The Shift to Remote Work Lessens Wage-Growth Pressures

Jose Maria Barrero, Nicholas Bloom, Steven J. Davis, Brent H. Meyer, and Emil Mihaylov

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Federal Reserve Bank *of* Atlanta

*The views expressed herein are my views and do not necessarily represent the views of the Federal Reserve Bank of Atlanta or the Federal Reserve System (…although it'd be better for everyone if they did).

“When inflation is suddenly much higher…workers will want to be compensated for the loss of real wages last year, and may be able to obtain such wage increases in a very tight labor market…”

Why I worry about inflation, interest rates, and unemployment

Olivier Blanchard (PIIE)
March 14, 2022 9:45 AM

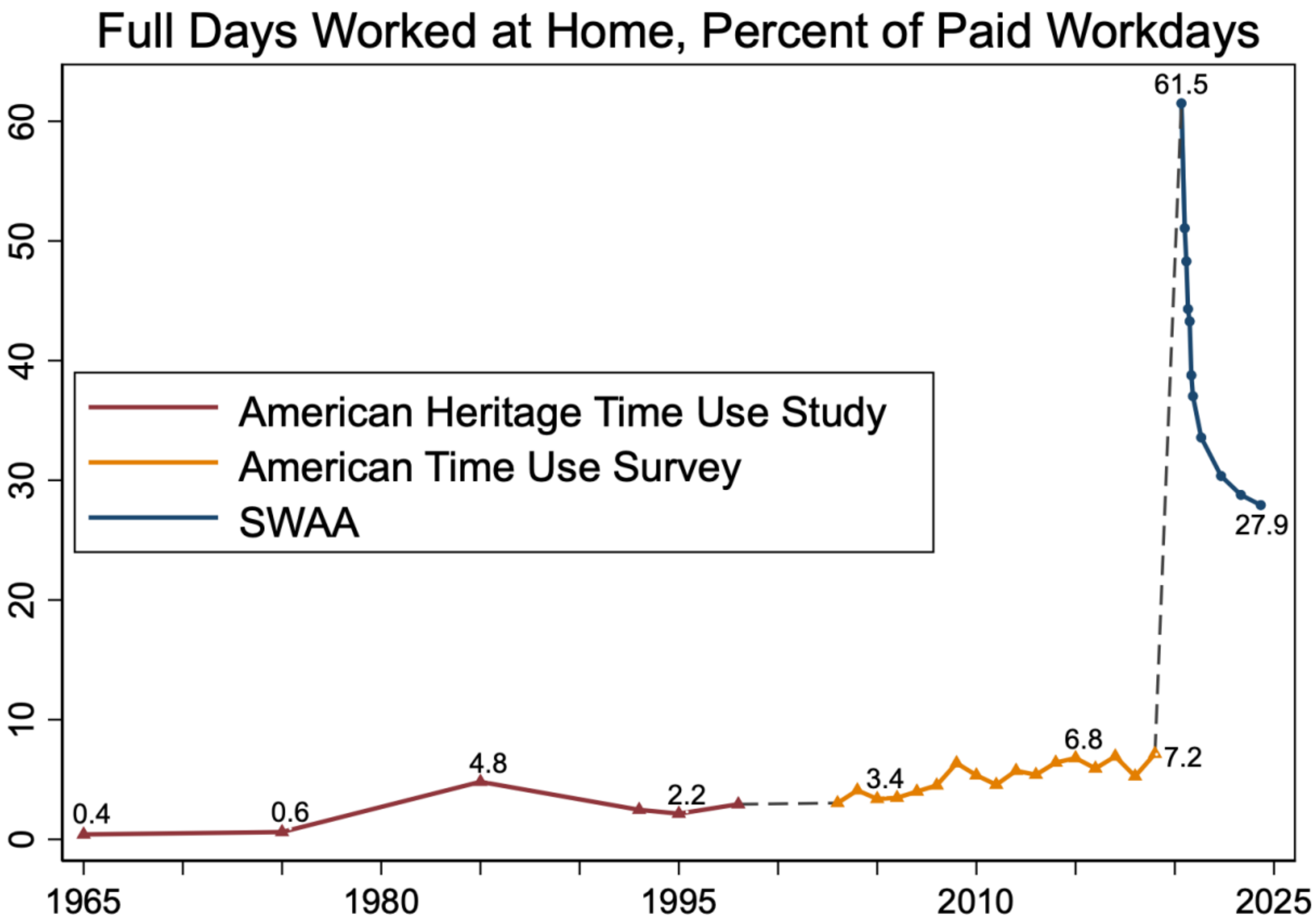
PIIE *series*
Debating Inflation
and What the Fed Should Do

This blog is part of a PIIE series on inflation.
Graphic design and production by Nia Kitchin and Oliver Ward.

We are very sympathetic to Olivier's concerns...but the COVID shock was unusual across many dimensions.

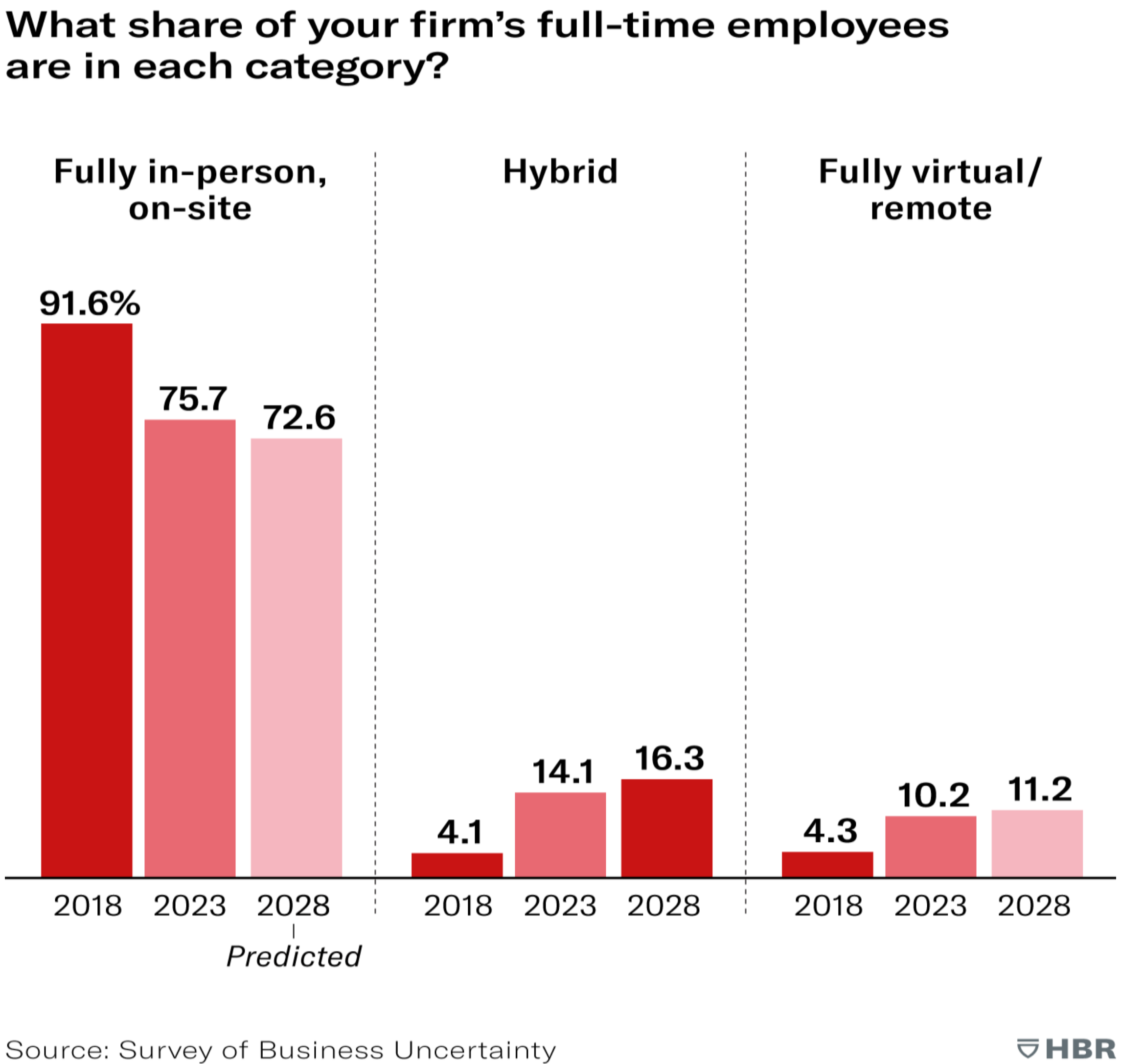
1. There was a huge, abrupt, and unforeseen shift to Working from Home (WFH)/remote work.
2. **Some unusual features of this macro shock**:
   a) WFH relaxes the time budget constraint
   b) It raises the amenity value of employment
   c) For employers: remote work greatly increases potential to source labor from low-cost places.
3. **In light of these features, economic reasoning says**:
   a) The WFH shock lowers real wages, conditional on TFP.
   b) The wage-moderation effects set in gradually.
4. **Evidence on wage-moderation effects**:
   a) We ask business executives whether, and how much, expanded WFH moderated wage growth at their own firms.
   b) The (extraordinary) behavior of real wages since early 2021
5. **Interpreting the recent disinflation**

The Pandemic Permanently Increased WFH, Equivalent to Almost 40 Years of Pre-Pandemic Growth



Reproduced from "The Evolution of Work from Home" by Barrero, Bloom and Davis (JEP 2023). Samples restricted to working persons, 20-64, with annual earnings > $10K. See the notes to Figure 1 in BBD for details.

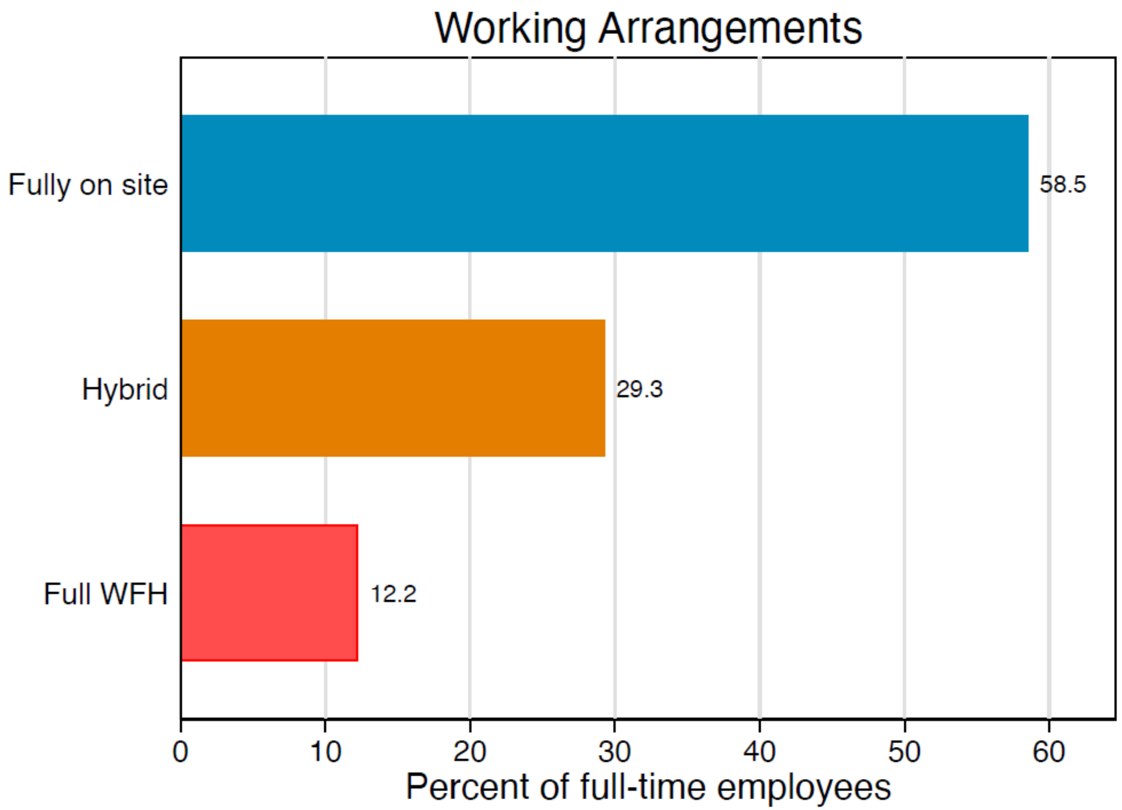
U.S. Business Executives Expect WFH Rates to Rise in Next Five Years



Data Source: Survey of Business Uncertainty, a monthly panel survey of U.S. business executives fielded by the Federal Reserve Bank of Atlanta in July 2023 in cooperation with Nick Bloom and Steve Davis.

Reproduced from "Remote Work Isn't Going Away – And Executives Know It," Bloom, Barrero, Davis, Meyer and Mihalov, *Harvard Business Review*, 28 August 2023..

Working Arrangements Among Full-Time American Employees



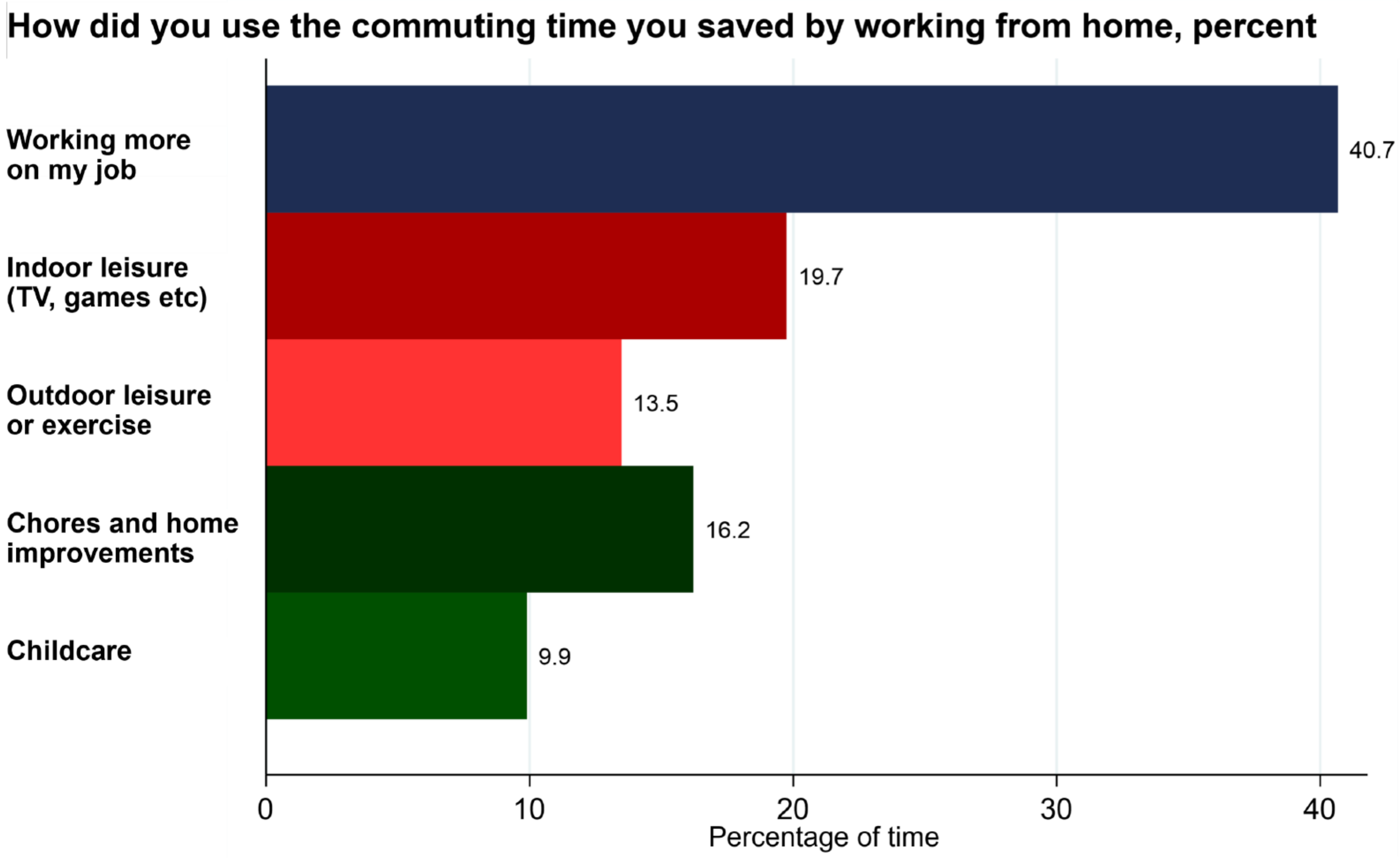
Front-line employees, mostly non-college, lower pay

Professionals and managers, mostly college educated, higher pay

Specialized roles - IT support, routine HR functions, call centers, etc.

Source: The Survey of Working Arrangements and Attitudes, March-July 2023 waves.
"Hybrid" means 1 to 4 full days per week of work from home

How Americans say they use their time savings



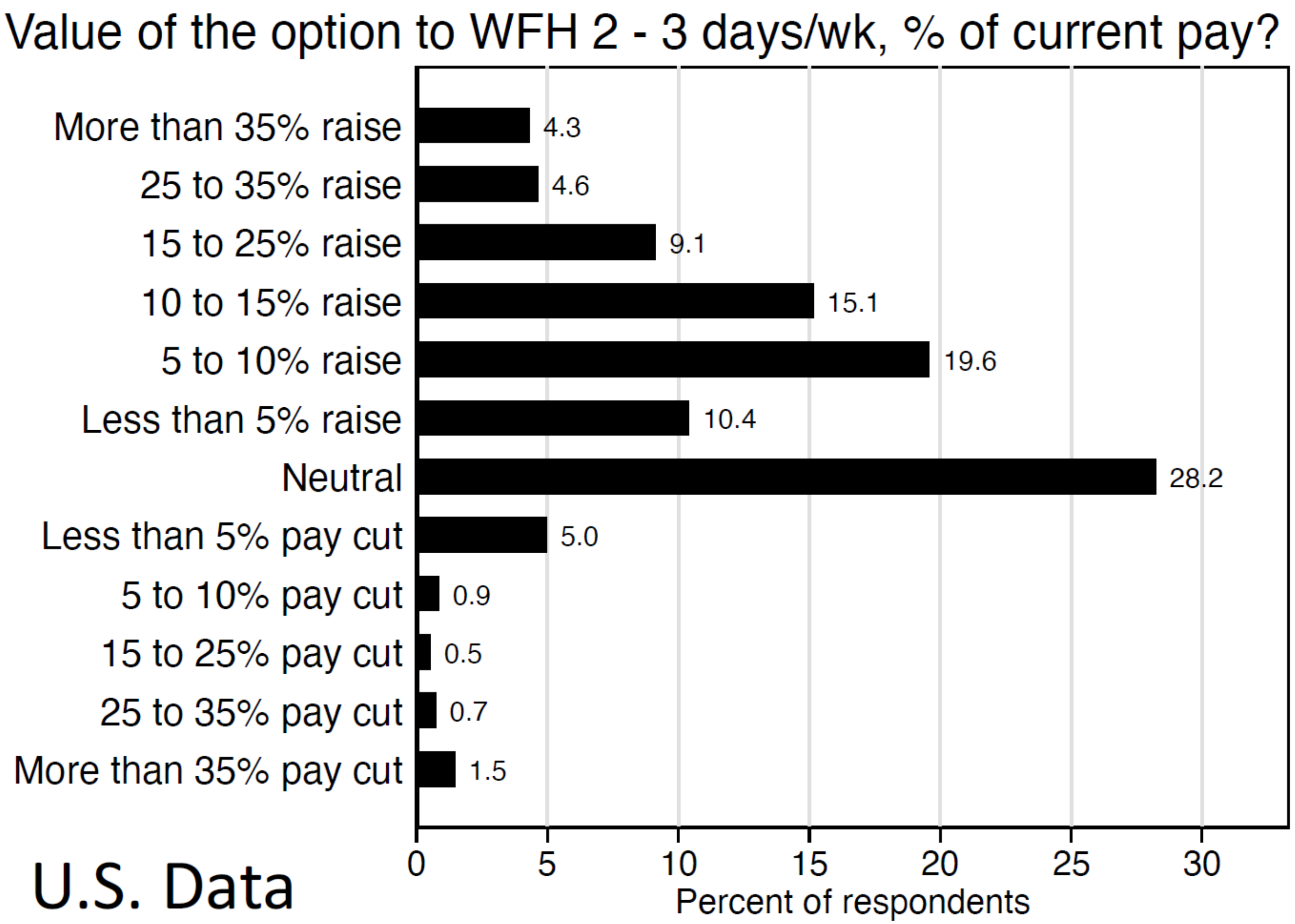
During the COVID-19 pandemic, while you have been working from home, how are you now spending the ***time you have saved by not commuting?***

Please assign a percentage to each activity (the total should add to 100%).

Notes: The sample contain 32,641 respondents who are able to work from home.

When asked directly, people place a high value on the option to WFH.

Mean Value = 8% of Pay, Similar to Findings in Experimental Settings with Narrower Samples



Source: SWAA responses to a two-part question.

Part 1: ***After COVID, in 2022 and later,*** *how would you feel about working from home* ***2 or 3 days*** *a week?"*

- *Positive: I would view it as a benefit or extra pay*
- *Neutral*
- *Negative: I would view it as a cost or a pay cut*

Part 2: *How much of a* ***pay raise [cut]*** *(as a percent of your current pay) would you value as much as the option to work from home 2 or 3 days a week?*

Data are from 20,750 survey responses collected from September 2020 to February 2021 by Inc-Query and QuestionPro. We asked a similar question in earlier and subsequent waves, but we focus on the above waves, which use identical questions and response options. We re-weight raw responses to match the share of working-age respondents in the 2010-2019 CPS by {age x sex x education x earnings} cells.

Evidence on wage moderation effects of increased WFH

A. In the **Survey of Business Uncertainty (SBU):** We ask business executives whether, and how much, expanded WFH moderated wage growth at their own firms.

B. The behavior of real wages since 2021

C. In "Job Amenity Shocks and Labor Reallocation" Bagga, Mann, Sahin and Violante show that putting an amenity-value shock into a dynamic equilibrium model with preference heterogeneity over WFH, search frictions, job creation costs and bargaining explains other unusual features of U.S. labor markets since the pandemic: a surge in quits, a lasting rise in vacancy rates and durations, and low matching efficiency.

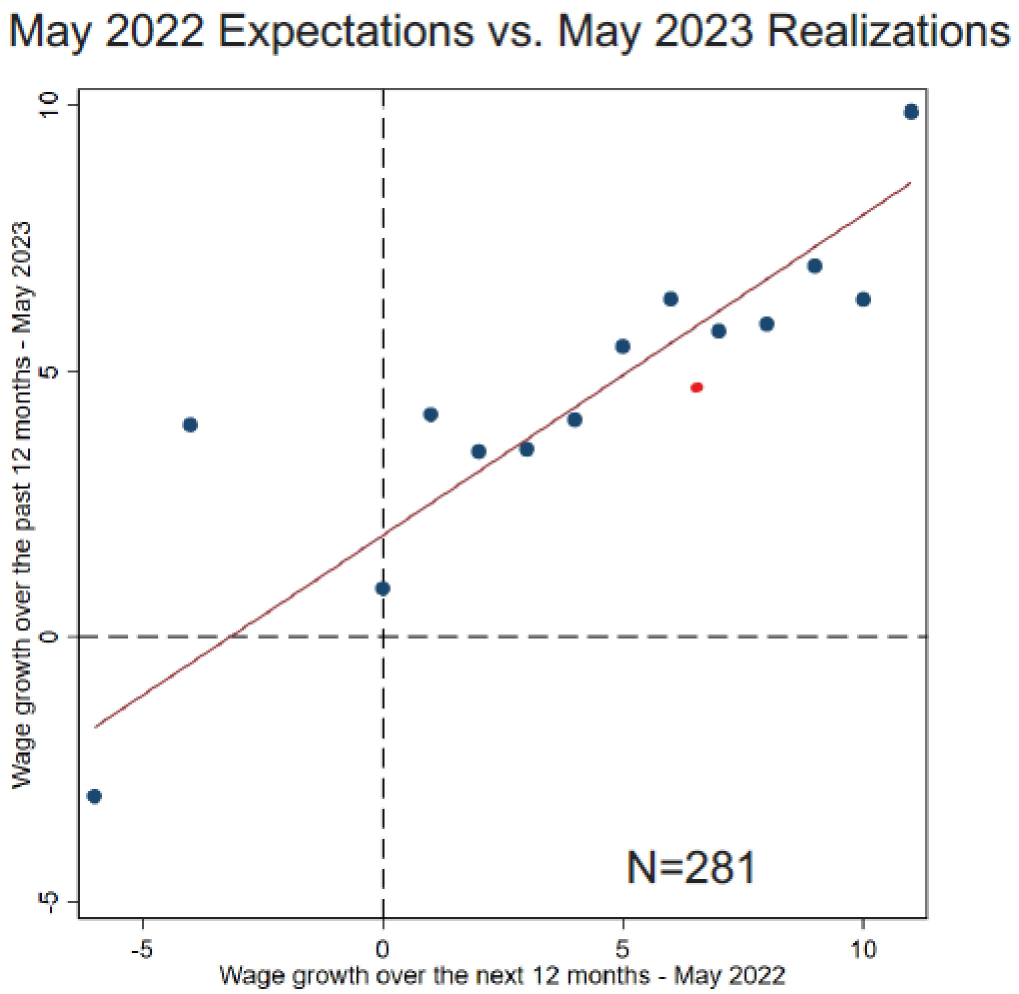
Realized wage growth in the SBU is similar to "official" measures of wage growth.

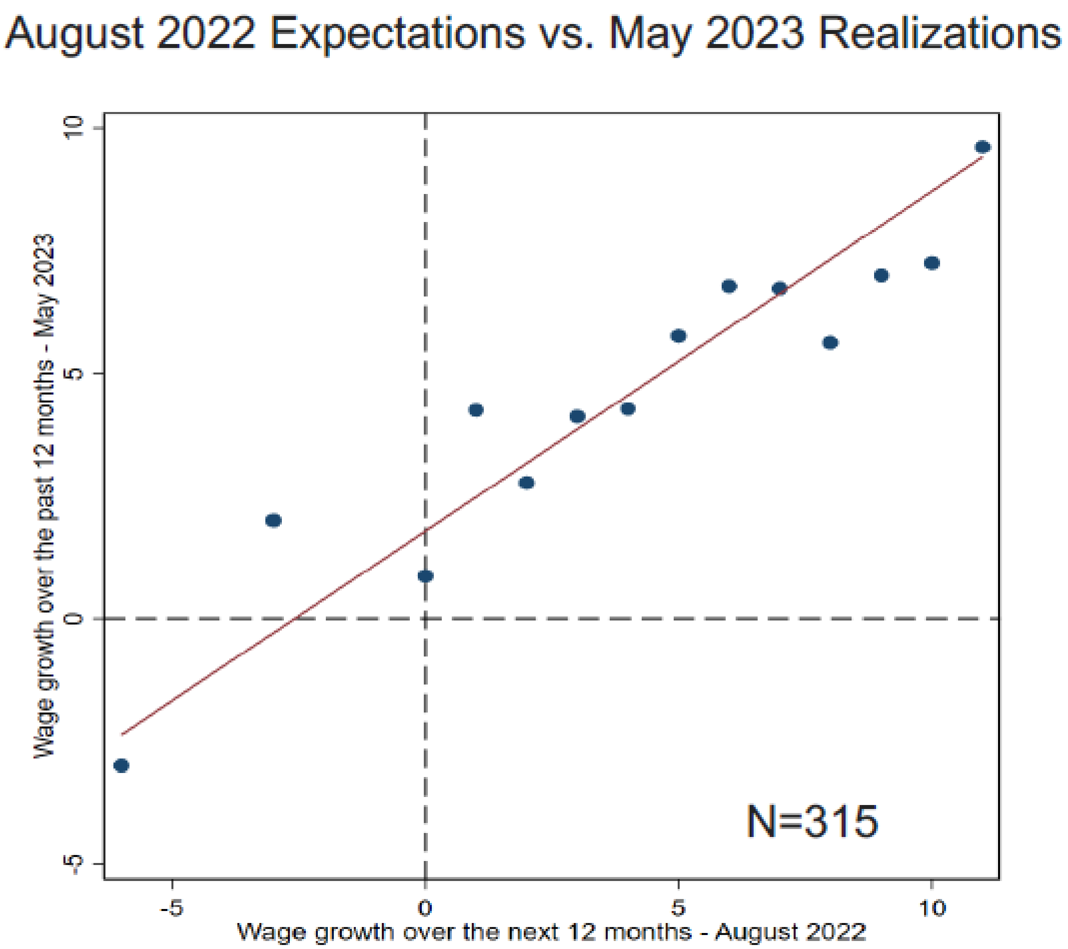
Measures of Nominal Wage Growth and Wage-Growth Expectations

Realized 12-month growth rates						
	May '22		**May '23**		**May '24**	
	12-month percent change	through:	12-month percent change	through:	**12-month percent change**	**through:**
FRBA SBU Survey	5.4	May '22	5.2	May '23	**4.1**	**May '24**
Avg. Hourly Earnings (total private)	5.6	May '22	4.6	May '23	**4.1**	**May '24**
Avg. Hourly Earnings (priv., prod. and nonsup.)	6.7	May '22	5.1	May '23	**4.0**	**May '24**
Employee Cost Index (priv. industry workers)	5.0	Q1 '22	5.1	Q1 '23	**4.3**	**Q1 '24**
Expected 12-month ahead growth rates						
	12-month percent change	through:	12-month percent change	through:	**12-month percent change**	**through:**
FRBA SBU Survey	4.9	May '23	3.6	May '24	**3.6**	**May '25**
FRBNY SCE (median HH earnings)	3.0	May '23	3.3	May '24	**3.1**	**May '25**
FRB Philadelphia Mfg. Survey (wages + benefits)	5.0	Q2 '23	4.0	Q2 '24	**3.5**	**Q2 '25**

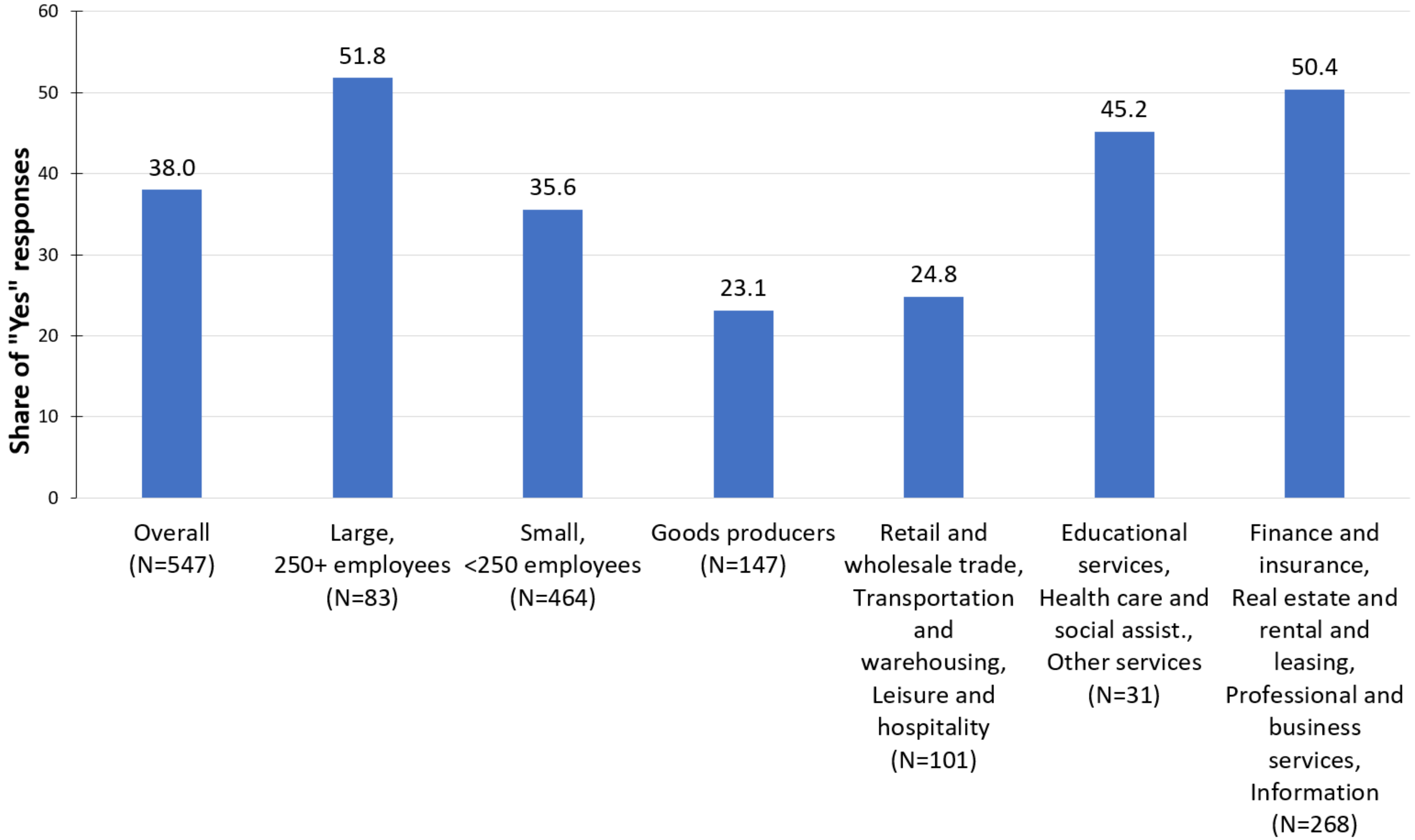
Sources: US Bureau of Labor Statistics; FRBA *Survey of Business Uncertainty;* FRBNY *Survey of Consumer Expectations*; FRBP *Manufacturing Survey (special question).*

Expected wage growth over the next 12 months compared to realized wage growth (Firm-level data in the SBU)





Over the past 12 months, has your firm expanded the opportunities to work from home (or other remote location) as a way to keep employees happy and to moderate wage-growth pressures?



When a business executive responds “yes” to the previous question, we follow up with:

“What is your best estimate for how much expanded remote-work opportunities have moderated wage growth pressures at your firm in the past 12 months?”

Response options are 0, 1, 2,…,19, 20 % and more than 20%.

Nominal Wage-Growth Moderation Due to the Rise of Remote Work Over a Two-Year Period Centered in April/May 2022 (Percentage points)

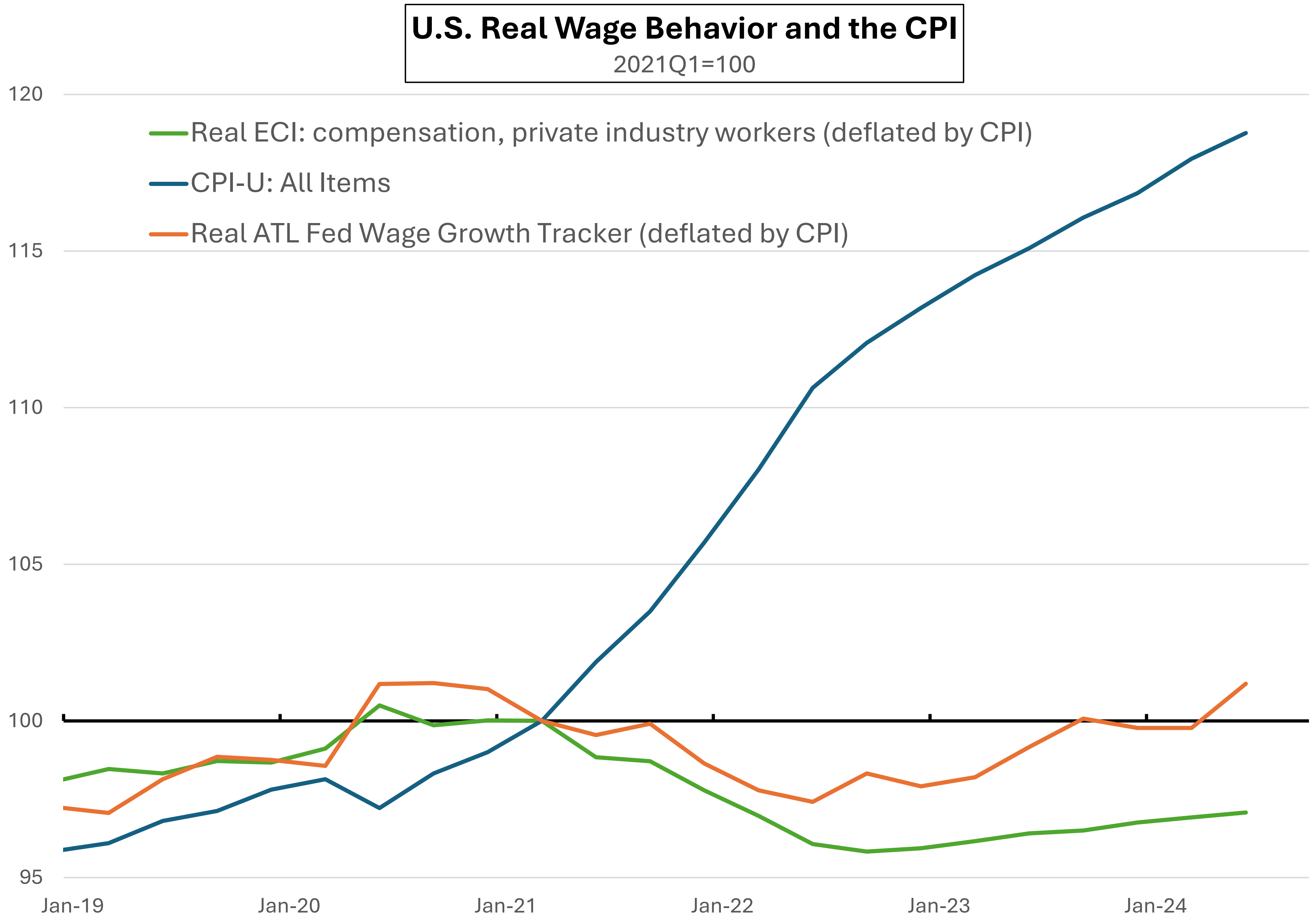
We assign a zero value to wage-growth restraint (in the look-back or look-ahead direction) if (a) the executive says ”No” to the first question, and if (b) the executive says “Yes” to the first question and responds with 0 to the follow-up question.

64% of sampled firms have a cumulative wage-growth moderation value of 0.

	Mean Cumulative Restraint on Wage Growth Over Two Years	
	Unweighted	**Weighted by Firm Size**
Overall	**2.2**	**2.0**
Small Firms	2.2	2.0
Large Firms	2.1	2.0
Goods Producers	1.3	1.3
Retail and wholesale trade, Transportation and warehousing, Leisure and hospitality	1.4	1.8
Educational services, Health care and social assist., Other services	2.7	3.8
Finance and insurance, Real estate and rental and leasing, Professional and business services, Information	3.0	2.3

The Shift to Remote Work has brought about other workforce changes

Source: Survey of Business Uncertainty conducted by the Federal Reserve Bank of Atlanta, Stanford University, and the University of Chicago Booth School of Business.



Sources: Bureau of Labor Statistics; Federal Reserve Bank of Atlanta; authors' calculations

Recent U.S. Economic Episodes with Falling Real Wages

A. Using the Atlanta Fed Wage Tracker, Deflated by the CPI-U

Economic Episode	Percentage Real Wage Change		Unemployment Rate, Percent		Ratio of Vacancies to Unemployed Persons		Mean Vacancy Duration, Days	
	Annualized	Cumulative	Episode Average	Prior 12 Months	Episode Average	Prior 12 Months	Episode Average	Prior 12 Months
August 2007 to September 2008	-1.9	-1.7	5.1	4.5	0.56	0.68	22.4	22.9
August 2009 to December 2009	-2.8	-1.2	9.8	7.9	0.16	0.25	16.1	18.3
August 2010 to February 2012	-1.6	-2.6	9.0	9.8	0.24	0.18	20.4	17.2
April 2021 to October 2022	**-2.2**	**-4.5**	**4.6**	**7.8**	**1.50**	**0.66**	**42.2**	**27.7**

B. Using the Employer Cost Index of Total Compensation for Private Sector Workers, Deflated by the CPI-U

Economic Episode	Percentage Real Wage Change		Unemployment Rate, Percent		Ratio of Vacancies to Unemployed Persons		Mean Vacancy Duration, Days	
	Annualized	Cumulative	Episode Average	Prior 4 Quarters	Episode Average	Prior 4 Quarters	Episode Average	Prior 4 Quarters
Q4 2007 to Q3 2008	-2.3	-2.3	5.3	4.5	0.50	0.69	22.1	22.8
Q2 2009 to Q4 2009	-1.5	-1.2	9.6	8.5	0.17	0.21	16.4	17.6
Q4 2010 to Q1 2012	-1.0	-1.5	8.9	9.7	0.26	0.18	20.6	17.8
Q1 2021 to Q4 2022	**-2.8**	**-4.1**	**4.4**	**8.7**	**1.62**	**0.56**	**43.8**	**28.5**

Interpreting the recent disinflation

- The recent inflation surge came as a surprise to businesses, policymakers, and most economists U.S.

- U.S. consumer prices rose 8.6 percent over the 12 months ending May 2022, a jump of several percentage points relative to previous years.

- Nominal wage growth failed to keep pace.

- After adjusting for the CPI, *real* average hourly earnings in the U.S. private sector fell 3.0 percent over the 12-month period ending May 2022.

Interpreting the recent disinflation

- From 2007 to 2019, nominal wage growth outstripped CPI inflation by 0.7 ppts per year. This figure offers a reasonable estimate for the real-wage growth that firms and workers expected before the surprise inflation surge.

- Thus, we take 3.7 ppts as an estimate for the real wage drop associated with the inflation surge.

- We interpret this figure as the magnitude of a potential real-wage catchup effect on near-term inflation pressures.

Interpreting the recent disinflation

- Prominent economists argued that pressures for a "catchup" in real wages would make it harder for monetary policy makers to engineer a soft landing.

- The argument: Workers, having experienced a material drop in purchasing power, will bargain for a bigger boost in wages. Employers will accommodate the desire for wage catchup, especially in the face of tight labor markets. In effect, the surprise component of recent price inflation raises future wage inflation. Higher wage inflation, in turn, raises production costs and feeds into higher price inflation.

Interpreting the recent disinflation

- As it turns out, no real-wage catchup effect has materialized and the economy has, thus far, avoided a recession. The Fed tightened monetary policy but less so (and later) than prescribed by a Taylor Rule.

- These outcomes are puzzling from the perspective of standard New Keynesian models.

- The fall in real wages (and the absence of catch up) amidst extremely tight labor markets is puzzling for a broader class of macro models.

- Our evidence and analysis say that these developments reflect the big, abrupt shift to WFH and the unusual macro features of the WFH shock.

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