

Overview of E-Commerce Statistics

United States Census Bureau

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The United States Census Bureau began looking at E-commerce in detail over 17 years ago. Initial steps in 1999 included developing a definition of e-commerce for implementation purposes, adding inquiries to existing surveys to capture e-commerce, and tabulating statistics across several sectors of the Economy. A more detailed history of the Census Bureau's efforts is available in, "Measuring Electronic Business" by Thomas Mesenbourg.ⁱ The paper outlines the initial development of baseline statistics on e-commerce and describes the initial methodology and collection efforts.

This paper will provide an overview of existing data products, compare and contrast the initial definition of e-commerce in the US and OECD, and pose some questions for consideration regarding the future of e-commerce measurement. Many of the challenges inherent in collecting and measuring e-commerce have changed and evolved with the growth of IT integration into almost all businesses but have also changed as companies have evolved. There is significant growth – that much is clear. However changing business practices might indicate that a redefinition of e-commerce is in order to more accurately measure the phenomenon of interest to business decision makers and policy makers.

Census Bureau E-commerce Data Series

The Census Bureau produces two separate programs addressing e-commerce directly. The first is the quarterly Retail E-Commerce Sales report and the second is the annual E-Stats (E-Commerce Statistics) program. Each of the programs has different scope and coverage.

The Retail E-Commerce Sales report first published data in the fourth quarter of 1999. The reported sales data use the same sample as the Monthly Retail Trade Survey (MRTS).ⁱⁱ Data are available in both unadjusted and seasonally adjusted series. Appendix 1 includes historical data for quarterly retail e-commerce sales – unadjusted. A quick review of the data shows that e-commerce has grown substantially as a percentage of total retail trade sales since the initial data in 1999. The seasonal pattern in the fourth quarter is also readily visible in the unadjusted data.

The annual E-Stats program covers the manufacturing sector, wholesale trade sector, and selected service industries as well as retail trade.ⁱⁱⁱ The Census Bureau provides individual tables by sector coverage as well as historical data, also by sector. For manufacturing, the data series starts with 1999 data. Wholesale trade begins in 1992; and retail trade and selected service industries begins in 1998. Each of these tables is available at <https://www.census.gov/data/tables/2015/econ/e-stats/2015-e-stats.html>. Most of the reports break down data to the two, three, and sometimes four digit NAICS level. A full list of breakdowns is available in Appendix 2.

A separate table for NAICS 45411, Electronic Shopping and Mail Order Houses is also produced with the following product breakdowns:

Total Electronic Shopping and Mail-Order Houses (NAICS 45411)

- Books and magazines
- Clothing and clothing accessories (includes footwear)
- Computer hardware
- Computer software
- Drugs, health aids, and beauty aids
- Electronics and appliances
- Food, beer, and wine

Furniture and home furnishings
 Music and videos
 Office equipment and supplies
 Sporting Goods
 Toys, hobby goods, and games
 Other merchandise (Includes other merchandise such as collectibles, souvenirs, auto parts and accessories, hardware, lawn and garden equipment and supplies, and jewelry).
 Nonmerchandise receipts (Includes nonmerchandise receipts such as auction commissions, customer training, customer support, advertising, and shipping and handling).

A summary of e-commerce as a percentage of total revenue by sector is useful to set the stage. These data are based on 2015 published data reports.

Sector	% of total revenue/shipments Accounted for by e-commerce 2015^{iv}	% of total revenue/shipments Accounted for by e-commerce initial year available
Manufacturing	63.2	18.1 (1999)
Wholesale Trade	30.2	N/A*
Retail Trade	7.2	0.2 (1998)
Selected Services	3.9	3.0 (2010)

*comparisons not available due to changes in the annual survey content and coverage. NAICS changes to manufacturers' sales branches and offices now included in merchant wholesale

E-commerce is growing and evolving in the United States at very different rates. The business models have changed substantially since the DotCom crash in 2001. Still, there is substantial interest in e-commerce data and changes over time.

The OECD provides some context for e-commerce data collection in their Guide to Measuring the Information Society. Specifically:

“Measuring electronic commerce is difficult for a number of reasons including defining what constitutes electronic commerce, the speed of its growth and evolution and the fact that in many cases firms conduct both electronic commerce and traditional commerce simultaneously.

Quantifying the value associated with electronic commerce activities can be challenging since many of its key qualities -- convenience, variety and ease of access to information -- are difficult to measure. This leads to a situation where it appears unlikely that official statistical offices will be able to provide accurate statistics on electronic commerce and quantitative insight into the nature of this activity will have to rely on private providers of data which suffer from a number of shortcomings, not the least of which is a transparent definition of what is meant by electronic commerce.”^v

Two topics that will be touched on in following sections are definitions and some potential measurement problems.

Census Definition of E-commerce

The Census Bureau definition initially used was presented in the paper prepared by Mesenbourg: *“Electronic commerce (e-commerce) is the value of goods and services sold over computer mediated networks. An e-commerce transaction is “completed” when agreement is reached between the buyer and seller online to transfer the ownership or rights to use goods or services. This online agreement is the trigger for determining an e-commerce transaction, not the payment. Only priced transactions will be measured. Downloads of free software, for example, will not be measured.*

While transactions involve buyers and sellers, we generally will measure e-commerce from the seller’s perspective. Examples of e-commerce transactions include the sale of a book or CD over the Internet, an electronic marketplace selling parts to another business, a manufacturing plant selling electronic components to another plant within the company using the company’s Intranet, and a manufacturer selling to a retailer over an EDI network.”^{vi}

Further, initially the Census Bureau included things like computers, smart phones, personal digital assistants (remember those?), WebTV, and telephones linked through interactive telephone systems.^{vii}

This base definition was worded differently in different annual survey instruments. For example, manufacturing asked:

E-Shipment

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 Internet, Extranet, Electronic Data Interchange (EDI) network, electronic mail, or other online system. Payment may or may not be made online.”^{viii}

By way of comparison, here is the language from a selected retail trade form:

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.

If AUTOMOTIVE also INCLUDE sales of cars where a binding sales price is established online through the dealer's or a third party's web site. EXCLUDE leads.^{ix}

The OECD defines e-commerce transactions as, *“... the sale or purchase of goods or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing of orders. The goods or services are ordered by those methods, but the payment and the ultimate delivery of the goods or services do not have to be conducted online. An e-commerce transaction can be between enterprises, households, individuals, governments, and other public or private organisations. To be included are orders made over the web, extranet or electronic data interchange. The type is defined by the method of placing the order. To be excluded are orders made by telephone calls, facsimile or manually typed e-mail.”^x*

The OECD excludes from e-commerce transactions that used phone, fax or e-mail while they were potentially within scope of the Census Bureau. Because separate data are not available by specific method of e-commerce, it is hard to tell what impact the different definitions may have on international comparisons. It is also unclear without specific respondent outreach what is actually included or excluded in response data regardless of the definition presented in the survey instrument.

Problems with E-commerce collection

The structure of industry classification systems creates some problems with collecting e-commerce data. The continued growth of the Internet and of the application of all types of IT in the business world have opened new doors for many types of businesses. Gone are the days of flipping through a catalog, filling out a paper order form and mailing or faxing the order. This provides an opportunity to outsource parts of the production process to others specialized in particular aspects of transactions. The Expert Group on Classifications is reviewing how these transactions should be handled in ISIC.^{xi}

According to the most recent annual E-Stats, e-commerce accounted for over \$6 trillion in 2015. The largest component was manufacturing, followed by wholesale trade, selected services and retail trade in that order. The value of e-commerce retail sales is about 1/10 the size of manufacturing e-commerce shipments. Yet the popular press is closely focused on the structural changes that e-commerce in retail trade involves with a move from traditional store retail to Internet retail.

Does the data collection infrastructure provide the data to evaluate changes of this type? A review of retail trade provides some potential problems.

NAICS United States includes an industry for Electronic Shopping and Mail Order Houses (454110). As a production function based classification, NAICS identifies the difference between the requirements to operate a store and to operate in the retail environment without a store infrastructure. NAICS makes the distinction of operating in a nonstore environment only. If a unit is providing both store and nonstore sales, the unit is classified to store retailing. While that may have made sense in the past, changes in retail create significant problems with showing structural changes between store and nonstore retail – or adequately separating Internet based sales from traditional store sales.

These problems become even more complex as Internet retailing evolves. Many large retailers now allow order via the Internet and pick up in store. Should that be e-commerce? What of the case where a terminal or screen is used to place the order inside the store? If separate units are created to handle e-commerce in omni-channel firms, are these various transactions credited in accounting records as store sale or Internet sales? Should e-commerce only include transactions that do not involve the store infrastructure – delivered directly to the consumer?

Census Bureau Retail E-commerce Sales Report has begun to address some of this by focusing on products rather than industries in supplemental tabulations. The methodology documentation for the supplemental tabulation explains how the data rearranged:

“Companies in the Annual Retail Trade Survey are classified by their major type of business using the North American Industry Classification System (NAICS). 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. (Note that this only refers to operating different types of stores, not to selling multiple types of products within a single type of store.) 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

For companies with separate store and e-commerce components as described above, the new supplemental e-commerce table reallocates the sales of the NAICS 4541 component to the primary 3-digit NAICS code of the brick-and-mortar component of the company. Companies without a brick-and-mortar component remain classified under NAICS 454. ^{xii}

This tabulation does allow a way to tease out the impact of Internet retailing by product category unless a unit has no brick and mortar stores. It is an improvement but is it really meeting the needs of data users?

Another growing trend in Internet retailing is the growth of fulfillment services. Large retailers with significant e-commerce infrastructure are performing the selling activities for other retailers on a commission or fee basis. Known as fulfillment services, this can include all aspects of the retail trade transaction except the actual buying and selling of the goods. A growing percentage of sales through large Internet retailers are actually owned by third party retailers.

Third party merchants outsource a large part of the services that are traditionally part of the retail trade margin. Fulfillment services can include a wide range of activities. In some cases, the e-commerce site is providing only transaction related services. That is they highlight a product on their website, collect and process payment, and forward the information to the third party retailer for actual fulfillment. The third party retailer receives payment (less commission) and then pulls the item, packages the item, and ships the item to the customer.

In other cases, the e-commerce site undertakes all of the functions except ownership. A third party merchant's goods are housed in the e-commerce distribution center. When an order is received, the item is picked, packed, and shipped by the e-commerce provider. The ownership and obsolescence risk remain with the third party merchant. This is another case where technology has allowed further separation or disaggregation of the production function to specialized units that can take advantage of economies of scale and particular expertise.

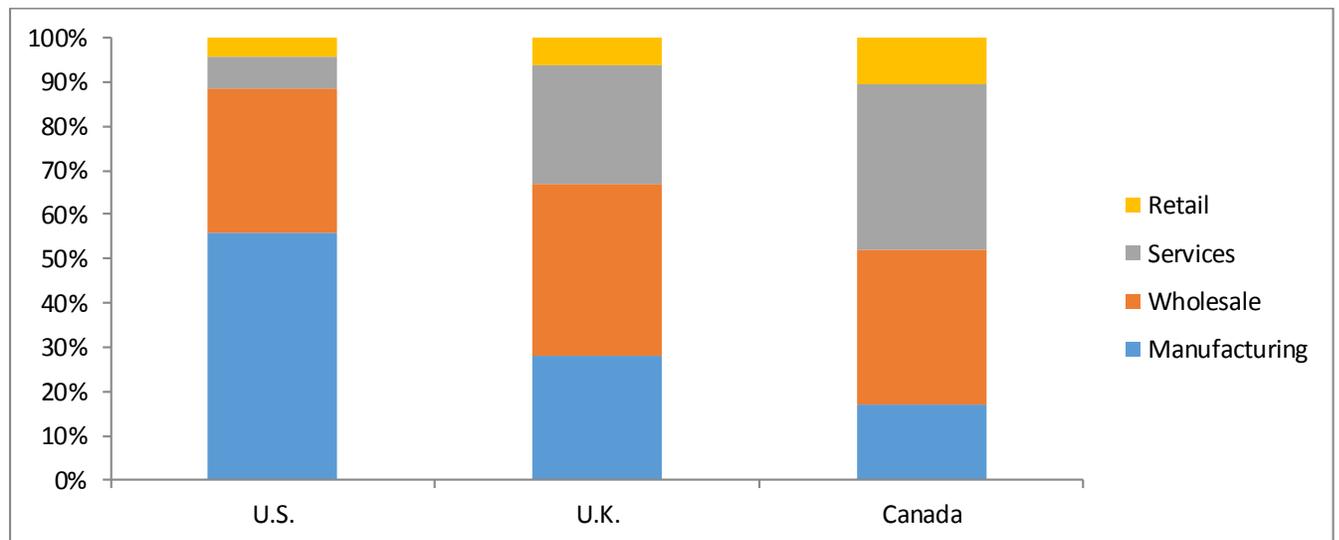
Are these commission services E-commerce? By definition, yes but should they be separately identified or treated as e-commerce sales?

The problems of e-commerce in retail trade may require a reconsideration of industry definitions and/or products to identify the areas of importance and allow alternative tabulations to meet a variety of needs for decision makers. A substantial growth in Internet retail with store delivery has much different implications for shipping companies, couriers, and the postal service from a substantial growth in direct delivery to consumer sales. Retail has changed but our definitions have not. There are some fundamental questions that require thought and discussion starting with what are we trying to answer with e-commerce data in retail trade? What is the need and are we meeting it?

Defining and collecting e-commerce services has also been challenging in the non-trade Services sectors. Currently U.S. Services Annual Survey (SAS) questionnaires provide the same definition of e-commerce as provided on the retail forms (see Page 3). After the definition, the questionnaire asks "Did this firm have any e-commerce revenue in (year)?" and for those that answer yes, "What was the total e-commerce revenue in (year)?"

Many U.S. services firms do not recognize their electronic sales activity as e-commerce, which some consider as a retail concept exclusively. For example, virtually all orders to buy or sell commodity future contracts are transmitted through electronic networks, but almost no U.S. commodity contract dealers reported revenues generated from executing these transactions as e-commerce. In addition, many businesses were recording only sales on their own websites as e-commerce, excluding sales on the sites of third party sellers. For example, some U.S. airlines failed to include ticket sales that occurred on online travel agent sites in their e-commerce reports. These issues may have resulted in significant underreporting of Services e-commerce. When looking at the distribution of e-commerce revenue by sector, the U.S. recorded a lower proportion from Services industries than was observed in the UK and Canada.

Composition of Total 2013 E-Commerce Revenue by Sector^{xiii}



Summary of e-commerce definition and question wording differences

	U.S. Services (current)	U.S. Manufacturing	U.K.	Canada
Orders “negotiated”, but not placed electronically	<i>Included</i>	<i>Excluded</i>	<i>Excluded</i>	<i>Excluded</i>
Orders placed through e-mail	<i>Included</i>	<i>Included</i>	<i>Excluded</i>	<i>Excluded</i>
Uses the phrase “e-commerce” in question	<i>Yes</i>	<i>No</i>	<i>No</i>	<i>No</i>
Descriptive phrases directly in question	<i>No</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>
Requests response in dollars or percentages	<i>Dollars</i>	<i>Percentages</i>	<i>Percentages</i>	<i>Both</i>
Number of questions	<i>2</i>	<i>2</i>	<i>4</i>	<i>4</i>

In 2017 U.S. Census Bureau staff conducted a series of cognitive interviews with Services industry respondents to investigate how the current questions were perceived and whether they were successful in meeting the measurement objective. Based on the information that was learned in those interviews, plus an evaluation of the British and Canadian questionnaires, the U.S. will ask a modified series of questions on the SAS questionnaires that will be used in calendar year 2018. The new questions are:

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? Yes/No
- B. Did this firm have any revenues from customers entering orders directly on third-party websites or mobile applications in 2017? 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? Yes/No
- D. Of the total 2017 revenues reported, 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.

\$ _____ OR _____%

Notably this change eliminates the use of the phrase "e-commerce" on the questionnaire, and provides descriptive phrases directly in the questions. The Census Bureau will conduct respondent debriefing interviews and evaluate the results of these modified questions in 2018.

Conclusion and Questions for Discussion

This brief overview of e-commerce data asks more questions than it answers. How can we identify the business and policy questions that need to be answered and are our current definitions and practices meeting those needs? The first question that must be addressed is what question(s) are we trying to answer with e-commerce statistics? Does the current one size fits all approach answer the questions or should we focus on sector specific questions and solutions? Is using IT infrastructure the same in manufacturing as in education or retail? Are the implications of IT to jobs and capital the same? As with many evolving business practices, it is important to identify and measure the impacts of change. What should be the next steps in the evolution of e-commerce measurement?

E-commerce Appendix 1.

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.)							
	Retail Sales		E-commerce		Percent Change		Percent Change
	(millions of dollars)		as a Percent of		From Prior Quarter		From Same Quarter
							A Year Ago
Quarter	Total	E-commerce	Total	Total	E-commerce	Total	E-commerce
2nd quarter 2017(p)	1,274,565	105,096	8.2	9.5	6.9	4.4	16.3
1st quarter 2017(r)	1,164,228	98,292	8.4	-10.4	-19.8	3.7	15.1
4th quarter 2016	1,299,699	122,515	9.4	6.5	32.2	3.6	14.0
3rd quarter 2016	1,220,051	92,644	7.6	-0.1	2.5	2.2	15.5
2nd quarter 2016	1,220,714	90,397	7.4	8.8	5.8	2.2	15.6
1st quarter 2016	1,122,389	85,431	7.6	-10.5	-20.5	3.5	14.6
4th quarter 2015	1,254,530	107,433	8.6	5.1	34.0	1.9	14.1
3rd quarter 2015	1,193,669	80,198	6.7	-0.1	2.5	2.0	14.3
2nd quarter 2015	1,194,448	78,212	6.5	10.1	4.9	1.5	13.7
1st quarter 2015	1,084,780	74,572	6.9	-11.9	-20.8	2.2	13.7
4th quarter 2014	1,230,611	94,167	7.7	5.2	34.3	4.4	13.9
3rd quarter 2014	1,170,221	70,139	6.0	-0.6	2.0	4.7	15.6
2nd quarter 2014	1,177,298	68,762	5.8	10.9	4.8	4.9	15.2
1st quarter 2014	1,061,310	65,614	6.2	-9.9	-20.6	2.0	13.2
4th quarter 2013	1,178,337	82,659	7.0	5.4	36.3	3.3	12.7
3rd quarter 2013	1,117,728	60,653	5.4	-0.4	1.6	4.8	13.4
2nd quarter 2013	1,121,963	59,686	5.3	7.8	3.0	4.0	14.3
1st quarter 2013	1,040,422	57,952	5.6	-8.8	-21.0	2.4	12.6
4th quarter 2012	1,141,081	73,312	6.4	6.9	37.1	4.0	14.2
3rd quarter 2012	1,067,024	53,467	5.0	-1.1	2.4	3.9	16.2
2nd quarter 2012	1,078,487	52,220	4.8	6.2	1.4	4.2	15.3
1st quarter 2012	1,015,637	51,475	5.1	-7.4	-19.9	7.6	16.6
4th quarter 2011	1,097,172	64,224	5.9	6.8	39.6	6.5	18.2
3rd quarter 2011	1,027,251	46,001	4.5	-0.7	1.6	8.0	14.8
2nd quarter 2011	1,034,750	45,298	4.4	9.6	2.6	7.7	17.7
1st quarter 2011	943,779	44,150	4.7	-8.4	-18.7	7.7	19.2
4th quarter 2010	1,030,175	54,324	5.3	8.3	35.5	6.6	18.6
3rd quarter 2010	950,860	40,077	4.2	-1.1	4.2	4.3	16.2
2nd quarter 2010	960,992	38,473	4.0	9.7	3.8	6.1	16.9
1st quarter 2010	876,021	37,047	4.2	-9.4	-19.1	5.7	14.8
4th quarter 2009	966,768	45,808	4.7	6.1	32.8	1.0	15.7
3rd quarter 2009	911,464	34,492	3.8	0.7	4.8	-8.8	3.0
2nd quarter 2009	905,562	32,924	3.6	9.3	2.0	-11.9	-3.9

¹ E-commerce sales are sales of goods and services where an order is placed by the buyer or price and terms of sales 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, sample design, and definitions, see							
http://www.census.gov/retail/mrts/how_surveys_are_collected.html							
Source: Retail Indicators Branch, U.S. Census Bureau							
Last Revised: August 17, 2017							

Source: https://www.census.gov/retail/mrts/www/data/pdf/ec_current.pdf

E-commerce Appendix 2

31-33 Total Manufacturing

- 311 Food manufacturing
- 312 Beverage and tobacco product manufacturing
- 313 Textile mills
- 314 Textile product mills
- 315 Apparel manufacturing
- 316 Leather and allied product manufacturing
- 321 Wood product manufacturing
- 322 Paper manufacturing
- 323 Printing and related support activities
- 324 Petroleum and coal products manufacturing
- 325 Chemical manufacturing
- 326 Plastics and rubber products manufacturing
- 327 Nonmetallic mineral product manufacturing
- 331 Primary metal manufacturing
- 332 Fabricated metal product manufacturing
- 333 Machinery manufacturing
- 334 Computer and electronic product manufacturing
- 335 Electrical equipment, appliance, and component manufacturing
- 336 Transportation equipment manufacturing
- 337 Furniture and related product manufacturing
- 339 Miscellaneous manufacturing

42 Total Merchant Wholesale Trade Including Manufacturers' Sales Branches and Offices

- 423 Durable Goods
 - 4231 Motor Vehicle and Motor Vehicle Parts and Supplies
 - 4232 Furniture and Home Furnishings
 - 4233 Lumber & Other Construction Materials
 - 4234 Professional and Commercial Equipment and Supplies
 - 42343 Computer and Computer Peripheral Equipment and Software
 - 4235 Metals and Minerals, ex. Petroleum
 - 4236 Electrical Goods
 - 4237 Hardware, and Plumbing and Heating Equipment and Supplies
 - 4238 Machinery, Equipment and Supplies
 - 4239 Miscellaneous Durable Goods
- 424 Nondurable Goods
 - 4241 Paper and Paper Products
 - 4242 Drugs and Druggists' Sundries
 - 4243 Apparel, Piece Goods, and Notions
 - 4244 Groceries and Related Products
 - 4245 Farm Product Raw Materials
 - 4246 Chemicals and Allied Products
 - 4247 Petroleum and Petroleum Products

- 4248 Beer, Wine, and Distilled Alcoholic Beverages
- 4249 Miscellaneous Nondurable Goods

Total for Selected Service Industries¹

- 22 Utilities²
- 4849y Transportation and Warehousing³
- 481 Air Transportation
- 483 Water Transportation
- 484 Truck Transportation
- 485 Transit and Ground Passenger Transportation
- 486 Pipeline transportation
- 487 Scenic and Sightseeing Transportation
- 488 Support Activities for Transportation
- 51 Information⁴
- 511 Publishing Industries (except Internet)
- 512 Motion Picture and Sound Recording Industries
- 515 Broadcasting (except Internet)
- 517 Telecommunications
- 518 Data Processing, Hosting, and Related Services
- 519 Other Information Services⁴
- 52 Finance and Insurance⁵
- 5223 Activities Related to Credit Intermediation
- 5231 Securities and Commodity Contracts Intermediation and Brokerage
- 53 Real Estate and Rental and Leasing⁶
- 532 Rental and Leasing Services
- 54 Professional, Scientific, and Technical Services^{4,7}
- 5415 Computer Systems Design and Related Services
- 56 Administrative and Support and Waste Management and Remediation Services⁴
- 5615 Travel Arrangement and Reservation Services
- 61 Educational Services⁸
- 62 Health Care and Social Assistance
- 71 Arts, Entertainment, and Recreation
- 72 Accommodation and Food Services⁹
- 81 Other Services (except Public Administration)¹⁰
- 811 Repair and Maintenance
- 812 Personal and Laundry Services
- 813 Religious, Grantmaking, Civic, Professional, and Similar Organizations¹¹

Footnotes

- 1** Includes NAICS 22 (Utilities), NAICS 4849y (Transportation and Warehousing), NAICS 51 (Information), NAICS 52 (Finance and Insurance), NAICS 53 (Real Estate and Rental and Leasing), NAICS 54 (Selected Professional, Scientific, and Technical Services), NAICS 56 (Administrative and Support and Waste Management and Remediation Services), NAICS 61 (Educational Services), NAICS 62 (Health Care and Social Assistance), NAICS 71 (Arts, Entertainment, and Recreation), NAICS 72 (Accommodation and Food Services), and NAICS 81 (Other Services (except Public Administration)).
- 2** Excludes government owned utilities.
- 3** Excludes NAICS 482 (Rail Transportation) and NAICS 491 (Postal Service).
- 4** Historical data, 2010 and prior, have been restated to reflect comparable data on the 2007 NAICS basis for more detailed levels within this aggregate.
- 5** Excludes NAICS 525 (Funds, Trusts, and Other Financial Vehicles).
- 6** NAICS published according to the 2007 NAICS definition, as is the 2007 Economic Census. The 2007 NAICS definition includes equity Real Estate Investment Trusts (REITs).
- 7** Excludes NAICS 54112 (Offices of Notaries).
- 8** Excludes NAICS 6111 (Elementary and Secondary Schools), NAICS 6112 (Junior Colleges), and NAICS 6113 (Colleges, Universities, and Professional Schools).
- 9** Estimates are based on data from the 2015 Annual Retail Trade Survey. Estimates have been adjusted using final results of the 2012 Economic Census.
- 10** Excludes NAICS 8131 (Religious Organizations), NAICS 81393 (Labor Unions and Similar Labor Organizations), NAICS 81394 (Political Organizations), and NAICS 814 (Private Households).
- 11** Excludes NAICS 8131 (Religious Organizations), NAICS 81393 (Labor Unions and Similar Labor Organizations), and NAICS 81394 (Political Organizations).

44-45 Total Retail Trade

- 441 Motor vehicles and parts dealers
- 442 Furniture and home furnishings stores
- 443 Electronics and appliance stores
- 444 Building materials and garden equipment and supplies stores
- 445 Food and beverage stores
- 446 Health and personal care stores
- 447 Gasoline stations
- 448 Clothing and clothing accessories stores
- 451 Sporting goods, hobby, book, and music stores
- 452 General merchandise stores
- 453 Miscellaneous store retailers
- 454 Nonstore retailers
- 4541 Electronic shopping and mail-order houses

ⁱ <https://www.census.gov/content/dam/Census/library/working-papers/2001/econ/ebusasa.pdf>

ⁱⁱ https://www.census.gov/retail/mrts/www/data/pdf/ec_current.pdf

ⁱⁱⁱ <https://www.census.gov/content/dam/Census/library/publications/2017/econ/e15-estats.pdf>

^{iv} <https://www.census.gov/data/tables/2015/econ/e-stats/2015-e-stats.html>

^v OECD Guide to Measuring the Information Society, 2011.
<http://browse.oecdbookshop.org/oecd/pdfs/free/9311021e.pdf>

^{vi} <https://www.census.gov/content/dam/Census/library/working-papers/2001/econ/ebusasa.pdf>

Pages 4-5

^{vii} Ibid

^{viii} [https://www2.census.gov/programs-surveys/asm/technical-documentation/questionnaire/2016/instructions/MA-10000\(S\)%20Instruction%20Sheet.pdf](https://www2.census.gov/programs-surveys/asm/technical-documentation/questionnaire/2016/instructions/MA-10000(S)%20Instruction%20Sheet.pdf)

^{ix} https://www2.census.gov/retail/forms_and_letters/arts/sa-44-16.pdf

^x <https://stats.oecd.org/glossary/detail.asp?ID=4721>

^{xi} Intermediaries in the Provision of Services and Classification in ISIC, UNSD Expert Group on International Statistical Classifications, 2017. <https://unstats.un.org/unsd/class/intercop/expertgroup/2017/AC340-10.PDF>

^{xii} Full methodology document for Supplemental U.S. Sales – Total and E-Commerce Sales by Primary Activity (2011-2015) is available at <https://www.census.gov/retail/index.html#ecommerce>

^{xiii} 2013 Canada Survey of Digital Technology and Internet Use (SDTIU): <http://www5.statcan.gc.ca/cansim/a47>

U.K. E-commerce Report:

<https://www.ons.gov.uk/businessindustryandtrade/itandinternetindustry/datasets/ictactivityofukbusinessesecommerceandictactivity>

US 2013 E-stats report: <https://www.census.gov/programs-surveys/e-stats/news-updates/updates/recent-updates.html>

For the U.K., their retail and wholesale trade data used excludes motor vehicles. The U.K. services total does not include financial services.