Inflation and Labor Markets

Discussion prepared for
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Phillips Curve (Post Friedman)

$$\pi_t = \kappa(u_t - u^*) + \beta E_t(\pi_{t+1}) + \varepsilon_{s,t}$$

Traditional term

Friedman Forces

- Demand imbalances
  Unemployment relative to natural rate

- Expectations

- Supply shocks $\varepsilon_{s,t}$

Long-Term Phillips Curve

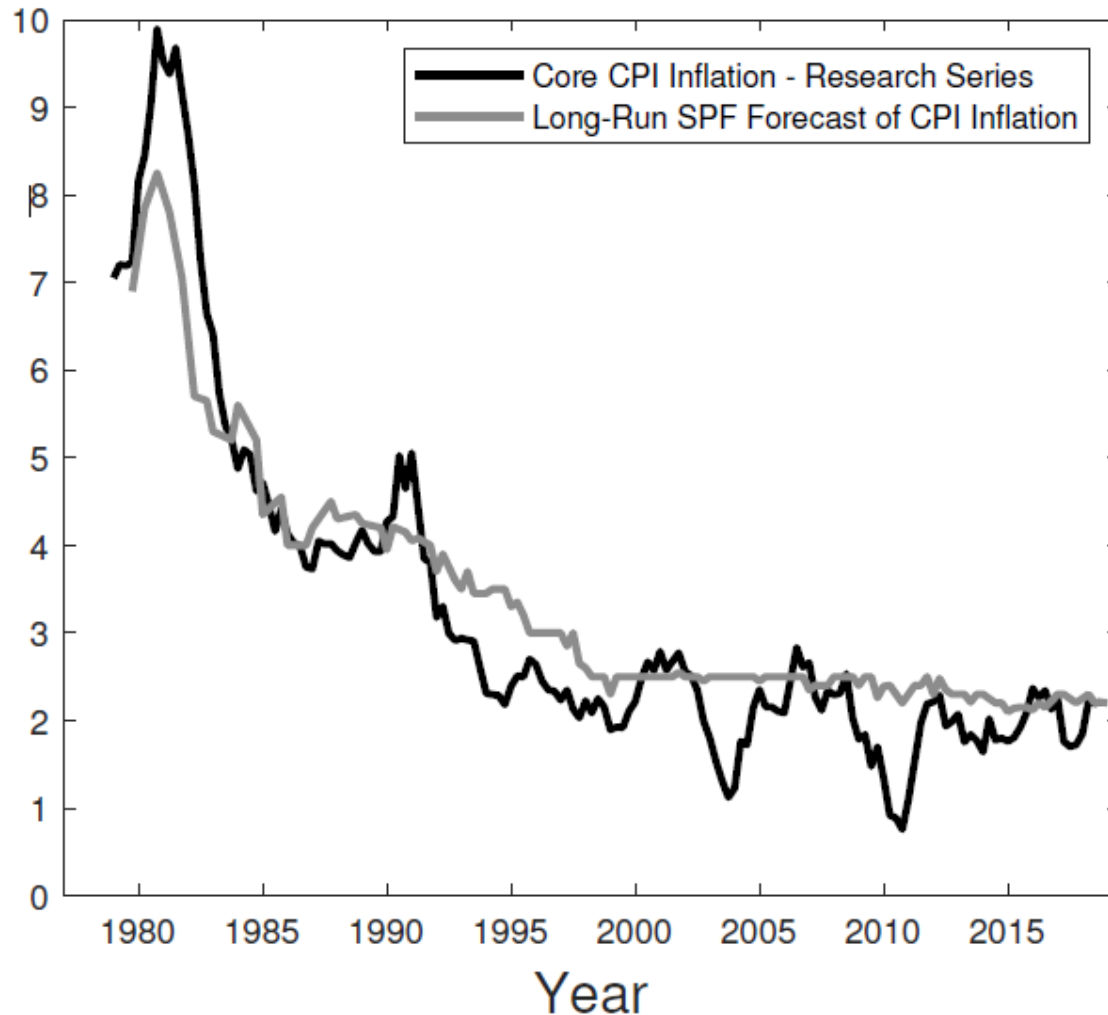$$\pi_t = \kappa^*(u_t - u^*) + \pi_\infty + \varepsilon_{s,t}$$

Demand
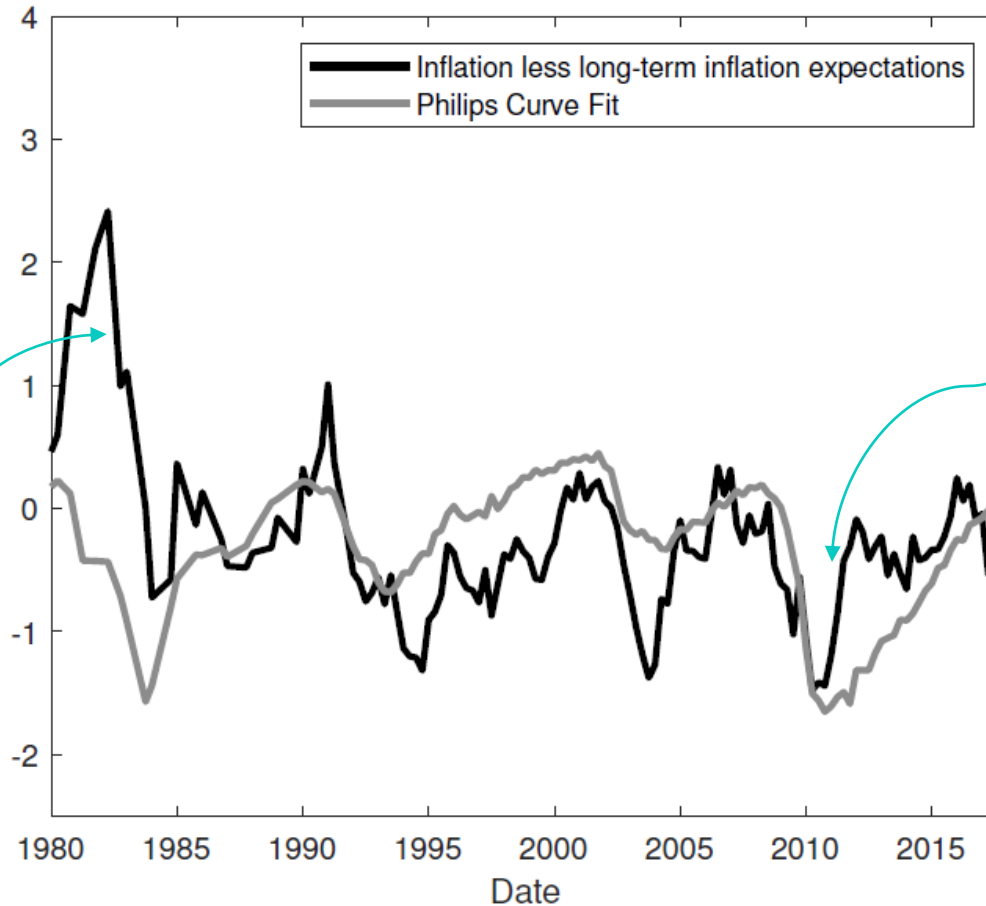Imbalances

LT Inflation
Expectations

- Credible disinflation can lower inflation with *no* increase in unemployment via π_∞ term (Sargent, 1982)

(κ^* takes on new interpretation; Hazell et al., 2022)

Long-Term Inflation Expectations: Volcker Disinflation

LT Phillips Curve Demand Term

Legend:
- Inflation less long-term inflation expectations
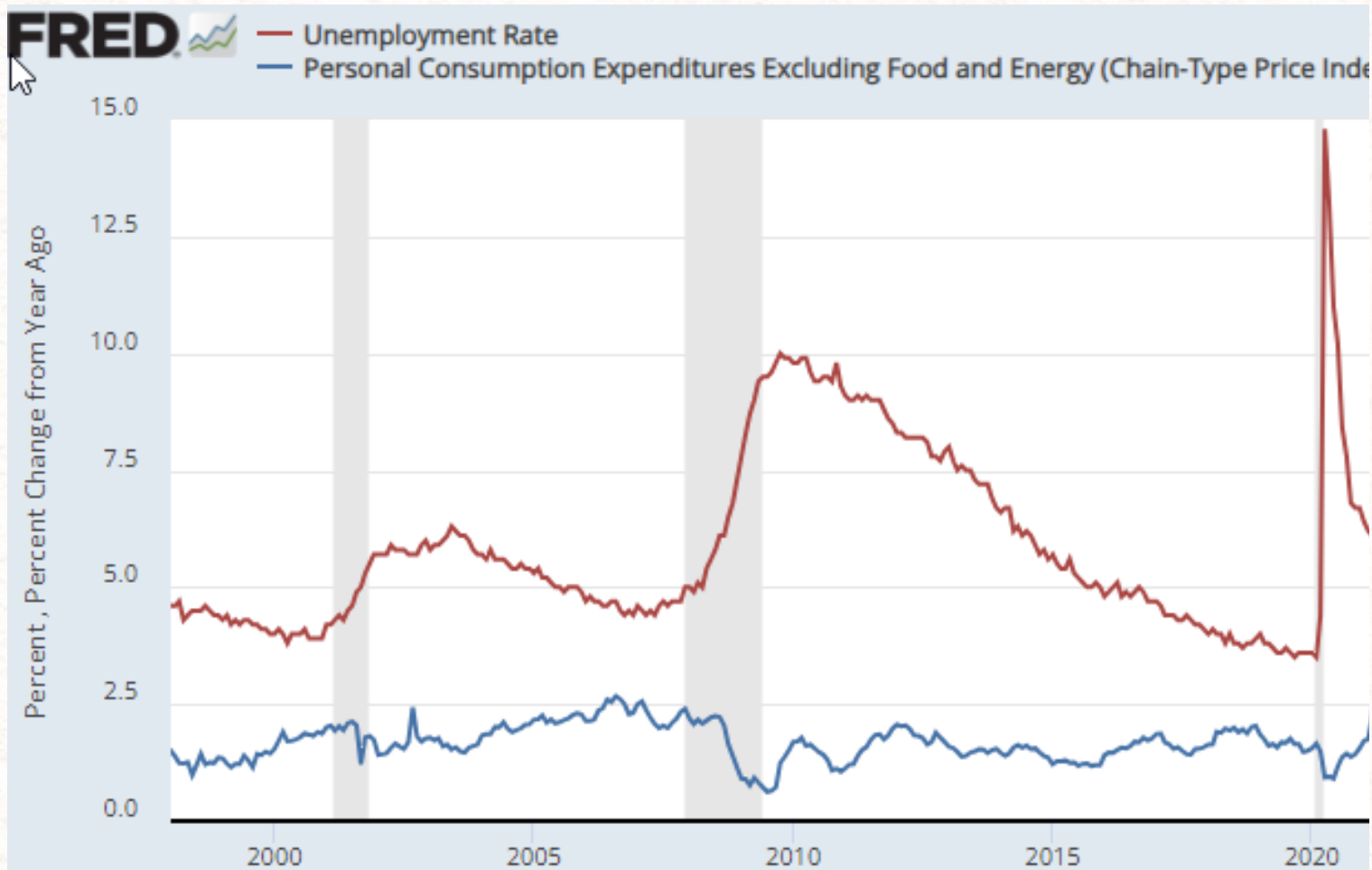- Philips Curve Fit
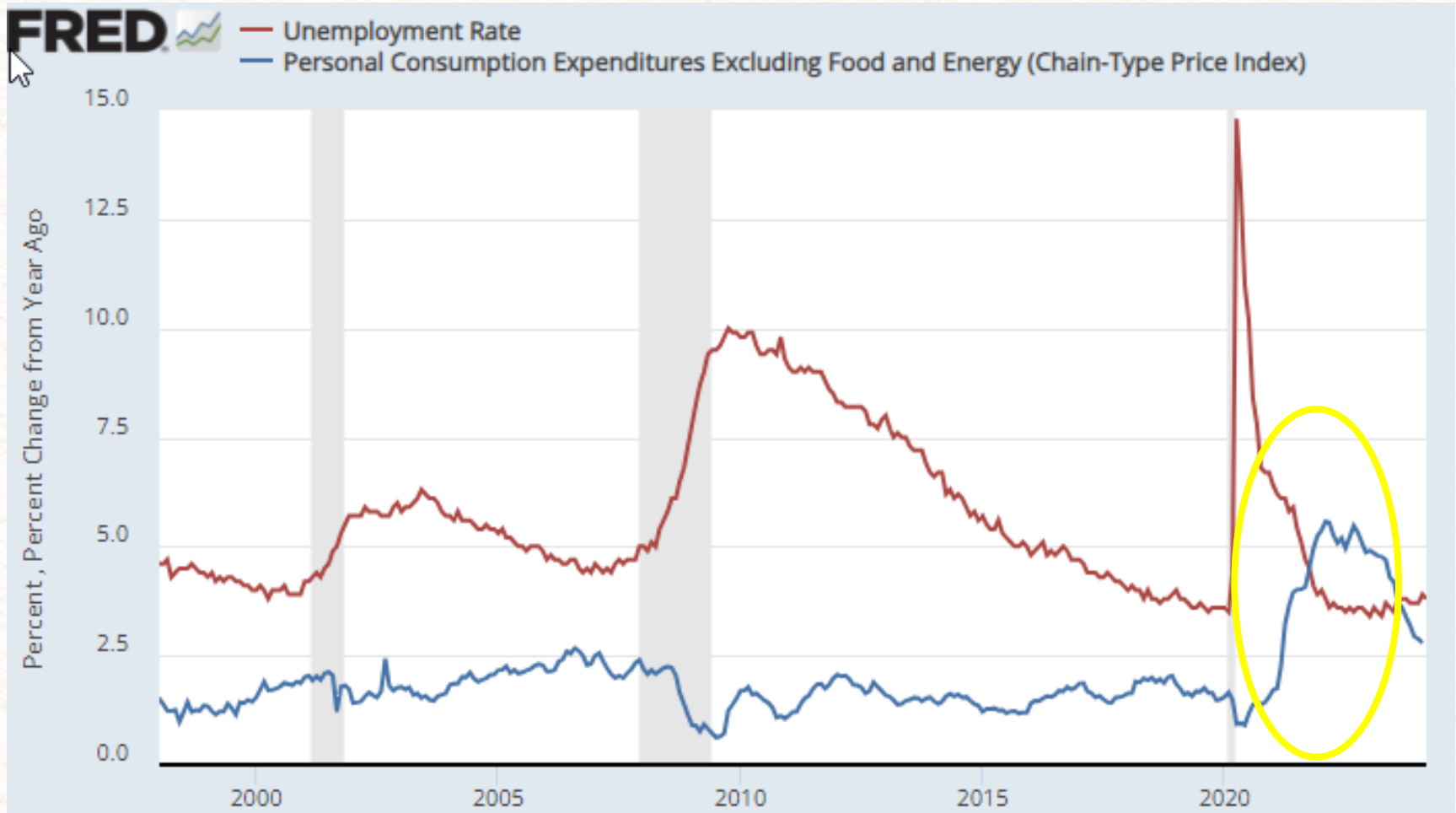
Need supply shocks to explain

Modest tendency for $\pi_t - \pi_\infty$ to fall in recessions

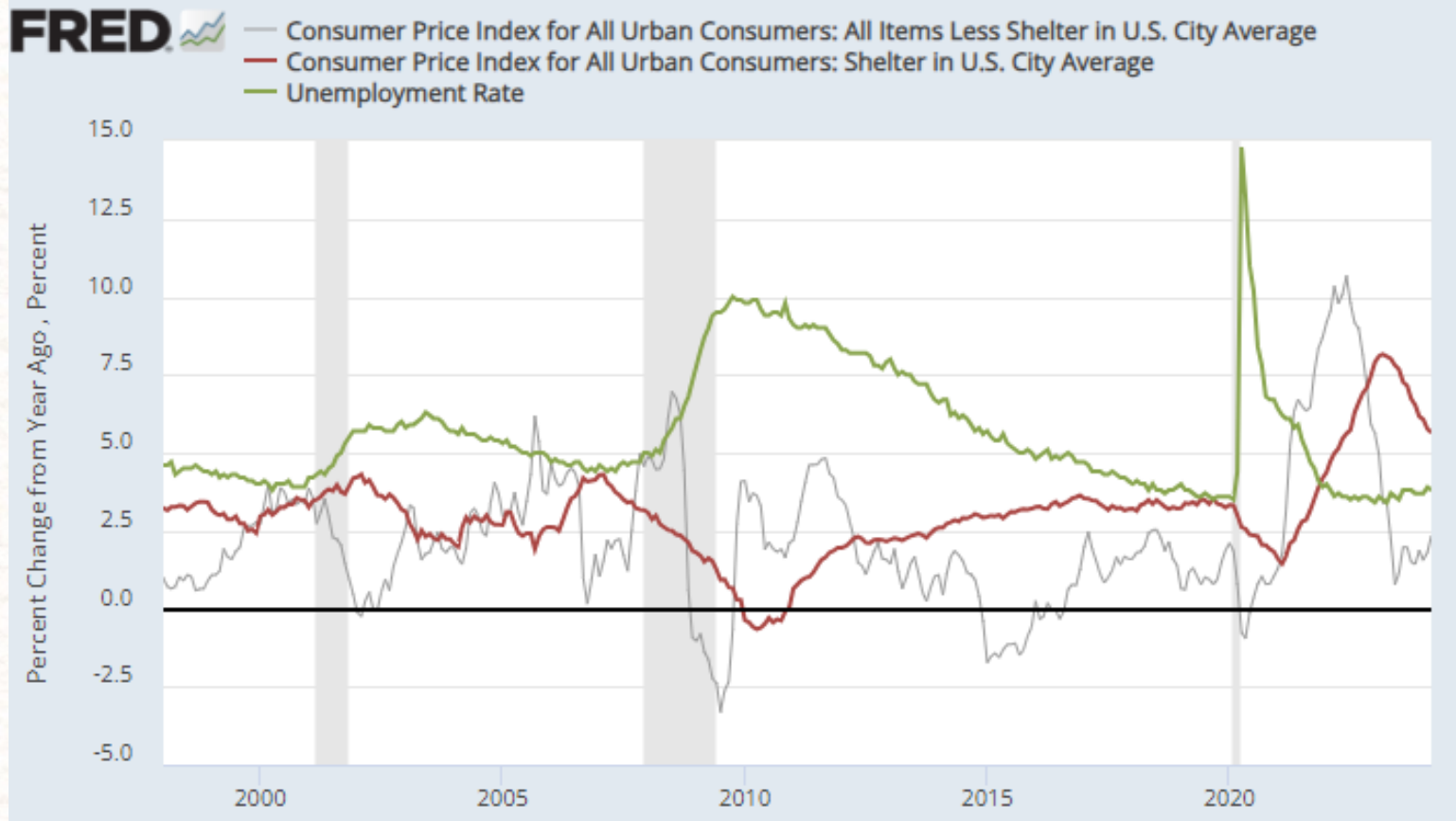:: Aggregate Phillips Curve and Housing: Predicted vs. Fit

Core PCE: Pre and Early Covid

Core PCE: Inflation Surge

Cyclicality of Shelter

What Was Different?

- Many explanations (a very incomplete list)
  - Sectoral reallocation (Ferrante et al.)
  - Supply chains (Bernanke and Blanchard; Comin et al., di Giovannini et al;
  - Fiscal stimulus (Bianchi et al; Hazell & Hobler)
  - Unmeasured labor market tightness (Ball et al.)
  - Non-linearities (Benigno & Eggertson, Blanco et al))
  - Expectations (Beaudry et al)
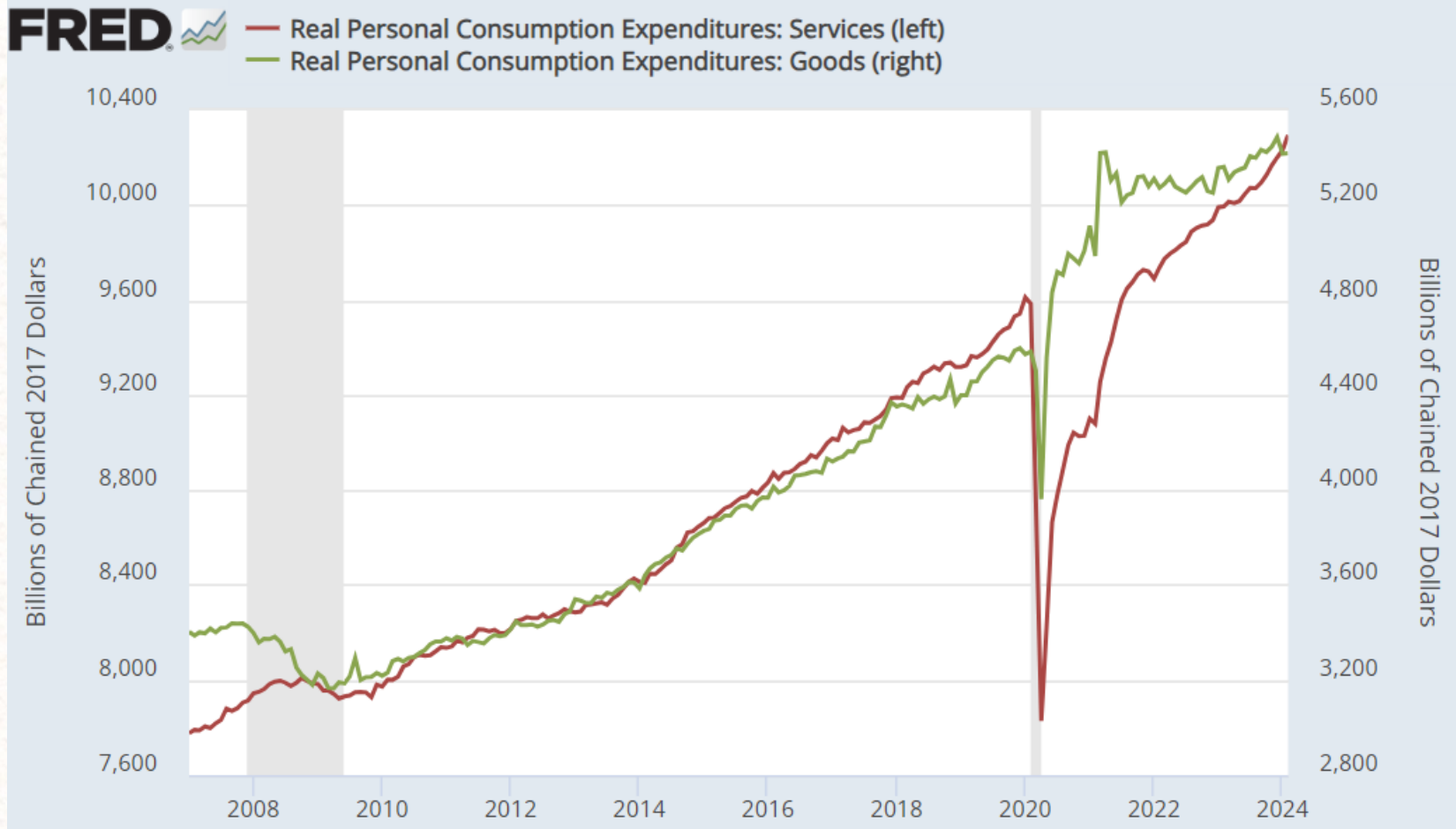
- Hard to distinguish in time series

$$\pi_t = \kappa(\textit{Demand Imbalance}) + \beta E_t(\pi_{t+1}) + \varepsilon_{s,t}$$

- Hard question: *why* did imbalance occur?
  - Huge reallocation of demand, fiscal stimulus etc.

- Easier question: How to *measure* imbalance?
  - $u_t - u^*$ with smooth (e.g., CBO) u* seemed not to capture important aspects of reality over past couple of years

  What is needed?
  - Labor market: New measures of u*, role for v/u
  - Product market imbalances not captured by $u_t - u^*$

Historic Goods Market Pressures

Delivery Lags

Comparison of Supplier Delivery Times Indicies, Z-Scores

— Institute for Supply Management Index
— Purchasing Managers' Index
— Global Supply Chain Pressure Index
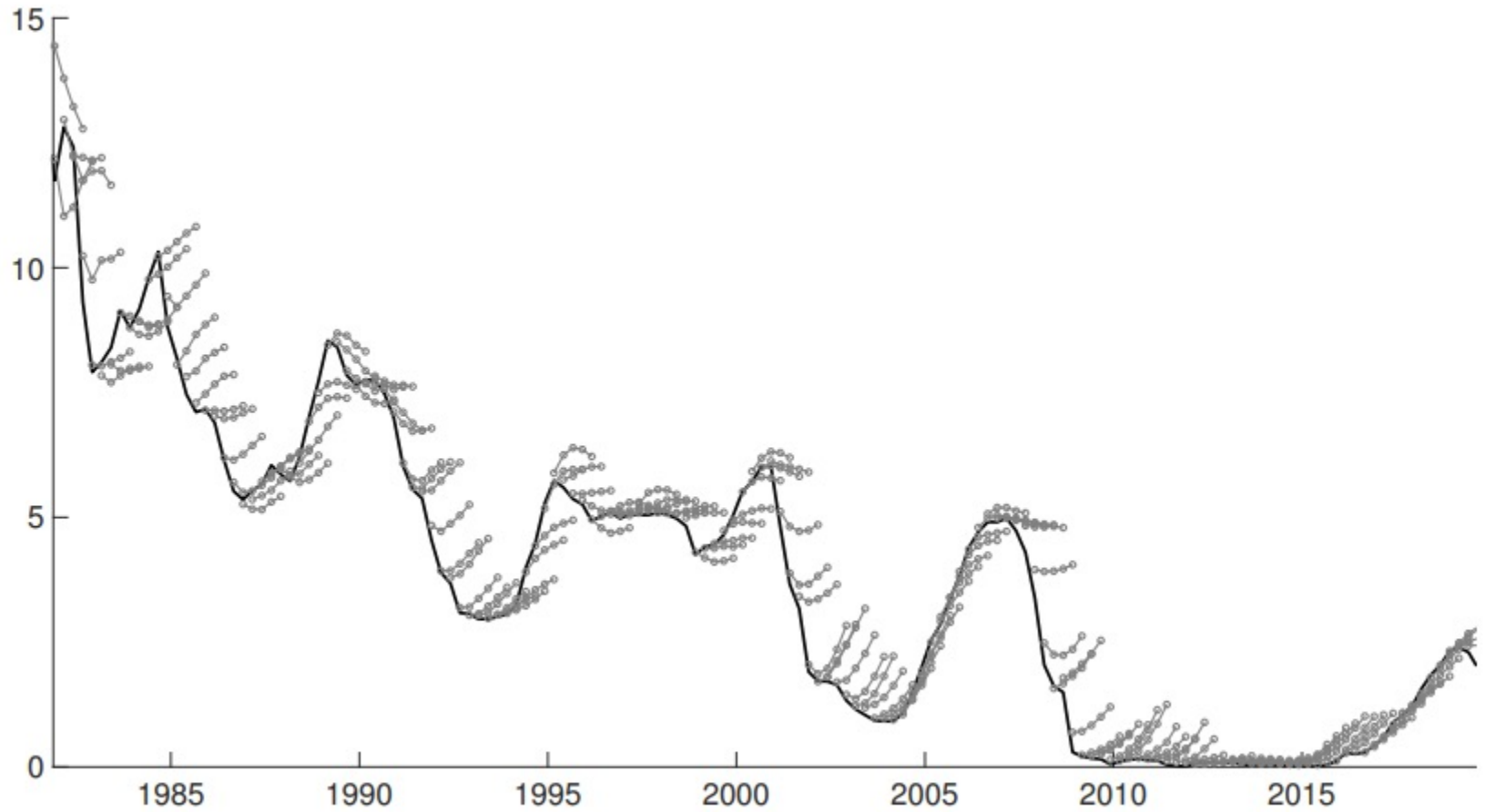
Exhibit 18

Brooks and Orszag (2023)

Delivery Lags

- Carlton (1989) emphasized importance of delivery lags in equilibrating industrial markets

- Stigler-Kindahl dataset on industrial prices
  - Shows widespread price rigidity in industrial contracts, even for goods that (economists might think) are homogenous
  - Delivery lags are key to clearing markets

- Delivery lags reflect product market imbalances; grew dramatically during Covid

Inflation Forecasts

- Historically, forecasters have tended to underestimate the persistence of macro variables
  - E.g., Interest rates in 2009
  - GDP in 1999

- Can happen even in models with rational agents
  - Slow learning and limited data sample
  - It's hard to be rational!

Interest Rate Forecast "Hair Plot"

GDP Growth Forecasts