

E-Commerce Measurement in the U.S. Service Sectors

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E-Commerce Measurement Challenges in the U.S. Service Sectors

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“E-Commerce” to “Revenues from Electronic Sources”

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Measuring Pandemic E-Commerce Activity

**“E-Commerce”
to
“Revenues from Electronic
Sources”**

Redesign of E-Commerce Question – 2017 SAS

A review of e-commerce data prior to 2017 Service Annual Survey (SAS) revealed the need for additional research. Among the observations:

- Differences in definition and measurement of e-commerce differed across sectors
- Company record keeping did not always reflect the distinction between electronic vs. non-electronic sales
- Volatile year-to-year reporting at the micro-level, e.g., firms reporting zero dollars after reporting billions of dollars the year before
- Suspected underreporting

Redesign of E-Commerce Question – 2017 SAS

Based on observations and cognitive testing, the e-commerce question was redesigned in time for the 2017 SAS:

- Question wording was modified
- Term “e-commerce” was replaced with “revenues from electronic sources (RES)”
- Question was expanded from one to three parts to help distinguish the various ways respondents might record their sources of electronic revenue

E-Commerce Question – 2016 SAS

8 E-COMMERCE

E-commerce is the sale of goods and services where the buyer places an order, or the price and terms of the sale are negotiated, over an Internet, mobile device (M-Commerce), extranet, EDI network, electronic mail, or other comparable online system. Payment may or may not be made online.

A. Did this firm have any e-commerce revenue in 2016 or 2015?

Yes

No - Go to 14

B. What was the total e-commerce revenue in 2016 and 2015?

2016				2015			
\$ Bil.	Mil.	Thou.	Dol.	\$ Bil.	Mil.	Thou.	Dol.

E-Commerce Question – 2017 SAS

8 REVENUES FROM ELECTRONIC SOURCES

A. Did this firm have any revenues from customers entering orders directly on the firm's websites or mobile applications in 2017?

0040 Yes

No

B. Did this firm have any revenues from customers entering orders directly on third-party websites or mobile applications in 2017?

0041 Yes

No

C. Did this firm have any revenues from customers entering orders via any other electronic systems (such as private networks, dedicated lines, kiosks, etc.) in 2017?

0042 Yes

No

D. Of the total 2017 revenues reported in 6, what was the dollar amount (or percentage) that was from the revenues identified in A-C above? Please provide an estimate if exact figures are not available. 2500

2017			
\$ Bil.	Mil.	Thou.	Dol.

OR 2501

2017
Percent
%

Redesign of E-Commerce Question – 2017 SAS

Improvements realized from the redesign:

- Revenue for e-commerce activity increased 70.6% between SY16 and SY17
- The portion of e-commerce activity to total revenue was 4.2% in SY16 and 6.8% in SY17

Costs of the redesign:

- E-commerce timeseries was broken in SY17
- New terminology may have introduced confusion among respondents

E-Commerce vs. Revenues from Electronic Sources (RES)

Sector Description	2016		2017	
	Revenue	E-Commerce	Revenue	Revenue from Electronic Sources
Services Total	14,591,111	608,718	15,314,582	1,004,250
Utilities	570,054	4,382	579,413	S
Transportation and Warehousing	875,642	113,880	917,458	182,271
Information	1,497,831	165,237	1,533,690	294,553
Finance and Insurance	4,268,985	142,782	4,498,127	187,818
Real Estate and Rental and Leasing	632,565	27,987	663,749	45,869
Professional, Scientific, and Technical Services	1,726,542	47,009	1,832,281	51,403
Administrative and Support and Waste Management and Remediation Services	872,729	31,648	929,684	60,150
Educational Services	64,306	7,508	67,753	10,809
Health Care and Social Assistance	2,427,731	1,828	2,541,261	8,635
Arts, Entertainment, and Recreation	250,250	10,931	265,506	24,145
Accommodation and Food Services	886,463	40,592	929,087	72,785
Other Services (except Public Administration)	518,013	14,934	556,573	31,559

2016 Service Annual Survey: Table 9. Estimated E-Commerce Revenue for Employer Firms: 2011 Through 2016

2017 Service Annual Survey: Table 9. Estimated Revenue from Electronic Sources for Employer Firms: 2015 Through 2017

S – Estimate does not meet publication standards because of high sampling variability, poor response quality, or other concerns about the estimate's quality.

All estimates are presented in millions of U.S. dollars (\$).

(Approval ID: CBDRB-FY21-256)

Revenues from Electronic Sources (RES) 2017 - 2019

Sector Description	Revenue from Electronic Sources		
	2017	2018	2019
Services Total	1,038,352	1,144,947	1,350,529
Utilities	S	S	S
Transportation and Warehousing	181,382	181,102	192,627
Information	326,989	360,486	479,850
Finance and Insurance	184,975	219,182	247,297
Real Estate and Rental and Leasing	44,354	50,154	54,127
Professional, Scientific, and Technical Services	62,742	70,313	80,929
Administrative and Support and Waste Management and Remediation Services	60,513	66,321	70,668
Educational Services	S	S	S
Health Care and Social Assistance	S	S	S
Arts, Entertainment, and Recreation	31,692	36,854	42,413
Accommodation and Food Services	92,405	106,288	124,621
Other Services (except Public Administration)	30,924	34,889	37,047

2020 Service Annual Survey: Table 9. Estimated Revenue from Electronic Sources for Employer Firms: 2015 Through 2020
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Redesign of E-Commerce Question – 2017 SAS

Ongoing challenges around the collection and publication of e-commerce data:

- Disparities in industry concentration
 - In concentrated industries where the aggregated industry total is heavily influenced by the accuracy and compliance from only a handful of companies, poor reporting has a greater impact on the reliability of the data
- Few opportunities to validate reporting
 - No administrative data
 - Limited additional sources of micro-level data to reconcile
- Infeasibility in tracking RES by NAICS/industry

Revenues from Electronic Sources (RES) 2019 - 2020

There were no methodology nor collection changes to the SAS RES questionnaire during SY19 or SY20:

- Preserving the time series is important
- Insufficient time to conduct proper research or cognitive testing
- Tweaking of question content did not align with standardization efforts across multiple annual surveys

Revenues from Electronic Sources (RES) 2019 - 2020

Sector Description	2019		2020	
	Revenue	Revenue from Electronic Sources	Revenue	Revenue from Electronic Sources
Services Total	16,999,369	1,350,529	16,668,151	1,362,639
Utilities	599,220	S	580,647	S
Transportation and Warehousing	1,070,520	192,627	919,668	120,181
Information	1,755,214	479,850	1,791,438	525,031
Finance and Insurance	4,854,315	247,297	4,959,947	S
Real Estate and Rental and Leasing	756,268	54,127	730,742	57,700
Professional, Scientific, and Technical Services	2,077,668	80,929	2,143,768	116,797
Administrative and Support and Waste Management and Remediation Services	1,090,944	70,668	1,042,582	51,463
Educational Services	72,812	S	67,793	14,731
Health Care and Social Assistance	2,786,127	S	2,828,912	S
Arts, Entertainment, and Recreation	296,444	42,413	210,185	23,646
Accommodation and Food Services	1,040,970	124,621	807,086	126,063
Other Services (except Public Administration)	598,867	37,047	585,383	36,822

2020 Service Annual Survey: Table 9. Estimated Revenue from Electronic Sources for Employer Firms: 2015 Through 2020

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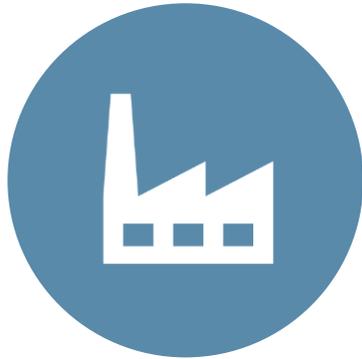
E-Commerce Standardization

Services Timeseries Preservation

No current plan to adapt RES for new e-commerce environment:

- Timeseries was already broken between SY16 and SY17
- Stakeholders value year-to-year comparisons
- Planning an E-commerce standardization effort across additional programs as part of the Annual Integrated Economic Survey (AIES)

Current Collection and Publication Activities – E-Commerce



**Annual Survey of
Manufactures**
(ASM)



**Annual Retail
Trade Survey**
(ARTS)



**Annual Wholesale
Trade Survey**
(AWTS)



**Service Annual
Survey**
(SAS)

Current Collection and Publication Activities – E-Commerce

	ASM - Manufacturing	ARTS - Retail	AWTS - Wholesale	SAS - Services
Sample Frame	Establishments	Employer Firms	Employer Firms	Employer Firms
E-Commerce Language	<p>What percent of the \$,000.00 reported in Item 5, line A was for goods that were ordered or whose movement was controlled or coordinated over electronic networks? (Report whole percent.)</p> <p>E-shipments are online orders accepted for manufactured products from customers. These include shipments to other domestic plants of your own company for further manufacture, assembly, or fabrication. The price and terms of sale for these shipments are negotiated over an online system. Payment may or may not be made online.</p>	<p>E-commerce is the sale of goods and services where the buyer places an order, or the price and terms of the sale are negotiated, over an Internet, mobile device (M-Commerce), extranet, EDI network, electronic mail, or other comparable online system. Payment may or may not be made online.</p>	<p>E-commerce is the sale of goods and services where the buyer places an order, or the price and terms of the sale are negotiated, over an Electronic Data Interchange (EDI), the Internet, mobile device (M-Commerce), or any other online system. Payment may or may not be made online.</p>	<p>Did this firm have any revenues from customers entering orders directly on the firm's websites or mobile applications in 2021?</p> <p>Did this firm have any revenues from customers entering orders directly on third-party websites or mobile applications in 2021?</p> <p>Did this firm have any revenues from customers entering orders via any other electronic systems (such as private networks, dedicated lines, etc.) in 2021?</p>

Measuring Pandemic E-Commerce Activity

Small Business Pulse Survey



- Experimental data product created as a response to the COVID-19 pandemic
- A weekly survey to measure the effect of changing business conditions on the U.S. small businesses during the COVID-19 pandemic



- Conducted in eight phases, each consisting of around 20 questions
- Per phase, the survey reached approximately 1M small businesses
- Data collection commenced one month after the World Health Organization declared COVID-19 a global pandemic. Concept to publication in 39 days
- Timeline April 2020 – April 2022



- Three questions involving e-commerce activity were asked as part of the Small Business Pulse Survey

Small Business Pulse Survey – Online Platforms



Since March 13, 2020, has there been an increase in this business's use of online platforms to offer goods or services?

- Yes
- No
- This business does not use online platforms to offer goods or services

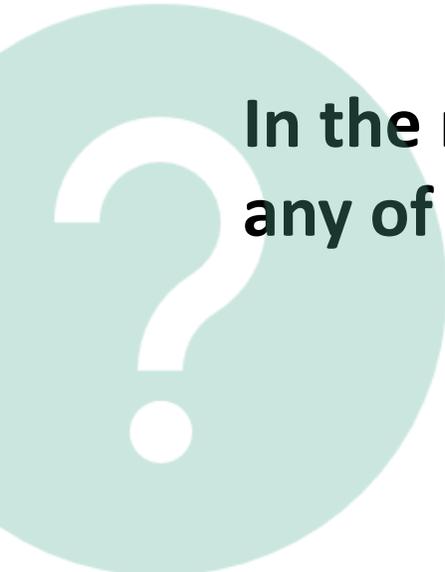
Small Business Pulse Survey – Change in Business Practices



Comparing now to what was normal before March 13, 2020, has this business done any of the following? Select all that apply:

- *Adopted or expanded use of digital technologies*
- Changed management practices
- Changed business strategies
- Introduced new goods or services
- Improved existing goods or services
- Improved methods of producing goods or services
- Improved methods of logistics, delivery, or distribution
- This business has not made any of these changes

Small Business Pulse Survey – Future Plans

 In the next six months, do you think this business will need to do any of the following?

- Obtain financial assistance or additional capital
- Identify new supply chain options
- ***Develop online sales or websites***
- Increase marketing or sales
- Identify and hire new employees
- Make a capital expenditure
- Cancel or postpone a planned capital expenditure
- Identify potential markets for exporting goods or services
- Permanently close this business
- None of the above

Small Business Pulse Survey - Publications



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

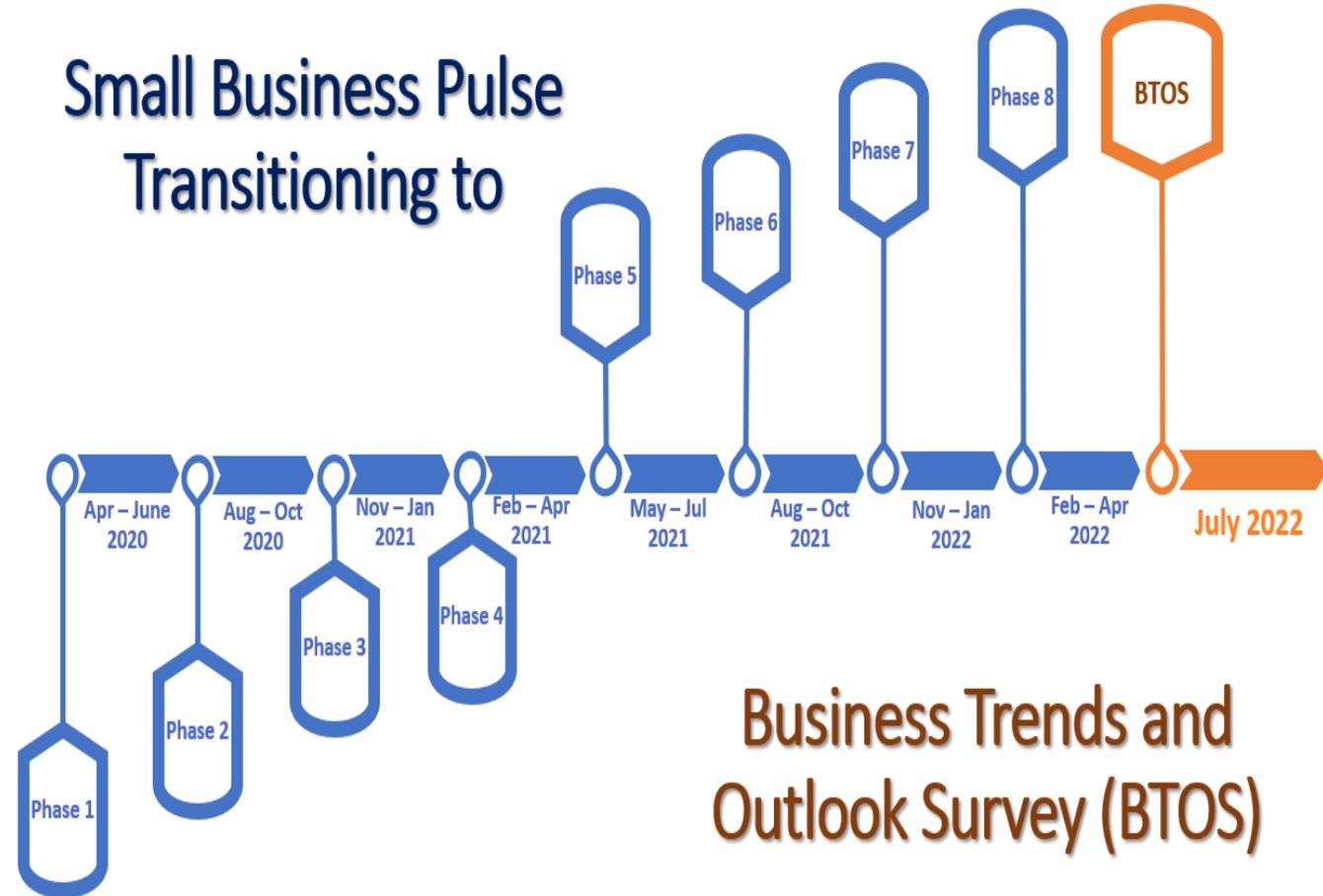
Small Business Pulse Survey Reveals Price Increases by Sector

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?



Business Trends and Outlook Survey

- Launched in July 2022 as the successor to the Small Business Pulse Survey (SBPS)
- Created from SBPS lessons learned, stakeholder feedback, and leadership strategy
- Continue design of content aimed at capturing economic baseline norms, unforeseen events, and recovery
- E-commerce will remain as one of the key concepts indexed



Questions and Considerations for the Future

- Will the increase in business participation of e-commerce translate into better reporting?
- Will the current confusion over e-commerce definitions and in-scope vs. out-of-scope activities lessen with the increase in e-commerce savviness?
- What data will best inform stakeholders and data users? What would they find most useful?
- Are there new or emerging economic frontiers which would benefit from the collection and publication of e-commerce data?
- How can we merge e-commerce business data with similar demographic data to present the most comprehensive understanding of e-commerce?

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