

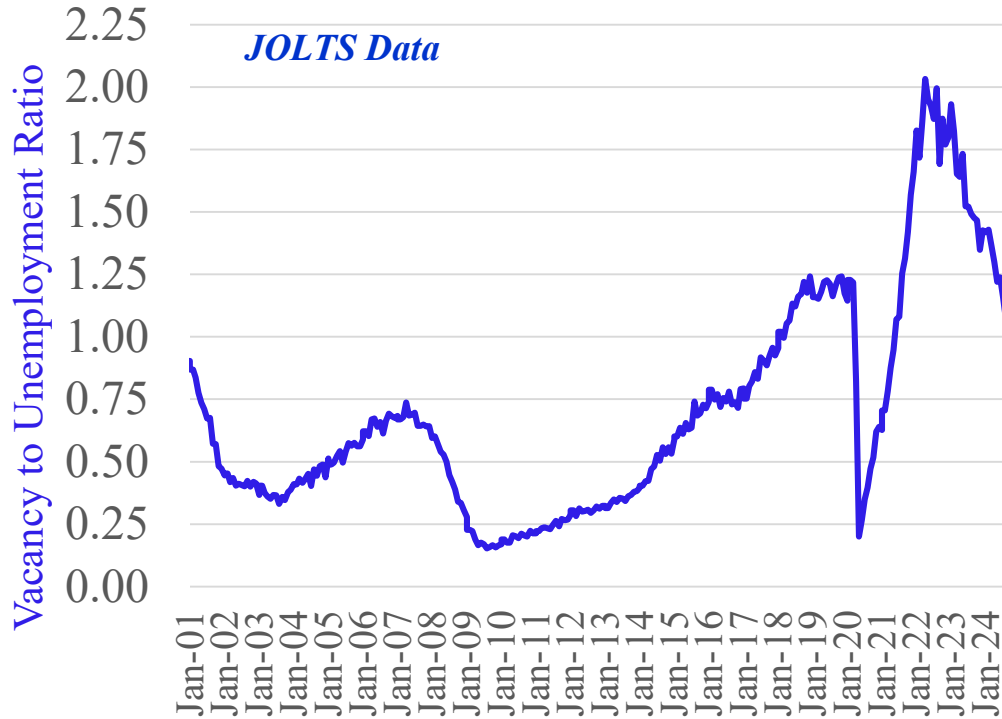
Inflation and the Labor Market

Erik Hurst

AMEC symposium “*The U.S. Labor Market in the 21st Century*”

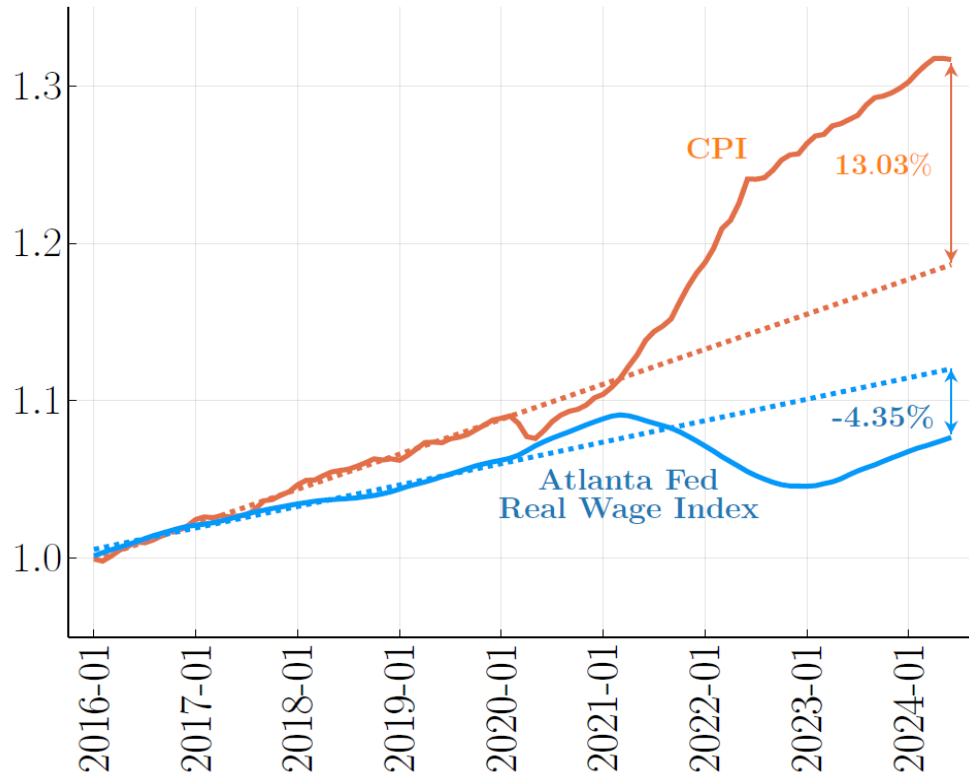
- Draws on my recent paper “*A Theory of How Workers Keep Up With Inflation*” (with Hassan Afrouzi, Andres Blanco, and Andres Drenik)

“Hot” Labor Market: 2021-2024?



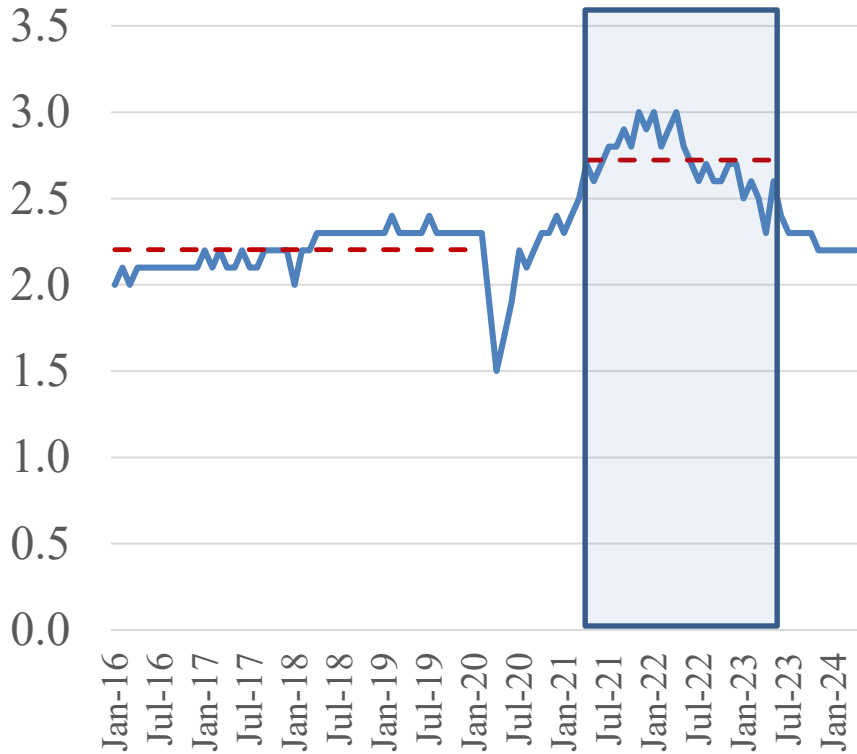
- The *vacancy-to-unemployment ratio* was at a historically high level in recent years.
- Based on this statistic, academics and policy makers concluded that the labor market was “hot”.
- Jerome Powell has cited labor market tightness as the reason the Fed kept interest rates high.
- *Common narrative*: Labor market flows (rising V/U ratio) → inflation

“Hot” Labor Market: 2021-2024?

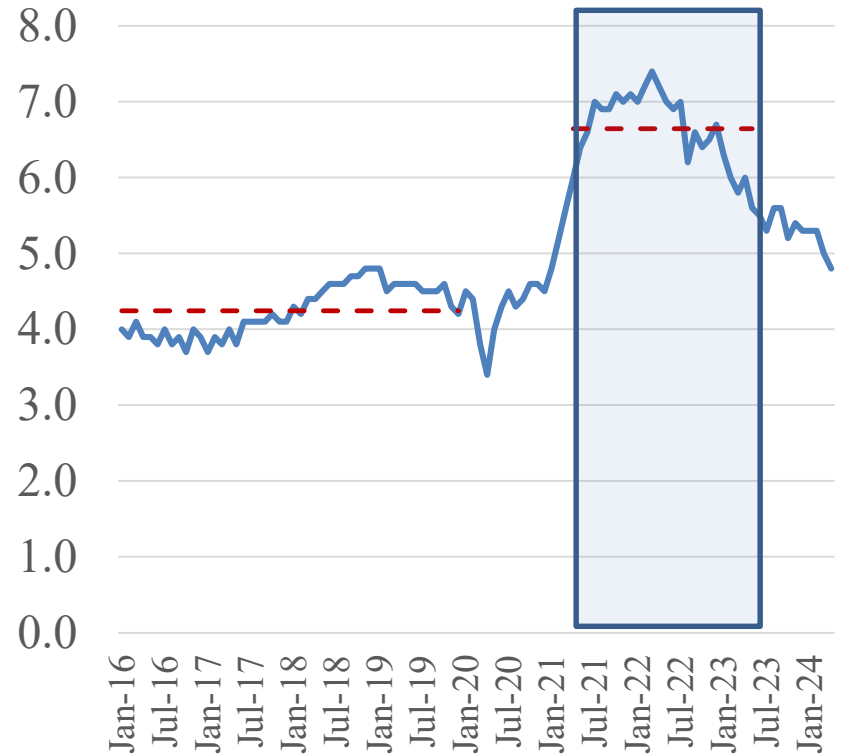


- *Median real wages fell sharply during inflationary period.*
- Real wages still 4.4% below trend.
- Real wages declined throughout the income distribution (show later)
- Consistent with survey evidence showing workers reporting disliking current inflation (Stantcheva 2024).

Fact 1: Monthly Quits, Vacancies, Layoffs, Worker Flows

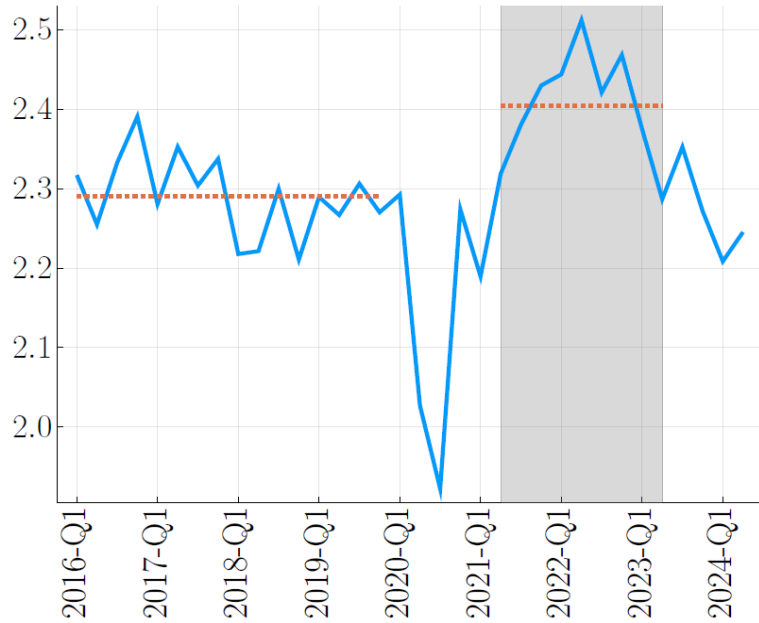


Quits (Jolts)

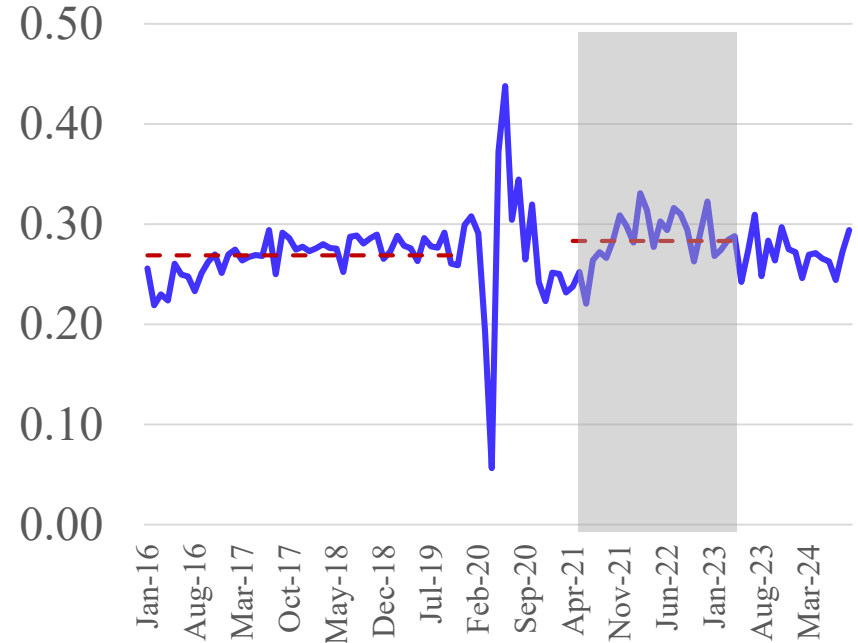


Job Openings (Jolts)

Fact 1: Monthly Quits, Vacancies, Layoffs, Worker Flows



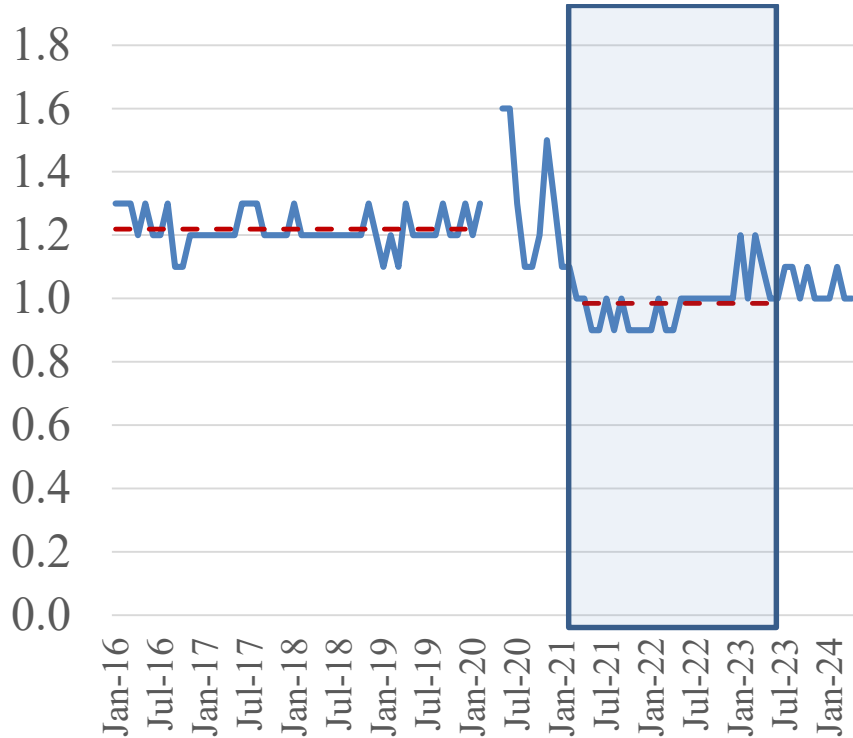
PANEL A: E-E RATE



Panel B: U-E Rate

- **Note:** Increase in EE rate was larger for lower educated individuals (see paper).

Fact 1: Evolution of Monthly Quits, Vacancies and Layoffs

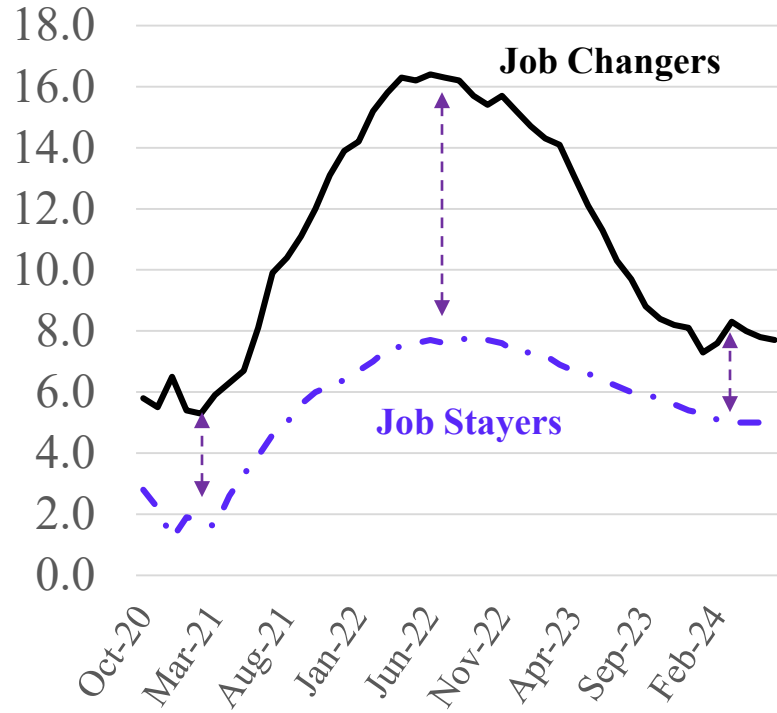


Layoffs (JOLTS)

■ Summary

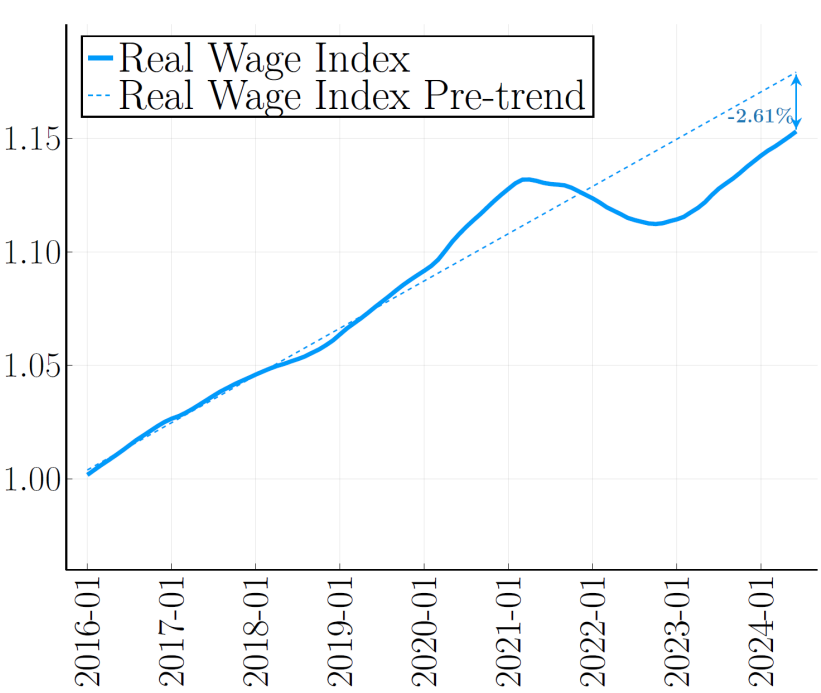
- **Quits, E-E flows, and Vacancies all jumped.**
- **No change in U-E Flows**
- **Large decline in Layoffs**

Nominal Earnings Growth: Switchers and Stayers, ADP Data

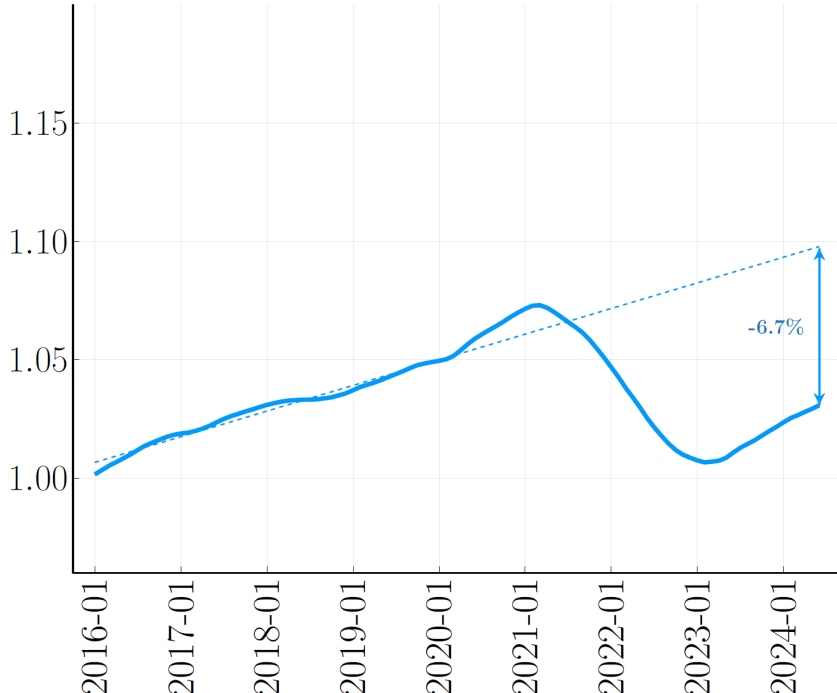


- Nominal wage growth of job switchers grew sharply during the inflation period relative to job-stayers
- Similar patterns in Atlanta Fed Wage Tracker Index.

Wage Growth Throughout The Wage Decile



Bottom Wage Quartile



Top Wage Quartile

Change in Employment Rates By Group During Inflation Period

Education	2016M1-2019M12	2021M4-2023M5
Men: Less than Bachelors	0.789	0.781
Men: Bachelors or More	0.899	0.900
Women: Less than Bachelors	0.617	0.617
Women: Bachelors or More	0.754	0.774
All	0.744	0.752

- **Relative to 2016-2019 period, employment rates are essentially the same during the inflation period. CPS data, 25-55 year olds.**

Our Paper

- Common narrative: *Labor market flows* → *Inflation*
- **Our paper:** Show both theoretically and empirically that the causation between labor market flows and inflation can go in the other direction: *Inflation* → *Labor market flows*
- Augment a modern model of labor market flows with New-Keynesian sticky wage features.
- Show a *burst of "inflation"* – all else equal – can generate a sharp rise in the vacancy-to-unemployment ratio through additional labor market churn, a decline in real wages, and relatively small effects on employment.
- Show a variety of evidence that support model predictions.

Mechanism

- **Assumption 1**: Sticky nominal wages within a job-match (both Calvo and menu-cost adjustments) → match ADP data on wage changes 2008-16.
- **Assumption 2**: Flexible nominal wages of new hires. Value of leisure (non-employment) in real terms.
- Inflation reduces real wage on impact for workers in a match.
 - Workers have three options to escape suddenly low real wage: (i) *search for a new job* (at a cost), (ii) *renegotiate wage with existing firm* (at a cost), or (iii) quit to unemployment.
 - Firms: (i) *reduce layoffs* (benefit to workers) because real wage is low and (ii) create new vacancies

Overview of Results

- Framework shows that an increase in inflation can quantitatively match all the facts documented above (calibrating model to pre-period moments):
 - Big increase in V-U, small decline in U, large increase in E-E rate, *constant U-E rate, declining layoffs, declining real wages, increasing gap between the wage growth of job-changers relative to job-stayers*, increasing vacancy duration and large increase in firm profits.

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 - Show model matches cross-sectional patterns as well.

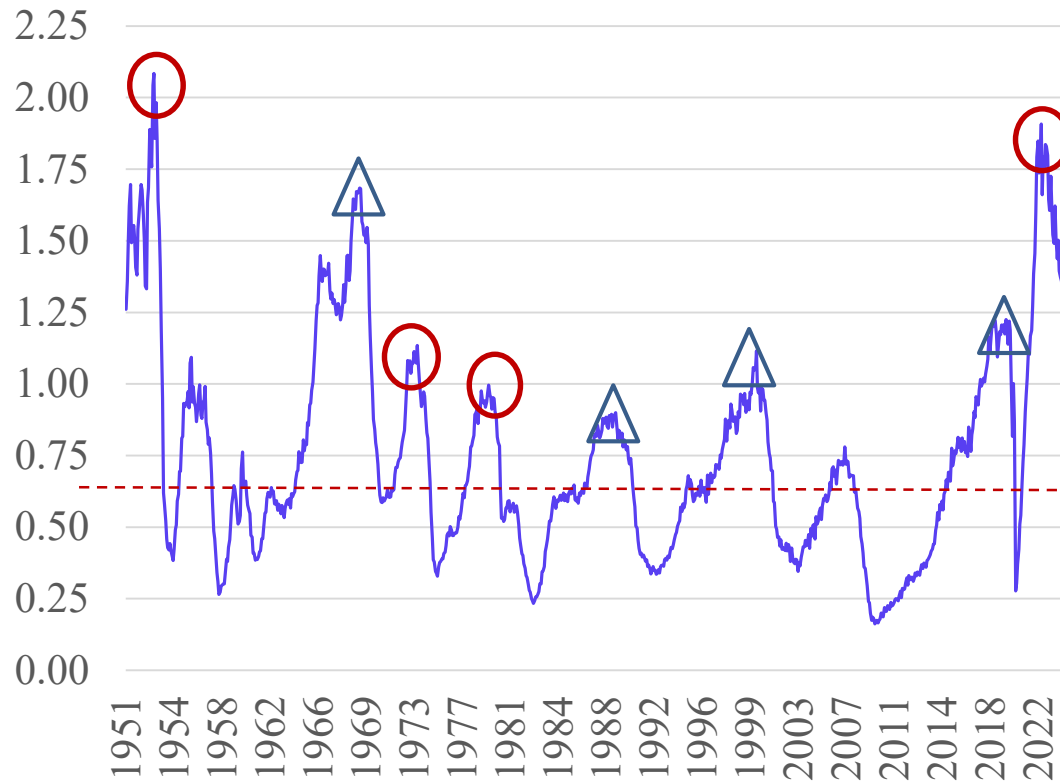
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 - **Show other shocks that generate rising V-U rate struggle to match other labor market flows (particularly the ones in blue).**

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 - Show model matches cross-sectional patterns as well.
 - Show other shocks that generate rising V-U rate struggle to match other labor market flows (particularly the ones in blue).
- **Find that recent inflation caused worker welfare to fall by an amount equal to about 1 month's consumption.**

Vacancy-to-Unemployment Rate Over Time



- Use vacancy data from Conference Board's Help Wanted Index for 1951-2000 (Barnichon (2010))
- 9 periods since 1950 with spikes in the V/U rate
- Green triangles – traditional Beveridge curve periods (low inflation and declining unemployment).
- Red circles – periods of very high inflation and non-declining unemployment

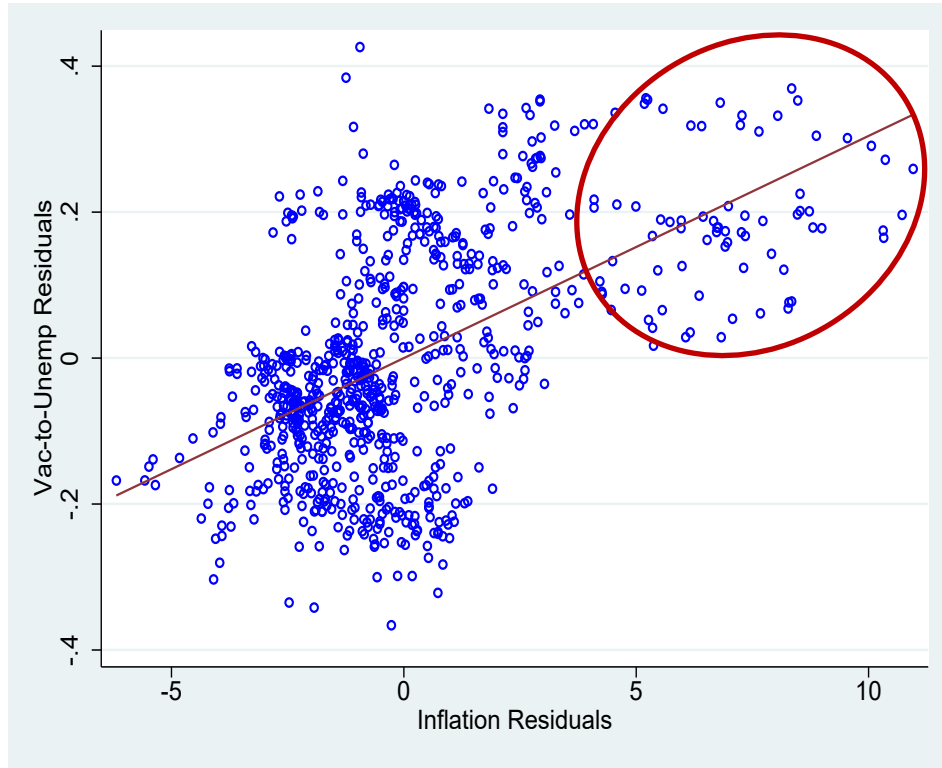
Historical Relationship Between Inflation and Vacancy-Unemployment Rate

- Regress: V/U on unemployment rate, unemployment rate squared, and annualized CPI inflation rate during 1951-2019 (monthly observations)

		(1)	(2)
Unemployment Rate (%)	-0.152 (0.004)	-0.158 (0.003)	-0.531 (0.016)
Unemployment Rate Squared			0.030 (0.001)
CPI Inflation Rate (%)		0.023 (0.002)	0.026 (0.002)
R-Squared	0.67	0.72	0.83

- Mean market tightness during this period ≈ 0.6**

Residualized Scatter Plot: Market Tightness and Inflation



- Residualized both vacancy-to-unemployment ratio and inflation rate after controlling for unemployment rate and unemployment rate squared
- Monthly data: 1950-2019
- Time periods in the red circle: early 1950s, 1973-1975, and 1978-1981

Historical Relationship Between Inflation and Vacancies (Beveridge Curve)

- Regress: V/U on unemployment rate, unemployment rate squared, and annualized cpi inflation rate during 1951-2019 (monthly observations)

		(1)	(2)
Unemployment Rate (%)	-0.251 (0.016)	-0.289 (0.013)	-0.509 (0.079)
Unemployment Rate Squared			0.017 (0.006)
CPI Inflation Rate (%)		0.142 (0.008)	0.144 (0.008)
R-Squared	0.24	0.46	0.46

Why Did Inflation Increase?

- **Negative aggregate supply shocks** (supply chain disruption, oil prices increasing) which causes:
 - Prices to increase and *labor demand to fall* → low V/U, low real wages, declining U-E rate, falling employment
- **Positive aggregate demand shocks** (pent up saving from Pandemic, increased fiscal stimulus, delayed monetary policy) which causes:
 - Prices to increase and *labor demand to rise* → high V/U, higher real wages, increasing U-E rate, rising employment
- *Both shocks have offsetting effects on labor demand implying recent labor market may be neither “hot” nor “cold”. Inflation → churn.*

Summary/Broader Thoughts

- Nominal wage rigidities imply causation from inflation changes to labor market flows.
- Our quantitative model matches a wide set of facts about labor market flows and wage dynamics during the recent inflation period. Similar patterns during prior inflationary periods.
- Use framework to assess the welfare costs of inflation on workers. Provides model based reason for why workers (voters) hate inflation.
- *Next steps:*
 - (1) *Use ADP data to better measure wage dynamics during inflation period.*
 - (2) *Can we use data on flows to help figure out the causes of inflation during recent period?*