SBU Survey of Business Uncertainty

FEDERAL RESERVE BANK of ATLANTA | CHICAGO BOOTH The University of Chicago Booth School of Business | Stanford University

About the Survey

The Survey of Business Uncertainty (SBU) is fielded by the Federal Reserve Bank of Atlanta. It was designed, tested, and refined in cooperation with Nick Bloom of Stanford University and Steven Davis of the Chicago Booth School of Business and the Hoover Institution. Bloom and Davis received research support from the Sloan Foundation and the U.S. National Science Foundation. Davis also received research support from Chicago Booth.

Our monthly Survey of Business Uncertainty (SBU) goes to about 1500 panel members (as of August 2022), who occupy senior finance and managerial positions at U.S. firms. We contact panel members each month by email, and they respond via a web-based instrument.

Survey questions pertain to current, past, and future outcomes at the respondent's firm. Our primary objective is to elicit the respondent's subjective forecast distributions over own-firm future sales growth rates and employment levels. We also ask special questions on timely topics.

For more information on survey design and methodology, please refer to the resources on the SBU page and "Surveying Business Uncertainty," published in the *Journal of Econometrics* and also available as NBER Working Paper 25956.

Sales revenue growth remains stronger compared to before the COVID pandemic but has been declining in 2022. Recent employment growth is in line with pre-pandemic levels.

January 2017–September 2022


Realized Growth Rates over the Past Year
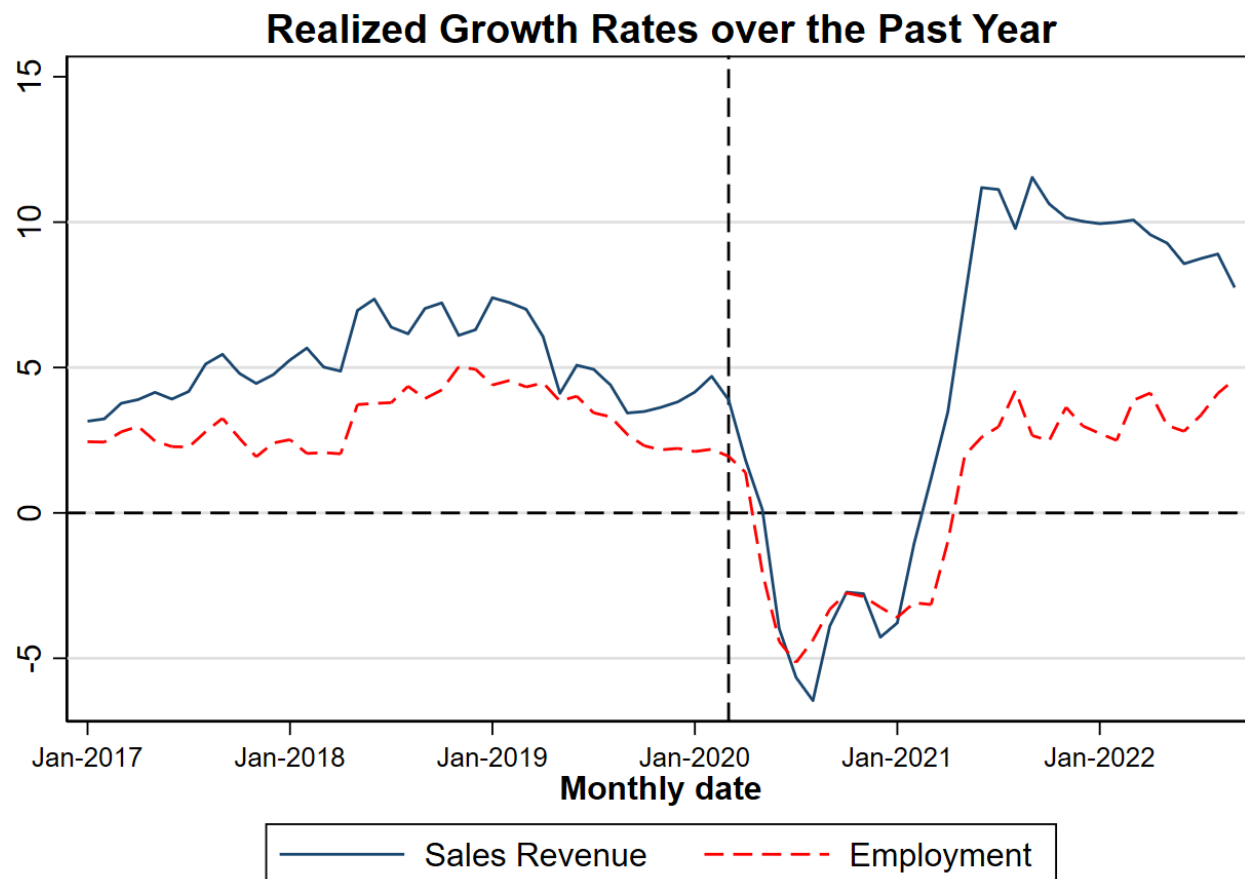
NOTE: Calculated using monthly data through September 2022. Realized growth rate series for sales revenue and employment are activity-weighted averages of firms' reported (look-back) growth rates over the past year (specifically, the previous four quarters for sales revenue and previous 12 months for employment).

NOTE: The chart shows smoothed series.

Source: Survey of Business Uncertainty conducted by the Federal Reserve Bank of Atlanta, Stanford University, and the University of Chicago Booth School of Business. For more information, see "Surveying Business Uncertainty" by David Altig, Jose Maria Barrero, Nick Bloom, Steven J. Davis, Brent Meyer, and Nick Parker, NBER Working Paper No. 25956, February 2020.

Sales revenue growth expectations have slowed in recent months, but firms remain significantly more uncertain about future revenue growth that they were before the pandemic.

January 2017–September 2022
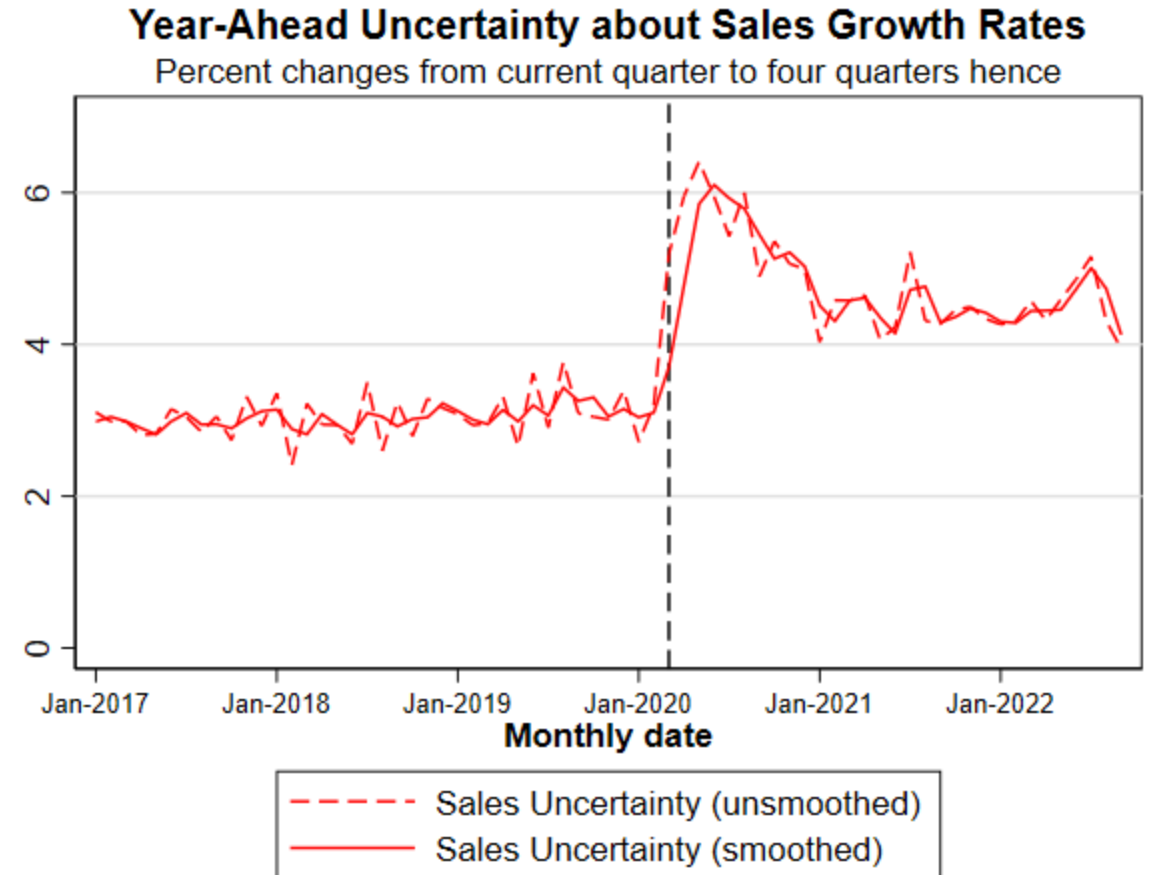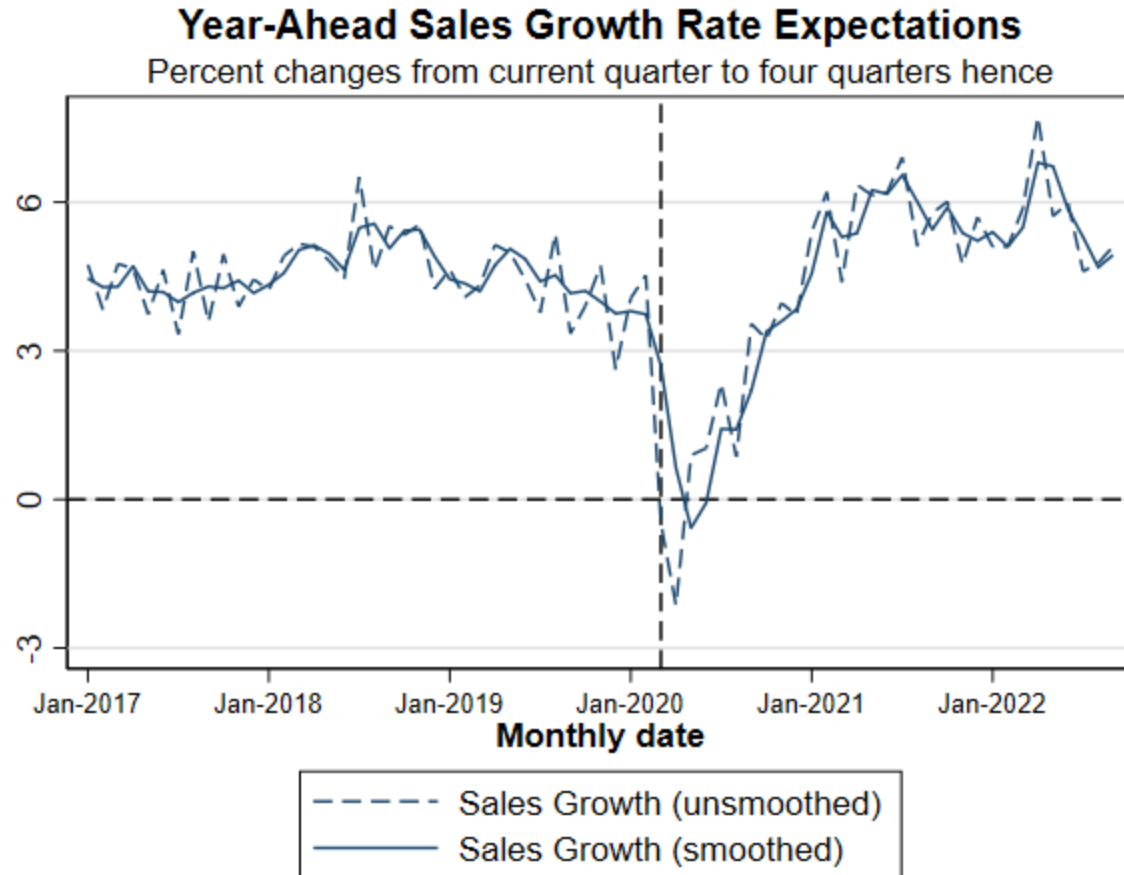
NOTE: The charts show smoothed series.

Source: Survey of Business Uncertainty conducted by the Federal Reserve Bank of Atlanta, Stanford University, and the University of Chicago Booth School of Business. For more information, see "Surveying Business Uncertainty" by David Altig, Jose Maria Barrero, Nick Bloom, Steven J. Davis, Brent Meyer, and Nick Parker, NBER Working Paper No. 25956, February 2020.

Firms' expectations about future employment growth have ebbed in recent months and uncertainty remains somewhat above pre-pandemic levels.

January 2017–September 2022

Year-Ahead Employment Growth Rate Expectations
Percent changes from current month to twelve months hence

- Employment Growth (unsmoothed)
- Employment Growth (smoothed)

Year-Ahead Uncertainty about Employment Growth Rates
Percent changes from current month to twelve months hence

- Employment Uncertainty (unsmoothed)
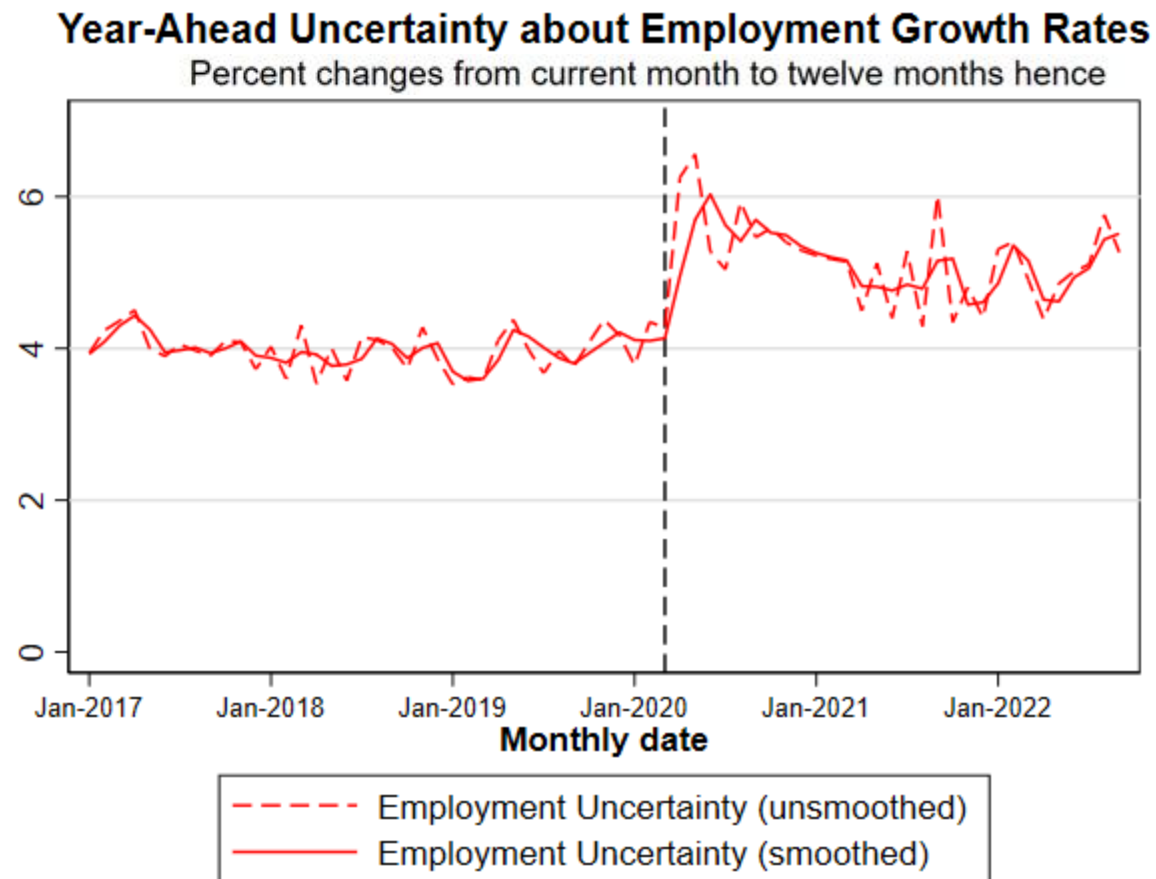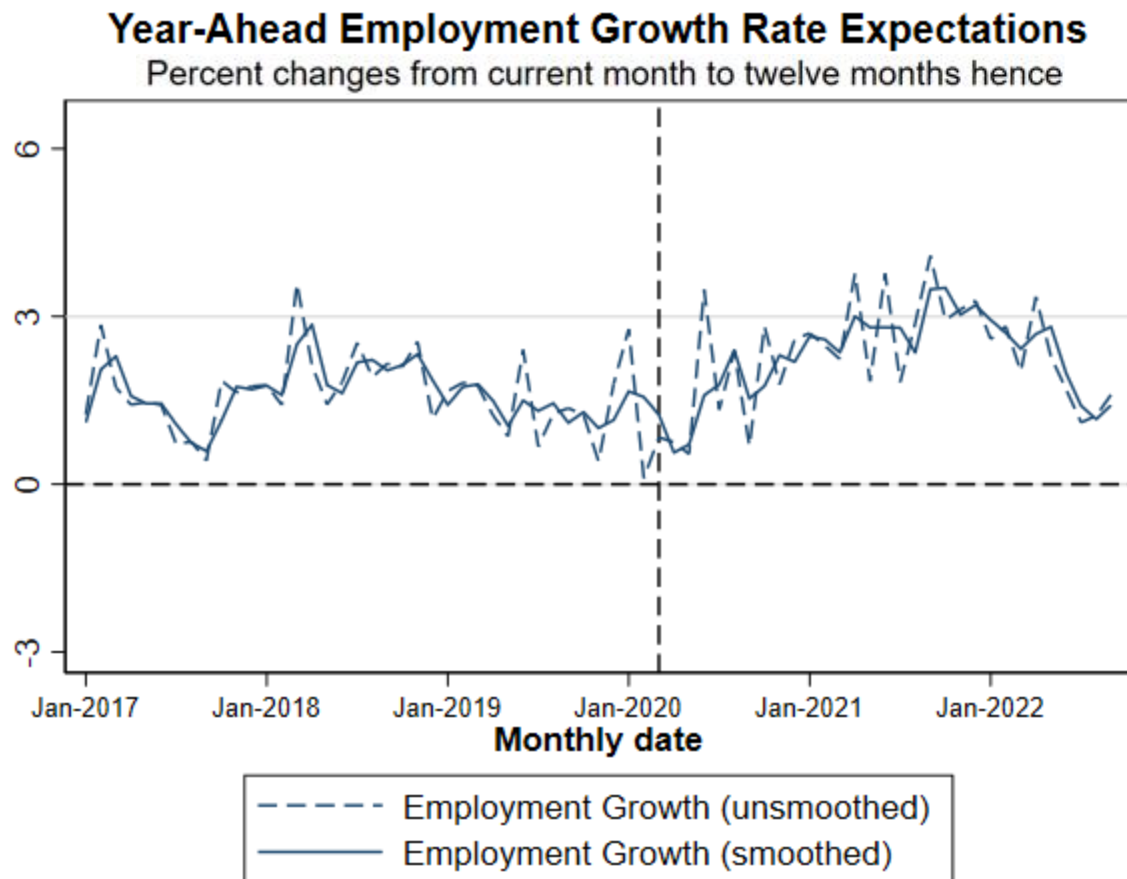- Employment Uncertainty (smoothed)

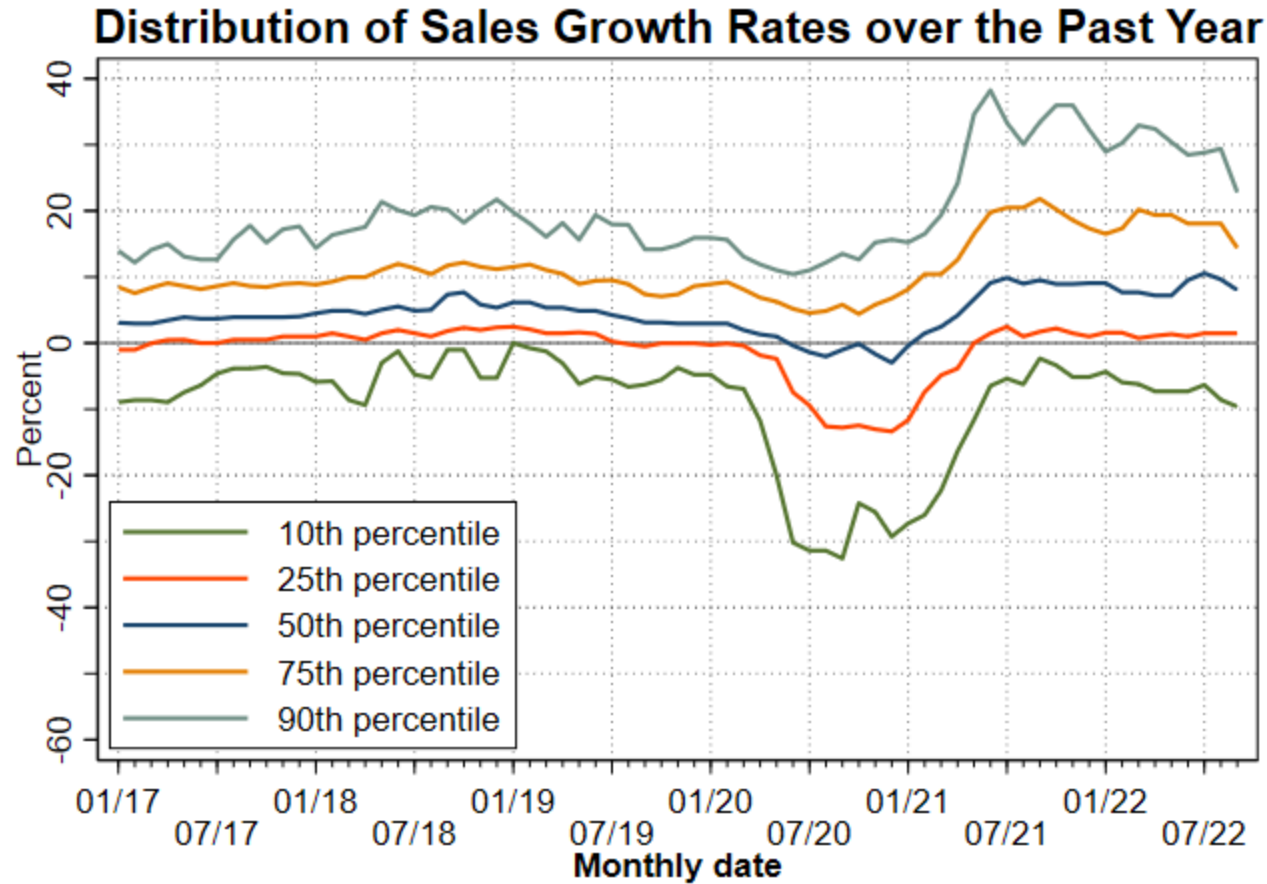NOTE: The charts show smoothed series.

Source: Survey of Business Uncertainty conducted by the Federal Reserve Bank of Atlanta, Stanford University, and the University of Chicago Booth School of Business. For more information, see "Surveying Business Uncertainty" by David Altig, Jose Maria Barrero, Nick Bloom, Steven J. Davis, Brent Meyer, and Nick Parker, NBER Working Paper No. 25956, February 2020.

The distribution of realized sales growth remains wider than it was in the pre-pandemic period.

Distribution of Sales Growth Rates over the Past Year

Legend:
- 10th percentile
- 25th percentile
- 50th percentile
- 75th percentile
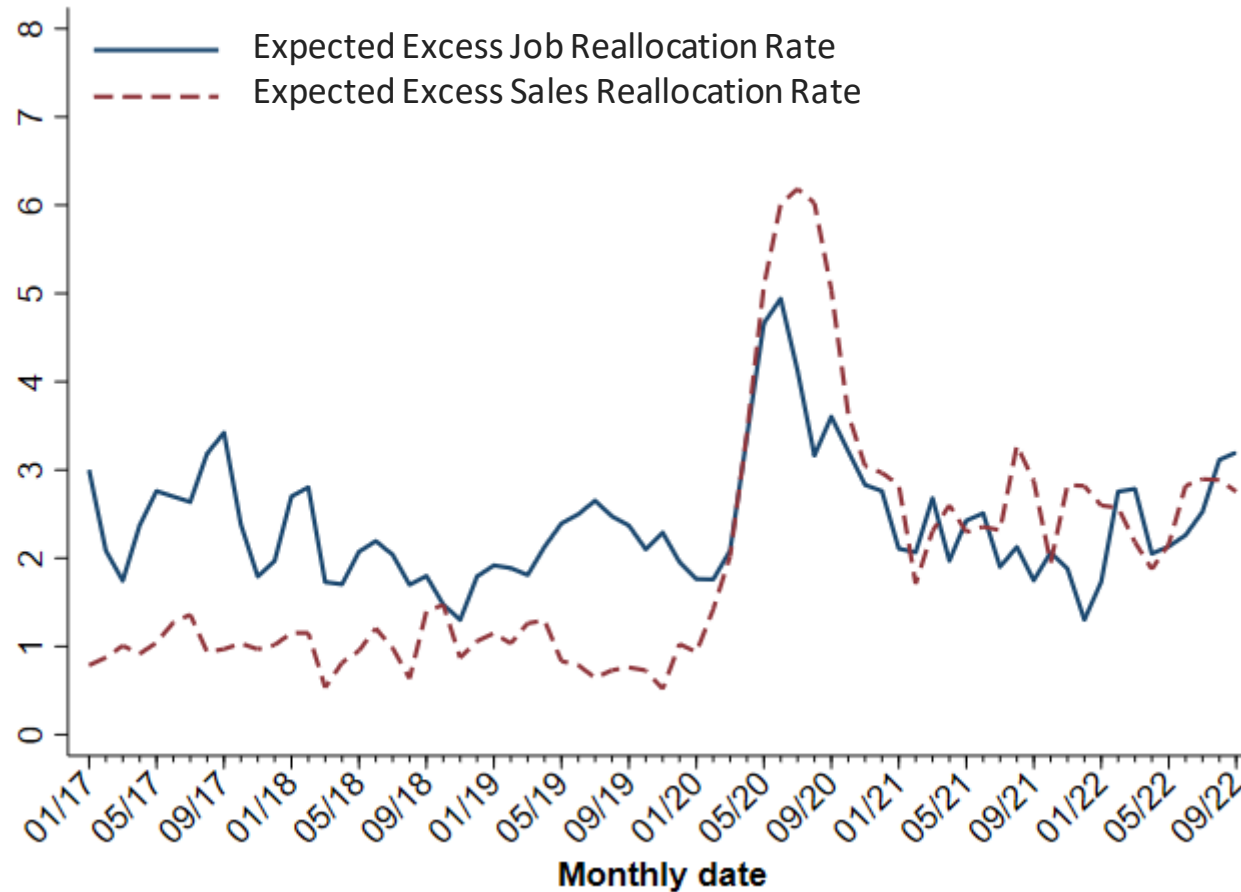- 90th percentile

NOTES: Calculated using monthly data through September 2022. The chart shows smoothed series. Lines show percentiles of the activity-weighted distribution of firm-level sales growth rates over the past year.

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

Expected excess job reallocation has reverted to pre-pandemic levels, while expected excess sales reallocation remains elevated.

January 2017–September 2022

NOTES: Calculated using monthly data through September 2022. The chart shows smoothed series. Expected excess reallocation rates quantify the expected volume of cross-firm job or sales reallocation in excess of what is required by the expected aggregate net change. All data are activity weighted.

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

Employees often report that nothing happens if they stay home on "work days," while managers claim they threaten to fire violators

What happens when employees WFH on "work days"

- ■ Senior Managers (SBU)
- ■ Individual Employees (SWAA)

Category	Senior Managers (SBU)	Individual Employees (SWAA)
Nothing	13	31
Verbal reprimand	25	17
Negative performance review	14	13
Reduction in pay/bonus	3	14
Threat to terminate	32	15
Termination	12	10

Percent of respondents
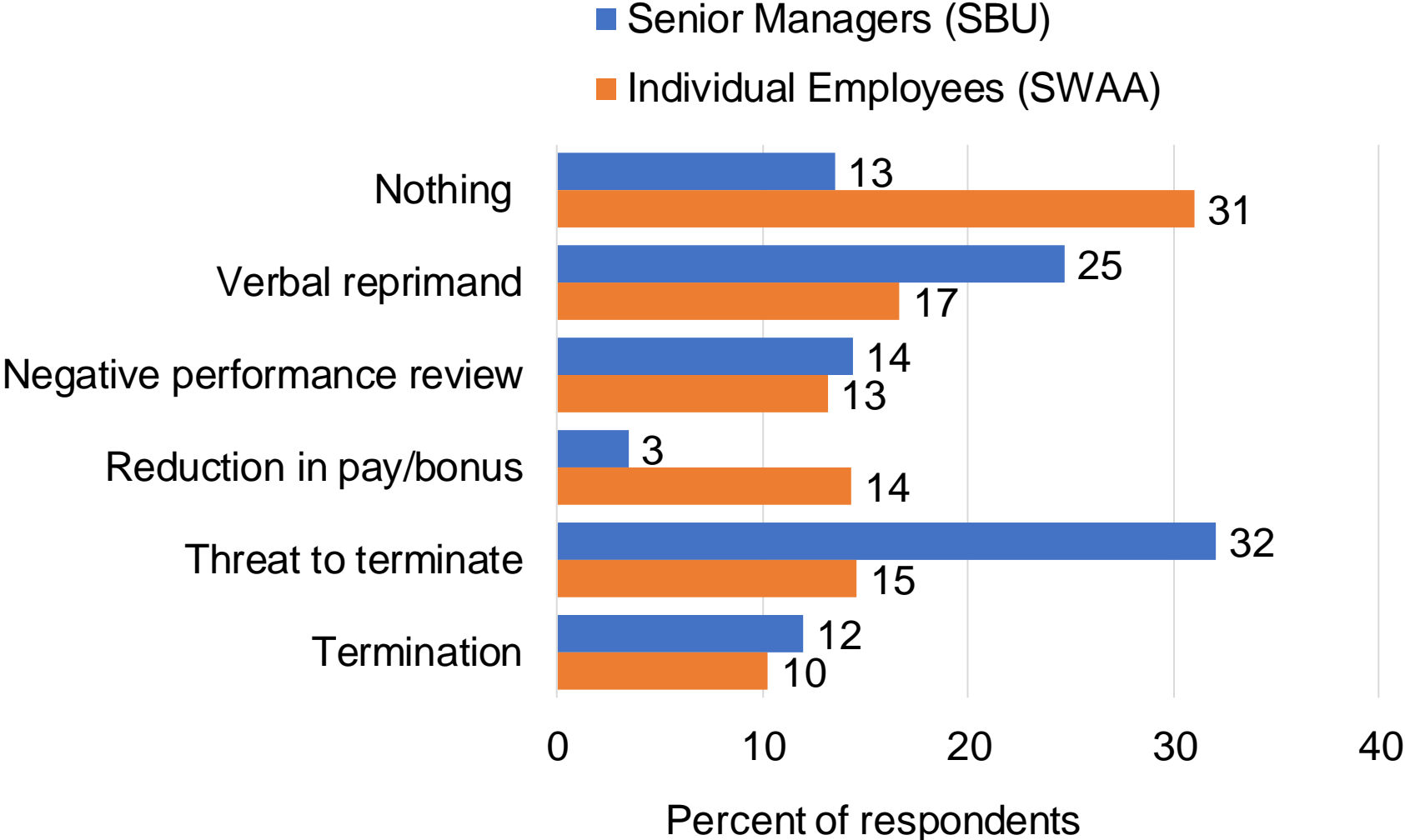
Notes: SWAA participants asked "How has your employer responded to employees who work on business premises fewer days than requested?" over June to September 2022 re-weighted to match US working population 20 to 64. N= 17,875. www.wfhresearch.com SBU participants asked "Currently, how does your firm deal with employees who work fewer days on business premises than required by company policy?" in September 2022 reweighted to match US firms. N= 335. www.atlantafed.org/SBU

Firms that use WFH to keep employees happy, moderate wage growth, and reduce turnover are less tough when it comes to enforcing their requirements to work on business premises.

Enforcing Requirements to Work on Business Premises: Average Values of Toughness Index

Left chart: 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?
- No: 0.52
- Yes: 0.42

Right chart: In the past 12 months, has your firm reduced turnover by expanding opportunities for employees to work from home or other remote location?
- No: 0.52
- Yes: 0.39

Note: Results are unweighted. The index is created from responses to the question "Currently, how does your firm deal with employees who work fewer days on business premises than required by company policy?" This question was fielded in the September wave of the SBU survey. Scores to the responses of these questions were assigned in the following way: do nothing = 0, verbal reprimand = 0.2, negative performance review in file = 0.4, reduce compensation = 0.6, tell employee to comply or be terminated = 0.8, and terminate = 1.0. Since firms were allowed to select more than one response option the index is created by calculating the average of all selected responses.

Appendix: Technical Information

Computing Moments of the Firm-Level Subjective Forecast Distributions

We calculate first and second moments of the subjective growth rate distributions of employment and sales revenue over the next 12 months or four quarters, as appropriate. Following standard practice in the literature on business-level dynamics, we calculate the growth rate of x from $t-1$ to t as $g_t = 2(x_t - x_{t-1})/(x_t + x_{t-1})$.*

Employment

$CEmp$ = firm's current employment level, as reported by the respondent

$FEmp_i$ = employment 12 months hence in scenario i, for $i = 1,2,3,4,5$

p_i = the associated probabilities, $i = 1,2,3,4,5$

Scenario-Specific Growth Rates

$EGr_i = 2(FEmp_i - CEmp)/(FEmp_i + CEmp)$, $i = 1,2,3,4,5$

First and Second Moments of the Subjective Growth Rate Forecast Distribution

$Mean(EGr) = \sum_{i=1}^{5} p_i EGr_i$

$Var(EGr) = \sum_{i=1}^{5} p_i (EmpGr_i - Mean(EGr))^2$

$SD(EGr) = \sqrt{Var(EGr)}$

Sales Revenue

$CSale$ = firm's sales revenue in the current quarter, as reported by the respondent

$FSaleGr_i$ = respondent's scenario–specific sales growth rate from now to four quarters hence, $i = 1,2,3,4,5$

p_i = the associated probabilities, $i = 1,2,3,4,5$

Implied Future Sales Level

$FSale_i = \left(1 + \frac{FSaleGr_i}{100}\right) CSale$, $i = 1,2,3,4,5$

Scenario–Specific Growth Rates (re–expressing respondent growth rates to our growth rate measure)

$SaleGr_i = 2(FSale_i - CSales)/(FSale_i + CSale) = 2FSaleGr_i/(FSaleGr_i + 2)$, $i = 1,2,3,4,5$

First and Second Moments of the Subjective Growth Rate Forecast Distribution

$Mean(SaleGr) = \sum_{i=1}^{5} p_i SaleGr_i$

$Var(SaleGr) = \sum_{i=1}^{5} p_i (SaleGr_i - Mean(SaleGr)_i)^2$

$SD(SaleGr) = \sqrt{Var(SaleGr)}$

Subjective Expectations and Uncertainty Indices

We construct a monthly activity-weighted expectations (first-moment) index for employment growth and sales growth looking one year ahead. We also construct a monthly activity-weighted uncertainty (second-moment) index for the employment growth and sales growth looking one year ahead.

- In month t, the index for employment (sales) takes a value equal to the activity-weighted average of subjective mean employment (sales) growth rates looking one year hence ($Mean(Gr)$), averaging across all firms responding that month. We compute these subjective mean growth rates as described on slide 3, and winsorize them at the first and 99th percentiles before using them to construct the index.

- The month-t index of year-ahead subjective uncertainty for employment (sales) growth is the activity-weighted mean of ($SD(Gr)$) values across firms responding in month t. We compute these subjective standard deviations over growth rates as described on slide 3, and winsorize them at the first and 99th percentiles before inputting them into the index construction formula.

- When constructing first- and second-moment employment growth indexes, we weight firm i's subjective mean growth rate expectation and uncertainty by the average of its month-t employment ($CEmp_{it}$) and its expected employment level ($EEmp_{it}$). We top-code these weights at 500 to diminish the influence of outliers among very large firms.

- When constructing first- and second-moment sales revenue growth indexes, we weight firms i's subjective mean growth rate expectation and uncertainty by the average of its month-t sales revenue ($CSale_{it}$) and its expected sales level ($ESale_{it}$). We winsorize these activity-weights at the 1st and 80th percentile.

- Finally, we smooth our topic-specific indices by taking a moving average. We set the window for the moving average to 2 or 3 months, to match the panel structure of our survey.

Topic-specific Expected Excess Reallocation Indices

We construct forward-looking indices of excess job and sales revenue reallocation. These series measure the volume of cross-firm reallocation in economic activity above the reallocation required to support aggregate growth. For ease of exposition, we often refer to these as simply "reallocation rates":

- First, in each month t, we compute the activity-weighted average of own-firm expected gross job creation and destruction rates, which boils down to the activity-weighted average of the absolute value of subjective mean growth rates $|Mean(EGr)|$.

- Then, in each month t, we compute the absolute value of the activity weighted average of own-firm expected employment growth $Mean(EGr)$. This is effectively the absolute value of the employment growth expectations index in month t.

- We then obtain the expected job reallocation rate index value for month t by subtracting the outcome of the second bullet from the first. Letting w_{it} be firm i's activity weight in month t,

$$Expected\ Job\ Reallocation\ Rate_t = \sum_i w_t \cdot |Mean(EGr)| - \left|\sum_i w_t \cdot Mean(EGr)\right|$$

- Analogously, the expected sales revenue reallocation rate index in month t is the difference between the activity-weighted average of absolute expected sales growth rates, minus the absolute value of the average activity-weighted growth rate:

$$Expected\ Reallocation\ Rate\ For\ Sales\ Revenue_t = \sum_i w_t \cdot |Mean(SaleGr)| - \left|\sum_i w_t \cdot Mean(SaleGr)\right|$$

- We compute the subjective mean growth rates $Mean(EGr)$ and $Mean(SaleGr)$ as described on slides 18-21, and winsorize them at the 1st and 99th percentiles before using them to construct the index.

- Firm i's activity weight w_{it} is the average of its month–t employment or sales level ($Cemp_{it}$ or $CSale_{it}$) and its expected employment or sales level twelve months hence ($FEmp_{it}$ or $FSale_{it}$). We top–code these weights at 500 for employment and at the 80th percentile for sales to diminish the influence of outliers among very large firms.

January 2017–September 2022

Subjective Distribution of Future Sales Growth Rates at a One-Year Horizon
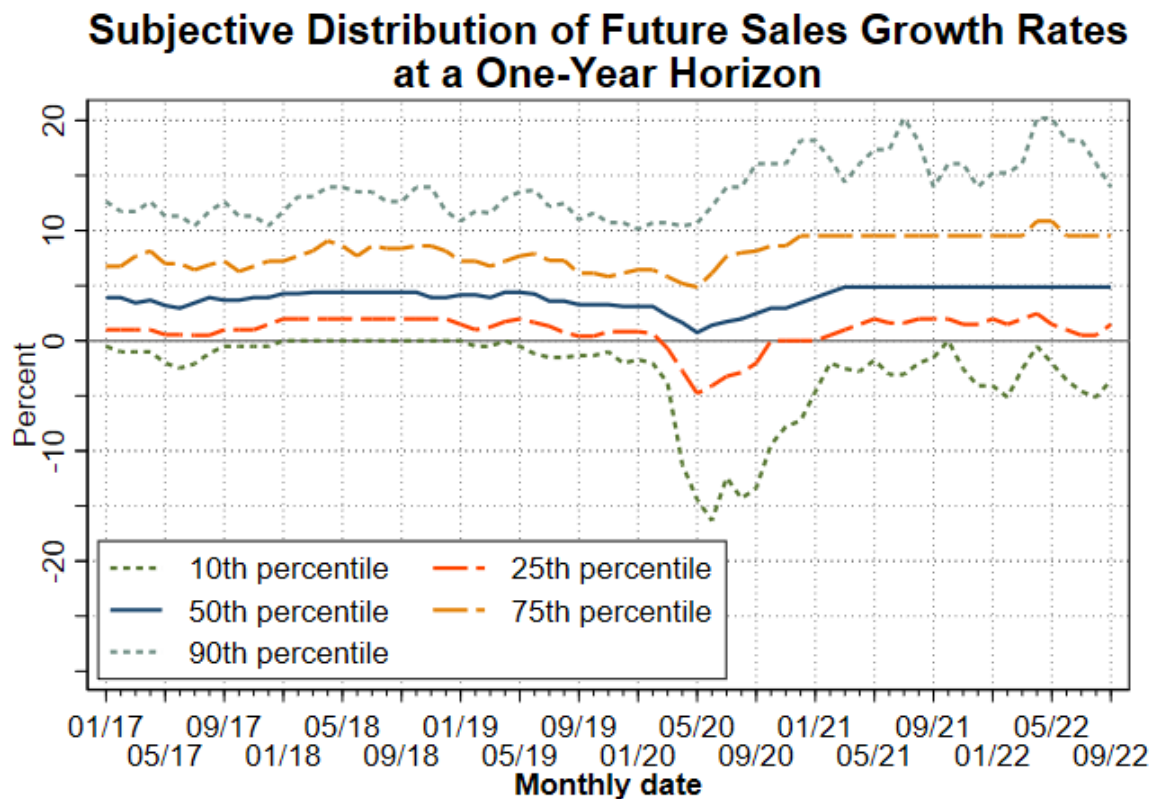
NOTES: Calculated using monthly data through September 2022. The charts show smoothed series. This is a plot of the subjective distribution for the representative firm's future sales growth rates over a 4-quarter look-ahead horizon. To calculate this distribution, we pool over all firm-level subjective forecast distributions in the indicated month and weight each firm by its activity level. Then we use the probabilities assigned to each possible future sales growth rate to obtain activity-weighted quantiles of the future sales growth rate distribution.

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