

Same demand, two Phillips curves

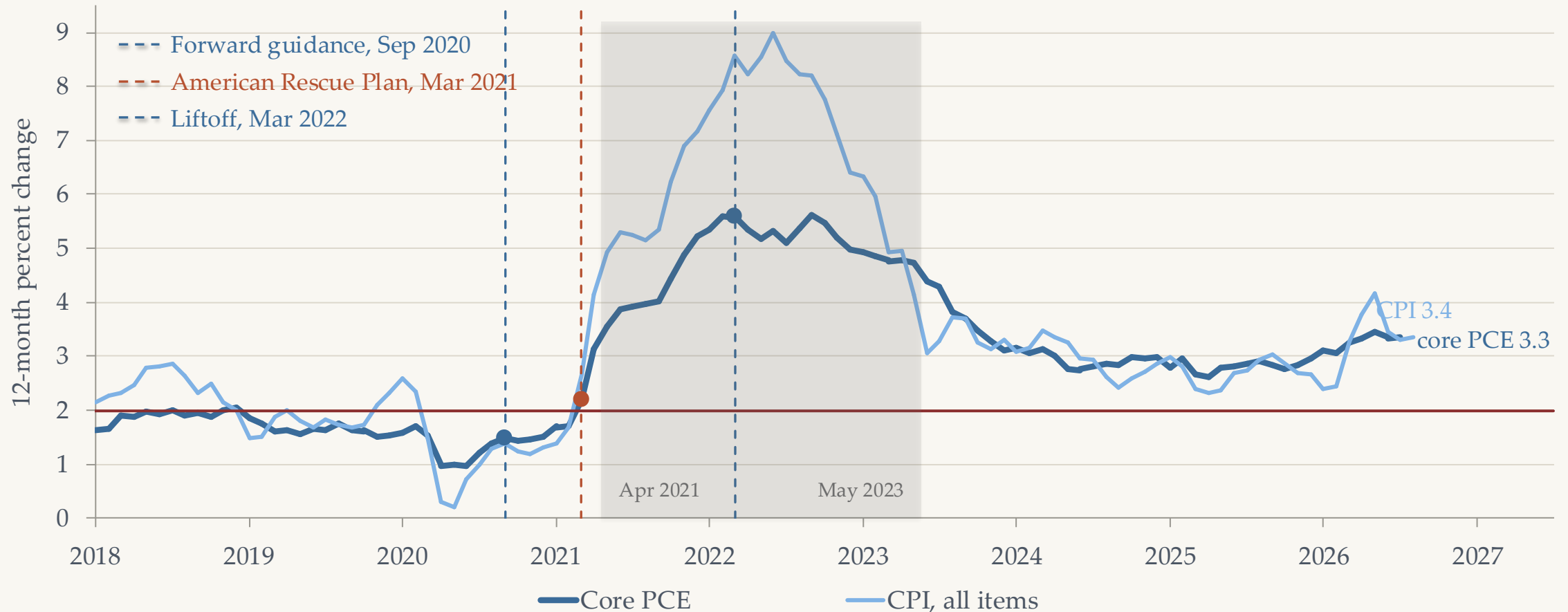
Discussion of Giannone and Primiceri, “Demand-driven inflation”

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The inflation surge, April 2021 to May 2023, and the question



The surge (Benigno and Eggertsson, 2025): first to last month with year-on-year CPI above 4 percent, at least twelve months averaging at least 5: April 2021 to May 2023.
Demand or supply, and through which Phillips curve?

Demand mattered: nominal GDP = real GDP + prices

Average annual growth, percent	2010 to 2019Q4	2021Q2 to 2023Q2
Nominal GDP	4.0	8.6
Real GDP	2.4	3.1
GDP deflator	1.6	5.6
Split: real growth / inflation, percent	60 / 40	35 / 65

Nominal spending grew 4.6 points a year faster than before covid, and the split flipped: 60 percent real before, 65 percent prices in the surge. The question is the Phillips curve it met.

VAR: Demand explains 73% of the surge

$$y = \begin{pmatrix} Y \\ \pi \end{pmatrix}, \quad y_t = c + \sum_{j=1}^4 B_j y_{t-j} + u_t$$

AS $\pi = \alpha Y + \varepsilon^S$
 $\alpha = 1.06$ (their estimate)

AD $Y = -\delta \pi + \varepsilon^D$
 $\delta = 0.53$ (their estimate)

Sign restrictions on impact

	Y	π
demand shock	+	+
supply shock	−	+

Demand share of the surge: 0.73. Their reading: prices rose with output near trend, so AD shifted.

The same VAR with v/u and the SPF added: Demand 39%

	bivariate VAR	with v/u and SPF	SPF response per point of π
demand	0.73	0.39	0.12
supply	0.27	0.05	-0.03
labor market (Beveridge shift)		0.17	0.11
fourth shock (unrestricted)		0.10	0.05

With v/u and the SPF added, no shock has large effect on inflation expectations

Sign restrictions on impact

	Y	π	v/u	SPF
demand shock	+	+	+	
supply shock	-	+		
labor market shock	-	+	+	
fourth shock	unrestricted			

DSGE: Demand explains 94% but AS flat

Supply $\pi = \kappa Y + \beta \pi_+^e + \varepsilon^S$

Demand $Y = Y_+^e - \sigma (i - \pi_+^e) + \varepsilon^D$

Policy $i = \phi_\pi \pi + \phi_Y Y + \varepsilon^R$

VAR supply $\pi = 1.06 Y + \varepsilon^S$

DSGE supply $\pi = 0.06 Y + \beta \pi_+^e + \varepsilon^S$

Slopes converted to annualized inflation per percent of static change in output

In the VAR, output and inflation move almost one for one; in the estimated DSGE small static effect.

Their DSGE, the SPF in the AS equation: demand 0.94 $\rightarrow$ 0.05

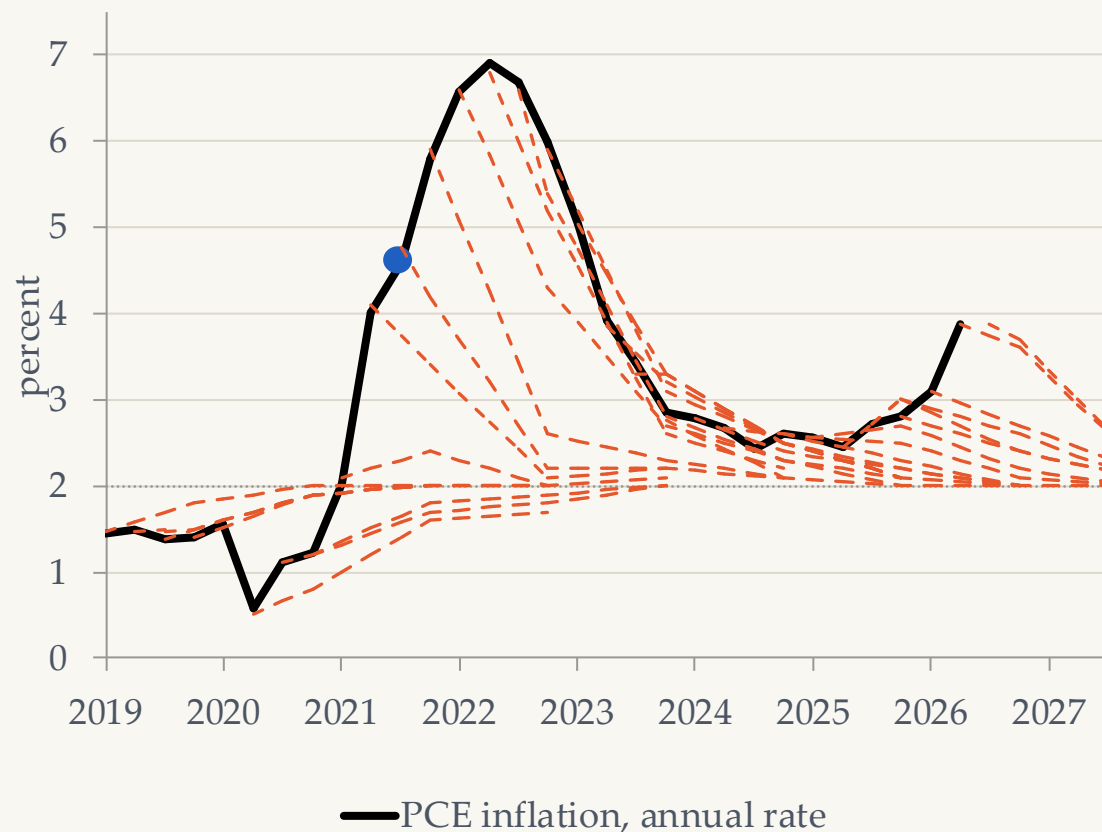
- Their data, their sample (1998Q1 to 2019Q4), their rule
- Only change: the SPF replaces model-consistent expectations in the AS equation

shock	their estimate		SPF in the AS equation
Inflation target	0.05		0.00
Monetary policy news (anticipated)	0.28		0.02
Monetary policy	0.24		0.02
Preference	0.38		0.02
Demand, sum of the four	0.94	$\rightarrow$	0.05
Cost-push (markup)	0.14		0.93
Technology	-0.08		0.02
Total	1.00		1.00

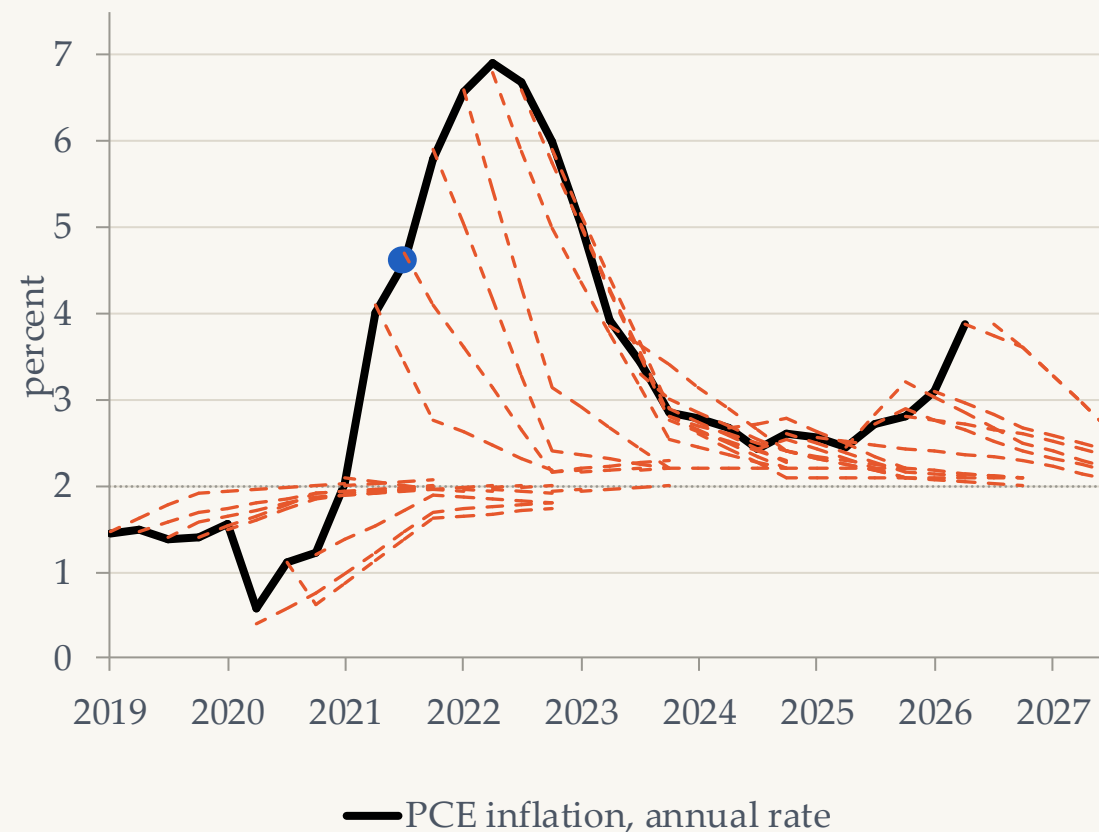
Same with Michigan: 0.10. With any survey in the AS equation, demand disappears: their demand story is a story about model-consistent expectations.

Nobody saw the surge coming

FOMC Summary of Economic Projections

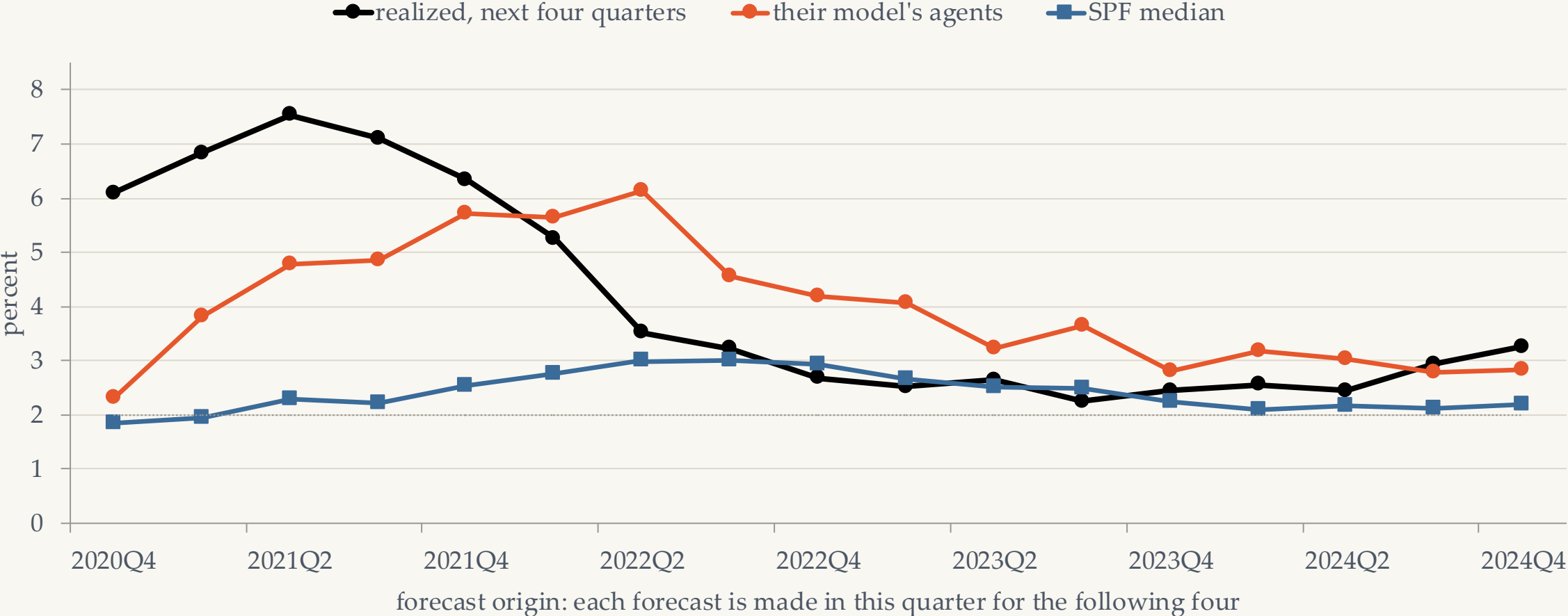


Survey of Professional Forecasters



Every projection before mid-2021 had inflation back near 2 within a year. The surge was unexpected.

Model, survey, realized

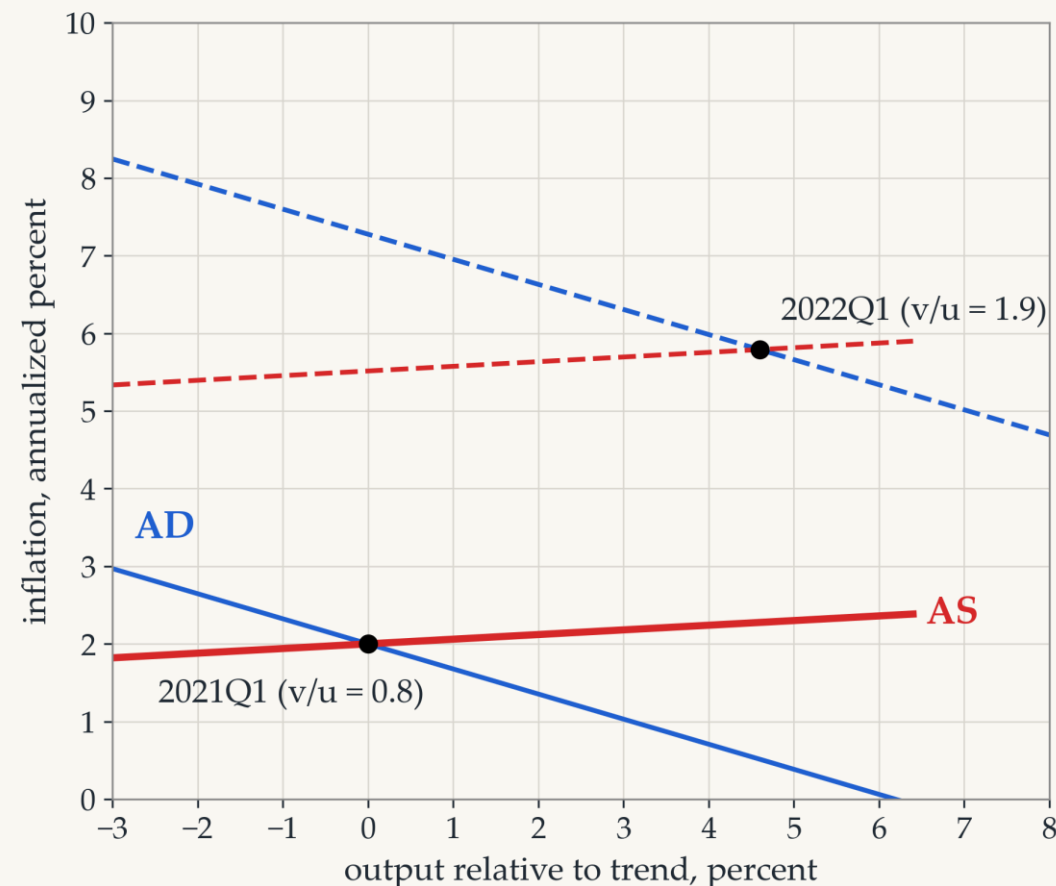


Their model's agents expected 4 to 6 percent; forecasters 2 to 3. The demand story needs expectations nobody reported.

Their story: expected inflation shifts the flat curve

$$\pi = \kappa Y + \beta \pi_+^e$$

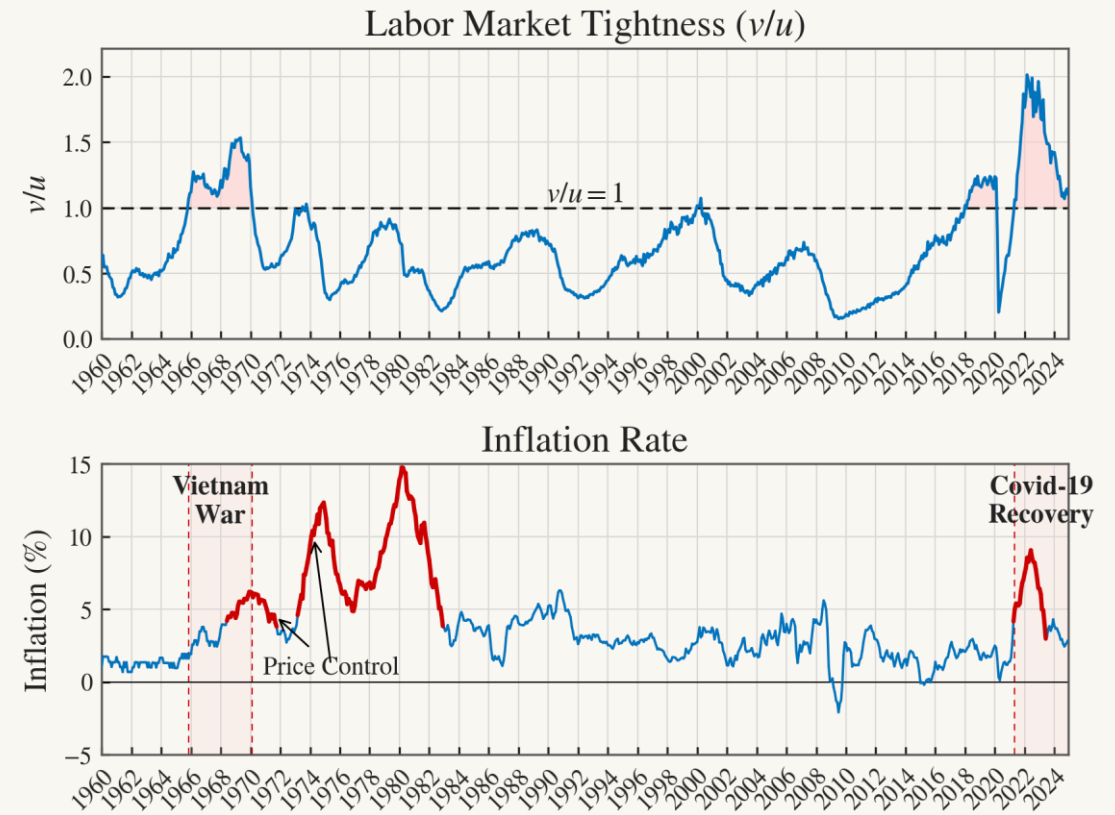
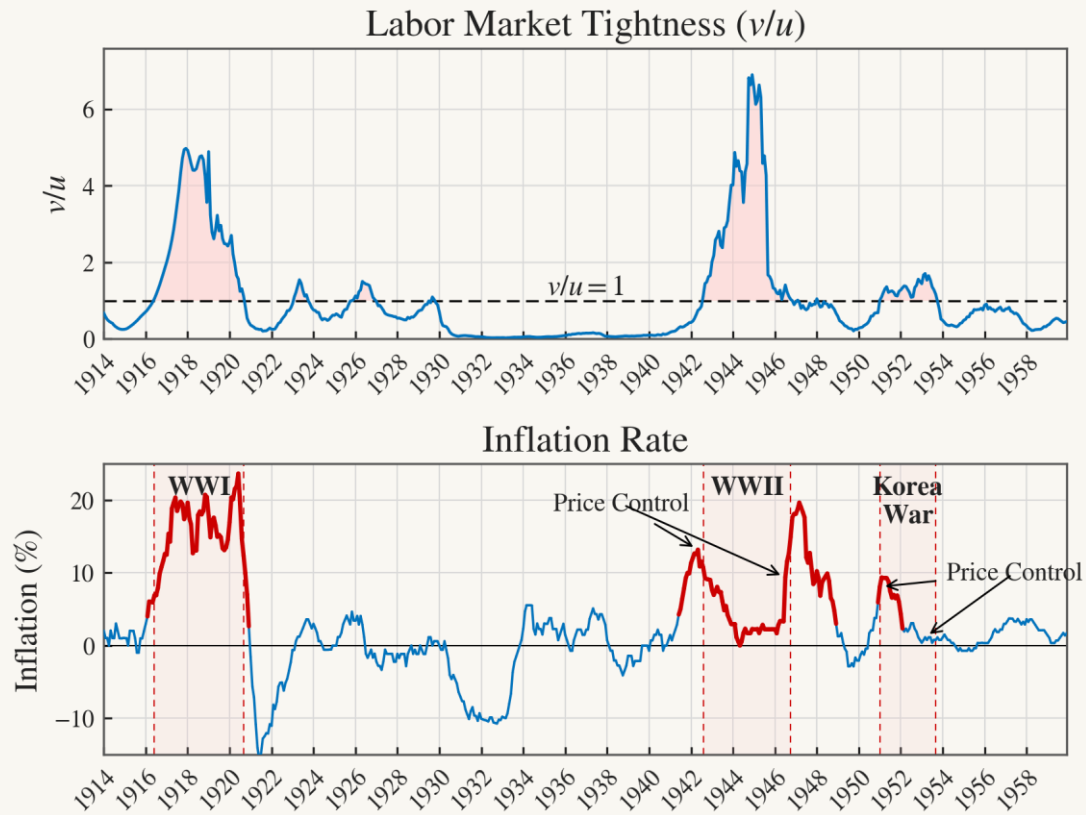
With a flat Phillips curve, the only way to get inflation is for expected inflation to rise.



The flat curve reaches 2022 only if expected inflation rises 4.4 points, to 6.4 percent.

IT DID NOT.

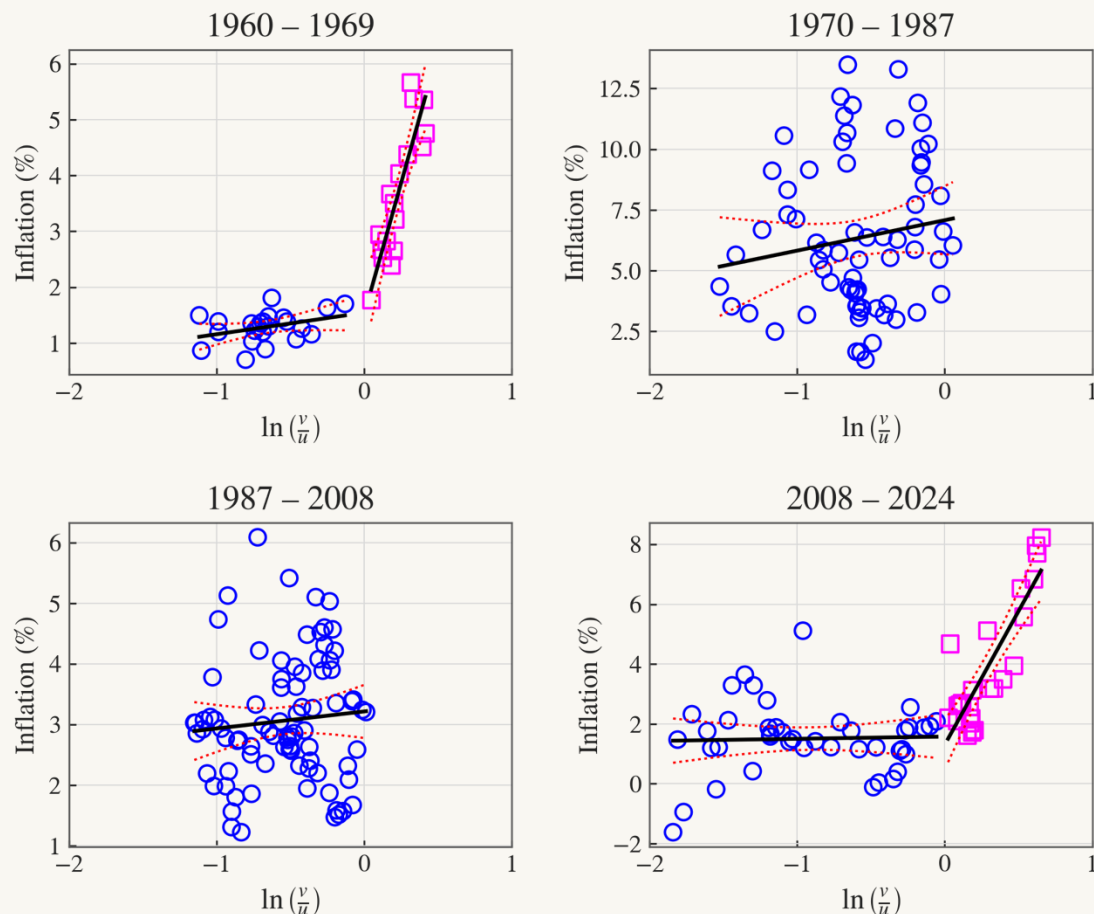
Six inflation surges since the Federal Reserve started in 1914



Five: $v/u > 1$. 1970s: $v/u < 1$ but $\pi^e \gg 0$.

Beveridge threshold ≈ 1

The Inv-L Phillips curve



Benigno and Eggertsson:

$$\pi = \kappa \ln(v/u) + \kappa_{\varrho} \varrho + \beta \pi_+^e$$

$$v/u < 1 \quad \left\{ \begin{array}{l} \kappa = 0.50 \\ \kappa_{\varrho} \approx 0 \end{array} \right.$$

$$v/u > 1 \quad \left\{ \begin{array}{l} \kappa = 5.50 \\ \kappa_{\varrho} = 0.25 \end{array} \right.$$

π^e : the SPF

Flat below $v/u = 1$, steep above it: the 1960s and the 2020s sit on the steep branch.

Replace NK Phillips curve with Inv-L and SPF: re-estimate

Their demand side; Benigno and Eggertsson labor market, Inv-L pricing, the SPF; core CPI, 1998 to 2026.

shock	share of the surge, April 2021 to May 2023
FG 2020Q3 (zero rate through 2022Q1)	0.39
2021 dissaving (preference shock)	0.18
Demand	0.57
Cost-push and technology	0.38
Labor market (Beveridge shift, separations, norm)	0.05
Total	1.00

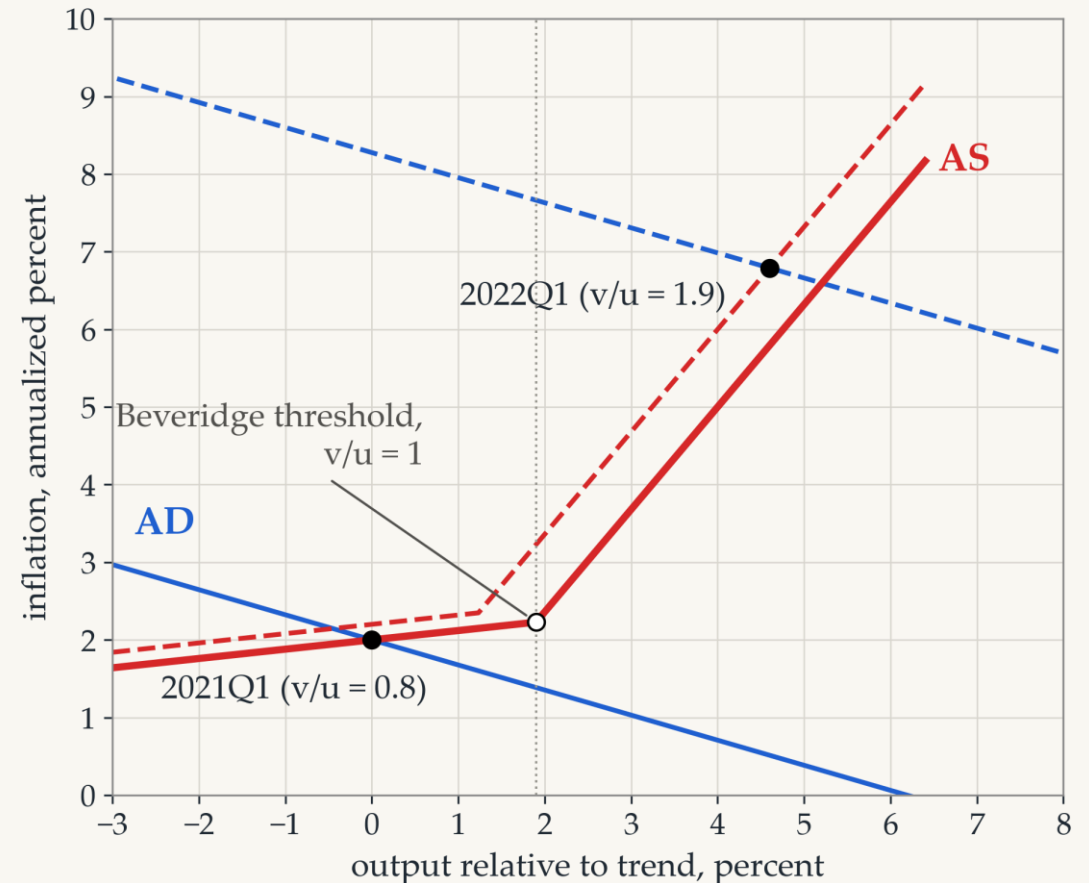
Demand share of the surge	Their VAR	Their DSGE	Their DSGE with the SPF	Inv-L DSGE with the SPF
	0.73	0.94	0.05	0.57

Demand here is two dated events, 2020Q3 FG and the 2021 dissaving, not a change in expectations.

My Story: no change in expectations needed

$$\pi = \kappa \ln(v/u) + \kappa_{\varrho} \varrho + \beta \pi_+^e$$

- The curve can be expressed in terms of output relative to trend.
- With the kink, AD raises inflation without AS shifting.
- A supply shock is amplified above the Beveridge threshold.



Demand can have large effect without expectations moving, supply shocks supercharged.

Agree on demand importance, different mechanism

- Same surge, same window: demand is 0.94 with expectations solved, 0.05 with expectations measured, 0.57 in the Inv-L model with the survey.
 - On a curve that bends at at some Beveridge threshold v/u , the same demand produces the surge and the descent with the surveys as they were: 0.57 of the surge through the peg and the 2021 dissaving, 0.38 cost-push, the labor market the rest.
 - Demand-driven inflation needs a Phillips curve that bends.
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- Old prediction: Volatile inflation while $v/u > 1$. Happens via v not u .