

Business Trends and Outlook Survey (BTOS)

10/4/23

Cory Breaux, Business Trends and Outlook Survey Team Lead

Small Business Pulse Survey (SBPS) Recap

From 2020-2022, the SBPS measured the effect of changing business conditions during the coronavirus pandemic. The SBPS complemented existing Census Bureau data by providing detailed, near real-time information on the challenges that small businesses face. The Census Bureau partnered with subject matter experts at other federal agencies for content.



BUSINESS AND ECONOMY

New Small Business Pulse Survey Shows COVID-19 Impact on Businesses

The U.S. Census Bureau's Small Business Pulse Survey yields near real-time economic data on businesses...



BUSINESS AND ECONOMY

Census Survey Shows Shift in Expectations from Spring to Winter

The Small Business Pulse Survey shows a majority of businesses face long-term challenges while others experienced little or no effect from the pandemic.



BUSINESS AND ECONOMY

U.S. Small Businesses Suffer Supply Chain Disruptions

Over 60% of manufacturers responding to the Small Business Pulse Survey saw disruptions in domestic supplies and 39% need to identify new supply options.



BUSINESS AND ECONOMY

Small Business Pulse Survey Reveals Price Increases by Sector

Phase 6 wrapped up October 17 and Phase 7 went into the field November 15. Will Phase 7 show that these economic trends are continuing?



SMALL BUSINESS PULSE SURVEY (SBPS)

BUSINESS TRENDS AND OUTLOOK SURVEY (BTOS)

- SBPS initially created as response to the Coronavirus pandemic
- Concept to publication in 39 days

Goals:
Continue producing near real time data products

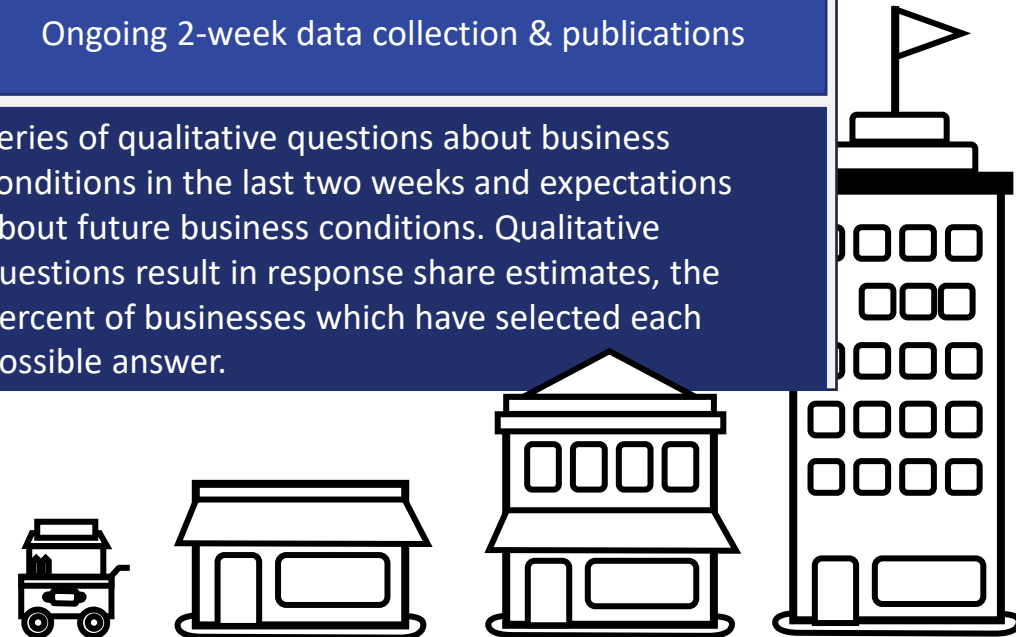
Produce economic pulse

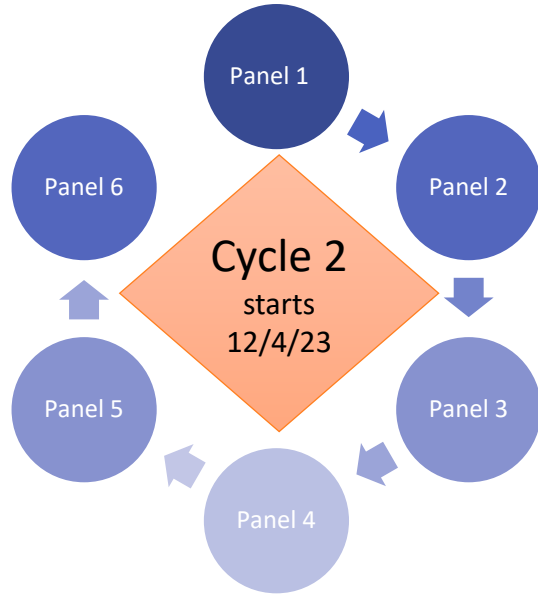
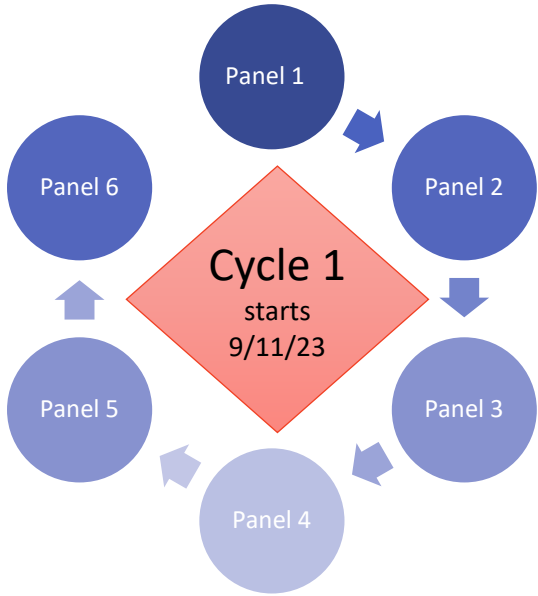
To create BTOS:

- SBPS lessons learned
- Stakeholder feedback
- Leadership strategy

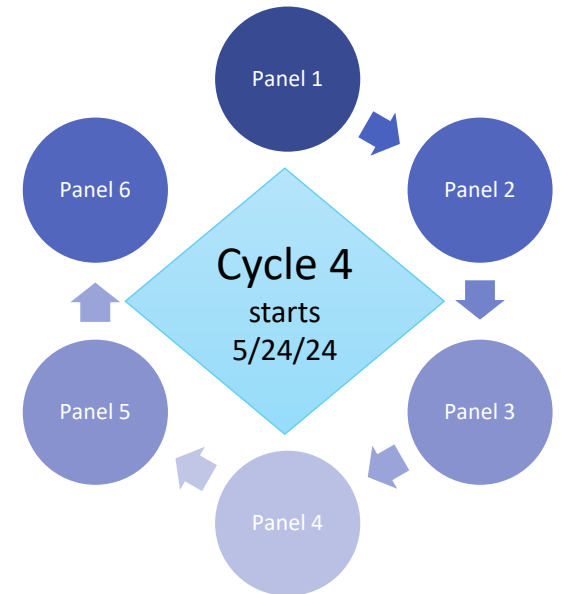
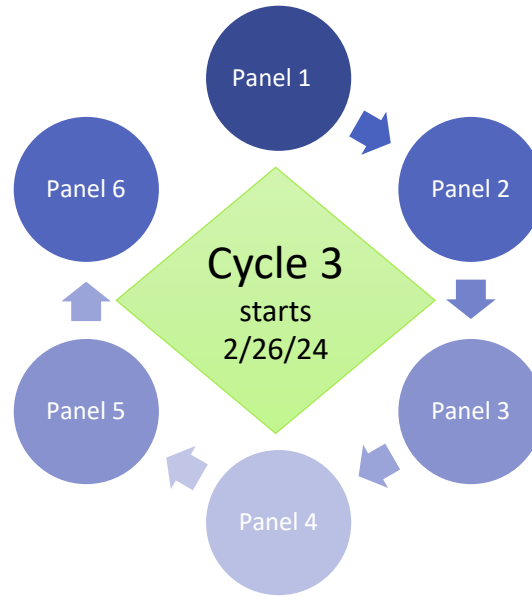
Business Trends and Outlook Survey (BTOS)

Frame	2021 Business Register
Sample	Nonfarm, employer businesses with receipts of \$1,000 in the United States, District of Columbia, and Puerto Rico.
Content	Designed to capture economic norms, impacts of unforeseen events
Data Collection	Mail once then email only. Instrument is Centurion.
Timing	Ongoing 2-week data collection & publications
Data Products	Series of qualitative questions about business conditions in the last two weeks and expectations about future business conditions. Qualitative questions result in response share estimates, the percent of businesses which have selected each possible answer.





- 1.2M sample / 6 bi-weekly panels = Cycle
- Each panel includes two weeks of data collection
- Same companies in panel 1, panel 2, etc.
- Cycle 1 includes a mailed letter
- Cycle 2 receives artificial intelligence supplement



Core Content Vs. Supplemental

Core Criteria

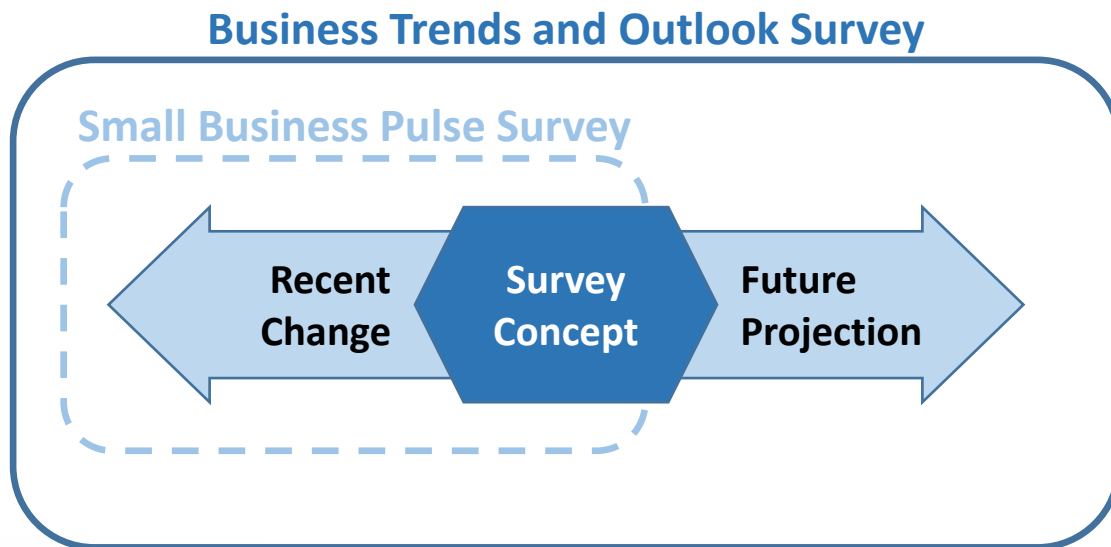
- Complementary to existing key items for other Economic surveys: revenues, employees, inventories
- Occasionally exploratory to determine when content may become a main topic. Evaluation after one year.

Supplement Criteria

- Set of questions relevant to produce an 'economic story'
- Trending in the news / policy interest
- Explore core items with details

BTOS Core Content

- Reused SBPS content where possible
- Expanded to include future projections for many concepts
- External stakeholder feedback used to help prioritize content



Questionnaire Concepts
Overall performance
Revenue
Employment
Hours worked
Artificial Intelligence
Operating status
Inventories
Delivery time
Demand
Output prices
Input prices
Interest Rates
Loss - Weather Event

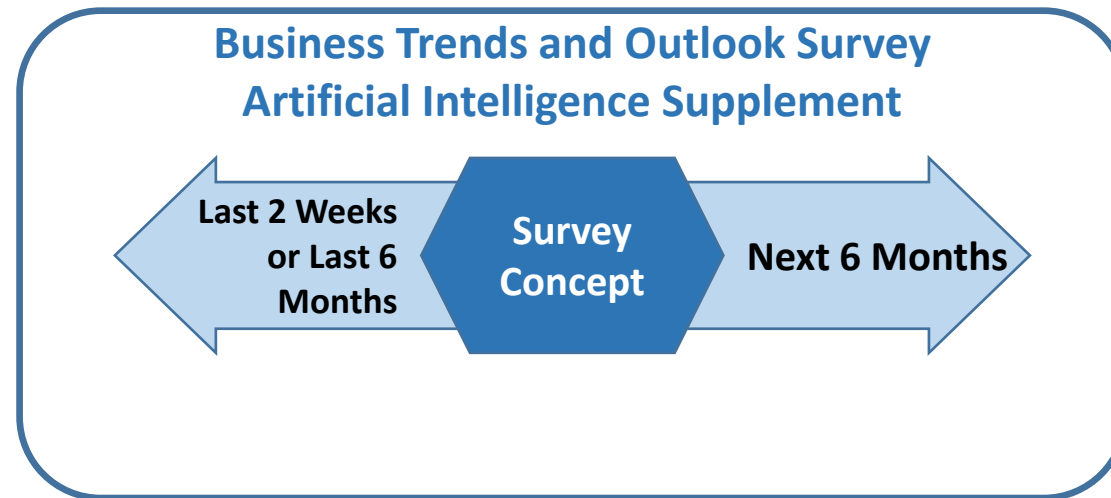
 - Legacy SBPS Concepts

Bold – Future Projections

 - New BTOS content for Sept '23

BTOS Supplemental Content

Artificial Intelligence (AI): Computer systems and software that are able to perform tasks normally requiring human intelligence, such as decision-making, visual perception, speech recognition, and language processing. Types or applications of AI include machine learning, natural language processing, virtual agents, predictive analytics, machine vision, voice recognition, decision making systems, data analytics, text analytics, image processing, etc.



Data Collection

- Multi unit employer businesses added this sample
- Mode: Mail one cycle then email
- Ongoing 2-week data collection periods
- 16% Unit Response Rate (URR) 30% response rate for email
- Conducted through online reporting tool, Centurion

Methodology

- Target population nonfarm employer businesses with receipts of \$1,000 or more that are in the United States, District of Columbia, and Puerto Rico.
- Sample size is ~1.2M, representing 5.8M employer businesses of all sizes
- Yearly sample refresh
- Once in the sample, businesses are asked to respond to the survey once every twelve weeks
- Proportional sample allocation is used (the same percentage of businesses is selected from each stratum)

Data Products

Single Dimension:

- National Average
- State (D.C. and Puerto Rico)
- NAICS Sector
- Sub-sector (NAICS3)
- Top 25 MSA
- Employment Size (6 categories)

	State	Sector	Sub-sector (NAICS3)	Top 25 MSA	Employment Size
State	X	X			X
Sector	X	X			X
Sub-sector (NAICS3)			X		
Top 25 MSA				X	
Employment Size	X	X			X

Multi-Dimension:

- State by Sector
- State by Employment Size
- Sector by Employment Size

BTOS Indexes

$$\text{Index} = (1 * \% \text{ Increasing}) + (0.5 * \% \text{ No Change}) + (0 * \% \text{ Decreasing})$$

$$\text{Index} = (1 * \% \text{ Excellent}) + (0.75 * \% \text{ Above Average}) + (0.5 * \% \text{ Average}) + (0.25 * \% \text{ Below Average}) + (0 * \% \text{ Poor})$$

$$\text{Index} = (1 * \% < 1 \text{ month}) + (0.75 * \% 2 - 3 \text{ months}) + (0.5 * \% 4 - 6 \text{ months}) + (0.25 * \% 7 - 12 \text{ months}) + (0 * \% 12 + \text{ months})$$

	Weight				
	1	0.75	0.5	0.25	0
Current performance	Excellent	Above average	Average	Below average	Poor
Revenues	Increased		No change		Decreased
Employees	Increased		No change		Decreased
Hours	Increased		No change		Decreased
Delivery time	Increased		No change		Decreased
Demand	Increased		No change		Decreased
Output prices	Increased		No change		Decreased
Input prices	Increased		No change		Decreased
Future performance	Excellent	Above average	Average	Below average	Poor
Future employees	Increased		No change		Decreased
Future hours	Increased		No change		Decreased
Future delivery time	Increased		No change		Decreased
Future demand	Increased		No change		Decreased
Future output prices	Increased		No change		Decreased
Future input prices	Increased		No change		Decreased

Data Viz Demo

Questions?

Cory Breaux, BTOS Team Lead

cory.breaux@census.gov

Hyon Shin, Survey Coordination
and Disclosure Avoidance

hyon.b.shin@census.gov

BTOS Resources – External Links

- [BTOS Experimental Data Page](#)
- [BTOS Visualization and Downloads Page](#)
- [BTOS Viz on Interactive Gallery](#)

Appendix: SBPS vs. BTOS

	SBPS	BTOS
Data Collection Frequency	Weekly data collection for 9 weeks with a 4 week break	Continuous two week (biweekly) data collection
Data Publication Frequency	Weekly data publications	Continuous two week (biweekly) data publications
Coverage	Nonfarm Single-Unit businesses with 1-499 employees	Nonfarm Employer businesses
Sample size	Nearly 1 million, split into 9 weekly panels	Approximately 1.2 million, split into 6 biweekly panels
Data Products	Interactive data visualizations, data table downloads	Interactive data visualizations, data table downloads, API access
Topics	Impact of coronavirus pandemic on small businesses. Specifically: overall effect, operations, COVID test/vaccine, challenges/impacts, new norms, finance, and outlook	Economic norms (baseline), unforeseen events and recovery. Specifically: performance, revenue, operating status, employment/hours, hiring difficulties, demand, input/output prices, supply chain delays, e-commerce

Appendix: Accessing More Data

DOWNLOADS AND DOCUMENTATION

Data Download

File	File Type	Date Range
National	XLSX	07/17/2022 to 9/26/2022
Sector	XLSX	07/17/2022 to 9/26/2022
Subsector	XLSX	07/17/2022 to 9/26/2022
Employment size class	XLSX	07/17/2022 to 9/26/2022
Sector by employment size class	XLSX	07/17/2022 to 9/26/2022
State	XLSX	07/17/2022 to 9/26/2022
Top 25 MSA	XLSX	07/17/2022 to 9/26/2022
State by employment size class	XLSX	07/17/2022 to 9/26/2022
State by Sector	XLSX	07/17/2022 to 9/26/2022
URR	XLSX	07/17/2022 to 9/26/2022

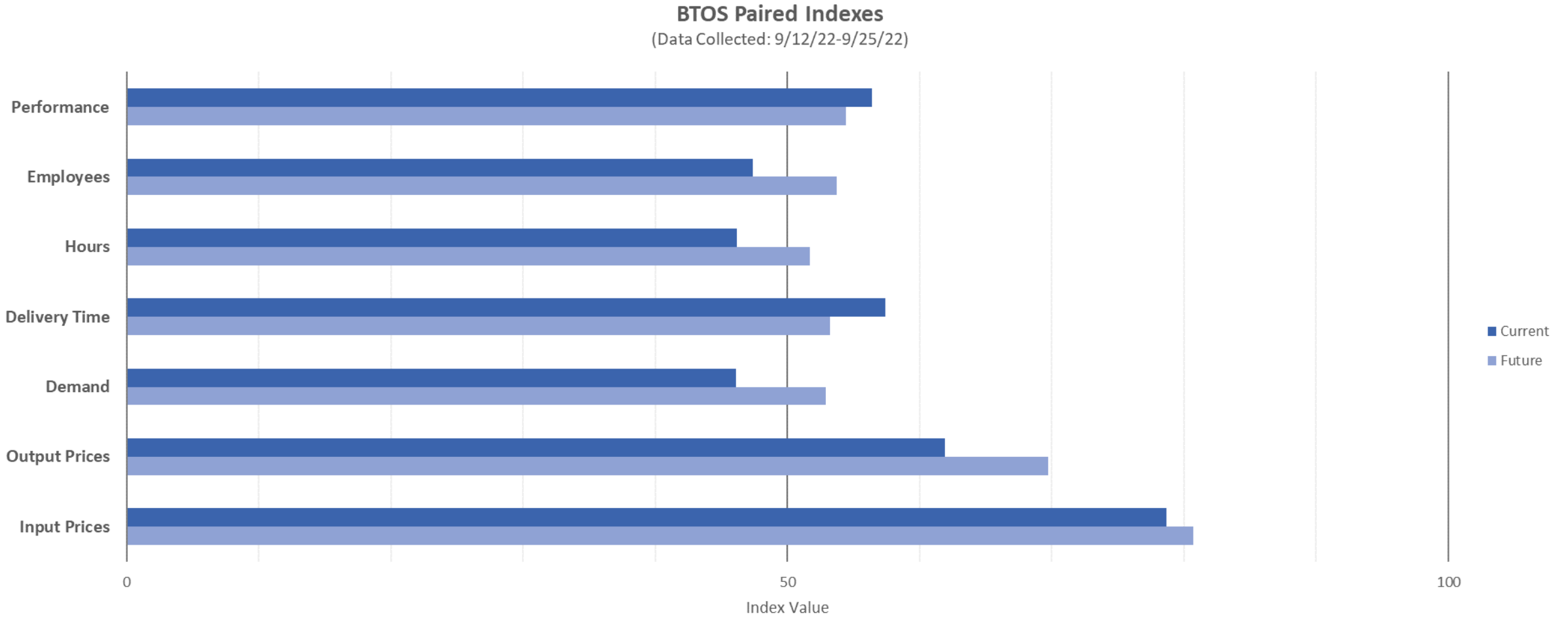
API

API

For your convenience, an API is provided to access data programmatically. No authentication is required, but you may be rate limited.

Method	Path	Description	Example
GET	/hfp/btos/api/periods	Get collection periods.	/hfp/btos/api/periods
GET	/hfp/btos/api/questions	Get all questions.	/hfp/btos/api/questions
GET	/hfp/btos/api/questions/answers	Get all answers joined with questions.	/hfp/btos/api/questions/answers
GET	/hfp/btos/api/periods/{period}/questions	Get questions for a period.	/hfp/btos/api/periods/1/questions
GET	/hfp/btos/api/periods/{period}/questions/answers	Get answers joined with questions for a period.	/hfp/btos/api/periods/1/questions/answers

Appendix: Current/Future Index Pairs



Appendix: Supply Chain Data

Supply Chain Impacts

Did this business have any of the following?

