

Trends in U.S. Trade in Information and Communications Technology (ICT) Services and in ICT-Enabled Services

By Alexis N. Grimm

INFORMATION AND COMMUNICATIONS technologies (ICT) play a vital role in the facilitation of trade in many types of services. Technological advances and reductions in costs for ICT over time have led to a greater opportunity for the remote provision and procurement of services across international borders. The desire to understand how these technological changes may affect international trade in ICT services and of the services trade taking place over ICT networks has led to increased interest in measuring such trade. This article builds on the international statistical community's recent progress toward more precisely defining the types of services that fall into these categories. It presents statistics for 1999–2014 of U.S. trade in ICT and potentially ICT-enabled services using statistics published by the Bureau of Economic Analysis (BEA) on international trade in services. In keeping with the Bureau of Economic Analysis's mission, these statistics promote a better understanding how U.S. companies engaged in services trade are reaching global markets. They also shed light on whether and how companies have reconfigured their global value chains over time in response to improvements in ICT.

This article updates and extends an earlier paper, "Trends in Digitally Enabled Trade in Services, 1998–2010," which featured estimates of ICT-enabled services trade (referred in that article as "digitally enabled" services trade) compiled from statistics published by BEA.¹ This article refines the definition of ICT-enabled services used in the earlier article with the expanded detail in trade in services resulting from the comprehensive restructuring of the international economic accounts in 2014.² It also introduces statistics on trade in ICT services and country-level statistics on trade in potentially ICT-enabled services.

ICT services are those services that are used to facilitate information processing and communication. ICT services presented in this article include three categories of services from BEA's published statistics on international trade in services: telecommunications services, computer services, and charges for the use of intellectual property associated with computer software (table A). ICT-enabled services are "services with

outputs delivered remotely over ICT networks."³ This

3. Timothy J. Sturgeon, Torbjörn Fredriksson, Scarlett Fondeur, and Diana Korke, *International Trade in ICT Services and ICT-Enabled Services: Proposed Indicators from the Partnership on Measuring ICT for Development* (Geneva, Switzerland: United Nations Conference on Trade and Development (UNCTAD) Division on Technology and Logistics, Science, Technology and ICT Branch, ICT Analysis Section, October 2015).

Table A. Trade in Selected Services Types by ICT and Potentially ICT-Enabled Services Categories, 2014

[Millions of dollars]

| | Exports | Imports | Balance |
|---|----------------|----------------|----------------|
| Total services | 710,565 | 477,428 | 233,137 |
| Potentially ICT-enabled services | 385,108 | 230,875 | 154,233 |
| ICT services | 68,374 | 37,815 | 30,559 |
| Other potentially ICT-enabled services..... | 316,734 | 193,060 | 123,674 |
| Not potentially ICT-enabled services | 325,457 | 246,553 | 78,904 |
| Total services | 710,565 | 477,428 | 233,137 |
| Maintenance and repair services n.i.e. | 22,389 | 7,468 | 14,921 |
| Transport | 90,031 | 94,219 | -4,188 |
| Travel (for all purposes including education) | 177,241 | 110,787 | 66,454 |
| Insurance services | 17,417 | 50,096 | -32,679 |
| Financial services..... | 87,290 | 19,503 | 67,787 |
| Charges for the use of intellectual property n.i.e. | 130,362 | 42,124 | 88,238 |
| Industrial processes..... | 48,723 | 23,783 | 24,940 |
| Computer software..... | 39,514 | 6,773 | 32,741 |
| Trademarks | 16,883 | (D) | (D) |
| Franchise fees..... | 5,735 | (D) | (D) |
| Audio-visual and related products..... | 19,414 | 7,643 | 11,771 |
| Other intellectual property..... | 94 | 114 | -20 |
| Telecommunications, computer, and information services..... | 35,885 | 33,314 | 2,571 |
| Telecommunications services | 13,550 | 6,656 | 6,894 |
| Computer services..... | 15,310 | 24,386 | -9,076 |
| Information services..... | 7,025 | 2,272 | 4,753 |
| Other business services..... | 129,514 | 95,752 | 33,762 |
| Research and development services..... | 33,192 | 33,048 | 144 |
| Professional and management consulting services | 59,487 | 38,163 | 21,324 |
| Technical, trade-related, and other business services | 36,834 | 24,542 | 12,292 |
| Architectural and engineering services..... | 12,343 | 4,986 | 7,357 |
| Construction | 1,971 | 2,261 | -290 |
| Industrial engineering..... | 4,085 | 2,691 | 1,394 |
| Mining | 3,797 | 1,762 | 2,035 |
| Operating leasing services | 7,505 | 3,509 | 3,996 |
| Trade-related services | 1,269 | 1,390 | -121 |
| Sports and performing arts..... | 817 | 992 | -175 |
| Training services..... | 2,515 | 1,260 | 1,255 |
| Other business services n.i.e. | 2,532 | 5,690 | -3,158 |
| Government goods and services n.i.e..... | 20,438 | 24,163 | -3,725 |

ICT Information and communications technology

ICT services

Other potentially ICT-enabled services

(D) Suppressed to avoid the disclosure of the data of individual companies.

n.i.e. Not included elsewhere

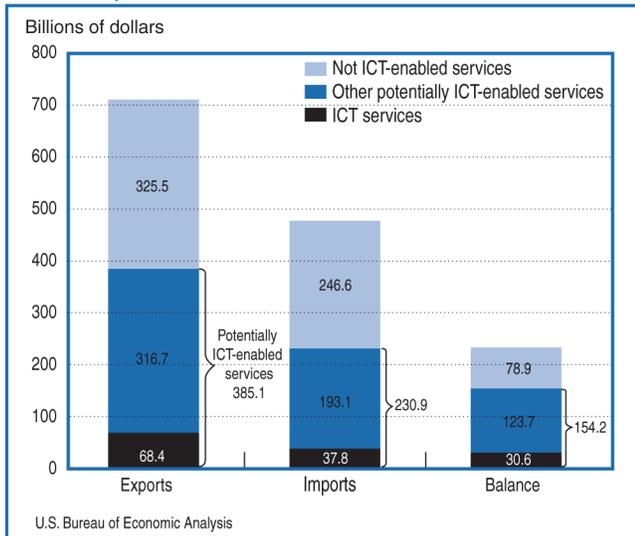
1. Maria Borga and Jennifer Koncz-Bruner. "Trends in Digitally Enabled Trade in Services, 1998–2010" (June 2012).

2. For more information, see Maria Borga and Kristy L. Howell, "The Comprehensive Restructuring of the International Economic Accounts: Changes in Definitions, Classifications, and Presentations," SURVEY OF CURRENT BUSINESS 90 (March 2014).

article also features a more broadly defined concept, *potentially* ICT-enabled services. For many types of services, the actual mode of delivery is unknown. Potentially ICT-enabled services include services types that *can* predominantly be delivered remotely over ICT networks without identifying the services that *are* delivered over ICT networks. See the box, “Defining ICT and Potentially ICT-Enabled Trade in Services.” Statistics on potentially ICT-enabled services are composed of BEA’s published statistics on international trade in insurance services; financial services; charges for the use of intellectual property n.i.e.; telecommunications, computer, and information services; and certain other services included in other business services (table A). Potentially ICT-enabled services include ICT services. Before 2006, limited detail is available for statistics on certain types of services trade. Consequently, ICT and potentially ICT-enabled statistics for 1999–2005 are partly based on estimates of subcomponents within services categories.⁴

In 2014, exports of ICT services were \$68.4 billion, and imports of ICT services were \$37.8 billion, resulting in a trade surplus in ICT services of \$30.6 billion. Exports of potentially ICT-enabled services were \$385.1 billion, and imports of potentially ICT-enabled services were \$230.9 billion, resulting in a trade surplus of \$154.2 billion (chart 1). The statistics on trade

Chart 1. Trade in ICT and Potentially ICT-Enabled Services, 2014

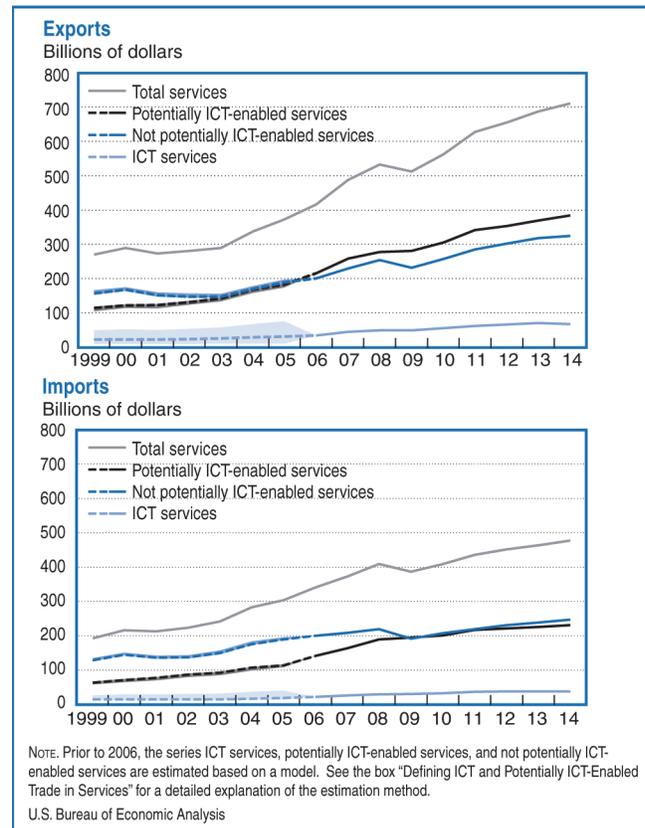


in ICT services and trade in potentially ICT-enabled services presented in this article are available starting

4. For more detailed definitions of ICT and potentially ICT-enabled services, see the box “Defining ICT and Potentially ICT-Enabled Trade in Services.” For the full list of types of trade in services in BEA’s published statistics that are identified as ICT and as potentially ICT-enabled, see table 1.

for 1999, the earliest year for which BEA has published data on trade in services by type that allow for ICT services and potentially ICT-enabled services to be separately identified or estimated.⁵ From 1999 to 2014, ICT services exports and potentially ICT-enabled services exports and imports more than tripled, and ICT services imports more than doubled (chart 2).⁶ Exports of

Chart 2. Trade in ICT and Potentially ICT-Enabled Services, 1999–2014



both ICT and potentially ICT-enabled services grew faster than imports, leading to an increase in the trade surplus in ICT services from 1.7 percent to 2.6 percent of total trade in services (exports plus imports) and to an increase in the trade surplus in potentially ICT-enabled services from 10.9 percent to 13.0 percent of total trade in services. The growth in the surplus on trade in potentially ICT-enabled services contributed to the growth of the surplus on trade in all services, which

5. The statistics presented in this article are calculated from BEA’s published statistics on trade in services, not from the underlying data used to compile the services trade statistics. For future years, statistics on trade in ICT services and trade in potentially ICT-enabled services will be calculated from the underlying data by the same processing system used for the other services trade statistics. The statistics in this article may differ slightly from those that will be published in future years because of differences in the rounding procedures used.

6. All statistics presented in this article are in current dollars and all growth rates are in nominal terms.

increased from 16.9 percent to 19.6 percent of total trade in services over the same period.

This article describes trade in ICT services and in potentially ICT-enabled services in 2014 and examines trends in these series from 1999. First, overall trade is discussed, followed by a discussion of U.S. trade in ICT and potentially ICT-enabled services by partner country. Summary statistics are provided in each section. For additional statistics, see tables 1–8 that follow this article. The following are key findings identified in this article:

- From the early 2000s to 2008, trade in ICT and potentially ICT-enabled services grew most rapidly. Growth slowed considerably in 2009, reflecting the broader economic slowdown and then resumed in 2010 for exports and in 2011 for imports before starting to slow again in 2012. Exports and imports of ICT services contracted in 2014.
- In 2014, the majority of trade in ICT services was between affiliated trading partners, and the majority of trade in potentially ICT-enabled services was between unaffiliated trading partners.
- In 2014, Europe accounted for the most exports of ICT services, exports of potentially ICT-enabled services, and imports of potentially ICT-enabled services by region. Asia and Pacific accounted for the most imports of ICT services.
- In 2014, the United States had trade surpluses in ICT services with every region except the Middle East and with all regions in potentially ICT-enabled services. The largest trade surpluses in ICT services were with Europe and Latin America and Other Western Hemisphere. The largest surpluses in potentially ICT-enabled services were with Europe and Asia and Pacific.

U.S. Exports

ICT services

In 2014, the most recent year for which BEA's most detailed annual trade in services statistics are available, exports of ICT services were \$68.4 billion, or 9.6 percent of total services exports (table B). By service type, more than half of ICT exports in 2014 were exports that reflect charges for the use of intellectual property associated with computer software (chart 3). By affiliation status of trading partners, just over half of all ICT exports were to affiliated purchasers in 2014 (table C).

From 1999, the earliest year for which BEA has published data on trade in services by type that allow for ICT services to be separately identified or estimated, to 2014, ICT exports increased at an average annual rate of 7.6 percent (table D). Over that same period, exports of all services types grew by an average annual rate of 6.6 percent, resulting in an increase in ICT ser-

vices' share of all services exports to 9.6 percent from 8.3 percent (table B). Exports of ICT services grew rapidly from 2003 to 2008, but growth slowed in 2009, reflecting the broader economic slowdown. Growth resumed in 2010 and 2011, but slowed again from 2012

Table B. Trade in ICT Services and in Potentially ICT-Enabled Services, 1999-2014

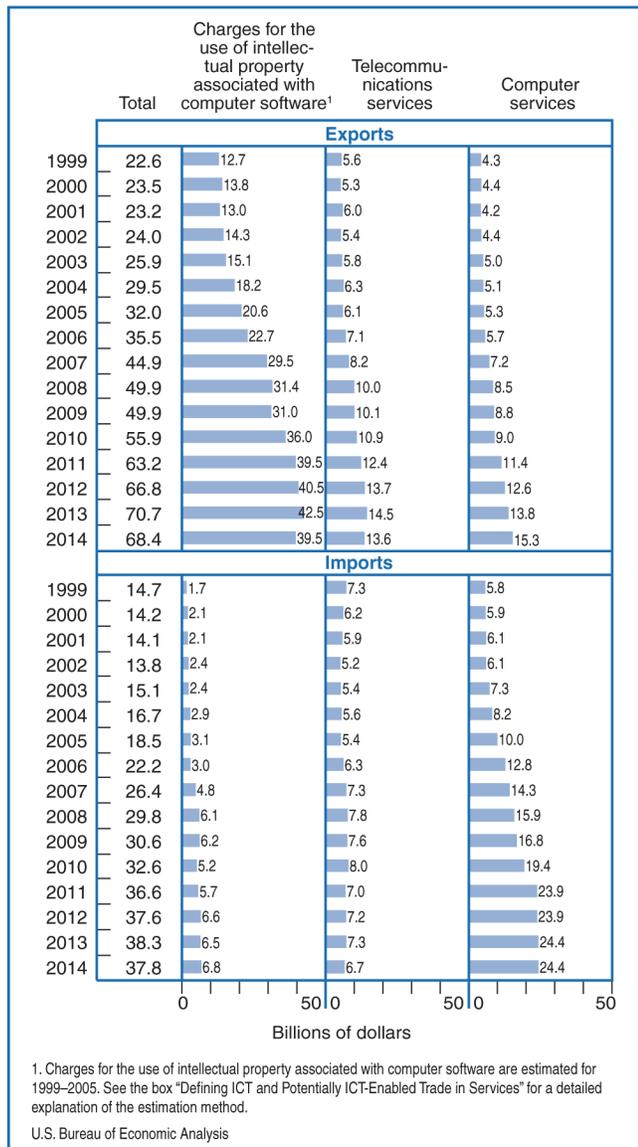
| | Potentially ICT-enabled services | | | | | | | Not potentially ICT-enabled services | |
|----------------|------------------------------------|-----------------------------|--------------------------------------|-----------------------------|--|-----------------------------|-----------------------------|--------------------------------------|--------------------------------------|
| | All services (Millions of dollars) | Total (Millions of dollars) | Total | | Other potentially ICT-enabled services | | Total (Millions of dollars) | As a share of all services (Percent) | |
| | | | As a share of all services (Percent) | Total (Millions of dollars) | As a share of all services (Percent) | Total (Millions of dollars) | | | As a share of all services (Percent) |
| Exports | | | | | | | | | |
| 1999 | 271,343 | 114,830 | 42.3 | 22,646 | 8.3 | 92,183 | 34.0 | 156,513 | 57.7 |
| 2000 | 290,381 | 122,220 | 42.1 | 23,472 | 8.1 | 98,748 | 34.0 | 168,161 | 57.9 |
| 2001 | 274,323 | 122,616 | 44.7 | 23,215 | 8.5 | 99,401 | 36.2 | 151,707 | 55.3 |
| 2002 | 280,670 | 132,452 | 47.2 | 24,009 | 8.6 | 108,443 | 38.6 | 148,218 | 52.8 |
| 2003 | 289,972 | 142,427 | 49.1 | 25,852 | 8.9 | 116,575 | 40.2 | 147,545 | 50.9 |
| 2004 | 337,966 | 168,062 | 49.7 | 29,537 | 8.7 | 138,526 | 41.0 | 169,904 | 50.3 |
| 2005 | 373,006 | 183,124 | 49.1 | 32,009 | 8.6 | 151,115 | 40.5 | 189,882 | 50.9 |
| 2006 | 416,738 | 215,508 | 51.7 | 35,494 | 8.5 | 180,014 | 43.2 | 201,230 | 48.3 |
| 2007 | 488,396 | 258,566 | 52.9 | 44,908 | 9.2 | 213,658 | 43.7 | 229,830 | 47.1 |
| 2008 | 532,817 | 277,769 | 52.1 | 49,915 | 9.4 | 227,854 | 42.8 | 255,048 | 47.9 |
| 2009 | 512,722 | 280,768 | 54.8 | 49,940 | 9.7 | 230,828 | 45.0 | 231,954 | 45.2 |
| 2010 | 563,333 | 305,582 | 54.2 | 55,910 | 9.9 | 249,672 | 44.3 | 257,751 | 45.8 |
| 2011 | 627,781 | 342,399 | 54.5 | 63,244 | 10.1 | 279,155 | 44.5 | 285,382 | 45.5 |
| 2012 | 656,411 | 353,520 | 53.9 | 66,796 | 10.2 | 286,724 | 43.7 | 302,891 | 46.1 |
| 2013 | 687,894 | 369,975 | 53.8 | 70,714 | 10.3 | 299,261 | 43.5 | 317,919 | 46.2 |
| 2014 | 710,565 | 385,108 | 54.2 | 68,374 | 9.6 | 316,734 | 44.6 | 325,457 | 45.8 |
| Imports | | | | | | | | | |
| 1999 | 192,893 | 64,140 | 33.3 | 14,697 | 7.6 | 49,443 | 25.6 | 128,753 | 66.7 |
| 2000 | 216,115 | 71,477 | 33.1 | 14,183 | 6.6 | 57,294 | 26.5 | 144,638 | 66.9 |
| 2001 | 213,465 | 77,194 | 36.2 | 14,135 | 6.6 | 63,060 | 29.5 | 136,271 | 63.8 |
| 2002 | 224,379 | 86,991 | 38.8 | 13,821 | 6.2 | 73,169 | 32.6 | 137,388 | 61.2 |
| 2003 | 242,219 | 92,427 | 38.2 | 15,112 | 6.2 | 77,315 | 31.9 | 149,792 | 61.8 |
| 2004 | 283,083 | 106,644 | 37.7 | 16,693 | 5.9 | 89,951 | 31.8 | 176,439 | 62.3 |
| 2005 | 304,448 | 114,163 | 37.5 | 18,519 | 6.1 | 95,643 | 31.4 | 190,285 | 62.5 |
| 2006 | 341,165 | 141,358 | 41.4 | 22,162 | 6.5 | 119,196 | 34.9 | 199,807 | 58.6 |
| 2007 | 372,575 | 164,067 | 44.0 | 26,394 | 7.1 | 137,673 | 37.0 | 208,508 | 56.0 |
| 2008 | 409,052 | 189,872 | 46.4 | 29,790 | 7.3 | 160,082 | 39.1 | 219,180 | 53.6 |
| 2009 | 386,801 | 194,961 | 50.4 | 30,626 | 7.9 | 164,335 | 42.5 | 191,840 | 49.6 |
| 2010 | 409,313 | 200,976 | 49.1 | 32,621 | 8.0 | 168,355 | 41.1 | 208,337 | 50.9 |
| 2011 | 435,761 | 216,537 | 49.7 | 36,615 | 8.4 | 179,922 | 41.3 | 219,224 | 50.3 |
| 2012 | 452,013 | 221,013 | 48.9 | 37,604 | 8.3 | 183,409 | 40.6 | 231,000 | 51.1 |
| 2013 | 463,700 | 225,840 | 48.7 | 38,267 | 8.3 | 187,573 | 40.5 | 237,860 | 51.3 |
| 2014 | 477,428 | 230,875 | 48.4 | 37,815 | 7.9 | 193,060 | 40.4 | 246,553 | 51.6 |
| Balance | | | | | | | | | |
| 1999 | 78,450 | 50,690 | 64.6 | 7,949 | 10.1 | 42,741 | 54.5 | 27,760 | 35.4 |
| 2000 | 74,266 | 50,744 | 68.3 | 9,290 | 12.5 | 41,454 | 55.8 | 23,522 | 31.7 |
| 2001 | 60,858 | 45,421 | 74.6 | 9,080 | 14.9 | 36,341 | 59.7 | 15,437 | 25.4 |
| 2002 | 56,291 | 45,461 | 80.8 | 10,187 | 18.1 | 35,273 | 62.7 | 10,830 | 19.2 |
| 2003 | 47,753 | 50,000 | 104.7 | 10,740 | 22.5 | 39,260 | 82.2 | -2,247 | -4.7 |
| 2004 | 54,883 | 61,418 | 111.9 | 12,843 | 23.4 | 48,575 | 88.5 | -6,535 | -11.9 |
| 2005 | 68,558 | 68,961 | 100.6 | 13,490 | 19.7 | 55,471 | 80.9 | -403 | -0.6 |
| 2006 | 75,573 | 74,150 | 98.1 | 13,332 | 17.6 | 60,818 | 80.5 | 1,423 | 1.9 |
| 2007 | 115,821 | 94,499 | 81.6 | 18,514 | 16.0 | 75,985 | 65.6 | 21,322 | 18.4 |
| 2008 | 123,765 | 87,897 | 71.0 | 20,125 | 16.3 | 67,772 | 54.8 | 35,868 | 29.0 |
| 2009 | 125,921 | 85,807 | 68.1 | 19,314 | 15.3 | 66,493 | 52.8 | 40,114 | 31.9 |
| 2010 | 154,020 | 104,606 | 67.9 | 23,289 | 15.1 | 81,317 | 52.8 | 49,414 | 32.1 |
| 2011 | 192,020 | 125,862 | 65.5 | 26,629 | 13.9 | 99,233 | 51.7 | 66,158 | 34.5 |
| 2012 | 204,398 | 132,507 | 64.8 | 29,192 | 14.3 | 103,315 | 50.5 | 71,891 | 35.2 |
| 2013 | 224,194 | 144,135 | 64.3 | 32,447 | 14.5 | 111,688 | 49.8 | 80,059 | 35.7 |
| 2014 | 233,137 | 154,233 | 66.2 | 30,559 | 13.1 | 123,674 | 53.0 | 78,904 | 33.8 |

to 2013. ICT exports contracted in 2014. More than half of the increase in ICT exports from 1999–2014 was in exports that reflect charges for the use of intellectual property associated with computer software, which more than tripled over that period (chart 3).

Potentially ICT-enabled services

Exports of potentially ICT-enabled services were \$385.1 billion in 2014, accounting for 54.2 percent of total services exports (table B). The services categories

Chart 3. Trade in ICT Services by Service Type, 1999–2014



with the largest potentially ICT-enabled exports in 2014 were exports that reflect charges for the use of intellectual property n.i.e. and the potentially ICT-enabled services types categorized under other business services (chart 4). In 2014, 50.5 percent of potentially ICT-enabled exports were to affiliated trading partners (table C).⁷

From 1999 to 2014, potentially ICT-enabled exports grew at an average annual rate of 8.4 percent (table D). Exports of not potentially ICT-enabled services, which mainly consist of travel (for all purposes including education), transport, maintenance and repair services n.i.e., and government goods and services n.i.e., grew at an average annual rate of 5.0 percent over the same period, resulting in an increase in potentially ICT-enabled services' share of all services exports to 54.2 percent from 42.3 percent. Most of this growth was in the first half of the period; growth slowed in 2009 but resumed in 2010 and 2011, before slowing again from 2012 to 2014.

Among the major categories of services, the largest increases in potentially ICT-enabled services exports for 1999–2014 were in charges for the use of intellectual property n.i.e., the potentially ICT-enabled portion of other business services, and in financial services (chart 4). The major categories with the fastest average annual rates of growth over the same period were insurance services (12.3 percent) and financial services (10.5 percent) (table 1).

7. In addition to the services types included in potentially ICT-enabled services for the trade by all affiliation types, the statistics by affiliation also include trade-related services, sports and performing arts, and mining, which cannot be disaggregated from the potentially ICT-enabled services in the category "other" technical, trade-related, and other business services (lines 58 and 117 of international services table 2.3). In 2014, the total of these three categories for all countries accounted for 53.8 percent of the category "other" technical, trade-related, and other business services exports and 1.5 percent of potentially ICT-enabled services exports; for imports, these shares were 37.4 percent and 1.8 percent, respectively.

Data Availability

Tables A–E and 1–8 presented in this article are available in an Excel file on [BEA's Web site](#). Statistics on ICT services and potentially ICT-enabled services for 2015 will be released in October 2016 when BEA publishes its most detailed annual statistics for U.S. international services. The statistics presented in this article for 2013 and 2014 will also be revised at that time.

U.S. Imports

ICT services

Imports of ICT services were \$37.8 billion, accounting for 7.9 percent of total services imports in 2014 (table B). Nearly two-thirds of ICT imports were in computer services (chart 3). Seventy percent of all ICT imports were from affiliated trading partners (table C).

From 1999 to 2014, ICT imports grew at an average annual rate of 6.5 percent, while imports of all services types grew at an average annual rate of 6.2 percent, leading to a slight increase in the share of ICT services imports of all services imports to 7.9 percent from 7.6 percent (tables D and B). ICT imports more than doubled from 2002 to 2008, but their growth slowed in 2009. As with growth in ICT exports, after increasing from 2010 to 2011, growth in ICT imports again slowed from 2012 to 2013 and ICT imports contracted in 2014. More than 80 percent of the increase in ICT imports over the period 1999–2014 was due to an increase in imports of computer services, and the remainder was more than accounted for by an increase in imports that reflected charges for the use of computer software. Imports of telecommunications services contracted between 1999 and 2014 (chart 3).

Potentially ICT-enabled services

In 2014, imports of potentially ICT-enabled services were \$230.9 billion, accounting for 48.4 percent of to-

tal services imports (table B). The potentially ICT-enabled services in other business services and insurance services combined for more than half of total potentially ICT-enabled services imports (chart 4). In 2014, 52.9 percent of potentially ICT-enabled imports were from unaffiliated trading partners (table C).

From 1999 to 2014, potentially ICT-enabled imports grew at an average annual rate of 8.9 percent, while imports of not potentially ICT-enabled services grew at an average annual rate of 4.4 percent, resulting in an increase in potentially ICT-enabled services' share of all services imports to 48.4 percent from 33.3 percent (tables D and B). Growth was most rapid in 2004–2008, then slowed in 2009–2010, reflecting the broader economic slowdown. Growth resumed in 2011, but again slowed from 2012 to 2014.

Other business services and insurance services together accounted for nearly two-thirds of the increase in potentially ICT-enabled services imports in 1999–2014 (chart 4). They also were the categories with the most rapid growth over the same period; insurance grew at an average annual rate of 11.8 percent, and the potentially ICT-enabled services in other business services—research and development services, professional and management consulting services, architectural and engineering services, industrial engineering, training services, and other business services n.i.e.—collectively grew at an average annual rate of 10.4 percent (table 2).

Table C. Trade in ICT Services and in Potentially ICT-Enabled Services by Affiliation, 2006-2014

| | Total services | | | Unaffiliated | | | Affiliated | | |
|---|--------------------------------|----------------|--|--------------------------------|----------------|--|--------------------------------|----------------|--|
| | Level (Millions of dollars) | | Average annual growth (Percent) | Level (Millions of dollars) | | Average annual growth (Percent) | Level (Millions of dollars) | | Average annual growth (Percent) |
| | 2006 | 2014 | 2006– 2014 | 2006 | 2014 | 2006– 2014 | 2006 | 2014 | 2006– 2014 |
| Total services exports | 416,738 | 710,565 | 6.9 | 307,679 | 512,848 | 6.6 | 109,058 | 197,718 | 7.7 |
| ICT services..... | 35,494 | 68,374 | 8.5 | 17,487 | 31,693 | 7.7 | 18,009 | 36,681 | 9.3 |
| Potentially ICT-enabled services..... | 215,508 | 385,108 | 7.5 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| Insurance services ¹ | 9,445 | 17,417 | 7.9 | 9,445 | 17,417 | 7.9 | ..... | ..... | ..... |
| Financial services..... | 47,882 | 87,290 | 7.8 | 37,283 | 69,649 | 8.1 | 10,599 | 17,641 | 6.6 |
| Charges for the use of intellectual property n.i.e..... | 83,549 | 130,362 | 5.7 | 28,276 | 47,962 | 6.8 | 55,273 | 82,400 | 5.1 |
| Telecommunications, computer, and information services ² | 17,184 | 35,885 | 9.6 | 12,451 | 20,233 | 6.3 | 4,733 | 15,652 | 16.1 |
| Potentially ICT-enabled services in other business services..... | 57,448 | 114,154 | 9.0 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| Total services imports | 341,165 | 477,428 | 4.3 | 272,413 | 345,917 | 3.0 | 68,751 | 131,510 | 8.4 |
| ICT services..... | 22,162 | 37,815 | 6.9 | 8,200 | 11,345 | 4.1 | 13,963 | 26,471 | 8.3 |
| Potentially ICT-enabled services..... | 141,358 | 230,875 | 6.3 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |
| Insurance services ¹ | 39,382 | 50,096 | 3.1 | 39,382 | 50,096 | 3.1 | ..... | ..... | ..... |
| Financial services..... | 14,733 | 19,503 | 3.6 | 8,139 | 11,230 | 4.1 | 6,594 | 8,272 | 2.9 |
| Charges for the use of intellectual property n.i.e..... | 25,038 | 42,124 | 6.7 | 7,175 | 13,816 | 8.5 | 17,863 | 28,309 | 5.9 |
| Telecommunications, computer, and information services ² | 19,776 | 33,314 | 6.7 | 7,754 | 10,985 | 4.5 | 12,023 | 22,328 | 8.0 |
| Potentially ICT-enabled services in other business services..... | 42,429 | 85,838 | 9.2 | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. |

n.a. not available

..... Not applicable

ICT Information and communications technology

n.i.e. Not included elsewhere

1. Insurance services transactions are considered to be unaffiliated even when they are between affiliated companies because the services are considered to be provided to the policyholders who pay the insurance premiums and who are unaffiliated with either company. The only insurance services considered to be affiliated are primary insurance transactions between

a U.S. company that is not an insurance company and an affiliated foreign insurance company, such as a captive foreign insurance affiliate. Data on these affiliated insurance services are not separately available.

2. Transactions in basic telecommunications services are considered to be unaffiliated, even when the services flow through affiliated channels, because they represent the distribution of revenues collected from unaffiliated customers. Other types of telecommunications services, such as value-added services, may flow through either affiliated or unaffiliated channels, and are recorded accordingly.

Table D. Growth in Trade in ICT Services and in Potentially ICT-Enabled Services, 2000-2014

[Percent change from preceding year]

| | All services | Potentially ICT-enabled services | | | Not potentially ICT-enabled services |
|--------------------------------------|--------------|----------------------------------|--------------|--|--------------------------------------|
| | | Total | ICT services | Other potentially ICT-enabled services | |
| Exports | | | | | |
| 2000 | 7.0 | 6.4 | 3.6 | 7.1 | 7.4 |
| 2001 | -5.5 | 0.3 | -1.1 | 0.7 | -9.8 |
| 2002 | 2.3 | 8.0 | 3.4 | 9.1 | -2.3 |
| 2003 | 3.3 | 7.5 | 7.7 | 7.5 | -0.5 |
| 2004 | 16.6 | 18.0 | 14.3 | 18.8 | 15.2 |
| 2005 | 10.4 | 9.0 | 8.4 | 9.1 | 11.8 |
| 2006 | 11.7 | 17.7 | 10.9 | 19.1 | 6.0 |
| 2007 | 17.2 | 20.0 | 26.5 | 18.7 | 14.2 |
| 2008 | 9.1 | 7.4 | 11.1 | 6.6 | 11.0 |
| 2009 | -3.8 | 1.1 | 0.1 | 1.3 | -9.1 |
| 2010 | 9.9 | 8.8 | 12.0 | 8.2 | 11.1 |
| 2011 | 11.4 | 12.0 | 13.1 | 11.8 | 10.7 |
| 2012 | 4.6 | 3.2 | 5.6 | 2.7 | 6.1 |
| 2013 | 4.8 | 4.7 | 5.9 | 4.4 | 5.0 |
| 2014 | 3.3 | 4.1 | -3.3 | 5.8 | 2.4 |
| Compound average annual growth | 6.6 | 8.4 | 7.6 | 8.6 | 5.0 |
| Imports | | | | | |
| 2000 | 12.0 | 11.4 | -3.5 | 15.9 | 12.3 |
| 2001 | -1.2 | 8.0 | -0.3 | 10.1 | -5.8 |
| 2002 | 5.1 | 12.7 | -2.2 | 16.0 | 0.8 |
| 2003 | 8.0 | 6.2 | 9.3 | 5.7 | 9.0 |
| 2004 | 16.9 | 15.4 | 10.5 | 16.3 | 17.8 |
| 2005 | 7.5 | 7.1 | 10.9 | 6.3 | 7.8 |
| 2006 | 12.1 | 23.8 | 19.7 | 24.6 | 5.0 |
| 2007 | 9.2 | 16.1 | 19.1 | 15.5 | 4.4 |
| 2008 | 9.8 | 15.7 | 12.9 | 16.3 | 5.1 |
| 2009 | -5.4 | 2.7 | 2.8 | 2.7 | -12.5 |
| 2010 | 5.8 | 3.1 | 6.5 | 2.4 | 8.6 |
| 2011 | 6.5 | 7.7 | 12.2 | 6.9 | 5.2 |
| 2012 | 3.7 | 2.1 | 2.7 | 1.9 | 5.4 |
| 2013 | 2.6 | 2.2 | 1.8 | 2.3 | 3.0 |
| 2014 | 3.0 | 2.2 | -1.2 | 2.9 | 3.7 |
| Compound average annual growth | 6.2 | 8.9 | 6.5 | 9.5 | 4.4 |
| Balance | | | | | |
| 2000 | -5.3 | 0.1 | 16.9 | -3.0 | -15.3 |
| 2001 | -18.1 | -10.5 | -2.3 | -12.3 | -34.4 |
| 2002 | -7.5 | 0.1 | 12.2 | -2.9 | -29.8 |
| 2003 | -15.2 | 10.0 | 5.4 | 11.3 | (¹) |
| 2004 | 14.9 | 22.8 | 19.6 | 23.7 | 190.9 |
| 2005 | 24.9 | 12.3 | 5.0 | 14.2 | -93.8 |
| 2006 | 10.2 | 7.5 | -1.2 | 9.6 | (¹) |
| 2007 | 53.3 | 27.4 | 38.9 | 24.9 | 1398.4 |
| 2008 | 6.9 | -7.0 | 8.7 | -10.8 | 68.2 |
| 2009 | 1.7 | -2.4 | -4.0 | -1.9 | 11.8 |
| 2010 | 22.3 | 21.9 | 20.6 | 22.3 | 23.2 |
| 2011 | 24.7 | 20.3 | 14.3 | 22.0 | 33.9 |
| 2012 | 6.4 | 5.3 | 9.6 | 4.1 | 8.7 |
| 2013 | 9.7 | 8.8 | 11.2 | 8.1 | 11.4 |
| 2014 | 4.0 | 7.0 | -5.8 | 10.7 | -1.4 |
| Compound average annual growth | 7.5 | 7.7 | 9.4 | 7.3 | 7.2 |

ICT Information and communications technology

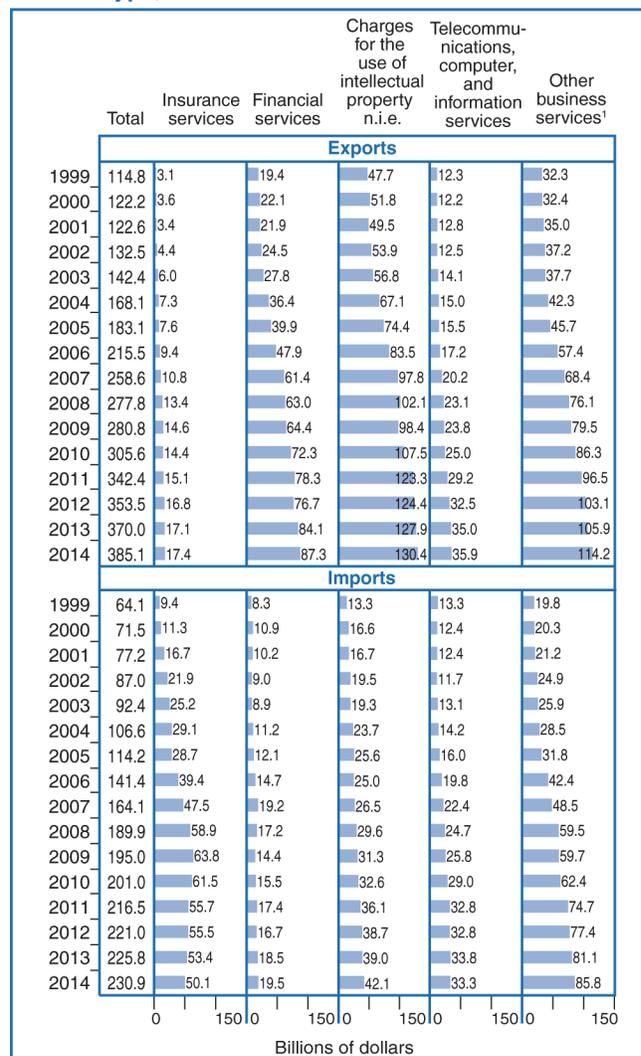
1. The growth rates for the balances for 2003 and 2006 are not shown, because the balance transitioned to a surplus from a deficit or to a deficit from a surplus.

U.S. Trade Balance

ICT services

The surplus on ICT services was \$30.6 billion in 2014, primarily reflecting a surplus on charges for the use of intellectual property associated with computer software (table B). From 1999 to 2014, the surplus on ICT services grew at an average annual rate of 9.4 percent, while the surplus on all services types grew at an average annual rate of 7.5 percent, leading to an increase in the ICT services' share of the all-services surplus to 13.1 percent from 10.1 percent (tables D and B). Nearly all of the increase in the surplus on ICT services in 1999–2014 was due to an increase in the surplus on

Chart 4. Trade in Potentially ICT-Enabled Services by Service Type, 1999–2014



1. The category other business services reflects only the services types categorized under other business services that are considered potentially ICT-enabled. The point estimates of exports and imports in these services types for 1999–2005 are model based. See the box "Defining ICT and Potentially ICT-Enabled Trade in Services" for a detailed explanation of the estimation method.

U.S. Bureau of Economic Analysis

charges for the use of intellectual property associated with computer software. Over the same period, the balance of trade in telecommunications services shifted from a deficit to a surplus, and the deficit on computer services grew.

Potentially ICT-enabled services

In 2014, the surplus on potentially ICT-enabled services was \$154.2 billion, primarily reflecting surpluses on charges for the use of intellectual property n.i.e., financial services, and the potentially ICT-enabled components in other business services (table B). A deficit on insurance services was partly offsetting. From 1999 to 2014, the surplus on potentially ICT-enabled services grew at an average annual rate of 7.7 percent, while the surplus on imports of not potentially ICT-enabled services grew at an average annual rate of 7.2 percent, resulting in a slight increase in the potentially ICT-enabled services' share of the surplus on total services to 66.2 percent from 64.6 percent (tables D and B). An increase in the surpluses on financial services and on charges for the use of intellectual property n.i.e. more than accounted for the increase in the surplus on potentially ICT-enabled services.

ICT and ICT-Enabled Services by Partner Country

The share of total services trade in ICT and potentially ICT-enabled services exports and imports varies by region and by country. BEA's statistics on potentially ICT-enabled services by country use a slightly different definition of potentially ICT-enabled services than for

the all-country totals in the previous section because less detail is available by service type in BEA's published statistics of trade in services by country.⁸ For countries for which one or more of the components of ICT or potentially ICT-enabled services exports or imports was suppressed to avoid the disclosure of data of individual companies, a range of possible values was calculated to rank the value of ICT and potentially ICT services exports and imports for all countries whose U.S. exports and imports of services are separately published by BEA.⁹

8. In addition to those services types included in potentially ICT-enabled services for the trade with all countries statistics, the statistics by partner country also include trade-related services, sports and performing arts, and mining, which cannot be disaggregated from the potentially ICT-enabled services in the category "other" technical, trade-related, and other business services (lines 58 and 117 of international services table 2.3). In 2014, the total of these three categories for all countries accounted for 53.8 percent of the category "other" technical, trade-related, and other business services exports and 1.5 percent of potentially ICT-enabled services exports. For imports these shares were 37.4 percent and 1.8 percent, respectively.

9. ICT and potentially ICT-enabled statistics have more suppressions than some other BEA datasets because the suppression procedures applied to the components did not account for the eventuality that the ICT and potentially ICT-enabled totals would be published. In most cases the categories that are suppressed are relatively small parts of the total. For countries where one or more components are suppressed, charts 6, 9, 12, and 14–16 include an upper bound and lower bound that establish a range of possible values. The lower bound is equal to the sum of the unsuppressed services types included in ICT or potentially ICT-enabled services that appear in charts 6, 9, 12, and 14–16. The upper bound is calculated as the sum of the parent category of the suppressed component less any unsuppressed sub-categories of that parent that are not considered ICT or potentially ICT-enabled services trade in charts 6, 9, 12, and 14–16. The lower bound is used to rank each country's total ICT services and potentially ICT-enabled services trade in charts 6–14. More sophisticated methods for determining the lower and upper bounds exist and may have served to tighten the range of the bounds, but these were not used to compile these charts.

Worldwide Trends in ICT-Enabled Trade in Services

Many countries do not compile statistics at the level of detail needed to calculate ICT services or potentially ICT-enabled services trade statistics. In addition, in recent years, many countries have restructured their trade in services statistics to conform more closely with the "Extended Balance of Payments Services Classification" presented in the updated *Manual on Statistics of International Trade in Services 2010*, thus limiting the comparability of statistics for recent years with those for older years. Despite these limitations, data on trade in services collected by the Organisation for Economic Co-operation and Development (OECD) from its member countries were used to calculate comparable estimates of ICT and potentially ICT-enabled trade for 2010–2014 for a set of countries that accounted for 67 percent of world exports and 58 percent of world imports in 2014.¹ For these countries, 50 percent of exports and 46 percent of imports were potentially ICT-enabled in 2014, an increase in both shares from 47 percent of exports and 43

percent of imports in 2010. These figures suggest that the share of global trade in services accounted for by potentially ICT-enabled trade has increased over this period. The shares for other countries are lower than the shares for the United States, which remained at 54 percent for exports in 2014 and 2010, and decreased slightly to 48 percent in 2014 from 49 percent in 2010 for imports.

1. The countries included in this comparison are Australia, Canada, the European Union (28 member countries), Hong Kong, Israel, the Republic of Korea, New Zealand, Russia, and the United States. The shares of world exports and imports for this set of countries were calculated using the World Trade Organization's 2015 international trade in services statistics. Potentially ICT-enabled services exports and imports were calculated for these countries using statistics available in the OECD.stat database on trade in services by partner country as the sum of the following services type categories: insurance and pension services; financial services; charges for the use of intellectual property n.i.e.; telecommunications, computer, and information services; research and development services; professional and management consulting services; architectural, engineering, scientific and other technical services; and other business services n.i.e.

U.S. exports

ICT services

By major region, the 2014 rank ordering of ICT services exports was the same as the rank ordering of total exports. Europe accounted for the most exports of ICT and total services, followed by Asia and Pacific and Latin America and Other Western Hemisphere (table E and chart 5). Nonetheless, ICT services shares of total exports varied by region. The largest ICT shares were for Latin America and Other Western Hemisphere (11.9 percent) and Europe (10.4 percent); the Middle East had the lowest share (3.5 percent) (table E). By country, the top five destinations for ICT exports in 2014 of those separately published by BEA were Brazil, the United Kingdom, Canada, Japan, and Germany

Chart 5. ICT Services Exports by Major Area, 2014

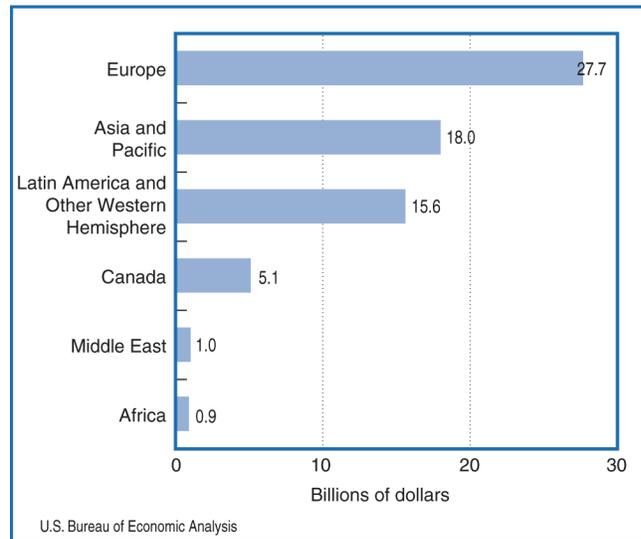


Table E. Trade in ICT Services and in Potentially ICT-Enabled Services by Major Area, 2014

| | All services (Millions of dollars) | Potentially ICT-enabled services | | | | | | Not potentially ICT-enabled services | |
|---|---------------------------------------|----------------------------------|---|--------------------------------|---|--------------------------------|--------------------------------|---|---|
| | | Total (Millions of dollars) | Total | | Other potentially ICT-enabled services | | Total (Millions of dollars) | As a share of all services (Percent) | |
| | | | As a share of all services (Percent) | Total (Millions of dollars) | As a share of all services (Percent) | Total (Millions of dollars) | | | As a share of all services (Percent) |
| Exports | | | | | | | | | |
| All countries | 710,565 | 390,992 | 55.0 | 68,374 | 9.6 | 322,618 | 45.4 | 319,573 | 45.0 |
| Canada | 61,353 | 29,212 | 47.6 | 5,140 | 8.4 | 24,072 | 39.2 | 32,141 | 52.4 |
| Europe | 267,497 | 183,687 | 68.7 | 27,725 | 10.4 | 155,962 | 58.3 | 83,810 | 31.3 |
| Latin America and Other Western Hemisphere | 131,554 | 66,656 | 50.7 | 15,646 | 11.9 | 51,010 | 38.8 | 64,898 | 49.3 |
| Africa..... | 14,475 | 7,231 | 50.0 | 917 | 6.3 | 6,314 | 43.6 | 7,244 | 50.0 |
| Middle East | 27,764 | 11,132 | 40.1 | 960 | 3.5 | 10,172 | 36.6 | 16,632 | 59.9 |
| Asia and Pacific..... | 205,216 | 92,965 | 45.3 | 17,987 | 8.8 | 74,978 | 36.5 | 112,251 | 54.7 |
| International organizations and unallocated | 2,706 | 110 | 4.1 | 0 | 0.0 | 110 | 4.1 | 2,596 | 95.9 |
| Imports | | | | | | | | | |
| All countries | 477,428 | 235,019 | 49.2 | 37,815 | 7.9 | 197,204 | 41.3 | 242,409 | 50.8 |
| Canada | 30,074 | 14,991 | 49.8 | 5,074 | 16.9 | 9,917 | 33.0 | 15,083 | 50.2 |
| Europe | 203,023 | 106,909 | 52.7 | 13,041 | 6.4 | 93,868 | 46.2 | 96,114 | 47.3 |
| Latin America and Other Western Hemisphere | 95,027 | 46,596 | 49.0 | 3,214 | 3.4 | 43,382 | 45.7 | 48,431 | 51.0 |
| Africa..... | 8,608 | (D) | (D) | 301 | 3.5 | (D) | (D) | (D) | (D) |
| Middle East | 15,823 | (D) | (D) | 1,030 | 6.5 | (D) | (D) | (D) | (D) |
| Asia and Pacific..... | 123,621 | 57,715 | 46.7 | 15,155 | 12.3 | 42,560 | 34.4 | 65,906 | 53.3 |
| International organizations and unallocated | 1,251 | 1,061 | 84.8 | 0 | 0.0 | 1,061 | 84.8 | 190 | 15.2 |
| Balance | | | | | | | | | |
| All countries | 233,137 | 155,973 | 66.9 | 30,559 | 13.1 | 125,414 | 53.8 | 77,164 | 33.1 |
| Canada | 31,279 | 14,221 | 45.5 | 66 | 0.2 | 14,155 | 45.3 | 17,058 | 54.5 |
| Europe | 64,474 | 76,778 | 119.1 | 14,684 | 22.8 | 62,094 | 96.3 | -12,304 | -19.1 |
| Latin America and Other Western Hemisphere | 36,527 | 20,060 | 54.9 | 12,432 | 34.0 | 7,628 | 20.9 | 16,467 | 45.1 |
| Africa..... | 5,867 | (D) | (D) | 616 | 10.5 | (D) | (D) | (D) | (D) |
| Middle East | 11,941 | (D) | (D) | -70 | -0.6 | (D) | (D) | (D) | (D) |
| Asia and Pacific..... | 81,595 | 35,250 | 43.2 | 2,832 | 3.5 | 32,418 | 39.7 | 46,345 | 56.8 |
| International organizations and unallocated | 1,455 | -951 | -65.4 | 0 | 0.0 | -951 | -65.4 | 2,406 | 165.4 |

(D) Suppressed to avoid the disclosure of data of individual companies.

ICT Information and communications technology

NOTE: The regions do not sum to the totals for all countries for potentially ICT-enabled

services, other potentially ICT-enabled services, and not potentially ICT-enabled services because a slightly different definition of potentially ICT-enabled services was used to produce the statistics by partner country.

(chart 6).¹⁰ These top five countries are among the top nine markets for total services exports, but Brazil's ranking is much higher for ICT exports than its rank of eighth-largest export market for total services exports.

Exports of ICT services to Europe grew to \$27.7 billion in 2014 from \$14.5 billion in 2006, representing an average annual growth rate of 8.4 percent (chart 7).¹¹ More than half of the increase in ICT services ex-

ports to Europe over that period was due to an increase in charges for the use of computer software in 2007, particularly to Ireland and to the United Kingdom. Exports of ICT services to other top destinations also grew strongly from 2006 to 2014. Exports to Asia and Pacific grew at an average annual rate of 5.7 percent. Exports to Latin America and Other Western Hemisphere grew at an annual average rate of 16 percent.

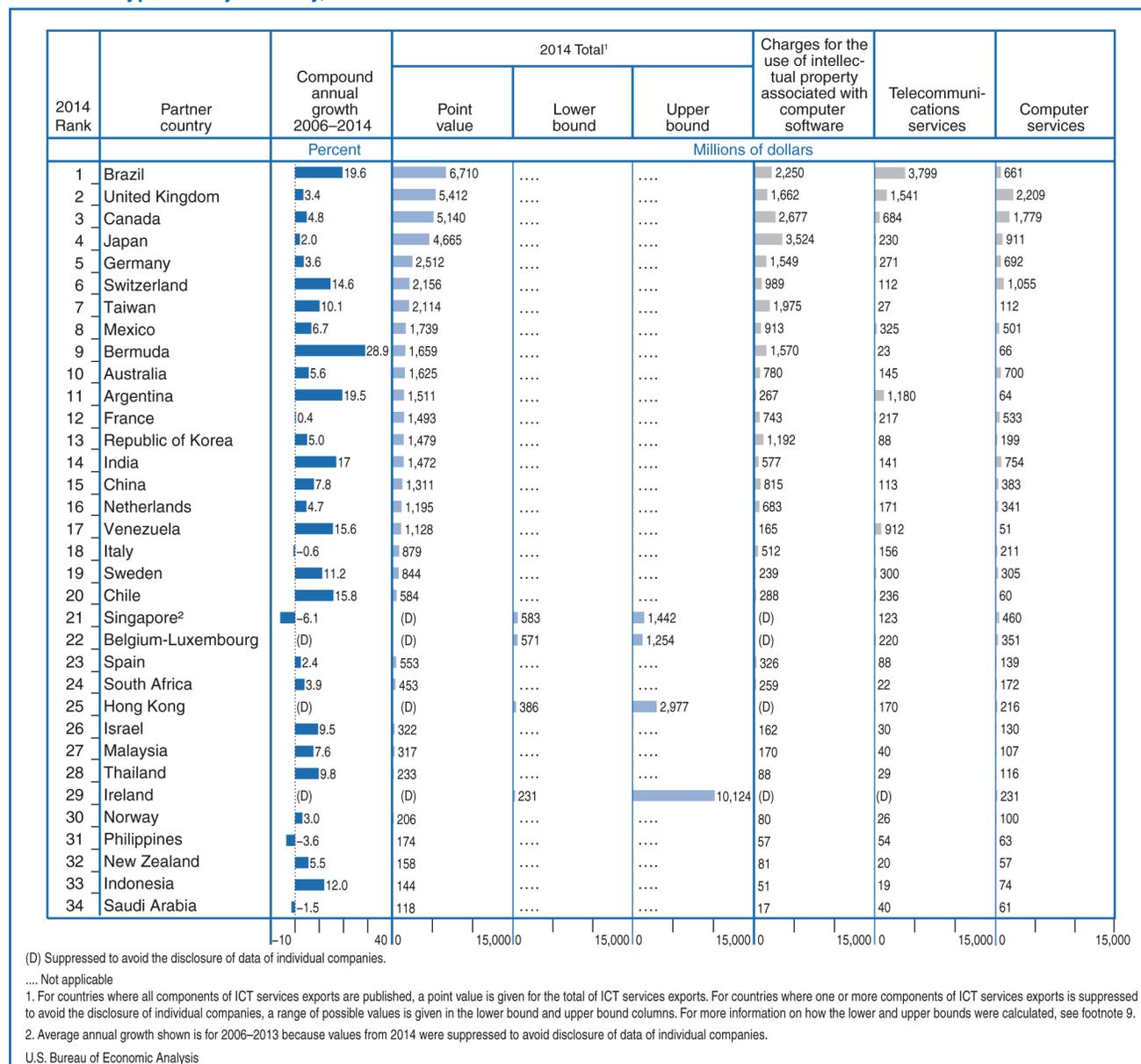
Potentially ICT-enabled services

As with ICT services exports, Europe was the largest regional destination for U.S. exports of potentially ICT-enabled services in 2014, followed by Asia and Pacific and by Latin America and Other Western Hemisphere (table E and chart 8). For three regions potentially ICT-enabled services accounted for half or

10. Ireland has also historically been an important market for ICT services exports, but the values of exports of various components of ICT services exports have been suppressed since 2010 to avoid the disclosure of data of individual companies. In 2014 the upper bound for ICT services exports to Ireland was 10,124, which was larger than exports to the United Kingdom, the top market identified using available data.

11. The year 2006 was the first for which BEA has published data on trade in services by type and by country that allow for ICT services by partner country to be calculated from published statistics.

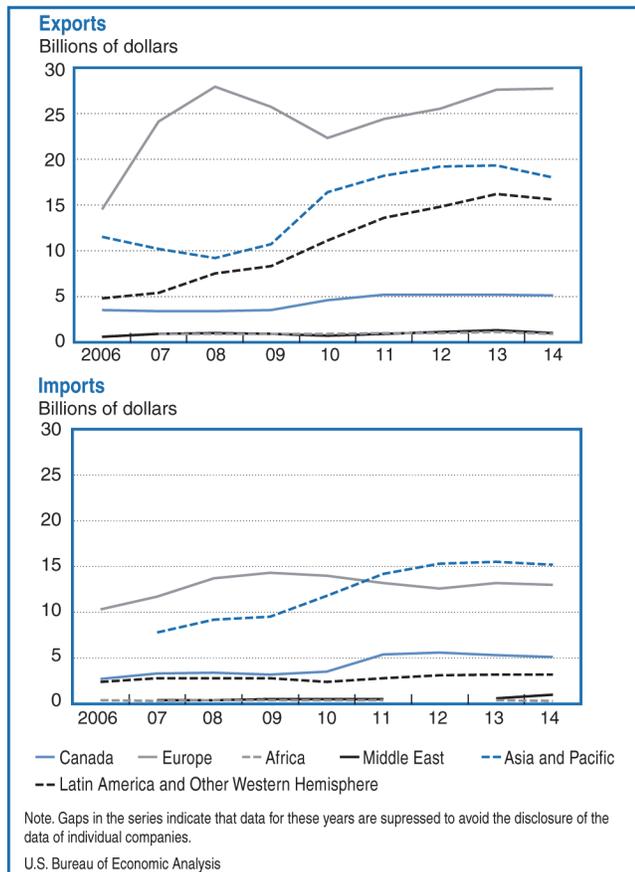
Chart 6. Growth in Exports of ICT Services by Country, 2006–2014 and Exports of ICT Services by Major Category of Service Type and by Country, 2014



more of all services exports: Europe (68.7 percent), Latin America and Other Western Hemisphere (50.7 percent), and Africa (50.0 percent). Potentially ICT-enabled services exports accounted for the lowest regional share in the Middle East (40.1 percent). By country, the top five destinations of potentially ICT-enabled exports in 2014 were the United Kingdom, Ireland, Canada, Japan, and Switzerland (chart 9). These countries were also among the top seven markets for total services exports in 2014.

Exports of potentially ICT-enabled services to the top regional destination, Europe, grew to \$183.7 billion in 2014 from \$111.2 billion in 2006, representing an average annual growth rate of 6.5 percent (chart 10). Exports of potentially ICT-enabled services to other top regional destinations also grew strongly from 2006 to 2014. Exports of potentially ICT-enabled services to Asia and Pacific grew by an average annual rate of 8.9 percent. Exports to Latin America and Other Western Hemisphere grew at an average annual rate of 9.8 percent.

Chart 7. Trade in ICT Services by Major Area, 2006–2014



U.S. imports

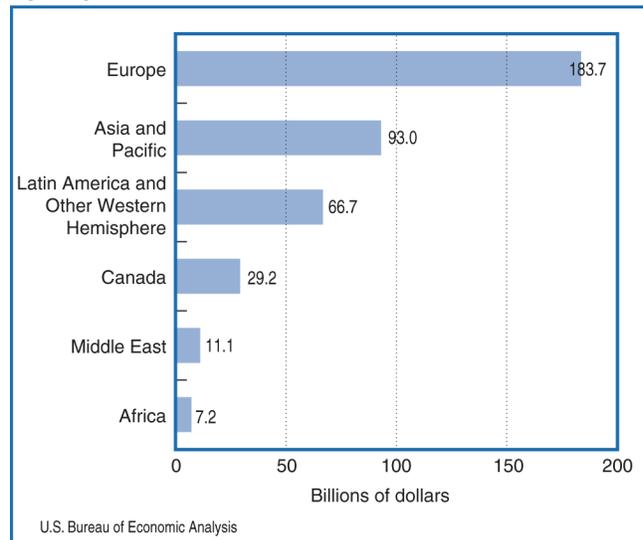
ICT services

Asia and Pacific was the largest regional source for U.S. imports of ICT services in 2014, followed by Europe (table E and chart 11). The two regions were ranked in the reverse order for total services imports. The regions where the largest shares of total services imports were accounted for by ICT services were Canada (16.9 percent) and Asia and Pacific (12.3 percent). Latin America and Other Western Hemisphere (3.4 percent) and Africa (3.5 percent) had the lowest shares (table E). The top five countries of origin for ICT imports in 2014 were India, Canada, the United Kingdom, Ireland, and Mexico (chart 12). Although these countries were also among the top ten countries of origin for total services imports in 2014, the rank ordering is quite different. India ranked seventh and Canada ranked fourth for total services imports.

Imports of ICT services from the top region of origin, Asia and Pacific, grew to \$15.2 billion in 2014 from \$7.8 billion in 2007, representing an average annual growth rate of 9.9 percent (chart 7).¹² Nearly all of the increase over that period was due to an increase in computer services. In contrast, imports of ICT services from Europe grew more slowly, growing at an average annual rate of 3.0 percent from 2006 to 2014, which led to Asia and Pacific overtaking Europe as the top region of origin for ICT imports in 2011.

12. The year 2007 was the first for which BEA has published data on trade in services by type and by country that allow for ICT services imports from Asia and Pacific to be calculated from published statistics.

Chart 8. Potentially ICT-Enabled Services Exports by Major Area, 2014



Potentially ICT-enabled services

Europe was the largest regional source for imports of potentially ICT-enabled services in 2014, followed by Asia and Pacific and Latin America and Other Western Hemisphere (table E and chart 13). Potentially ICT-enabled services accounted for a majority of all services

imports (52.7 percent) from Europe and just under half of all imports from Canada (49.8 percent) and Latin America and Other Western Hemisphere (49.0 percent) (table E). The top five countries of origin of potentially ICT-enabled imports in 2014 were the United Kingdom, Bermuda, India, Japan, and

Chart 9. Growth in Exports of Potentially ICT-Enabled Services by Country, 2006–2014 and Exports of Potentially ICT-Enabled Services by Major Category of Service Type and by Country, 2014

| 2014 Rank | Partner country | Compound annual average growth 2006–2014 | 2014 Total ¹ | | | Insurance | Financial services | Charges for the use of intellectual property | Telecommunications, computer, and information services | R&D and professional and management consulting | Technical, trade-related, and other business services ² | | |
|-----------|-----------------------------|--|-------------------------|-------------|-------------|-----------|--------------------|--|--|--|--|--|--|
| | | | Point value | Lower Bound | Upper bound | | | | | | | | |
| | | Percent | Millions of dollars | | | | | | | | | | |
| 1 | United Kingdom ³ | 2.5 | (D) | 40,486 | 42,855 | 1,906 | 14,971 | 9,731 | 4,862 | 9,016 | (D) | | |
| 2 | Ireland | (D) | (D) | 38,027 | 38,190 | 320 | 2,722 | 18,752 | 1,076 | 15,157 | (D) | | |
| 3 | Canada | 5.6 | 29,213 | .... | .... | 2,898 | 5,870 | 8,732 | 3,113 | 6,034 | 2,566 | | |
| 4 | Japan | 2.5 | 23,254 | .... | .... | 2,074 | 3,033 | 8,693 | 1,567 | 7,255 | 632 | | |
| 5 | Switzerland | (D) | (D) | 23,115 | 24,777 | 269 | 1,517 | 10,636 | 1,399 | 9,294 | (D) | | |
| 6 | Germany | (D) | 16,210 | .... | .... | 269 | 3,290 | 5,953 | 1,308 | 4,712 | 678 | | |
| 7 | China | 18.0 | 13,523 | .... | .... | 172 | 3,133 | 6,826 | 653 | 1,026 | 1,713 | | |
| 8 | Netherlands | 8.6 | 12,731 | .... | .... | 62 | 1,949 | 4,788 | 612 | 5,050 | 270 | | |
| 9 | Brazil | 17.1 | 12,574 | .... | .... | 468 | 2,119 | 4,074 | 4,617 | 670 | 626 | | |
| 10 | Australia | 11.0 | 11,332 | .... | .... | 838 | 3,602 | 2,884 | 1,224 | 1,437 | 1,347 | | |
| 11 | Bermuda | (D) | 10,261 | .... | .... | 3,452 | 1,377 | 2,193 | 100 | 3,115 | 24 | | |
| 12 | Belgium-Luxembourg | 11.7 | 9,931 | .... | .... | 99 | 3,725 | 2,430 | 634 | 2,936 | 107 | | |
| 13 | France ⁴ | 0.6 | 9,845 | .... | .... | 262 | 2,536 | 3,215 | 925 | 2,145 | 762 | | |
| 14 | Republic of Korea | 9.8 | 9,570 | .... | .... | 267 | 903 | 6,082 | 381 | 1,324 | 613 | | |
| 15 | Singapore | (D) | 8,922 | .... | .... | 221 | 982 | 3,329 | 736 | 3,250 | 404 | | |
| 16 | Mexico | 6.9 | 8,807 | .... | .... | 484 | 1,508 | 3,169 | 954 | 1,135 | 1,557 | | |
| 17 | Taiwan | (D) | 6,975 | .... | .... | 75 | 612 | 5,164 | 196 | 505 | 423 | | |
| 18 | Hong Kong ⁴ | 9.9 | 6,834 | .... | .... | 78 | 1,497 | 3,353 | 446 | 1,166 | 294 | | |
| 19 | Italy | 0.4 | 4,321 | .... | .... | 95 | 1,219 | 1,603 | 588 | 634 | 182 | | |
| 20 | India | 13.4 | 4,007 | .... | .... | 82 | 806 | 1,108 | 1,033 | 583 | 395 | | |
| 21 | Spain | 0.8 | 3,580 | .... | .... | 303 | 1,004 | 1,369 | 306 | 411 | 187 | | |
| 22 | Argentina | (D) | 2,825 | 3,079 | 99 | 469 | 791 | 1,286 | 180 | (D) | (D) | | |
| 23 | Sweden | (D) | 2,407 | 3,971 | 12 | 544 | 1,167 | 684 | (D) | (D) | (D) | | |
| 24 | Venezuela | (D) | 2,187 | 2,451 | 115 | 262 | 677 | 985 | 148 | (D) | (D) | | |
| 25 | Saudi Arabia | (D) | 2,130 | 3,206 | 19 | 929 | 207 | 209 | 766 | (D) | (D) | | |
| 26 | Israel | 11.9 | 1,969 | .... | .... | 116 | 394 | 593 | 213 | 579 | 74 | | |
| 27 | South Africa ⁴ | 4.3 | 1,903 | .... | .... | 43 | 358 | 774 | 251 | 159 | 318 | | |
| 28 | Thailand | 13.2 | 1,709 | .... | .... | 94 | 393 | 507 | 180 | 238 | 297 | | |
| 29 | Chile ³ | 15.0 | (D) | 1,676 | 1,869 | 188 | 383 | 530 | 327 | 248 | (D) | | |
| 30 | Malaysia | 11.4 | 1,619 | .... | .... | 33 | 309 | 628 | 167 | 306 | 176 | | |
| 31 | Norway | 6.1 | 1,599 | .... | .... | 47 | 508 | 259 | 186 | 295 | 304 | | |
| 32 | Indonesia | 9.1 | 1,187 | .... | .... | 34 | 277 | 286 | 116 | 290 | 184 | | |
| 33 | Philippines | (D) | 1,038 | .... | .... | 39 | 234 | 327 | 134 | 149 | 155 | | |
| 34 | New Zealand | (D) | 925 | .... | .... | 39 | 284 | 323 | 111 | 96 | 72 | | |

(D) Suppressed to avoid the disclosure of data of individual companies.

.... Not applicable

1. For countries where all components of potentially ICT-enabled services exports are published, a point value is given for the total of potentially ICT-enabled services exports. For countries where one or more components of potentially ICT-enabled services exports is suppressed to avoid the disclosure of individual companies, a range of possible values is given in the lower and upper bound columns. For more information on how the lower and upper bounds were calculated, see footnote 9.

2. The category technical, trade-related, and other business services reflects only the services types that are considered potentially ICT-enabled.

3. Average annual growth shown is for 2006–2013 because values from 2014 were suppressed to avoid disclosure of data of individual companies.

4. Average annual growth shown is for 2007–2014 because values from 2006 were suppressed to avoid disclosure of data of individual companies.

Switzerland. These countries were all in the top seven countries of origin for total services imports in 2014.

Imports of potentially ICT-enabled services from the top region of origin, Europe, increased to \$106.9 billion in 2014 from \$73.9 billion in 2006, representing an average annual growth rate of 4.7 percent (chart 10). Imports of potentially ICT-enabled services from other top regions of origin also grew strongly over this period. Imports from Asia and Pacific grew at an aver-

age annual rate of 9.5 percent. Imports from Latin America and Other Western Hemisphere grew at an average annual rate of 7.4 percent.

U.S. trade balance

ICT services

In 2014, the largest surpluses by region in ICT services were with Europe and with Latin America and Other Western Hemisphere (table E). The United States also had surpluses in ICT services with Asia and Pacific, Africa, and Canada and a deficit with the Middle East. In contrast, the largest surplus for total services was with Asia and Pacific. The five largest surpluses in ICT services were with Brazil, Japan, the United Kingdom, Taiwan, and Bermuda (chart 15). The largest deficit was with India, which was more than accounted for by a deficit in computer services.

Chart 10. Trade in Potentially ICT-Enabled Services by Major Area, 2006–2014

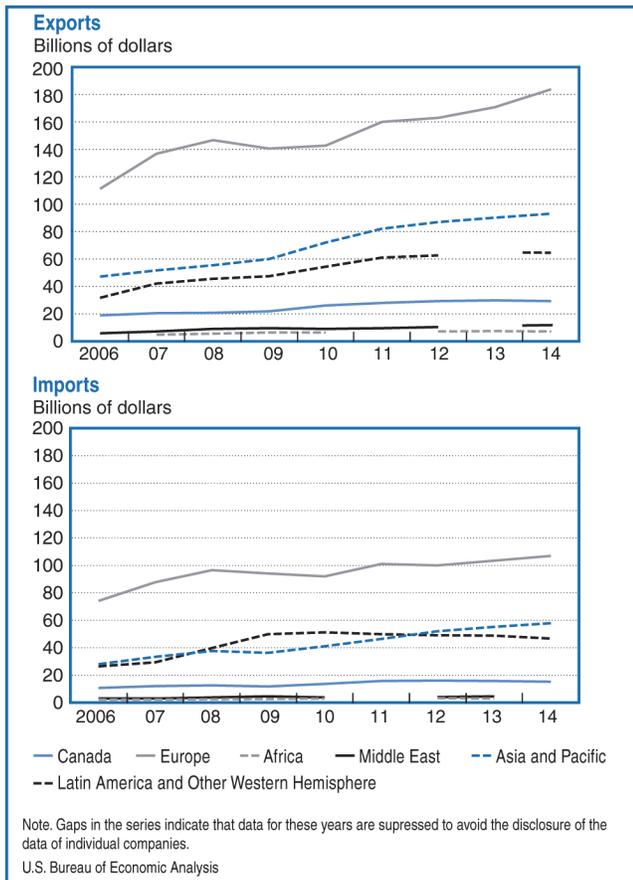
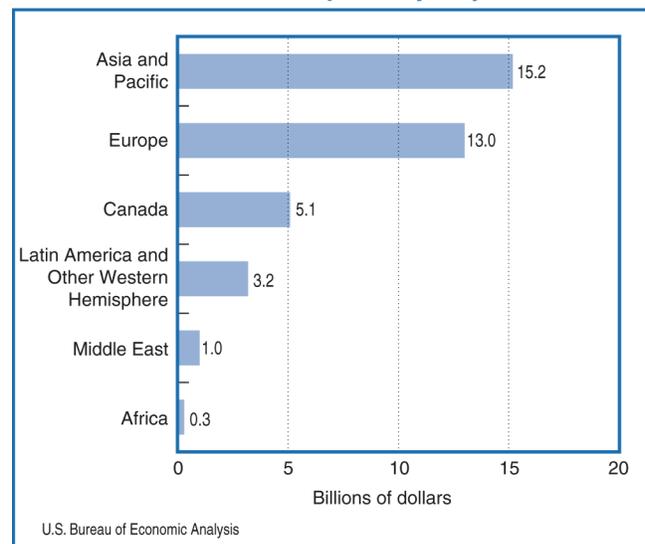
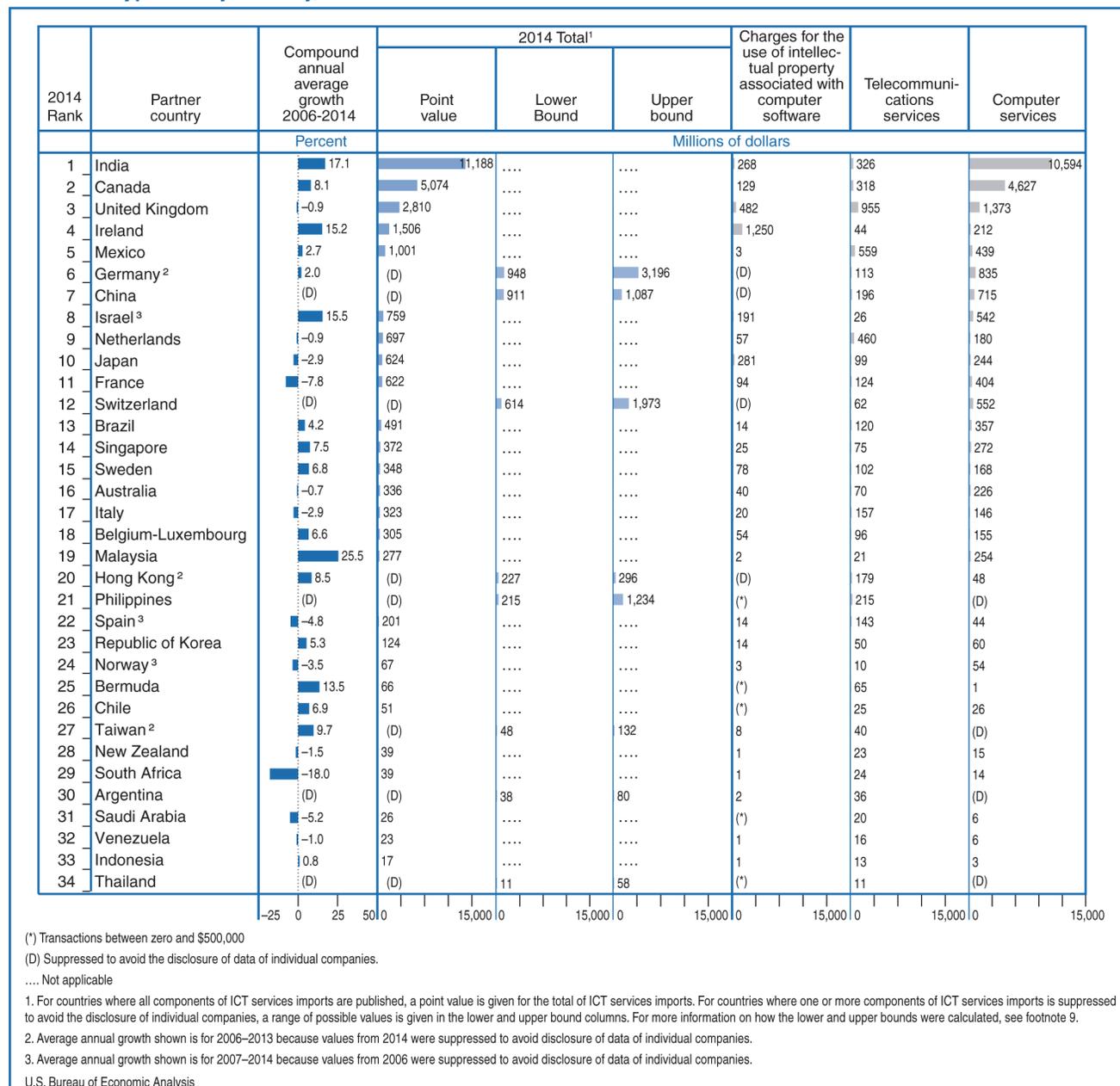


Chart 11. ICT Services Imports by Major Area, 2014



The surplus on ICT services from Europe grew to \$14.7 billion in 2014 from \$4.2 billion in 2007. Most of the increase over that period was in charges for the use of intellectual property associated with computer software and in computer services. The surplus in Latin America and Other Western Hemisphere also grew sig-

Chart 12. Growth in Imports of ICT Services by Country, 2006–2014 and Imports of ICT Services by Major Category of Service Type and by Country, 2014



nificantly, to \$12.4 billion from \$2.4 billion; an increase in the surplus with Brazil accounted for nearly half of the increase.

Potentially ICT-enabled services

The largest surpluses by region in potentially ICT-enabled services in 2014 were with Europe and Asia and Pacific. Total services trade surpluses for these two regions were ranked in the reverse order. The United States also had surpluses on potentially ICT-enabled services with Latin America and Other Western Hemisphere, Canada, the Middle East, and Africa.¹³ The five largest trade surpluses in potentially ICT-enabled imports in 2014 were with Ireland, Canada, the United Kingdom, Korea, and China (chart 16). The largest deficits were with Bermuda and India.

The surplus on potentially ICT-enabled services from the region with the largest surplus, Europe, increased to \$76.8 billion in 2014 from \$37.3 billion in 2006. The surplus on potentially ICT-enabled services with Asia and Pacific increased to \$35.3 billion from

13. Imports of potentially ICT-enabled services from the Middle East and Africa were suppressed to avoid the disclosure of data from individual companies in 2014, but based on the range of possible values for the trade balance in potentially ICT-enabled services (\$3.4–\$6.8 billion for the Middle East and \$3.3–\$5.3 billion for Africa), the United States had a trade surplus with both regions. See footnote 9 for an explanation of how the range of values was calculated.

\$19.1 billion. In Asia and Pacific, increases in the surpluses in ICT services with China (\$8.0 billion in 2014 from \$2.1 billion in 2006), Australia (\$7.6 billion from \$2.5 billion), and Korea (\$8.3 billion from \$3.8 billion) together exceeded an increase in the deficit with India (\$13.3 billion from \$3.5 billion).

Chart 13. Potentially ICT-Enabled Services Imports by Major Area, 2014

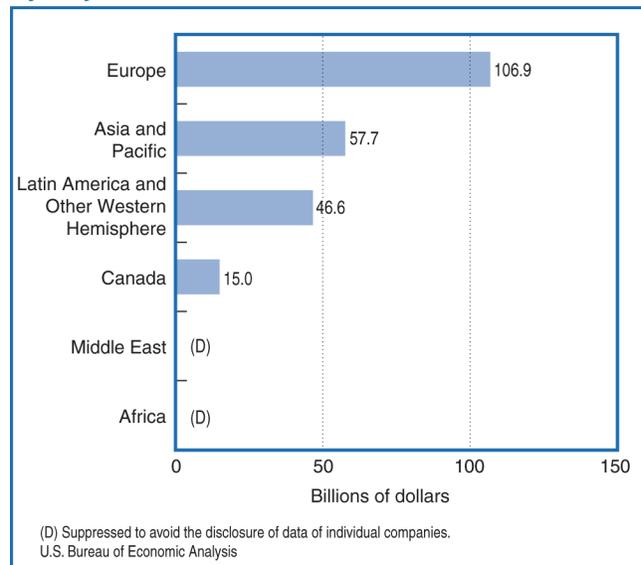


Chart 14. Growth in Imports of Potentially ICT-Enabled Services by Country, 2006–2014 and Imports of Potentially ICT-Enabled Services by Major Category of Service Type and by Country, 2014

| 2014 Rank | Partner country | Compound annual average growth 2006–2014 | 2014 Total ¹ | | | Insurance | Financial services | Charges for the use of intellectual property | Telecommunications, computer, and information services | R&D and professional and management consulting | Technical, trade-related, and other business services ² | | |
|-----------|--------------------------|--|-------------------------|-------------|-------------|-----------|--------------------|--|--|--|--|--|--|
| | | | Point value | Lower bound | Upper bound | | | | | | | | |
| | | Percent | Millions of dollars | | | | | | | | | | |
| 1 | United Kingdom | 3.7 | 30,402 | .... | .... | 4,874 | 6,144 | 4,049 | 2,640 | 10,200 | 2,495 | | |
| 2 | Bermuda | (D) | (D) | 23,121 | 23,319 | 22,893 | 161 | (D) | 67 | (D) | (D) | | |
| 3 | India | 16.9 | 17,286 | .... | .... | 50 | 436 | 364 | 11,344 | 4,322 | 770 | | |
| 4 | Japan | 4.3 | 17,215 | .... | .... | 361 | 1,031 | 12,406 | 376 | 2,707 | 334 | | |
| 5 | Switzerland | 5.3 | 15,679 | .... | .... | 6,319 | 412 | 5,116 | 712 | 2,918 | 202 | | |
| 6 | Canada | 4.5 | 14,991 | .... | .... | 560 | 1,659 | 1,054 | 5,089 | 4,677 | 1,952 | | |
| 7 | Germany ³ | 3.8 | (D) | 13,822 | 15,738 | 2,733 | 617 | 4,263 | 1,007 | 5,202 | (D) | | |
| 8 | Ireland | (D) | (D) | 11,891 | 12,260 | 2,909 | 163 | 1,840 | 262 | 6,717 | (D) | | |
| 9 | France | -0.5 | 7,023 | .... | .... | 558 | 687 | 2,400 | 567 | 2,308 | 503 | | |
| 10 | Netherlands | 3.8 | 5,984 | .... | .... | 76 | 195 | 803 | 701 | 3,860 | 349 | | |
| 11 | China | 18.1 | 5,567 | .... | .... | 56 | 421 | 285 | 968 | 3,415 | 422 | | |
| 12 | Belgium-Luxembourg | 11.2 | 5,199 | .... | .... | 193 | 381 | 658 | 258 | 3,571 | 138 | | |
| 13 | Brazil | (D) | (D) | 4,429 | 4,957 | 44 | 398 | 1,269 | 479 | 2,239 | (D) | | |
| 14 | Australia | 5.7 | 3,749 | .... | .... | 121 | 656 | 594 | 318 | 951 | 1,109 | | |
| 15 | Mexico ³ | 7.8 | (D) | 3,294 | 4,802 | 40 | 365 | 697 | 1,011 | 1,181 | (D) | | |
| 16 | Singapore | (D) | (D) | 2,973 | 3,386 | 113 | 423 | 70 | 374 | 1,993 | (D) | | |
| 17 | Israel ⁴ | 9.4 | 2,948 | .... | .... | (*) | 33 | 302 | 573 | 1,975 | 65 | | |
| 18 | Philippines | (D) | 2,352 | .... | .... | (*) | 115 | 5 | 1,234 | 863 | 135 | | |
| 19 | Hong Kong ³ | 4.8 | (D) | 2,052 | 2,726 | 18 | 680 | 94 | 254 | 1,006 | (D) | | |
| 20 | Sweden | 0.4 | 1,960 | .... | .... | 74 | 119 | 875 | 274 | 551 | 67 | | |
| 21 | Italy | 1.5 | 1,767 | .... | .... | 97 | 328 | 126 | 321 | 776 | 119 | | |
| 22 | Spain | 7.1 | 1,593 | .... | .... | 233 | 252 | 112 | 336 | 527 | 133 | | |
| 23 | Republic of Korea | 7.8 | 1,267 | .... | .... | 73 | 247 | 153 | 114 | 546 | 134 | | |
| 24 | Taiwan | (D) | (D) | 1,035 | 1,135 | 13 | 112 | 32 | 124 | 754 | (D) | | |
| 25 | Malaysia | (D) | (D) | 915 | 382 | 4 | 83 | 18 | 277 | 533 | (D) | | |
| 26 | Argentina | (D) | (D) | 773 | 873 | 7 | 65 | 292 | 78 | 331 | (D) | | |
| 27 | South Africa | -0.7 | 590 | .... | .... | 1 | 87 | 7 | 40 | 310 | 145 | | |
| 28 | Norway | (D) | (D) | 545 | 869 | 55 | 55 | 20 | 66 | 349 | (D) | | |
| 29 | Saudi Arabia | (D) | 487 | .... | .... | 8 | 149 | 3 | 27 | 41 | 259 | | |
| 30 | New Zealand ⁴ | 8.4 | 350 | .... | .... | 1 | 37 | 34 | 44 | 82 | 152 | | |
| 31 | Chile | 7.3 | 349 | .... | .... | (*) | 47 | 74 | 54 | 122 | 52 | | |
| 32 | Thailand | 6.2 | 306 | .... | .... | (*) | 120 | 9 | 58 | 119 | 190 | | |
| 33 | Venezuela ⁴ | 3.9 | 246 | .... | .... | 8 | 44 | 93 | 22 | 38 | 41 | | |
| 34 | Indonesia | 3.6 | 229 | .... | .... | (*) | 83 | 2 | 17 | 79 | 48 | | |

(*) Transactions between zero and \$500,000

(D) Suppressed to avoid the disclosure of data of individual companies.

.... Not applicable

1. For countries where all components of potentially ICT-enabled services imports are published, a point value is given for the total of potentially ICT-enabled services imports. For countries where one or more components of potentially ICT-enabled services imports is suppressed to avoid the disclosure of individual companies, a range of possible values is given in the lower and upper bound columns. For more information on how the lower and upper bounds were calculated, see footnote 9.

2. The category technical, trade-related, and other business services reflects only the services types that are considered potentially ICT-enabled.

3. Average annual growth shown is for 2006–2013 because values from 2014 were suppressed to avoid disclosure of data of individual companies.

4. Average annual growth shown is for 2007–2014 because values from 2006 were suppressed to avoid disclosure of data of individual companies.

U.S. Bureau of Economic Analysis

Chart 15. Growth in the Trade Balance on ICT Services by Country, 2006–2014 and the Trade Balance on ICT Services by Major Category of Service Type and by Country, 2014

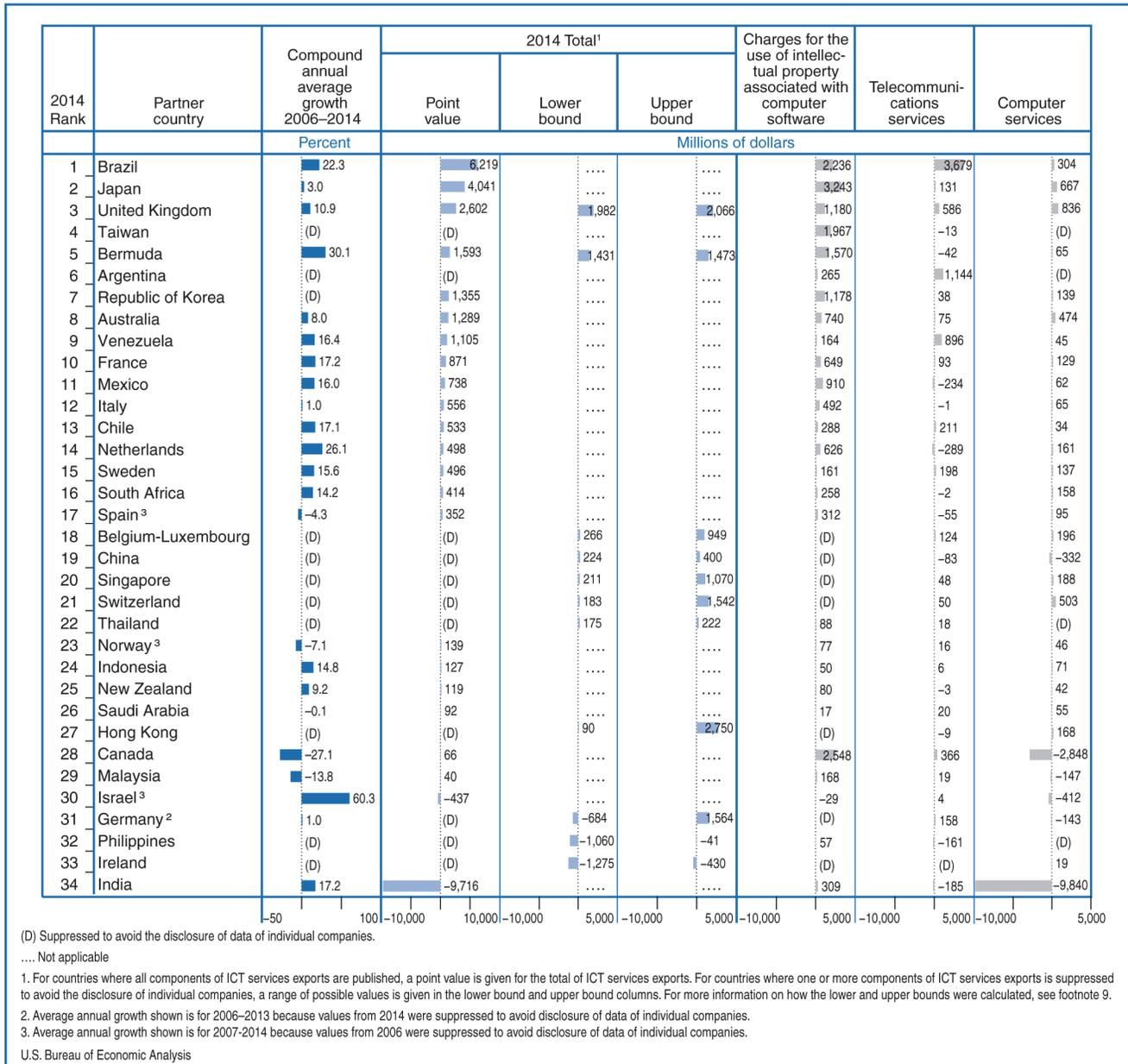


Chart 16. Growth in the Trade Balance on Potentially ICT-Enabled Services by Country, 2006–2014 and the Trade Balance on Potentially ICT-Enabled Services by Major Category of Service Type and by Country, 2014

| 2014 Rank | Partner country | Compound annual average growth 2006–2014 | 2014 Total ¹ | | | Insurance | Financial services | Charges for the use of intellectual property | Telecommunications, computer, and information services | R&D and professional and management consulting | Technical, trade-related, and other business services ² |
|-----------|-----------------------------|--|-------------------------|-------------|-------------|-----------|--------------------|--|--|--|--|
| | | | Point value | Lower bound | Upper bound | | | | | | |
| | | Percent | Millions of dollars | | | | | | | | |
| 1 | Ireland | (D) | (D) | 25,767 | 26,299 | -2,589 | 2,559 | 16,912 | 814 | 8,440 | 1 |
| 2 | Canada | 6.9 | 14,222 | ... | ... | 2,338 | 4,211 | 7,678 | -1,976 | 1,357 | 614 |
| 3 | United Kingdom ³ | 1.5 | (D) | 10,084 | 12,453 | -2,968 | 8,827 | 5,682 | 2,222 | -1,184 | (D) |
| 4 | Republic of Korea | 10.2 | 8,303 | ... | ... | 194 | 656 | 5,929 | 267 | 778 | 479 |
| 5 | China | 17.9 | 7,956 | ... | ... | 116 | 2,712 | 6,541 | -315 | -2,389 | 1,291 |
| 6 | Australia | 14.9 | 7,583 | ... | ... | 717 | 2,946 | 2,290 | 906 | 486 | 238 |
| 7 | Switzerland | (D) | (D) | 7,436 | 9,098 | -6,050 | 1,105 | 5,520 | 687 | 6,376 | (D) |
| 8 | Brazil | (D) | (D) | 6,991 | 7,519 | 424 | 1,721 | 2,805 | 4,138 | -1,569 | (D) |
| 9 | Netherlands | 15.4 | 6,747 | ... | ... | -14 | 1,754 | 3,985 | -89 | 1,190 | -79 |
| 10 | Japan | -1.5 | 6,039 | ... | ... | 1,713 | 2,002 | -3,713 | 1,191 | 4,548 | 298 |
| 11 | Taiwan | (D) | (D) | 5,417 | 5,517 | 62 | 500 | 5,132 | 72 | -249 | (D) |
| 12 | Singapore | (D) | (D) | 5,132 | 5,545 | 108 | 559 | 3,259 | 362 | 1,257 | (D) |
| 13 | Belgium-Luxembourg | 12.2 | 4,732 | ... | ... | -94 | 3,344 | 1,772 | 376 | -635 | -31 |
| 14 | Hong Kong | (D) | (D) | 3,814 | 4,488 | 60 | 817 | 3,259 | 192 | 160 | (D) |
| 15 | France ⁴ | 11.6 | 2,822 | ... | ... | -296 | 1,849 | 815 | 358 | -163 | 259 |
| 16 | Italy | -0.3 | 2,554 | ... | ... | -2 | 891 | 1,477 | 267 | -142 | 63 |
| 17 | Mexico ³ | 6.5 | (D) | 2,448 | 3,956 | 444 | 1,143 | 2,472 | -57 | -46 | (D) |
| 18 | Spain | -2.5 | 1,987 | ... | ... | 70 | 752 | 1,257 | -30 | -116 | 54 |
| 19 | Argentina | (D) | (D) | 1,952 | 2,306 | 92 | 404 | 499 | 1,208 | -151 | (D) |
| 20 | Venezuela | (D) | (D) | 1,941 | 2,205 | 107 | 218 | 584 | 963 | 110 | (D) |
| 21 | Saudi Arabia | (D) | (D) | 1,643 | 2,719 | 11 | 780 | 204 | 182 | 725 | (D) |
| 22 | Chile ³ | 17.8 | (D) | 1,327 | 1,520 | 188 | 336 | 456 | 273 | 126 | (D) |
| 23 | South Africa ⁴ | 6.9 | 1,313 | ... | ... | 42 | 271 | 767 | 211 | -151 | 173 |
| 24 | Thailand | 17.7 | 1,213 | ... | ... | 94 | 273 | 498 | 122 | 119 | 107 |
| 25 | Malaysia | (D) | (D) | 1,061 | 528 | 29 | 226 | 610 | -110 | -227 | (D) |
| 26 | Indonesia | 10.8 | 958 | ... | ... | 34 | 194 | 284 | 99 | 211 | 136 |
| 27 | New Zealand | (D) | 575 | ... | ... | 38 | 247 | 289 | 67 | 14 | -80 |
| 28 | Sweden | (D) | (D) | 447 | 2,011 | -62 | 425 | 292 | 410 | (D) | (D) |
| 29 | Norway | (D) | (D) | 426 | 750 | -8 | 453 | 239 | 120 | -54 | (D) |
| 30 | Germany | (D) | (D) | -206 | 1,710 | -2,464 | 2,673 | 1,690 | 301 | -490 | (D) |
| 31 | Israel ⁴ | 10.2 | -979 | ... | ... | 116 | 361 | 291 | -360 | -1,396 | 9 |
| 32 | Philippines | (D) | -1,314 | ... | ... | 39 | 119 | 322 | -1,100 | -714 | 20 |
| 33 | India | 18.2 | -13,279 | ... | ... | 32 | 370 | 744 | -10,311 | -3,739 | -375 |
| 34 | Bermuda | (D) | (D) | -14,201 | -12,884 | -19,441 | 1,216 | (D) | 33 | (D) | (D) |

(D) Suppressed to avoid the disclosure of data of individual companies.

.... Not applicable

1. For countries where all components of potentially ICT-enabled services exports and imports are published, a point value is given for the trade balance on potentially ICT-enabled services. For countries where one or more components of potentially ICT-enabled services exports or imports is suppressed to avoid the disclosure of individual companies, a range of possible values is given in the lower and upper bound columns. For more information on how the lower and upper bounds were calculated, see footnote 9.

2. The category technical, trade-related, and other business services reflects only the services types that are considered potentially ICT-enabled.

3. Average annual growth shown is for 2006–2013 because values from 2014 were suppressed to avoid disclosure of data of individual companies.

4. Average annual growth shown is for 2007–2014 because values from 2006 were suppressed to avoid disclosure of data of individual companies.

U.S. Bureau of Economic Analysis

Defining ICT and Potentially ICT-Enabled Trade in Services—Continues

Guidance on standards for internationally comparable statistics on ICT and ICT-enabled services has been by the United Nations Conference on Trade and Development (UNCTAD) Task Group on Measuring Trade in ICT Services and ICT-Enabled Services.¹ The task group's October 2015 report is the first to offer a detailed classification of ICT-enabled services based on existing international statistical guidelines for compiling trade in services statistics, including the United Nations' *Manual on Statistics of International Trade in Services 2010* (MSITS) and the *International Monetary Fund's Balance of Payments and International Investment Position Manual, Sixth edition*.²

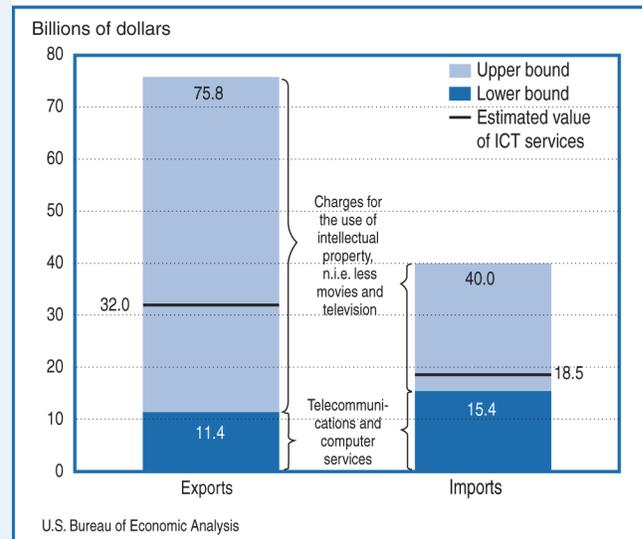
ICT services

ICT services are those that are “intended to enable and/or fulfill the function of information processing and communication.”³ UNCTAD identified a number of industries in the *International Standard Industrial Classification of All Economic Activities (ISIC) Revision 4* that should be classified as ICT services industries. To facilitate the production of detailed statistics on trade in ICT services, UNCTAD also proposed a corresponding grouping of ICT services categories based on the Extended Balance of Payments Services classification (EBOPS 2010) established by MSITS. In BEA's published statistics on international trade in services, these services types are telecommunications services, computer services, and charges for the use of intellectual property associated with computer software, as shown in the blue shaded rows of table A.

For 1999–2005, statistics on services trade that reflect charges for the use of intellectual property associated with computer software are not available because of source data limitations. However, published statistics are available for its parent category, charges for the use of intellectual property n.i.e. and for one subcomponent of that parent category not considered an ICT service, charges for the use of movies and television programming. To provide estimates of ICT trade for these years, these data were used to calculate a range of possible values for ICT exports and imports for each year in 1999–2005. The lower bound of the range is equal to the sum of telecommunications and computer services and the upper bound is equal to the sum of telecommunications services, computer services, and charges for the use of intellectual property n.i.e. less charges for the use of movies and television programming. The data were

also used to calculate a point estimate for 1999–2005 ICT services by multiplying charges for the use of intellectual property associated with computer software's 2006 share of nonmovie/television programming charges for the use of intellectual property n.i.e. (0.32 for exports and 0.13 for imports) by the value of nonmovie/television programming charges for the use of intellectual property n.i.e. in the earlier years. An example of these calculations for 2005 is shown in chart I, and the point estimates and the range of possible values for 1999–2005 are shown by the dotted lines and shaded areas extending from the solid line graphs of ICT services exports and imports in chart 2 on page 2.

Chart I. Estimation of ICT Services in 2005



Potentially ICT-enabled services

ICT-enabled services are “services that are delivered remotely over ICT networks” and “include activities that can be specified, performed, delivered, evaluated and consumed electronically.”⁴ This broad definition includes a variety of types of services, excluding those services types that necessarily involve the movement of physical objects or people or those that require face-to-face contact. Unlike ICT services, it is not possible to identify precisely ICT-enabled services using the EBOPS 2010 classification because the EBOPS classification system is based on the types of services traded, not the mode of delivery of the service. UNCTAD therefore recommends measuring a related concept, *potentially* ICT-enabled services, which

1. The definitions are from Sturgeon, Fredriksson, Fondeur, and Korka.

2. *Manual on Statistics of International Trade in Services* (Geneva: United Nations Department of Economic and Social Affairs, 2010) and *Balance of Payments and International Investment Position Manual Sixth Edition* (Washington, DC: International Monetary Fund, 2009).

3. Sturgeon, Fredriksson, Fondeur, and Korka, 3, paragraph 6.

4. Sturgeon, Fredriksson, Fondeur, and Korka, 3, paragraph 8, and 9, paragraph 22.

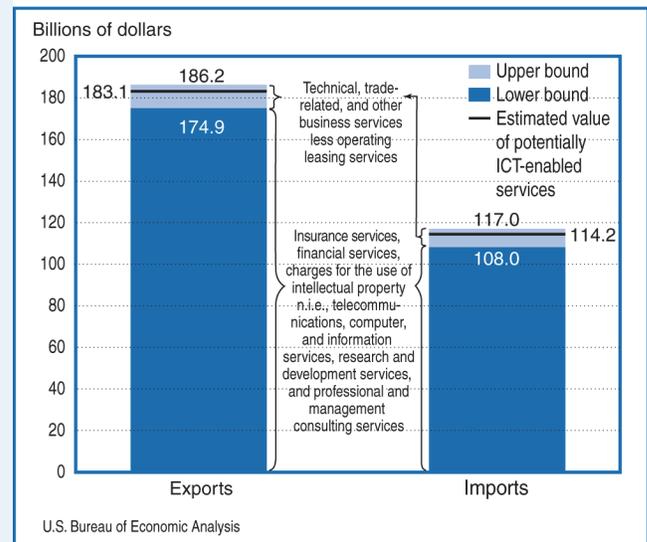
Defining ICT and Potentially ICT-Enabled Trade in Services—Ends

includes service types that *can* predominantly be delivered remotely over ICT networks, a subset of which are *actually* delivered via that method. Potentially ICT-enabled services include ICT services as well as other potentially ICT-enabled services and correspond to the following services types in BEA’s published statistics on international trade in services: insurance services; financial services; charges for the use of intellectual property n.i.e.; telecommunications, computer, and information services; and certain services included in other business services, including professional and management consulting services and research and development. Potentially ICT-enabled services include ICT services. The full list of services types identified as being potentially ICT-enabled is shown by the shaded (yellow and blue) rows in table A.

For 1999–2005, statistics on services trade for the service types within technical, trade-related, and other business services are not available because of source data limitations. However, published statistics are available for technical, trade-related, and other business services as a whole and for a separate subcomponent of that parent category not considered potentially ICT-enabled, operating leasing services. These two series were used to calculate a range of possible values for potentially ICT-enabled exports and imports, with the lower bound equal to the sum of insurance services, financial services, charges for the use of intellectual property n.i.e., telecommunications, computer, and information services, professional and management consulting services, and research and development services and the upper bound equal to the sum of those categories as well as technical, trade-related, and other business services less operating leasing services. A point estimate for potentially ICT-enabled services was also calculated for 1999–2005 by identifying the share of technical, trade-related,

and other business services less operating leasing services considered potentially ICT-enabled in 2006 (0.73 for exports and 0.68 for imports), and multiplying that share by the value of technical, trade-related, and other business services less operating leasing in 1999–2005. An example of these calculations for 2005 is shown in chart II, and the point estimates and range of possible values for 1999–2005 are shown by the dotted lines and shaded areas extending from the solid line graphs of potentially ICT-enabled services exports and imports in chart 2 on page 2.

Chart II. Estimation of Potentially ICT-Enabled Services in 2005



Tables 1 through 8 accompany this article.