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QUARTERLY RETAIL E-COMMERCE SALES
## 2nd QUARTER 2020

> **Statement Regarding COVID-19 Impact:** Due to recent events surrounding COVID-19, many businesses are operating on a limited capacity or have ceased operations completely. The Census Bureau has monitored response and data quality and determined estimates in this meet publication standards. For more information on the complication of this quarter's report, see <COVID-19 FAQs>.

The Census Bureau of the Department of Commerce announced today that the estimate of U.S. retail e-commerce sales for the second quarter of 2020, adjusted for seasonal variation, but not for price changes, was $211.5 billion, an increase of 31.8 percent (±1.2%) from the first quarter of 2020. Total retail sales for the second quarter of 2020 were estimated at $1,311.0 billion, a decrease of 3.9 percent (±0.4%) from the first quarter of 2020. The second quarter 2020 e-commerce estimate increased 44.5 percent (±1.9%) from the second quarter of 2019 while total retail sales decreased 3.6 percent (±0.5%) in the same period. E-commerce sales in the second quarter of 2020 accounted for 16.1 percent of total sales.

On a not adjusted basis, the estimate of U.S. retail e-commerce sales for the second quarter of 2020 totaled $200.7 billion, an increase of 37.0 percent (±1.2%) from the first quarter of 2020. The second quarter 2020 e-commerce estimate increased 44.4 percent (±1.9%) from the second quarter of 2019 while total retail sales decreased 3.4 percent (±0.5%) in the same period. E-commerce sales in the second quarter of 2020 accounted for 15.1 percent of total sales.

Estimated Quarterly U.S. Retail E-commerce Sales as a Percent of Total Quarterly Retail Sales: 1st Quarter 2011 – 2nd Quarter 2020
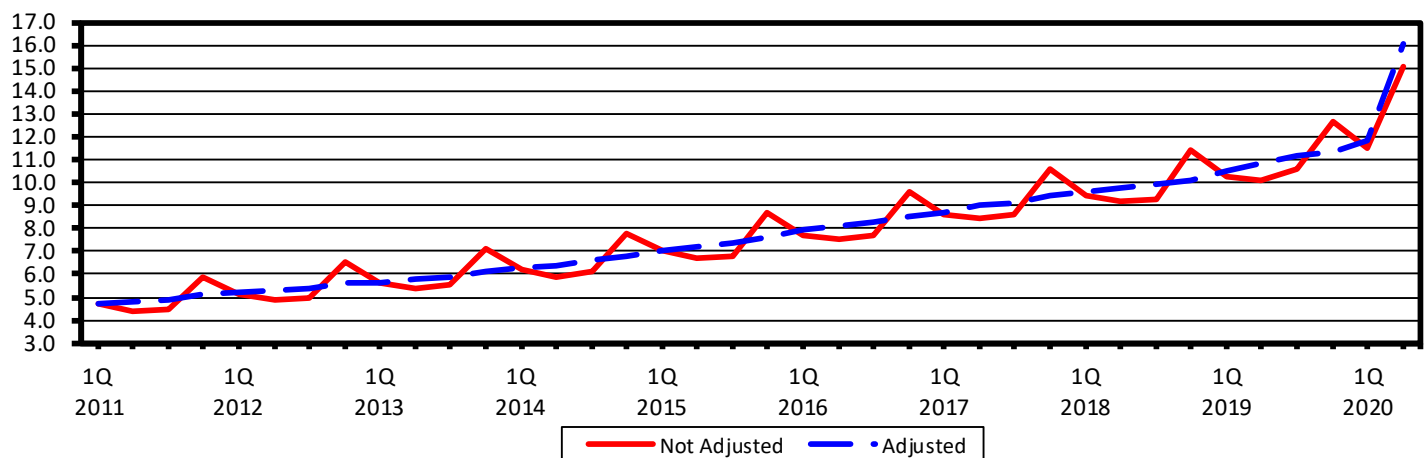
The Quarterly Retail E-Commerce sales estimate for the third quarter of 2020 is scheduled for release on November 19, 2020 at 10:00 A.M. EST.

For information, including estimates from 4th quarter 1999 forward, visit the Census Bureau's Web site at <http://www.census.gov/retail>. For additional information about Census Bureau e-business measurement programs and plans visit <https://www.census.gov/programs-surveys/e-stats.html>.

* *The 90% confidence interval includes zero. The Census Bureau does not have sufficient statistical evidence to conclude that the actual change is different from zero.*

Table 1.   **Estimated Quarterly U.S. Retail Sales: Total and E-commerce[1]**
(Estimates are based on data from the Monthly Retail Trade Survey and administrative records.)

Quarter	Retail Sales (millions of dollars)		E-commerce as a Percent of Total	Percent Change From Prior Quarter		Percent Change From Same Quarter A Year Ago	
	Total	E-commerce	Total	Total	E-commerce	Total	E-commerce
Adjusted[2]							
2nd quarter 2020(p)	1,310,973	211,505	16.1	-3.9	31.8	-3.6	44.5
1st quarter 2020(r)	1,364,197	160,414	11.8	-1.2	2.4	2.1	14.8
4th quarter 2019	1,381,250	156,581	11.3	0.5	2.2	3.9	16.6
3rd quarter 2019	1,374,212	153,274	11.2	1.1	4.7	3.9	17.3
2nd quarter 2019(r)	1,359,250	146,394	10.8	1.8	4.8	3.2	13.8
Not Adjusted							
2nd quarter 2020(p)	1,331,384	200,720	15.1	4.6	37.0	-3.4	44.4
1st quarter 2020(r)	1,273,055	146,539	11.5	-12.8	-21.1	2.9	14.6
4th quarter 2019	1,459,855	185,700	12.7	6.0	27.7	4.1	16.3
3rd quarter 2019	1,376,996	145,474	10.6	0.0	4.7	4.4	18.0
2nd quarter 2019	1,377,667	138,956	10.1	11.3	8.7	3.5	13.9

(p) Preliminary estimate. (r) Revised estimate.

[1] E-commerce sales are sales 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, Electronic Data Interchange (EDI) network, electronic mail, or other comparable online system. Payment may or may not be made online.
[2] Estimates are adjusted for seasonal variation, but not for price changes. Total sales estimates are also adjusted for trading-day differences and moving holidays.

Note: Table 2 provides estimated measures of sampling variability. For information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions, see http://www.census.gov/retail/mrts/how_surveys_are_collected.html.

Table 2.   **Estimated Measures of Sampling Variability for Quarterly U.S. Retail Sales Estimates: Total and E-commerce**
(Estimates are shown as percents and are based on data from the Monthly Retail Trade Survey.)

Quarter	Coefficient of Variation (CV)		Standard Error (SE) for E-commerce as a Percent of Total	SE for Percent Change From Prior Quarter		SE for Percent Change From Same Quarter A Year Ago	
	Total	E-commerce		Total	E-commerce	Total	E-commerce
2nd quarter 2020(p)	0.7	1.4	0.2	0.2	0.7	0.3	1.1
1st quarter 2020(r)	0.5	1.7	0.2	0.1	0.6	0.2	1.0
4th quarter 2019	0.5	1.5	0.2	0.1	0.4	0.2	0.6
3rd quarter 2019	0.5	1.4	0.1	0.1	0.2	0.2	0.8
2nd quarter 2019(r)	0.4	1.5	0.1	0.1	0.5	0.3	0.9

(p) Preliminary estimate. (r) Revised estimate. (Z) Estimate is less than 0.05%.

Note: Estimated measures of sampling variability are based on data not adjusted for seasonal variation, trading-day differences, or moving holidays, and are used to make confidence statements about both adjusted and not adjusted estimates. For information on confidentiality protection, sampling error, nonsampling error, sample design, and definitions, see http://www.census.gov/retail/mrts/how_surveys_are_collected.html.

Survey Description

Retail e-commerce sales are estimated from the same sample used for the Monthly Retail Trade Survey (MRTS) to estimate preliminary and final U.S. retail sales. Advance U.S. retail sales are estimated from a subsample of the MRTS sample that is not of adequate size to measure changes in retail e-commerce sales.

A stratified simple random sampling method is used to select approximately 10,800 retail firms excluding food services whose sales are then weighted and benchmarked to represent the complete universe of over two million retail firms. The MRTS sample is probability based and represents all employer firms engaged in retail activities as defined by the North American Industry Classification System (NAICS). Coverage includes all retailers whether or not they are engaged in e-commerce. Online travel services, financial brokers and dealers, and ticket sales agencies are **not** classified as retail and are **not** included in either the total retail or retail e-commerce sales estimates. Nonemployers are represented in the estimates through benchmarking to prior annual survey estimates that include nonemployer sales based on administrative records. E-commerce sales are included in the total monthly sales estimates.

The MRTS sample is updated on an ongoing basis to account for new retail employer businesses (including those selling via the Internet), business deaths, and other changes to the retail business universe. Firms are asked each month to report e-commerce sales separately. For each month of the quarter, data for nonresponding sampling units are imputed from responding sampling units falling within the same kind of business and sales size category or based on historical performance of that company. Responding firms account for approximately 67 percent of the e-commerce sales estimate and about 72 percent of the estimate of U.S. retail sales for any quarter.

For each month of the quarter, estimates are obtained by summing weighted sales (either reported or imputed). The monthly estimates are benchmarked to prior annual survey estimates. Estimates for the quarter are obtained by summing the monthly benchmarked estimates. The estimate for the most recent quarter is a preliminary estimate. Therefore, the estimate is subject to revision. Data users who create their own estimates using data from this report should cite the Census Bureau as the source of the input data only.

Adjusted Estimates

This report publishes estimates that have been adjusted for seasonal variation and holiday and trading-day differences, but not for price changes. We used quarterly e-commerce sales estimates for 4th quarter 1999 to the current quarter as input to the X-13ARIMA-SEATS program to derive the adjusted estimates. For sales, we derived quarterly adjusted estimates by summing adjusted monthly sales estimates for each respective quarter. Seasonal adjustment of estimates is an approximation based on current and past experiences.

The X-13ARIMA-SEATS software improves upon the X-12 ARIMA seasonal adjustment software by providing enhanced diagnostics as well as incorporating an enhanced version of the Bank of Spain's SEATS (Signal Extraction in ARIMA Time Series) software, which uses an ARIMA model-based procedure instead of the X-11 filter-based approach to estimate seasonal factors. The X-13ARIMA-SEATS and X-12 ARIMA software produce identical results when using X-13ARIMA-SEATS with the X-11 filter-based adjustments. The X-13ARIMA-SEATS software and additional information on the X-13ARIMA-SEATS program may be found at http://www.census.gov/srd/www/x13as/.

Note that the retail estimates continue to be adjusted using the X-11 filter-based adjustment procedure.

Reliability of Estimates

Because the estimates in this report are based on a sample survey, they contain sampling error and nonsampling error.

Sampling error is the difference between the estimate and the result that would be obtained from a complete enumeration of the population conducted under the same survey conditions. This error occurs because only a subset of the entire population is measured in a sample survey. Standard errors and coefficients of variation, as given in Table 2 of this report, are estimated measures of sampling variation.

The margin of error, as used on page 1, gives a range about the estimate which is a 90 percent confidence interval. If, for example, the estimated percent change is -11.4% and its estimated standard error is 1.2%, then the margin of error is ±1.753 x 1.2% or 2.1%, and the 90 percent confidence interval is -13.5% to -9.3%. Confidence intervals are computed based on the particular sample selected and canvassed. If one repeats the process of drawing all possible samples and forming all corresponding confidence intervals, approximately 90 percent of these individual confidence intervals would contain the estimate computed from a complete enumeration of all units on the sampling frame. If the confidence interval contains 0%, then one does not have sufficient evidence to conclude at the 90 percent confidence level that the change is different from zero.

Nonsampling error encompasses all other factors that contribute to the total error of a sample survey estimate. This type of error can occur because of nonresponse, insufficient coverage of the universe of retail businesses with e-commerce sales, mistakes in the recording and coding of data, and other errors of collection, response, coverage, or processing. Although not directly measured, precautionary steps are taken to minimize the effects of nonsampling error.

Introduction of the United States Census Bureau's New Supplemental Quarterly E-Commerce Data Product[1]

1 Introduction

A dynamic retail economy garners great attention every day as it evolves to meet consumers' changing needs and to adapt to emerging technologies. The evolution of e-commerce is a particularly noteworthy topic to retail industry experts, analysts, policymakers, and consumers. As a result, there is increased interest in the Census Bureau's retail data products that measure the e-commerce component of the retail economy. In order to meet the needs of its data users, the United States Census Bureau has made it a priority to:

1. Evaluate the current definition of e-commerce.
2. Produce additional e-commerce data products where quality standards and resources allow.

The first priority is a long-term goal. A group of Census Bureau retail and classification subject matter experts are working with retail industry experts to better understand how different retail industry stakeholders—be it retailers, real estate developers, financial institutions, or retail trade groups, among others—define and track e-commerce.

The second priority is a short-term goal. A Census Bureau E-Commerce Data Analysis Team was tasked with researching the feasibility of using already collected data to produce one or more supplemental e-commerce tables. These tables would be published in conjunction with the Quarterly E-Commerce Report. The Census Bureau currently produces the following e-commerce data products on a monthly or quarterly basis:

- On a monthly basis, the Monthly Retail Trade Report includes estimates for companies classified by the North American Industry Classification System (NAICS) as Nonstore Retailers (NAICS 454) and a subset of those companies in NAICS 4541 called Electronic Shopping and Mail-Order Houses. However, other retailers that may not be conducting e-commerce, including electronic auctions and mail-order houses, are also included in these estimates.
- On a quarterly basis, the Quarterly E-Commerce Report is published. This report provides a single quarterly estimate measuring all retail e-commerce sales captured by the Monthly Retail Trade Survey (MRTS).

The purpose of this document is to share the findings of the work done on the second priority. Using existing MRTS data, a quarterly supplemental e-commerce table has been developed to provide more granular e-commerce sales estimates.

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[1] The Census Bureau has reviewed this data product for unauthorized disclosure of confidential information and has approved the disclosure avoidance practices applied. (Approval ID: CBDRB-FY19-EID-B00004z)

2 Overview of Census Retail Programs

The retail trade program currently covers retail companies as defined by NAICS and represents all retail companies (NAICS Sector 44-45) with and without paid employees. These retail businesses may be large retailers with many store locations, single-unit retailers with only one location, or retailers operating solely as e-commerce businesses.

The Census Bureau measures the retail economy every five years in the Economic Census and on a more frequent basis in monthly and annual surveys. In years ending in "2" and "7", the Economic Census asks for detailed sales and product-level information as well as employment and payroll and business characteristics for each physical store location that a retailer operates. Response to the Economic Census is mandatory and the data collected are used to update the Census Bureau's Business Register from which the sampling frames for many Economic Directorate surveys—including the annual and monthly retail trade surveys—are created. Each year, the Annual Retail Trade Survey (ARTS) collects data at the company or retailer level nationally; no store location data are collected. The ARTS collects annual sales, e-commerce sales, end-of-year inventories, and expenses data as well as some retailer characteristics; the annual data are released approximately 15 months after the data year ends.

The MRTS is a voluntary survey conducted at the retailer or company level and collects sales/receipts as well as end-of-month inventories and e-commerce sales from all retail industries. Estimates from this survey are released approximately six weeks after month's end.

The MRTS is a subsample of the ARTS and a selection of the MRTS sample occurs approximately every five years to ensure the sample remains representative and to redistribute the burden for small and mid-size businesses. A stratified simple random sampling method is used to select approximately 10,800 retail firms whose sales are then weighted and benchmarked to represent the complete universe of retail firms. The MRTS sample is probability based and represents all employer firms engaged in retail activities as defined by NAICS. Coverage includes all retailers whether or not they are engaged in e-commerce. Online travel services, financial brokers and dealers, and ticket sales agencies are not classified as retail and are not included in either the total retail or retail e-commerce sales estimates. Nonemployers are represented in the estimates through benchmarking to prior annual survey estimates that include nonemployer sales based on administrative records and imputation and e-commerce sales through imputation. E-commerce sales are included in the total monthly sales estimates.

The MRTS sample is updated on an ongoing basis to account for new retail employer businesses (including those selling via the Internet), business deaths, and other changes to the retail business universe. Firms are asked each month to report e-commerce sales separately. For each month of the quarter, data for nonresponding companies are imputed from responding companies falling within the same kind of business and sales size category. Responding firms account for approximately 67 percent of the e-commerce sales estimate and about 72 percent of the estimate of U.S. retail sales for any quarter.

Retailers are sampled by primary kind-of-business as classified by NAICS code. However, if a retailer engages in more than one kind-of-business (e.g, food and beverage stores, general

merchandise stores, etc), it can have more than one tabulation part. This means that a company contributes to estimates of each of the different kinds-of-business it conducts. Note that in general, companies with a tabulation part in NAICS 4541 may have multiple kinds of brick-and-mortar businesses, but all e-commerce sales are reported under one NAICS 4541 part.

Retail e-commerce sales are estimated from the same sample used for the MRTS to estimate preliminary and final U.S. retail sales.

3 Project Objective

The core objective of the E-Commerce Data Analysis Team is to analyze existing e-commerce data and determine if the data and data quality would allow for publishing more granular e-commerce sales.[2]

This effort mimics the effort that led to the publication of an annual supplemental e-commerce table released as part of the 2015 Annual Retail Trade Survey (ARTS). ARTS has long published a table that contains total sales and total e-commerce sales for each 3-digit NAICS code.

Figure 1 shows an example of this annual data presentation for 2016 and 2017.

NAICS Code	Kind of Business	2017		2016ʳ	
		Total	E-commerce	Total	E-commerce
	Total Retail Trade	**5,046,894**	**461,034**	**4,851,774**	**397,307**
441	Motor vehicle and parts dealers	1,174,417	34,273	1,142,261	31,913
442	Furniture and home furnishings stores	113,783	1,335	110,695	1,122
443	Electronics and appliance stores	99,401	2,078	99,297	1,954
444	Building mat. and garden equip. and supplies dealers	365,651	2,583	349,372	2,260
445	Food and beverage stores	725,915	3,802	699,362	2,435
446	Health and personal care stores	333,219	S	327,031	D
447	Gasoline stations	452,856	S	418,684	D
448	Clothing and clothing access. stores	258,472	9,898	259,840	8,854
451	Sporting goods, hobby, musical instrument, and book stores	84,264	2,423	86,562	2,288
452	General merchandise stores	683,854	453	675,374	362
453	Miscellaneous store retailers	125,500	4,053	121,740	3,766
454	Nonstore retailers	629,562	399,178	561,556	341,430
4541	Electronic shopping and mail-order houses	552,214	397,490	488,619	339,928

D - Denotes an estimate withheld to avoid disclosing data of individual companies; data are included in higher-level totals; S – Suppressed
Figure 1: Estimated Annual U.S. Retail Trade Sales - Total and E-commerce: 2016-2017
Estimates are shown in millions of dollars and are based on data from the Annual Retail Trade Survey.
Source: https://www2.census.gov/programs-surveys/arts/tables/2017/ecommerce.xls

In recent years, data users have requested more detailed e-commerce sales information. In 2017, ARTS introduced a new supplemental e-commerce table that is now included as part of its annual publication. This data product uses existing data collected from nonstore retailers in

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[2] Information on the history of the existing E-Commerce definition and measurements can be found in Thomas L. Mesenbourg's *Measuring the Digital Economy* working paper. Working paper available here:
https://www.census.gov/content/dam/Census/library/working-papers/2001/econ/umdigital.pdf

NAICS 4541 and further breaks out that data by primary kind-of-business for those nonstore retailers.

If a company operates in more than one industry, it is asked to report for each industry separately. This allows the company's data to be tabulated in the correct industries.[3] When a company has a large e-commerce segment—typically with separate warehousing facilities— ARTS considers this a separate industry from the company's brick-and-mortar NAICS classifications. Appendix A provides examples of how these types of company structures are created and tabulated in retail and e-commerce sales estimates.

For companies with separate store and e-commerce components as described above, the supplemental e-commerce table reallocates the sales of the NAICS 4541 component to the primary business activity (3-digit NAICS code) of the company. 'Primary business activity' refers to the 3-digit NAICS code having the most sales for the company when the sample was selected. For example, consider two separate companies (Company A and Company B) that both have a brick-and-mortar component (NAICS code 448110, which is Men's Clothing Stores) and an e-commerce component (NAICS code 454111, which is Electronic Shopping). When the sample was selected, the majority of Company A's sales were under NAICS code 448110. Consequently, the primary business activity of Company A is 448, and the sales of the NAICS 4541 component of Company A are under 448 in the supplemental table. Conversely, when the sample was selected, the majority of Company B's sales were under NAICS code 454111. Thus, for Company B, the primary business activity is 454, and the sales of the NAICS 4541 component of Company B are under 454 in the supplemental table. Companies without a brick-and-mortar component remain classified under NAICS 454. Figure 2 shows an example of this annual data presentation for 2016 and 2017.

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[3] Note that this only refers to operating different types of stores, not to selling multiple types of products within a single type of store.

NAICS Code of Primary Business Activity[3]	Kind of Business	2017		2016[r]	
		Total	E-commerce	Total	E-commerce
	Total Electronic Shopping and Mail-Order Houses	**552,214**	**397,490**	**488,619**	**339,928**
441	Motor vehicle and parts dealers	530	528	496	496
442	Furniture and home furnishings stores	8,214	7,756	7,275	6,878
443	Electronics and appliance stores	30,791	30,762	25,639	25,627
444	Building material and garden equipment and supplies dealers	D	10,363	D	7,542
445	Food and beverage stores	1,531	1,400	1,476	1,358
446	Health and personal care stores	D	3,722	D	3,296
447	Gasoline stations	ZZ	ZZ	ZZ	ZZ
448	Clothing and clothing accessories stores	25,206	24,778	23,635	23,176
451	Sporting goods, hobby, musical instrument, and book stores	5,949	5,548	5,959	5,634
452	General merchandise stores	D	31,744	27,477	27,167
453	Miscellaneous store retailers	D	11,518	D	10,154
454	Nonstore retailers	371,757	269,371	329,381	228,600

D - Denotes an estimate withheld to avoid disclosing data of individual companies; data are included in higher-level totals. ZZ - Estimate is less than $500,000.

Figure 2: Supplemental Estimated Annual Sales for U.S. Electronic Shopping and Mail-Order Houses (NAICS 4541) - Total and E-commerce Sales by Primary Business Activity: 2016-2017 Estimates are shown in millions of dollars and are based on data from the Annual Retail Trade Survey.

Source: https://www2.census.gov/programs-surveys/arts/tables/2017/supecommerce4541.xls

4 New Supplemental Quarterly E-Commerce Table

After the annual supplemental table was published, data users expressed the usefulness of this new table but requested that the estimates in the table be published on a more frequent basis: either monthly or quarterly. The E-Commerce Data Analysis Team initially replicated the tables displayed in Figures 1 and 2 at a quarterly frequency using existing monthly retail sales data collected by the Monthly Retail Trade Survey.[4] The Team used the same methodology in creating these tabulations that was employed by ARTS. When these tables were created, numerous sales estimates required suppression due to disclosure protections and data quality concerns. For many survey data products, including the retail surveys, the current quality practice is to suppress as follows:

- If 50% or more of the estimate is imputed, the data should not be published.
- If the coefficient of variation equals or surpasses 30%, the data should not be published.
- If the estimate does not pass disclosure review, the data cannot be published and is further protected so a reader cannot calculate the suppressed value.
  - Data collected in the MRTS are subject to legal confidentiality protections (U.S. Code Title 13, Section 9 [1,5]).

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[4] The scope of the e-commerce work currently only covers Retail Trade. Food Services (NAICS 722) are excluded from the work.

- o MRTS uses cell suppression for disclosure avoidance. Cell suppression is a disclosure avoidance technique that protects the confidentiality of individual survey units by withholding cell values from release and replacing the cell values with a symbol, usually a "D". If the suppressed cell value were known, it would allow one to estimate an individual survey unit's value too closely. The cells that must be protected are called *primary suppressions*. To make sure the cell values of the primary suppressions cannot be closely estimated by using other published cell values, additional cells may also be suppressed. These additional suppressed cells are called *complementary suppressions*. The process of suppression does not change the higher-level totals.

Balancing the requests and needs of data users with the value of publishing a table with limited information, the Team sought feedback from internal and external stakeholders. One idea proposed during the feedback gathering was to combine the data in Figure 1 and Figure 2 to create a whole picture of e-commerce sales by primary kind-of-business. For example, rather than looking at clothing store e-commerce sales for clothing store retailers (NAICS 448 in Figure 1) and clothing nonstore retailers (the 448 breakout of 4541 in Figure 2) individually, this table would combine the e-commerce sales for the two and create total clothing store and nonstore sales and e-commerce sales estimates.

To produce the MRTS sales estimates, the following methodology is used. For each month of the quarter, Horvitz-Thompson estimates are obtained by summing weighted e-commerce sales (either reported or imputed). Benchmarked monthly estimates are computed by multiplying each Horvitz-Thompson estimate by the carry-forward factor calculated during the most recent benchmarking. Estimates for the quarter are obtained by summing the monthly benchmarked estimates. For companies with separate store and e-commerce components, the e-commerce components are tabbed in MRTS under NAICS 4541.

To calculate the sales and e-commerce estimates in the experimental quarterly e-commerce table, first subtotal Horvitz-Thompson estimates are obtained by summing weighted sales and e-commerce sales within 4541 by the primary kind-of-business of the company. Note these companies are only tabbed under their primary kind-of-business even though they may operate in multiple kinds-of-business. To ensure the overall total retail estimates are consistent with MRTS, these kind-of-business subtotals are raked to the benchmarked monthly estimate for NAICS 4541 from MRTS. This is done by calculating the proportion of each kind of business to the Horvitz-Thompson estimate of NAICS 4541, then applying each of these proportions to the benchmarked monthly estimate for NAICS 4541 to get the corresponding benchmarked monthly estimate for that kind of business subtotal. Finally, these kind-of-business nonstore subtotals are added to the MRTS estimate for that kind of business to get a total store and nonstore estimate.[5] Note that the Nonstore line of the table contains the remaining NAICS 454 companies, including NAICS 4541 companies whose primary kind-of-business is nonstore, after the other companies' NAICS 4541 parts are removed.

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[5] For more information on the current quarterly E-commerce methodology as well as the new supplemental table, please visit https://www.census.gov/retail/ecommerce/how_surveys_are_collected.html

These combined estimates also presented a number of disclosure and data quality issues. To overcome these issues while still publishing as many e-commerce sales estimates as possible, the Team created groups of kinds-of-businesses. Total store and nonstore sales estimates are provided in the table at the grouping levels but not at the separate kinds-of-business. However, total e-commerce sales estimates *are* provided at the grouping level and at the separate kinds-of-business level. For example, total sales for retailers whose kinds-of-business are in furniture and home furnishings; electronics and appliance; and building materials, garden equipment and supplies are combined to produce a furniture, building materials, and electronics total store and nonstore estimate. This grouping approach was necessary to produce a table with sufficient disclosure protections.

Based on this methodology, a new supplemental quarterly e-commerce table was released as an experimental data product on August 28th, 2019. Data in this new table are available back to 2018Q2 when the current MRTS sample was introduced. Figure 3 shows an example of this new table.

Kind of Business	Retail Sales (millions of dollars)					
	2019Q2 (p)		2019Q1 (p)		2018Q4 (p)	
	Total Store and Nonstore Sales	Total E-Commerce	Total Store and Nonstore Sales	Total E-Commerce	Total Store and Nonstore Sales	Total E-Commerce
Total Retail Trade	**1,377,719**	**139,671**	**1,241,540**	**129,015**	**1,407,934**	**160,894**
Motor vehicle and parts	322,912	9,609	289,748	8,697	297,397	9,169
Furniture, building materials, and electronics	173,939	S	146,516	S	171,411	18,970
Furniture and home furnishings	*	2,505	*	2,344	*	2,934
Electronics and appliance	*	S	*	S	*	S
Building materials, garden equipment and supplies	*	3,995	*	3,018	*	3,449
Clothing and general merchandise	257,621	17,679	230,698	16,275	306,894	27,368
Clothing and clothing accessories	*	9,028	*	8,833	*	13,710
General merchandise	*	8,651	*	7,442	*	13,658
All other	489,958	9,131	445,976	8,962	487,336	10,735
Food and beverage	*	1,843	*	1,840	*	1,935
Health and personal care	*	1,219	*	1,065	*	1,609
Sporting goods, hobby, musical instrument, and books	*	1,347	*	1,399	*	2,072
Miscellaneous including gasoline stations	*	4,722	*	4,658	*	5,119
Nonstore retailers	133,289	85,716	128,602	79,337	144,896	94,652

S – Suppressed; * - not published

Figure 3: Supplemental Estimated Quarterly U.S. Retail Trade Sales - Total and E-commerce[1]: 2019Q2. Estimates are not adjusted and based on data from the Monthly Retail Trade Survey and administrative records.
Source: https://www.census.gov/retail/mrts/www/data/excel/19q2supptables.xls

5 Conclusions

A new supplemental quarterly e-commerce table was created and published as an experimental data product in response to data user requests for more frequent and more detailed measures of e-commerce sales on August 28, 2019. The Team creating the table encountered data suppression issues in creating a quarterly table to mimic the annual tables produced by the Annual Retail Trade Survey. Rather than publishing a table comparable to the annual table but with limited data, the Team created a new table layout that presents a whole picture of e-commerce sales by retailers' kinds-of-business. Going forward, this table will be included in the Quarterly E-Commerce Report as a supplemental table.

This new supplemental table is being released as an experimental data product. The E-Commerce Data Analysis Team welcomes data user feedback on the table and will incorporate feedback when possible. Of particular interest is the usefulness of the data presentation and the choice of kinds-of-business groupings included in the tables. Please send any feedback to eid.retail.indicator.branch@census.gov.

In developing the new Table, the Team found that data users wanted a better understanding of how e-commerce sales are tabulated. In response, the Team developed a guide to help with this that is included as Appendix A. We also welcome feedback on improving this guide.

Appendix A

As e-commerce has evolved over the past few decades, retailer operations around e-commerce have evolved. As part of its outreach efforts regarding e-commerce, the Team realized that data users would like to better understand how individual retailers' total sales and total e-commerce sales are tabulated and where that data is included in Census Bureau's monthly, quarterly, and annual publications. This appendix first walks through how retailers' retail and e-commerce operations are classified in the NAICS structure. Next, this appendix walks through how total retail sales and e-commerce sales tabulation parts are defined for retailers. And last, the appendix shows how these individual tabulation parts are included in the retail sales estimates published on a monthly, quarterly, and annual basis.

To guide these explanations, three example retailers are used. These are simplified and hypothetical examples used to convey e-commerce sales survey reporting and tabulation scenarios. E-commerce operations and survey reporting arrangements can vary by retailer. These three example retailers represent the following three potential e-commerce operations scenarios:

- Single store location where e-commerce sales are fulfilled from within the store.
- Large retail chain with a separate e-commerce distribution center.
- Online retailer that has no brick and mortar presence and only operates online.

Retailer Examples

- Retailer A is a small women's clothing store.
- Like other mom and pop style shops, Retailer A has only one store location.
- Retailer A has a website that they conduct e-commerce on where all online orders are fulfilled from within the store.

- Retailer B is a women's clothing chain with many store locations across the country.
- Retailer B has a website for e-commerce. Online orders that are shipped are fulfilled from one distribution center.
- Retailer B offers the omnichannel e-commerce experience allowing customers to buy online and pick up in-store.

- Retailer C is a women's clothing store that operates solely online ("pure play").

Census Company Structure

On its Economic Census form, Retailer A reported:
- One physical store location operating in NAICS code 44812 (Women's Clothing Store).

On its Economic Census form, Retailer B reported:
- Multiple physical store locations operating in NAICS code 44812 (Women's Clothing Store).
- One distribution center for e-commerce which is classified in NAICS Code 45411 (Nonstore retailer).

On its Economic Census form, Retailer C reported:
- One distribution center for e-commerce which is classified in NAICS Code 45411 (Nonstore retailer).

Company Reporting

Retailer A receives one MRTS form for retail activity in NAICS 44812 and
- Reports Total Store Sales (equal to brick & mortar sales plus e-commerce sales)
- Answers "yes" to the question "Did you have e-commerce sales this month?"
- Reports Total E-commerce Sales (e-commerce sales only)
  - Total E-commerce Sales should be less than or equal to Total Store Sales

Retailer B receives two MRTS forms for retail activity in NAICS 44812 and 45411.
On the 44812 form, Retailer B
- Reports Total Store Sales equal to brick & mortar only
- Reports zero for Total E-commerce Sales
On the 45411 form, Retailer B
- Reports Total Store Sales equal to total e-commerce sales.
- Reports Total E-commerce Sales.
  - Total Store Sales equals Total E-commerce Sales unless there are catalog or phone orders.

Retailer C receives one MRTS form for retail activity in NAICS 45411 and
- Reports Total Store Sales equal to total e-commerce sales
- Reports Total E-Commerce Sales
  - Total Store Sales equals Total E-commerce Sales unless there are catalog or phone orders.

Retailer Tabulation Parts

Total Store Sales in NAICS 44812 includes
- Total Brick & Mortar sales
- Total E-Commerce Sales
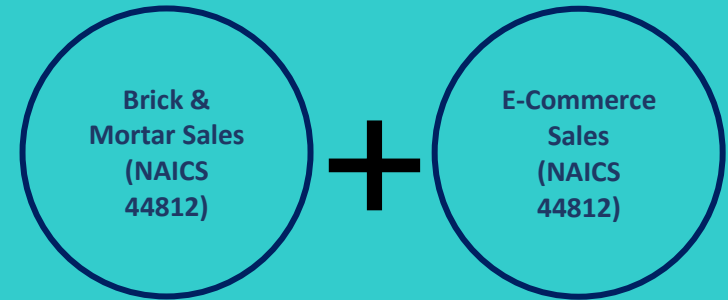
Brick & Mortar Sales (NAICS 44812) **+** E-Commerce Sales (NAICS 44812)

Total Store Sales in NAICS 44812 includes
- Total Brick & Mortar sales

Total Store Sales in NAICS 45411 includes
- Total E-commerce Sales

Brick & Mortar Sales (NAICS 44812) **+** E-Commerce Sales (NAICS 45411)

Total Store Sales in NAICS 45411 includes
- Total E-commerce Sales
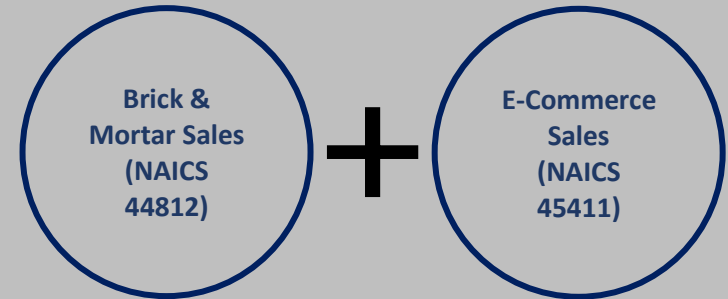
E-Commerce Sales (NAICS 45411)

Current Monthly E-Commerce Tabulations

Not Adjusted Monthly Retail Sales		
NAICS Code	**Kind of Business**	**Jan. 2019 Sales**
	Retail sales, total	
441	Motor vehicle and parts dealers	
442	Furniture and home furnishings stores	
443	Electronics and appliance stores	
444	Building mat. and garden equip. and supplies dealers	
445	Food and beverage stores	
446	Health and personal care stores	
447	Gasoline stations	
448	Clothing and clothing access. stores	B&M EC B&M
451	Sporting goods, hobby, musical instrument, and book stores	
452	General merchandise stores	
453	Miscellaneous store retailers	
454	Nonstore retailers	EC EC
4541	Electronic shopping and mail-order houses	EC EC

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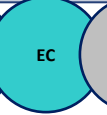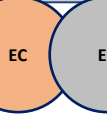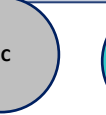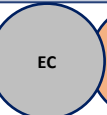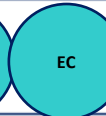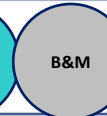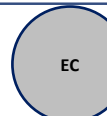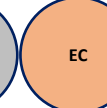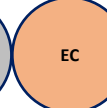
Current Annual E-Commerce Tabulations

Annual E-Commerce Table

NAICS Code	Kind of Business	Retail Sales (millions of dollars)		
		Total Sales		Total E-Commerce Sales
	Total Retail Trade	B&M · EC · B&M · EC · EC		EC · EC · EC
441	Motor vehicle and parts dealers			
442	Furniture and home furnishings stores			
443	Electronics and appliance stores			
444	Building mat. and garden equip. and supplies dealers			
445	Food and beverage stores			
446	Health and personal care stores			
447	Gasoline stations			
448	Clothing and clothing access. stores	B&M · EC · B&M		EC
451	Sporting goods, hobby, musical instrument, and book stores			
452	General merchandise stores			
453	Miscellaneous store retailers			
454	Nonstore retailers	EC · EC		EC · EC
4541	Electronic shopping and mail-order houses	EC · EC		EC · EC

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Current Annual Supplemental E-Commerce Tabulations

Annual Supplemental E-Commerce Table

NAICS Code of Primary Business Activity	Kind of Business	Retail Sales (millions of dollars)	
		Total Sales	Total E-Commerce Sales
	Total Electronic Shopping and Mail-Order Houses	EC EC	EC EC
441	Motor vehicle and parts dealers		
442	Furniture and home furnishings stores		
443	Electronics and appliance stores		
444	Building mat. and garden equip. and supplies dealers		
445	Food and beverage stores		
446	Health and personal care stores		
447	Gasoline stations		
448	Clothing and clothing access. stores	EC	EC
451	Sporting goods, hobby, musical instrument, and book stores		
452	General merchandise stores		
453	Miscellaneous store retailers		
454	Nonstore retailers	EC	EC

NEW Supplemental Quarterly E-Commerce Table

NEW Supplemental Quarterly E-Commerce Table

Kind of Business	Retail Sales (millions of dollars) 2018Q4	
	Total Store and Non-Store Sales	E-commerce
Total Retail Sales	B&M EC B&M EC EC	EC EC EC
Motor vehicle and parts		
Furniture, building materials, and electronics		
Furniture and home furnishings		
Electronics and appliance		
Building materials, garden equipment and supplies		
Clothing and general merchandise	B&M EC B&M EC	EC EC
Clothing and clothing accessories	B&M EC B&M EC	EC EC
General merchandise		
All other		
Food and beverage		
Health and personal care		
Sporting goods, hobby, musical instrument, and books		
Miscellaneous including gasoline stations		
Nonstore retailers	EC	EC

NEW Supplemental Quarterly E-Commerce Table