U.S. Census Bureau News

U.S. Department of Commerce • Washington, D.C. 20233

FOR IMMEDIATE RELEASE
TUESDAY, MAY 17, 2016, AT 10:00 A.M. EDT

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CB16-80

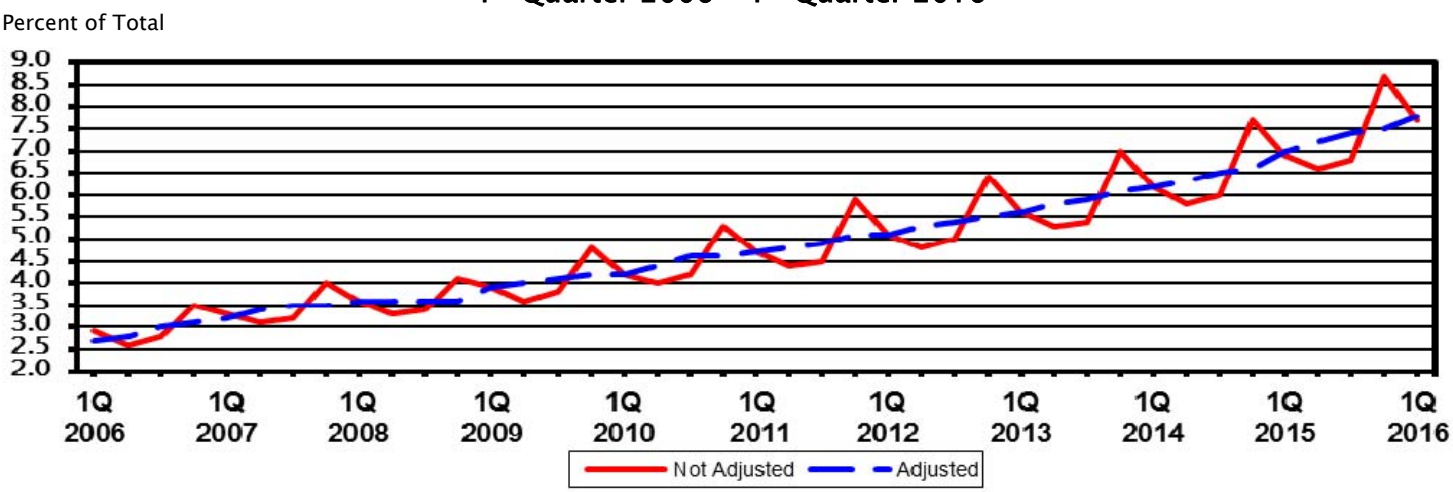
QUARTERLY RETAIL E-COMMERCE SALES
1ST QUARTER 2016

Notice of Revision: Quarterly retail e-commerce estimates were revised based on the results of the 2014 Annual Retail Trade Survey and the final results from the 2012 Economic Census. Not adjusted estimates and corresponding adjusted estimates were revised for the fourth quarter 1999 through fourth quarter 2015.

The Census Bureau of the Department of Commerce announced today that the estimate of U.S. retail e-commerce sales for the first quarter of 2016, adjusted for seasonal variation, but not for price changes, was $92.8 billion, an increase of 3.7 percent (±0.9%) from the fourth quarter of 2015. Total retail sales for the first quarter of 2016 were estimated at $1,183.9 billion, a decrease of 0.2 percent (±0.4%)* from the fourth quarter of 2015. The first quarter 2016 e-commerce estimate increased 15.2 percent (±1.8%) from the first quarter of 2015 while total retail sales increased 2.2 percent (±0.4%) in the same period. E-commerce sales in the first quarter of 2016 accounted for 7.8 percent of total sales.

On a not adjusted basis, the estimate of U.S. retail e-commerce sales for the first quarter of 2016 totaled $86.3 billion, a decrease of 20.2 percent (±0.9%) from the fourth quarter of 2015. The first quarter 2016 e-commerce estimate increased 15.1percent (±1.8%) from the first quarter of 2015 while total retail sales increased 3.3 percent (±0.4%) in the same period. E-commerce sales in the first quarter of 2016 accounted for 7.7 percent of total sales.

Estimated Quarterly U.S. Retail E-commerce Sales as a Percent of Total Quarterly Retail Sales: 1st Quarter 2006 – 1st Quarter 2016



The Quarterly Retail E-Commerce sales estimate for the second quarter of 2016 is scheduled for release on August 16, 2016 at 10:00 A.M. EDT.

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 <http://www.census.gov/estats>.

** 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. Unless otherwise specified, all estimates are revised based on the 2014 Annual Retail Trade Survey and the final results from the 2012 Economic Census.)

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	E-commerce	Total	E-commerce
Adjusted[2]							
1st quarter 2016(p)	1,183,863	92,801	7.8	-0.2	3.7	2.2	15.2
4th quarter 2015	1,186,748	89,454	7.5	0.1	2.1	1.4	15.1
3rd quarter 2015	1,185,330	87,588	7.4	0.9	4.0	1.6	15.2
2nd quarter 2015	1,174,967	84,217	7.2	1.4	4.5	1.2	14.5
1st quarter 2015	1,158,391	80,569	7.0	-1.0	3.7	2.1	14.6
Not Adjusted							
1st quarter 2016(p)	1,116,695	86,327	7.7	-10.6	-20.2	3.3	15.1
4th quarter 2015	1,249,081	108,175	8.7	5.1	33.5	1.7	14.8
3rd quarter 2015	1,188,363	81,020	6.8	-0.1	2.8	1.6	15.4
2nd quarter 2015	1,189,836	78,784	6.6	10.1	5.1	1.1	14.7
1st quarter 2015	1,081,022	74,982	6.9	-12.0	-20.4	1.8	14.4

(p) Preliminary 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[1] (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
1st quarter 2016(p)	0.4	1.7	0.1	0.2	0.5	0.2	1.0
4th quarter 2015(r)	0.4	1.3	0.1	0.1	0.5	0.2	0.7
3rd quarter 2015	0.4	1.4	0.1	0.1	0.5	0.2	0.7
2nd quarter 2015	0.4	1.3	0.1	0.1	0.5	0.2	0.6
1st quarter 2015	0.4	1.5	0.1	0.1	0.3	0.2	1.1

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

[1]Standard errors may be larger than those previously published because the estimated totals used to produce the percent changes are derived from different samples.

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.

Table 3. Estimated Quarterly U.S. Retail Sales (Adjusted[1]): Total and E-commerce[2]

(Estimates are based on data from the Monthly Retail Trade Survey and administrative records. Unless otherwise specified, all estimates are revised based on the 2014 Annual Retail Trade Survey and the final results from the 2012 Economic Census.)

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	E-commerce	Total	E-commerce
1st quarter 2016(p)	1,183,863	92,801	7.8	-0.2	3.7	2.2	15.2
4th quarter 2015	1,186,748	89,454	7.5	0.1	2.1	1.4	15.1
3rd quarter 2015	1,185,330	87,588	7.4	0.9	4.0	1.6	15.2
2nd quarter 2015	1,174,967	84,217	7.2	1.4	4.5	1.2	14.5
1st quarter 2015	1,158,391	80,569	7.0	-1.0	3.7	2.1	14.6
4th quarter 2014	1,169,921	77,710	6.6	0.3	2.2	4.0	13.9
3rd quarter 2014	1,166,946	76,027	6.5	0.5	3.4	4.4	15.2
2nd quarter 2014	1,160,589	73,552	6.3	2.3	4.6	4.6	14.8
1st quarter 2014	1,134,551	70,301	6.2	0.9	3.1	2.5	13.3
4th quarter 2013	1,124,817	68,206	6.1	0.6	3.4	3.2	12.9
3rd quarter 2013	1,117,639	65,986	5.9	0.7	3.0	4.1	13.5
2nd quarter 2013	1,109,667	64,082	5.8	0.3	3.3	4.2	14.1
1st quarter 2013	1,106,813	62,032	5.6	1.6	2.7	3.6	12.9
4th quarter 2012	1,089,590	60,410	5.5	1.5	3.9	4.1	13.5
3rd quarter 2012	1,073,654	58,158	5.4	0.8	3.6	4.4	15.8
2nd quarter 2012	1,064,973	56,141	5.3	-0.3	2.2	4.3	14.7
1st quarter 2012	1,068,584	54,958	5.1	2.1	3.3	6.3	16.6
4th quarter 2011	1,047,104	53,203	5.1	1.8	5.9	6.7	17.5
3rd quarter 2011	1,028,566	50,220	4.9	0.8	2.6	8.0	15.0
2nd quarter 2011	1,020,587	48,954	4.8	1.6	3.8	7.5	18.1
1st quarter 2011	1,004,990	47,148	4.7	2.4	4.1	7.6	19.6
4th quarter 2010	981,650	45,277	4.6	3.0	3.7	6.7	18.4
3rd quarter 2010	952,745	43,662	4.6	0.4	5.3	4.4	16.4
2nd quarter 2010	949,180	41,468	4.4	1.7	5.2	6.4	17.2
1st quarter 2010	933,758	39,433	4.2	1.5	3.1	5.0	15.1
4th quarter 2009	919,780	38,235	4.2	0.8	1.9	1.0	15.4
3rd quarter 2009	912,503	37,514	4.1	2.3	6.0	-8.6	3.1
2nd quarter 2009	891,962	35,378	4.0	0.3	3.3	-11.9	-3.3
1st quarter 2009	889,441	34,245	3.9	-2.3	3.4	-11.6	-5.1
4th quarter 2008	910,622	33,126	3.6	-8.8	-9.0	-10.3	-7.6
3rd quarter 2008	998,140	36,384	3.6	-1.4	-0.6	-0.4	4.3
2nd quarter 2008	1,012,287	36,596	3.6	0.6	1.4	1.8	9.1
1st quarter 2008	1,006,382	36,101	3.6	-0.9	0.7	2.0	13.6
4th quarter 2007	1,015,026	35,853	3.5	1.3	2.8	4.3	18.8
3rd quarter 2007	1,001,704	34,876	3.5	0.7	4.0	3.0	20.7
2nd quarter 2007	994,447	33,533	3.4	0.8	5.6	2.8	22.4
1st quarter 2007	986,278	31,769	3.2	1.3	5.3	2.3	20.1

NA Not available. (p) Preliminary

[1] Estimates are adjusted for seasonal variation, but not for price changes. Total sales estimates are also adjusted for trading-day differences and moving holidays.

[2] E-commerce sales are sales of goods and services where an order is placed by the buyer or price and terms of sale are negotiated over an Internet, extranet, Electronic Data Interchange (EDI) network, electronic mail, or other online system. Payment may or may not be made online.

Note: 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 4. Estimated Quarterly U.S. Retail Sales (Not Adjusted): Total and E-commerce[1]

(Estimates are based on data from the Monthly Retail Trade Survey and administrative records. Unless otherwise specified, all estimates are revised based on the 2014 Annual Retail Trade Survey and the final results from the 2012 Economic Census)

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	E-commerce	Total	E-commerce
1st quarter 2016(p)	1,116,695	86,327	7.7	-10.6	-20.2	3.3	15.1
4th quarter 2015	1,249,081	108,175	8.7	5.1	33.5	1.7	14.8
3rd quarter 2015	1,188,363	81,020	6.8	-0.1	2.8	1.6	15.4
2nd quarter 2015	1,189,836	78,784	6.6	10.1	5.1	1.1	14.7
1st quarter 2015	1,081,022	74,982	6.9	-12.0	-20.4	1.8	14.4
4th quarter 2014	1,228,634	94,193	7.7	5.1	34.2	4.2	13.9
3rd quarter 2014	1,169,173	70,185	6.0	-0.7	2.2	4.6	15.5
2nd quarter 2014	1,176,975	68,685	5.8	10.9	4.8	4.9	15.0
1st quarter 2014	1,061,563	65,532	6.2	-10.0	-20.8	2.0	13.0
4th quarter 2013	1,178,918	82,700	7.0	5.5	36.1	3.3	12.8
3rd quarter 2013	1,117,781	60,772	5.4	-0.4	1.7	4.8	13.6
2nd quarter 2013	1,121,857	59,749	5.3	7.8	3.0	4.0	14.4
1st quarter 2013	1,040,447	57,985	5.6	-8.8	-20.9	2.4	12.5
4th quarter 2012	1,141,069	73,292	6.4	6.9	37.1	4.0	13.7
3rd quarter 2012	1,067,067	53,478	5.0	-1.1	2.4	3.9	15.7
2nd quarter 2012	1,078,508	52,245	4.8	6.2	1.4	4.3	14.7
1st quarter 2012	1,015,585	51,548	5.1	-7.4	-20.1	7.6	16.1
4th quarter 2011	1,097,057	64,481	5.9	6.8	39.5	6.5	18.2
3rd quarter 2011	1,026,969	46,215	4.5	-0.7	1.5	8.0	14.8
2nd quarter 2011	1,034,497	45,543	4.4	9.6	2.6	7.6	17.9
1st quarter 2011	943,664	44,384	4.7	-8.4	-18.7	7.7	19.4
4th quarter 2010	1,030,295	54,568	5.3	8.3	35.6	6.5	18.7
3rd quarter 2010	951,077	40,255	4.2	-1.1	4.2	4.3	16.3
2nd quarter 2010	961,240	38,633	4.0	9.7	3.9	6.1	17.0
1st quarter 2010	876,229	37,184	4.2	-9.4	-19.1	5.7	14.8
4th quarter 2009	966,970	45,954	4.8	6.1	32.8	1.0	15.8
3rd quarter 2009	911,593	34,600	3.8	0.7	4.8	-8.8	3.0
2nd quarter 2009	905,656	33,025	3.6	9.3	2.0	-11.9	-3.9
1st quarter 2009	828,728	32,377	3.9	-13.4	-18.4	-12.8	-5.7
4th quarter 2008	957,285	39,670	4.1	-4.3	18.1	-9.7	-6.0
3rd quarter 2008	999,873	33,579	3.4	-2.7	-2.2	0.0	3.6
2nd quarter 2008	1,028,067	34,351	3.3	8.2	0.0	1.5	8.6
1st quarter 2008	950,280	34,342	3.6	-10.4	-18.6	3.1	12.8
4th quarter 2007	1,060,394	42,188	4.0	6.0	30.2	4.3	20.0
3rd quarter 2007	1,000,151	32,397	3.2	-1.3	2.4	2.5	20.3
2nd quarter 2007	1,013,371	31,632	3.1	10.0	3.9	2.9	22.4
1st quarter 2007	921,266	30,437	3.3	-9.3	-13.5	3.0	19.3

NA Not available. (p) Preliminary

[1] E-commerce sales are sales of goods and services where an order is placed by the buyer or price and terms of sale are negotiated over an Internet, extranet, Electronic Data Interchange (EDI) network, electronic mail, or other online system. Payment may or may not be made online.

Note: 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 10,000 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. Responding firms account for approximately 73 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.