Monthly Report: March 2023

Based on survey responses from
13-24 March 2023 and 13-24 February 2023

David Altig, Jose Maria Barrero, Nicholas Bloom, Steven J. Davis, Kevin Foster, Brent H. Meyer, and Emil Mihaylov
1. Surprises to firm-level sales growth over the next 12 months would lead to employment growth responses that are 45% as large. (Slide 3)

2. U.S. firms remain more uncertain about future sales growth than they were before the pandemic. (Slide 5)

3. The top sources of business uncertainty in 2023 are the strength of the economy, inflation, and labor availability. (Slide 8)
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 Hoover Institution and the University of Chicago Booth School of Business. 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.
Surprises to firm-level sales growth over the next 12 months lead to employment growth responses that are 45% as large.

Notes:
Q1: How many employees would you expect 12 months from now if your firm’s sales growth rate is X percentage points lower/higher than you currently expect? X = -20,-15,-10,-5,5,10,15 or 20, randomized.
Q2: As in Q1, but switching the sign of X.

Our core survey questions yield current and baseline expected employment values for each firm 12 months hence. We combine these values with responses to Q1 and Q2 to compute the “Firm-level employment growth rate response” on the vertical scale.

Results are weighted by firm size.
Nominal sales growth remains higher than before the pandemic but has been declining over the past year. Recent employment growth is in line with pre-pandemic growth.

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. Firms remain more uncertain about future revenue growth than they were before the pandemic.

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 their future employment growth have dropped in recent months. Uncertainty about employment growth has returned to pre-pandemic levels.

January 2017–March 2023

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

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

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.

NOTES: Calculated using monthly data through March 2023. 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.
Firms view the strength of the economy, inflation, and labor availability as the top sources of business uncertainty in 2023.

Question: From the list below, please select up to three sources of uncertainty that have the potential to affect your firm’s decision making. Rank the sources of uncertainty from 1 to 3, with "1" being the most important.

Note: Results are not weighted. The results are from the February survey wave (Feb 13 – Feb 24, 2023).
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 $\gamma_t = (x_t - x_{t-1}) / (x_t + x_{t-1})$.

**Employment**

$E_{\gamma_t} = $ firm's current employment level, as reported by the respondent $F_{\gamma_t} =$ 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

**Sales Revenue**

$Csale_t = $ firm's sales revenue in the current quarter, as reported by the respondent $F_{\gamma_t} =$ 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

**Scenario-Specific Growth Rates** ($E_{\gamma_t}$, $Var_{\gamma_t}$)

$E_{\gamma_t} = 2(F_{\gamma_t} - C_{\gamma_t})/(F_{\gamma_t} + C_{\gamma_t})$, i = 1, 2, 3, 4, 5

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 ($Mean_{\gamma_t}$), 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 ($SD_{\gamma_t}$) 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 ($E_{\gamma_t}$) and its expected employment level ($E_{\gamma_t}$). 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 firm $i$'s subjective mean growth rate expectation and uncertainty by the average of its month-$t$ sales revenue ($Csale_t$) and its expected sales level ($E_{\gamma_t}$). We winsorize these activity weights at the 1st and 98th 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.

**Implications for Sales Level**

$F_{\gamma_t} =$ sales growth rate looking one year ahead, and $E_{\gamma_t}$ is its expected sales level $\gamma_t = \frac{F_{\gamma_t} - C_{\gamma_t}}{100}$ $C_{\gamma_t} =$ current sales level $E_{\gamma_t}$'s activity weight in month $t$.

**First and Second Moments of the Subjective Growth Rate Forecast Distribution**

$Mean_{\gamma_t} = \sum_{i=1}^{5} p_i E_{\gamma_t}$ $Var_{\gamma_t} = \sum_{i=1}^{5} p_i (E_{\gamma_t} - Mean_{\gamma_t})^2$ $SD_{\gamma_t} = \sqrt{Var_{\gamma_t}}$

**Subjective Expectations and Uncertainty 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 ($Mean_{\gamma_t}$).

- Then, in each month $t$, we compute the absolute value of the activity weighted average of own-firm expected employment growth ($Mean_{\gamma_t}$). 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 $w_{i,t}$ be firm $i$'s activity weight in month $t$.

**Expected Job Reallocation Rates**

$\sum_{t} w_{i,t} \cdot Mean_{\gamma_t} - |\sum_{t} w_{i,t} \cdot Mean_{\gamma_t}|

- 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:

$$\sum_{t} w_{i,t} \cdot Mean_{\gamma_t} - |\sum_{t} w_{i,t} \cdot Mean_{\gamma_t}|$$

- We compute the subjective mean growth rates ($Mean_{\gamma_t}$) and $Mean_{\gamma_t}$ 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 $w_{i,t}$ is the average of its month-$t$ employment or sales level ($E_{\gamma_t}$ or $C_{\gamma_t}$) and its expected employment or sales level twelve months hence ($F_{\gamma_t}$ or $F_{\gamma_t}$). We top-code these weights at 500 for employment and at the 90th percentile for sales to diminish the influence of outliers among very large firms.

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**Appendix: Technical Information**

- First and Second Moments of the Subjective Growth Rate Forecast Distribution

- Scenario-Specific Growth Rates

- Sales Revenue

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

- First and Second Moments of the Subjective Growth Rate Forecast Distribution

- Subjective Expectations and Uncertainty Indices

- Computing Moments of the Firm-Level Subjective Forecast Distributions

- Employment

- Sales Revenue

- Scenario-Specific Growth Rates

- First and Second Moments of the Subjective Growth Rate Forecast Distribution

- Subjective Expectations and Uncertainty Indices

- Topic-specific Expected Excess Reallocation Indices
Appendix: Subjective Forecast Distribution of Future Sales Growth Rates at a One-Year Horizon

NOTES: Calculated using monthly data through March 2023. 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.
Appendix: Histogram of survey response frequency for the March 2023 survey wave

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