



**ESTIMATES OF GLOBAL E-COMMERCE 2019
AND PRELIMINARY ASSESSMENT OF COVID-19 IMPACT
ON ONLINE RETAIL 2020**

UNCTAD Technical Notes on ICT for Development

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ESTIMATES OF GLOBAL E-COMMERCE 2019 AND PRELIMINARY ASSESSMENT OF COVID-19 IMPACT ON ONLINE RETAIL 2020

1 COVID-19 impact on e-commerce

Government business-to-business (B2B) and business-to-consumer (B2C) statistics lag by over a year so 2020 data were not available at the time of this note. However, with a view to making preliminary assessment of the impact of COVID-19 on online shopping, this note draws on data on online retail sales from selected countries and from annual reports for 2020 of leading B2C e-commerce companies. The full estimates for e-commerce in 2019 are provided in section 2.

1.1 Online retail sales increase at above average rate in 2020

National statistical offices in several countries compile online retail sales on a frequent basis. Data for these countries, which accounted for 65% of global B2C e-commerce in 2019, suggest that online retail sales as a share of total retail sales jumped by 3 percentage points in 2020 (from 16% to 19%) compared to a two percentage point rise between 2018-2019 (Table 1). Notably, COVID-19 generated an increase in demand for online ordering of physical goods due to quarantine restrictions imposed in many countries.¹ Overall retail sales declined by 1% in this group of countries in 2020 while online retail grew by 22%. Among the countries included in table 1, the Republic of Korea had the highest online share of retail trade at 25.9% in 2020, up from 20.8% the year before.

Table 1: Online retail sales, selected economies, 2018-2020

Economy	Online retail sales (\$ billions)			Retail sales (\$ billions)			Online share (% of retail sales)		
	2018	2019	2020	2018	2019	2020	2018	2019	2020
Australia	13.5	14.4	22.9	239	229	242	5.6	6.3	9.4
Canada	13.9	16.5	28.1	467	462	452	3.0	3.6	6.2
China	1,060.4	1,233.6	1,414.3	5,755	5,957	5,681	18.4	20.7	24.9
Korea (Rep.)	76.8	84.3	104.4	423	406	403	18.2	20.8	25.9
Singapore	1.6	1.9	3.2	34	32	27	4.7	5.9	11.7
United Kingdom	84.0	89.0	130.6	565	564	560	14.9	15.8	23.3
United States	519.6	598.0	791.7	5,269	5,452	5,638	9.9	11.0	14.0
Economies above	1,770	2,038	2,495	12,752	13,102	13,003	14	16	19

Source: UNCTAD, based on national statistics offices.

¹ UNCTAD. 2021. *COVID-19 and e-commerce: a global review*. <https://unctad.org/webflyer/covid-19-and-e-commerce-global-review>

1.2 COVID-19 results in mixed fortunes for e-commerce companies

Another perspective regarding the COVID-19 impact on e-commerce can be deduced from the financial reports of leading e-commerce companies. This provides a more complete picture than the online retail sales since it also covers e-commerce services companies.

Table 2 shows data for the top 13 e-commerce companies in 2020, ten of which are from China and the United States. There was a notable reversal of fortune for services e-commerce companies, such as in ride hailing and travel. All of them experienced sharp declines in gross merchandize volume (GMV) and corresponding drops in ranks. For instance, Expedia fell from 5th place in 2019 to 11th in 2020, Booking Holdings from 6th to 12th and Airbnb, which launched its IPO in 2020, from 11th to 13th. Despite the reduction in services companies' GMV, total GMV for the top 13 B2C e-commerce companies rose by 20.5% in 2020, higher than in 2019 (17.9%). Overall, B2C GMV for these companies stood at US\$ 2.9 trillion in 2020. It is estimated that they accounted for just less than half of B2C e-commerce GMV in 2019.

Table 2: Top B2C e-commerce companies by GMV, 2020

Rank by GMV		Company	HQ	Industry	GMV (\$ billions)			GMV change (%)	
2020	2019				2018	2019	2020	2018-19	2019-20
1	1	Alibaba	China	E-commerce	\$866	\$954	<i>1,145</i>	10.2	20.1
2	2	Amazon	USA	E-commerce	\$344	\$417	<i>\$575</i>	21.0	38.0
3	3	JD.com	China	E-commerce	\$253	\$302	<i>\$379</i>	19.1	25.4
4	4	Pinduoduo	China	E-commerce	\$71	\$146	<i>\$242</i>	104.4	65.9
5	9	Shopify	Canada	Internet Media & Services	\$41	\$61	<i>\$120</i>	48.7	95.6
6	7	eBay	USA	E-commerce	\$90	\$86	<i>\$100</i>	-4.8	17.0
7	10	Meituan	China	E-commerce	\$43	\$57	<i>\$71</i>	33.0	24.6
8	12	Walmart	USA	Consumer goods retail	\$25	\$37	<i>\$64</i>	47.0	72.4
9	8	Uber	USA	Internet Media & Services	\$50	\$65	<i>\$58</i>	30.5	-10.9
10	13	Rakuten	Japan	E-commerce	\$30	\$34	<i>\$42</i>	13.6	24.2
11	5	Expedia	USA	Internet Media & Services	\$100	\$108	<i>\$37</i>	8.2	-65.9
12	6	Booking Holdings	USA	Internet Media & Services	\$93	\$96	<i>\$35</i>	4.0	-63.3
13	11	Airbnb	USA	Internet Media & Services	\$29	\$38	<i>\$24</i>	29.3	-37.1
Companies above					\$2,035	\$2,399	\$2,890	17.9	20.5

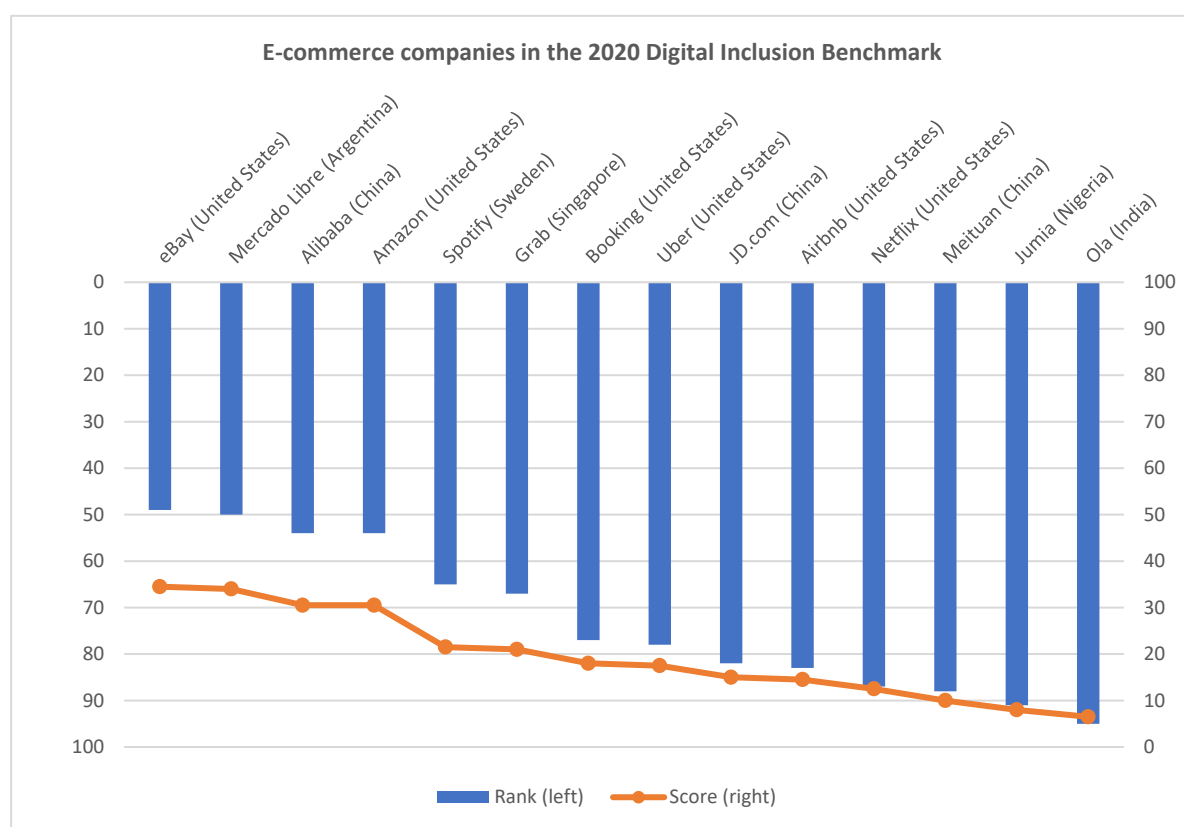
Note: Alibaba year beginning 1 April, Walmart year beginning 1 February. Figures in italics are estimates. GMV = Gross Merchandize Value (as well as Booking Value).

Source: UNCTAD based on company reports.

Box 1: E-commerce companies lagging in support of digital inclusion

In December 2020, the World Benchmarking Alliance launched the first ever global index measuring the performance of tech companies on digital inclusion (Digital Inclusion Benchmark (DIB)).² The world's top 100 digital companies were ranked based on how they contribute to access to digital technologies, building digital skills, enhancing trust and fostering innovation. Fourteen e-commerce companies were included in the DIB. E-commerce enterprises performed poorly compared to companies in other digital industries such as hardware or telecommunication services. For instance, the highest ranked e-commerce company was eBay at 49th place. Overall, e-commerce companies obtained a score of just 20 out of a possible 100. A main factor for the poor performance is that e-commerce companies are relatively young, typically founded only in the last two decades. They have been more focused on shareholders rather than engaging with a wide group of stakeholders and compiling metrics on their environmental, social and governance performance. Nonetheless there are some bright spots. For instance, several e-commerce companies provide free training to entrepreneurs on how to sell online including in some cases, specifically targeted at vulnerable groups such as people with disabilities or ethnic minorities.

Figure 1: E-commerce companies in the 2020 Digital Inclusion Benchmark



Source: UNCTAD based on World Benchmarking Alliance. Digital Inclusion Benchmark 2020.

² World Benchmarking Alliance. 2020. *Digital Inclusion Benchmark Synthesis Report*. <https://www.worldbenchmarkingalliance.org/research/synthesis-report-digital-inclusion-benchmark-2020/>

2 Estimates of Global E-commerce 2019

2.1 E-commerce sales up four per cent in 2019

UNCTAD estimates that the global value of e-commerce sales (B2B and B2C) reached almost \$26.7 trillion in 2019 (see Table 3). This corresponded to about 30% of GDP and represented an increase of 4% from 2018 (\$25.6 trillion). The estimated value of global B2B e-commerce was \$21.8 trillion, representing 82% of all e-commerce, including both sales over online market platforms and electronic data interchange (EDI) transactions. B2C e-commerce sales were estimated at \$4.9 trillion in 2019, up 11% over 2018. The top three countries by B2C e-commerce sales remained China, the United States and the United Kingdom.

Table 3: E-commerce sales: Top ten countries, 2019

Rank	Economy	Total e-commerce sales (\$ billions)	Share of total e-commerce sales in GDP (%)	B2B e-commerce sales (\$ billions)	Share of B2B e-commerce sales in total e-commerce (%)	B2C e-commerce sales (\$ billions)
1	United States	<i>9,580</i>	45	<i>8,319</i>	87	<i>1,261</i>
2	Japan	<i>3,416</i>	67	<i>3,238</i>	95	<i>178</i>
3	China	<i>2,604</i>	18	<i>1,065</i>	41	<i>1,539</i>
4	Korea (Rep.)	<i>1,302</i>	79	<i>1,187</i>	91	<i>115</i>
5	United Kingdom	<i>885</i>	31	<i>633</i>	72	<i>251</i>
6	France	<i>785</i>	29	<i>669</i>	85	<i>116</i>
7	Germany	<i>524</i>	14	<i>413</i>	79	<i>111</i>
8	Italy	<i>431</i>	22	<i>396</i>	92	<i>35</i>
9	Australia	<i>347</i>	25	<i>325</i>	94	<i>21</i>
10	Spain	<i>344</i>	25	<i>280</i>	81	<i>64</i>
	10 above	20,218	36	16,526	82	3,691
	World	26,673	30	21,803		4,870

Source: UNCTAD, based on national sources.

Note: Figures in italics are UNCTAD estimates.

2.2 Top 20 economies by B2C e-commerce sales

Developing and transition economies accounted for about half of the top 20 economies by B2C e-commerce sales in 2019 (see Table 4). In relation to GDP, B2C e-commerce sales were the largest in Hong Kong (China), China and the United Kingdom. Among the top 20 economies, the extent to which Internet users engage in online purchases varies considerably. In 2019, the highest shares were observed in the United Kingdom (88%), Canada, Germany and the Netherlands (all 84%).

Table 4: B2C e-commerce sales: Top 20 economies, 2019

Rank	Economy	B2C e-commerce sales (\$ billion)	Share of B2C e-commerce sales in GDP (%)	Online shoppers (million)	Online shoppers (% of internet users)
1	China	1,539	10.7	639	75
2	United States	1,261	5.9	189	80
3	United Kingdom	251	8.9	42	88
4	Japan	178	3.5	55	54
5	France	116	4.3	38	77
6	Korea (Rep.)	115	7.0	27	66
7	Germany	111	2.9	56	84
8	Spain	64	4.6	23	64
9	India	61	2.1	70	20
10	Canada	53	3.0	24	84
11	Hong Kong (China)	38	10.4	2	38
12	Italy	35	1.8	19	49
13	Russian Federation	31	1.9	34	35
14	Mexico	31	2.5	26	32
15	Netherlands	29	3.2	12	84
16	Thailand	27	5.3	5	14
17	Ireland	25	6.4	2	73
18	Australia	21	1.5	12	73
19	Malaysia	19	6.0	15	35
20	Brazil	16	0.9	48	39
	20 above	4,021	5.9	1,339	59

Source: UNCTAD, based on sources mentioned in section 3 on methodology and data sources.

Note. Data for some economies are from supply-side surveys that include overseas sales (exports) but not overseas purchases. Data for other economies are from demand-side surveys that include purchases by consumers from overseas (imports) but not foreign sales by companies. Hence the data are not directly comparable and should therefore be interpreted carefully. Figures in italics refer to 2018.

2.3 Cross-border B2C e-commerce

UNCTAD estimates that cross-border B2C e-commerce sales amounted to \$440 billion in 2019, representing an increase of 9% over 2018. This is based on sales for the top ten economies by merchandise exports (Table 5). Cross-border sales are estimated to be 9% of total B2C e-commerce sales.

Table 5: Cross border B2C e-commerce sales: Top ten merchandise exporters, 2019

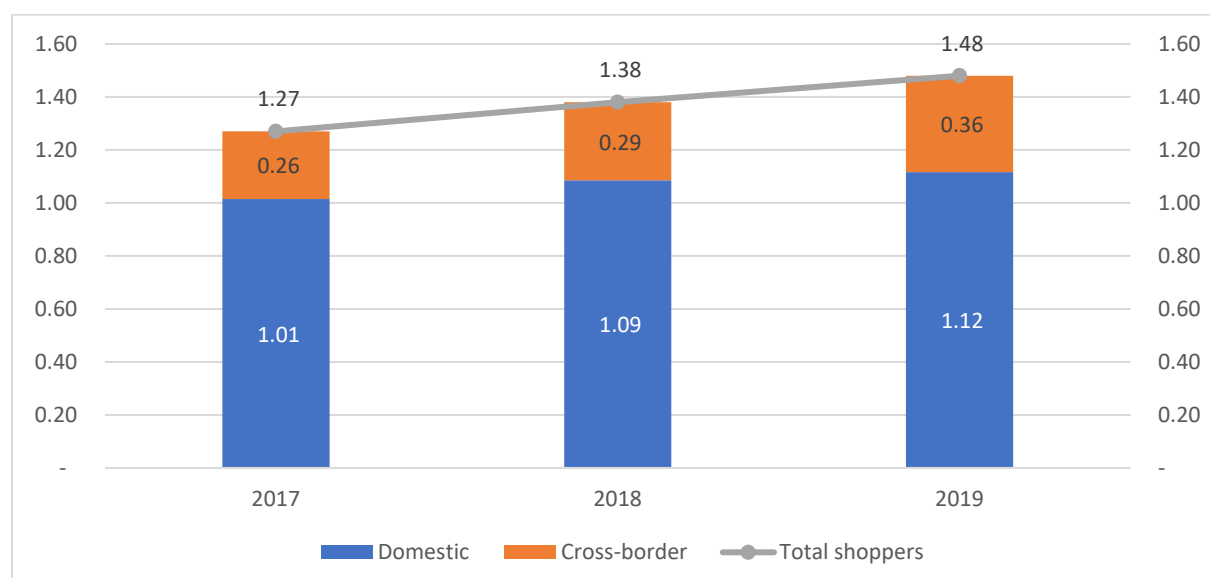
Rank	Economy	Cross border B2C e-commerce sales (\$ billions)	Share of cross border B2C e-commerce sales in merchandise exports (%)	Share of cross-border B2C sales in total B2C e-commerce sales (%)
1	China	105	4.2	6.8
2	United States	90	5.5	7.1
3	United Kingdom	38	8.2	15.2
4	Hong Kong (China)	35	6.2	94.3
5	Japan	23	3.3	13.2
6	Germany	16	1.1	14.7
7	France	12	2.2	10.6
8	Korea (Rep.)	5	0.9	4.4
9	Italy	5	0.9	13.9
10	Netherlands	1	0.2	4.3
	10 above	332	3.4	9.0
	World	440	2.3	9.0

Source: UNCTAD estimates based on national sources.

2.4 Almost 1.5 billion people shopped online in 2019

UNCTAD estimates that 1.48 billion people, or a little over one quarter of the world's population aged 15 and older, made purchases online in 2019 (Figure 2). This is 7% higher than in 2018. While the majority of online shoppers mainly buy from domestic suppliers, some 360 million online shoppers made cross-border purchases in 2019—around one in four of all online shoppers. The interest in buying from foreign suppliers continued to expand. The share of cross-border online shoppers to all online shoppers rose from 20% in 2017 to 25% in 2019.

Figure 2: Global online shoppers (billions), 2017-2019



Source: UNCTAD, based on national data.

Note: Cross-border refers to shoppers who purchase from websites located outside their own country. Following the transaction, the goods are delivered to the overseas location where the purchaser is located.

3 Methodology and data sources

3.1 Global estimates

Global *B2C e-commerce sales* were estimated based on the GDP share (92%) of the countries with data on B2C e-commerce. Data on *total e-commerce sales* were available for countries representing 65% of global GDP. To estimate global e-commerce sales UNCTAD used the ratio of B2C to total e-commerce for those countries.

Global *cross-border B2C e-commerce sales* were estimated based on total B2C sales of the top ten merchandise exporters.

Global number of online shoppers was estimated based on the top 25 economies representing 90% of all online shoppers.

3.2 Data sources

GDP and annual average exchange rates were sourced from the World Bank.³ Merchandise exports were sourced from the World Trade Organization.⁴ Company data were sourced from their respective annual financial reports. Sources for the proportion of online shoppers are from national surveys. Sources for data in Tables 1, 2 and 4 are shown below.

3.2.1 Australia

Total e-commerce is sourced from the Australian Bureau of Statistics (ABS) and refers to Internet income encapsulating all B2B and B2C orders.⁵ Online retail sales data is from ABS.⁶ Data on B2C e-commerce are from the National Australia Bank.⁷ As the latest Internet income data are from 2017, estimates for 2019 were based on the proportion of B2C in total Internet income.

3.2.2 Brazil

B2C e-commerce sales are from Ebit based on a demand survey and do not include services.⁸

3.2.3 Canada

Data on B2C e-commerce sales are from Statistics Canada, based on a demand survey.⁹ Online retail sales are also from Statistics Canada.¹⁰

³ <https://data.worldbank.org/indicator/NY.GDP.MKTP.CD> and <https://data.worldbank.org/indicator/PA.NUS.ATLS>

⁴ <https://timeseries.wto.org>

⁵ Australian Bureau of Statistics. 2018. "8166.0 - Summary of IT Use and Innovation in Australian Business, 2016-17." <https://www.abs.gov.au/ausstats/abs@.nsf/mf/8166.0>

⁶ <https://www.abs.gov.au/articles/online-sales-january-2021-supplementary-covid-19-analysis>

⁷ National Australia Bank. 2020. "NAB Online Retail Sales Index December 2019." <https://business.nab.com.au/wp-content/uploads/2020/02/NAB-Online-Retail-Sales-Index-December-2019.pdf>

⁸ ebit. 2020 "WEBSHOPPERS ISSUE 41 2020."

⁹ Statistics Canada. 2019. "Online shopping in Canada, 2018." *Just the Facts*, 2 December. <https://www150.statcan.gc.ca/n1/pub/89-28-0001/2018001/article/00016-eng.htm#data>

¹⁰ Statistics Canada. Table 20-10-0072-01 Retail e-commerce sales (x 1,000). DOI: <https://doi.org/10.25318/2010007201-eng>

3.2.4 China

Official statistics for B2C (including online retail)¹¹ and total¹² e-commerce are available from the Chinese Bureau of Statistics. There are no regularly published official data on the value of cross-border e-commerce, which were derived from Alibaba's export sales.¹³ Alibaba had a 62% B2C market share in 2019.

3.2.5 France

Official statistics for e-commerce value are available from the national statistics office.¹⁴ Cross-border e-commerce sales were estimated on the basis of exports by non-store online retailers in 2015.¹⁵

3.2.6 Germany

In Germany, B2C and B2B data were sourced from the industry association (BEVH).¹⁶ Cross-border e-commerce was estimated on reported cross-border sales from the second and third largest B2C companies in the country.¹⁷

3.2.7 Hong Kong, China

E-commerce value data are available from the Census and Statistics Department.¹⁸ Cross-border sales were derived by subtracting estimated consumer online spending from B2C sales. B2C e-commerce sales data are based on supply survey.

3.2.8 India

B2C e-commerce value is sourced from J.P. Morgan.¹⁹

3.2.9 Ireland

B2C e-commerce sales are from the Central Bank of Ireland and based on credit card transactions.²⁰

¹¹ Statistical Communiqué of the People's Republic of China on the 2019 National Economic and Social Development. <http://www.stats.gov.cn>

¹² <http://data.stats.gov.cn/english/easyquery.htm?cn=C01>

¹³ Alibaba Group Holding Limited. 2020. *Form 20-F*. <https://otp.investis.com/clients/us/alibaba/SEC/sec-show.aspx?Type=html&FilingId=13476929&CIK=0001577552&Index=10000>

¹⁴ Insee. 2020. "Les TIC et le commerce électronique dans les entreprises en 2019."

<https://www.insee.fr/fr/statistiques/4464231>

¹⁵ Direction générale des douanes et droits indirects. 2016. Le secteur de la vente à distance se développe à l'international." *Etudes et éclairages*, October.

https://lekiosque.finances.gouv.fr/fichiers/etudes/tableaux/ee_70.pdf

¹⁶ BEVH. "The Impact Of E-Commerce on the German Economy." <https://www.bevh.org/impact-of-e-commerce.html>

¹⁷ According to EHI Retail Institute, Amazon, Otto and Zalando are the three top e-commerce sites by sales (<https://www.ehi.org/de/top-100-umsatzstaerkste-onlineshops-in-deutschland/>). Otto and Zalando reports were analyzed to determine the share of foreign sales. See: <https://corporate.zalando.com/en/investor-relations> and https://www.ottogroup.com/en/die-otto-group/daten-fakten/Annual_Reports.php.

¹⁸ Census and Statistics Department. 2020. "Report on the Survey on Information Technology Usage and Penetration in the Business Sector for 2019."

<https://www.censtatd.gov.hk/hkstat/sub/sp120.jsp?productCode=B1110005>

¹⁹ <https://www.jpmorgan.com/merchant-services/insights/reports/india-2020>

²⁰ Central Bank of Ireland. 2020. "Credit and Debit Card Statistics – Q4 2019." <https://www.centralbank.ie>

3.2.10 Italy

B2C value including cross-border sales and purchases was compiled by the School of Management Politecnico di Milano.²¹ B2B and total e-commerce were derived from the B2C ratio based on EUROSTAT percentages.

3.2.11 Japan

Official statistics for both B2C and B2B are available from METI.²² Cross-border sales and purchases are also available from METI but only for trade with China and the United States.

3.2.12 Malaysia

Data on B2C e-commerce sales refer to 2017 and are from the Department of Statistics.²³

3.2.13 Mexico

Data on B2C e-commerce sales are from Asociación de Internet MX and based on a demand survey.²⁴

3.2.14 Netherlands

The Netherlands is among the top ten merchandise exporters. B2C consumer spending was sourced from the industry association.²⁵ Cross-border sales were estimated based on the export revenue of the second largest online shop.²⁶

3.2.15 Republic of Korea

B2C value data including online retail and cross-border sales and purchases are available from the national statistical office.²⁷ As it stopped publishing B2B statistics several years ago (last available data are from 2013), total e-commerce was estimated based on the ratio to GDP in 2013 (84%).

3.2.16 Russian Federation

B2C e-commerce sales are from the Association of Internet Trade Companies (AKIT).²⁸

3.2.17 Singapore

Online retail sales are available from Statistics Singapore.²⁹

3.2.18 Spain

Official value statistics for B2C and B2B are available from the National Statistical Institute.³⁰

²¹ Osservatori Digital Innovation del Politecnico di Milano. <https://www.osservatori.net>

²² Ministry of Economy, Trade and Industry (METI). <https://www.meti.go.jp>

²³ Department of Statistics. 2019. "Statistics on Usage of ICT and E-Commerce by Establishment 2018." *Press Release*, 14 May.

<https://www.dosm.gov.my/v1/index.php?r=column/pdfPrev&id=U3FYOHJ3cE90UnNWMWdUaVMzREIKdz09>

²⁴ Asociación de Internet MX. <https://www.asociaciondeinternet.mx/estudios/comercio-electronico>

²⁵ Thuiswinkel. <https://www.thuiswinkel.org>

²⁶ Cool Blue. *Yearbook*. <https://www.coolblue.nl/en/c/yearbook.html>

²⁷ Statistics Korea. <http://kostat.go.kr>

²⁸ <https://akit.ru/internet-torgovlya-v-rossii-2020/>

²⁹ <https://www.singstat.gov.sg/find-data/search-by-theme/industry/services/latest-data>

³⁰ Instituto Nacional de Estadística (INE). 2020. "Encuesta de uso de TIC y Comercio Electrónico (CE) en las empresas."

3.2.19 Thailand

Data on B2C e-commerce sales are based on figures sourced to the Electronic Transaction Development Agency and based on a supply survey.³¹

3.2.20 United Kingdom

Official value statistics for B2C and B2B³² and online retail sales³³ are available from the Office of National Statistics. Cross-border data were estimated on the basis of SME online export sales.³⁴

3.2.21 United States

Overall figures for e-commerce in four key industries are published by US Census Bureau (latest data available for 2018).³⁵ These were added together for total e-commerce. B2C e-commerce was derived from retail e-commerce sales and the estimated proportion of B2C in the services industry total e-commerce (based on the proportion of B2C sales by the service industry in the United Kingdom). Cross border data were estimated based on available bilateral data (i.e., Canada, China, Japan and Republic of Korea).

https://www.ine.es/dyngs/INEbase/es/operacion.htm?c=estadistica_C&cid=1254736176743&menu=ultiDatos&idp=1254735576799

³¹ Suchit Leesa-Nguansuk. 2019. "E-commerce grows 14%, highest in Asean." *Bangkok Post*, 5 February.

<https://www.bangkokpost.com/business/1623714/e-commerce-grows-14-highest-in-asean>

³² Office of National Statistics (ONS). "E-commerce and ICT activity, UK Statistical bulletins."

<https://www.ons.gov.uk/businessindustryandtrade/itandinternetindustry/bulletins/ecommerceandictactivity/previousReleases>

³³ <https://www.ons.gov.uk/businessindustryandtrade/retailindustry/bulletins/retailsales/march2021#retail-sales-data>

³⁴ WorldFirst. 2017. *Rise of the Global iStreet*.

https://www.worldfirst.com/downloads/rise_of_the_global_istreet.pdf

³⁵ United States Census Bureau. "E-Stats". <https://www.census.gov/programs-surveys/e-stats.html>



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