





Stanford University

# Monthly Report: August 2022

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# **SBU** Survey of Business Uncertainty

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# **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 <u>SBU page</u>.

# **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

 $\begin{aligned} & \textit{Mean(EGr)} &= \sum_{i=1}^{5} p_i EGr_i \\ & \textit{Var(EGr)} &= \sum_{i=1}^{5} p_i (EmpGr_i - \textit{Mean(EGr)})^2 \\ & \textit{SD(EGr)} &= \sqrt{\textit{Var(EGr)}} \end{aligned}$ 

### 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

 $\begin{aligned} \text{Mean}(SaleGr) &= \sum_{i=1}^{5} p_i SaleGr_i \\ \text{Var}(SaleGr) &= \sum_{i=1}^{5} p_i (SaleGr_i - \text{Mean}(SaleGr)_i)^2 \\ \text{SD}(SaleGr) &= \sqrt{\text{Var}(SaleGr)} \end{aligned}$ 

# **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<sub>it</sub>*) and its expected employment level (*EEmp<sub>it</sub>*). 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<sub>it</sub>*) and its expected sales level (*ESale<sub>it</sub>*). We winsorize these activity-weights at the 1<sup>st</sup> and 80<sup>th</sup> 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.

#### **Realized Growth Rates over the Past Year**

#### January 2017–August 2022



NOTE: Calculated using monthly data through August 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.

#### January 2017–August 2022



NOTE: The charts show smoothed series.

# **Sales Revenue Growth Rate Expectations**

#### January 2017–August 2022



NOTE: The charts show smoothed series.

#### January 2017–August 2022



Year-Ahead Uncertainty about Employment Growth Rates

NOTE: The charts show smoothed series.

#### January 2017–August 2022



NOTE: The charts show smoothed series.

# Sales Revenue Growth Rate Expectations and Uncertainty

#### January 2017–August 2022



NOTE: The charts show smoothed series.

#### January 2017–August 2022



NOTE: The charts show smoothed series.

# **Employment Growth Rate Expectations and Uncertainty**

#### January 2017–August 2022



NOTE: The charts show smoothed series.

#### January 2017–August 2022



NOTE: The charts show smoothed series.

# 2-Year (1-Year Look-Back + 1-Year Look-Ahead) Growth Rates

January 2017–August 2022



NOTES: Calculated using monthly data through August 2022. The chart shows smoothed series. The two-year growth rates are computed combining individual firm realized (one-year look-back) and future (one-year look-ahead) sales growth rates. All data are activity weighted.

# Subjective Forecast Distribution of Future Sales Growth Rates at a One-Year Horizon

#### January 2017–August 2022





NOTES: Calculated using monthly data through August 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.

#### **Realized Distribution of Sales Growth Rates over the Past Year**

#### Januarv 2017–August 2022



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

# Expected Excess Sales and Job Reallocation Rates over the Next One Year

#### January 2017–August 2022

![](_page_16_Figure_2.jpeg)

NOTES: Calculated using monthly data through August 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.

# Excess Sales and Job Reallocation Rates over 24-Month and 36-Month Intervals

January 2017–August 2022

![](_page_17_Figure_2.jpeg)

NOTES: Calculated using monthly data through August 2022. The charts show smoothed series. The excess job (sales) reallocation rate quantifies the volume of cross-firm job (sales) reallocation in excess of what is required by the aggregate net change. The 24-month excess reallocation rates are computed using realized firm-level growth over the past one year and expected future growth over the next one year. The 36-month excess reallocation rates are computed using realized firm-level growth over the past two years and expected future growth over the next one year. All data are activity weighted.

	What was the average growth rate of wages at your firm in the past 12 months?							Over the next 12 months, what do you expect the average growth rate of wages to be at your firm?					
	U	Inweighte	ed	Weigh	Weighted by Firm Size			Inweighte	ed	Weighted by Firm Size			
	N	Mean	S.E.	N	Mean	S.E.	N	Mean	S.E.	N	Mean	S.E.	
Overall	438	4.8	0.17	438	5.4	0.14	447	4.6	0.13	447	5.0	0.11	
Small Firms	372	4.6	0.18	372	5.3	0.16	378	4.5	0.15	378	4.8	0.13	
Large Firms	66	5.6	0.37	66	5.5	0.37	69	5.1	0.26	69	5.2	0.25	
Goods Producers	122	5.2	0.31	122	4.9	0.27	124	4.3	0.26	124	4.7	0.20	
Retail and wholesale trade, Transportation and warehousing, Leisure and hospitality	81	5.2	0.38	81	6.1	0.34	85	5.0	0.30	85	5.7	0.26	
Educational services, Health care and social assist., Other services	26	4.6	0.68	26	5.0	0.63	26	4.7	0.53	26	5.0	0.47	
Finance and insurance, Real estate and rental and leasing, Professional and business services, Information	209	4.4	0.24	209	5.4	0.20	212	4.5	0.18	212	4.8	0.15	

	What v	What was the average growth rate of wages at your firm in the past 12 months?							Over the next 12 months, what do you expect the average growth rate of wages to be at your firm?					
	ι	Inweighte	ed	Weigh	Weighted by Firm Size			Inweighte	ed	Weighted by Firm Size				
	N	Mean	S.E.	N	Mean	S.E.	N	Mean	S.E.	N	Mean	S.E.		
Overall	478	5.0	0.17	478	5.6	0.13	483	4.3	0.12	483	4.4	0.09		
Small Firms	394	4.8	0.19	394	5.3	0.17	399	4.2	0.14	399	4.4	0.11		
Large Firms	84	5.8	0.27	84	5.8	0.26	84	4.4	0.21	84	4.4	0.21		
Goods Producers	139	5.1	0.30	139	5.8	0.22	139	4.0	0.21	139	4.3	0.13		
Retail and wholesale trade, Transportation and warehousing, Leisure and hospitality	89	5.4	0.41	89	5.9	0.31	90	4.7	0.31	90	5.1	0.25		
Educational services, Health care and social assist., Other services	20	5.2	0.97	20	6.2	1.01	20	4.1	0.41	20	4.0	0.34		
Finance and insurance, Real estate and rental and leasing, Professional and business services, Information	230	4.7	0.24	230	5.3	0.18	234	4.3	0.19	234	4.2	0.15		

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60

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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?

#### Over the next 12 months, will your firm let employees work from home (or other remote location) at least one day per week to restrain wage-growth pressures?

![](_page_20_Figure_3.jpeg)

📕 April & May 📕 August

🔳 April & May 🛛 📕 August

	Wha exp moder	What is your best estimate for how much the expanded remote-work opportunities have moderated wage-growth pressures at your firm in the past 12 months?						What is your best estimate for how much your firm can restrain wage-growth pressures in the next 12 months by letting employees work remotely part of the week?						Cumulative Restraint on Wage Growth Over Two Years		
	ι	Unweighted Weighted by Firm Size				Unweighted			Weighted by Firm Size				Weighted by			
	N	Mean	S.E.	Ν	Mean	S.E.	Ν	Mean	S.E.	N	Mean	S.E.	Unweighted	Firm Size		
Overall	485	1.0	0.11	485	0.9	0.10	491	1.2	0.11	491	1.1	0.09	2.2	2.0		
Small Firms	411	1.1	0.13	411	1.1	0.12	417	1.1	0.13	417	0.9	0.09	2.2	2.0		
Large Firms	74	0.7	0.20	74	0.8	0.21	74	1.3	0.25	74	1.3	0.24	2.1	2.0		
Goods Producers	134	0.4	0.15	134	0.5	0.14	133	0.8	0.19	133	0.8	0.14	1.3	1.3		
Retail and wholesale trade, Transportation and warehousing, Leisure and hospitality	88	0.6	0.21	88	0.6	0.17	95	0.9	0.24	95	1.2	0.25	1.4	1.8		
Educational services, Health care and social assist., Other services	29	1.4	0.62	29	1.8	0.69	28	1.3	0.50	28	2.0	0.44	2.7	3.8		
Finance and insurance, Real estate and rental and leasing, Professional and business services, Information	234	1.5	0.19	234	1.2	0.15	235	1.5	0.18	235	1.1	0.13	3.0	2.3		

	What is your best estimate for how much these expanded remote-work opportunities have						What is your best estimate for how much your firm can restrain its overall wage-growth in the next 12						Cumulative Restraint on Wage Growth Over Two			
	modera	noderated overall wage-growth at your firm in the past 12 months?					mont	months by letting employees work remotely for part or all of the week?						Years		
	Unweighted				Weighted by Firm Size			Unweighted			ted by Fir	m Size		Weighted by		
	N	Mean	S.E.	N	Mean	S.E.	N	Mean	S.E.	N	Mean	S.E.	Unweighted	Firm Size		
Overall	484	0.8	0.10	484	0.7	0.09	482	0.8	0.09	482	0.9	0.09	1.6	1.7		
Small Firms	400	0.8	0.11	400	0.7	0.10	398	0.8	0.10	398	0.5	0.07	1.6	1.2		
Large Firms	84	0.7	0.21	84	0.8	0.23	84	1.2	0.25	84	1.2	0.25	1.9	2.0		
Goods Producers	139	0.2	0.06	139	0.3	0.08	139	0.4	0.12	139	0.7	0.14	0.6	1.0		
Retail and wholesale trade, Transportation and warehousing, Leisure and hospitality	91	0.3	0.13	91	0.2	0.09	91	0.5	0.18	91	0.7	0.23	0.8	0.8		
Educational services, Health care and social assist., Other services	20	0.9	0.57	20	0.3	0.27	20	0.8	0.32	20	0.8	0.35	1.6	1.1		
Finance and insurance, Real estate and rental and leasing, Professional and business services, Information	234	1.3	0.18	234	1.4	0.18	232	1.2	0.15	232	1.3	0.14	2.6	2.6		

![](_page_23_Figure_1.jpeg)

			August
	Didn't expand WFH opportunities and doesn't plan to expand such opportunities in the next 12m.	238	283
Reported "0"	Expanded WFH opportunities in the past 12m, and plans on expanding such opportunities in the next 12m	38	30
cumulative	Didn't expand WFH opportunities in the past 12m but plans on expanding such opportunities in the next 12m	13	16
effect	Expanded WFH opportunities in the past 12m, but doesn't plan on expanding such opportunities in the next 12m	13	16
cheet	Total "0" cumulative moderation effect responses	302	345
	Cumulative effect responses different from 0	158	136
	Total responses	460	481

![](_page_24_Figure_1.jpeg)

#### May 2022

August 2022

![](_page_24_Figure_4.jpeg)

In the past 12 months, has your firm reduced turnover by expanding opportunities for employees to work from home or other remote location?

![](_page_25_Figure_2.jpeg)

	How	How much have these expanded opportunities to work remotely reduced your firm's costs related to employee recruitment, onboarding, and training in the past 12 months?													
		May 2022							August 2022						
	U	Unweighted Weighted by Firm Size				U	Inweighte	ed	Weighted by Firm Size						
	Ν	Mean	S.E.	N	Mean	S.E.	N	Mean	S.E.	N	Mean	S.E.			
Overall	444	0.5	0.09	444	0.4	0.07	483	0.5	0.08	483	0.5	0.08			
Small Firms	375	0.5	0.09	375	0.3	0.07	399	0.5	0.09	399	0.4	0.08			
Large Firms	69	0.5	0.24	69	0.4	0.21	84	0.6	0.19	84	0.6	0.19			
Goods Producers	123	0.1	0.06	123	0.2	0.07	139	0.2	0.06	139	0.3	0.08			
Retail and wholesale trade, Transportation and warehousing, Leisure and hospitality	85	0.0	0.04	85	0.0	0.01	90	0.3	0.15	90	0.6	0.24			
Educational services, Health care and social assist., Other services	26	0.3	0.20	26	0.0	0.07	20	0.9	0.57	20	0.3	0.25			
Finance and insurance, Real estate and rental and leasing, Professional and business services, Information	210	0.9	0.17	210	0.9	0.16	234	0.8	0.15	234	0.7	0.12			

![](_page_27_Figure_1.jpeg)

Reduced turnover by expanding WFH opportunities, but reported 0 reduction to the follow-up question	68	49
Didn't reduce turnover by expanding WFH opportunities	331	378
Total "0" reduction responses	399	427
Reported reduced costs related to turnover different from 0	45	56
Total responses	444	483

	Outliers											
May												
ContactID	Sector	Firm Size	Expanded WFH opportunities	Wage growth moderation	Planning on expanding WFH opportunities	Expected wage growth moderation	Reported reduced costs related to turnover greater than 10 percent					
6609	Finance and insurance	<50					11					
394033	Information	<50					11					
983987	Finance and insurance	<50			Yes	10	11					
1591904620618	Finance and insurance	250+			Yes	3	11					
1626368221122	Professional and business services	<50	Yes	11	Yes	4	11					
37663	Finance and insurance	250+					11					
1589363625423	Professional and business services	<50	Yes	0	Yes	0	11					
1611777697737	Professional and business services	<50	No				11					
			August									
ContactID	Sector	Firm Size	Expanded WFH opportunities	Wage growth moderation	Planning on expanding WFH opportunities	Expected wage growth moderation	Reported reduced costs related to turnover greater than 10 percent					
1595273977300	Professional and business services	<50	Yes	7	Yes	5	11					
1630518810959	Information	<50	No		No		11					
1646335487664	Information	<50	Yes	8	No		11					
1649855315164	Retail and wholesale trade	250+	Yes	0	Yes	0	11					
1657202018414	Real estate and rental and leasing	<50	Yes	11	Yes	11	11					
6979	Other services except government	<50	Yes	11	Yes	3	11					
1589363913758	Professional and business services	100-249	No		Yes	0	11					
1617202362153	Professional and business services	<50	Yes	11	Yes	5	11					
1626368221122	Professional and business services	<50	Yes	11	Yes	3	11					