

# Do Cost-of-Living Shocks Pass Through to Wages?<sup>1</sup>

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<sup>1</sup>The views expressed in this paper are those of the authors and do not necessarily reflect the position of the Federal Reserve Bank of New York or the Federal Reserve System.

# Do Cost of Living Shocks Pass Through to Wages?

During COVID, both inflation and nominal wage growth surged.

- **Question:** are wages responding to inflation, or reflect tight labor markets?
- Concern about 1970's style wage-price spiral:  
shock to specific sector → increased wage demands → generalized inflation

Sticky wage macro models: union wage setting (Erceg et al., 2000; Lorenzoni and Werning, 2023) or ad-hoc real wage rigidity (Gagliardone and Gertler, 2023)

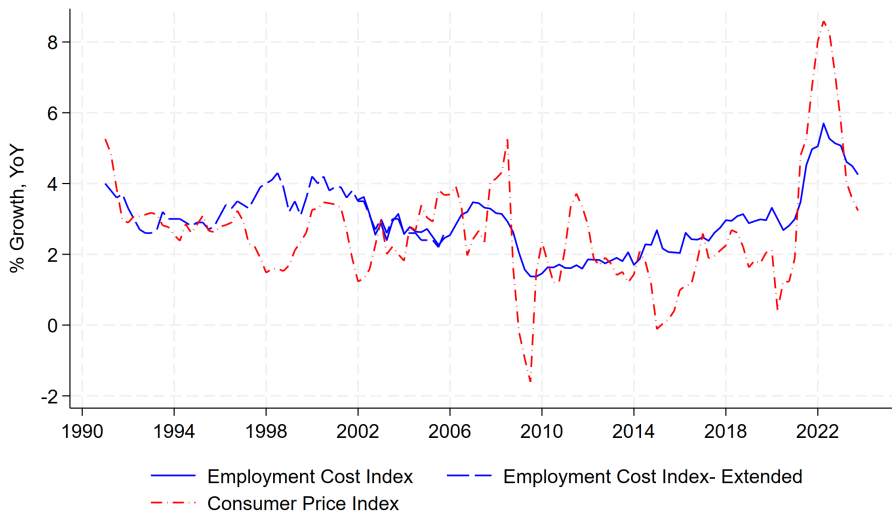
- Micro evidence: wage posting is dominant form of wage determination in the US. (Lachowska et al., 2022; Di Addario et al., 2023)

## Big Question

If firms set wages, how do wages respond to shocks to cost-of-living?

- "Cost-of-living shock": raises price of consumption bundle, no direct effect on physical marginal product of labor.
- Example: labor intensive services (haircuts), endowment good (food).

## Inflation and wage growth: weak correlation at high frequencies, both surge post-COVID



# Wage Posting, OTJ Search: Weak Cost of Living → Wages

**Firms set (post) wages** (Lachowska et al., 2022; Di Addario et al., 2023), post (costly) vacancies.

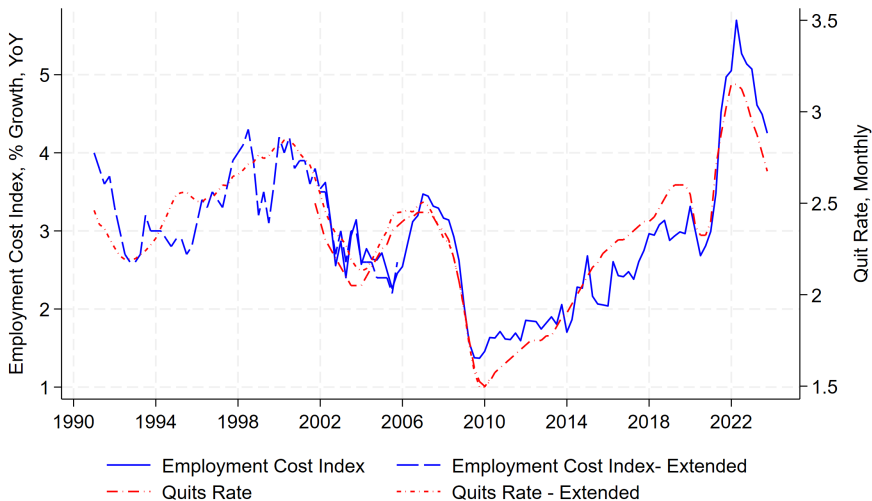
- Optimal wage setting trades off **wage costs** and **turnover costs**.
- Cost of living shock affects wages only to the extent that recruiting or retaining workers is harder (i.e., quits or vacancies matter for wage growth).

**Workers search on the job**, experience workplace preference shocks.

- Cost-of-living shocks affect relative value of working vs. nonemployment
- But: unemployment is rarely a credible threat.
  - Weak effect of unemployment benefit level on wages (Jäger et al., 2020).
- Firms primarily concerned with job-to-job quits:

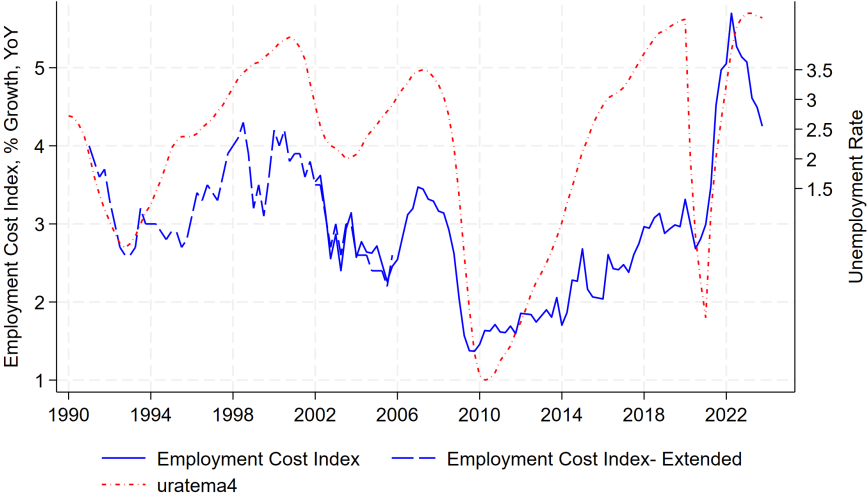
On-the-job search dramatically dampens pass-through!

# Quits Rate Captures Labor Market “Tightness”



Extends results by, e.g., [Faberman and Justinian \(2015\)](#) and [Moscarini and Postel-Vinay \(2017\)](#), through COVID shock and recovery.

# Unemployment: Less So



## Log-Linear Wage Phillips Curves (Vacancies)

Leveraging the full structure of the model leads to:

$$\check{\Pi}_t^w = \phi_V \check{V}_t + \phi_U \check{U}_{t-1} + \phi_{\check{w}} \check{w}_t + \frac{1}{1+\rho} \check{\Pi}_{t+1}^w, \quad (1)$$

where  $\check{w}_t = \sum_{s=0}^{t-1} \Pi_s^w - \sum_{s=0}^t \Pi_s$  is a (last period) real wage term under the realized price inflation in period  $t$ .

- 1  $\phi_V > 0$  and  $\phi_U < 0$  with  $|\phi_V| > |\phi_U|$
- 2  $\phi_{\check{w}} = 0$  in our benchmark (i.e., relative desirability of unemployment is not affected by cost of living)

Given monetary policy stabilizing  $\check{V}_t$  and  $\check{U}_t$ , no pass through

- 3  $\phi_{\check{w}} < 0$  when unemployment becomes more attractive under higher cost of living:  $\exists$  pass through, but small under higher on-the-job search

**Table:** Structural Wage Phillips Curve Coefficients vs. OLS Coefficients

Panel A: Vacancies  $V_t$  and Unemployment  $U_{t-1}$

Source	$\phi_V$	$\phi_U$	$\phi_{\tilde{w}}$
Baseline Model ( $\chi = 1$ )	1.83	-0.30	0
Baseline Model ( $\chi = 0$ )	0.95	-0.63	0
Real Unemployment Benefit Model ( $\chi = 1$ )	1.83	-0.30	-.030
OLS using ECI 1990-Present	0.40***	-0.22*	-.019*
	(0.12)	(0.12)	(.010)

Panel B: Quits  $Q_t$  and Unemployment  $U_{t-1}$

Source	$\beta_Q$	$\beta_U$	$\beta_{\tilde{w}}$
Baseline Model ( $\chi = 1$ )	2.46	0.09	0
Baseline Model ( $\chi = 0$ )	2.13	-0.11	0
Real Unemployment Benefit Model ( $\chi = 1$ )	2.46	0.09	.0426
OLS using ECI 1990-Present	1.11***	-0.04	-.021***
	(0.16)	(0.07)	(.007)

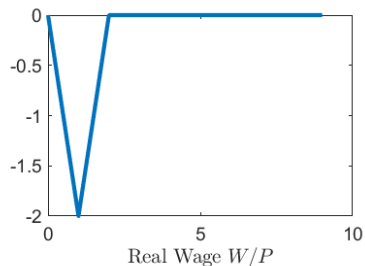
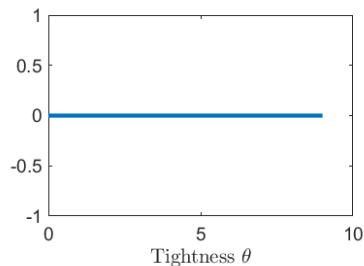
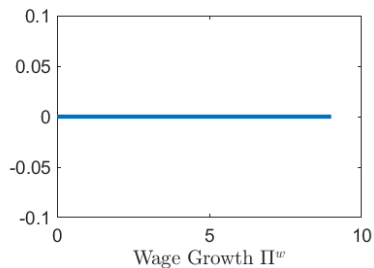
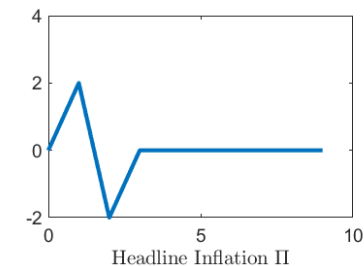
Standard errors in parentheses (Newey-West; 4 lags)

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$



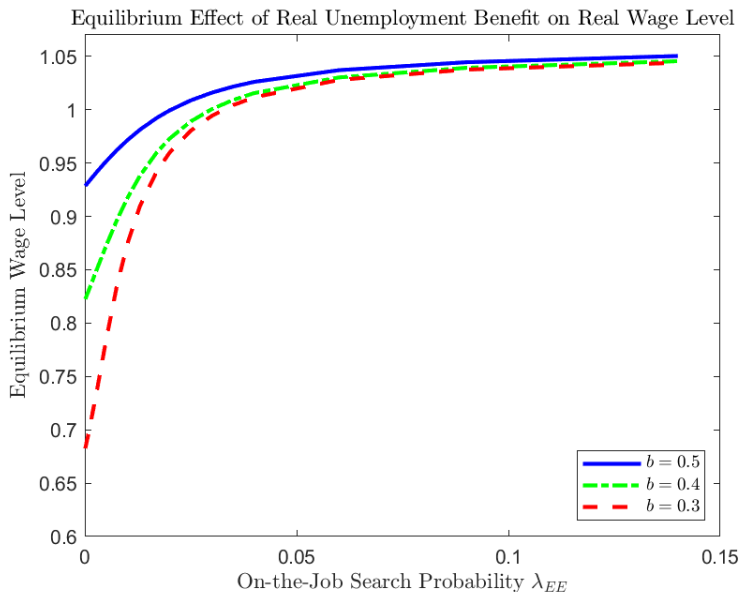
# Pass Through in Our Baseline Model is Zero

Benchmark: relative desirability of unemployment remains the same



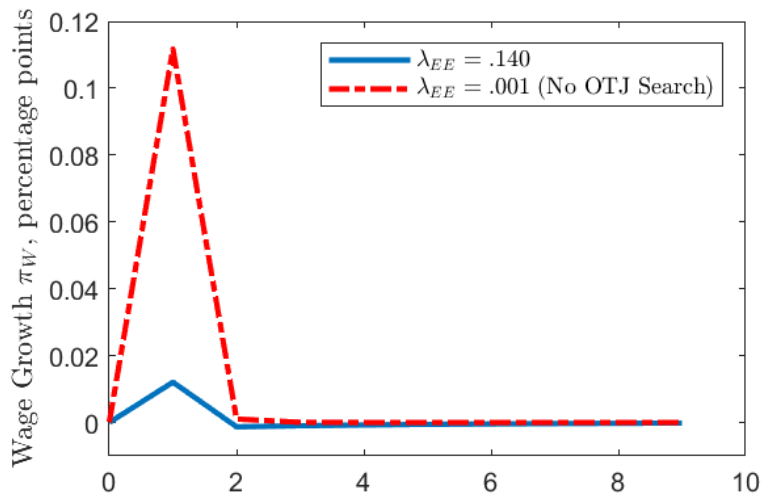
# OTJ Search Kills Effect of Unemployment Benefit on Wages

Extension: fixed real unemployment benefit



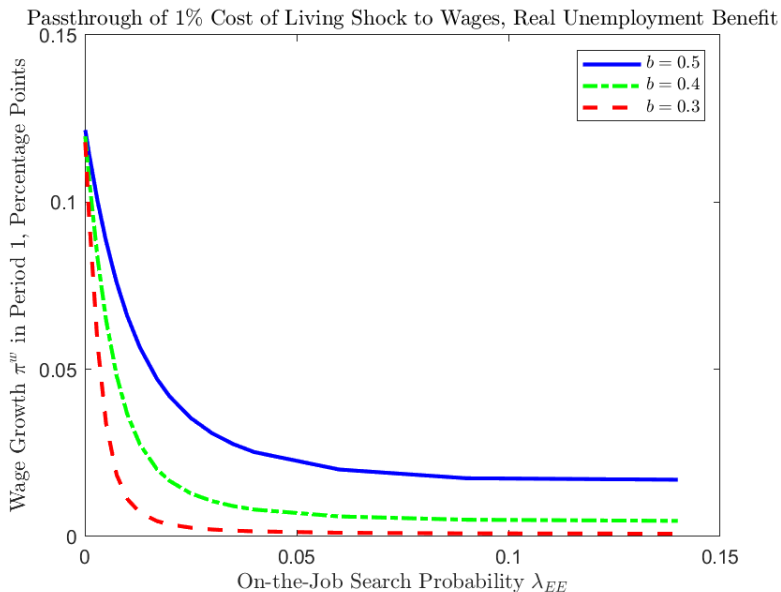
# On-the-Job Search Dramatically Dampens Pass-through

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# Conclusion

We develop a tractable New Keynesian model with **wage-posting** firms and **on-the-job search** consistent with a range of micro evidence.

- Wage posting → wage setting trades off **wage costs** vs. **turnover costs**.
- Wage growth is mostly driven by quits, not unemployment.
- On-the-job search dramatically dampens pass-through of cost of living shocks to wages.
- Bernanke & Blanchard (2024): “catch-up” effect, the tendency of workers to press for compensation for earlier unexpected price increases, appears limited in practice, with the estimated coefficient on the catch-up variable in the wage equation close to zero in most countries.

**Implication:** COVID-era surge in wage growth will revert as labor market tightness reverts