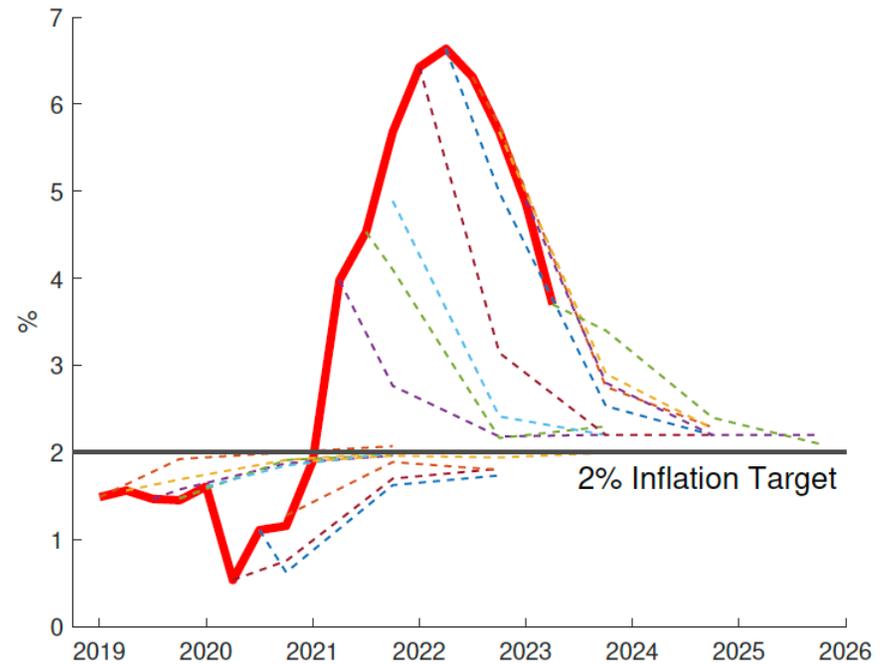
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Surprise!

Personal Consumption-Index Inflation: Actual and **Forecasted**:



Federal Reserve Summary of Economic Projections



Survey of Professional Forecasters

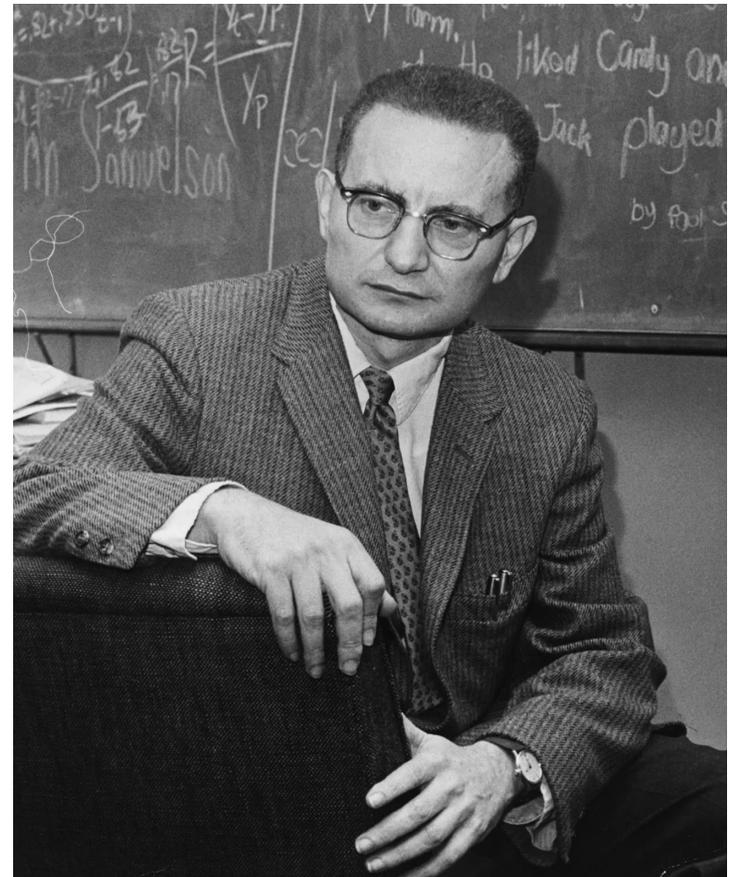
What do market say now?

“The stock market has predicted nine out of the last five recessions!”

My view: Markets move based on meta-narratives and can fluctuate between a few meta-narratives.

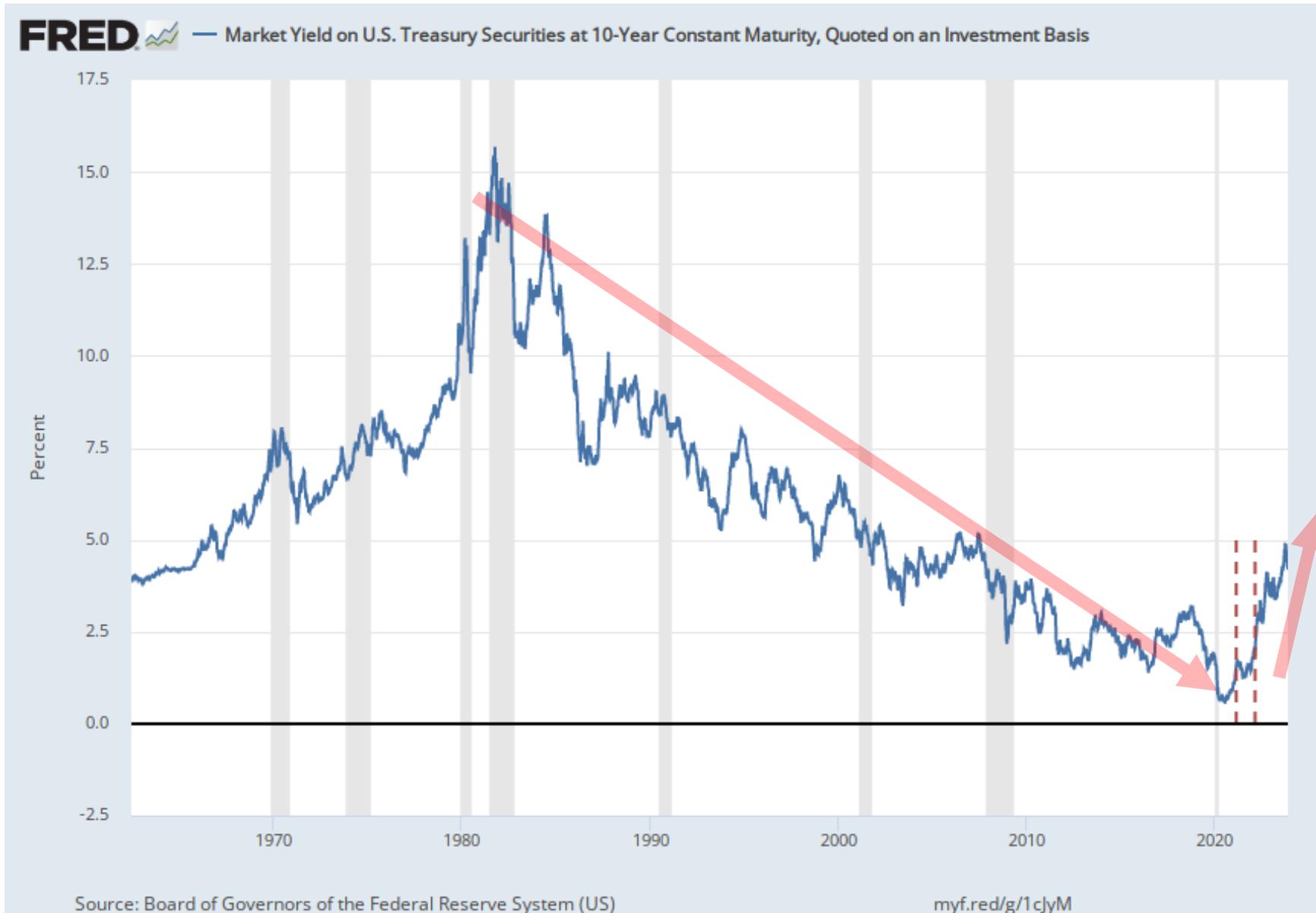
Prior to the inflation surge the meta-narrative was secular stagnation

Now there is a battle between the meta-narrative of secular stagnation and a “new normal” of higher rates



Paul Samuelsson

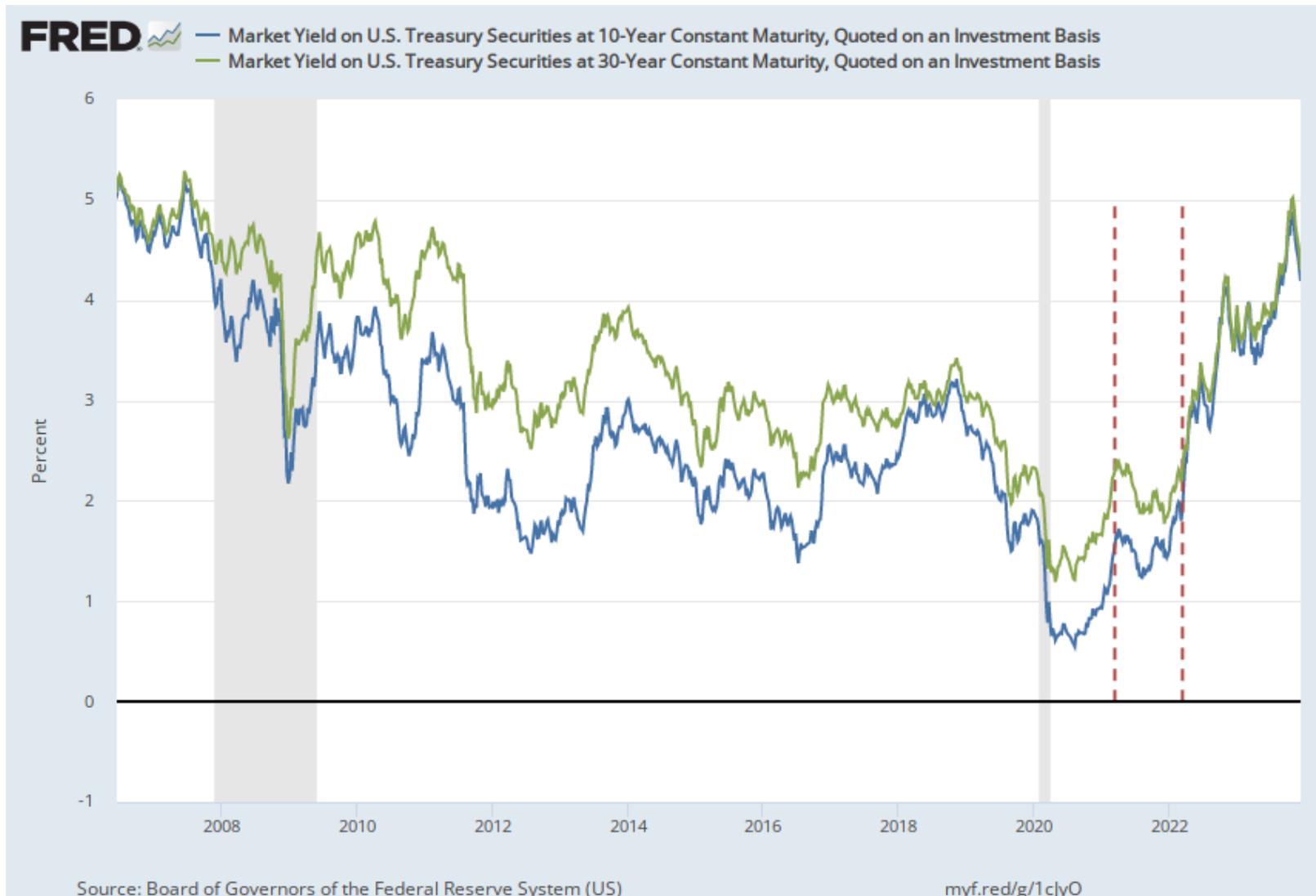
10 Year US Treasuries



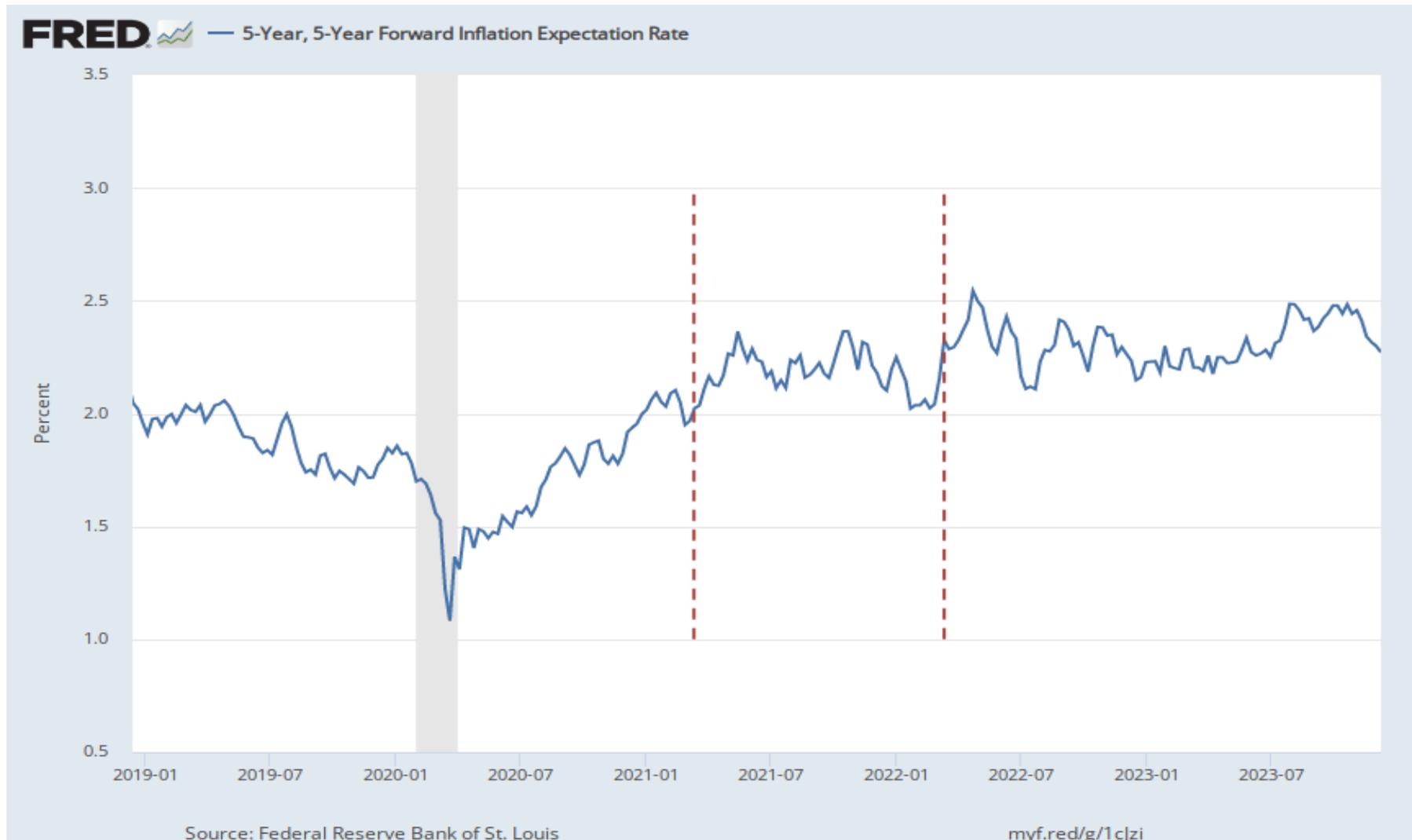
Closer Look: 10 Year Treasury Yields climb to highest level since prior to financial crisis 2008 in Oct/Nov 2023



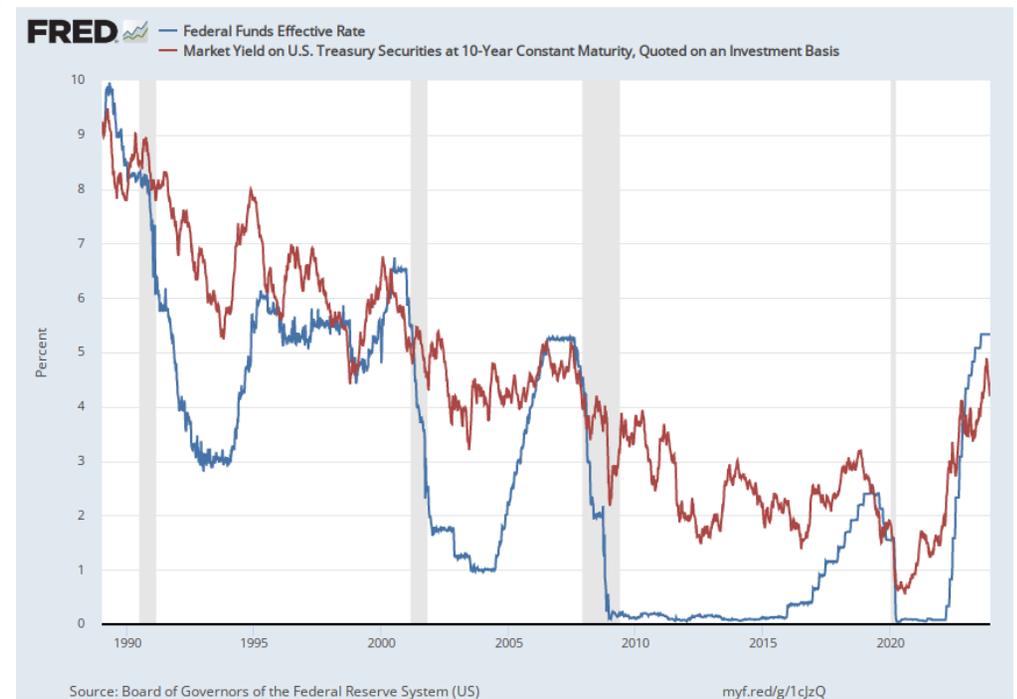
30-year rates move in lockstep with 10-year rates suggesting a *permanent change in beliefs of the market?*



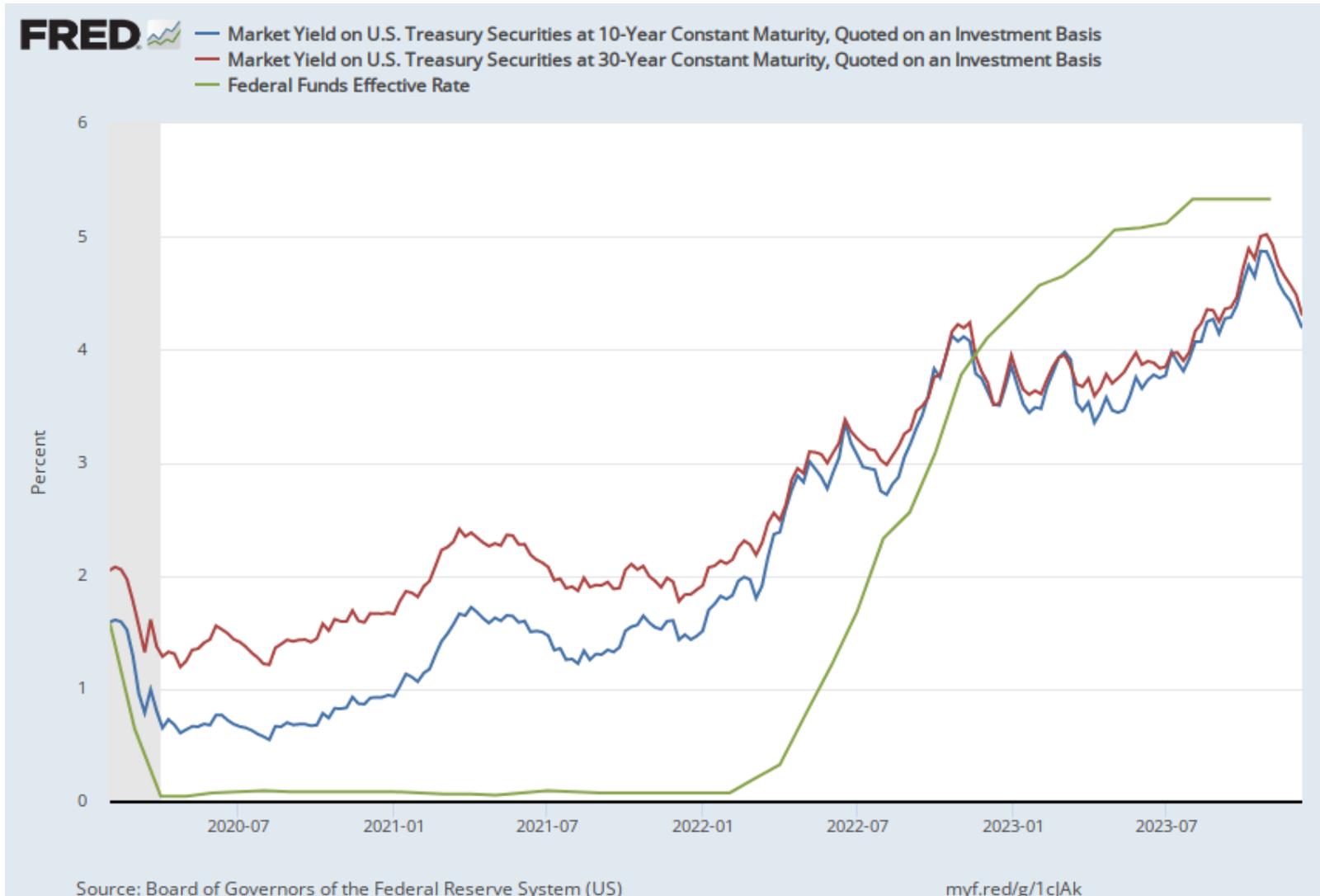
Inflation expectation not the answer! Long-term Inflation Expectations well anchored



10 year moving sharply with short rate suggesting fundamental change in expectation about long rate



Battle of two narratives



We are at a major inflection point



Part II

The secular stagnation hypothesis:

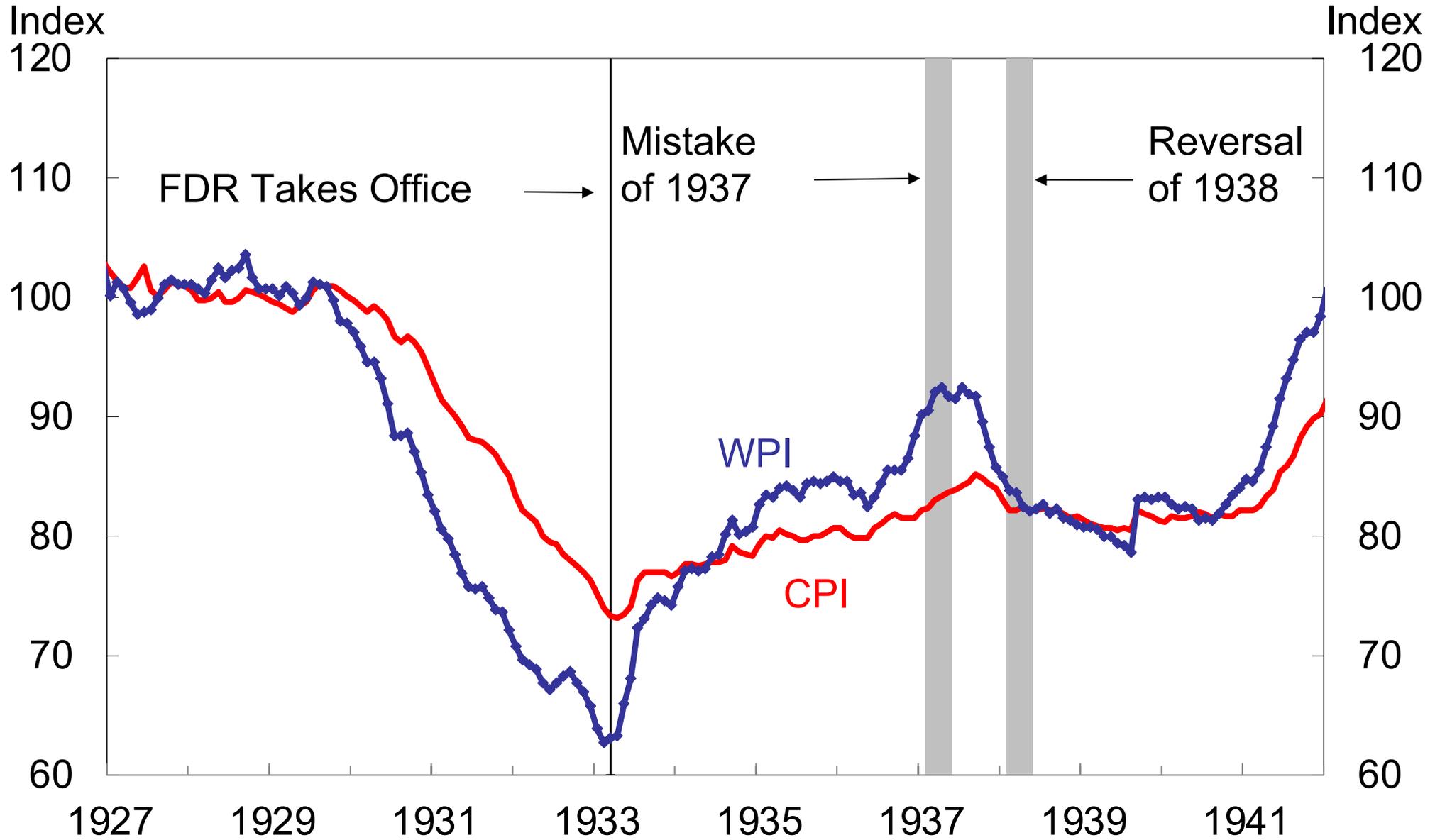
- i. The original idea and its death
- ii. Revival: The modern version

Secular Stagnation Hypothesis

history

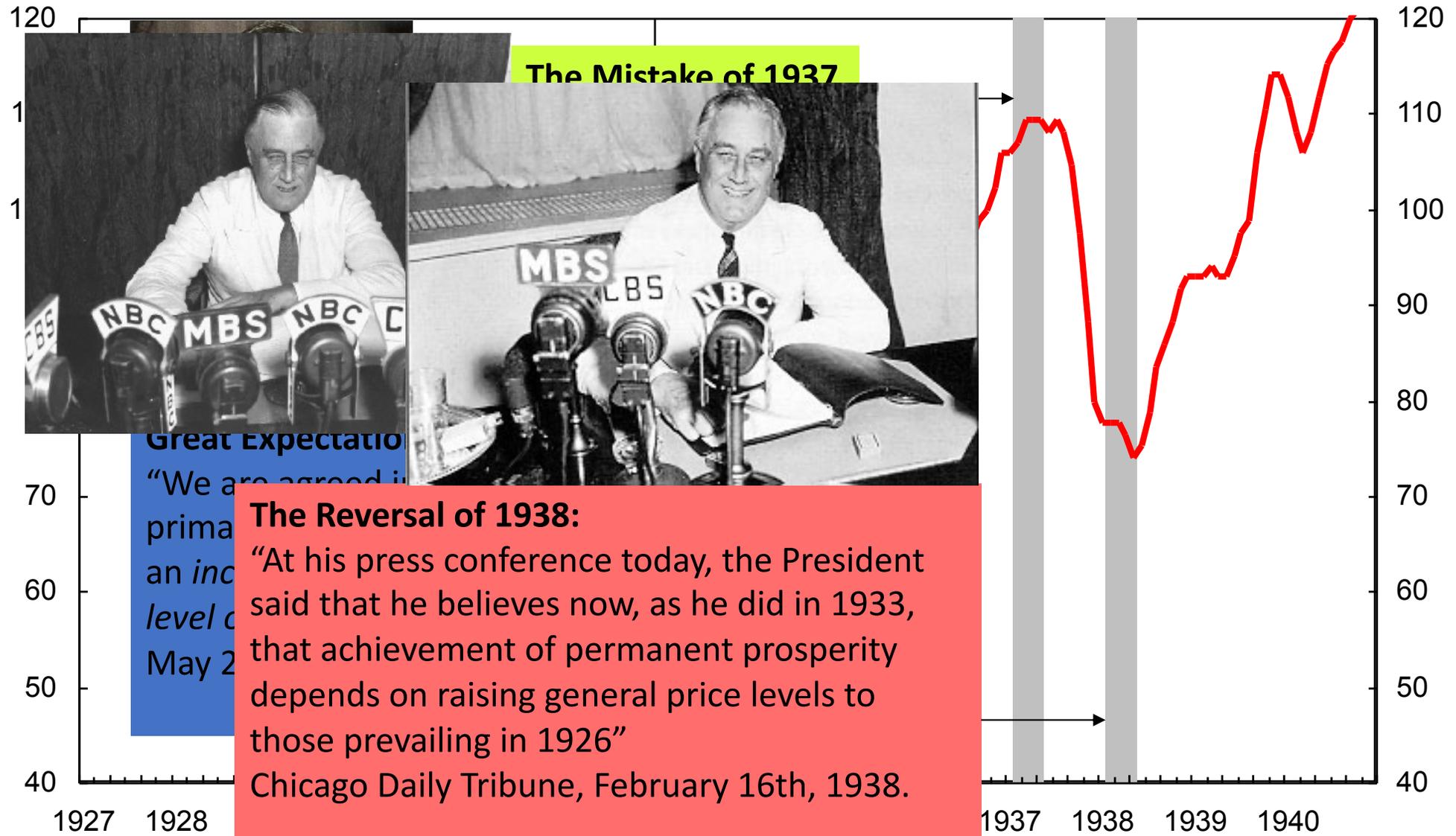
- Proposed by President of the American Economic Association in 1938, Alvin Hansen, in his presidential address to ASSA.
- Core message: Gloom and doom doom
- I have my own theory of the Great Depression which differ substantially
 1. Eggertsson: "Great Expectations and the End of the Depression," American Economic Review, 2008.
 2. Eggertsson, "Was the New Deal Contractionary," American Economic Review, 2012

Price Indices (1929=100)

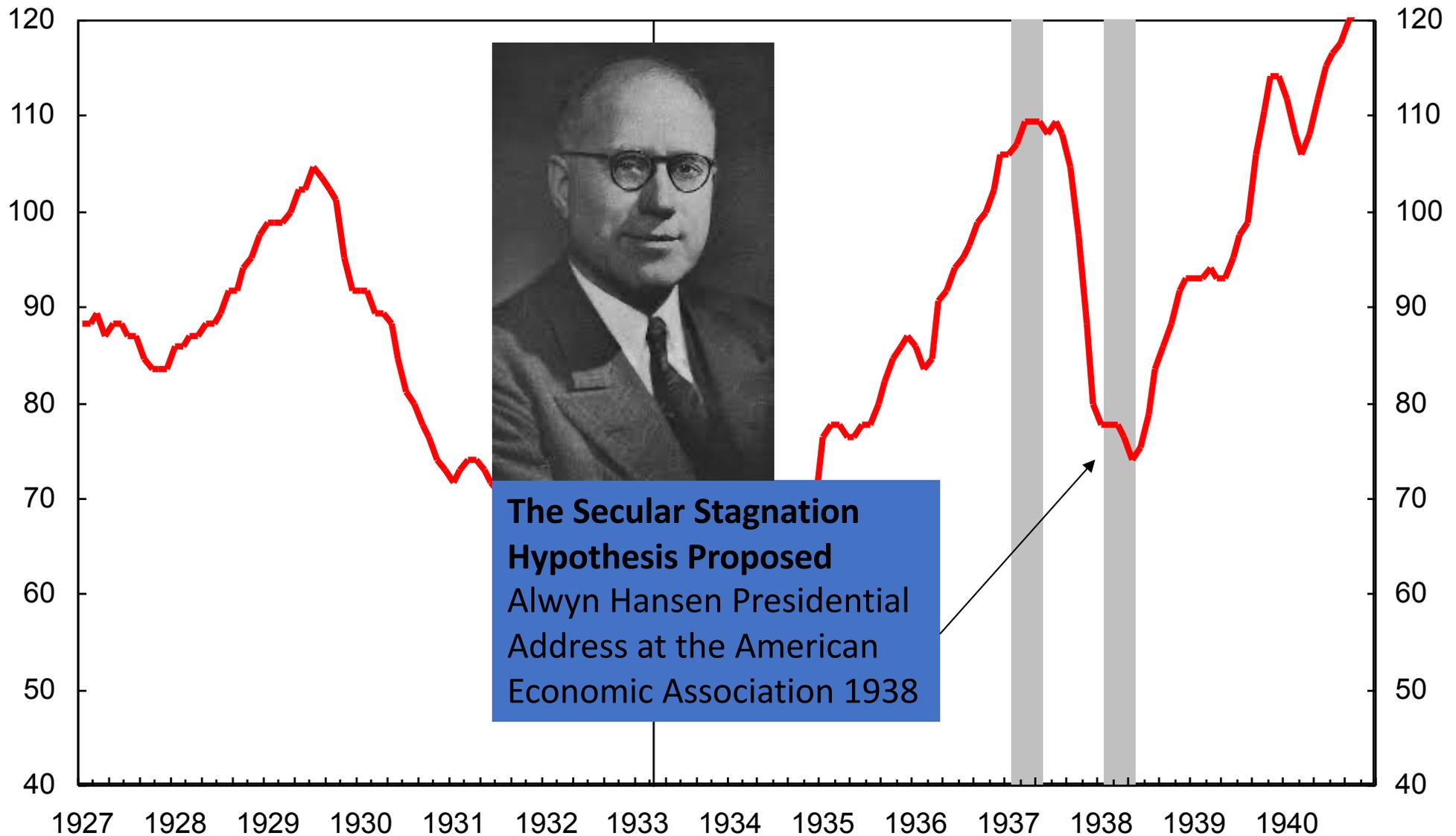


Source: NBER Macroeconomy Database

Examples of Commitments (Communications by FDR) and Industrial production



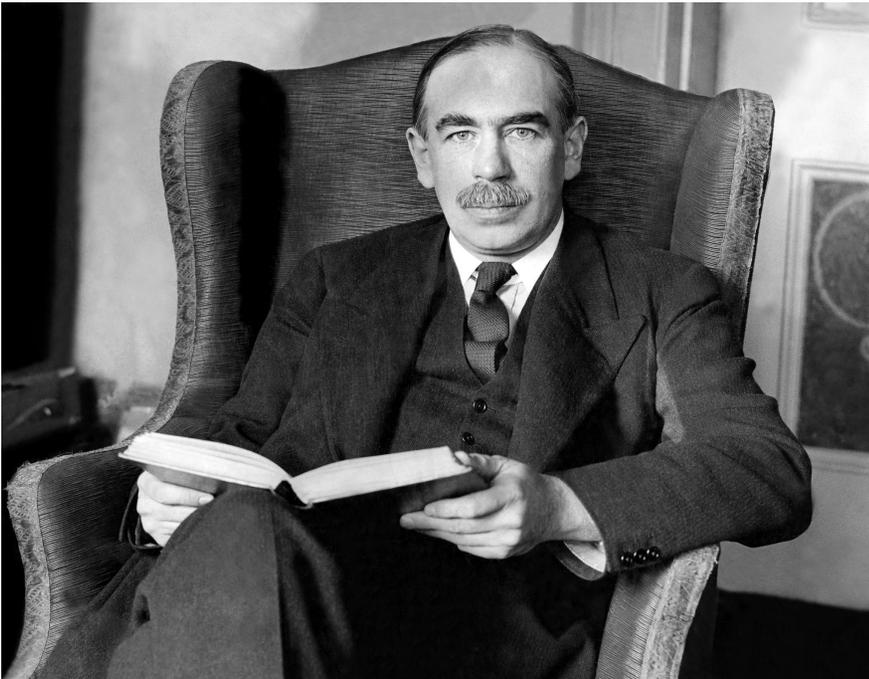
Industrial Production in the Great Depression and the Secular Stagnation hypothesis



What is the secular stagnation theory

Latin: *Seculium* "century or lifetime"

Roots: Keynesian Consumption Theory



Keynes proposed two psychological laws to explain consumption

1. People spend less than one to one if income increases
2. People *save more* the higher is their income

Prediction: As country get richer, Then they will spend less and less on consumption, and need to invest more

Hansen's secular stagnation theory



Alwyn Hansen: Professor at Harvard.

Most influential economist in the US in the 30s and 40s.

Dubbed the “American Keynes”

Helped create:

Social Security System

Council of Economic Advisors for US Presidents.

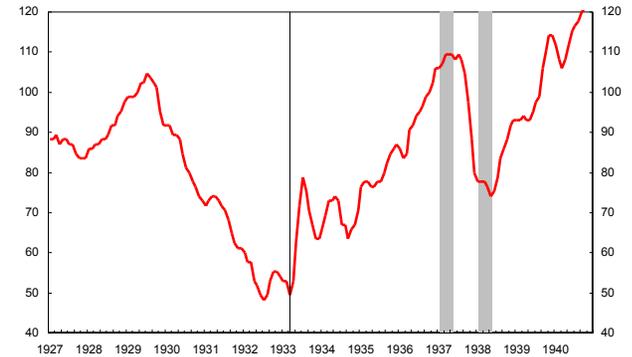
Adviser of two later Nobel Prize winners:

Paul Samuelson and James Tobin

Believed there was excess savings driven by several factors:

1. Population growth slowdown
2. Oversupply of savings
3. Lack of investment opportunities despite nominal interest rate collapsing to zero.
4. Was generally pessimism that cutting interest rate sufficiently potent tool to stimulate investment and spending (in line with Keynesian thinking)

Secular stagnation fades into background



Franklin Delano Roosevelt Policy of reflating the Price Level

+

WWII spending eliminated any traces of insufficient demand in 1938

After World War II: Return to Secular Stagnation

- Many economist predicted: With reduction in government spending there would be return to Great Depression conditio
→ and a secular stagnation would be come an issue again.
- They were wrong

Reasons

1. Baby boom reversing the slowdown in population growth
2. The younger generation had great demand for new housing
3. Rapid increase in productivity and technological advancement giving rise to number of investment opportunities.
4. Inflation, instead of deflation, became the major cause of concern following the 1960s

Secular Stagnation left textbooks and was **largely forgotten.**

The Financial Crisis of 2008 and the secular stagnation strikes back

- The Financial crisis of 2008 resulted in:
 - Interest rate collapse to zero (first time since the 1930's)
 - Inflation drops below target
 - Output drops and inflation rises.

But what was the trigger?

Two initial reigning hypothesis

Household debt did it!

e.g. Eggertsson and Krugman (2012)

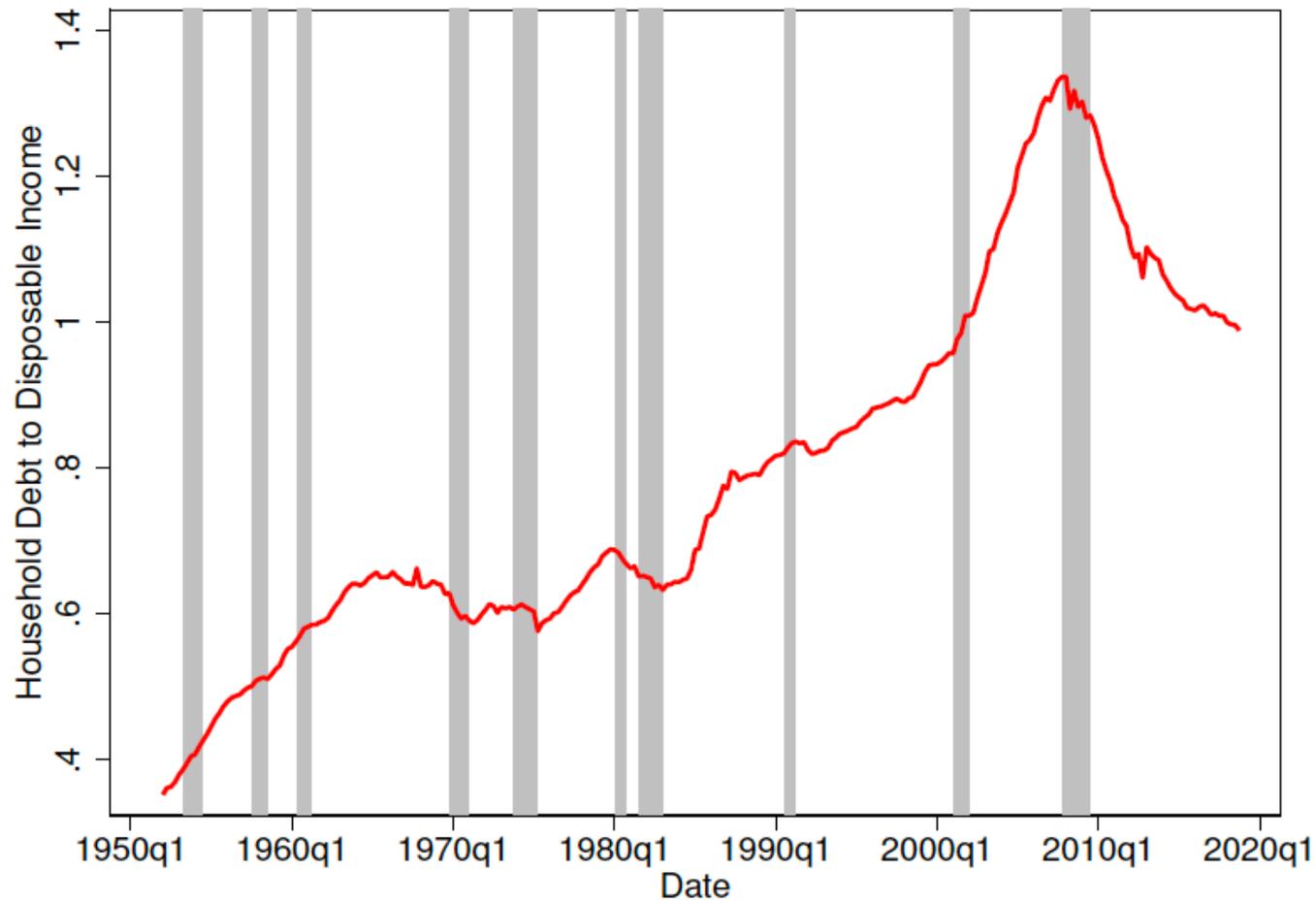


Figure 1: Ratio of Household Debt to Disposable Income

Financial crisis resulted in banks being undercapitalized so spreads (financial condition) became elevated.

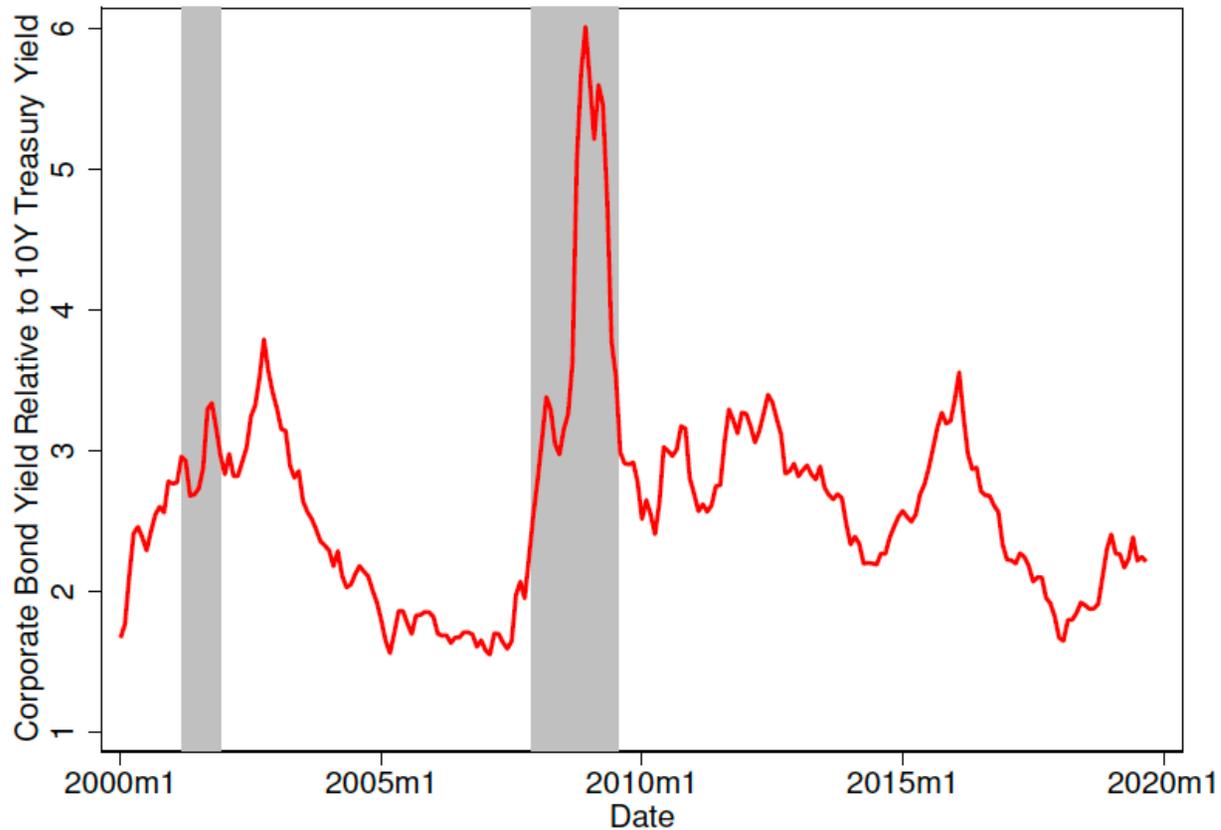
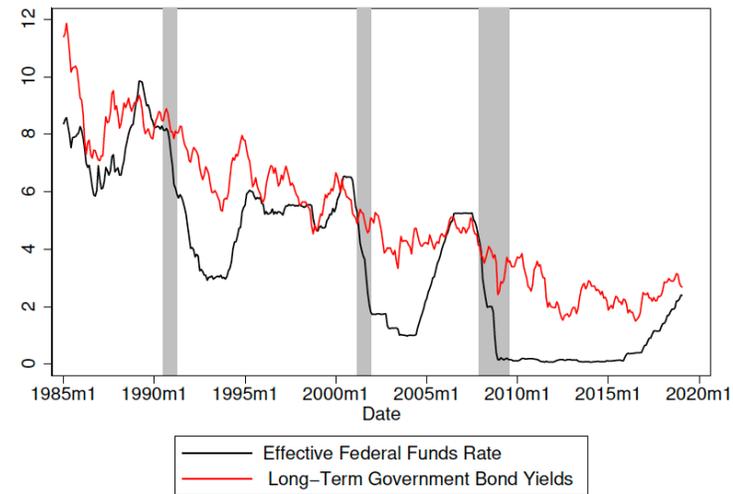


Figure 3: Moody's Seasoned Baa Corporate Bond Yield Relative to Yield on 10-Year Treasury Constant Maturity

Problem: Fast forward fall 2013

- Spreads had fallen to precrisis level.
- Household debt had gone back to "sustainable" levels by most accounts.
- And yet:

Interest rate at zero,
inflation below target,
growth anemic.



Modern Secular Stagnation Hypothesis

- Larry Summers revives the secular stagnation hypothesis in a speech at the IMF in fall of 2013
- Fun fact: Alvin Hansen was Paul Samuelson advisors, who was the brother of Larry's father.
- Could it be, Larry suggested: That we need to revisit Alvin Hansen's long forgotten idea?



Larry Summers cleavel formulation

$$0 > r_t^n < r_t$$


The natural rate of interest: What the central bank wants to set to achieve inflation target and full employment

Summers suggest: Natural rate is permanently negative!

The market real interest rate which can be different but if larger then there is a recession. You can't make the real interest rate negative due to the zero bound if inflation is low.

Secular Stagnation

- Led to major rethinking of macro modeling
- Why? The real interest rate in “steady state” was a positive constant.
- Model in use in central banks needed to be reformulated to take into account many generations, so there could be imbalance between savings and investment opportunities.
- Wrote my self series of papers with Summers and others to formulate this idea.
- Example on next page

Example

Eggertsson, Mehtra, Robbins 2019, AEJ macro

- 81 generations
- Have life cycle profile of income
- Expect death at some point
- Borrow when young to finance housing etc
- There is inequality

What determines the interest rate

- Relative supply and demand of savings
 - No reason in theory to expect them to be permanently positive or negative
 - Is history a good judge?
 - Demographic transition of wealthy countries has not been observed in history.

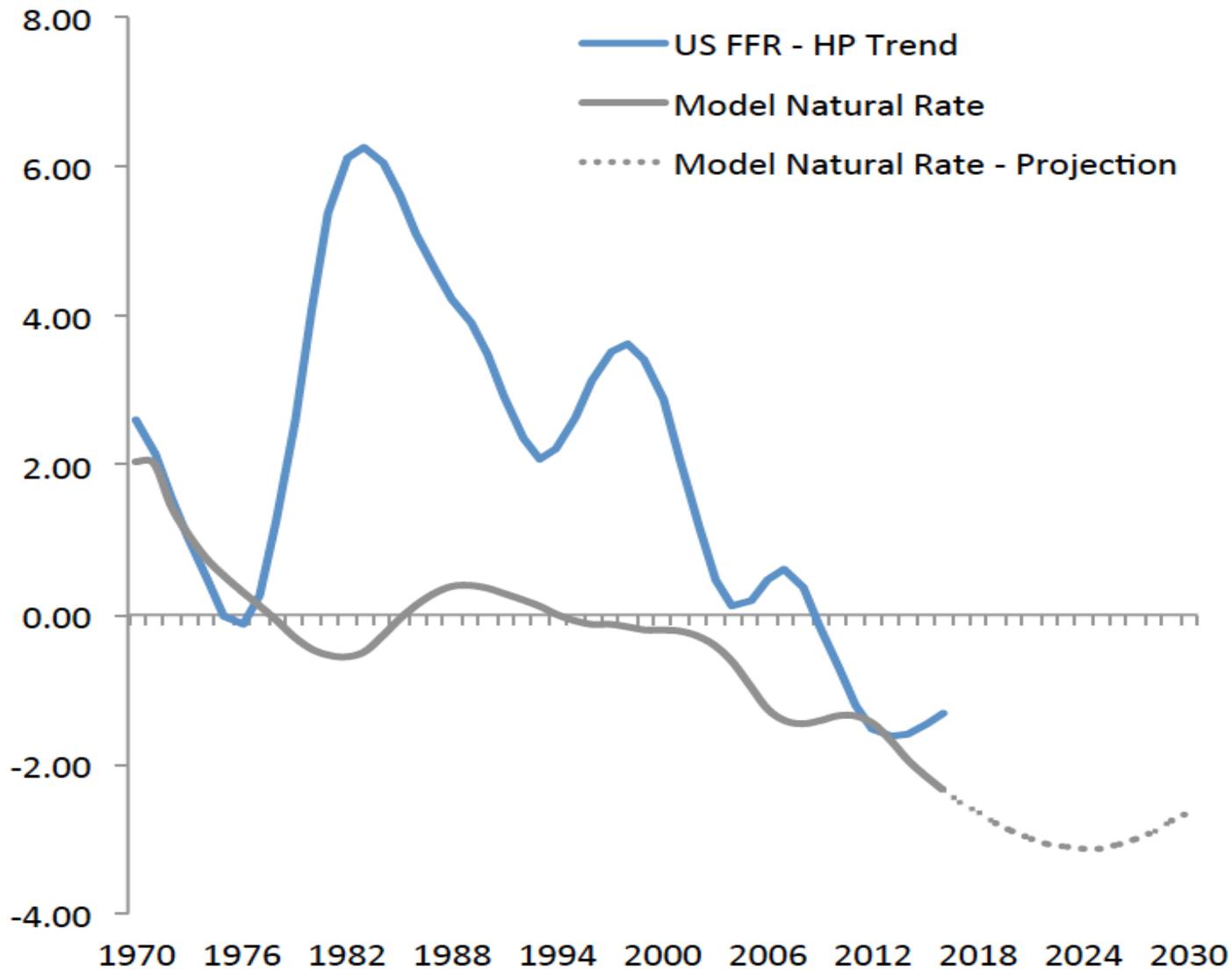
DECOMPOSITION OF FALL IN INTEREST RATES

1970 TO 2015

<i>Forcing variable</i>	Δ in r	% of total Δ
Total interest rate change	-4.02%	100%
Mortality rate	-1.82	43%
Total fertility rate	-1.84	43%
Productivity growth	-1.90	44%
Government debt (% of GDP)	+2.11	-49%
Labor share	-.52	12%
Relative price of investment goods	-0.44	10%
Change in debt limit	+.13	-3%

COMBINED EFFECT

TRANSITION PATH



Getting back to normal

Table 7: Raising the natural rate of interest to 1%

Forcing variable	2015 Value	Counterfactual value
Total fertility rate	1.88	3.28
Government debt (% of GDP)	118%	215%
Productivity growth	0.65%	2.43%
Relative price of investment goods	1.00	2.43

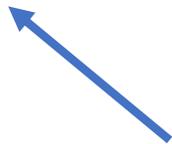
Secular Stagnation hypothesis

- Became widely accepted in markets with long rates at historic low and in policy circles.
- The Federal Reserve New Policy Framework was largely designed in response to the belief that there had been a permanent reduction in the real interest rate so that the ZLB would be hit again and again.
- Then came the the inflation surge of 2020s.

Interesting and unexpected twists



Other, like Olivier Blanchard, stuck to the secular stagnation narrative!



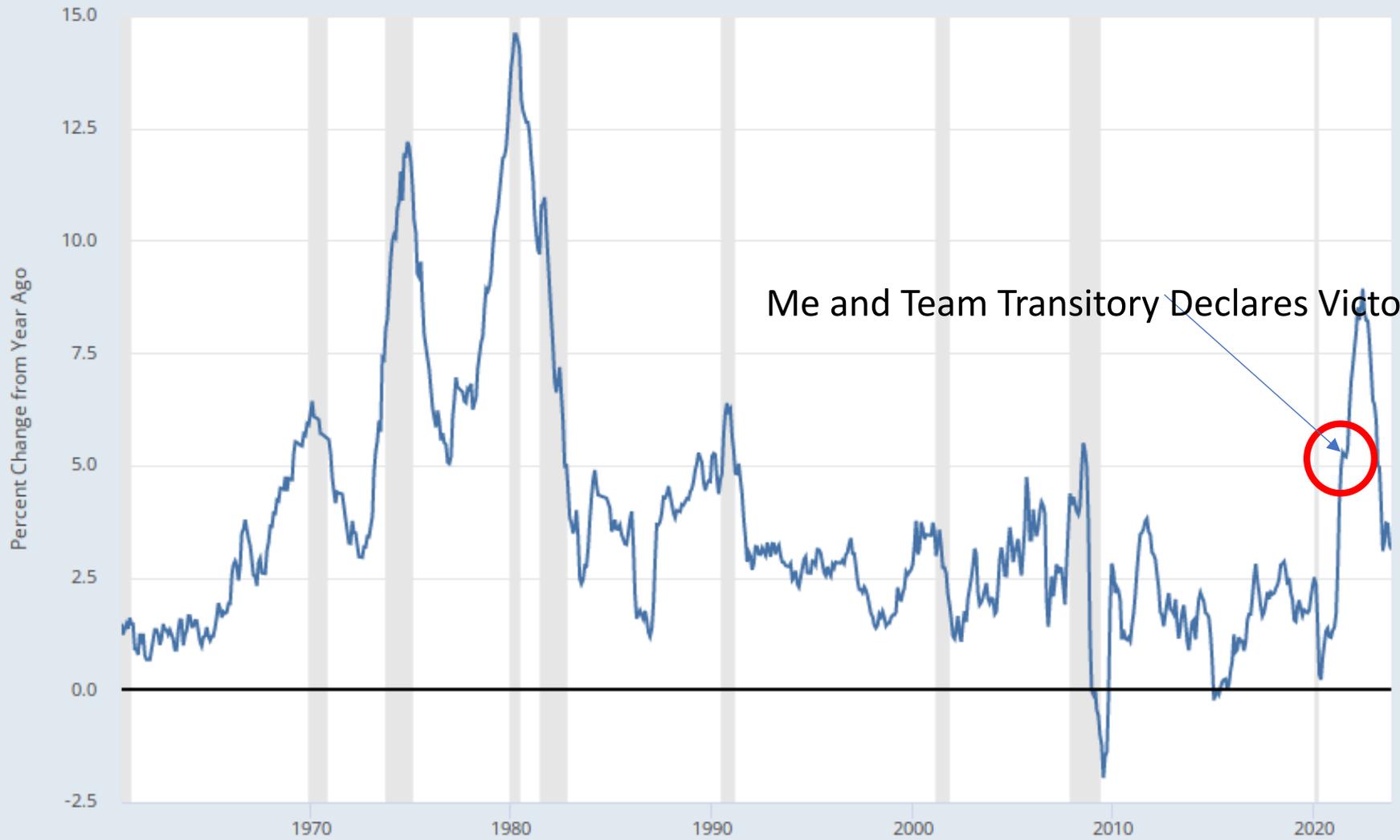
Summers, the main proponent of the secular stagnation hypothesis changed his tune!

What about me?

To address that question we need to have a theory of why there was as surge in inflation. I will offer it tomorrow, and then come to a “balanced” conclusion.

Part III

The unexpected and rapid
rise in inflation: What did
we miss?



Me and Team Transitory Declares Victory!

How did we get it so wrong?

$$\pi_t = \kappa x_t + \beta E_t \pi_{t+1} + u_t$$

Estimated to be very-very-very low

Driving Inflation

Hazell, Herrano, Steinsson, Nakamura, QJE,

2022:

one-percent reduction in unemployment
generates only 0.34 percent increase in
inflation

Output or 1-unemployment

Inflation

From the Feds New Policy Framework 2020

The **maximum level of employment** is a broad-based and inclusive goal that is **not directly measurable** and changes over time owing largely to nonmonetary factors that affect the structure and dynamics of the labor market. Consequently, it would not be appropriate to specify a fixed goal for employment; rather, the Committee's policy decisions **must be informed by assessments of the shortfalls of employment from its maximum level**, recognizing that such assessments are necessarily uncertain and subject to revision. The Committee considers a wide range of indicators in making these assessments.

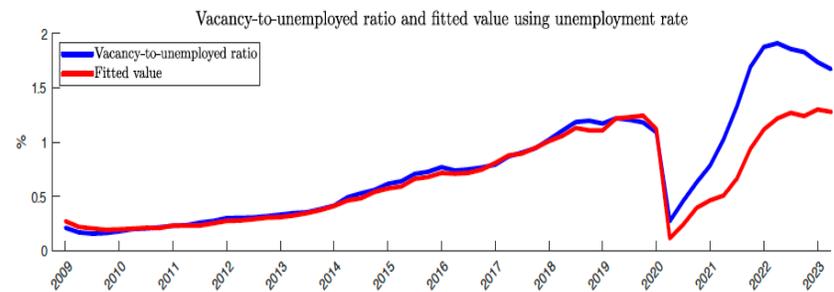
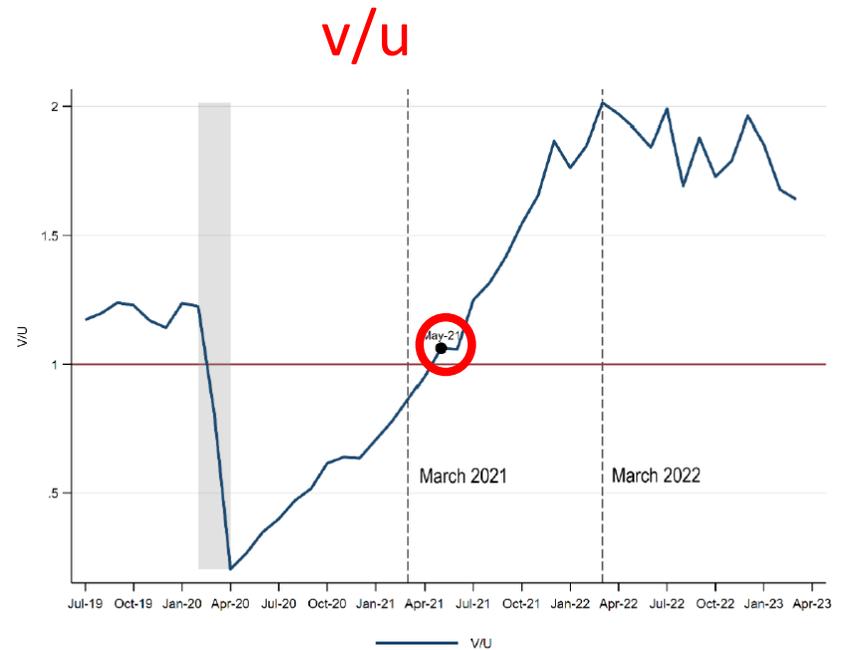
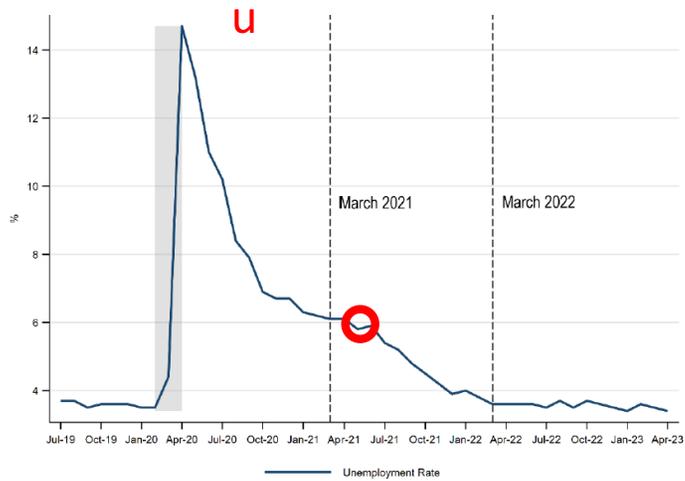
What went wrong?

- Fed believed in low κ , and focused on labor market, following new policy framework announced in August 2020



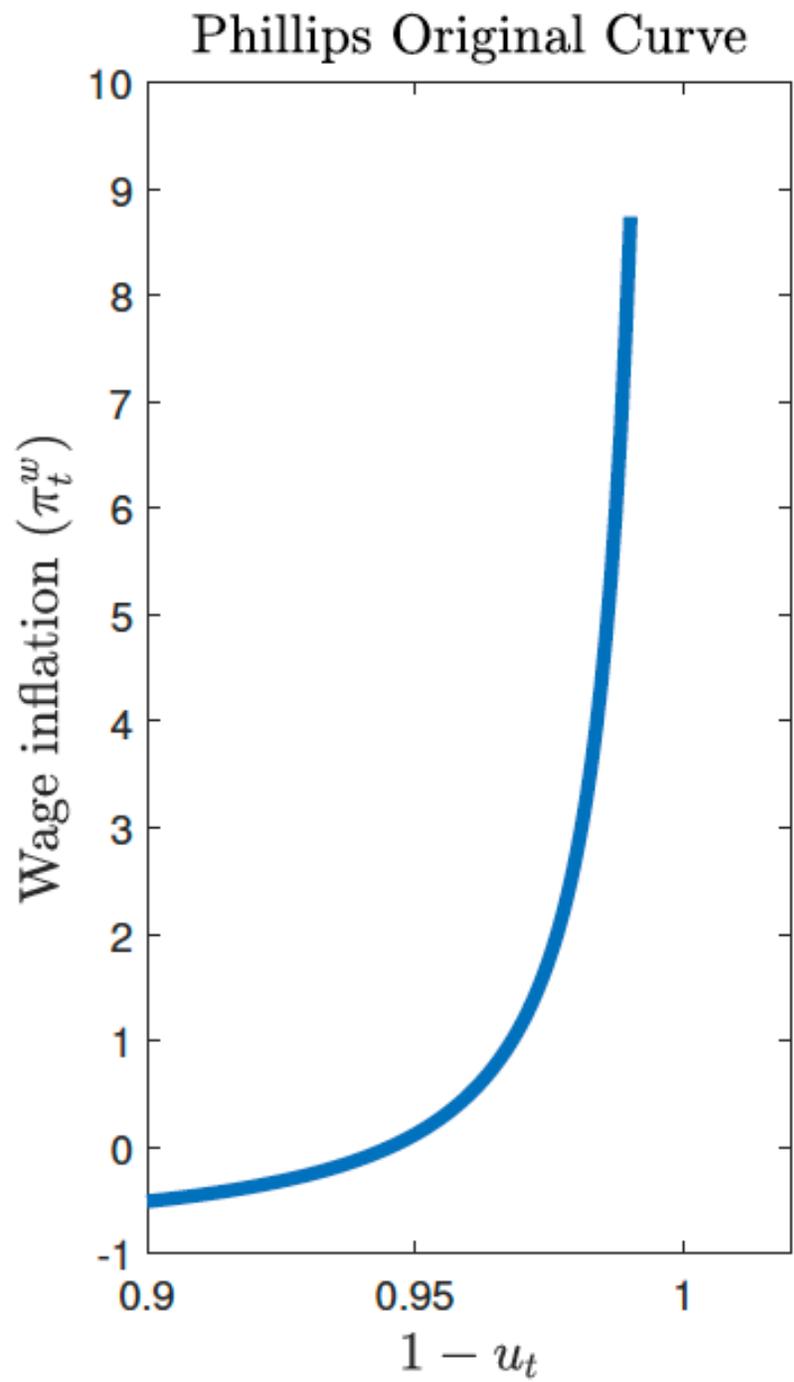
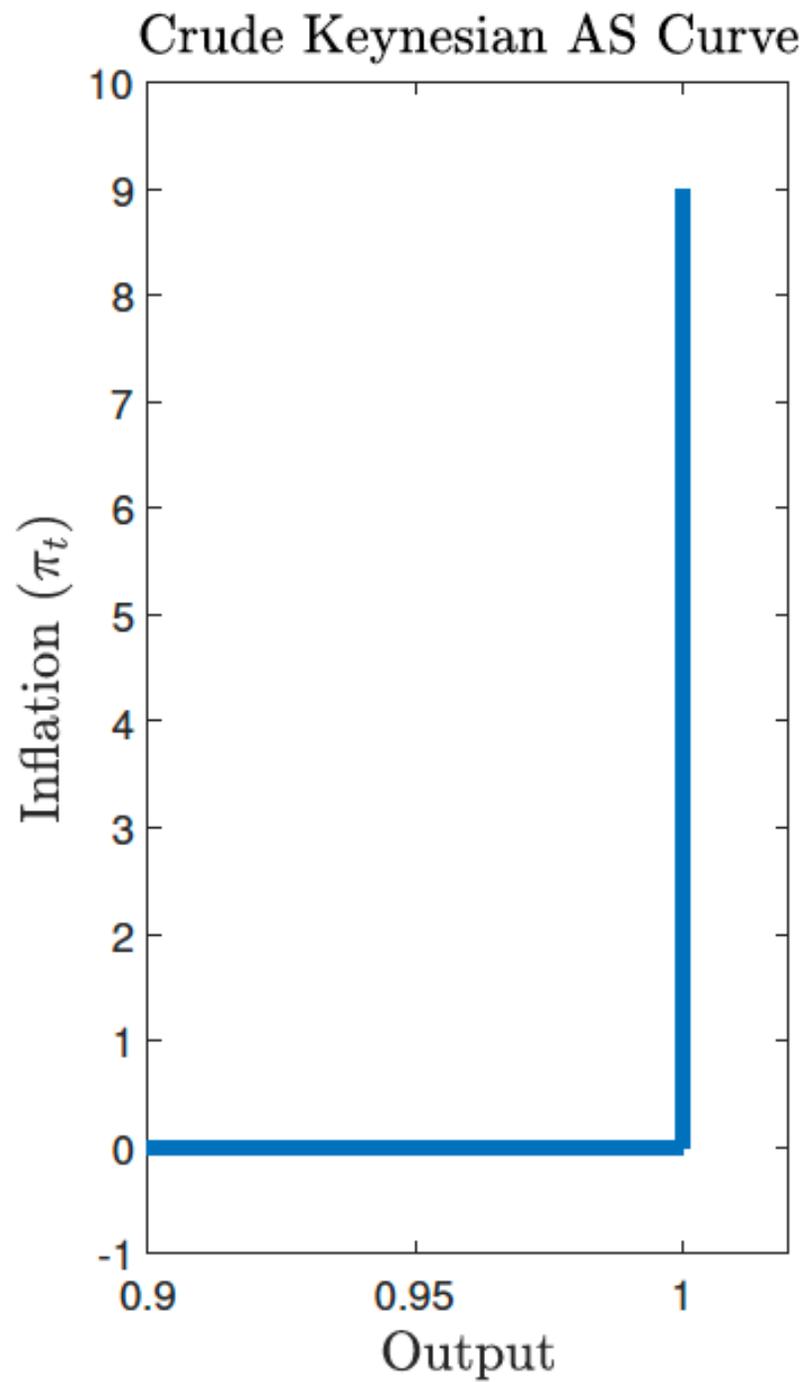
Still slack labor market?

Importance of v/u



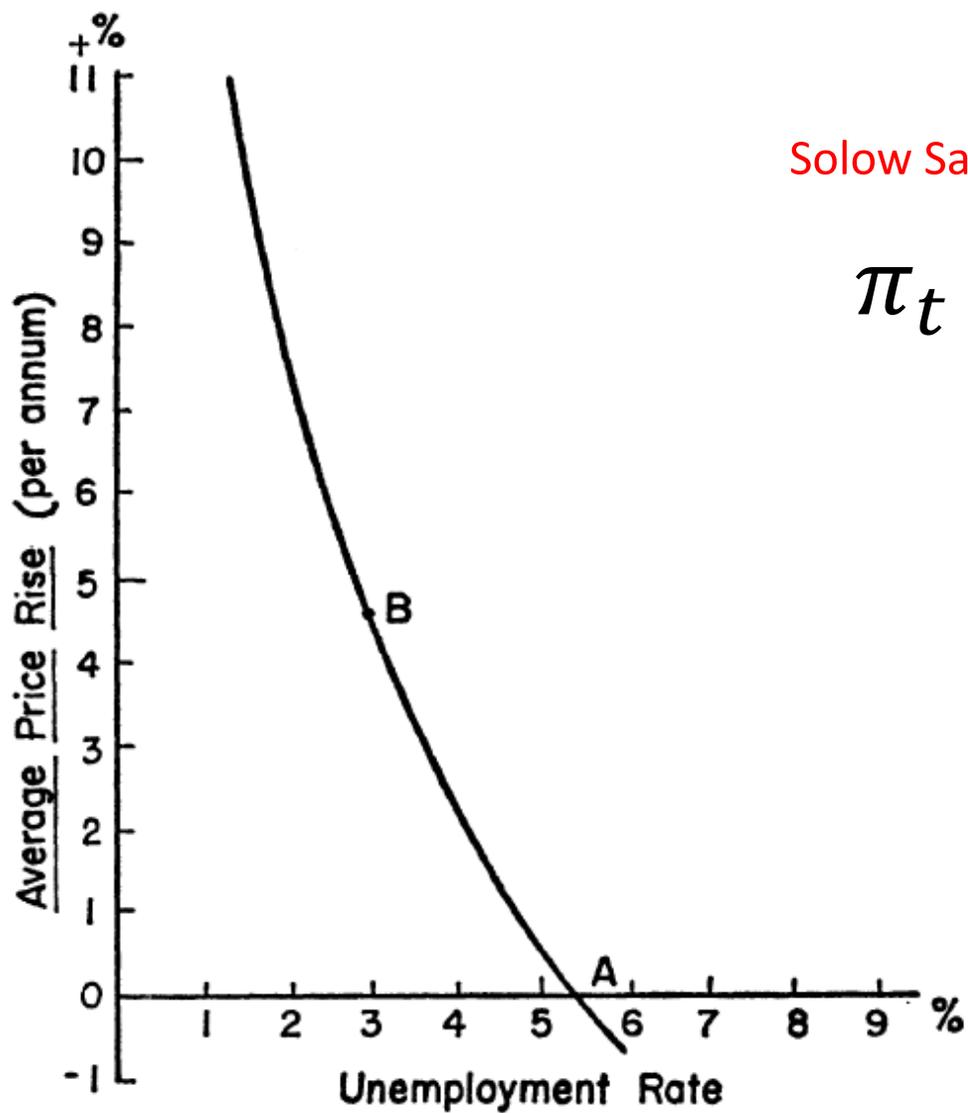
What went wrong?

The Big Picture



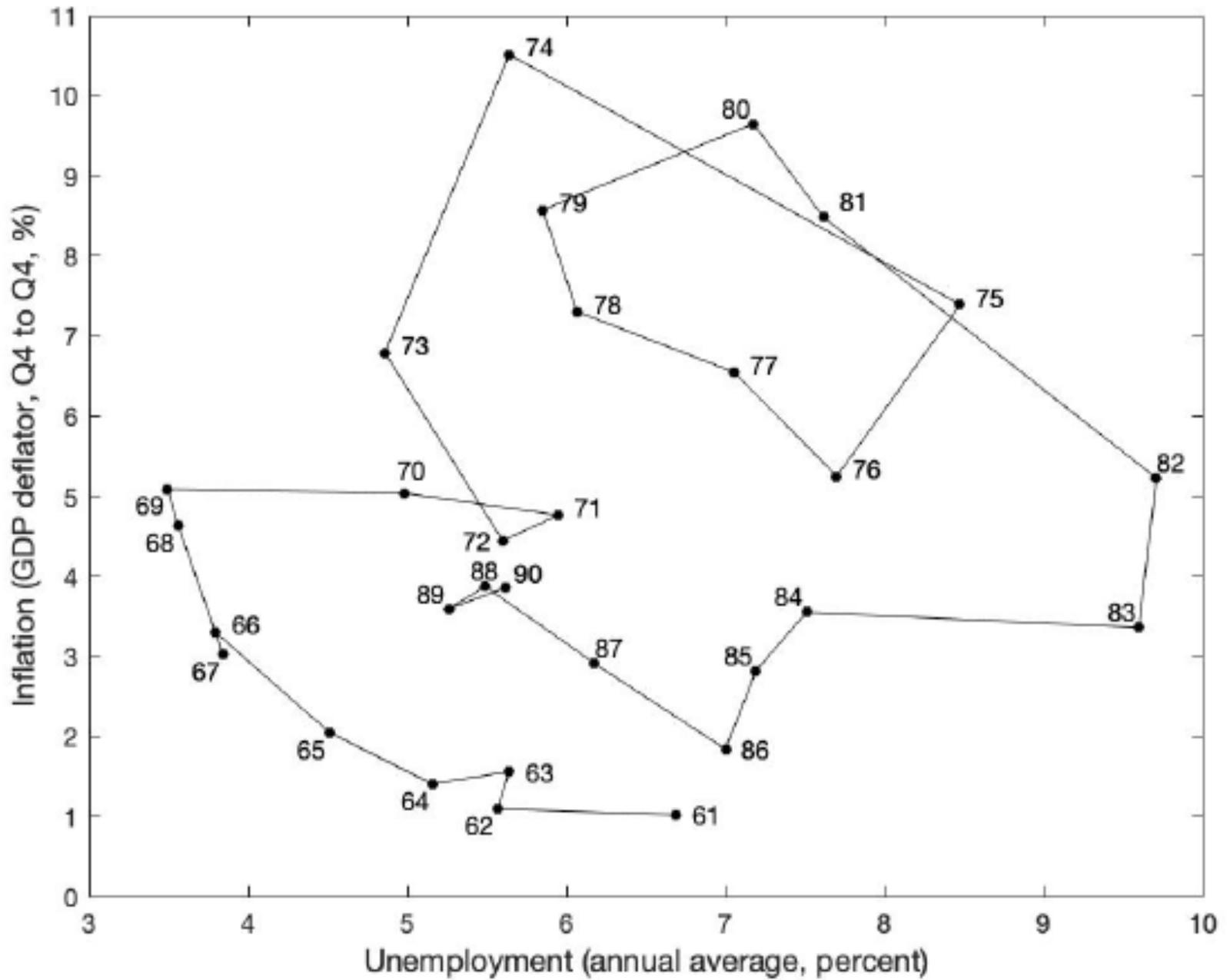
Phillips Curve:

Coming to America



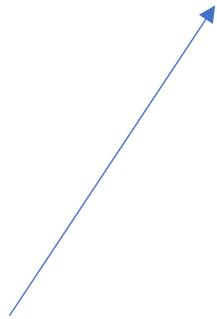
Solow Samuelson (1960)

$$\pi_t = \kappa x_t$$



1970's Consistent with Conventional Wisdom

$$\pi_t = \kappa x_t + \beta E_t \pi_{t+1} + u_t$$



1970's
consistent with
very low κ

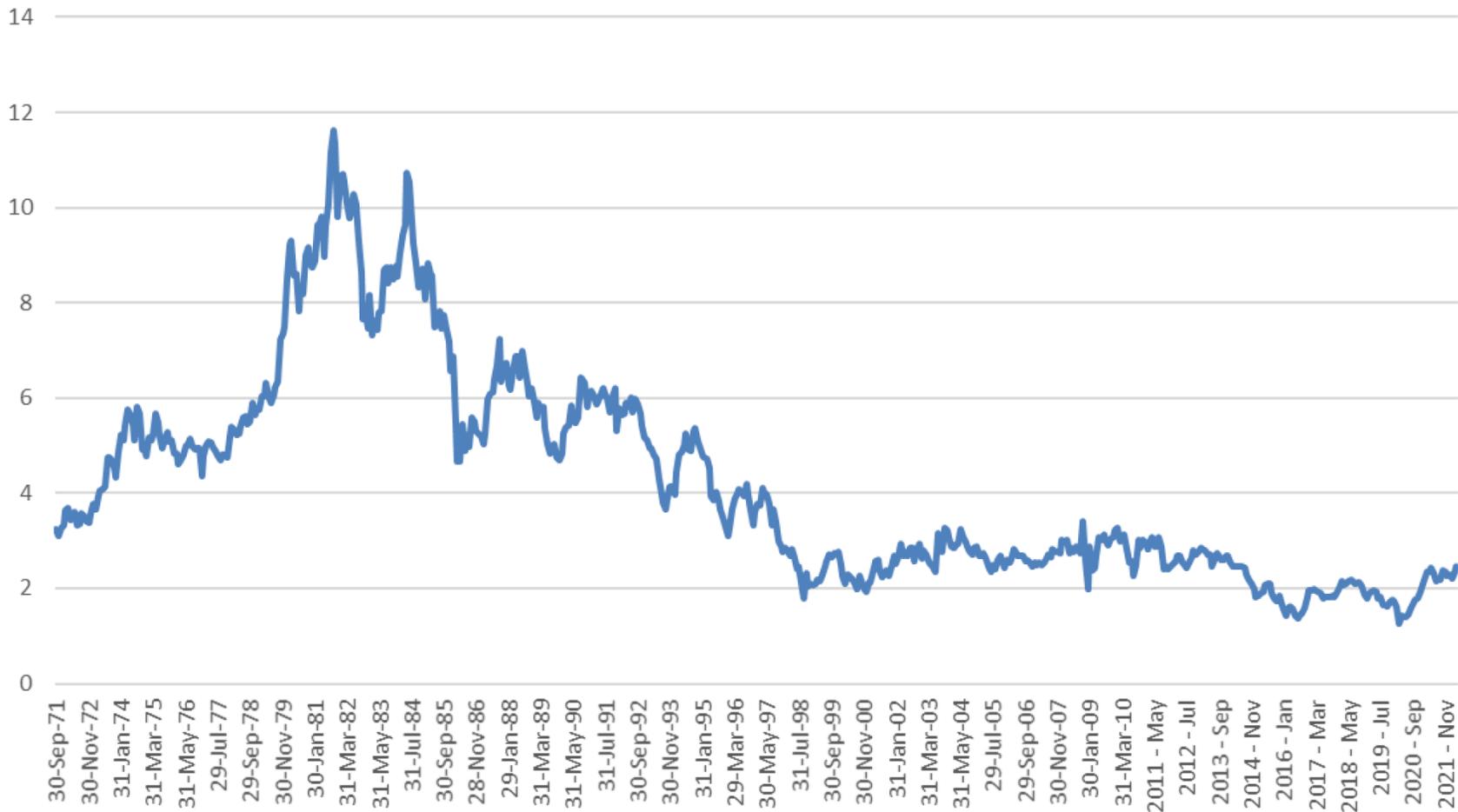


The Great Inflation was
triggered by expectation
going all over the place
and supply shocks

But now Expectation well anchored

Groen and Middledorp (2013)

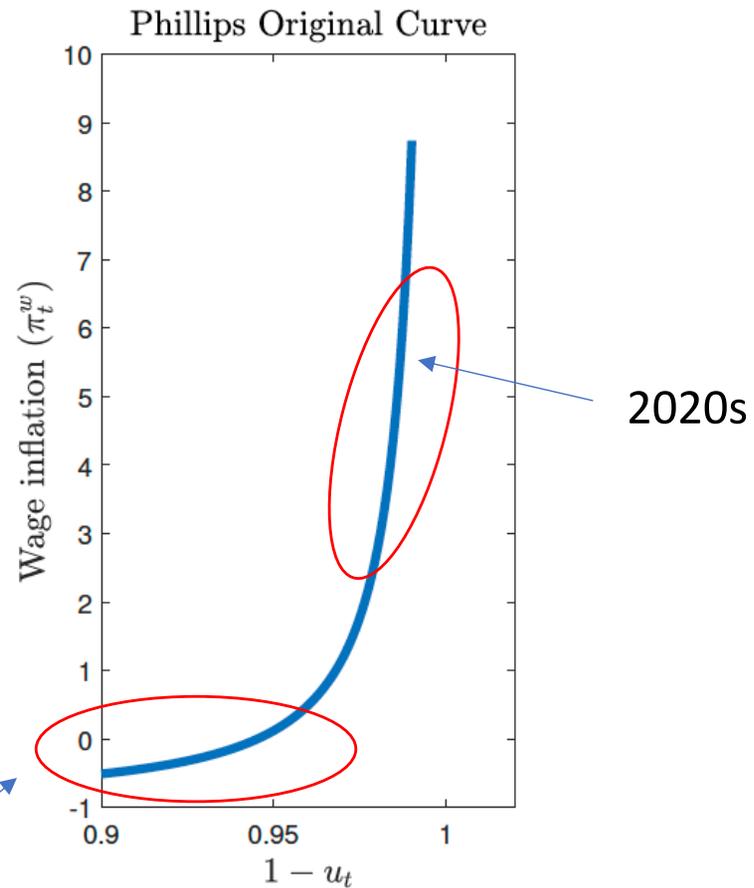
5YR5YR Inflation Forward - Backcasted + Market Data



So what went wrong in 2020s?

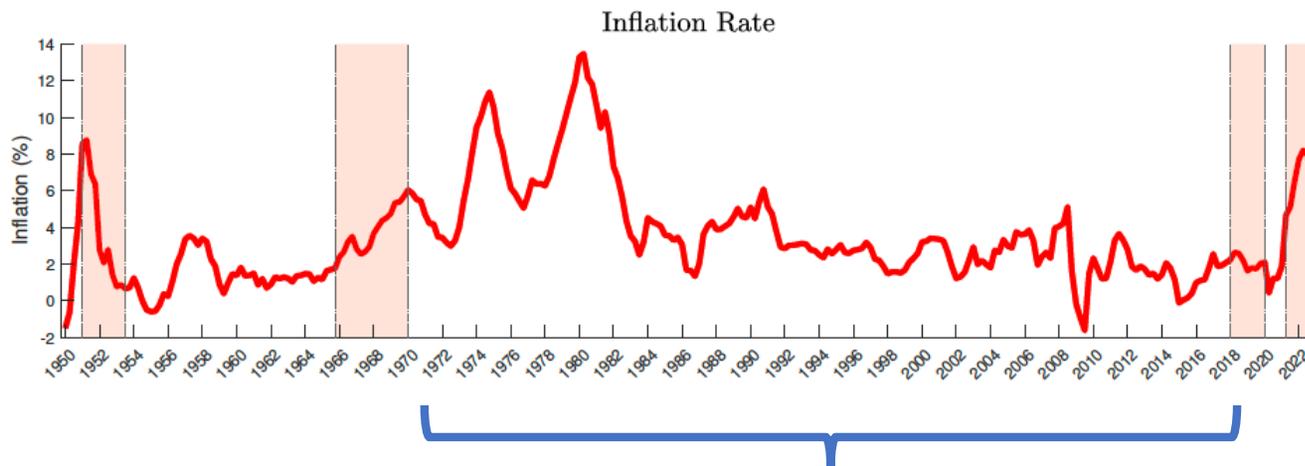
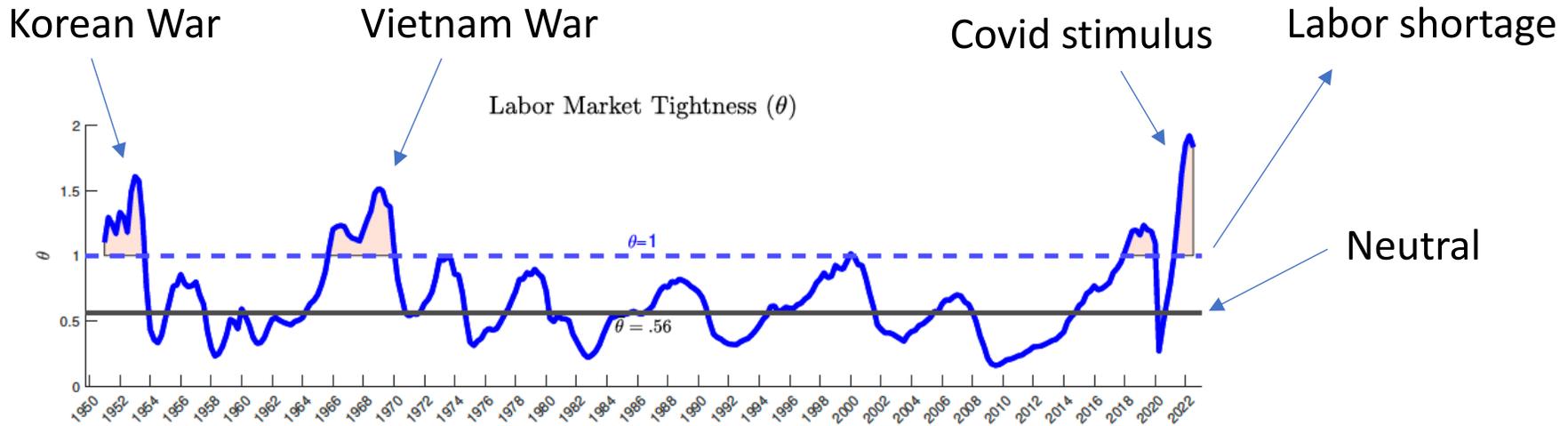
Perhaps we should have been reading Phillips (1958) when thinking about the Phillips curve?

Lucas:
"We get paid to write not read."



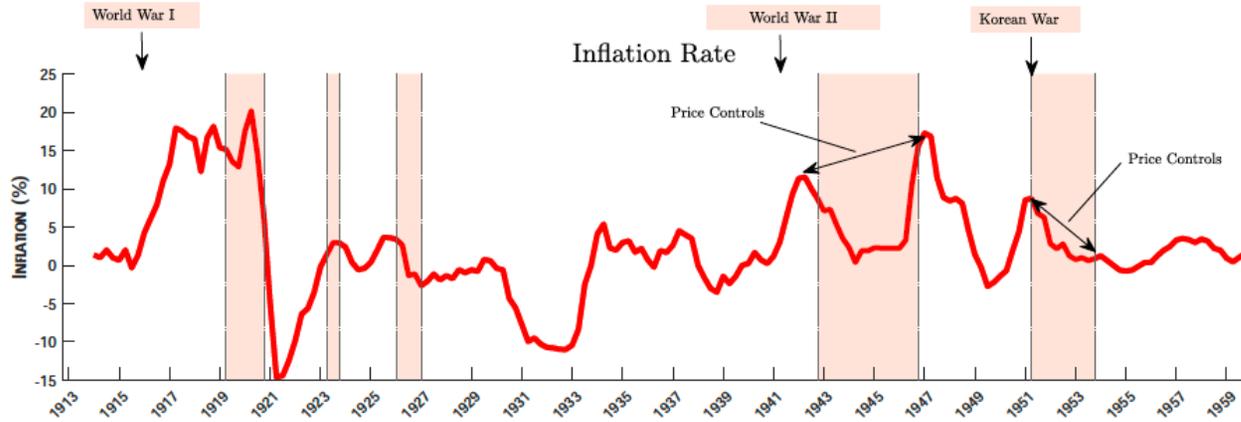
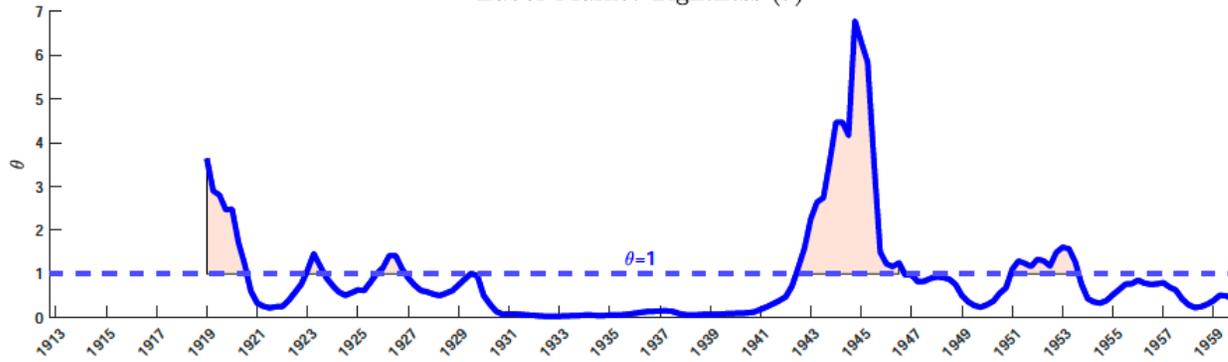
1970s

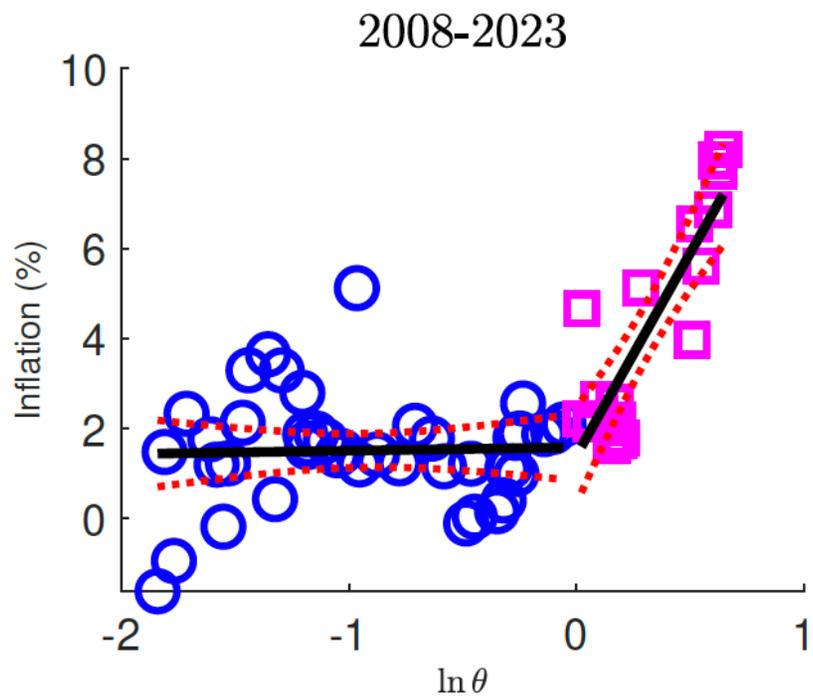
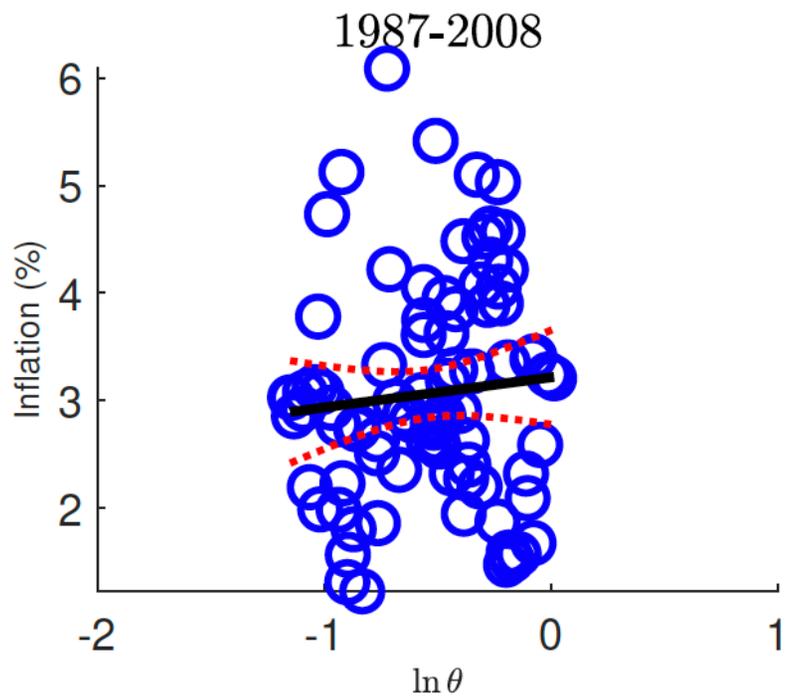
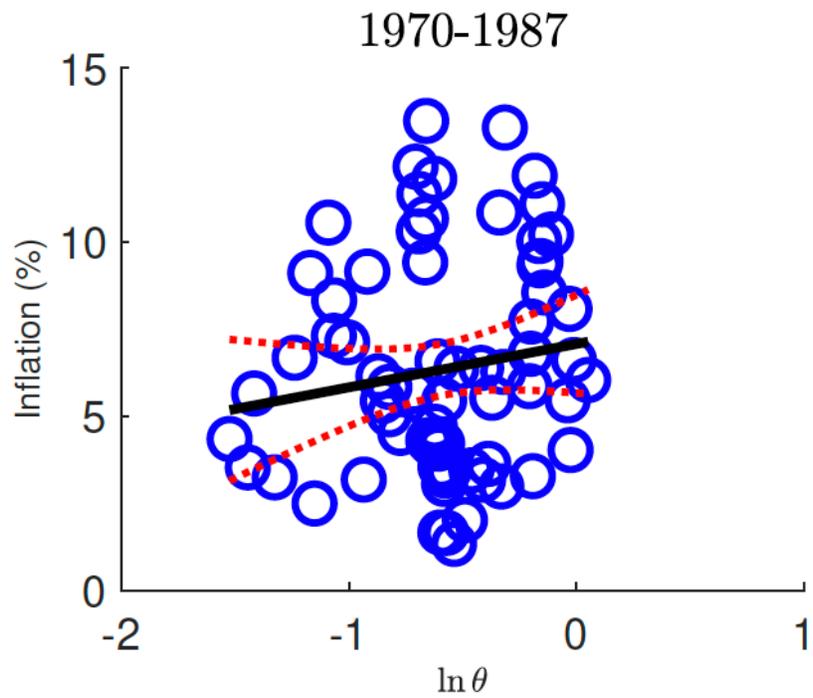
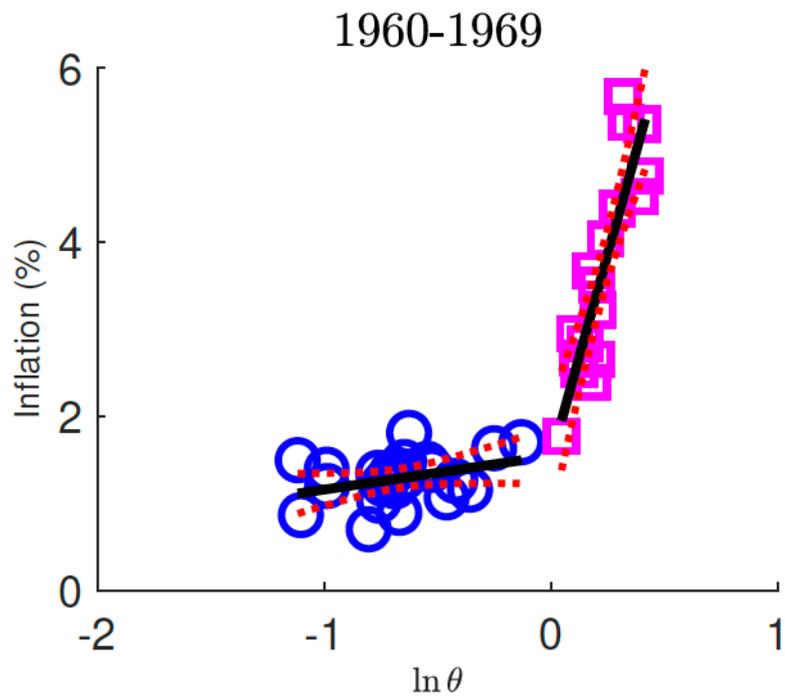
$$\theta = \frac{\text{Number of firm Vacancies}}{\text{Number of Unemployed workers}}$$



Typical Estimation window

Labor Market Tightness (θ)





$$\pi_t = \beta_c + \beta_\pi \pi_{t-1} + (\beta_\theta + \beta_{\theta_d} D_t) \ln \theta_t + (\beta_u + \beta_{\theta_u} D_t) u_t + \beta_{\pi^e} \pi_t^e + \epsilon_t$$

Table 1: Phillips Curve Estimates

	(1)	(2)	(3)	(4)
	1960-2022	2008-2022	1960-2022	2008-2022
<i>Lagged inflation</i>	0.3688*** (0.0965)	0.2758 (0.2559)	0.262*** (0.0933)	-0.1794 (0.1923)
$\ln \theta$	0.6496*** (0.1887)	0.6886* (0.3781)	0.2421 (0.2074)	0.599* (0.3302)
$\theta \geq 1$			3.8789*** (0.9152)	4.1601*** (0.9291)
μ shock	0.0389** (0.0192)	0.0125 (0.0381)	0.0443** (0.0204)	-0.0083 (0.0245)
$\theta \geq 1$			0.0958 (0.1364)	0.4612** (0.1824)
<i>Inflation expectations</i>	0.6617*** (0.1085)	1.0516 (0.6255)	0.8014*** (0.1017)	0.529 (0.5469)
<i>Constant</i>	0.5418*** (0.1629)	1.0136** (0.4656)	0.2055 (0.1768)	0.4879 (0.4186)
R^2 adjusted	0.816	0.462	0.816	0.661
Observations	251	57	251	57

· ***, **, * denote statistical significance at the 1, 5, and 10 percent level, respectively.

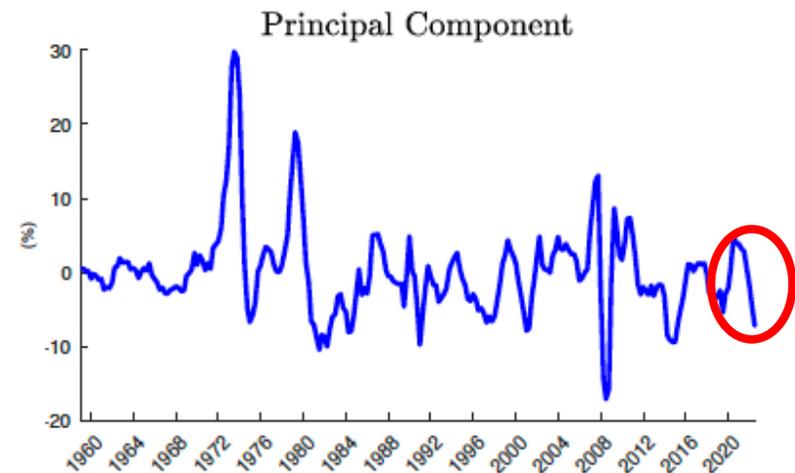
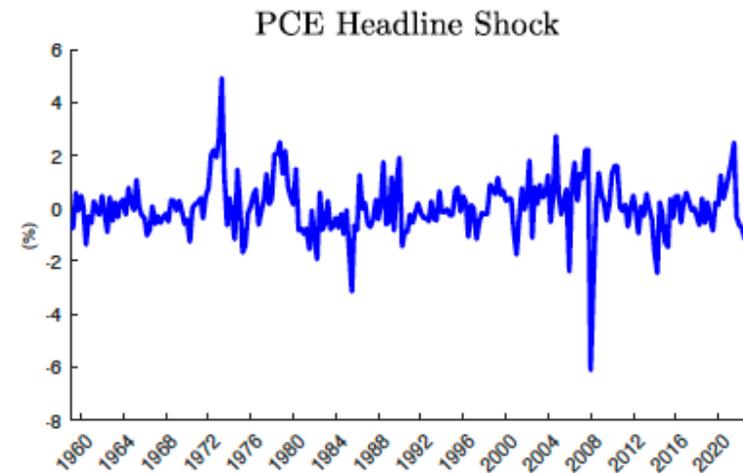
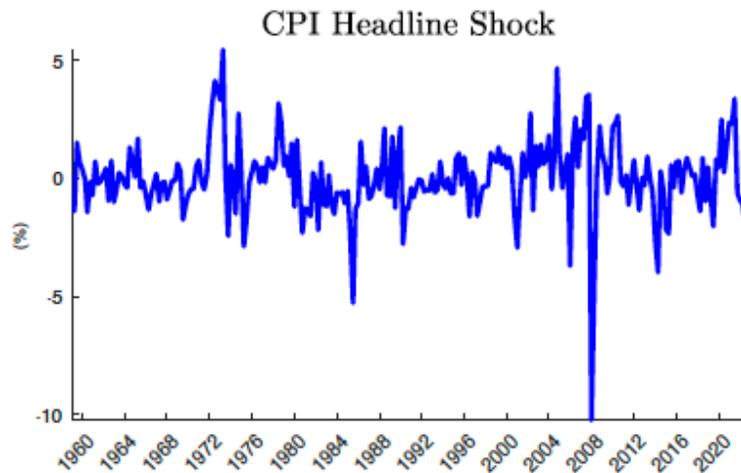
· Newey-West standard errors.

· (1) and (3): sample 1958 Q1 – 2022 Q3

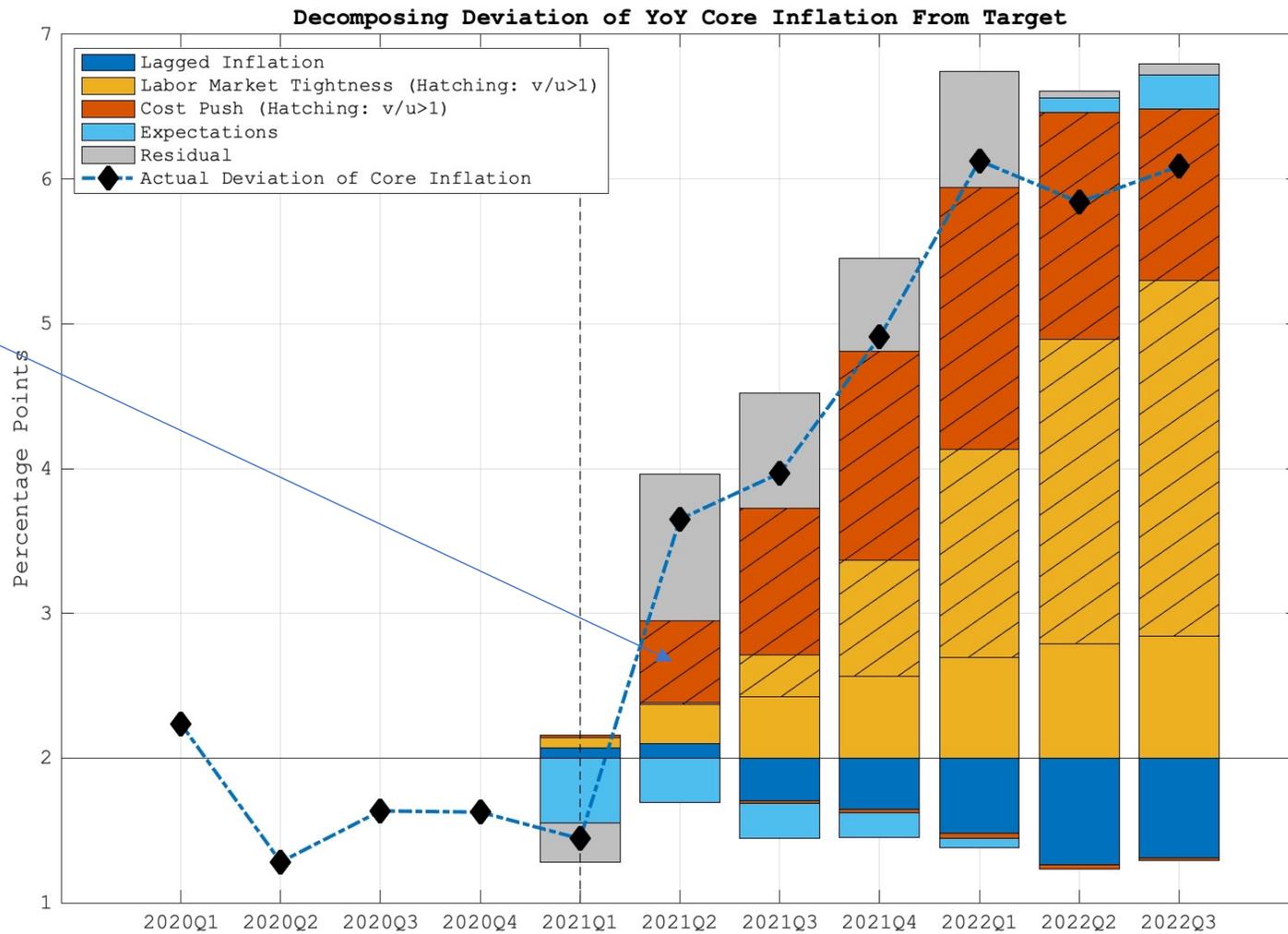
· (2) and (4): sample 2008 Q3 – 2022 Q3

Moderate Supply Shocks

Yet interaction of supply shock and labor shortage critical



Regression Decomposition (Y-o-Y)



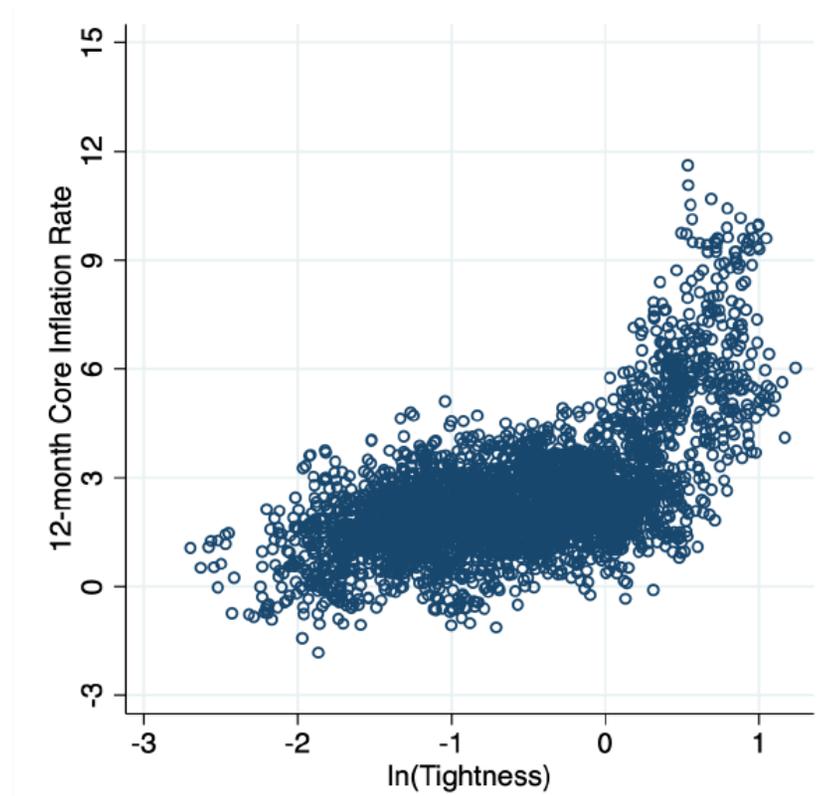
Cost push
AND
labor
tightness

Estimated with data from 2008-2022, corresponding to Column (4) of Table 1

Complementary Evidence

from 2011-2023 MSA level data

[Giulia Gitti](#) (2023) job market paper. Estimates the slope using IV-approach



Inv-L NK Phillips Curve

- integrate search and matching, together with Phillips idea of wage norms (joint work with **Pierpaolo Benigno**)

Labor shortage

$$\pi_t = \kappa^{tight} \hat{\theta}_t + \kappa_{\rho}^{tight} (\hat{v}_t + \hat{\vartheta}_t^{tight}) + \beta E_t \pi_{t+1}$$

Normal

θ^*

$$\pi_t = \kappa_w \hat{w}_{t-1} + \kappa \underbrace{\hat{\theta}_t}_{\text{tightness}} + \kappa_{\rho} \left(\underbrace{\hat{v}_t}_{\text{cost-push}} + \underbrace{\hat{\vartheta}_t}_{\text{matching}} \right) + \kappa_{\beta} E_t \pi_{t+1}$$

Implications for policy

- Easy up – easy down
- Provided the Fed does not overtighten
- Prediction: There will be a soft landing!
 - Inflation will decline without a substantial increase in unemployment
- This should look a lot more like when inflation fell following the Korean War, without any increase in unemployment, than the Volcker recession in early 1980s.

Implication for policy framework

- Need to monitor labor market for “overheating” more carefully.
- Policy framework 2020 too open ended with respect to labor market.
- Expensive to experiment with “hot” labor market
 - > **The cost in terms of inflation overshooting is much larger than we anticipated.**
- Monetary policy not the right instrument to reverse the decline in labor force participation.
- Previously forward looking and pre-emptive

Part IV

Where does this leave us?

What is the new normal?

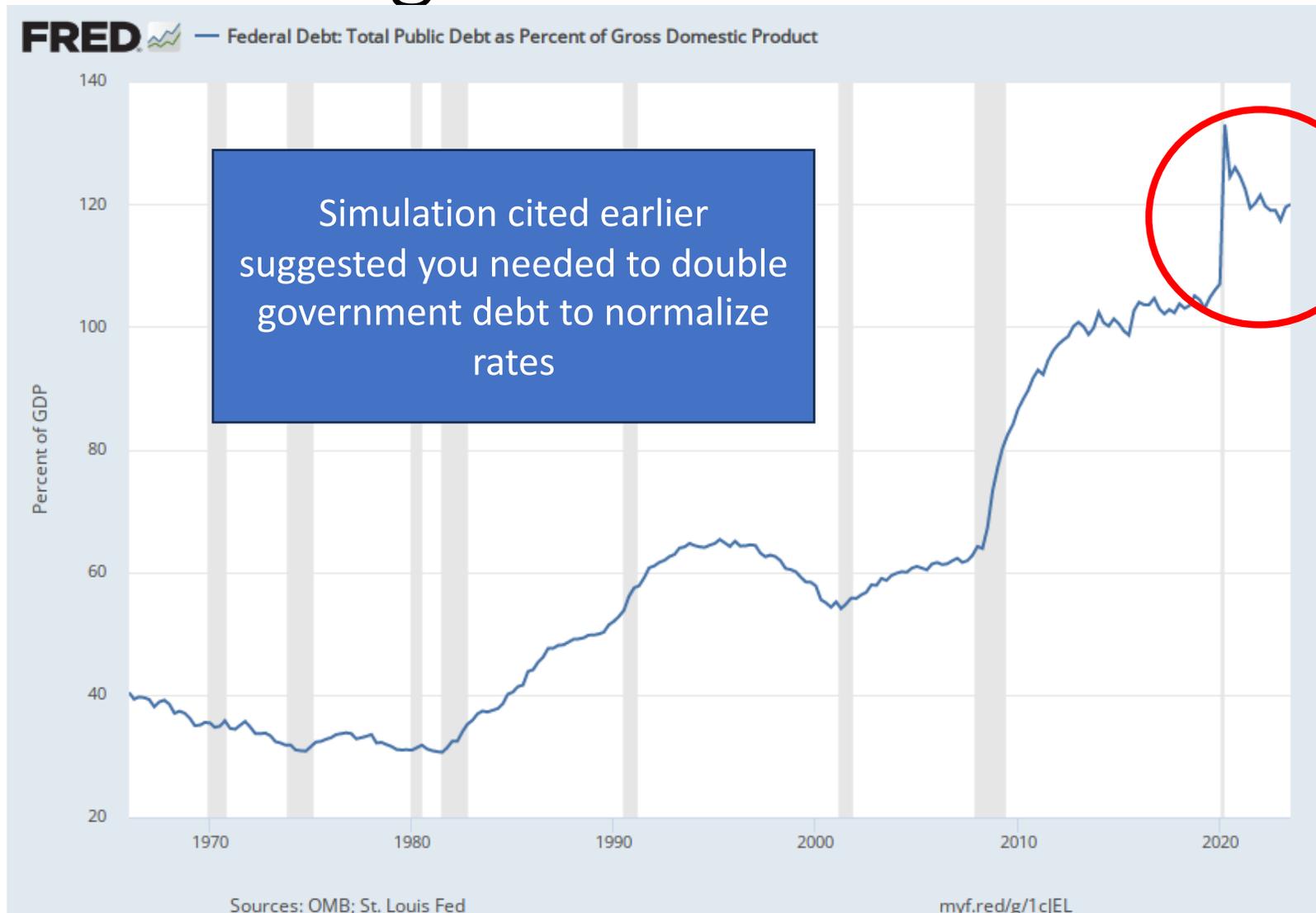
Is the Secular Stagnation hypothesis dead?

- It was based upon
 - ❖ Observation of a secular decline in long-term interest rate over 30 years
 - ❖ Low population growth
 - ❖ Rise in income inequality
 - ❖ Imbalance in savings-investment
 - ❖ Slowdown in productivity

Has anything changed?

- Low birth-rate the same, inequality does not seem to have substantially been reduced
- Big thing that changed is:
 - Pandemic with unique features
 - Temporary
 - Large temporary fiscal response
 - Permanent effect on government debt?
 - Big technological innovation that will greatly improve productivity?
 - Artificial intelligence?
 - Energy transition?

Approximately 20 percent increase in government debt



Two possibilities

1. Markets, Fed, and scholars were wrong about secular stagnation pre-2019.

- Perhaps because of AI, technological innovations etc.
- ZLB will not be a problem going forward

2. Market were right pre-2019 but are wrong now. As inflation normalizes, interest rate will start falling.

- Will hit the ZLB in the next recession just as we did now.
- Back in “secular stagnation”.

Part V
Conclusions

Conclusion #1

- Alvin Hansen was wrong in 1938.
- Was Larry Summers wrong in 2014 (and right now).
- My own assessment:
 - Nothing substantial has changes since pre-inflation surge.
 - As inflation normalizes, so will interest rate at the low level we saw prior to the runup in inflation.
 - Come next recession, monetary policy will be constrained by ZLB.
 - Urgent need to rethink fiscal policy
- Then what?

Conclusion #2

I suspect the fiscal stimulus had a lot to do with the inflation surge.

This is good news!

Suggest that fiscal policy, e.g. in form of “stimulus checks” more effective than we had thought them to be.

This brings us closer to Alvin Hansen original view.

He, as well as early Keynesians, were very skeptical that monetary policy was enough to stabilize the economy.

If we go back to low interest rate environment, the experience from the inflation surge of 2021-2022 may be informative about using fiscal policy for economic stabilization

