Monetary Policy under Labor Market Power

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Motivation and question

- **Flattening of the wage Phillips Curve:** In recent economic expansions, monetary easing failed to stimulate wage growth, but employment growth was robust
- **Labor market power:** is elevated in the U.S. (wages $\approx$ 30% “marked down" below the marginal product of labor Hershbein, Macaluso, Yeh, 2019)

Question: What is the role of labor market power in the transmission of monetary policy?

Takeaways

- Labor market power strengthens the labor demand effects of monetary policy
- The labor demand effect is stronger for non-skilled workers
- But effects on wages do not depend on labor market power — wages of High LMP firms respond in the same way as those of Low LMP firms

$\Rightarrow$ Labor market power offers partial explanation for wageless recovery

Intuition

- Results consistent with a search and matching model where hiring can be adjusted using two margins (Manning 2006):
  - offered wages and/or
  - number of vacancies or recruitment intensity
- Take a monetary loosening:
  - In response to higher demand, firms with high LMP post more vacancies and do not raise wages as much since the latter would impact their existing wage bill more.
  - Because high LMP firms hire more, their average wage may rise almost as much as that of low LMP firms

Data

- **Lightcast (formerly Burning Glass Technologies)**
  - Near universe of U.S. online vacancy postings: 70% of all U.S. online vacancies
  - Industry, occupation, job requirements, posted wages
  - Fine geographical breakdown -> establishment level data

  $\Rightarrow$ Collapsed to firm-region-quarter level
- **Monetary Policy shocks** using *Jarocinski and Karadi (2020)*, control for information component

Definition: Labor market power

- Measure connected to two theoretical approaches:
  - *Berger, Herkenhoff and Mongey (2022)* (share of payroll) and
  - *Jarosch, Nimczik, and Sorkin, 2019* (share of employment/vacancies)
- **Vacancy Share**: Share of vacancies posted by a single firm in a local labor market = U.S. census commuting zone
- Use cumulative share to allow for inclusion of smaller firms

$$\text{Vacancy Share}_{i,c,t} = \frac{\sum_{\tau \leq t} v_{i,c\tau}}{\sum_{\tau \leq t} \sum_{i} v_{i,c\tau}}$$

Wages negatively related to this measure of LMP in vacancy-level regressions after controlling for characteristics

Empirical specification

$$\text{Log Vacancies}_{i,c,t+h} = \alpha + \beta\ \text{MP easing}_t \times \text{Labor Market Power}_{i,c,t-1} + \theta X_{i,c,t} + \gamma_{i,t} + \gamma_{c,t} + \varepsilon_{i,c,t}$$

$X_{i,c,t}$ includes the Fed. information shock and its interactions with LMP

$\gamma_{i,t}$ - firm-time fixed effects that absorb any firm-level shocks, such as productivity, funding conditions, changes in stock prices, product market power,...

$\gamma_{c,t}$ - commuting zone - time fixed effects, such as regional demand shocks

Firms with labor market power are more responsive to MP

	Log Vacancies$_{i,c,t}$			
	(1)	(2)	(3)	(4)
MP easing$_t$	0.696***			
	(0.035)			
LMP$_{i,c,t-1}$	20.318***	20.866***	21.439***	22.713***
	(1.534)	(1.560)	(1.667)	(1.639)
MP easing$_t$ $\times$ LMP$_{i,c,t-1}$	5.442**	7.624***	8.722**	7.895**
	(2.330)	(2.398)	(3.389)	(3.839)
Obs.	15,070,026	15,070,026	12,851,844	12,851,727
Firm FE	✓			
Time FE		✓		
CZ FE	✓	✓	✓	
Firm $\times$ Time FE			✓	✓
CZ $\times$ Time FE				✓
No. Firms	355,254	355,254	199,839	199,839

The response of firms with market power is persistently different

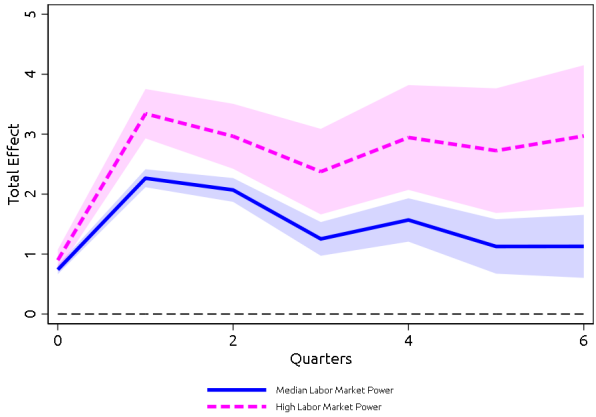


Figure: Response of Vacancy Postings to Monetary Policy Easing Across Horizons

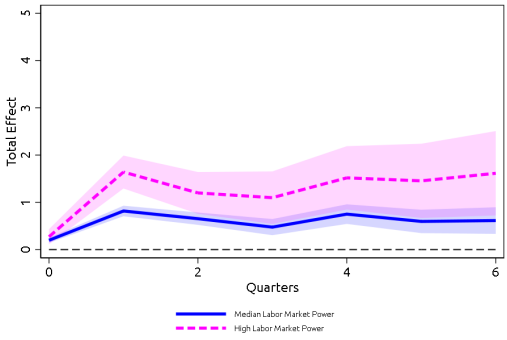
Heterogeneity

- Burning Glass provides granular data on vacancy requirements, including on skill and education

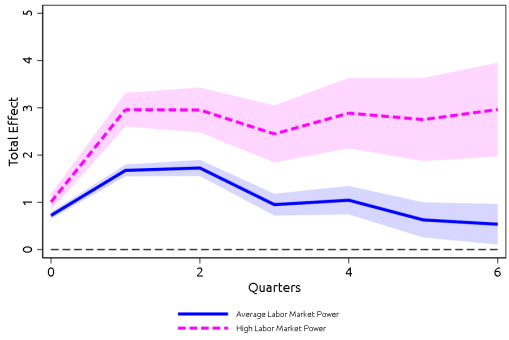
  $\approx$ 40% require college, $\approx$ 28% require tech skills, correlation $\approx$ 29%

$$\begin{aligned}\text{Log Vacancies}_{i,c,t,j} = \alpha + \beta\ \text{MP easing}_t \times \text{Labor Market Power}_{i,c,t-1} + \\ \delta \text{MP easing}_t \times \text{Labor Market Power}_{i,c,t-1} \times \text{Type}_j + \theta X_{i,c,t} + \\ + \gamma_{i,t} + \gamma_{c,t} + \varepsilon_{i,c,t,j}\end{aligned}$$

Differential effect of LMP on the response of posted vacancies to a monetary policy easing



(a) Vacancies with college requirement



(b) Vacancies without college requirement

Robustness: Response of employment using Compustat

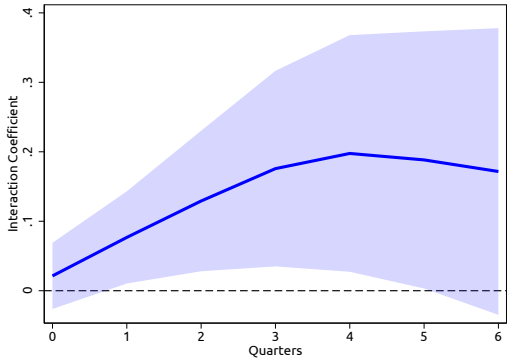
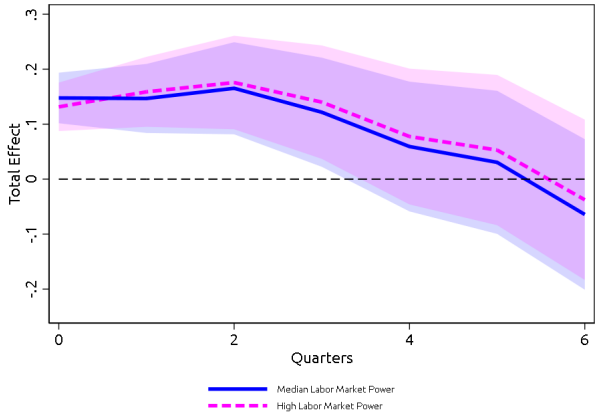
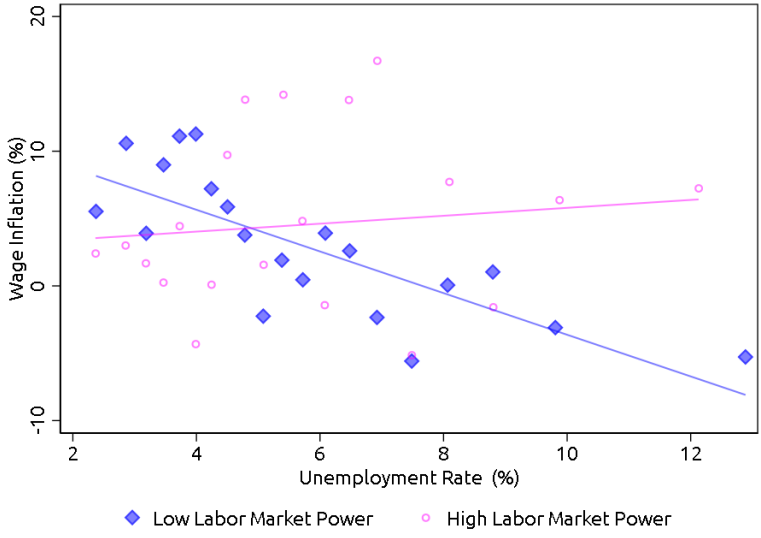


Figure: Differential effect of labor market power on the response of employment to MP Easing

Response of wages to monetary policy easing



High LMP regions exhibit a flat Phillips Curve



Conclusion

- Labor market power strengthens the employment effects of monetary policy
- Especially for low-skilled workers
- The capacity of monetary policy to influence wages might be more limited, especially if many firms have high labor market power

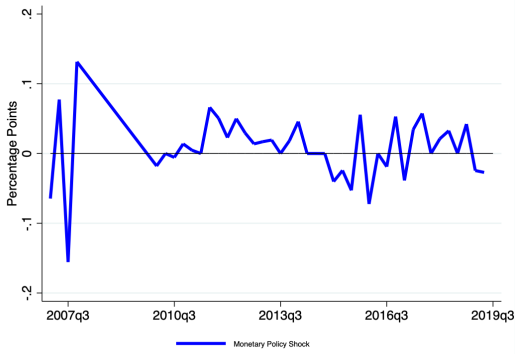
- Results may help explain modest increase in wages in the post-GFC recovery, while unemployment fell significantly (“wageless recovery”)
- Ongoing tightening of U.S. monetary policy could have important implications for income inequality across skill groups and regions

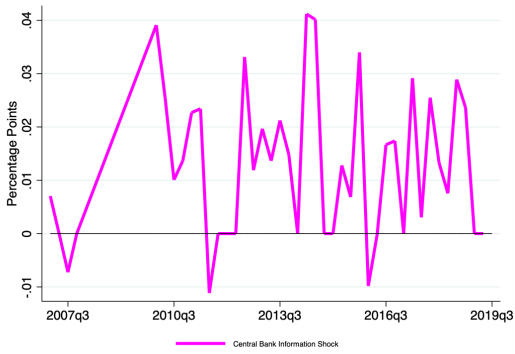
EXTRA SLIDES

Literature

- MP and labor markets: Romer and Romer (1989); Fornaro and Wolf, 2021; Coglianese et al., 2021; Dolado et al., 2021; Coibion et al., 2017; Andersen et al., 2021; Jasova et al., 2021; Bartscher et al., 2021; Bergman et al 2022;
- Product market power and MP: De Loecker et al. (2020), Wang and Werning (2020), Baqaee et al. (2021); Philippon (2019) and Eeckhout (2021); Duval et al., 2021; Ferrando et al., 2021; Kroen et al., 2021
- Labor market power: Berger et al. (2022); Hershbein et al. (2022); Azar et al. (2019a,b,c, 2020, 2022); Benmelech et al. (2022); Manning (2006,2010,2011)
- LMP in BGT data: Hershbein and Kahn (2018); Hazell et al. (2021); Hershbein et al. (2022); Azar et al. (2022).

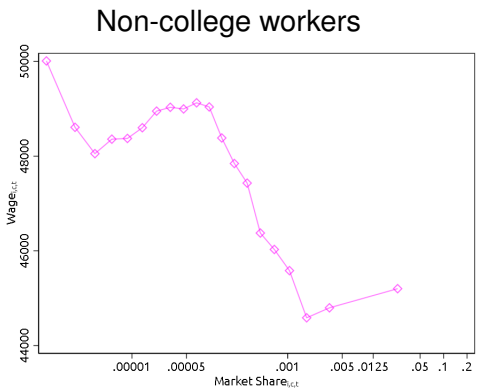
Monetary Policy Shocks

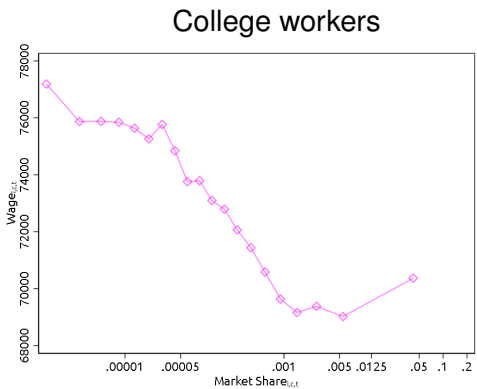




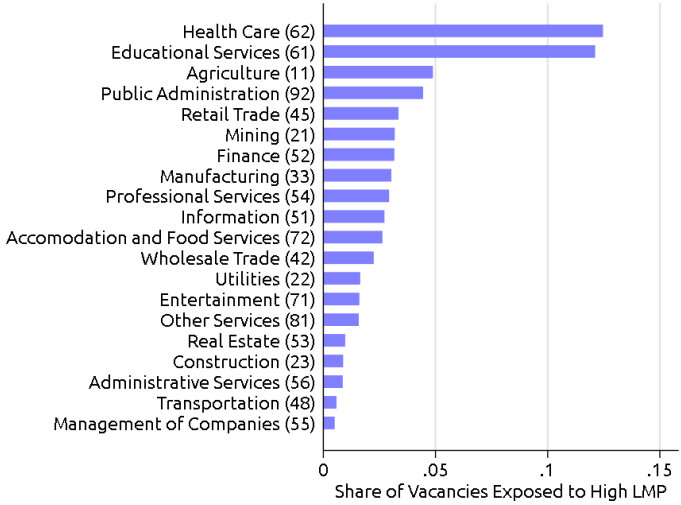
42 quarters from 2007q1 to 2019q3

Wages decline with higher vacancy shares





LMP at industry level



Vacancy Level Regressions

Table: Relationship Between Wages and Our Measure of LMP At the Vacancy-Level

	Log wage$_{v,i,c,t}$				
	(1)	(2)	(3)	(4)	(5)
LMP$_{i,c,t}$	-0.360***	-0.193**	-0.168***	-0.174**	-0.181***
	(-3.85)	(-2.44)	(-2.83)	(-2.31)	(-2.81)
Obs.	12,714,694	12,356,399	11,862,438	11,857,790	11,857,284
Vacancy characteristics	✓	✓	✓	✓	✓
Firm FE	✓				
Firm × Time FE		✓	✓	✓	✓
CZ × Time FE	✓	✓	✓	✓	✓
Industry × Time FE	✓	✓	✓	✓	✓
ONET × Time FE			✓	✓	✓
ONET × CZ FE				✓	✓
ONET × Industry FE					✓
No. Firms	173,057	144,813	141,764	141,715	141,708

Response of wages does not depend on labor market power

	Log Wages$_{i,c,t}$						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
MP easing$_t$	0.001	0.146***		0.148***			
	(0.038)	(0.023)		(0.024)			
LMP$_{i,c,t-1}$	0.277**	-0.084	-0.011	0.056	0.112*	0.354***	0.390***
	(0.137)	(0.085)	(0.093)	(0.061)	(0.065)	(0.077)	(0.081)
MP easing$_t$ × LMP$_{i,c,t-1}$	0.191	-0.579**	0.009	-0.495*	0.090	0.433	0.363
	(0.389)	(0.271)	(0.271)	(0.279)	(0.277)	(0.349)	(0.482)
Obs.	3,611,431	3,546,366	3,546,366	3,546,366	3,546,366	2,716,562	2,715,673
Firm FE		✓	✓	✓	✓		
Time FE			✓		✓		
CZ FE				✓	✓	✓	
Firm × Time FE						✓	✓
CZ × Time FE							✓
No. Firms	281,380	216,315	216,315	216,315	216,315	97,858	97,856

Geography of Labor Market Power