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**INFLATION SINCE COVID:
DEMAND OR SUPPLY**



EUROPEAN CENTRAL BANK
EUROSYSTEM

Inflation Since Covid: Demand or Supply



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Research Question:

- To what extent the post-COVID rise in US inflation was driven by demand factors?

Methodology:

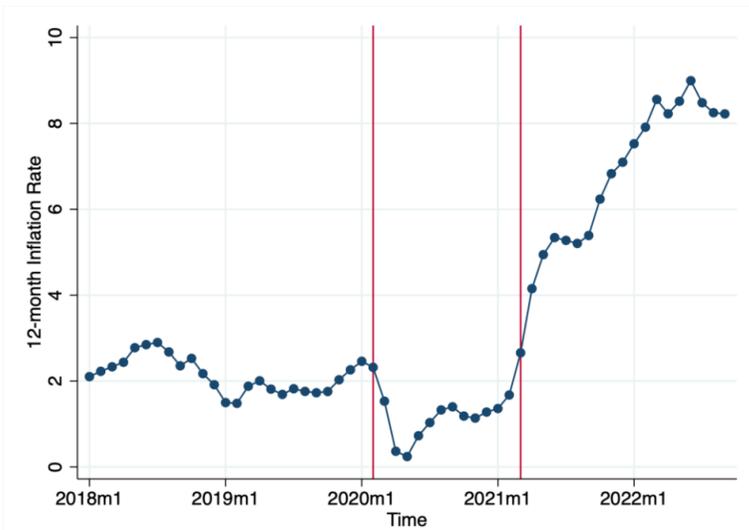
- Two-region NK model to relate slopes of regional and aggregate Phillips curves (PC).
- Estimate slope of PC using panel variation in US city-level inflation and unemployment rates.

Results:

- Slope of PC dropped to 0 during COVID and more than tripled post-COVID with respect to pre-COVID.
- 25%-38% increase in post-COVID inflation driven by demand factors.
- Without PC steepening, demand contribution would be small and statistically insignificant.
- PC flattening driven by services and steepening driven by goods.

Motivation

US Headline Inflation, 2018-2023



Difficult to decompose what is driven by:

- Demand: tight labor markets
- Supply: supply bottlenecks, Great Resignation ...

New Keynesian Phillips curve (PC):

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

κ = slope of PC → effect of demand factors on inflation

Challenging to estimate κ with time-series data:

- Low statistical power
- Confounding factors

⇒ turn to panel data

Methodology

- New Keynesian model of two regions in a monetary union featuring:

- Labor supply shocks
- Supply chain disruptions

⇒ Slopes of regional and aggregate PCs coincide

⇒ Regional PC:

$$\pi_{it} = E_t \pi_{t+\infty} - \psi u_{it} + \delta p_{it}^x - \eta a_{it}^y + \omega_{it}$$

- Exploit panel variation in inflation and unemployment rates across US cities to estimate ψ before, during, and after COVID.

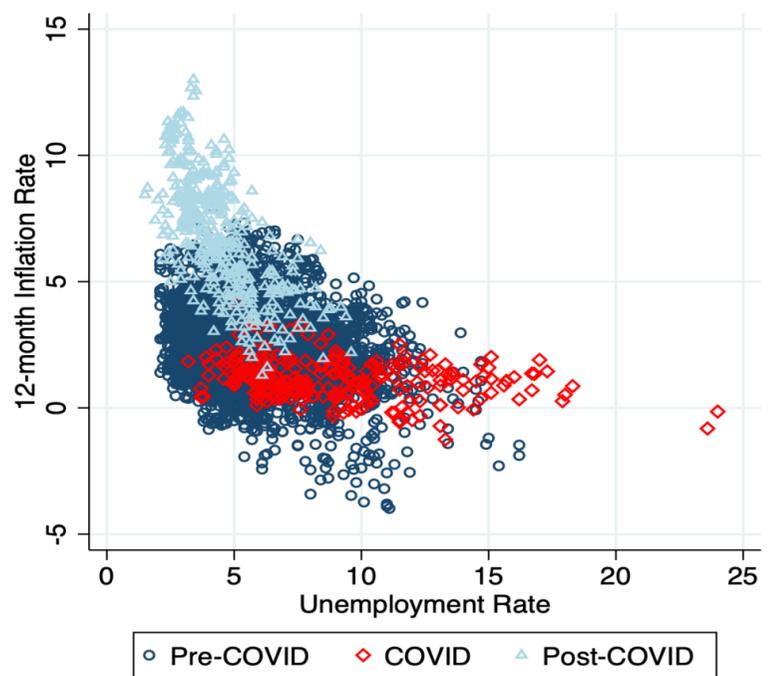
- Empirical specification:

$$\pi_{it} = \alpha_i + \gamma_t - \psi u_{it} + \delta p_{it}^x - \eta z_{it}^y + \omega_{it}$$

- Identification strategy:

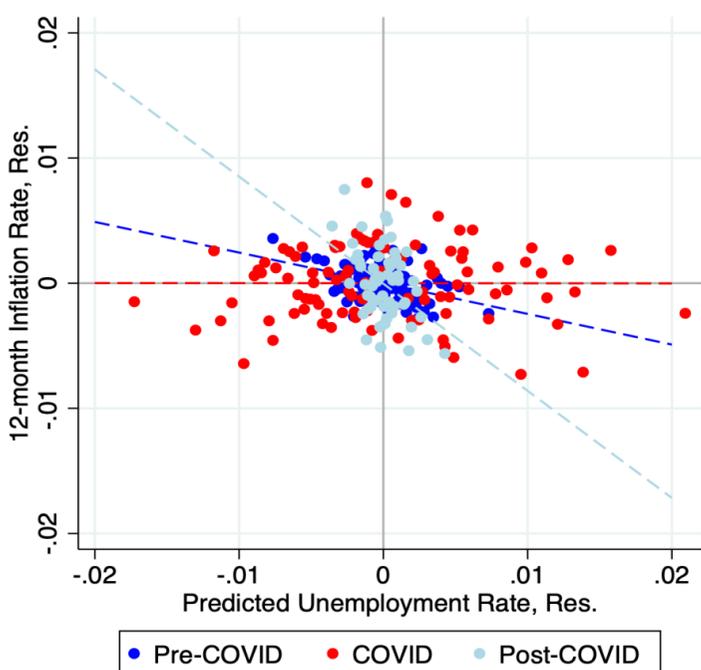
- 1) Two-way fixed effects
- 2) Shift share instrument capturing tradable intermediate-input sector productivity

Inflation and Unemployment Rates Across US Cities, 1990-2023



Results

- Slope of PC drops to 0 during COVID and more than triples post-COVID with respect to pre-COVID



- Demand factors explain from 25% to 38% of post-COVID rise in US inflation

