# Measuring Business Trends and Outlook through a New Survey

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The Census Bureau's new Business Trends and Outlook Survey (BTOS) provides information from businesses on current trends and their outlook over core concepts such as prices, employment, and revenue. National as well as detailed industry and geographic results are published biweekly. The BTOS results are representative of all single-location nonfarm businesses in the United States.

The BTOS builds on the successes of its predecessor, the Small Business Pulse Survey (SBPS), while addressing some of its limitations. The SBPS was launched early in the COVID pandemic to provide high frequency information on rapidly changing economic conditions (see Buffington et al. (2021a)) for details on the SBPS as well as the Household Pulse Survey). The shutdown due to the pandemic of our National Processing Center, responsible for printing and mail operations typically used to contact surveyed businesses, meant paper-based strategies had to be quickly abandoned and replaced with the Bureau's first all-electronic contact strategy.

For the SBPS, this meant limiting the survey to those businesses for which we had email addresses. Because of possible disparities in impact of the pandemic across geography and industry, we anticipated demand for detailed data products. Businesses with more than one location ("multi-unit firms") often span more than one geography and industry adding complexity for which we did not have time to resolve; thus, we chose to limit the scope of the survey to businesses with one location ("single unit firms") to produce representative state and industry data. Last, we anticipated policy and other interest in small businesses and chose to limit our scope to those single unit employer firms with fewer than 500 employees. Thus, the SBPS did not use a random stratified sample but rather a convenience sample.[1]

[1] While not a representative stratified survey sample, published estimates were produced using weights that reflect an adjustment for survey non-response. Subsequent non-response bias studies (e.g., Gutentag and Caldwell (2022)) indicate that very small businesses (1-4 employees) were less likely to respond and were also

The SBPS produced experimental data products from April 2020 – April 2022 and was a successful demonstration of collaboration across federal agencies to produce timely and detailed data products in response to a national emergency (see Buffington et al. (2021b) for lessons learned).

## I. Methodology

The easing of pandemic constraints allowed for improvements in methodology. The BTOS uses, instead of a convenience sample, a stratified random sample representative of all single location nonfarm businesses. The Census Bureau continues to collect email addresses for businesses, but because this work is ongoing, both traditional mail and email are used to preserve sample representativeness.

The BTOS sample is comprised of 1.2 million single unit businesses divided into six representative panels. Each panel is asked to respond once every 12 weeks for approximately a year. The collection period for the BTOS is two weeks. Data are released every two weeks, typically within one week of the end of a collection period.

The BTOS sample will be drawn annually. As with any survey, it is important to consider selection in addition to other sources of bias; resampling annually will mitigate but not eliminate the selection bias caused by business exits. This source of bias is especially important to consider when there are large numbers of business exits such as during a widespread economic downturn or at the onset of the pandemic. Using the new experimental Business Dynamics Statistics of Single Unit Firms, Beem et al. (2022) report a 15.1% exit rate in 2020:Q2 which is about 5 percentage points above 2019 rate (which had been relatively stable since 2012). Further, they find about one-third of these businesses reopened by the end of 2020. Because the BTOS sample is not adjusted for exit (or entry) except through the sampling process, it is important to keep business dynamics in mind when interpreting the results (for example, measured changes in employment and revenue may miss decreases due to exiting businesses; see Buffington et al. (2021b) for discussion of selection issues).

## II. Content and Dissemination

The BTOS asks qualitative questions about the current reference period and the next six months. Questions were selected to produce extensive margins for core economic

underrepresented in the target population (that is, there was coverage bias as well.) The target population is described fully at https://portal.census.gov/pulse/data/#methodology.

phenomena and provide context for fluctuations in other high frequency quantitative economic statistics (and can be adjusted as economic conditions evolve). In addition, the granularity, higher frequency, and timeliness of BTOS series provides a new ability to measure the effects of shocks and recoveries that would be missed or attenuated by lower frequency or less detailed statistics.

The BTOS consists of 26 questions: 23 provide checkbox responses, two are process related questions (identification and contact information), and one provides space for text responses. The 23 substantive questions include 12 on current operations (performance; establishment openings, closings, exits; revenue; employment and hours; demand; input and output prices) and current conditions (supply chain timing and other difficulties, hiring difficulties, use of online platforms). The remaining 11 questions include 10 on expectations for operations (performance; establishment openings, closings, exits; employment and hours; demand; input and output prices) and future conditions (supply chain timing, hiring difficulties, online platform use). The last question concerns the prediction horizon of businesses for their performance.

Based on feedback received for the SBPS, the BTOS shifted focus from question response details to diffusion indices, although the Census Bureau releases response details as table downloads and through an Application Programming Interface. Diffusion indices are produced for 8 current and 7 forward-looking operations and conditions measures as well as the forecast horizon measure.

## III. Results

We focus on results that highlight evolving business concerns about employment and inflation. The state of U.S. employment and inflation changed dramatically during SBPS and BTOS collections. SBPS collection started following a large drop in employment from 152.5 million in February 2020 to 130.5 million in April 2020 (Bureau of Labor Statistics (BLS) (2022a)). As SBPS collection progressed, employment increased, and was back to pre-pandemic levels soon after SBPS collection ended. At the same time, inflation (Consumer Price Index year-over-year changes) fell at the start of the pandemic but was rising by May 2020, surpassing the pre-pandemic rate by March 2021, and hitting its peak of 9.1% in June 2022 (BLS (2022b)). As BTOS collection started, some of this inflationary pressure had lessened slightly and by October 2022 was 7.7%. In sum, at the start of BTOS collection, employment at the

national level was back to pre-pandemic levels, but inflation was above pre-pandemic levels.

We rely upon both indices and underlying shares of response categories in discussing results. These provide a measure of the prevalence of a characteristic (e.g., the share of businesses experiencing increased prices), but do not provide information on the magnitude of the characteristic (e.g., the size of the increased prices). The employment and price indices combine three outcomes (increase=100, decrease=0, and no change=50) allowing us to visualize these changes over multiple characteristics. The underlying *shares* can provide useful insights into, for example, the ways prices may differ importantly over "increase" and "no change."

### *A. National*

Figure 1 summarizes as a radar plot the latest available information as of this writing for the national average of BTOS indices: performance, input prices, output prices, demand, delivery time, hours, and employees. Starting first with employment, the index suggests that current employment (solid line) is overall relatively stable (index is 47.8) and that the outlook for future employment (dotted line) is slightly more positive (index is 53.7).

As noted above, inflation was a concern during the SBPS collection. In the last week of SBPS, 78.6% of *small* businesses experience an increase in prices relative to 6 months earlier -- evenly divided between shares that saw large increases (40.6%) and moderate increases (38.0%). As a reminder, due to sample differences the data are not directly comparable between the SBPS and BTOS. The ongoing concern about prices is reflected in Figure 1 by the pull of the lines outward in input prices dimension (and to a lesser extent output prices dimension). The index values for prices from smallest to largest are current output (59.7), future output (69.6), current input (77.4), and future input (80.3).

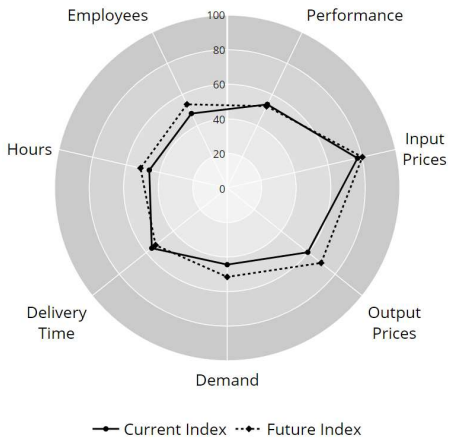


FIGURE 1. NATIONAL AVERAGE

*Note:* BTOS results for 2022.22 (collected 10/24-11/06/2022).

In terms of the underlying responses, 83.1% of businesses have no change in *current* employment, 6.2% have an increase, and 10.7% have a decrease. The more positive outlook is driven by an increase in businesses expecting a *future* increase in employment:

17.5% of businesses expect an increase (10.0% expect a decline and 72.5% expect no change in future employment).

The share of businesses with a response of price decline (either current or future) is so small that variation is essentially a trade-off between increasing or flat prices; thus, we can focus on shares of businesses with price increases (and treat no change as the residual of 100%). 56.5% of businesses have an increase in input prices and 23.3% of businesses have an increase in their own output prices. The share anticipating *future* price increases for inputs is 63.3% and for their own output is 43.3%. Thus, there is a slightly larger future-current price gap for own prices (20 percentage points) than there is for input prices (6.8 percentage points). Perhaps these businesses are anticipating that they will no longer be able to absorb rising input prices.

### *B. Sectoral*

While national employment is back to pre-pandemic levels, this is not the case across all sectors. Two sectors, Finance and Insurance and Accommodation and Food Services, illustrate the uneven impact of the COVID pandemic. At the start of the COVID recession, employment was 6.51 million in Finance and Insurance and 14.5 million in Accommodation and Food Services; these dropped to 6.47 million and 7.6 million respectively at the trough of the recession (BLS(2022a)). Beem et al. (2022) find the exit rate was about double in Accommodation and Food Services early in the pandemic. By the time BTOS collection started, Finance and Insurance employment was back above pre-pandemic levels, but employment in Accommodation and Food Services was still about 1 million lower.

In terms of inflation, businesses in the two sectors faced different experiences with price changes. At the end of the SBPS, 54.0% of businesses in Finance and Insurance and 89.1% in Accommodations and Food Services faced an increase in input prices in the last six months. Moreover, these differences were even more stark for businesses experiencing large price increases: 12.7% in Finance and Insurance and 57.8% in Accommodations and Food Services.

Figures 2 and 3 show the index radars for Finance and Insurance and Accommodations and Food Services respectively. The indices for employment for both sectors show more businesses expect an increase in employment relative to current changes in employment (dashed lines are further out than solid lines). Specifically, the indices for current employment and future employment are 48.6 and 53.8 for Finance and Insurance and 45.8 and 52.0 for Accommodation and Food

Services. The indices for current input prices are higher than for output prices in both sectors and overall are higher for Accommodation and Food Services (82.4 and 63.6) than for Finance and Insurance (71.8 and 58.7). The indices for *future* input prices are higher than the indices for *future* output prices in Accommodation and Food Services (84.0 and 76.2) and Finance and Insurance (74.6 and 63.2). In Accommodation and Food Services, there is a large future-current price gap for own output prices.

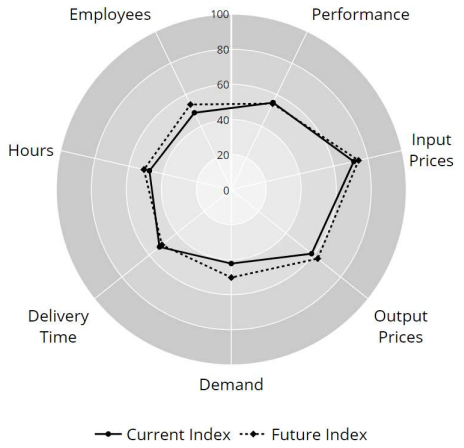


FIGURE 2. FINANCE AND INSURANCE SECTOR

*Note:* BTOS results for 2022.22 (collected 10/24-11/06/2022).

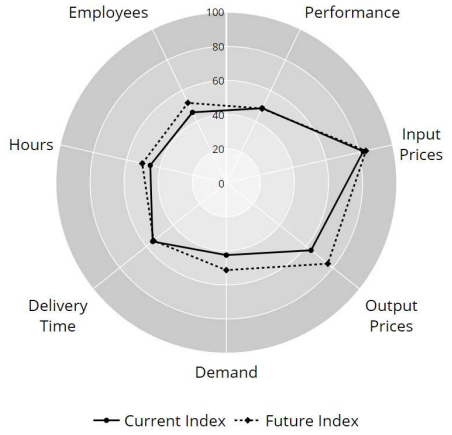


FIGURE 3. ACCOMMODATIONS AND FOOD SERVICES SECTOR

*Note:* BTOS results for 2022.22 (collected 10/24-11/06/2022).

Turning to the response detail for current employment changes, no change dominates in both sectors, but more so in Finance and Insurance (86.6%) than in Accommodations and Food Services (74.4%). 17.0% of businesses in Accommodations and Food Services have a decrease in current employment, as compared to 8.1% in Finance and Insurance. Businesses in both sectors expect more employment change in the future: 16.2% (8.5%) of businesses in Finance and Insurance expect an increase (decrease) and 19.5% (15.6%) of business in Accommodation and Food Services expect an increase (decrease) in employment.

Concerning current prices, similar to the national average results, a larger share of businesses in both sectors have seen an increase input prices than have seen an increase in output prices (but with larger shares for both for Accommodation and Food Services). For businesses in Finance and Insurance, 45.2% have higher current input prices and 20.8% have higher output prices. For businesses in Accommodation and Food Services, 67.0% have higher current input prices and 30.8% have higher current output prices.

In terms of expectations, in both sectors about the same share expect a future input price increase as saw a current price increase but this is not the case for output prices. The gap

between the share of businesses with an increase in current output prices and future output prices is almost 10 percentage points for Finance and Insurance (20.8% versus 30.0%) and more than 20 percentage points for Accommodation and Food Services (30.8% versus 55.5%). Again, this could indicate that businesses in this sector anticipate having to raise their prices to accommodate rising input prices.

## IV. Future Work

Planned innovations to the BTOS are conditional on research and budget support. We hope to expand the scope to include multi-unit firms to produce estimates representative of all employer businesses. Planned research includes activity weighted indices and detailed geographic collections and products during weather or other emergencies. We focus on sectoral variation in this paper, but spatial variation is also important (see Beem et al. (2022) and Decker and Haltiwanger (2022)).

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