Monetary Policy and the Online Labor Market: Early Empirical Results

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November 13, 2025

Research Question & Positioning

Research Question:

- How do U.S. monetary policy shocks affect online labor **demand** and **supply**?
- Do different online occupations respond heterogeneously?

Why Online Labor?

- OLI captures flexible, fast-adjusting forms of work.
- Useful margin of labor-market adjustment during macro shocks.

Why Monetary Policy (MP) Shock?

- High-frequency (BRW) shocks are plausibly exogenous.
- Avoids endogeneity between MP and macro conditions.
- Clean causal interpretation relative to fiscal/technology shocks.

Data Overview

Online Labor Index (OLI) (U.S. monthly aggregation)

- Demand side: Posted vacancies.
- Supply side: Registered active workers.
- 6 occupation groups:
  - Clerical & Data Entry, Sales & Marketing, Professional Services, Software Dev & Tech, Creative/Multimedia, Writing & Translation

Monetary Policy Shocks: BRW (Bu et al., 2021)

- Intraday high-frequency changes around FOMC announcements.
- Isolated from central bank informational effects and other background noises.
- Positive value = tightening.

Time range: 2016m3–2024m9, monthly

Methodology

Baseline Panel Regression

$$\log(y_{o,t}) = \beta\, BRW_t + \alpha_o + \varepsilon_{o,t}$$

$y_{o,t}$: OLI demand or supply for occupation o
α_o: occupation FE

Enhanced Specification (Autocorrelation + Inertia): total amount

$$\log(y_t) = \alpha + \beta BRW_t + \rho \log(y_{t-1}) + \gamma_{season} + u_t$$

(Newey-West corrected SEs for serial correlation.)

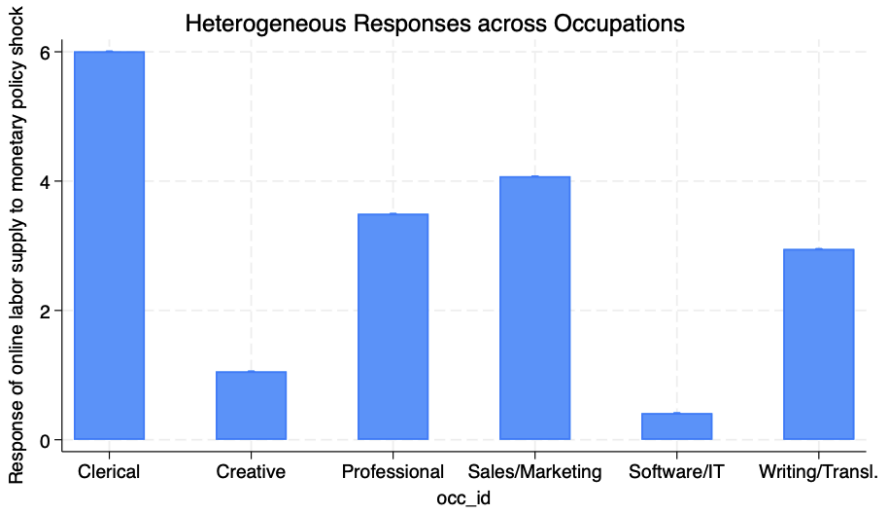
Local Projections (Jordà 2005)

$$\log(y_{o,t+h}) = \beta_h BRW_t + \text{Controls}_{o,t} + \alpha_o + \epsilon_{o,t+h}$$

Goal: Recover impulse responses of OLI demand/supply to MP shocks.

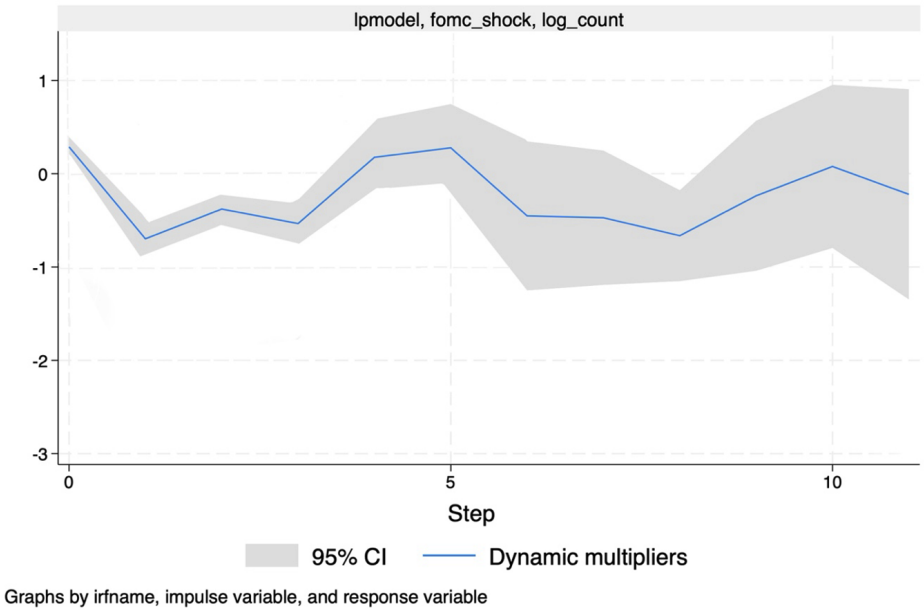
Early Results: Baseline Regressions

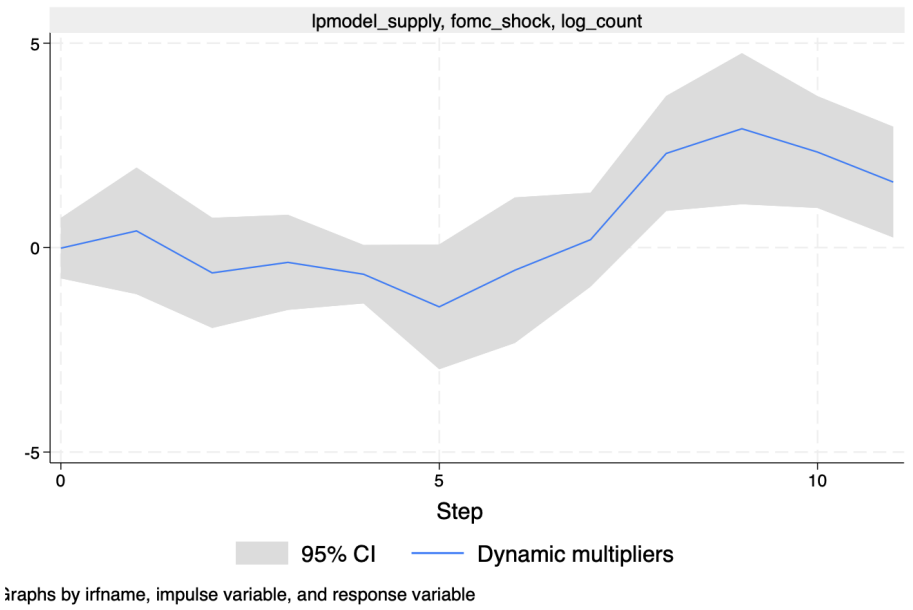
	demand		supply	
	total	panel	total	panel
FOMC_shock	3.762	1.161*	2.013*	2.999**
	(2.943)	(0.376)	(1.042)	(0.836)
_cons	13.465***	11.402***	13.001***	10.951***
	(0.093)	(0.001)	(0.000)	(0.003)
log(y)	✓		✓	
Season FE	✓		✓	
Occupation FE		✓		✓
N	98	594	87	522



- Tightening MP $\rightarrow$ **higher online demand**:
  - employers substitute flexible digital labor when macro conditions tighten.
- Tight MP $\rightarrow$ **higher supply**:
  - especially routine/service occupations.
  - labor force shifts online during macro slowdowns.

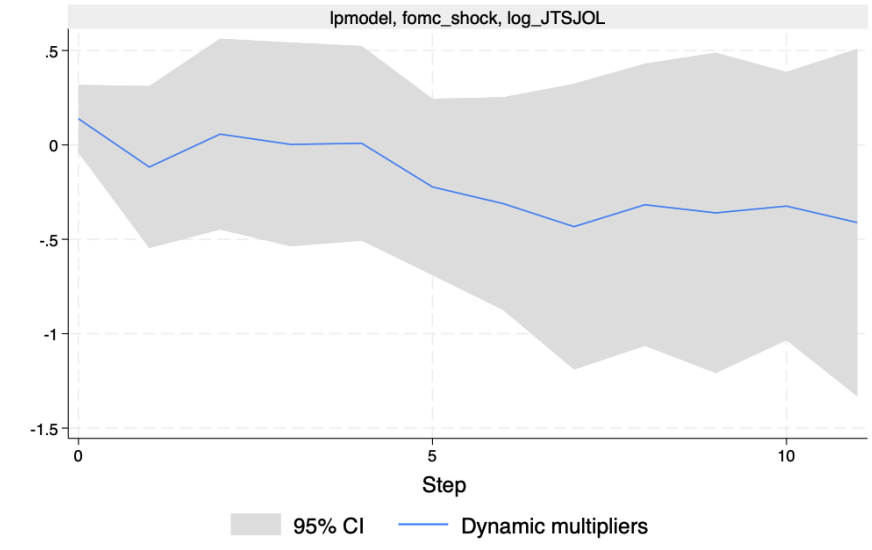
Early Results: Dynamics

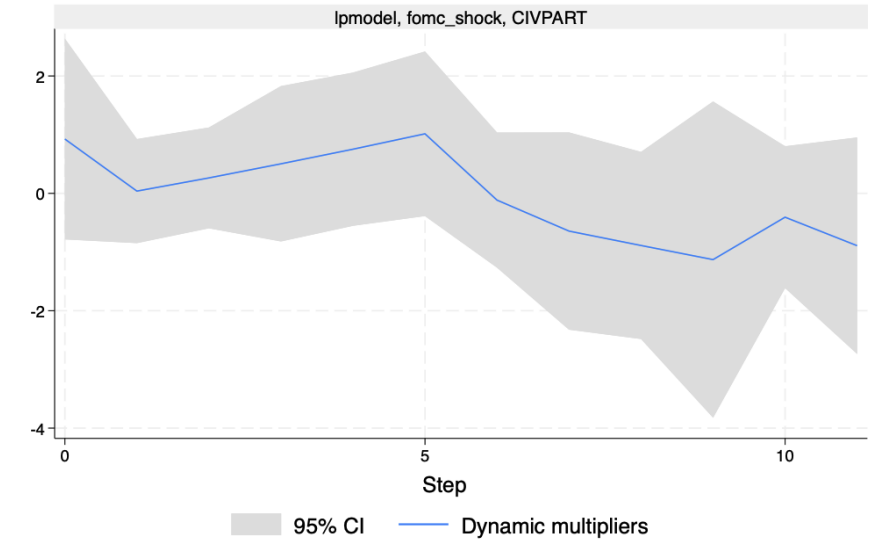


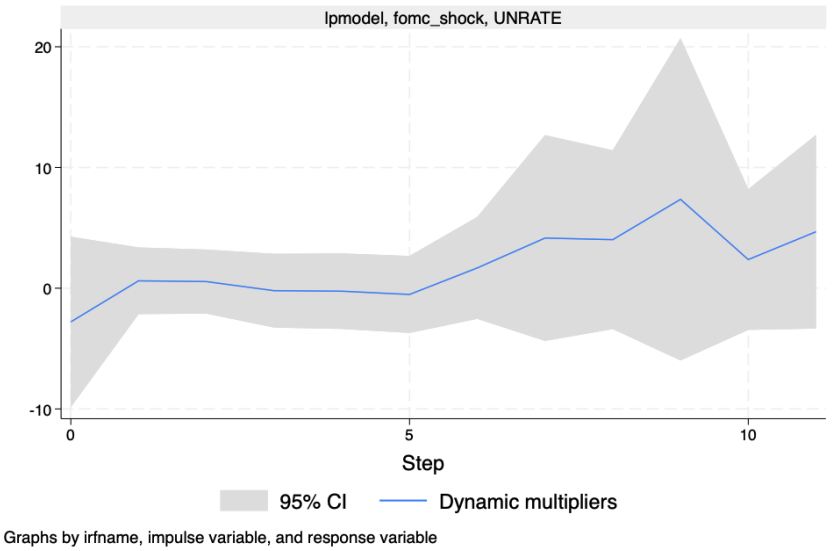


- Dynamic Response — Demand:
  - Weak increase at month 0.
  - Months 1–4: temporary decline in online hiring.
  - Returns to baseline within 6 months.
- Dynamic Response — Supply:
  - No immediate change.
  - Increase at 6–10 months post-shock.
  - Effect fades after 12 months.

Early Results: Contrast







Hurdles & Next Steps

Current Challenges

- Small number of observations (monthly) $\rightarrow$ wide confidence intervals.
- Occupation-level clusters too few for strong inference.
- OLI counts are small relative to total labor market.

Next Steps

- Explanation
- Compare with traditional indicators:
  - JOLTS openings (vacancies)
  - Employment level & labor-force participation
  - Unemployment (rate + level)
- Expand specification:
  - Try multiple shocks (BRW + Gertler-Karadi + Fed Funds futures)
  - Add controls
- Heterogeneity