Inflation and Labor Markets

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Phillips Curve (Post Friedman)

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

- Demand imbalances
  Unemployment relative to natural rate
- Expectations
- Supply shocks \( \varepsilon_{s,t} \)
Long-Term Phillips Curve

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

- Credible disinflation can lower inflation with no increase in unemployment via \( \pi_\infty \) term (Sargent, 1982)

(\( \kappa^* \) takes on new interpretation; Hazell et al., 2022)
Long-Term Inflation Expectations: Volcker Disinflation
LT Phillips Curve Demand Term

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

Need supply shocks to explain
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
\[ \pi_t = \kappa (Demand\ \text{Imbalance}) + \beta E_t (\pi_{t+1}) + \varepsilon_{s,t} \]

- 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