The Debate Over Post-Pandemic Inflation

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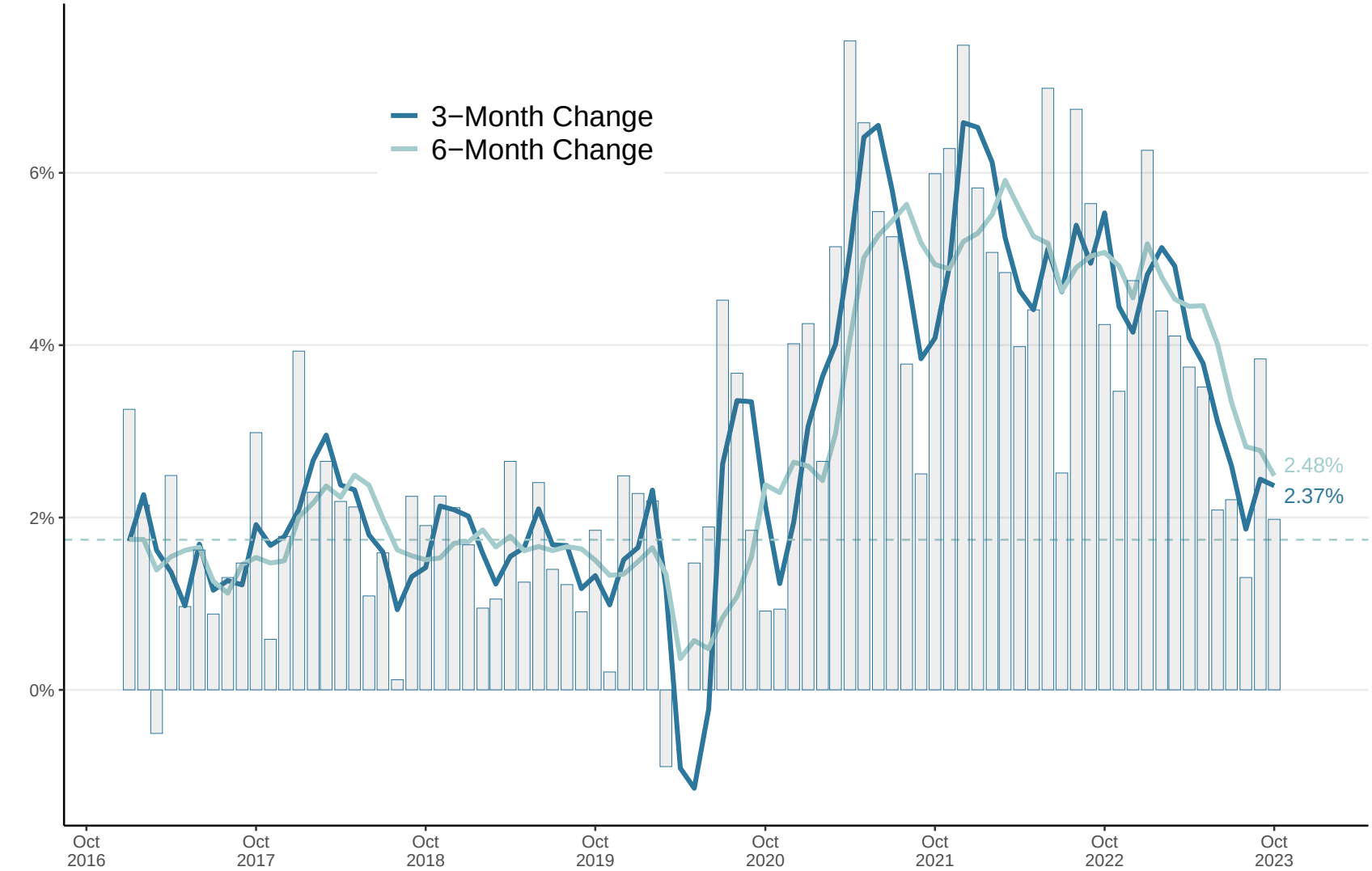
Historic Disinflation - Since 2021

- Inflation falls 2.5 percentage points.
- Unemployment is below 4 percent the entire time.

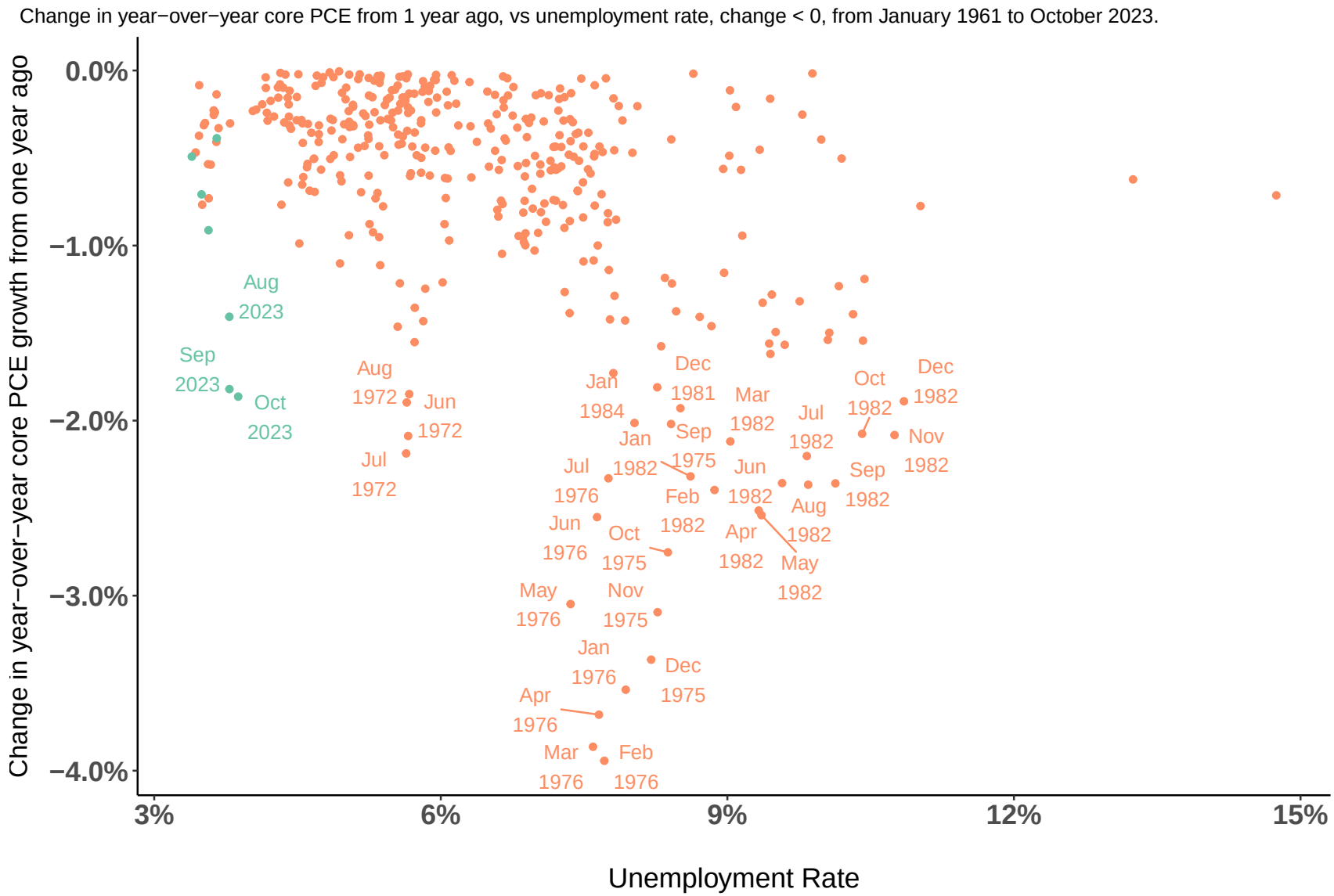
Core PCE inflation, monthly percentage change, annualized. Dotted line represented 2017 to 2019 value of 1.7%, annualized.



PCE excluding food and energy, 1−month value for April 2020 removed from graphic as negative outlier. Author's calculations. Mike Konczal, Roosevelt Institute.

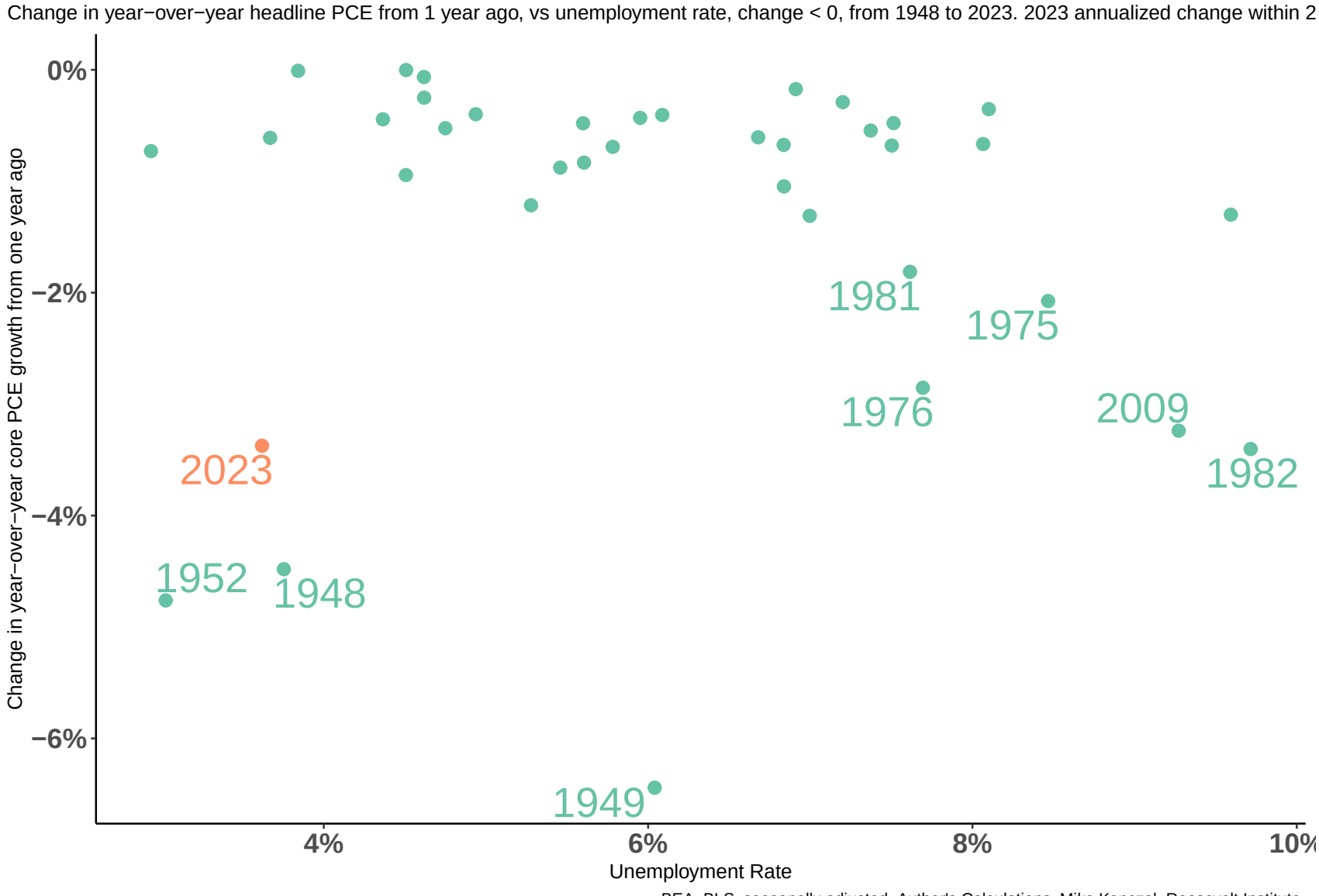
Historic Disinflation - Since 1960s

- Disinflation with low unemployment hasn't happened over past 60 years.



BEA, BLS, seasonally adjusted. Author's Calculations. Mike Konczal, Roosevelt Institute.

Historic Disinflation - Since 1940s



How we got here, 2021: Fed and Transitory

"The COVID-19 pandemic is causing tremendous human and economic hardship across the United States and around the world. Amid progress on vaccinations and strong policy support, indicators of economic activity and employment have strengthened. The sectors most adversely affected by the pandemic remain weak but have shown improvement. Inflation has risen, **largely reflecting transitory factors.**"

FOMC statement, April 2021

"The sectors most adversely affected by the pandemic have improved in recent months, but the summer's rise in COVID-19 cases has slowed their recovery. **Inflation is elevated, largely reflecting factors that are expected to be transitory**. Supply and demand imbalances related to the pandemic and the reopening of the economy have contributed to sizable price increases in some sectors."

FOMC statement, November 2021

How we got here, 2021: Transitory Definitions

What was transitory inflation? In 2021, it was the idea that inflation would be:

- confined to sectors impacted by the pandemic and reopening
- limited to categories that became more volatile from reopening, reflected in metrics that ignored outliers (e.g. trimmed mean PCE, median CPI)
- driven by the shift into goods from services; with time, inflation in goods would come down while inflation in services would be contained
- Still in line with the Great Moderation, driven by a handful of categories rather than broader increases, reflected in metrics of pre-pandemic price movements (e.g. Stock-Watson's cyclically sensitive inflation)

Inflation in 2021

Year over Year Change	2019	August, 2021
Trimmed Mean PCE	2	2.3
Core CPI Services	3.1	2.7
Cyclically-sensitive inflation	2	3.1
		Yay!

Inflation in 2021

Year over Year Change	2019	August, 2021	August, 2022
Trimmed Mean PCE	2	2.3	4.7
Core CPI Services	3.1	2.7	6.1
Cyclically-sensitive inflation	2	3.1	6.5
		Yay!	Yikes!

Inflation in 2022: Phillips Curve Guidance?

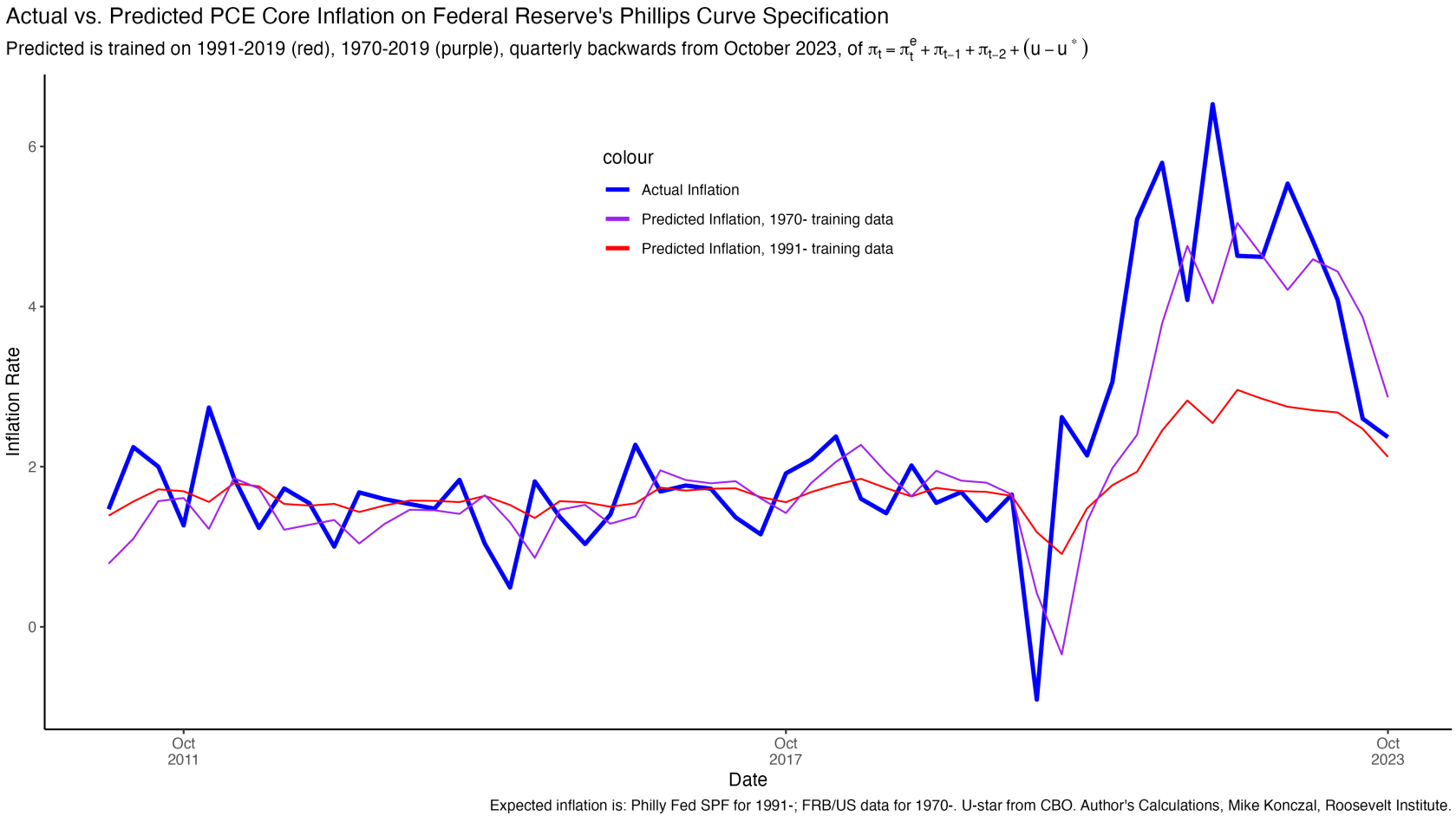
Take a model of the Phillips Curve from Yellen (2017):

$$\pi_t = \pi_{t-1} + \pi_{t-2} + \pi_t^e + \beta(u - u^*)$$

- π_t^e from Survey of Consumer Finance, 1991-, FRB/US prior.
- π_t quarterly Core PCE
- u^* from Congressional Budget Office.

But, what years to train the data on?

Inflation in 2022: Two Difference PC Answers



Inflation in 2022: Two Difference PC Answers Summary

Table 1: Regression Results for Phillips Curve Models

	Dependent variable:	
	π	
	1992-2019	1971-2019
	(1)	(2)
π_{t-1}	0.195^{**}	0.531^{***}
	(0.098)	(0.071)
π_{t-2}	0.074	0.225^{***}
	(0.096)	(0.072)
π_t^e	0.478^{***}	0.303^{***}
	(0.178)	(0.087)
$(u - u^*)$	-0.036	-0.113^{**}
	(0.033)	(0.045)
Constant	0.270	-0.150
	(0.324)	(0.170)
Observations	112	196
R^2	0.231	0.847
Adjusted R^2	0.202	0.844

2022: The Case for Persistence

"We need five years of unemployment above 5 percent to contain inflation—in other words, we need two years of 7.5 percent unemployment or five years of 6 percent unemployment or one year of 10 percent unemployment"

- Larry Summers, Summer 2022

2022: The Math for Persistence

$$\pi_t = \pi_{t-1} + \beta(u - u^*)$$

$$2 = 4.5 + 0.5(u - 5)$$

$$-2.5 = 0.5u - 2.5$$

$$u = 10$$

How we got here, 2022: Persistence Definitions

Many different versions of this argument. What assumptions were baked into these approach?

- The delta between predicted and actual inflation was largely demand.
- That delta was entrenched and had to down from a high sacrifice ratio.
- NAIRU had increased as a result of a shifted Beveridge Curve.
- Unemployment would be the only way to balance the shifted Beveridge Curve.

How we got here, 2022: Peristence Definitions Don't Pan Out

However, 2023 pulled in a different direction:

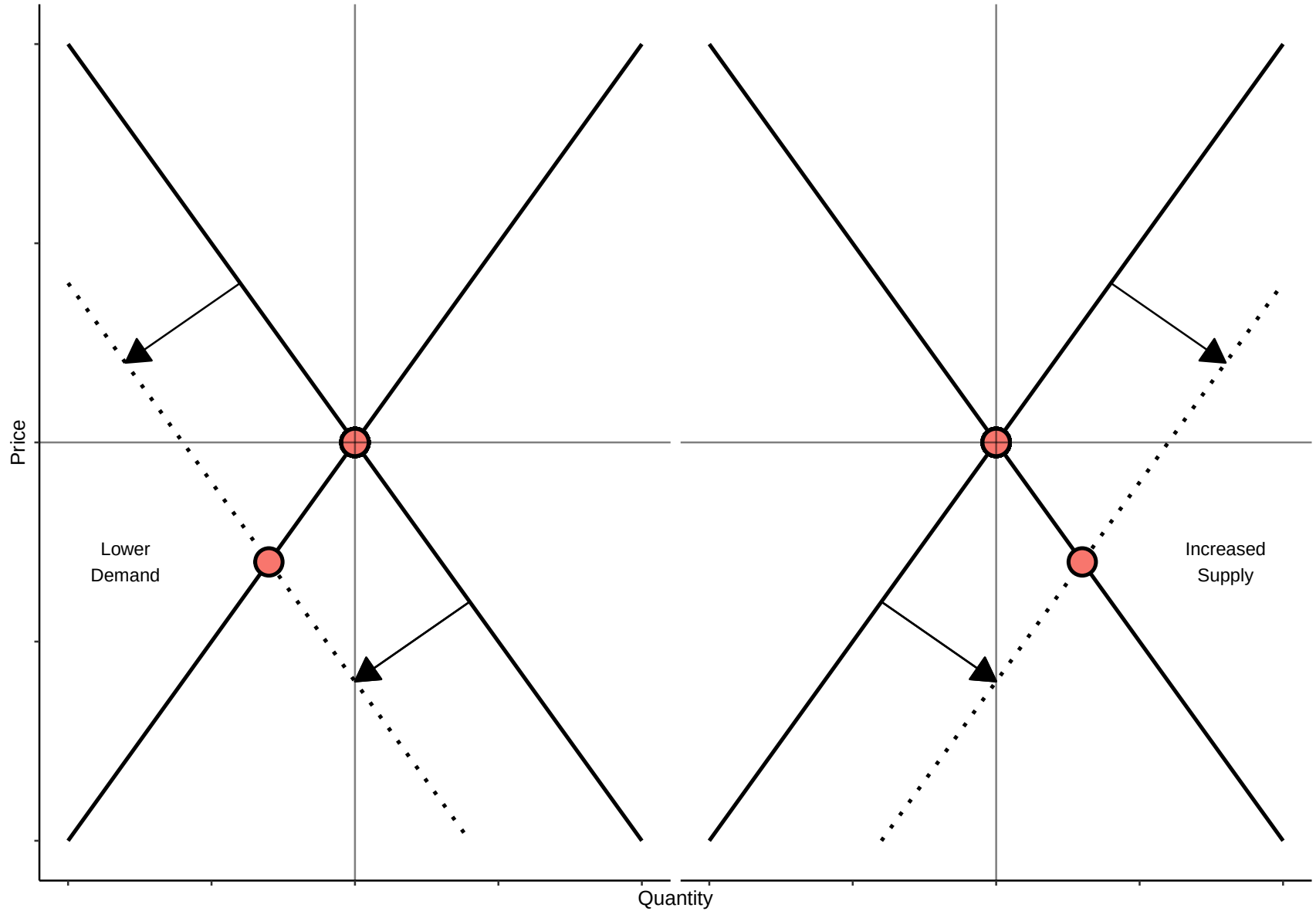
- Inflation we had didn't fit that specification.
- Job openings declined without any significant movement in unemployment.
- Beveridge Curve always had shaky movements over a business cycle.

Inflation in 2023: What Actually Happened?

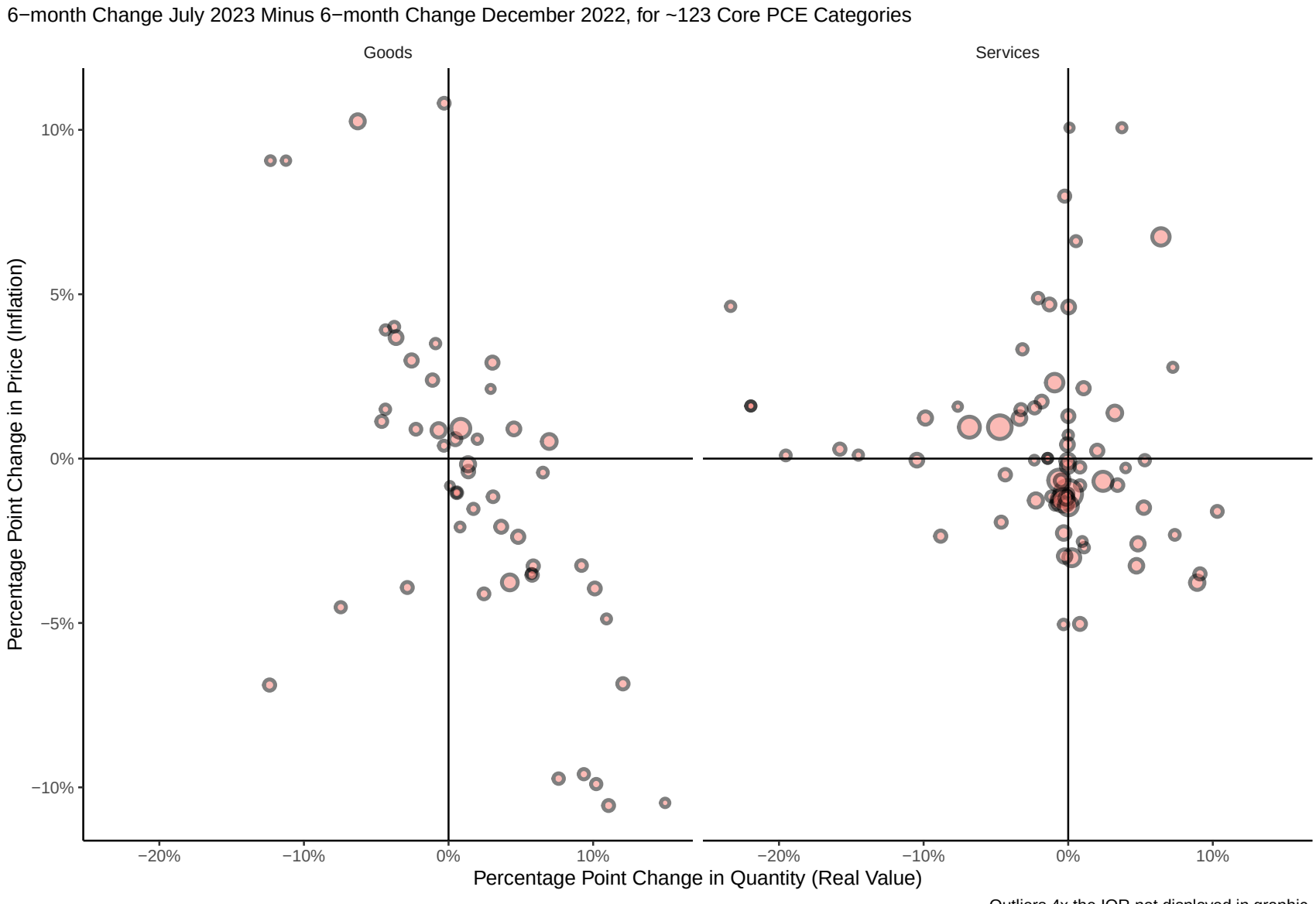
Still a question of supply and demand. How to break what happened?

- Following Shapiro (2022), we can decompose changes in PCE nominal prices into both quantities and prices.
- Item Categories: The PCE distribution is detailed, featuring 131 distinct, non-overlapping item categories.
- Coverage: These items are classified under a 'level 4' categorization system, or four levels down within the underlying NIPA categories. Representing around 100 percent of nominal spending, thereby providing a complete overview of spending in the economy.

Inflation in 2023: Supply and Demand



Inflation in 2023: So what happened?



Inflation in 2023: So how much happened?

	Core Items			Goods			Services		
	Location	Change	Decline	Location	Change	Decline	Location	Change	Decline
Demand+	14%	-2.52		32%	-2.10		9%	-2.65	
Supply-	27%	-3.94		25%	-7.18		27%	-2.93	
Demand-	23%	2.02	27%	4%	1.33	13%	28%	2.24	34%
Supply+	37%	5.44	73%	39%	8.94	87%	36%	4.34	66%

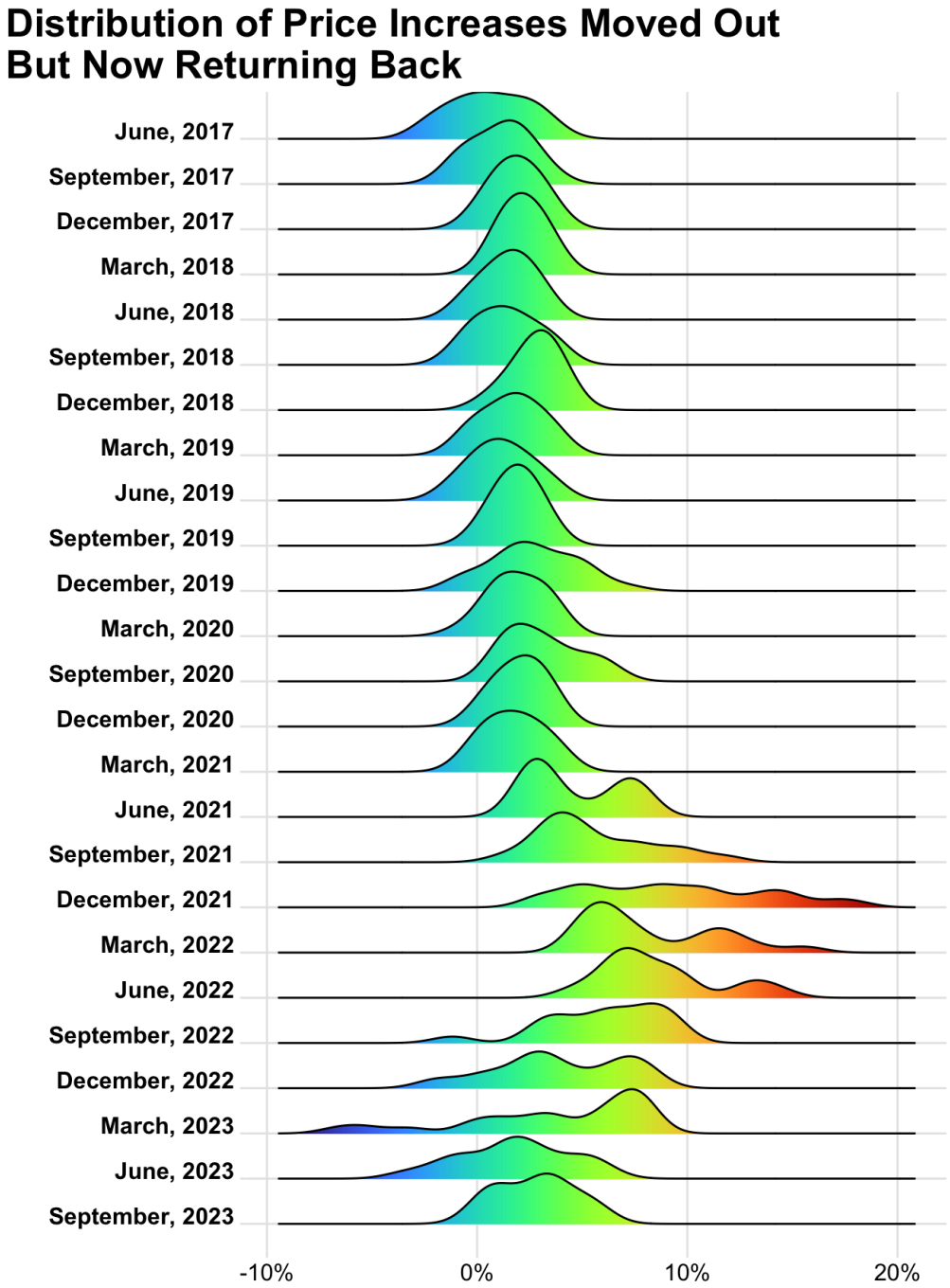
- 73 percent from expanding supply; 27 percent from declining demand.
- Robust to several measures of time-length and comparsion points.
- Question of straight declines.

Inflation in 2023: Last Mile Hardest?

Could the last mile of inflation be the hardest?

- Higher underlying inflation is being masked by the tails of the distribution.
- Disinflation is driven by categories that aren't sensitive to demand.

Inflation in 2023: Not in the tails.



Inflation in 2023: Not by demand insensitive categories.

- Take 179 individual CPI spending category inflation rates, 2000 -.

$$\pi_{i,t} = \pi_{i,t-1} + \beta(u - u^*)$$

```
>
> print(cpi_lm %>% select(item_name, term, estimate, statistic), n=Inf)
# A tibble: 16 × 4
# Groups:   item_name [16]
   item_name                                  term            estimate statistic
   <chr>                                      <chr>              <dbl>     <dbl>
 1 Rent of primary residence                  I(unrate - nrou)   -0.146     -4.29
 2 Owners' equivalent rent of primary residence I(unrate - nrou)   -0.115     -3.64
 3 Day care and preschool                     I(unrate - nrou)   -0.324     -3.39
 4 Laundry and dry cleaning services          I(unrate - nrou)   -0.413     -3.32
 5 Other food away from home                  I(unrate - nrou)   -0.412     -2.77
 6 Pets and pet products                      I(unrate - nrou)   -0.535     -2.72
 7 Full service meals and snacks              I(unrate - nrou)   -0.155     -2.58
 8 Pet services including veterinary          I(unrate - nrou)   -0.393     -2.53
 9 Elementary and high school tuition and fees I(unrate - nrou)   -0.213     -2.51
10 Electricity                                I(unrate - nrou)   -0.721     -2.43
11 Garbage and trash collection               I(unrate - nrou)   -0.318     -2.33
12 Legal services                             I(unrate - nrou)   -0.772     -2.27
13 Funeral expenses                           I(unrate - nrou)   -0.201     -2.25
14 Motor vehicle repair                       I(unrate - nrou)   -0.512     -2.15
15 Other dairy and related products           I(unrate - nrou)   -0.678     -2.07
16 Wine at home                               I(unrate - nrou)   -0.312     -1.99
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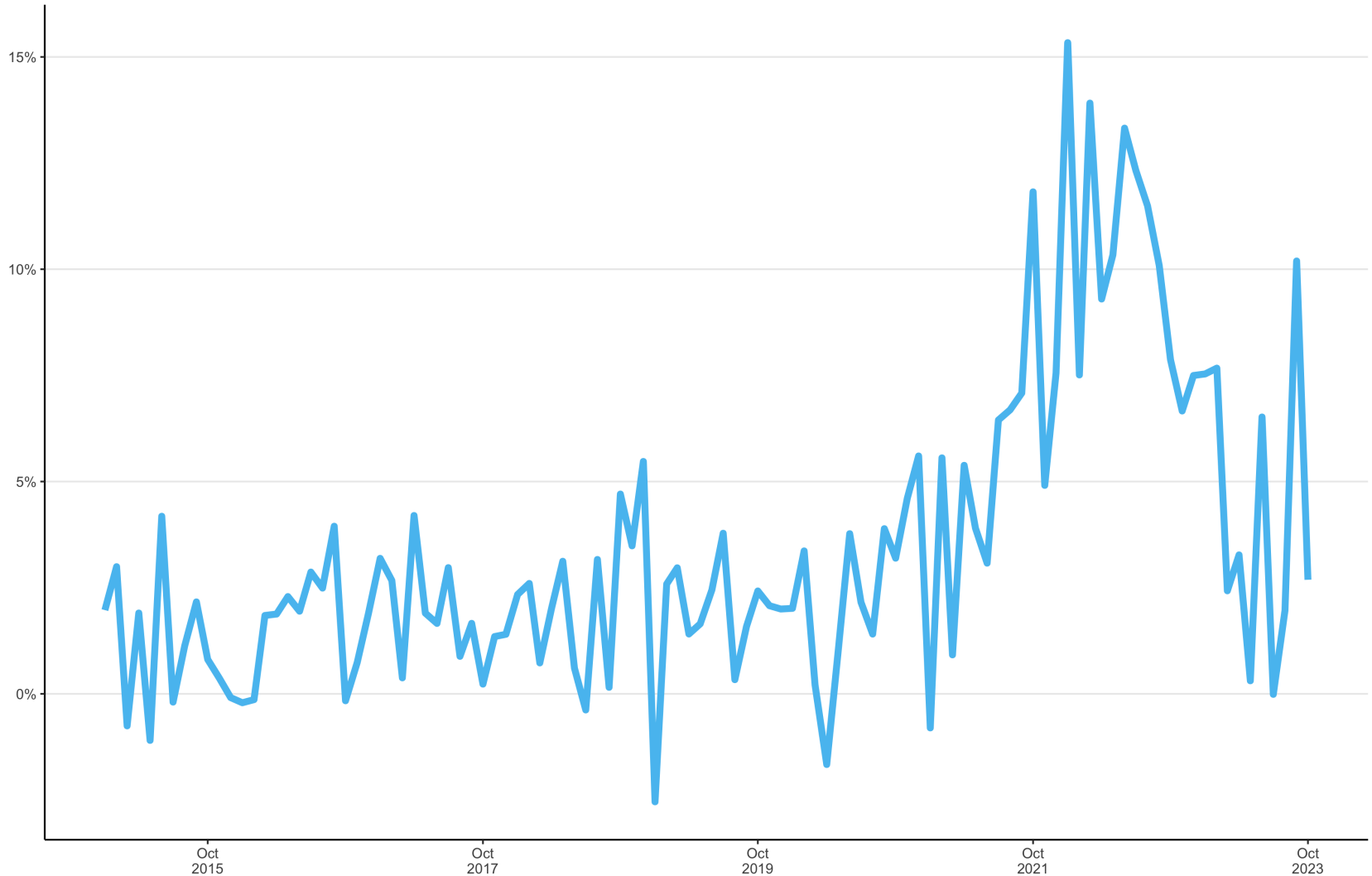
Inflation in 2023: Not by demand insensitive categories.

- Our demand sensitive index.
- Approximately 8 percent of consumer spending.



BLS, Author's calculations. Mike Konczal.