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Recent Trends in U.S. Services Trade: 2021 Annual Report

April 2021

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Errata

For the United States International Trade Commission, *Recent Trends in U.S. Services Trade: 2021 Annual Report*, Investigation No. 332-345, USITC Publication 5192, April 2021.

- In chapter 2, page 41, line 5 has been modified to include the UK as the top location for U.S. foreign affiliate sales in architecture and engineering services in 2018, valued at \$7.5 billion.

May 24, 2021

Preface

This report is the 25th in a series of annual reports on recent trends in U.S. services trade published by the U.S. International Trade Commission (Commission or USITC). The Commission also publishes an annual companion report on U.S. trade in goods, *Shifts in U.S. Merchandise Trade*. These recurring reports are the products of an investigation instituted by the Commission in 1993 under section 332(b) of the Tariff Act of 1930.¹ This report is one of the regular publications by the Commission that present expert analysis of trade in services industries. It draws on interviews with industry representatives as well as published sources to apprise the Commission's customers and the public of global industry trends, regional developments, and competitiveness issues.

¹ On August 27, 1993, acting on its own motion under section 332(b) of the Tariff Act of 1930 (19 U.S.C. 1332(b)), USITC instituted investigation no. 332-345, *Annual Reports on U.S. Trade Shifts in Selected Industries*. On December 20, 1994, USITC on its own motion expanded the scope of this report to include more detailed coverage of services industries. Under the expanded scope, USITC publishes two annual reports, *Shifts in U.S. Merchandise Trade* and *Recent Trends in U.S. Services Trade*. The Commission's current report format provides a systematic means of examining and assessing major trade developments with leading U.S. trading partners in the services, agriculture, and manufacturing sectors. Beginning in 2013, *Recent Trends* has rotated its coverage between four services categories: professional services, electronic services, distribution services, and financial services. The 2020 report focused on financial services. The most recent report covering professional services was published in 2017.

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Abbreviations and Acronyms

Terms	Definitions
AAGR	average annual growth rate
ABI	Architecture Billings Index
AE	architecture and engineering
AI	artificial intelligence
AIA	American Institute of Architects
ALSP	alternative legal service provider
BEA	Bureau of Economic Analysis (U.S. Department of Commerce)
CAGR	compound annual growth rate
CDC	Centers for Disease Control and Prevention (United States)
CMS	Centers for Medicare and Medicaid services
COVID-19	coronavirus disease 2019, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)
EU	European Union
FTE	full-time equivalent
FY	fiscal year
GATS	General Agreement on Trade in Services
GDP	gross domestic product
IoT	Internet of Things
IT	information technology
LDCs	least-developed countries
MC	management consulting
MNEs	multinational enterprises
MOFAs	majority-owned foreign affiliates
MOUSAs	majority-owned U.S. affiliates
MRI	magnetic resonance imaging
NAICS	North American industry classification system (U.S. Census Bureau)
OECD	Organisation for Economic Co-operation and Development
R&D	research and development
RSO	remote second opinion
SMEs	small and medium sized enterprises
TACB	technical assistance and capacity building
TFA	trade facilitation agreement
UAVs	unmanned aerial vehicles
UBO	ultimate beneficial owner
UK	United Kingdom
USDOC	U.S. Department of Commerce
USITC	U.S. International Trade Commission
WTO	World Trade Organization

Executive Summary

Trade in services falls into two categories: cross-border transactions, and transactions in one country by affiliates of firms that are headquartered in another country. The United States continued to lead in both categories in 2019. First, the United States remained the world's largest services cross-border exporter and importer. In 2019, U.S. cross-border services exports totaled \$853.3 billion, or 14.1 percent of global services exports; U.S. cross-border services imports totaled \$564.3 billion, or 9.8 percent of global services imports. Preliminary 2020 trade data estimate that in the second quarter of 2020, cross-border exports and imports fell by over 27 percent to \$156.6 billion and \$95.0 billion, respectively, compared to same period in 2019.

Given the inherently local nature of many services—they often require in-person delivery and/or provision by locally regulated entities—U.S. trade in services through sales by foreign affiliates of U.S. services firms is consistently larger than U.S. cross-border trade in services. Sales by foreign affiliates of U.S. services firms (referred to here as affiliate sales) totaled \$1.7 trillion in 2018 (the latest year available), while purchases from the U.S. affiliates of foreign-owned services firms (referred to here as affiliate purchases) totaled \$1.2 trillion.

This report begins with an overview of services trade in all sectors during 2015–19 and January–June 2020, for which it draws on preliminary 2020 services trade data. Its primary focus, however, is developments in U.S. trade in professional services during that period, including trade statistics for research and development services and the impact of COVID-19 on services trade in 2020, where information permits. This information is detailed in three chapters that describe U.S. professional services trade trends; new business models and methods of supply for professional services; and impacts of the COVID-19 pandemic on demand for professional services.

Report Highlights

The United States Runs a Trade Surplus in Both Cross-border Services Trade and Foreign Affiliate Sales

In 2019, U.S. cross-border services exports substantially exceeded imports, resulting in a trade surplus of \$289.0 billion; cross-border trade surpluses were recorded in most major services sectors, with the largest surpluses in professional services, financial services, and travel services. The United States' largest cross-border trading partner in services in 2019—in terms of both imports and exports—was the United Kingdom (UK). After the UK, the top export destinations were Canada, Ireland, China, and Japan, and the top import sources were Canada, Germany, Japan, and India. According to preliminary 2020 trade data, all service sectors experienced lower exports during April–June 2020 compared to the same period in 2019. In the second quarter of 2020, travel services and passenger fares experienced the largest drops in both cross-border exports (76.4 percent lower) and imports (94.0 percent lower) compared to the second quarter of 2019.

In 2018, the most recent year for which data were available, affiliate sales exceeded affiliate purchases by a wide margin. In that year, the sales of services by U.S.-owned affiliates in foreign countries exceeded purchases from foreign-owned affiliates in the United States by \$528.9 billion. The UK was the largest market for U.S.-owned foreign affiliates, followed by Ireland, Canada, Singapore, and the Netherlands. Affiliates of Japanese firms in the United States accounted for the largest share of purchases from all foreign-owned affiliates in the United States, followed by affiliates owned by firms in the UK, Germany, Canada, and France.

Professional Services Accounted for 29 Percent of U.S. Cross-border Services Exports in 2019 and 15 Percent of U.S. Foreign Affiliate Sales in 2018

Professional services, the focus of this report, represent a significant share of U.S. cross-border trade. Including education- and health-related travel services, U.S. professional services exports made up 34.3 percent of total U.S. cross-border services exports, and professional services imports made up 25.4 percent of total cross-border services imports. In terms of value, in 2019 U.S. professional services exports totaled \$292.3 billion, while imports of these services totaled \$143.4 billion, resulting in a cross-border trade surplus in professional services of \$148.9 billion. Top markets for U.S. cross-border exports of professional services included Ireland, Switzerland, China, and the UK; top sources of imports of these services into the United States were the UK, Japan, Germany, Ireland, and Canada.

In 2018, the foreign affiliates of U.S. companies supplied \$255.5 billion in professional services sales, or 15.0 percent of total sales of services by foreign affiliates. The UK was the largest market for U.S.-owned professional service affiliates, followed by Ireland, Switzerland, Germany, and Japan. Professional services purchased from the U.S.-based affiliates of foreign firms totaled \$175.3 billion, or 14.9 percent of total affiliate purchases of services in 2018. Affiliates of French firms in the United States accounted for the largest share of purchases of professional services from majority foreign-owned affiliates in the United States, followed by affiliates of Indian, Canadian, and German firms.

Research and development (R&D) services are the largest category of U.S. professional services cross-border trade and underpin the production and trade of many other products, such as computer and information services, pharmaceuticals, and automobiles. Measuring R&D services trade, however, continues to be difficult for governments and academics, partially due to these services' use as an input into the production of final goods. In addition, a certain share of R&D reported in international trade as well as national accounts is also impacted by complex tax strategies of multinational enterprises (MNEs). Over time, there has been an increased volume and geographic expansion of R&D spending by U.S. foreign affiliates, coupled with a declining domestic share of R&D spending by U.S. parent firms.

The Legal, Education, and Management Consulting Industries Continue to Adopt New Business Models and to Shift Modes of Supply

In recent years, some professional service sectors have seen changes in the way their services are provided, whether by introducing new business models and suppliers or by shifting from providing services in person to providing them online.

In the legal services industry, alternative legal service providers (ALSPs)—firms that provide legal support services, such as litigation support and legal research, that are traditionally done in-house by law firms—have outpaced the growth of traditional law firms. ALSPs encompass a diverse group of companies including legal process outsourcing firms (LPOs) and the Big Four accounting firms. Their growth reflects the growing use of ALSPs by law firms and corporations, the establishment of in-house ALSPs by some law firms, and intensifying competition between law firms and accounting firms in some markets. Increasing collaboration between law firms and ALSPs, as well as new regulations on non-lawyer ownership of law firms, has given rise to new models of doing business in law firms. Over a third of the largest U.S. law firms have either created an internally housed ALSP, acquired one as a wholly owned ALSP subsidiary, or partnered with an ALSP in 2019. The growth of ALSPs is expected to continue due to changes in regulation and the longer-term trends resulting from COVID-19.

The digital supply of services by management consulting (MC) firms and the technology consulting segment is also experiencing fast growth. While an evolving trend towards the digital provision of MC services aimed at reducing the travel expenses of management consultants preceded the COVID-19 pandemic, COVID-19 travel restrictions have hastened this trend, and MC providers now mostly supply services remotely. A separate but related development has been the rise of technology consulting services. Technology consulting services were already the fastest-growing MC services before the pandemic's onset, and COVID-19 related restrictions have underscored and quickened the demand for digital transformation consulting products. In the next few years, digital transformation consulting is predicted to be the leading sector in MC services.

Trade in education services has been under increasing stress in recent years. The number of university-level foreign students studying in the United States—contributing the majority of U.S. cross-border trade in education services—has been declining steadily, a trend which was further aggravated by COVID-19 in 2020. Largely due to limited international flights and ongoing border and travel restrictions, new enrollments of international students fell by 43 percent in fall 2020. In response to COVID-19 restrictions, universities are increasingly either employing digital tools, such as online conferencing applications, or using international affiliates and partners to maintain service offerings for foreign students.

Architecture, Engineering, and Healthcare Firms Respond to Drastic Demand Changes Due to COVID-19

For several professional services sectors, changing consumer preferences due to the COVID-19 pandemic have driven recent developments. In the architecture and engineering (AE) services industry, COVID-19 has created strong demand for project design in essential business segments, such as hospitals, water management, and pharmaceutical manufacturing, and for pandemic-related redesign services for medical, home, educational, and office space. Government stimulus programs are expected to increase AE business in infrastructure subsegments, such as water and wastewater management, transportation, communication, and healthcare. On the other hand, suspension of some construction projects and a slowdown in new contracts are projected to put downward pressure on industry growth. Industry estimates predict that total revenues from U.S. AE services will fall considerably in 2020, and they are not expected to recover for several years.

Although growth in telemedicine predates COVID-19, the adoption of telemedicine in the United States has accelerated sharply since March 2020 in response to the pandemic. The share of U.S. consumers who have used telemedicine went up by 35 percentage points in 2020, from 11 percent in 2019 to 46 percent in 2020. Attributable to social distancing concerns, consumer preferences have shifted away from in-person visits towards remote diagnosis and treatment. In response, providers in certain sectors have dramatically increased their supply of telemedicine. For example, in behavioral health (mental health and counseling), telemedicine provision was up 41 percent over baseline (the week in 2020 before pandemic impacts hit the United States). Regulatory changes since the onset of the pandemic have also enabled the increased adoption of telemedicine, as U.S. states, insurance companies, and Medicare have issued waivers, the most common of which increased interstate supply. While early data suggest this trend may be subsiding after the initial surge of telemedicine during March to May 2020, higher-than-normal usage rates could continue as consumers and providers become more comfortable with telemedicine.

Chapter 1

Introduction

The services sector represents the largest sector of the U.S. economy, and the United States is the world's top cross-border exporter and importer of services. In 2019, the U.S. services sector accounted for 69.0 percent of U.S. gross domestic product (GDP) and for 81.9 percent of total U.S. private employment.² In that same year, U.S. services exports totaled \$853.3 billion, whereas imports totaled \$564.3 billion, resulting in a \$289.0 billion trade surplus.³

The *Recent Trends in U.S. Services Trade (Recent Trends)* report, published annually by the U.S. International Trade Commission (Commission or USITC), examines U.S. services trade, global market conditions, and important U.S. trading partners for services, both in the aggregate and in selected industries. Since 2013, each year's *Recent Trends* report has focused on a specific category of services, while also providing summary information about overall trade in services. This year, *Recent Trends* focuses on professional services, a category which was last covered in *Recent Trends in U.S. Services Trade: 2017 Annual Report*. Other service categories, covered in a four-year rotation, include financial services (2020), distribution services (2019), and electronic services (2018).

The report is organized into six chapters. This introductory chapter gives an overview of the domestic U.S. services sector, global cross-border trade in services, and U.S. cross-border trade and foreign affiliate sales by services sector. Chapter 2 provides an overview of trends in cross-border trade and foreign affiliate sales for professional services and specific subsectors. Chapter 3 focuses on new business models and shifts in mode of supply in legal, management consulting, and education services. Next, chapter 4 focuses on the impact of COVID-19 on demand for architecture and engineering services and healthcare services. Finally, chapter 5 summarizes the views expressed at the 14th annual USITC Services Roundtable, hosted by the Commission on October 27, 2020. Appendix A summarizes recent research conducted by Services Division staff at the Commission, and appendix B presents underlying data for the figures presented in this report. The report is accompanied by web-based interactive charts, available on the Commission's website, which allow users to explore U.S. services trade trends over time and for select industries and countries.⁴

Data: Sources, Categories, and Limitations

Because of the intangible nature of services, data on services trade tend to be more limited than data on goods trade. As a result, this report relies on a variety of sources to present a more comprehensive picture of global trade in services. Official U.S. services trade data used in this report come from the

² USDOC, BEA, "Real Value Added by Industry," September 30, 2020; USDOC, BEA, table 6.5D, "Full-Time Equivalent Employees by Industry," July 31, 2020. The latest year for which data on U.S. cross-border trade in services are available is 2019.

³ USDOC, BEA, table 2.1, "U.S. Trade in Services, by Type of Service," October 20, 2020.

⁴ Interactive charts and alternative text are available at:

https://www.usitc.gov/publications/industry_econ_analysis_332/2021/recent_trends_us_services_trade_2021_annual_report.htm.

Bureau of Economic Analysis (BEA) at the U.S. Department of Commerce (USDOC), which publishes annual data on U.S. trade in services for both cross-border trade and affiliate transactions. Together, cross-border trade and foreign affiliate transactions account for a substantial portion of total services trade via all four modes of supply specified in the General Agreement on Trade in Services (GATS) of the World Trade Organization (WTO). Box 1.1 explains and illustrates the four modes of supply for services trade, as well as where each mode falls within the trade statistics.

Box 1.1 Services Trade “Modes of Supply” under the WTO General Agreement on Trade in Services (GATS)

GATS identifies four modes of supply for services trade, or four ways that services can be traded:

Mode 1 is cross-border supply. In this mode, a service is supplied by an individual or firm in one country to an individual or firm in another (i.e., the service crosses national borders). An example is a firm’s digital file of an architectural design emailed (i.e., exported) to a foreign client.

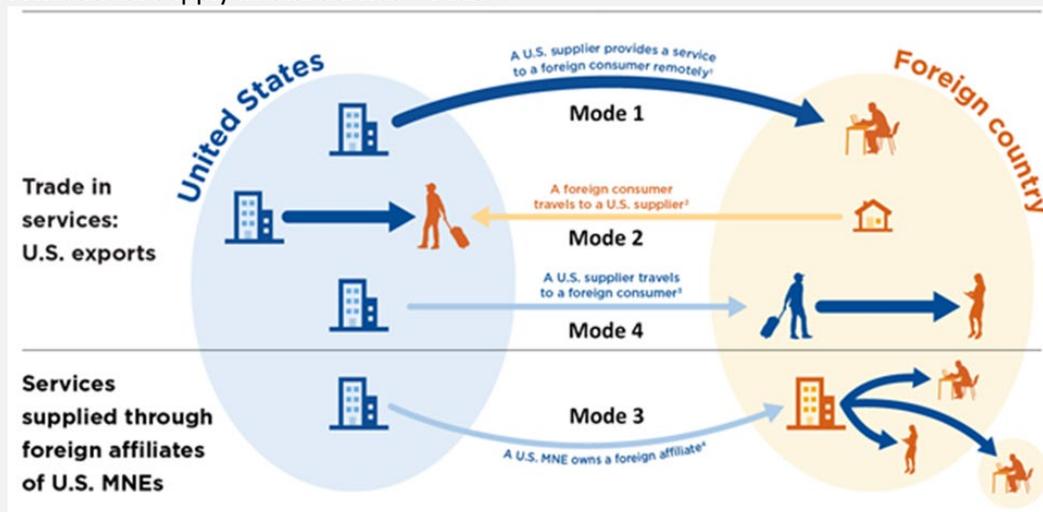
Mode 2 is consumption abroad. In this mode, an individual from one country travels to another country and consumes a service in that country. A classic example of mode 2 trade is travel services. For example, a U.S. export of travel services occurs when a foreign tourist stays in hotels and eats at restaurants while vacationing in the United States.

Mode 3 is commercial presence. In this mode, a firm based in one country establishes a local affiliate in another country and supplies services through that affiliate. An example is a U.S.-based law firm providing legal services in a foreign country from an affiliated office located in that country.

Mode 4 is the temporary presence of natural persons. In this mode, an individual from one country travels to another country on a short-term basis to supply a service—for instance, as a consultant, contract employee, or intracompany transferee at a foreign affiliate.³ An example is a U.S.-based engineer traveling to a foreign country to help local staff on a construction project.

Figure A summarizes these four modes of supply, as well as how the modes are differentiated in BEA data.^b Modes 1, 2, and 4 appear in the top half of the figure, under “trade in services,” while mode 3 appears under “services supplied through foreign affiliates of U.S. multinational enterprises (MNEs).”

Figure A Modes of supply in U.S. services trade



Source: Allen et al., “The Basics of How International Services Are Supplied,” October 2018.

Note: MNEs = multinational enterprises

^a WTO, “Basic Purpose and Concepts” (accessed November 15, 2018).

^b See footnote 6. USDOC, BEA, *U.S. International Economic Accounts: Concepts and Methods*, September 2014.

As defined by BEA, cross-border trade occurs when suppliers in one country sell services to consumers in another country, with people, information, or money crossing national borders. Firms also provide services to foreign consumers through affiliates established in host (i.e., foreign) countries.⁵ GATS mode 1 and mode 2 transactions, as well as some mode 4 transactions, are generally grouped together in BEA’s data on cross-border trade, while mode 3 transactions are included, with some exceptions, in BEA’s affiliate transactions data.⁶ This report focuses on BEA’s “private services” data. Consequently, the export and import data presented throughout the report exclude government transactions, which primarily consist of services supplied in support of operations of U.S. military and embassies abroad.

At an aggregated level, data on cross-border trade in services appear in the balance of payment statistics published quarterly for the United States by BEA, and annually in the WTO’s global services trade data.⁷ The term “commercial services,” as used in the WTO services trade data, is roughly equivalent to the term “private services” used in BEA services trade data. Like BEA cross-border trade data, the WTO’s cross-border trade data roughly correspond to modes 1, 2, and 4 specified in GATS.⁸

BEA also uses survey data to publish more detailed annual information on services trade each year for cross-border and foreign affiliate transactions for the United States. These data are broken down by country and by industry, at the highest level of detail that BEA’s surveys and confidentiality policies allow. Data are suppressed for certain countries or sectors for which disclosure could potentially reveal confidential information about individual companies that have responded to the surveys. Disaggregated data on cross-border trade and foreign affiliate transactions are available for many professional services sectors, including architecture and engineering; legal services; management consulting; research and development services; and recently, education and health services unrelated to travel. More information on the data coverage for each professional services sector is available in chapter 2.

⁵ This Bureau of Economic Analysis (BEA) definition of cross-border trade is generally consistent with the WTO’s GATS definitions of mode 1, mode 2, and part of mode 4, while affiliate transactions are generally consistent with the WTO’s GATS definition of mode 3. After income generated through affiliate transactions has been repatriated to the United States, it appears as direct investment income in the balance of payments.

⁶ The BEA data include only affiliate transactions between residents and nonresidents, while certain transactions that fall under GATS’s mode 3 could involve only residents of the host country. Some statistics on services supplied through mode 4 may also be commingled with statistics on compensation of employees. The channel of delivery that service providers use is determined primarily by the nature of the service. For example, legal and accounting services are generally supplied through affiliates, while audiovisual services are generally supplied across borders. The value of sales of services by foreign affiliates of U.S. firms tends to exceed that of U.S. cross-border exports of services. USDOC, BEA, U.S. “International Economic Accounts: Concepts and Methods,” September 2014.

⁷ BEA also uses preliminary monthly services trade data from the U.S. Census Bureau for its monthly news releases. See USDOC, BEA, “U.S. International Trade in Goods and Services, December 2020,” February 5, 2021; and U.S. Census Bureau, “U.S. International Trade in Goods and Services (FT900)” (accessed February 16, 2021). WTO, “Trade in Commercial Services, 2005–onward” (accessed September 30, 2020); and USDOC, BEA, table 1.1, “U.S. International Transactions” (accessed September 30, 2020).

⁸ WTO, “Technical Notes” (accessed January 22, 2021), 3.

Every five years BEA conducts a benchmark survey that increases the number of respondents reporting on international trade flows in services and that enhances available data to include new categories, improve classifications, and expand geographical coverage. Latest BEA data reflect its 2019 benchmark survey revising 1999–2019 statistics.⁹ Overall, data on services imports were revised differently for two sets of years during the period. Higher estimates for 1999–2017 primarily reflected the inclusion of new financial services categories. Lower estimates for 2018–19 mainly stemmed from methodological improvements in estimating travel and transport services.¹⁰ For professional services categories, statistics were revised upwards during the entire 1999–2019 period because of improved universe estimation methods.¹¹

BEA's survey-based statistics are collected and published in two different ways: for cross-border services trade, statistics are based on the type of service traded, while for services supplied through affiliates, statistics are based on the affiliate's primary industry.¹² This means that there is limited comparability between statistics for cross-border trade and foreign affiliate sales at the sector level. For example, a bank like JPMorgan Chase that also provides management consulting services could report cross-border trade in professional services, but because it is primarily a financial services firm, its sales of consulting services would likely not appear under the professional services category in BEA's foreign affiliate transactions data.

This report uses the latest available services trade data for each source described above. As of the date of publication, WTO data were available through 2019. Annual data on cross-border trade from BEA were available through 2019 (with preliminary quarterly data available for part of 2020); BEA data on affiliate transactions were available through 2018. Data on market conditions in each of the specific industries in this report may also cover different years, based on the latest year for which data are available.

U.S. Services Sector

The U.S. services sector represented the largest portion of the U.S. economy in 2019. In real value-added terms, U.S. private service-supplying industries contributed \$13.2 trillion, or 69.0 percent, to U.S. GDP.¹³ In contrast, goods-producing industries contributed only \$3.6 trillion or 19.0 percent to GDP.¹⁴ In terms of employment, service-supplying industries also represented the majority of full-time equivalent (FTE) employees in the U.S. economy in 2019, accounting for 81.9 percent of all private employment, or

⁹ USDOC, BEA, "Annual Update of the U.S. International Transactions Accounts," July 2020, 6–30.

¹⁰ USDOC, BEA, "Annual Update of the U.S. International Transactions Accounts," July 2020, 33.

¹¹ USDOC, BEA, "Annual Update of the U.S. International Transactions Accounts," July 2020, 39–40.

¹² See chapter 2 for further discussion of the ways that services trade data are classified as well as information about sector-specific data collection and classification.

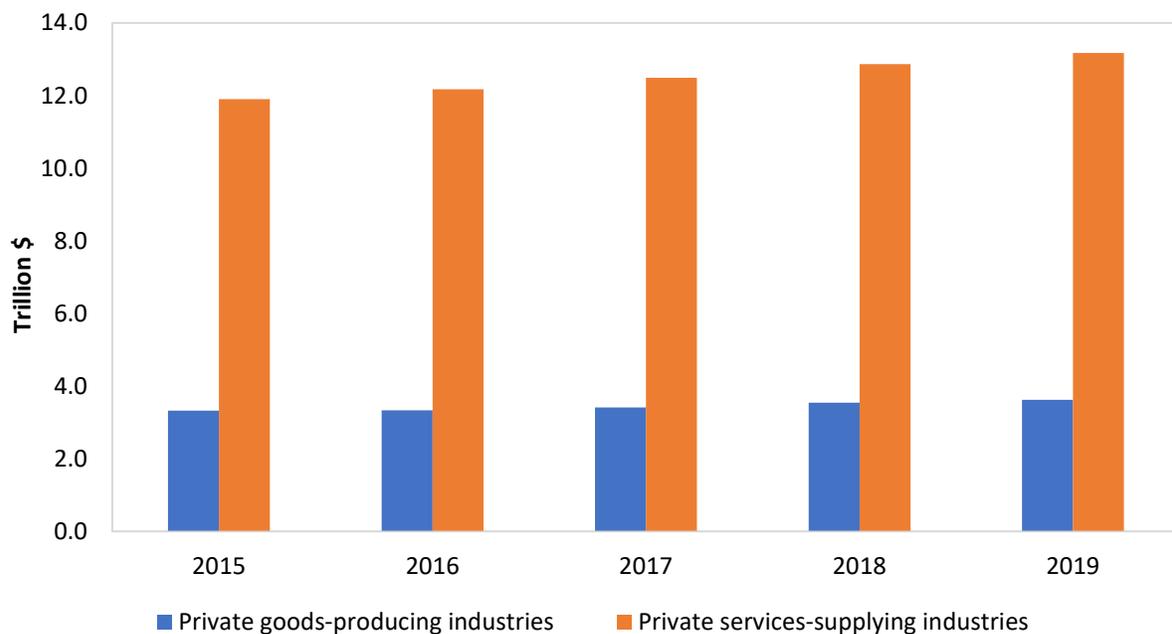
¹³ Value added is a measure of an industry's contribution to GDP; it is the difference between the value of an industry's gross output and the cost of its intermediate inputs. Service-supplying industries include utilities; wholesale trade; retail trade; transportation and warehousing; information; finance; insurance; real estate, rental, and leasing; professional and business services; educational services, health care and social assistance; arts, entertainment, recreation, accommodation, and food services; and other services, except government services. USDOC, BEA, "Real Value Added by Industry," September 30, 2020.

¹⁴ Goods-producing industries include mining; construction; manufacturing; and agriculture, forestry, fishing, and hunting. USDOC, BEA, "Real Value Added by Industry," September 30, 2020.

98.6 million FTE employees. Goods-producing industries accounted for 18.1 percent of private employment, or 21.8 million FTE employees.¹⁵

Between 2015 and 2019, U.S. service-supplying industries increased real output by 10.7 percent, from \$11.9 trillion to \$13.2 trillion (figure 1.1), representing an average annual growth rate of 2.6 percent. This represents slightly faster growth than that for goods-producing industries, which grew 8.9 percent from 2015 to 2019, with an average annual growth rate of 2.2 percent. U.S. service-supplying industries have also grown faster than goods-producing industries in terms of employment, increasing the number of FTE employees by 7.3 percent from 2015 to 2019, compared to 6.9 percent for goods-producing industries.¹⁶

Figure 1.1 Real value added by U.S. industry, 2015–19 (trillion dollars)



Source: USDOC, BEA, “Real Value Added by Industry,” September 30, 2020.

Note: Estimates are chained 2012 dollars. Underlying data for this figure can be found in [appendix table B.1](#).

Global Services Trade

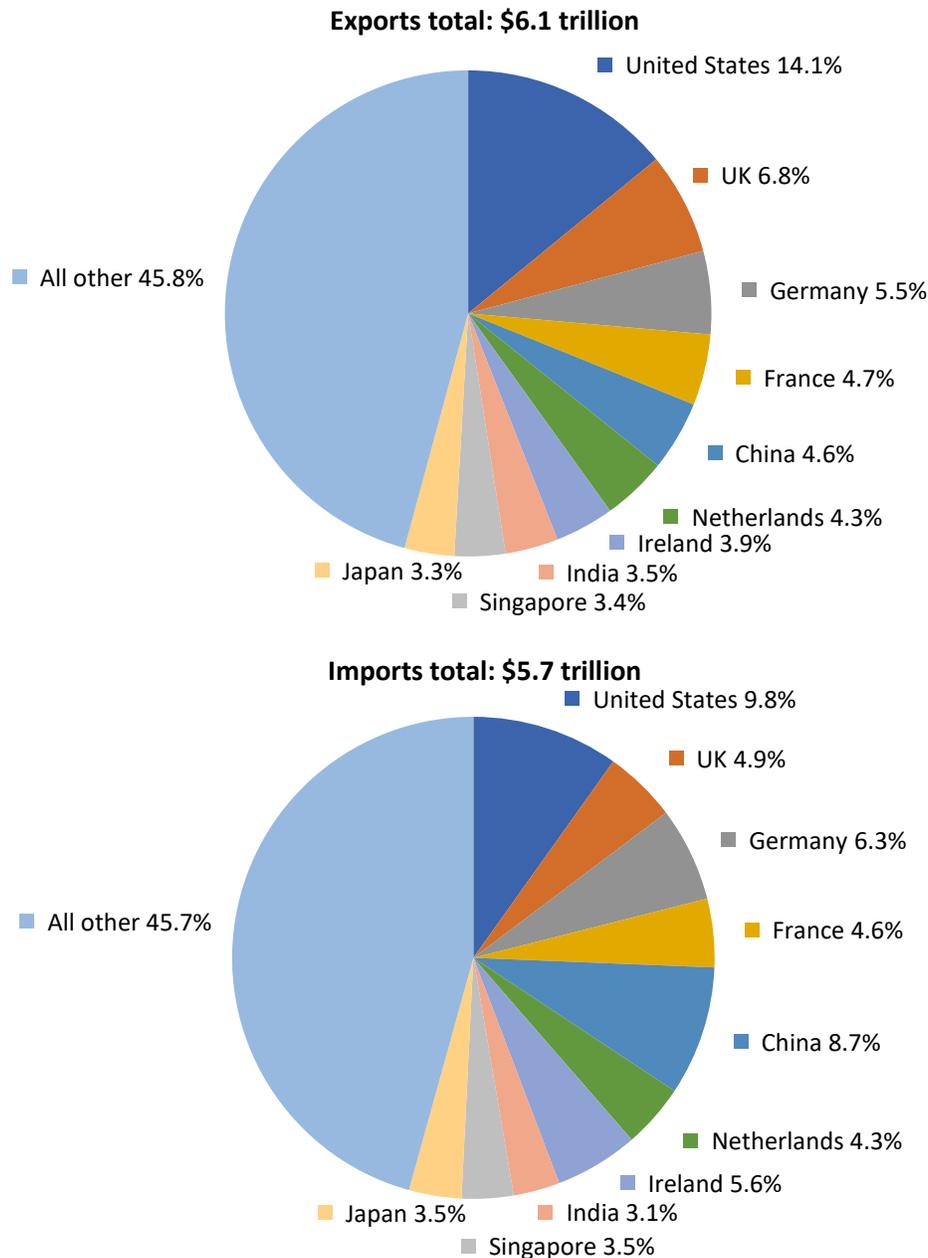
The United States was the largest cross-border exporter of commercial services in the world in 2019, supplying \$853.3 billion of global exports (14.1 percent) (figure 1.2). It was followed by the United Kingdom (UK) and Germany, which accounted for \$411.8 billion (6.8 percent) and \$335.2 billion

¹⁵ FTE employees equal the number of employees on full-time schedules plus the number of employees on part-time schedules converted to a full-time basis. The number of FTE employees in each industry is the product of the total number of employees and the ratio of average weekly hours per employee for all employees to average weekly hours per employee on full-time schedules. USDOC, BEA, table 6.5D, “Full-Time Equivalent Employees by Industry,” July 31, 2020.

¹⁶ USDOC, BEA, table 6.5D, “Full-Time Equivalent Employees by Industry,” July 31, 2020.

(5.5 percent), respectively, of total global exports. The United States was also the largest global importer of services, accounting for \$564.3 billion of all cross-border services imports (9.8 percent) in 2019. Other large importing countries included China, which accounted for \$497.0 billion of imports (8.7 percent) and Germany, which accounted for \$363.0 billion of total imports (6.3 percent). Overall, the United States was a net exporter of commercial services in 2019, with a cross-border trade surplus of \$289.0 billion.

Figure 1.2 Global services: Cross-border exports and imports of commercial services, by country, 2019 (percent)



Source: WTO, "Trade in Commercial Services, 2005–onward" (accessed September 30, 2020).

Notes: Exports and imports of commercial services exclude public-sector transactions. Due to difficulty measuring and reporting services trade data, total services exports do not equal total services imports. Underlying data for these figures can be found in [appendix table B.2](#).

Globally, services trade was severely harmed by the COVID-19 pandemic in 2020, at least matching the decline in goods trade. After accounting for exchange rates and inflation, estimates by the WTO reflect steeper declines in global services trade during the current recession than during the global financial crisis in 2007–9.¹⁷

U.S. Trade in Services

This section provides an overview of U.S. trade in services by broad industry sector and by trading partner and discusses (1) total U.S. cross-border imports and exports of private services and (2) total imports and exports of services through foreign affiliate sales during 2015–19 (figure 1.3).

Overall, trade in services through foreign affiliate sales (based on affiliates' primary industry) was consistently larger than cross-border trade (based on type of service) during the period. At the same time, the United States consistently ran a trade surplus in cross-border trade, and foreign affiliate sales exceeded purchases from domestic affiliates of foreign firms.¹⁸ In 2019, U.S. cross-border exports in services grew 1.5 percent, slower than the average annual growth rate of 4.0 percent recorded during 2015–18. U.S. cross-border imports grew 4.7 percent in 2019, just above the average annual growth rate (4.2 percent) during 2015–18.¹⁹ For foreign affiliate transactions, the value of services supplied by U.S. foreign affiliates (i.e., U.S.-owned companies located abroad) increased by 10.0 percent during 2017–18 to \$1.7 trillion.²⁰ Services supplied by the U.S. affiliates of foreign firms (i.e., foreign-owned companies located in the United States) also saw moderate growth, with an increase of 4.6 percent in 2018 to \$1.2 trillion compared to the prior year.²¹

¹⁷ WTO, "Trade Shows Signs of Rebound from COVID-19," October 6, 2020.

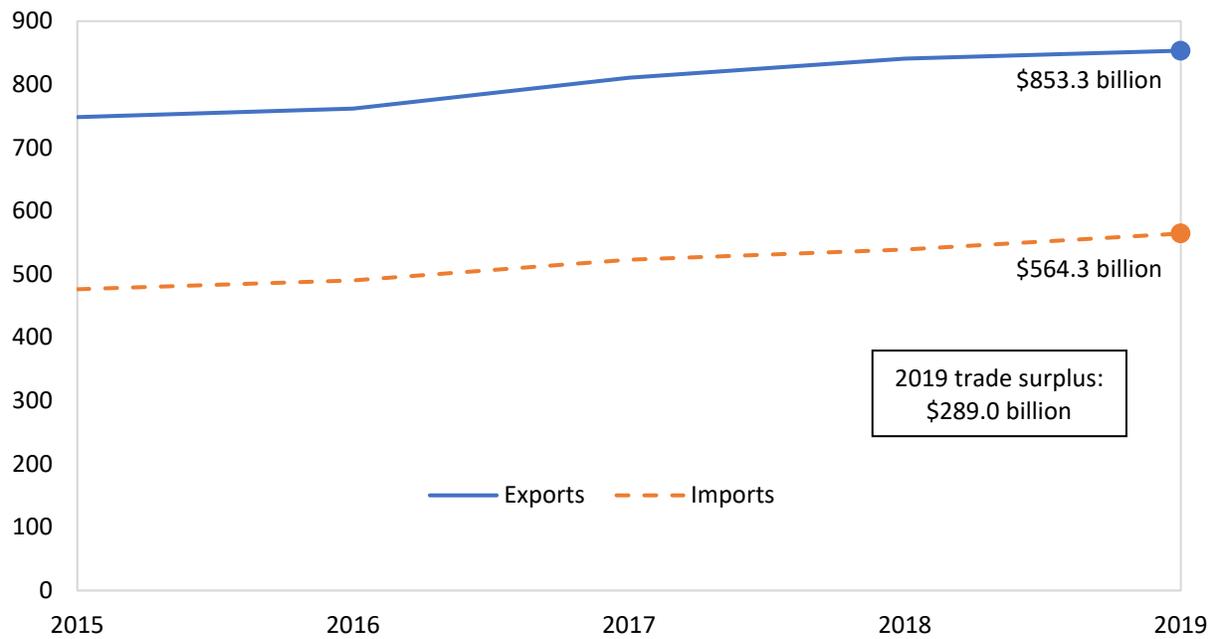
¹⁸ Due to differences in data collection and in the definition of private services vs. commercial services, figures for total trade in cross-border services in 2019 vary slightly between the BEA data in this section and the WTO global services trade data presented above.

¹⁹ USDOC, BEA, table 2.1, "U.S. Trade in Services, by Type of Service," October 15, 2019.

²⁰ USDOC, BEA, table 4.1, "Services Supplied to Foreign Persons by U.S. MNEs through Their MOFAs, by Industry of Affiliate and by Country of Affiliate," October 15, 2019.

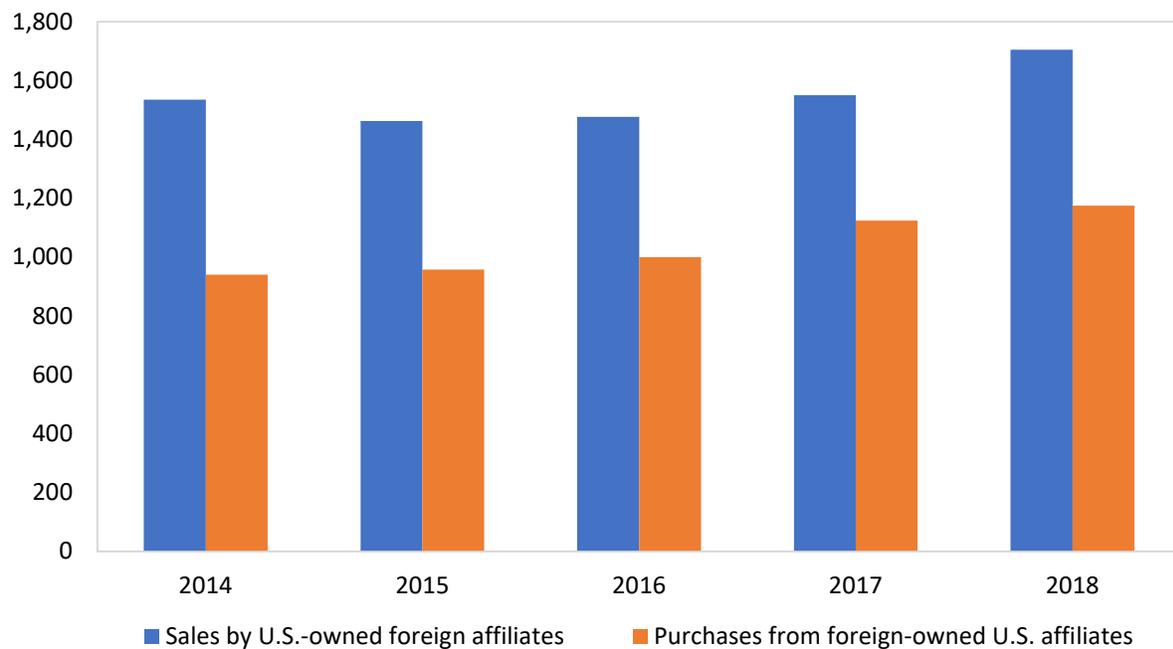
²¹ USDOC, BEA, table 5.1, "Services Supplied to U.S. Persons by Foreign MNEs through Their MOUSA, by Industry of Affiliate and by Country of UBO," October 15, 2019.

Figure 1.3 U.S. services: Cross-border exports/imports, 2015–19 (billion dollars)



Sources: USDOC, BEA, table 2.1, “U.S. Trade in Services, by Type of Service,” October 15, 2019. Underlying data for these figures can be found in [appendix table B.3](#).

Figure 1.4 U.S. services: Affiliate sales/purchases, 2014–18 (billion dollars)



Sources: USDOC, BEA, table 4.1: “Services Supplied to Foreign Persons by U.S. MNEs through Their MOFAs, by Industry of Affiliate and by Country of Affiliate,” October 15, 2019; table 5.1, “Services Supplied to U.S. Persons by Foreign MNEs through Their MOUSA, by Industry of Affiliate and by Country of UBO,” October 15, 2019. Underlying data for these figures can be found in [appendix table B.3](#).

Notes: MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSA = majority-owned U.S. affiliate; UBO = ultimate beneficial owner.

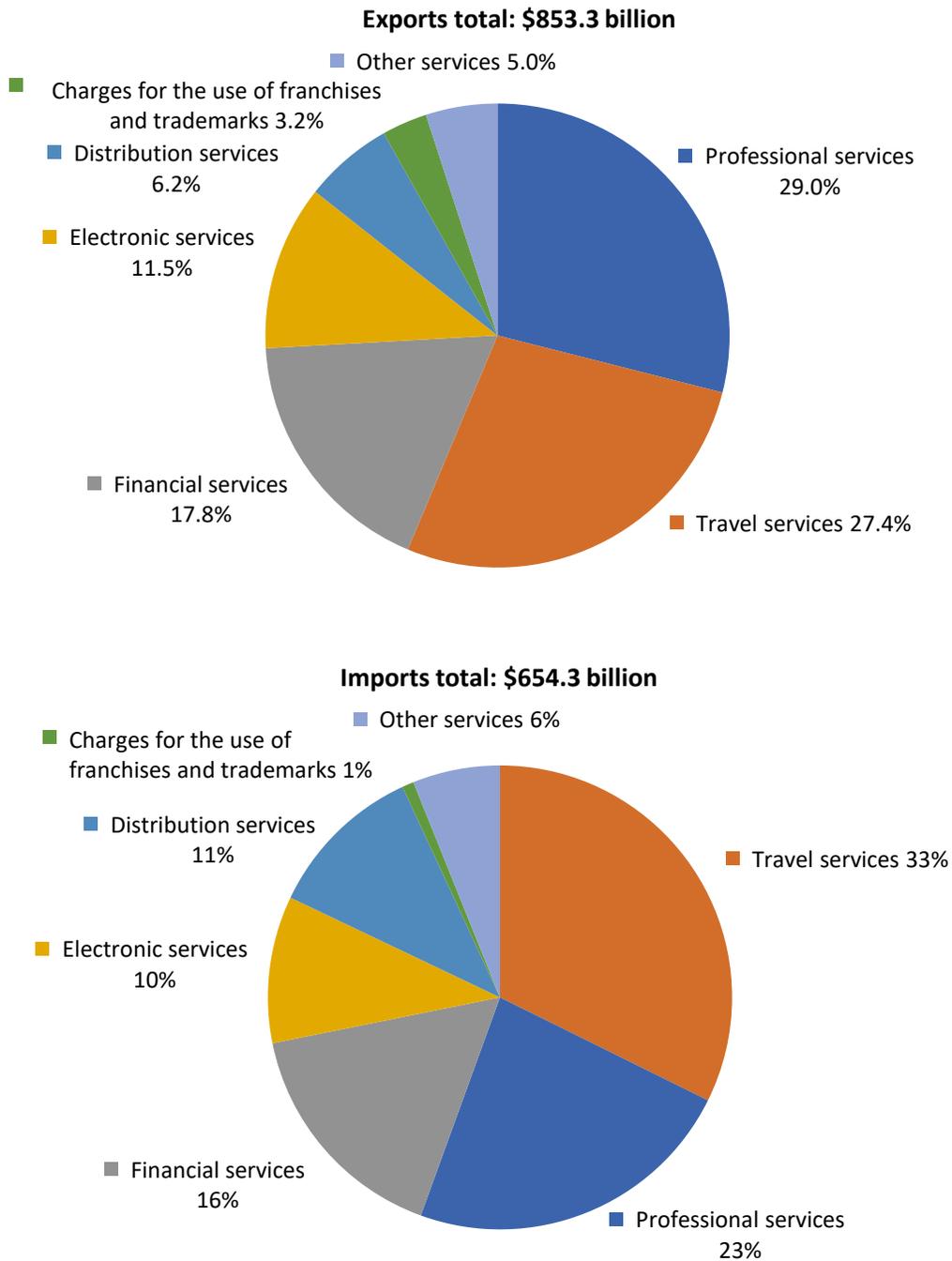
Cross-border Trade

The largest segment of both U.S. cross-border exports and imports in 2019 was professional services, which made up \$247.1 billion of all exports (29.0 percent), followed by travel services, which made up \$233.5 billion of all exports (27.4 percent) (figure 1.5, top panel). Professional services was the second-largest segment for U.S. cross-border imports accounting for \$131.0 billion of all imports (23.2 percent); it was outpaced by only travel services at \$182.4 billion (32.3 percent) in 2019 (figure 1.5, bottom panel).²² In most service sectors, the United States ran a surplus in cross-border trade, with the largest surplus in professional services (\$116.0 billion), followed by financial services (\$60.0 billion) and travel services (\$51.1 billion). The only sector registering a deficit in cross-border trade was the distribution services sector (\$9.2 billion).²³

²² For purposes of these statistics, travel services for the purposes of education or healthcare are included in the “travel services” category and not the “professional services” category. Chapter 2 includes education-related travel and healthcare-related travel as part of all professional services categories.

²³ Distribution services include transportation services (air, water, road, and rail), logistics, retail, and wholesale services.

Figure 1.5 U.S. services: Cross-border exports and imports, by category, 2019 (percent)



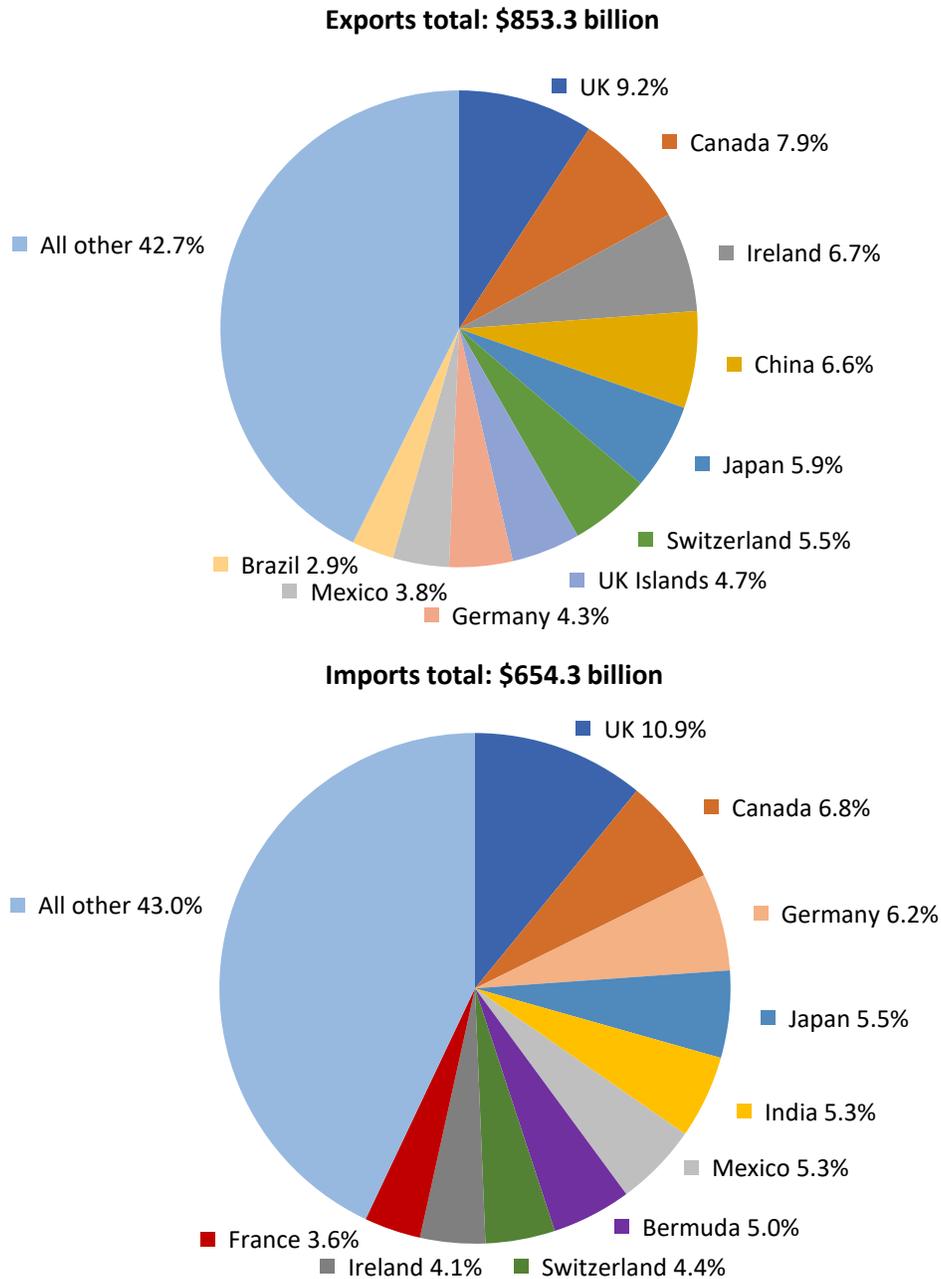
Source: USDOC, BEA, table 2.1 "U.S. Trade in Services, by Type of Service," October 20, 2020.

Note: Data exclude public-sector service transactions. Underlying data for this figure can be found in [appendix table B.4](#).

Looking at U.S. cross-border services trade by partner, the UK was the largest single-country U.S. services trade partner in terms of both exports and imports (figure 1.6). In 2019, U.S. exports to the UK were \$78.3 billion, or 9.2 percent of total exports, while imports from the UK totaled \$61.6 billion, or 10.9 percent of total imports. After the UK, the top destinations for U.S. exports in 2019 were Canada (\$67.3 billion), Ireland (\$57.5 billion), and China (\$56.0 billion). The top sources of imports, following the

UK, were Canada (\$38.2 billion), Germany (\$34.9 billion), Japan (\$31.1 billion), and India (\$29.7 billion).²⁴ The top ten trading partners accounted for roughly 57 percent of U.S. cross-border services trade.

Figure 1.6 U.S. services: Cross-border exports and imports, by country, 2019 (percent)



Source: USDOC, BEA, table 2.2, “U.S. Trade in Services, by Type of Service and by Country or Affiliation,” October 15, 2019.
 Note: The BEA category “United Kingdom Islands (Caribbean)” includes the following UK overseas territories: the British Virgin Islands, the Cayman Islands, Montserrat, and the Turks and Caicos Islands. Underlying data for this figure can be found in [appendix tables B.5](#) and [B.6](#).

²⁴ USDOC, BEA, table 2.2, “U.S. Trade in Services, by Type of Service and by Country or Affiliation,” October 20, 2020.

Preliminary 2020 Cross-border Trade

Preliminary seasonally adjusted quarterly data for U.S. cross-border services trade from January to June 2020 (available at a more broadly aggregated level than data used in the rest of this report) show that total services exports were lower year-over-year, largely due to the 27.1 percent year-over-year decline during the second quarter to \$156.6 billion (table 1.1). Though three sectors, professional and management consulting services; telecommunications, computer, and information services; and financial services, experienced slightly higher exports during January–March 2020 than during the same period in the previous year, all sectors experienced lower exports during April–June 2020 compared to that period in 2019. The largest export decline was in travel and passenger fares, with exports 76.4 percent lower between April and June 2020, than in the same period in the prior year.²⁵

Table 1.1 Total U.S. private cross-border services exports (preliminary), by category, January to June 2019–20 (billion dollars)

Services category	Jan–Mar 2019	Apr–June	Jan–Mar 2020	Apr–June
	(2019 Q1)	2019 (2019 Q2)	(2020 Q1)	2020 (2020 Q2)
Financial services	33.5	34.4	33.6	33.7
Professional and management consulting services	24.5	26.3	27.9	26.1
Research and development services ^a	24.3	24.8	22.9	23.8
Travel and passenger fares	58.6	59.0	47.3	13.9
Telecommunications, computer, and information services	12.8	14.3	13.4	13.7
Technical, trade-related, and other business services	8.7	8.7	8.3	7.9
Personal, cultural, and recreational services	5.6	5.9	5.0	4.1
Charges for the use of franchises and trademarks	6.6	6.4	6.3	5.8
Air transport (excludes passenger fares)	7.3	6.9	6.8	4.8
Sea transport	4.6	4.6	4.5	4.1
Insurance services	4.2	4.0	3.8	3.7
Other services ^b	19.4	19.4	16.3	15.2
Total cross-border exports	210.0	214.8	196.1	156.6

Source: USDOC, BEA, table 3.1, “U.S. International Trade in Services,” December 18, 2020.

Notes: Data for 2020 are preliminary. Data exclude public-sector services transactions. Due to rounding, figures may not add up to totals.

^a Includes licenses for the use of outcomes of research and development.

^b Includes maintenance and repair services n.i.e., other modes of transportation, construction, and licenses to reproduce and/or distribute computer software and audiovisual products.

Similarly, U.S. imports during January–March 2020 broadly tracked imports during the same period in 2019; however, by the second quarter of 2020 imports fell \$46.8 billion (33.0 percent lower) compared to that period in 2019 (table 1.2). Between April and June 2020, imports of travel and passenger fares experienced the largest drops, with \$43.8 billion fewer imports (94.0 percent lower) compared to the second quarter of 2019. In contrast, four sectors—professional and management consulting services; insurance services; technical, trade-related, and other business services; and air transport—services, experienced positive changes in imports during that time.²⁶

²⁵ USDOC, BEA, International Transactions table 3.1, “U.S. International Trade in Services,” December 18, 2020.

²⁶ USDOC, BEA, International Transactions table 3.1, “U.S. International Trade in Services,” December 18, 2020.

Table 1.2 Total U.S. private cross-border services imports (preliminary), by category, January to June 2019–20 (billion dollars)

Services category	Jan–Mar 2019	Apr–June	Jan–Mar 2020	Apr–June
	(2019 Q1)	2019 (2019 Q2)	(2020 Q1)	2020 (2020 Q2)
Professional and management consulting services	13.5	13.8	15.7	15.1
Insurance services	11.3	12.9	14.1	14.7
Research and development services ^a	14.7	14.5	14.9	13.0
Telecommunications, computer, and information services	10.6	11.0	9.9	9.3
Financial services	10.0	10.2	10.1	9.7
Sea transport	8.4	8.1	7.7	7.7
Technical, trade-related, and other business services	5.5	5.8	6.1	5.4
Personal, cultural, and recreational services	5.1	5.3	5.7	5.9
Air transport (excludes passenger fares)	5.8	5.8	5.3	4.8
Travel and passenger fares	45.3	46.6	34.2	2.9
Maintenance and repair services n.i.e.	2.0	2.0	1.6	1.3
Other services ^b	6.2	6.0	5.4	5.2
Total cross-border imports	138.4	142.0	130.6	95.0

Source: USDOC, BEA, International Transactions table 3.1, “U.S. International Trade in Services,” December 18, 2020.

Notes: Data for 2020 are preliminary; n.i.e. = not included elsewhere. Data exclude public-sector services transactions. Due to rounding, figures may not add up to totals.

^a Includes licenses for the use of outcomes of research and development.

^b Includes construction, charges for the use of franchises and trademarks, licenses to reproduce and/or distribute computer software and audiovisual products, and other modes of transportation.

Affiliate Transactions

In 2018, distribution services represented the largest services sector supplied through foreign affiliates of U.S. firms (\$475.1 billion or 27.9 percent) and provided by the U.S.-based affiliates of foreign firms (\$361.5 billion or 30.8 percent).²⁷ Electronic services were the second-largest sector supplying services through foreign affiliates, accounting for 24.1 percent (\$411.4 billion) of these sales. However, financial services represented the second-largest share of purchases from the U.S. affiliates of foreign firms, accounting for 17.4 percent (\$204.1 billion) of all such purchases in 2018. In the same period, professional services accounted for 15.0 percent (\$255.5 billion) of affiliate sales and 14.9 percent (\$175.3 billion) of affiliate purchases (figure 1.7).²⁸

As with cross-border services trade, the UK was a leading source of and destination for U.S. foreign affiliate transactions in 2018. The UK was the largest source of sales by U.S. foreign affiliates, followed by Ireland, Canada, Singapore, and the Netherlands.²⁹ The affiliates of Japanese firms in the United

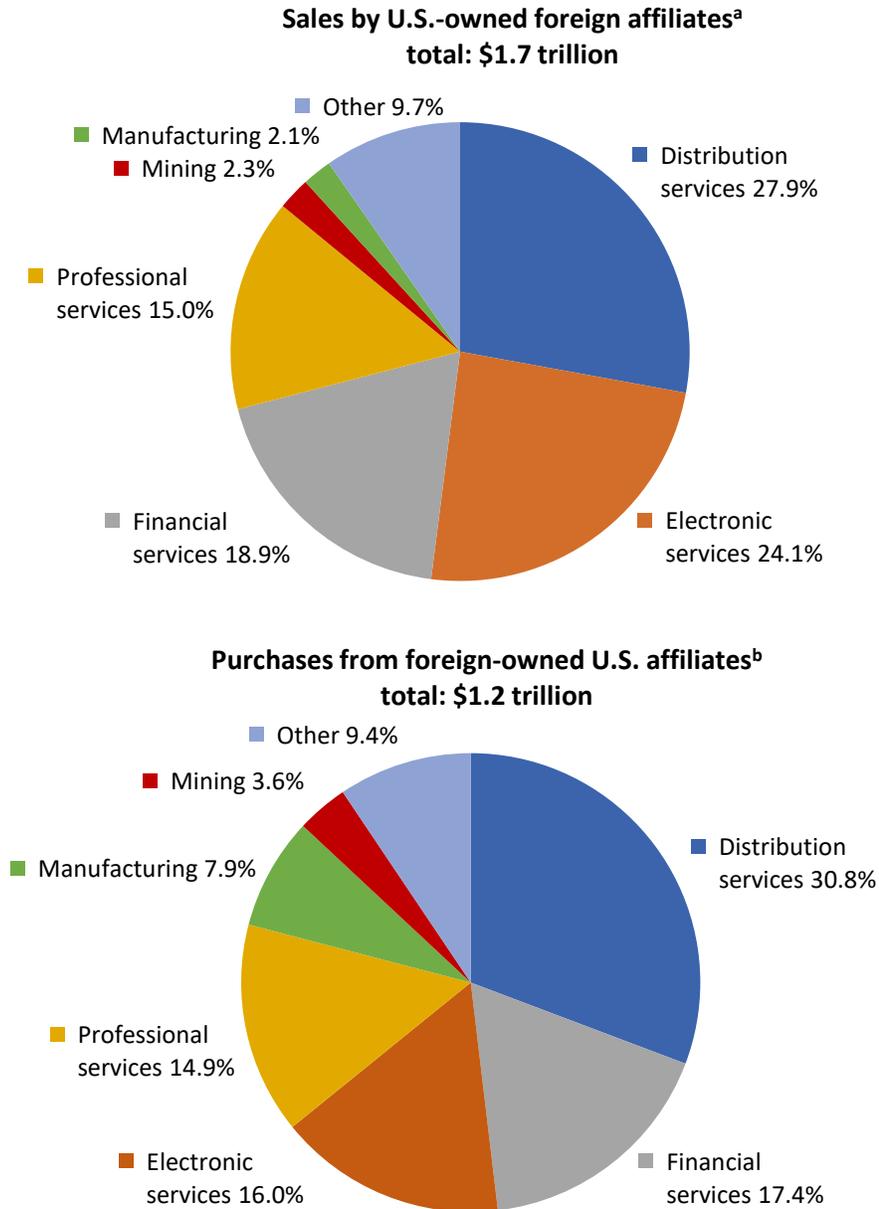
²⁷ Throughout the report, “U.S.-firms” are entities established in the United States, that have less than 50 percent foreign ownership. For more information on the treatment of firm ownership in foreign affiliate data, see USDOC, BEA, How Are BEA’s Statistics? January 23, 2020.

²⁸ USDOC, BEA, table 4.1, “Services Supplied to Foreign Persons by U.S. MNEs through Their MOFAs, by Industry of Affiliate and by Country of Affiliate,” and table 5.1, “Services Supplied to U.S. Persons by Foreign MNEs through Their MOUSAs, by Industry of Affiliate and by Country of UBO,” October 20, 2020.

²⁹ USDOC, BEA, table 4.1, “Services Supplied to Foreign Persons by U.S. MNEs through Their MOFAs, by Industry of Affiliate and by Country of Affiliate,” October 20, 2020.

States accounted for the largest share of purchases from all such foreign affiliates, followed by the UK, Germany, Canada, and France.³⁰

Figure 1.7 U.S. services: Affiliate sales and purchases, by industry, 2018 (percent)



Source: USDOC, BEA, table 4.1, “Services Supplied to Foreign Persons by U.S. MNEs through Their MOFAs, by Industry of Affiliate and by Country of Affiliate,” and table 5.1, “Services Supplied to U.S. Persons by Foreign MNEs through Their MOUSAs, by Industry of Affiliate and by Country of UBO,” October 20, 2020. MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner.

Notes: “Manufacturing” includes ancillary services provided by goods manufacturers. “Distribution services” includes wholesale and retail trade services and transport and warehousing services. “Other” includes ancillary services provided in mining, agriculture, and other sectors, as well as suppressed data. Beginning with the 2018 *Recent Trends in U.S. Services Trade* report, software publishing was reallocated from “Other

³⁰ USDOC, BEA, table 5.1, “Services Supplied to U.S. Persons by Foreign MNEs through Their MOUSAs, by Industry of Affiliate and by Country of UBO,” October 20, 2020.

Services” to “Electronic Services” to better reflect the industry composition. Also included in “Electronic services” are the motion picture and sound recording industries, telecommunications, broadcasting, data processing, and computer systems design and related services. Therefore, electronic services data in this report and the 2018 report cannot be directly compared with such data in USITC reports published before 2018. Underlying data for this figure can be found in [appendix table B.7](#).

^a Includes goods and services supplied by majority-owned foreign affiliates of U.S. parent firms.

^b Includes goods and services supplied by majority-owned U.S. affiliates of foreign parent firms.

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<https://apps.bea.gov/iTable/iTable.cfm?reqid=62&step=6&isuri=1&tablelist=363&product=4>.
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Chapter 2

Professional Services

Overview

The professional services category includes a variety of activities that generally require highly skilled labor. In many cases, such as accounting, legal, architecture, engineering, healthcare, and education services, specific licenses or credentials are required to provide the services. A number of professional services can be traded cross-border. This year's report highlights some major subcategories of such cross-border professional services trade, including research and development, legal services, management consulting services, and architecture and engineering services, as well as two professional services particularly impacted by the COVID-19 pandemic: healthcare and education services.

U.S. Trade in Professional Services

This section provides an overview of the composition of U.S. international trade in professional services, in terms of both cross-border trade and foreign affiliate sales. In contrast to trade patterns for other services sectors, cross-border trade flows of professional services tend to be larger than foreign affiliate sales and purchases.³¹

Cross-border Exports and Imports

In 2019, exports of professional services (including travel services for the purposes of education and healthcare) totaled \$292.3 billion, accounting for 34.3 percent of total cross-border services exports.³² This represented a 4.7 percent increase in professional services exports compared to 2018. Top export destinations for professional services included Ireland (\$34.9 billion), Switzerland (\$32.6 billion), and China (\$23.9 billion) (figure 2.1, top panel).³³

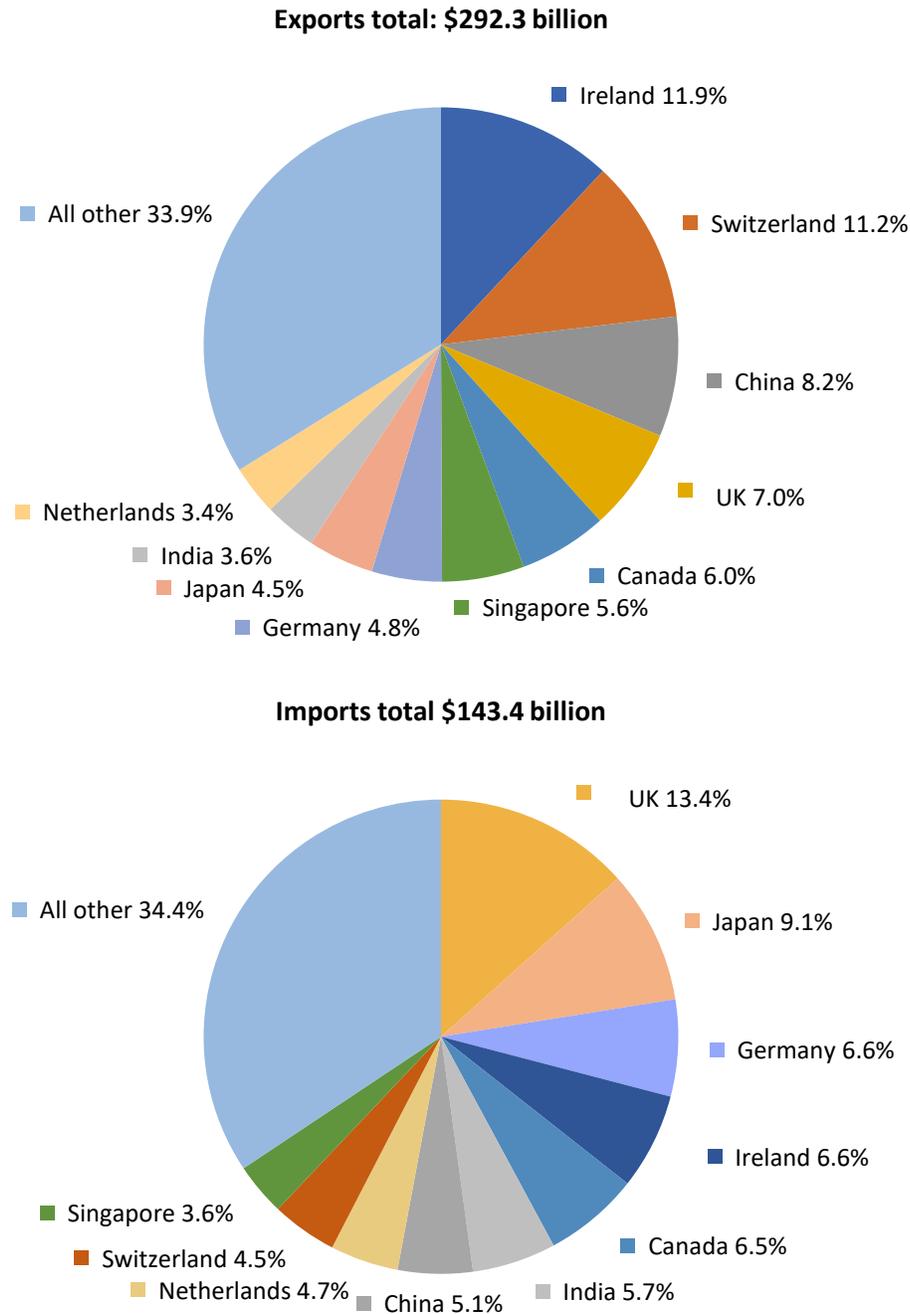
Professional services imports (including travel services) totaled \$143.4 billion in 2019, accounting for 25.4 percent of total cross-border services trade and resulting in a \$148.9 billion trade surplus. This represented a 3.2 percent increase in imports compared to 2018. Top cross-border importing countries included the United Kingdom (UK) (\$19.2 billion), Japan (\$13.1 billion), and Germany (\$9.5 billion) (figure 2.1, bottom panel).

³¹ As outlined in chapter 1, these two types of trade flows are not directly comparable due to differences in how services are categorized in BEA cross-border trade and foreign affiliate transaction data.

³² Typically, travel services for the purposes of education and healthcare are not included in the aggregate "professional services" category by BEA's statistics (instead, they are classified as a separate "travel" category, as in chapter 1). Later chapters of this report focus on healthcare and education services in depth. This section does include education-related travel and healthcare-related travel as part of all professional services categories.

³³ In figures 2.1 and 2.2, the data for education services are broken out (decomposed) into travel-related and other cross-border education services. Because healthcare services travel is a smaller segment and healthcare services data are missing in some years, the data for healthcare services are not broken out in the same way.

Figure 2.1 Professional services: U.S. cross-border exports and imports by country, 2019



Source: USDOC, BEA, table 2.2, “U.S. Trade in Services, by Type of Service and by Country or Affiliation,” July 10, 2020.

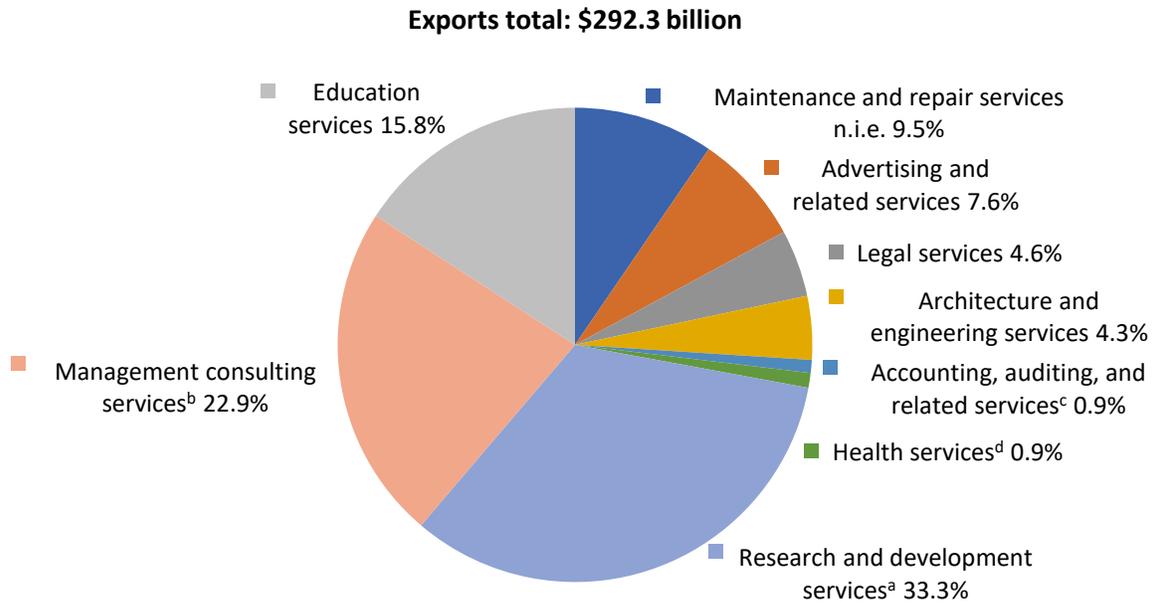
Note: Total imports include travel-related services for education and healthcare.

Underlying data for this figure can be found in [appendix tables B.8](#) and [B.9](#).

The largest category of cross-border trade in professional services in 2019 was R&D services, which accounted for one-third of all U.S. professional cross-border services exports (figure 2.2). This category included both R&D services, under “other business services,” and associated license fees for use of intellectual property outcomes of R&D (i.e., patents, industrial processes, and trade secrets).

Management consulting and education services represented the next-largest export categories; the latter category includes travel services for education. Within education services, the vast majority of exports (95.1 percent) consisted of individuals traveling to the United States to attend U.S. schools. Similarly, research and development, management consulting services, and education services were the largest source of imports (figure 2.3), and the majority of education services imports (87.1 percent) were travel related.

Figure 2.2 Professional services: U.S. cross-border exports, 2019



Source: USDOC, BEA, table 2.1, "U.S. Trade in Services, by Type of Service," June 30, 2020.

Notes: n.i.e. = not included elsewhere. Data exclude public-sector transactions.

^a Includes licenses for outcomes of research and development.

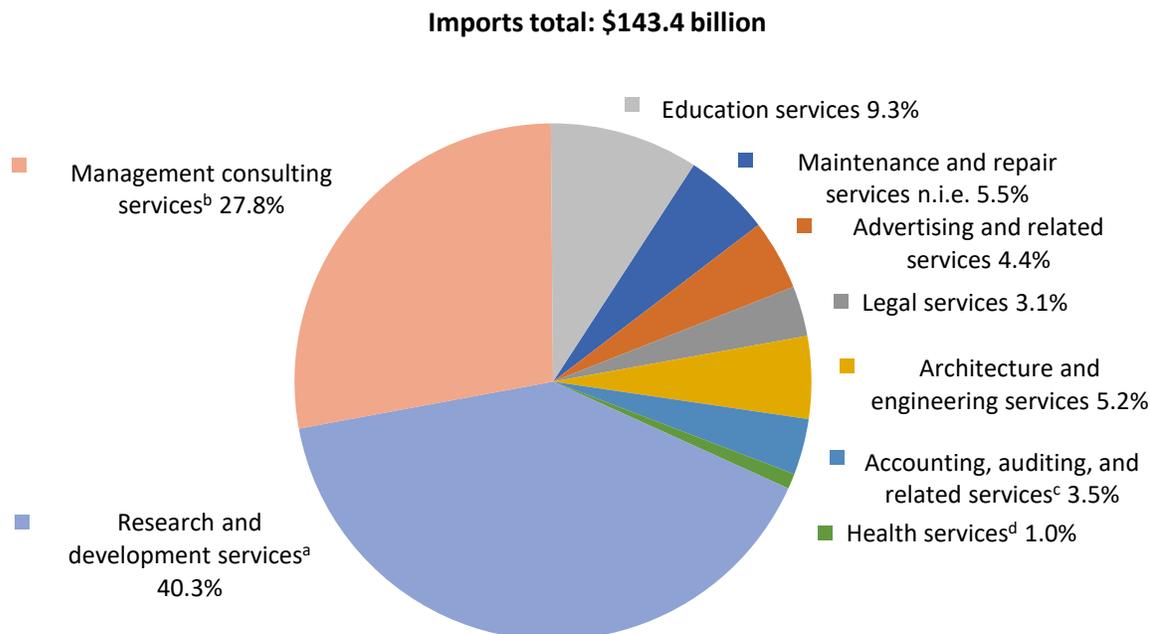
^b Includes business consulting and public relations services.

^c Includes bookkeeping and tax-consulting services.

^d Includes health services provided remotely and health-related travel services.

Underlying data for this figure can be found in [appendix table B.10](#).

Figure 2.3 Professional services: U.S. cross-border imports 2019



Source: USDOC, BEA, table 2.1, “U.S. Trade in Services, by Type of Service,” June 30, 2020.

Notes: n.i.e. = not included elsewhere. Data exclude public-sector transactions.

^a Includes licenses for outcomes of research and development.

^b Includes business consulting and public relations services.

^c Includes bookkeeping, and tax-consulting services.

^d Includes health services provided remotely and health-related travel services.

Underlying data for this figure can be found in [appendix table B.10](#).

Foreign Affiliate Sales

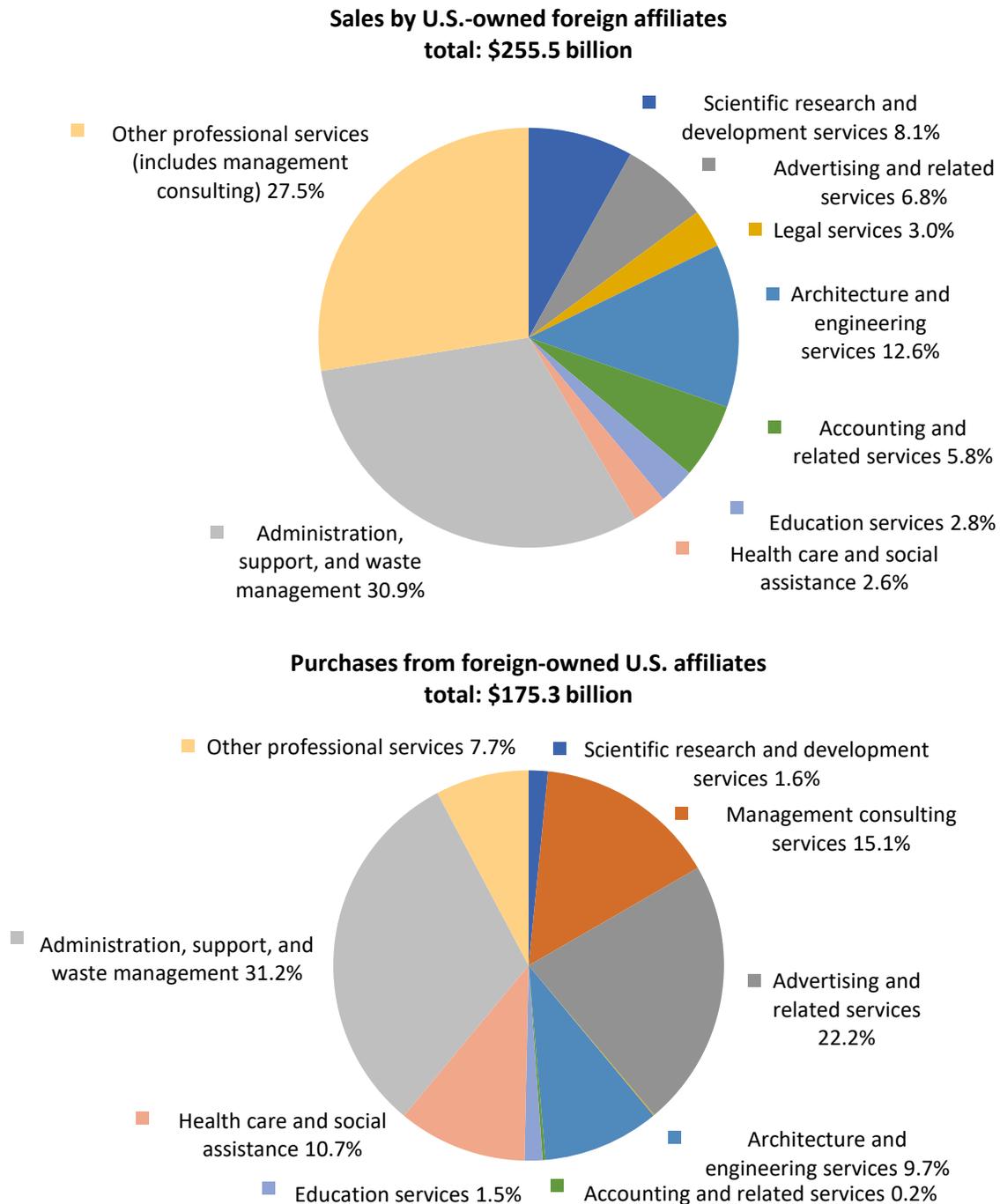
In 2018, the last year for which data were available, foreign affiliate sales of professional services totaled \$255.5 billion, representing an 8.5 percent increase in sales from 2017. U.S. purchases from affiliates of foreign-owned companies located in the United States totaled \$175.3 billion in 2018, representing a 3.2 percent increase from 2017. Thus, foreign affiliate sales in professional services exceeded purchases by \$80.2 billion in 2018.

U.S. foreign affiliate sales data for professional services include an additional category that does not have corresponding cross-border trade data: administration, support, and waste management services.³⁴ This category made up the largest category of U.S. foreign affiliate sales, with 30.9 percent of total sales in 2018 (figure 2.4, top panel). Two other major categories of U.S. foreign affiliate sales in 2018 were scientific research and development services, and architecture and engineering services. Management consulting services also likely represented a large portion of the “other services” category

³⁴ This category includes companies that specialize in performing routine support activities for day-to-day operations of other companies, such as office administration, hiring, clerical services, security, cleaning, and waste disposal. USDOC, Census Bureau, “Sector 56—Administrative and Support and Waste Management and Remediation Services,” August 17, 2016.

in this case, but data for management consulting foreign affiliate sales in 2018 have been suppressed to avoid disclosing individual company information. The largest category of professional services for foreign affiliate sales was also the largest for purchases from foreign-owned U.S. affiliates: administration, support, and waste management services, followed by advertising services and management consulting services (figure 2.4, bottom panel).

Figure 2.4 Professional services: Affiliate sales by industry, 2018



Source: USDOC, BEA, table 5.1, “Services Supplied to U.S. Persons by Foreign Multinational Enterprises through Their Majority Owned U.S. Affiliates, by Industry of Affiliate and by Country of Ultimate Beneficial Owner,” October 20, 2020; USDOC, BEA, table 4.1, “Services Supplied to Foreign Persons by U.S. Multinational Enterprises through Their Majority Owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate,” October 20, 2020.

Note: Data on sales of management consulting services through foreign affiliates are suppressed to avoid disclosure of individual company data, so management consulting sales appear in the “other professional services” category. For affiliate purchases, “other” includes other professional services as well as suppressed data. Legal services purchases represent 0.1 percent of total purchases from foreign-owned U.S. affiliates, and therefore the percentage share is not visible on this graph.

Underlying data for this figure can be found in [appendix table B.11](#).

U.S. Trade in Professional Services by Sector

This section provides additional detail on trade in professional services for the sectors covered in this report. More detail on research and development services is available at the end of this chapter management consulting, legal, and education services are covered in chapter 3; and architecture and engineering, and health services are covered in chapter 4. Additional detail, including the sector compositions of services trade for major U.S. trading partners and for different services sectors not covered in this report, is available in the interactive tables accompanying this report.³⁵

Management Consulting Services

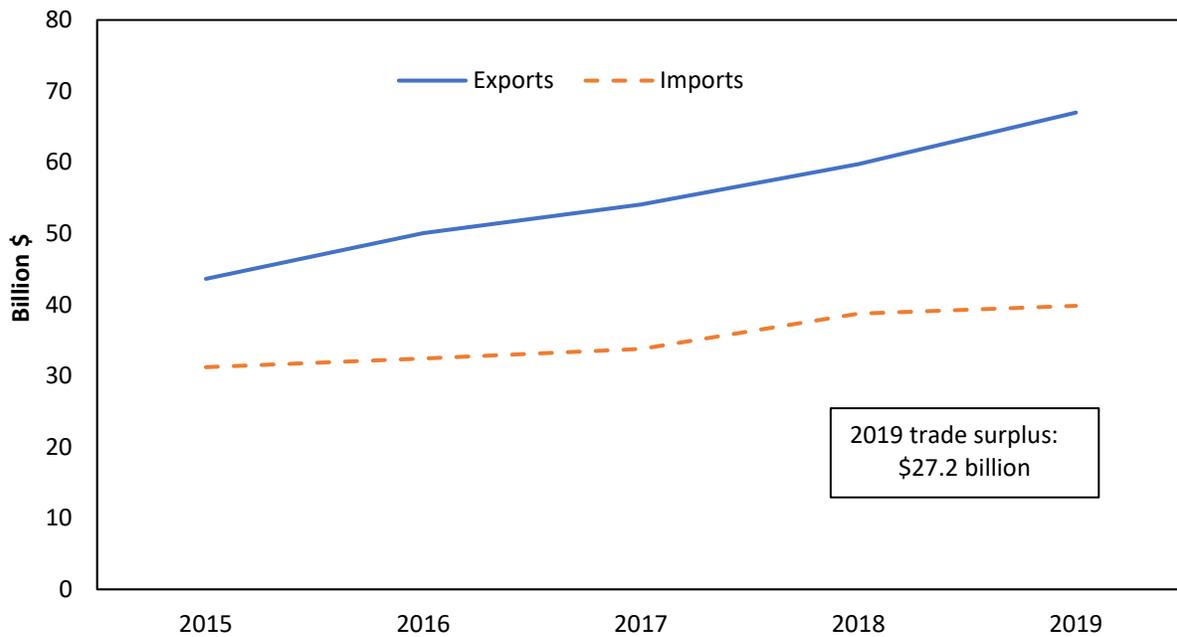
In 2019, U.S. cross-border exports of management consulting services, which include business consulting and public relations services, were \$67.0 billion, and imports totaled \$39.8 billion, resulting in a surplus of \$27.2 billion (figure 2.7). Management consulting exports continued a pattern of rapid expansion, with a 12.2 percent increase in 2019 compared to the prior year, and average annual growth of 11.1 percent over the 2015–18 period. Top destinations for management consulting exports included Ireland (\$13.2 billion), the UK (\$8.6 billion), and Switzerland (\$6.5 billion).³⁶ Cross-border imports of management consulting services have grown more slowly than exports, with a 2.8 percent increase from 2018 to 2019, down from an average annual growth rate of 7.6 percent in 2015–18. Top sources of management consulting imports in 2019 included the UK (\$7.3 billion), the Netherlands (\$3.9 billion), and Canada (\$3.3 billion).³⁷

³⁵ Interactive charts and alternative text are available at:

https://www.usitc.gov/publications/industry_econ_analysis_332/2021/recent_trends_us_services_trade_2021_annual_report.htm.

³⁶ USDOC, BEA, table 2.3, “U.S. Trade in Services, by Country or Affiliation and by Type of Service,” July 10, 2020. Ireland and the UK are important bases for U.S. and global multinational firms operating in the EU and other regional markets, while Switzerland is a leading global financial center, and therefore may attract management consulting services geared toward finance.

³⁷ USDOC, BEA, table 2.3, “U.S. Trade in Services, by Country or Affiliation and by Type of Service,” July 10, 2020.

Figure 2.5 Management consulting: U.S. cross-border exports and imports, 2015–19 (billion dollars)

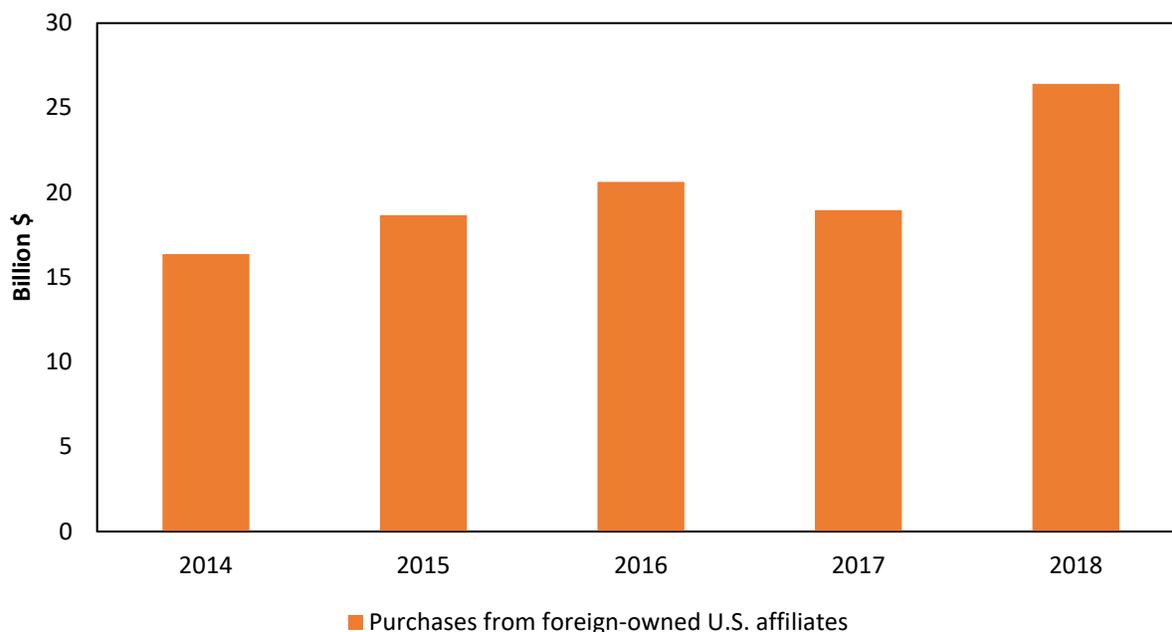
Source: USDOC, BEA, table 2.2, “U.S. Trade in Services, by Type of Service and by Country or Affiliation,” July 10, 2020. Underlying data for this figure can be found in [appendix table B.12](#).

Due to suppression of data in the BEA official statistics to safeguard individual companies’ information, data on management consulting services (including scientific and technical consulting) supplied by foreign affiliates of U.S. firms are not available from 2014 to 2018. Nevertheless, some U.S. foreign affiliate sales data are available at the country level. Top destinations for management consulting services included the UK (\$6.3 billion), Switzerland (\$3.3 billion), and Germany (\$3.0 billion).³⁸ Summing the country-level data shows that foreign affiliate sales in management consulting totaled *at least* \$28.4 billion in 2018, which indicates that total foreign affiliate sales exceeded purchases in 2018.

Data about purchases of services from foreign-owned affiliates in the United States, which totaled \$26.4 billion in 2018, are presented in figure 2.8. U.S. affiliate sales to foreign firms increased by 39.4 percent from 2017 to 2018, five times the average annual growth rate of 5.5 percent in 2014–17. Canadian-owned U.S. affiliates had the largest share of U.S. purchases (\$3.5 billion), followed by Japan (\$147 million) and France (\$114 million).³⁹

³⁸ USDOC, BEA, table 5.1 “Services Supplied to U.S. Persons by Foreign Multinational Enterprises through Their Majority Owned U.S. Affiliates, by Industry of Affiliate and by Country of Ultimate Beneficial Owner,” October 20, 2020.

³⁹ USDOC, BEA, table 4.1, “Services Supplied to Foreign Persons by U.S. Multinational Enterprises through Their Majority Owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate,” October 20, 2020.

Figure 2.6 Management consulting services: affiliate purchases, 2014–18

Source: USDOC, BEA, table 4.1, “Services Supplied to Foreign Persons by U.S. Multinational Enterprises through Their Majority Owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate,” October 20, 2020; table 5.1, “Services Supplied to U.S. Persons by Foreign Multinational Enterprises through Their Majority Owned U.S. Affiliates, by Industry of Affiliate and by Country of Ultimate Beneficial Owner,” October 20, 2020.

Notes: MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner.

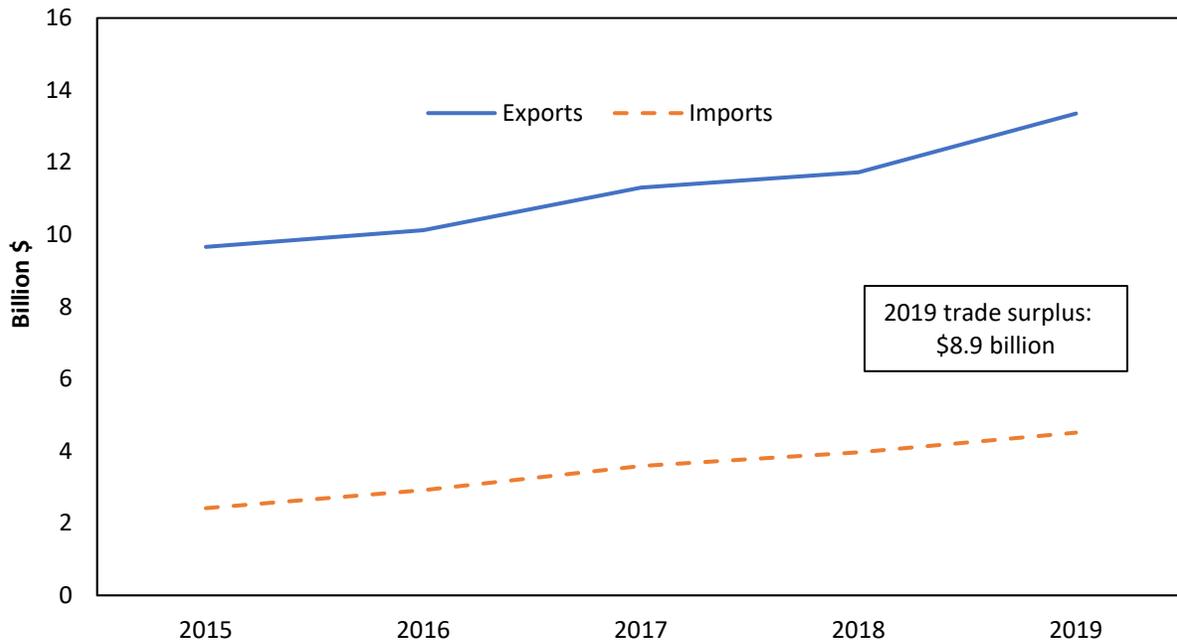
Underlying data for this figure can be found in [appendix table B.13](#).

Legal Services

In 2019, the value of U.S. cross-border exports of legal services was \$13.4 billion, and imports totaled \$4.5 billion, resulting in a surplus of \$8.9 billion (figure 2.9). The value of legal services exports saw particularly strong growth from 2018 to 2019, rising 13.9 percent, compared to an average annual growth rate of 6.7 percent in 2015–18. Top destinations for legal services exports included the UK (\$2.6 billion), Canada (\$1.2 billion), and Japan (\$1.1 billion).⁴⁰ While smaller in size than exports, cross-border imports of legal services have also seen strong growth in recent years; an average annual growth rate of 18.1 percent in 2015–18 and a 13.7 percent increase from 2018 to 2019. Top sources of legal services imports in 2019 included the UK (\$1.5 billion), Japan (\$508 million), and China (\$350 million).⁴¹

⁴⁰ USDOC, BEA, table 2.3, “U.S. Trade in Services, by Country or Affiliation and by Type of Service,” July 10, 2020.

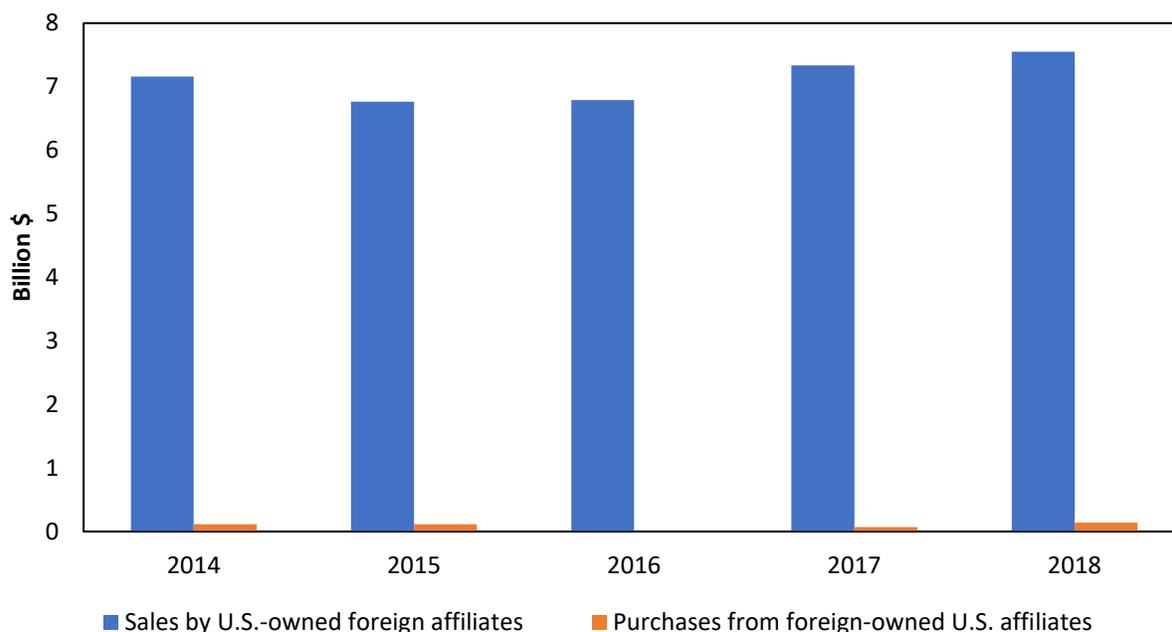
⁴¹ USDOC, BEA, table 2.3, “U.S. Trade in Services, by Country or Affiliation and by Type of Service,” July 10, 2020.

Figure 2.7 Legal services: U.S. cross-border exports and imports, 2015–18 (billion dollars)

Source: USDOC, BEA, table 2.2, “U.S. Trade in Services, by Type of Service and by Country or Affiliation,” July 10, 2020. Underlying data for this figure can be found in [appendix table B.14](#).

In 2018, the last year for which data were available, legal services supplied by foreign affiliates of U.S. firms totaled \$7.6 billion, while services purchased from U.S. affiliates of foreign firms were \$141 million (figure 2.10). Foreign affiliate sales grew 3 percent from 2017 to 2018, slightly faster than the 1.0 average annual growth rate in 2014–17. Top locations for U.S. foreign affiliate sales in legal services included the UK (\$3.0 billion), France (\$786 million), and Germany (\$650 million).⁴² Purchases of services from U.S. affiliates of foreign firms almost doubled from 2017 to 2018, albeit from a small base, compared to notably shrinking in 2014–17, when purchases declined on average by 18.7 percent on an annual basis. Due to data suppression, there is too little information to rank top sources of foreign affiliate purchases in legal services.

⁴² USDOC, BEA, table 4.1, “Services Supplied to Foreign Persons by U.S. Multinational Enterprises through Their Majority Owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate,” October 20, 2020.

Figure 2.8 Legal services: affiliate sales and purchases, 2014–18

Source: USDOC, BEA, table 4.1, “Services Supplied to Foreign Persons by U.S. Multinational Enterprises through Their Majority Owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate,” October 20, 2020; table 5.1, “Services Supplied to U.S. Persons by Foreign Multinational Enterprises through Their Majority Owned U.S. Affiliates, by Industry of Affiliate and by Country of Ultimate Beneficial Owner,” October 20, 2020.

Notes: MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner.

Underlying data for this figure can be found in [appendix table B.15](#).

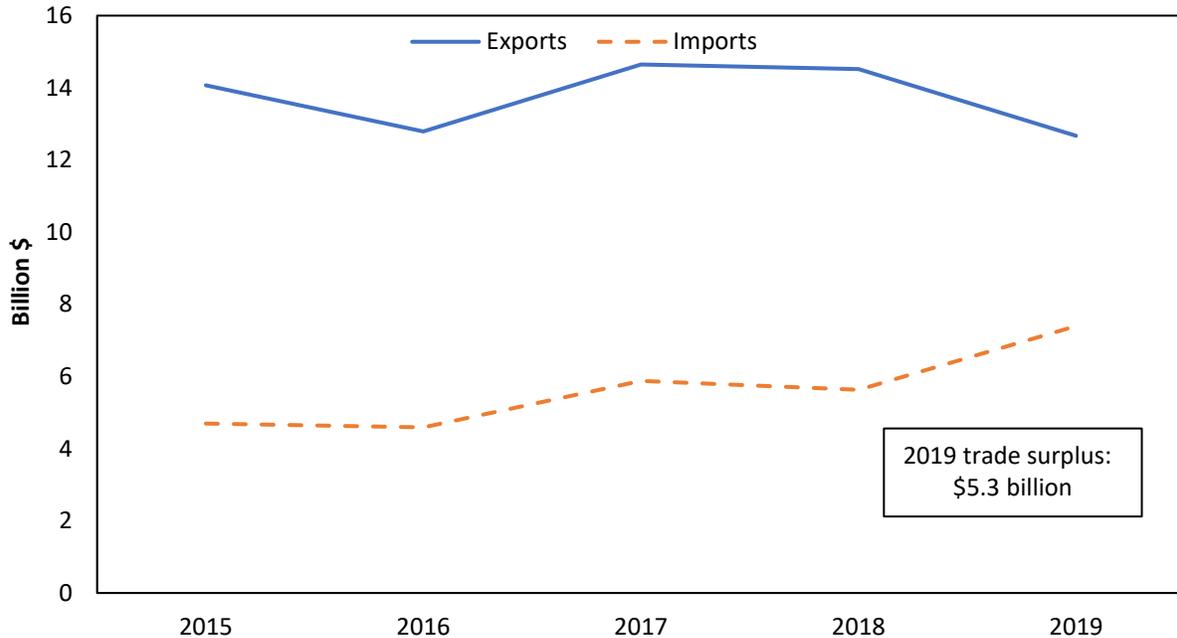
Architecture and Engineering Services

In 2019, U.S. cross-border exports of architecture and engineering services were valued at \$12.7 billion, and imports totaled \$7.4 billion, resulting in a surplus of \$5.3 billion (figure 2.11). However, these exports fell 12.7 percent from 2018 to 2019—a large decline relative to the average annual growth rate of 1.5 percent in 2015–18. Top destinations for architecture and engineering services exports included the UK (\$1.4 billion), Canada (\$932 million), and China (\$688 million).⁴³ In contrast, cross-border imports of architecture and engineering services grew rapidly from 2018 to 2019, with a 31.3 percent increase—far larger than the average annual growth rate of 7.2 percent seen in 2015–18. Top sources of architecture and engineering services imports in 2019 included Germany (\$1.7 billion), India (\$1.3 billion), and China (\$1.1 billion).⁴⁴

⁴³ USDOC, BEA, table 2.3, “U.S. Trade in Services, by Country or Affiliation and by Type of Service,” July 10, 2020.

⁴⁴ USDOC, BEA, table 2.3, “U.S. Trade in Services, by Country or Affiliation and by Type of Service,” July 10, 2020.

Figure 2.9 Architecture and engineering: U.S. cross-border exports and imports, 2015–19 (billion dollars)

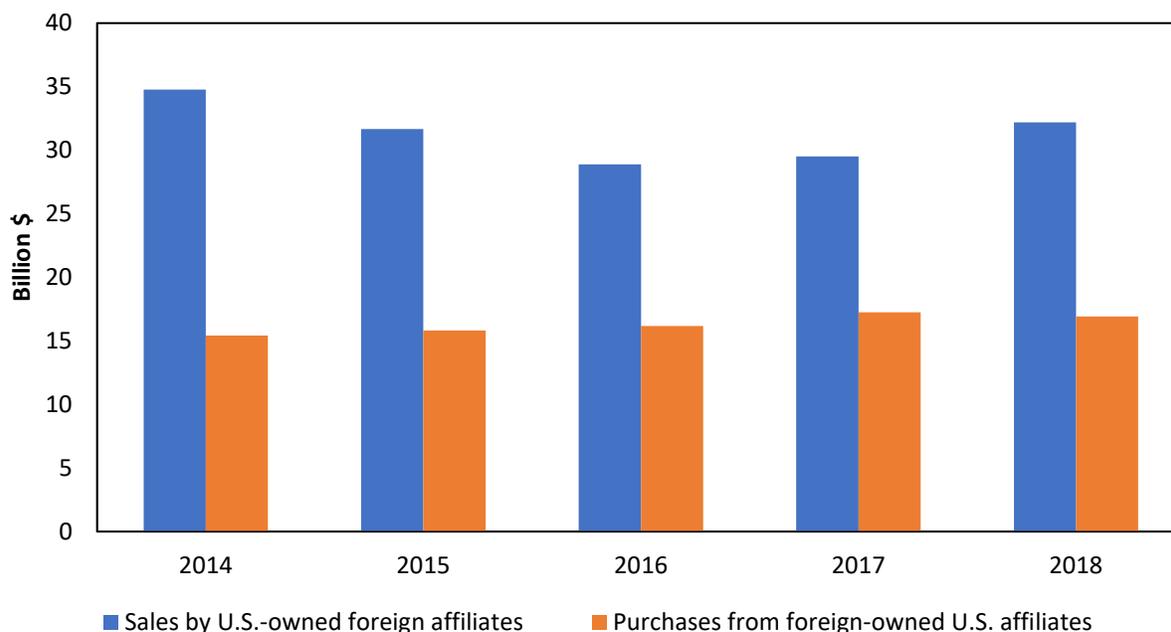


Source: USDOC, BEA, table 2.2, “U.S. Trade in Services, by Type of Service and by Country or Affiliation,” July 10, 2020. Underlying data for this figure can be found in [appendix table B.16](#).

In 2018, the last year for which data were available, the value of architecture and engineering services supplied by foreign affiliates of U.S. firms totaled \$32.2 billion, while the value of services purchased from U.S. affiliates of foreign firms was \$16.9 billion (figure 2.12). Foreign affiliate sales grew 9.1 percent from 2017 to 2018, a sharp turnaround from the –5.2 percent average annual growth rate in 2014–17. Top locations for U.S. foreign affiliate sales in architecture and engineering services included the UK (\$7.5 billion), Canada (\$4.4 billion), Australia (\$3.8 billion), and the Netherlands (\$1.0 billion).⁴⁵ Purchases of architecture and engineering services from U.S. affiliates of foreign firms declined by 1.8 percent from 2017 to 2018, compared to an average annual growth rate of 3.8 percent in 2014–17. Top sources of architecture and engineering purchases included Canada (\$5.1 billion), France (\$3.2 billion), and Japan (\$2.1 million).⁴⁶

⁴⁵ USDOC, BEA, table 4.1, “Services Supplied to Foreign Persons by U.S. Multinational Enterprises through Their Majority Owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate,” October 20, 2020.

⁴⁶ USDOC, BEA, table 5.1 “Services Supplied to U.S. Persons by Foreign Multinational Enterprises through Their Majority Owned U.S. Affiliates, by Industry of Affiliate and by Country of Ultimate Beneficial Owner,” October 20, 2020.

Figure 2.10 Architecture and engineering services: affiliate sales and purchases, 2014–18

Source: USDOC, BEA, table 4.1, “Services Supplied to Foreign Persons by U.S. Multinational Enterprises through Their Majority Owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate,” October 20, 2020; table 5.1, “Services Supplied to U.S. Persons by Foreign Multinational Enterprises through Their Majority Owned U.S. Affiliates, by Industry of Affiliate and by Country of Ultimate Beneficial Owner,” October 20, 2020.

Notes: MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner.

Underlying data for this figure can be found in [appendix table B.17](#).

Education and Education-related Travel Services

U.S. cross-border trade in education services is composed of two categories, depending on how education services are consumed. On the export side, the first category, education services, refers to education services provided via correspondence and online courses, as well as instruction provided by U.S. educators who travel to foreign markets to provide in-person education services.⁴⁷ The second category, education-related travel services, refers to foreign students traveling to the United States to attend U.S. schools.⁴⁸ In 2019, 95 percent of total education services exports involved travel services.

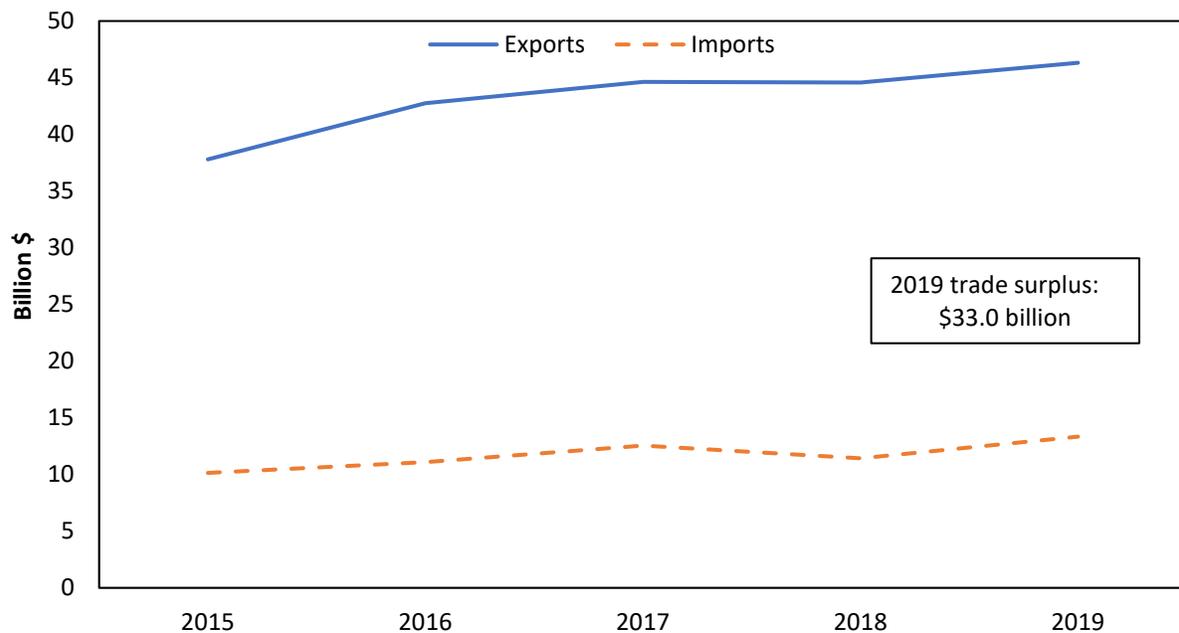
In 2019, cross-border exports of education services were \$46.3 billion, and imports totaled \$13.3 billion, resulting in a surplus of \$33.0 billion (figure 2.13). Education services exports increased by 3.9 percent from 2018 to 2019. This was somewhat slower than in previous years, which recorded an average annual growth rate of 5.8 percent in 2015–18. Top countries for education services exports (primarily

⁴⁷ This does not include educators teaching at a foreign campus of a home university, which would be captured in foreign affiliate sales.

⁴⁸ Similarly, U.S. imports include education services provided via correspondence and online courses, and instruction provided by foreign educators who travel to the United States to provide in-person education services. Education-related travel services imports refer to U.S. students traveling to foreign markets to attend foreign schools. USDOC, BEA, “2017 Benchmark Survey of Transactions in Selected Services and Intellectual Property with Foreign Persons, Form BE-120,” April 2018.

consisting of foreign students traveling to the United States for education) included China (\$16.3 billion), India (\$7.7 billion), and South Korea (\$2.4 billion).⁴⁹ Cross-border imports of education services grew steadily, at an average annual rate of 4.5 percent in 2015–18. While the change in imports from 2018 to 2019 represented growth of 16.8 percent, this growth rate likely overestimates total growth in education services imports, due to data suppression in 2018.⁵⁰ Top sources of education services imports in 2019 (primarily consisting of U.S. students traveling abroad for education) included the UK (\$1.5 billion), Italy (\$740 million), and Spain (\$650 million).⁵¹

Figure 2.11 Education and education-related travel services: U.S. cross-border exports and imports, 2015–19 (billion dollars)



Source: USDOC, BEA, table 2.2, “U.S. Trade in Services, by Type of Service and by Country or Affiliation,” July 10, 2020.

Note: A breakdown of education services exports by subcategory is available in appendix B, in [appendix table B.18](#).

In 2018, the last year for which data were available, education services supplied by foreign affiliates of U.S. firms totaled \$7.2 billion, while services purchased from U.S. affiliates of foreign firms were \$2.6 billion (figure 2.14). Foreign affiliate sales declined 9.0 percent from 2017 to 2018, in contrast to the 12.9 percent average annual growth rate in 2014–17. Top locations for U.S. foreign affiliate sales in education services included the UK (\$1.1 billion), Australia (\$258 million), and Germany (\$213 million).⁵² Purchases of education services from U.S. affiliates of foreign firms saw strong growth of 16.3 percent

⁴⁹ USDOC, BEA, table 2.3, “U.S. Trade in Services, by Country or Affiliation and by Type of Service,” July 10, 2020.

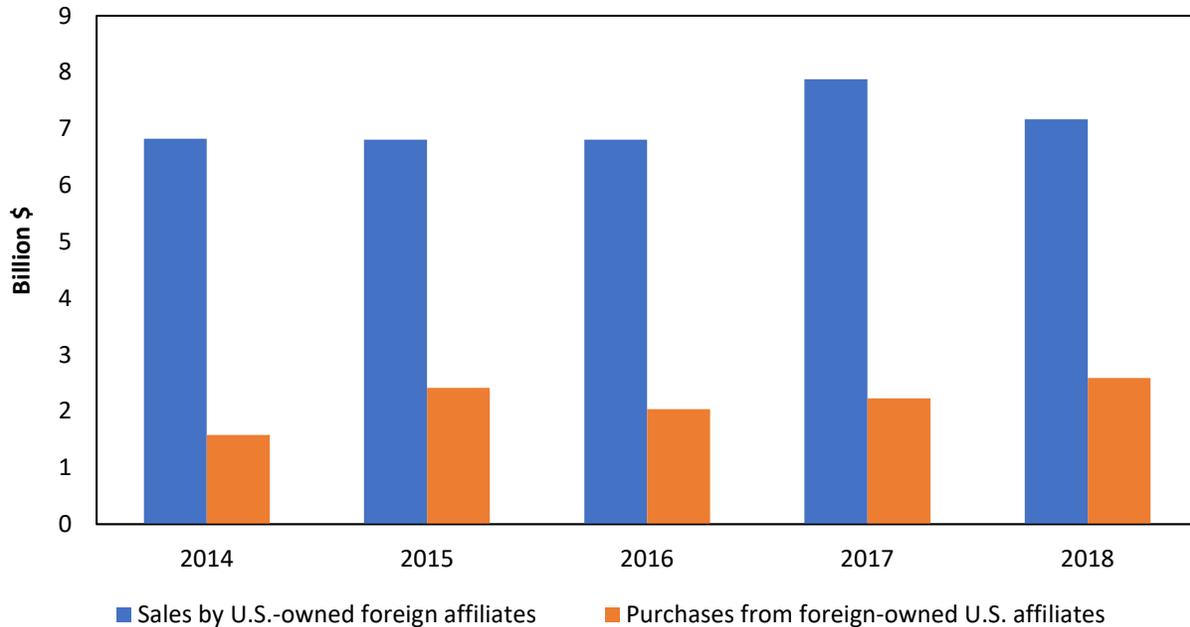
⁵⁰ Specifically, cross-border imports of non-travel education services in 2018 are suppressed to avoid disclosure of individual company data, so the growth rate from 2018 to 2019 only reflects changes to travel-related education services, while the slower growth in 2015–18 includes both trade flows.

⁵¹ USDOC, BEA, table 2.3, “U.S. Trade in Services, by Country or Affiliation and by Type of Service,” July 10, 2020.

⁵² USDOC, BEA, table 4.1, “Services Supplied to Foreign Persons by U.S. Multinational Enterprises through Their Majority Owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate,” October 20, 2020.

from 2017 to 2018, compared to an average annual growth rate of 15.6 percent in 2014–17. Top sources of education services included Japan (\$187 million), the UK (\$41 billion), and China (\$6 million).⁵³

Figure 2.12 Education services: affiliate sales and purchases, 2014–18



Source: USDOC, BEA, table 4.1, “Services Supplied to Foreign Persons by U.S. Multinational Enterprises through Their Majority Owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate,” October 20, 2020; table 5.1, “Services Supplied to U.S. Persons by Foreign Multinational Enterprises through Their Majority Owned U.S. Affiliates, by Industry of Affiliate and by Country of Ultimate Beneficial Owner,” October 20, 2020.

Notes: MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner.

Underlying data for this figure can be found in [appendix table B.19](#).

Health and Health-related Travel Services

Health services exports comprise two components, health services and health-related travel services. Health services consist of services provided by hospitals and medical professionals, including laboratory and diagnostic services, and may be provided remotely or via travel of medical professionals to a foreign market. Health-related travel services refer to services provided to individuals traveling to a foreign country to undergo medical procedures (often called “medical tourism”).⁵⁴ In 2015, the last year for which trade flows for both health services and health-related travel services are available, health-related travel accounted for 49 percent of U.S. exports of all health services and 80 percent of U.S. imports.

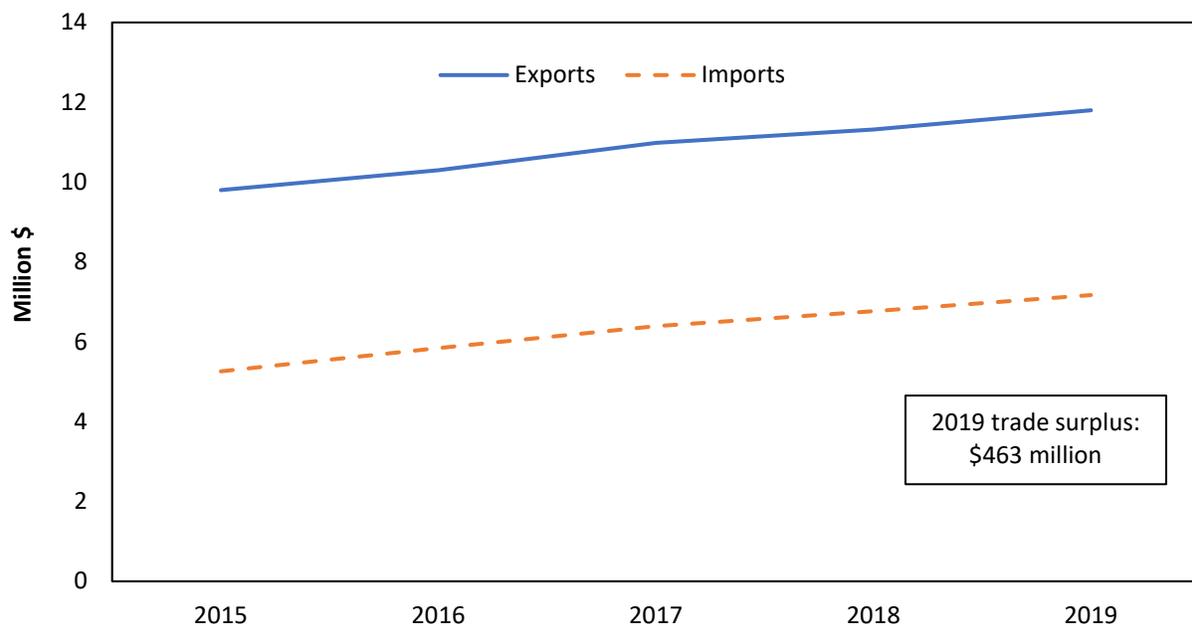
⁵³ USDOC, BEA, table 5.1 “Services Supplied to U.S. Persons by Foreign Multinational Enterprises through Their Majority Owned U.S. Affiliates, by Industry of Affiliate and by Country of Ultimate Beneficial Owner,” October 20, 2020.

⁵⁴ USDOC, BEA “2017 Benchmark Survey of Transactions in Selected Services and Intellectual Property with Foreign Persons, Form BE-120,” April 2018.

Since data on health services trade from 2016 to 2019 have been suppressed, the analysis below focuses on health-related travel services.

In 2019, U.S. cross-border exports of health-related travel services were \$1.2 billion, and imports totaled \$717 million, resulting in a surplus of \$463 million (figure 2.15). Health-related travel services exports increased by 4.2 percent from 2018 to 2019, which was comparable to the average annual growth rate of 4.9 percent attained in 2015–18. Top countries buying health-related travel services cross-border in 2019 included China (\$192 million), Canada (\$81 million), and Mexico (\$69 million).⁵⁵ Cross-border imports of health-related travel services grew by 5.9 percent from 2018 to 2019, less than the average annual growth rate of 8.8 percent in 2015–18. Top sources of health-related travel services imports in 2019 included Mexico (\$231 million), Colombia (\$48 million), and Costa Rica (\$35 million).⁵⁶

Figure 2.13 Health-related travel services: U.S. cross-border exports and imports, 2015–19 (billion dollars)



Source: USDOC, BEA, table 2.2, “U.S. Trade in Services, by Type of Service and by Country or Affiliation,” July 10, 2020. Underlying data for this figure can be found in [appendix table B.20](#).

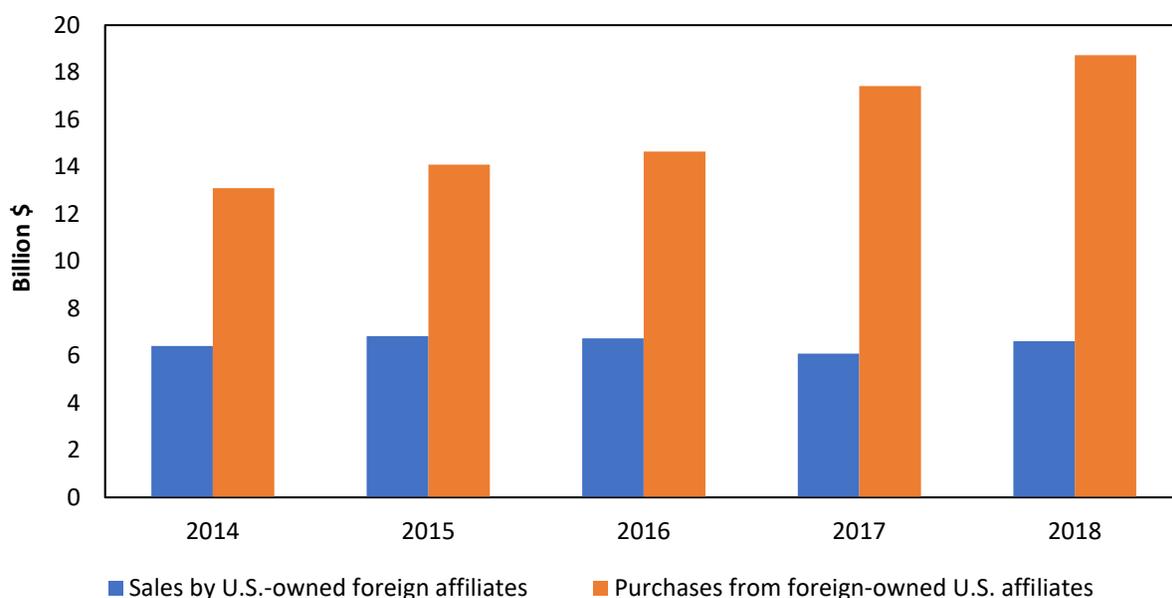
Healthcare services can also be delivered through foreign affiliates (mode 3)—for example, when a U.S. hospital sets up an affiliate in a foreign country. These affiliates can provide a full set of healthcare

⁵⁵ USDOC, BEA, table 2.3, “U.S. Trade in Services, by Country or Affiliation and by Type of Service,” July 10, 2020.

⁵⁶ USDOC, BEA, table 2.3, “U.S. Trade in Services, by Country or Affiliation and by Type of Service,” July 10, 2020.

services, including in-patient services and acute care, both services not provided by telemedicine.⁵⁷ In 2018, the last year for which data were available, healthcare and social assistance services supplied by foreign affiliates of U.S. firms totaled \$6.6 billion, while services purchased from U.S. affiliates of foreign firms were \$18.7 billion (figure 2.16). Foreign affiliate sales increased 8.5 percent from 2017 to 2018, surpassing the -1.5 average annual growth rate in 2014–17. Top locations for U.S. foreign affiliate sales in education services included the UK (\$3.2 billion), Canada (\$1.2 billion), and China (\$515 million).⁵⁸ Purchases of healthcare and social assistance services from U.S. affiliates of foreign firms saw growth of 7.5 percent from 2017 to 2018, below than the average annual growth rate of 10.2 percent in 2014–17. While U.S. purchases of healthcare and social assistance services from Canada were \$2.0 million in 2018, other data on country-level purchases of these services are suppressed.⁵⁹

Figure 2.14 Healthcare and social assistance: affiliate sales and purchases, 2014–18 (million dollars)



Source: USDOC, BEA, table 4.1, “Services Supplied to Foreign Persons by U.S. Multinational Enterprises through Their Majority Owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate,” October 20, 2020; table 5.1, “Services Supplied to U.S. Persons by Foreign Multinational Enterprises through Their Majority Owned U.S. Affiliates, by Industry of Affiliate and by Country of Ultimate Beneficial Owner,” October 20, 2020.

Notes: MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner.

Underlying data for this figure can be found in [appendix table B.21](#).

⁵⁷ Certain healthcare services (for example, in-patient care) cannot be provided through telemedicine due to the physical separation of the provider and the patient, but such care can be provided through regular healthcare facilities operated by foreign affiliates. Patients tend not to rely on health-related travel for acute care (urgent treatment for a severe injury or illness) due to the lengthy processes involved in arranging travel. However, by traveling to an in-person provider, a patient can receive a greater range of care than through telemedicine. Industry representative, interview by USITC staff, August 6, 2020.

⁵⁸ USDOC, BEA, table 4.1, “Services Supplied to Foreign Persons by U.S. Multinational Enterprises through Their Majority Owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate,” October 20, 2020.

⁵⁹ USDOC, BEA, table 5.1 “Services Supplied to U.S. Persons by Foreign Multinational Enterprises through Their Majority Owned U.S. Affiliates, by Industry of Affiliate and by Country of Ultimate Beneficial Owner,” October 20, 2020.

Research and Development Services

Cross-border trade in research and development services is included in two categories: research and development activities, and licenses for the use of outcomes of research and development.⁶⁰ First, original research and development activities include work aimed at discovering new knowledge, goods, or services, along with nonroutine testing and product development activities. Second, the category “licenses for the use of outcomes of research and development” includes charges for the use of a patent, process, or trade secret to produce or distribute a product or service.⁶¹ In 2019, research and development activities and licenses each made up roughly half of total U.S. research and development exports, while research and development activities represented 60 percent of total imports.

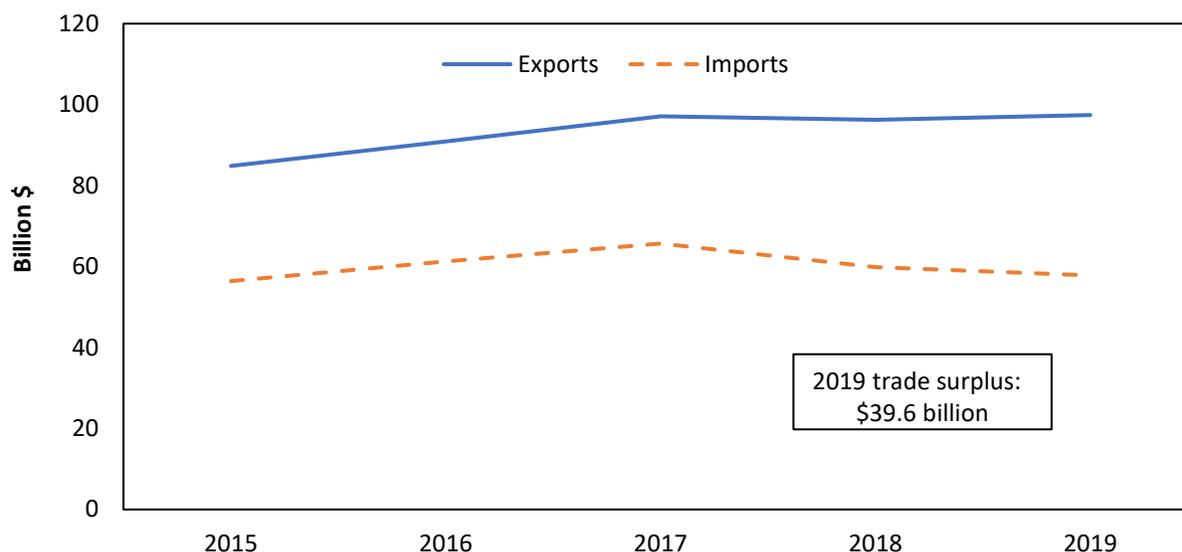
In 2019, total U.S. cross-border exports of research and development services (including both R&D activities and licenses for use of outcomes of R&D) made up the largest category of professional services trade. Exports totaled \$97.4 billion, and imports totaled \$57.8 billion, resulting in a surplus of \$39.6 billion (figure 2.15). The growth of research and development exports has slowed in recent years, with a 1.2 percent increase in research and development exports from 2018 to 2019, compared to an average annual growth rate of 4.4 percent in 2015–18. Top destinations for research and development exports included Switzerland (\$23.5 billion), Ireland (\$18.2 billion), and Singapore (\$9.0 billion).⁶² Cross-border imports of research and development declined from 2018 to 2019 by 3.5 percent, compared to a positive average annual growth rate of 2.3 percent in 2015–18. Top sources of research and development imports in 2019 included Japan (\$10.6 billion), Ireland (\$6.4 billion), and the UK (\$4.5 billion).⁶³

⁶⁰ Previous Recent Trends reports did not include the charges for intellectual property as part of R&D cross-border trade. Beginning with BEA’s annual update in July 2020, the sale/purchase of ownership rights for patents, processes and trade secrets (i.e. the outcomes of research and development) have been separately reclassified permitting the inclusion of this specific subcategory of charges for intellectual property with its corresponding services trade.

⁶¹ For more information on the composition of research and development services trade, see chapter 1. USDOC, BEA, “2017 Benchmark Survey of Transactions in Selected Services and Intellectual Property with Foreign Persons, Form BE-120,” April 2018.

⁶² USDOC, BEA, table 2.3, “U.S. Trade in Services, by Country or Affiliation and by Type of Service,” July 10, 2020.

⁶³ USDOC, BEA, table 2.3, “U.S. Trade in Services, by Country or Affiliation and by Type of Service,” July 10, 2020.

Figure 2.15 Research and development: U.S. cross-border exports and imports, 2015–19 (billion dollars)

Source: USDOC, BEA, table 2.2, “U.S. Trade in Services, by Type of Service and by Country or Affiliation,” July 10, 2020.

Notes: Exports and imports of research and development services include sale of licenses for outcomes of research and development. Underlying data for this figure can be found in [appendix table B.22](#).

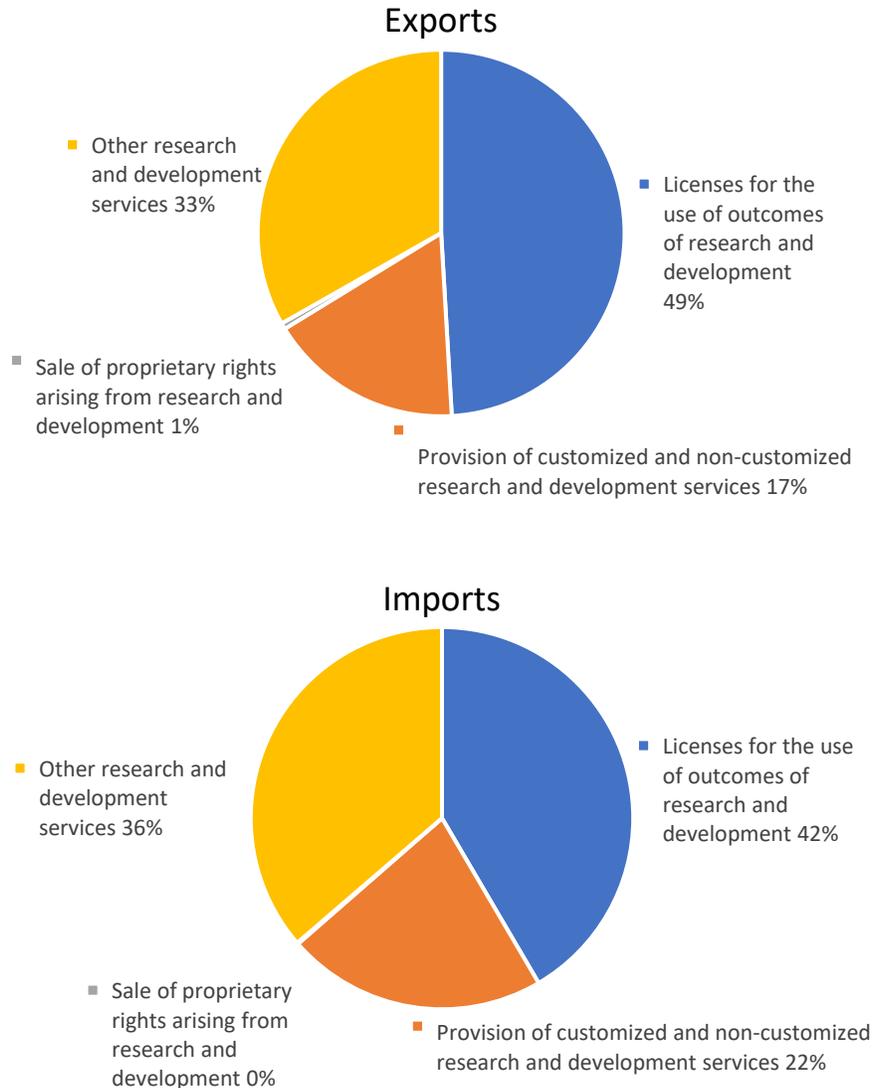
As noted above, under the “other business services” category in BEA’s cross-border trade tables, exports and imports of R&D services fall into two categories. The first category is “work undertaken on a systematic basis to increase the stock of knowledge,” further divided into the “provision of customized and non-customized research and development services” and the “sale of proprietary rights arising from research and development.” The second category is “other research and development services.”⁶⁴ License fees received or paid for the use of outcomes of R&D (patents, industrial processes, and trade secrets) are shown separately as “licenses for the use of outcomes of research and development” under the broader category “charges for the use of intellectual property n.i.e.”⁶⁵ Thus, in cross-border services trade, charges for the use of the products created through R&D services are classified separately from

⁶⁴ USDOC, BEA, table 2.1, “U.S. Trade in Services, by Type of Services,” June 30, 2020. R&D exports, particularly the “sale of proprietary rights arising from research and development,” would reflect, for example, “a U.S. company selling outright the ownership of a design patent for manufacturing motor vehicle parts to a foreign company.” BEA representative, interview by USITC staff, March 1, 2021. The “other research and development services” category accounts for the largest share of both imports and exports and is defined in the underlying survey as including “testing and other product/process development activities that will likely give rise to patents and are not reportable elsewhere.” See USDOC, BEA, “Quarterly Survey of Transactions in Selected Services and Intellectual Property with Foreign Persons Form BE-125,” revised October 2018, 24.

⁶⁵ USDOC, BEA, table 2.1, “U.S. Trade in Services, by Type of Services,” June 30, 2020. The acronym “n.i.e.” refers to “not included elsewhere.” Exports for the use of IP, particularly “licenses for the use of outcomes of research and development,” would occur when a U.S. company “charges a foreign company royalties that allow it to use the patent’s design to produce and sell motor vehicle parts. BEA representative, interview by USITC staff, March 1, 2021.

cross-border sales or purchases of ownership rights of R&D and trade in the R&D processes themselves (figure 2.16).⁶⁶

Figure 2.16 Research and development: Detailed U.S. cross-border exports and imports, 2019



Source: USDOC, BEA, table 2.1, “U.S. Trade in Services, by Type of Service,” June 30, 2020.

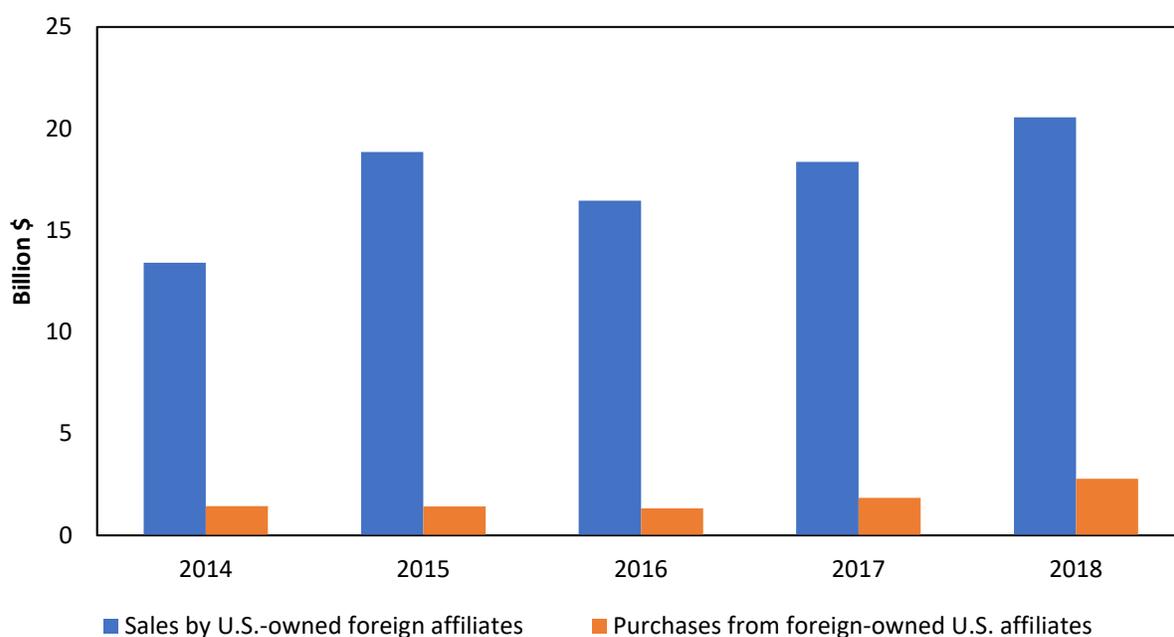
Notes: Licenses for the use of outcomes of research and development includes patents, industrial processes, and trade secrets. Values of 0 percent represent percentages less than 0.5 percent and greater than zero.

Underlying data for this figure can be found in [appendix table B.23](#).

⁶⁶ In 2020, the BEA reclassified transactions involving the sale or purchase of ownership rights for patents, processes, and trade secrets as part of the R&D services category, whereas previously they had been part of the category “charges for the use of intellectual property.” This reclassification, along with others—including those affecting certain other types of transactions in intellectual property—were done to better align BEA statistics with IMF guidelines. Telles, Martinez, and Peck, “Annual Update of the U.S. International Transactions Accounts,” July 2020; BEA representative, interview by USITC staff, August 6, 2020.

In 2018, the last year for which data are available, research and development services supplied by foreign affiliates of U.S. firms totaled \$20.6 billion, while R&D services purchased from U.S. affiliates of foreign firms were \$2.8 billion (figure 2.17). Foreign affiliate sales grew 11.9 percent from 2017 to 2018, compared to a 13.1 average annual growth rate in 2014–17. Top markets for U.S. foreign affiliate sales in scientific research and development services included the UK (\$2.8 billion), India (\$1.3 billion), and Japan (\$478 million).⁶⁷ U.S. purchases from foreign-owned affiliates increased by 50.9 percent from 2017 to 2018, albeit from a small base—well above the average annual growth rate of 10.3 percent in 2014–17. Top purchasers include Japan (\$433 million), Switzerland (\$307 million), and the UK (\$194 million).⁶⁸

Figure 2.17 Scientific research and development services: affiliate sales and purchases, 2014–18 (billion dollars)



Source: USDOC, BEA, table 4.1, “Services Supplied to Foreign Persons by U.S. Multinational Enterprises through Their Majority Owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate,” October 20, 2020; table 5.1, “Services Supplied to U.S. Persons by Foreign Multinational Enterprises through Their Majority Owned U.S. Affiliates, by Industry of Affiliate and by Country of Ultimate Beneficial Owner,” October 20, 2020.

Notes: MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner.

Underlying data for this figure can be found in [appendix table B.24](#).

⁶⁷ USDOC, BEA, table 4.1, “Services Supplied to Foreign Persons by U.S. Multinational Enterprises through Their Majority Owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate,” October 20, 2020.

⁶⁸ USDOC, BEA, table 5.1, “Services Supplied to U.S. Persons by Foreign Multinational Enterprises through Their Majority Owned U.S. Affiliates, by Industry of Affiliate and by Country of Ultimate Beneficial Owner,” October 20, 2020.

Special Topic: Understanding Trade Statistics for Research and Development Services

Research and development (R&D) services, a category of “other business services,” are one of the largest categories of U.S. professional services trade both cross-border and via affiliate transactions. The R&D services category includes cross-border trade in the provision of R&D services and, as of BEA’s annual update in July 2020, the sale/purchase of ownership rights for patents, processes and trade secrets (i.e. the outcomes of research and development). As described above, licenses for the use of outcomes of research and development continue to be listed separately as a subcategory of “charges for the use of intellectual property n.i.e.” As R&D services, their outcomes, and charges for the use of R&D outcomes are all inputs into the production of final goods, measuring R&D services trade continues to be a challenge for governments and academics. This special topic section provides a closer look at global trends in the provision of R&D services, and outlines some of the issues involved in measuring trade in this activity.

Industry Overview

R&D services underpin the production and trade of many other products, such as computer and information services (including software), pharmaceuticals, and automobiles, among others. Firms’ global tax strategies explain some of the geographic trends in R&D services activities and trade (with some firms locating their R&D-related intellectual property in low-tax jurisdictions and/or conducting their R&D activities in higher-tax jurisdictions). In addition, recent shifts in the source markets for U.S. imports and destination markets for U.S. exports have also been driven by the increasing globalization of the R&D services industry, as some firms, for example, locate R&D centers in different markets to take advantage of local research talent.

R&D services can be separated into two types: basic and applied.⁶⁹ Basic R&D aims to improve the understanding of scientific phenomena.⁷⁰ Applied research, on the other hand, is systematic study to understand how to meet a recognized and specific need.⁷¹ Firms providing basic scientific R&D services are typically involved in the physical, engineering, or life sciences. Total U.S. industry revenue from basic R&D was estimated to be \$170.8 billion in 2020.⁷²

Applied R&D typically aims to develop technologies for commercial use, although these often rely on understanding gained from basic R&D.⁷³ Many large, multinational firms—and some smaller firms—

⁶⁹ U.S. government official, interview by USITC staff, November 3, 2020.

⁷⁰ The industry classification corresponds to NAICS 5417—scientific research and development services. See USDOC, BEA, Guide to Industry Classifications, 2017, 79.

⁷¹ NSF, “Definitions of Research and Development,” March 2018.

⁷² The federal government has traditionally funded a significant portion of basic research in the United States, although its role as a funding source has declined since the 1980s. Across all industries and types of R&D, the federal government provided about 22 percent of total funding for R&D in 2017, down from 67 percent in 1964. Research on health, defense, and counterterrorism are major areas funded by the federal government. Boroush, “Research and Development: U.S. Trends and International Comparisons,” January 15, 2020; Diment, “Scientific Research and Development Services,” February 2020, 4, 8.

⁷³ Kenton, “Research and Development (R&D),” July 5, 2020.

across many industries conduct applied research, such as for product development or process improvement, to support their primary operations. For example, pharmaceutical firms conduct R&D related to producing medicines and other therapeutics.⁷⁴

Statistics describing business spending on R&D encompass firms across all industry sectors and capture both basic and applied R&D. Among firms that conduct their own R&D, spending is concentrated in a handful of high-technology and advanced manufacturing industries. In 2018, the computing and electronics industry represented 23 percent of global R&D spending, followed by healthcare (22 percent), automobiles (16 percent), and software (16 percent).⁷⁵

Given its high cost, concentration in R&D spending is also evident at the firm level. Amazon was the leading firm in global R&D spending in 2018 (\$22.6 billion), followed by Alphabet, the parent company of Google (\$16.2 billion), and Volkswagen (\$15.8 billion).⁷⁶ U.S. headquartered firms accounted for 7 of the top 10 firms with the highest global R&D spending in 2018 across all industries (table 2.1).⁷⁷

Table 2.1 Top 10 firms by global R&D spending, 2018

Firm name	R&D spending (billion \$)	Firm headquarters location	Primary industry
Amazon	22.6	United States	Technology
Alphabet	16.2	United States	Technology
Volkswagen	15.8	Germany	Automobiles
Samsung	15.3	South Korea	Technology
Intel	13.1	United States	Technology
Microsoft	12.3	United States	Technology
Apple	11.6	United States	Technology
Roche	10.8	Switzerland	Pharmaceuticals
Johnson & Johnson	10.6	United States	Pharmaceuticals
Merck	10.2	United States	Pharmaceuticals

Source: Statista, “Companies with the Highest Spending,” 2018.

Geographically, R&D activities appear concentrated in a small number of economies, while the mix of industries varies by country. Business R&D spending on an absolute basis was highest in larger markets, with the United States leading in 2017 (\$389 billion), followed by China (\$333 billion), Japan (\$133 billion), and Germany (\$86 billion) (figure 2.18).⁷⁸ By contrast, however, total R&D spending (including spending by the government) as a percent of GDP was highest in smaller but technologically-advanced markets, such as Israel (5.0 percent), South Korea (4.6 percent), and Sweden (3.4 percent).⁷⁹ The United States ranked 9th (2.8 percent) in this measure of R&D.⁸⁰ On another measure, the number of workers

⁷⁴ These firms may also outsource this type of R&D to contract research and development firms. Kenton, “Research and Development (R&D),” July 5, 2020.

⁷⁵ Statista, “Research and Development (R&D) Worldwide,” 2020, 15.

⁷⁶ Statista, “Companies with the Highest Spending,” 2018.

⁷⁷ Statista, “Ranking of the 20 Companies Highest,” 2018, 14.

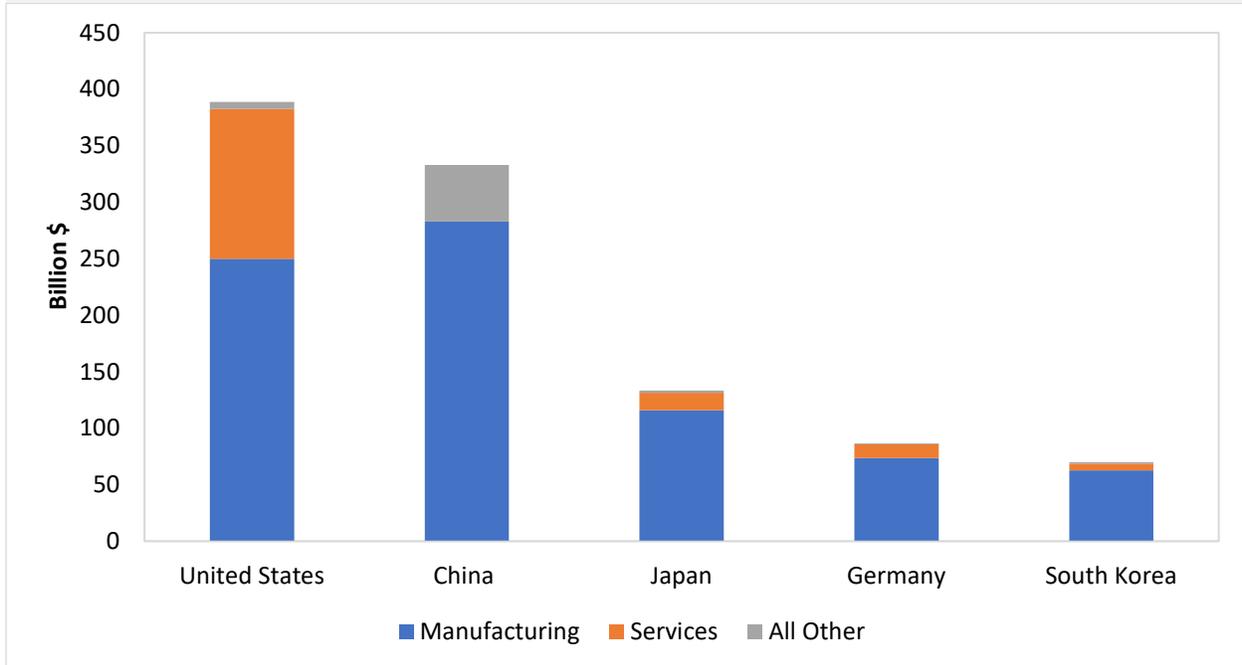
⁷⁸ 2017 is the latest full year for which data are available. The OECD classifies R&D spending into spending by businesses, by government, by institutions of higher education, and by private nonprofits.

⁷⁹ World Bank, World Development Indicators, “R&D Spending as % of GDP” (accessed November 19, 2020).

⁸⁰ World Bank, World Development Indicators, “R&D Spending as % of GDP” (accessed November 19, 2020).

employed in R&D, Denmark ranked highest in per capita terms, followed again by South Korea and Sweden.⁸¹

Figure 2.18 Business R&D spending in the top five countries, by industry, 2017



Source: OECD, "Business Enterprise R&D Expenditure by Industry," 2017.

Notes: China does not report R&D spending in services sectors separately. This spending is contained in the "All other" category. Investment is measured in 2015 dollars, constant prices, and purchasing power parities (PPPs).

Underlying data for this figure can be found in [appendix table B.25](#).

Trends in R&D Services Trade

Trends in international trade in R&D services reflect the pattern of spending on both basic and applied R&D, as well as the impact of firms' global tax strategies.⁸² The largest recipients of U.S. exports of R&D services include some, but not all, of the world's leading R&D countries by a variety of measures (table 2.2). For example, Switzerland is the leading destination for U.S. exports, but ranks only 14th in terms of total business spending on R&D. However, Switzerland spends three times as much on R&D as the next-largest destination for U.S. exports, Ireland, which ranks 25th in terms of business spending on R&D and 10th in terms of R&D personnel. In other words, the largest destinations for U.S. R&D services exports are similar to, but not exactly aligned with, countries where total domestic R&D spending is high and where U.S.-owned foreign affiliates spend the most on R&D activities.⁸³ Varying taxation levels for R&D

⁸¹ The United States ranked 19th on this measure in 2017. World Bank, World Development Indicators, "R&D Personnel per Capita" (accessed November 19, 2020).

⁸² Trade in R&D services in this section focuses on the business spending for the R&D services, rather than the licenses for the use of outcomes of R&D which is included above under "Research and Development Services."

⁸³ Statistics on foreign affiliate spending on R&D captures both spending on R&D services imports (including from the United States) and domestic spending on R&D in the country where the affiliate is located.

and intellectual property assets among the major destinations for U.S. exports, as well as the location of R&D-intensive business activities (such as pharmaceuticals), may explain part of this pattern of trade.⁸⁴

Table 2.2 R&D statistics, 2018, selected countries

	Percent of total U.S. R&D services exports ^a	Domestic spending as a percent of GDP	Percent of total U.S. foreign affiliate spending on R&D	Business spending on R&D (rank) ^b	R&D personnel per million people (rank) ^c
Switzerland	24.1	3.4 ^c	9.2	14	9
Ireland	18.7	1.1	5.9	25	10
Singapore	9.1	1.9 ^c	2.7	(^d)	4
Japan	7.0	3.3	4.8	5	12
Netherlands	5.9	2.2	2.7	18	15
China	4.2	2.2	6.6	(^d)	56 ^e
UK	3.2	1.7	11.5	(^d)	24
Germany	3.0	3.1	10.8	6	13
South Korea	2.9	4.8	1.7	7	2
Canada	2.6	1.6	6.7	11	25

Sources: OECD, "Business Enterprise R&D Expenditure by Industry," 2017 (accessed January 19, 2021); World Bank, World Development Indicators, "R&D Spending as % of GDP" (accessed November 19, 2020); World Bank, World Development Indicators, "R&D Personnel per Capita" (accessed November 19, 2020); USDOC, BEA, table 2.2, "U.S. Trade in Services, by Type of Service and by Country or Affiliation," July 10, 2020; USDOC, BEA, "U.S. Direct Investment Abroad, All Majority-owned Foreign Affiliates (data for 2009 and forward), Research and Development Expenditures" (accessed January 19, 2021).

^a This measure provides a breakdown of the destination of U.S. R&D services exports, and includes both cross-border R&D services, as reported by the BEA under other business services, and R&D-related categories classified under charges for the use of intellectual property.

^b Business spending excludes spending by governments. Domestic spending includes spending by governments as well as the private sector.

^c Data from 2018 not available, estimate is from 2017.

^d Data not available.

^e Excluding Hong Kong and Macao.

MNE's profit-sharing arrangements, often motivated by tax strategies, influence the pattern of different types of R&D trade (cross-border R&D trade and earnings of foreign affiliates). For example, the terms of parents and their affiliates' intra-firm cost-sharing agreements – where parents and affiliates agree to share in costs and profits from eventual sales of a product - can affect such statistics.⁸⁵ More specifically, if the payment to the parent for sharing the costs did not fully reflect actual costs of R&D, that affiliate payment to the parent firm (or cross-border export from parent to the affiliate, classified as R&D exports) would be underestimated. Additionally, in this scenario, the affiliate's earnings from eventual sales of the product would be increased, and would probably be larger than what the U.S. exports for the product (likely classified as charges for the use of IP) would have been if the U.S. parent did not

⁸⁴ One analyst estimates that about 70 percent of all U.S. exports of R&D are to low-tax jurisdictions. For example, Ireland attracts R&D exports and is the center of European operations for many large U.S. technology firms, such as Apple and Google, which is reportedly in part due to its low corporate tax rate. In addition to its low corporate taxes, Switzerland also attracts U.S. R&D exports because several large multinational pharmaceutical firms such as Roche and Novartis (both rank in the 10 largest pharmaceutical firms by revenue and R&D spending) are based there. Setser, "When the Services Trade Data Tells You," April 20, 2020; Levy, "Why Silicon Valley Likes Ireland So Much," August 31, 2016; Statista, "Pharmaceutical Research and Development," August 4, 2020; Statista, "Pharmaceutical Market Worldwide," 2020.

⁸⁵ Jenniges et al., "Strategic Movement of Intellectual Property," 2018. For more information on transfer pricing and cost-sharing agreements, see U.S. Senate, Homeland Security and Government Affairs Committee, Permanent Subcommittee on Investigations, "Memorandum," May 21, 2013. Further discussion of this issue and its relation to services trade data can also be found in Setser, "When the Services Trade Data Tells You," April 22, 2020.

share the cost of R&D with the foreign affiliate.⁸⁶ There is empirical evidence that such cost-sharing arrangements among R&D-intensive firms are associated with higher profitability of foreign affiliates compared to their U.S. parents.⁸⁷

Observing the underlying industry pattern of trade in R&D services in trade statistics is also complex because of different bases of measurement used. R&D trade statistics describing cross-border trade capture the R&D trade of all types of firms, both larger manufacturing or services firms and smaller specialist R&D services providers, and therefore include both basic and applied R&D services trade. Foreign affiliate transactions statistics, on the other hand, cover only the activities of firms that specialize in R&D and as a result are likely to be weighted more towards basic R&D. This difference arises because the BEA classifies cross-border services trade by the type of service provided, not the industry of the firm providing the service.⁸⁸ By contrast, foreign affiliate sales are classified by the BEA according to the industry of the foreign affiliate.⁸⁹ As a result, cross-border R&D services trade includes trade in both basic and applied R&D regardless of the type of firm engaged in such activities, while foreign affiliate sales statistics include only the sales of affiliates whose primary activity is R&D, which are the firms more likely to conduct basic R&D services.⁹⁰

In 2019, cross-border exports of R&D services, excluding licenses for the use of outcomes of research and development, totaled \$49.6 billion and imports totaled \$33.8 billion, resulting in a \$15.8 billion trade surplus.⁹¹ These R&D services comprised 6 percent of both total services imports and exports. Cross-border exports of R&D services increased from 2018 to 2019 by 5.6 percent, down from an average annual growth of 8.8 percent in 2015–18. Cross-border imports of R&D services declined by 3.0 percent in 2019 from 2018, reversing an average annual growth rate of 1.5 percent in 2015–18. The top industries that both export and import R&D services are manufacturing; professional, scientific, and technical services; and information services (table 2.5). Notably, manufacturing firms accounted for the majority of both R&D exports (60.3 percent) and R&D imports (53.3 percent) in 2017.⁹²

⁸⁶ See Jenniges et al., “Strategic Movement of Intellectual Property,” 2018, 8–9, for illustration of impacts to national and international statistics, including on exports of charges for the use of intellectual property. Tax incentives can also influence the location of the production of IP-laden goods like pharmaceuticals and thus have an effect on goods trade flows. See Setser, “When Tax Drives the Trade Data,” March 26, 2019.

⁸⁷ Jenniges et al., “Strategic Movement of Intellectual Property,” 2018, 17–24.

⁸⁸ BEA data also does not differentiate between basic and applied R&D. USDOC, BEA, “Concepts and Methods,” September 22, 2014, 6.

⁸⁹ USDOC, BEA, “Concepts and Methods,” September 22, 2014, 158.

⁹⁰ U.S. government representative, interview by USITC staff, November 3, 2020; USDOC, BEA, “Quarterly Survey of Transactions in Selected Services,” 2019, 24.

⁹¹ USDOC, BEA, table 2.1, “U.S. Trade in Services, by Type of Services,” June 30, 2020. These values reflect R&D services as reported by the BEA under “other business services” and exclude R&D-related categories classified under charges for the use of intellectual property.

⁹² The latest year for which data are available for this detailed breakdown of R&D services is 2017. USDOC, BEA, table 6.1, “U.S. Trade in Selected Services, by Major Industry and by Service Type,” December 19, 2019.

Table 2.3 Research and development: Services trade across industry categories, 2017

Industry category	Research and development services U.S. export share by industry (%)	Research and development services U.S. import share by industry (%)
Manufacturing	60.3	53.3
Professional, scientific, and technical services	16.6	14.8
Wholesale trade	11.1	3.6
Information	9.0	25.2
Other industries	2.8	2.7
Finance and insurance	0.0	0.2
Mining	0.0	0.0
Retail trade	(a)	(a)
Real estate and rental and leasing	(a)	(a)

Source: USDOC, BEA, table 6.1, "U.S. Trade in Selected Services, by Major Industry and by Service Type," December 19, 2019.

Note: "0.0" denotes values that are less than 0.05.

^a Data not available.

For foreign affiliate trade, a rise in overall business R&D spending over time by U.S. foreign affiliates has coincided with a geographic expansion of such spending and a decline in the domestic share of R&D spending by U.S. parent firms.⁹³ Across all industries, R&D expenditures by U.S. majority-owned foreign affiliates increased from \$39.2 billion in 2009 to \$58.2 billion in 2018, at an average annual rate of 4.6 percent during that period.⁹⁴ During the same period (from 2009 to 2018), all regions reported by BEA posted positive average annual growth rates of R&D spending by foreign affiliates across all industries. The top three regions in terms of highest average annual growth in spending were Latin America (9.9 percent), Asia and Pacific (8.4 percent), and the Middle East (5.7 percent).⁹⁵ While these trends likely partially reflect efforts to accumulate R&D assets and their associated license fee income streams in low-tax jurisdictions, they also illustrate the "globalization of R&D" that has occurred in recent years.⁹⁶ MNEs' R&D spending has become more globally dispersed, and this has been motivated to some extent by a by a desire to tap research talent and expertise in more locations. Wider distribution of R&D activities around the world is therefore viewed by some observers as an important source of global innovation and beneficial for global productivity growth.⁹⁷

⁹³ Branstetter, Glennon, and Jensen, *The New Global Invention Machine*, 2019, 8–11. The authors examine these trends over a long period of time—for example, growth in R&D expenditures by U.S. foreign affiliates from 1997 to 2015.

⁹⁴ USDOC, BEA, "U.S. Direct Investment Abroad, All Majority-owned Foreign Affiliates (data for 2009 and forward), Research and Development Expenditures" (accessed November 17, 2020). "All industries" refers to the total across all industries.

⁹⁵ USDOC, BEA, "U.S. Direct Investment Abroad, All Majority-owned Foreign Affiliates (data for 2009 and forward), Research and Development Expenditures" (accessed November 17, 2020).

⁹⁶ Branstetter, Glennon, and Jensen, *The New Global Invention Machine*, 2019, 2, 11–15.

⁹⁷ Branstetter, Glennon, and Jensen, *The New Global Invention Machine*, 2019, 11–15. The authors also examine U.S. patent data over time to show growth in cross-border R&D activity. See also García-Vega and Huergo, "The Role of International and Domestic R&D Outsourcing," January 2019.

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Chapter 3

New Business Models and Mode of Supply Shifts in Professional Services

In 2020, the global COVID-19 pandemic changed the way many economic activities are conducted. Numerous national, state, and local authorities imposed temporary restrictions on travel and on in-person gatherings, including nonessential retail activities, and employers, workers, and consumers adjusted their behavior dramatically because of public health concerns. While the pandemic has disrupted business models in nearly all professional services sectors, in some cases it has also accelerated trends that were visible before COVID-19.

This chapter highlights three professional services sectors that have been making changes in the way services are provided in their industry, whether by adopting new business models and supply arrangements or by shifting from providing services in person to offering them online. Some of these changes were prompted or accelerated by the pandemic; others are changes that have been occurring for reasons unrelated to the pandemic. For example, the growth of alternative legal services providers has diversified the type and scale of firms that provide legal services. In management consulting, the already visible shift from in-person to digital provision of consulting services has accelerated during the pandemic. Finally, the higher education services sector, following a long-term trend toward online provision of education services, has moved almost entirely online in response to the pandemic. While the shifts in management consulting and legal services are likely to continue even when the pandemic subsides, online provision of education is likely to substantially recede in favor of in-person instruction.

Legal Services

Market Conditions

U.S. trade data for legal services are defined either by the industry classification that law firms fall under (which is the case for sales by affiliates) or by the type of service offered by companies (which is the case for cross-border trade). Both definitions are broad and include the provision of services across a variety of specific fields of law (for example, criminal law or real estate law), as well as other legal services (such as notary public services).⁹⁸ International trade in legal services typically involves the business and international law fields.⁹⁹

Attorneys and law firms engaging in international trade typically provide legal advisory services supporting international transactions or business operations, along with other matters involving

⁹⁸ The industry classification corresponds to North American Industry Classification System (NAICS) 5411: Legal Services. See USDOC, BEA, "Guide to Industry Classifications," 2017, 77. The type of services is defined in BEA surveys. See USDOC, BEA, "Quarterly Survey of Transactions in Selected Services and Intellectual Property with Foreign Persons: Form BE-125," October 2018, 23.

⁹⁹ Geloso Grosso et al., *Services Trade Restrictiveness Index (STRI): Legal and Accounting Services*, November 2014, 7.

international law, their home country's law, and third-country law. At the same time, domestic law practice, which pertains to host country law (or the law of the country receiving the service), is widely subject to trade barriers. Examples include nationality or residency requirements for foreign lawyers wanting to practice in a particular country, as well as restrictions on recognition of foreign qualifications.¹⁰⁰ However, with the growth of commercial presence as an avenue to deliver legal services abroad, domestic law practice has been an increasingly important component of international trade.¹⁰¹

In 2018, the global legal services market was valued at \$668.7 billion (table 3.1). The market grew by 5.4 percent from 2017 to 2018, faster than the 3.4 percent compound annual growth rate (CAGR) seen in 2014–18.¹⁰² The United States accounted for 47.0 percent of global revenue in 2018, followed by Europe at 25.3 percent and Asia-Pacific at 15.4 percent. The United Kingdom (UK) supplied the largest share within Europe (27.4 percent), while China accounted for the largest share within Asia-Pacific (50.7 percent). The size and development of country and regional legal services revenues appear to be correlated with cross-border trade. In 2018, the European Union (EU) as a whole, which then contained 28 members, appeared to export the highest value of legal services to the world, at \$21.8 billion, followed by the United States at \$11.7 billion. 2018.¹⁰³

Table 3.1 Global and country/regional revenues in legal services

Country or region	2017 revenue (billion \$)	2018 revenue (billion \$)	Growth, 2017–18 (%)	Share of global revenue, 2018
United States	294.2	314.0	6.7	47.0
Europe	164.4	169.3	3.0	25.3
Asia-Pacific	97.3	103.3	6.2	15.4
Middle East	^(a)	6.7	^(a)	1.0
Rest of the world	^(a)	75.4	^(a)	11.3
Total	634.7	668.7	5.4	100.0

Source: MarketLine, *Global Legal Services*, January 2019, 9–11; MarketLine, *Legal Services in the United States*, January 2019, 9; MarketLine, *Legal Services in Europe*, January 2019, 8; MarketLine, *Legal Services in the United Kingdom*, January 2019, 8; MarketLine, *Legal Services in France*, January 2019, 9; MarketLine, *Legal Services in Germany*, January 2019, 8; MarketLine, *Legal Services in Asia-Pacific*, January 2019, 9; MarketLine, *Legal Services in Australia*, January 2019, 8; MarketLine, *Legal Services in Japan*, January 2019, 9.

Note: As indicated in MarketLine, *Global Legal Services*, January 2019, 7, "The market's value is calculated as the total revenue received by law companies for services rendered. These values include all applicable taxes." Additionally, revenue totals are calculated for the following regions and economies, some of which overlap: North America consists of Canada, Mexico, and the United States; South America comprises Argentina, Brazil, Chile, Colombia, and Peru; Europe comprises Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Poland, Portugal, Russia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom; Scandinavia comprises Denmark, Finland, Norway, and Sweden; Asia-Pacific comprises Australia, China, Hong Kong, India, Indonesia, Kazakhstan, Japan, Malaysia, New Zealand, Pakistan, Philippines, Singapore, South Korea, Taiwan, Thailand, and Vietnam; and the Middle East comprises Egypt, Israel, Saudi Arabia, and United Arab Emirates.

^a Data not available.

¹⁰⁰ For more information, see OECD, "STRI Sector Brief: Legal Services," 2019. Geloso Grosso et al., *Services Trade Restrictiveness Index (STRI): Legal and Accounting Services*, November 2014, 7–8; OECD, "STRI Sector Brief: Legal Services," 2019, 2.

¹⁰¹ Geloso Grosso et al., *Services Trade Restrictiveness Index (STRI): Legal and Accounting Services*, November 2014, 7.

¹⁰² Throughout this report, compound annual growth rates are only used when data for average annual growth rates are not available. MarketLine, *Global Legal Services*, January 2019, 9–11.

¹⁰³ Organisation for Economic Cooperation and Development (OECD). "International Trade and Balance of Payments, International Trade in Services Statistics (ITSS), EBOPS 2010 - ITSS by Partner Country, EBOPS 2010-Trade in Service by Partner Economy." Data are not available for China and the United Kingdom. Definitions of Europe in revenue data are not an exact match for the EU-28 (the European Union including the UK; the data for this report predate the UK's departure from the EU).

Similar to global revenue trends in the sector, growth in the U.S. legal services market was much faster in 2017–18, at 6.7 percent year on year, than over the whole 2014–18 period, which saw a 3.0 percent CAGR. In fact, 2017–18 growth was among the highest for any year in the last decade.¹⁰⁴ The Asia-Pacific and European markets grew by 6.2 and 3.0 percent, respectively, between 2017 and 2018.¹⁰⁵ Notably, China’s industry appeared to grow at the fastest rate compared to those of other reported countries, both globally and within the Asia-Pacific region, attaining an 8.6 percent CAGR between 2014 and 2018.¹⁰⁶

Firms in the United States and the UK accounted for 89 of the world’s 100 top-grossing firms.¹⁰⁷ The top 5 firms globally, including 4 U.S. firms and 1 Chinese firm, accounted for 14.1 percent of gross revenue for the top 100 global firms (table 3.2). Illustrating the globalization of large law firms, the top 10 firms have, on average, a presence in about 25 countries.¹⁰⁸

Table 3.2 Top five firms ranked by revenue, FY 2020

Rank	Firms	Country base (country with most lawyers)	Total revenue (billion \$)	Share of global 100 total (%)
1	Kirkland & Ellis	United States	4.2	3.5
2	Latham & Watkins	United States	3.8	3.2
3	DLA Piper ^a	United States	3.1	2.6
4	Baker McKenzie ^a	United States	2.9	2.4
5	Dentons ^a	China	2.9	2.4

Source: *American Lawyer*, “The Global 200, Most Revenue,” October/November 2020; *American Lawyer*, “The Global 200, Most Lawyers,” October/November 2020, and USITC calculations.

Note: Revenues refer to the most recent fiscal year (2020) and the ranking applies to 2020. The USITC calculated a firm’s share of Global 100 by listed revenue as a share of gross revenue for the top 100 global firms (\$119.6 billion).

^aThe Global 200 rankings list the country with the most lawyers, which usually coincides with the country base/headquarters, but may not when firms have alternate firm structures. As shown in the table., this is the case for DLA Piper, Baker McKenzie, and Dentons.

Growth of Alternative Legal Services Providers Expands the Range of Companies Providing Legal Services

“Alternative legal services providers” (ALSPs) is a broad term, encompassing a diverse group of companies that supply certain types of legal and related services but are not full-service law firms. As a group, ALSPs have grown faster than traditional law firms in recent years, as evidenced by their growing use by law firms and corporations, the adoption of in-house ALSPs by some law firms, and the increasing

¹⁰⁴ MarketLine, *Legal Services in the United States*, January 2019, 9; MarketLine, *Legal Services in the United States*, April 2014, 8; MarketLine, *Legal Services in the United States*, October 2012, 8. From 2011 to 2012, the market grew by 9.8 percent, while in the period from 2008 to 2018, the annual average rate of growth was 2 percent.

¹⁰⁵ MarketLine, *Legal Services in Europe*, January 2019, 8; MarketLine, *Legal Services in Asia-Pacific*, January 2019, 9.

¹⁰⁶ MarketLine, *Legal Services in Asia-Pacific*, January 2019, 7.

¹⁰⁷ *American Lawyer*, “The Global 200, Most Revenue,” October/November 2020. The top 100 firms also included five Chinese firms, four Canadian firms, and one firm each from Australia and South Korea.

¹⁰⁸ *American Lawyer*, “The Global 200, Most Lawyers,” October/November 2020. The top 10 firms included those listed in the table and Skadden, Arps, Slate, Meagher & Flom; Sidley Austin; Clifford Chance; Morgan, Lewis & Bockius; and Hogan Lovells.

competition between law firms and accounting firms.¹⁰⁹ Their growth has been facilitated by advances in information technology and ALSPs are frequently characterized by their adoption of new and sophisticated technologies as well as their related efficiency and ability to manage high volumes of work.¹¹⁰ They have been categorized into the following segments: (1) legal process outsourcing firms, both independent and affiliated, (2) companies that offer flexible staffing services, and (3) providers of managed services, which offer clients ongoing services (versus temporary or project-based services).¹¹¹ Examples of companies in each segment include Integreon (legal process outsourcing), Axiom (flexible staffing), and Elevate (ongoing managed services), though all appear to provide overlapping services on a variety of flexible timeframes. According to one source, the Big Four accounting firms are the ALSPs that compete most directly with law firms, as they are able to integrate their growing range of legal services capabilities with existing consulting and other complementary services, bolstered by their use of technology.¹¹²

As demand for services provided by law firms overall in each year since 2010 has either declined or grown very slowly (at or around 1 percent), law firm revenue growth has reportedly been driven by increases in billing rates.¹¹³ More successful law firms, however, have focused on increasing efficiency in delivering legal services, including their use of ALSPs for services ranging from legal research to litigation support.¹¹⁴ According to a survey conducted in 2018, more than half of the responding large U.S. law firms reported using common ALSP services in 2018, a significant increase compared to their use in

¹⁰⁹ Center on Ethics and the Legal Profession and Thomson Reuters LEI, *Alternative Legal Service Providers 2019*, 2019, 1. According to this report, the market grew from \$8.4 billion in 2015 to about \$10.7 billion in 2017 which represents faster growth than the U.S. or global law firm market. Market size estimates may include the United States, the UK, Canada, and Australia. U.S. cross-border trade data likely capture exports and imports of different types of providers (such as accounting firms) that may export or import legal services. However, trade statistics are not disaggregated by type of provider and would therefore not be helpful for understanding the growing presence of ALSPs.

¹¹⁰For example, outsourcing and offshoring by companies were directly facilitated by such technology. For an overview of the rise of ALSPs and the future of the “legal ecosystem,” see Wilkins and Esteban Ferrer, “Taking the ‘Alternative’ Out of Alternative Legal Services Providers,” July/August 2019.

¹¹¹ Center on Ethics and the Legal Profession and Thomson Reuters LEI, *Alternative Legal Service Providers 2019*, 2019, 3.

¹¹² Center on Ethics and the Legal Profession and Thomson Reuters LEI, *Alternative Legal Service Providers 2019*, 2019, 1, 4. The Big Four accounting firms are Deloitte, Ernst & Young (EY), KPMG, and PricewaterhouseCoopers (PwC). For more information on the Big Four, see Wilkins and Esteban Ferrer, “Taking the ‘Alternative’ Out of Alternative Legal Services Providers,” July/August 2019.

¹¹³ Demand is measured as billable time and can vary by practice area and across firms. The Center on Ethics and the Legal Profession and Thomson Reuters LEI, *2020 Report on the State of the Legal Market, 2020*, 3–4; Hildebrandt and Citi, “2020 Client Advisory,” December 2019, 3.

¹¹⁴ Hildebrandt and Citi, “2020 Client Advisory,” December 2019, 6, 8. According to results of surveys, ALSPs most typically provide U.S. law firms services related to e-discovery, legal research, litigation and investigation support, document review/coding, and nonlegal/factual research. The list of top uses of ALSPs for U.S. corporations overlaps with that of U.S. law firms, with the top five uses for corporations including regulatory risk and compliance in place of nonlegal/factual research. See Center on Ethics and the Legal Profession and Thomson Reuters LEI, *Alternative Legal Service Providers 2019*, 2019, 4–6.

2016.¹¹⁵ The reasons for ALSP use by corporations and law firms differ across ALSP service offerings, but cost savings, access to specialized expertise, and increased efficiency are among the top factors.¹¹⁶

With increasing collaboration between law firms and ALSPs, new models of doing business in law firms are emerging,¹¹⁷ and regulations related to non-lawyer ownership of law firms in certain U.S. states are shifting. Over a third of the largest U.S. law firms as measured by revenue (the “AM Law 100”) have created either (1) an internally housed ALSP or an ALSP affiliate as a wholly owned subsidiary, or (2) have partnered with an ALSP.¹¹⁸ At the same time, as outlined in *Recent Trends 2017*, the Big Four accounting firms have a growing focus on legal services in jurisdictions outside of the United States where non-lawyer ownership of law firms is permitted.¹¹⁹ Stemming from the desire to lower costs as well as increase innovation in, and access to, legal services, there have been discussions of significant reforms across U.S. states to also allow non-lawyer ownership of law firms. Notably, Arizona’s recent liberalization will allow non-lawyer ownership beginning in 2021 and is anticipated to change the domestic industry landscape, beyond just the Big Four.¹²⁰

Outlook

The legal industry has responded to the global pandemic with measures which may result in longer-term shifts in working environments. For example, law firms have cut expenses, including halting business travel and reducing business support and secretarial staff.¹²¹ While the permanence of these changes is

¹¹⁵ Similarly, across the variety of top service offerings, about a third of U.S. corporations reported using ASLPs in 2018 with significant growth compared to 2016. Center on Ethics and the Legal Profession and Thomson Reuters LEI, *Alternative Legal Service Providers 2019*, 2019, 4–6. The report defines large law firms as those with more than 175 lawyers.

¹¹⁶ See Center on Ethics and the Legal Profession and Thomson Reuters LEI, *Alternative Legal Service Providers 2019*, 2019, see 8, 10.

¹¹⁷ Wilkins and Esteban Ferrer, “Taking the ‘Alternative’ Out of Alternative Legal Services Providers,” July/August 2019.

¹¹⁸ Packel, “Big Law Doing More than Dabbling in New Law,” October 06, 2020; see Baretz + Brunelle New Law, “Home Court Advantage,” 2020 for how ASLPs are defined. Similarly, about 40–50 percent of surveyed law firms (of all sizes) that use ALSPs have formed partnerships with them, and a smaller percentage have created their own ALSP affiliates, see Center on Ethics and the Legal Profession and Thomson Reuters LEI, *Alternative Legal Service Providers 2019*, 2019, 13.

¹¹⁹ See USITC, *Recent Trends in U.S. Services Trade*, 2017, chapter 3: “Accounting and Auditing Services.” For example, “alternative business structure” (ABS) licenses allow each of the Big Four to provide legal services in the UK.

¹²⁰ Arizona is the first state to allow non-lawyer ownership of law firms, though Washington, DC’s rules allow lawyer and non-lawyer partnerships, and Washington state had previously allowed joint ownership between lawyers and limited license legal technicians; both sets of rules contained restrictions. Utah also has implemented reforms to the practice of law, which started on a two-year trial basis in January 2021. American Bar Association, “Ethics and Non-Lawyer Ownership of US Law Firms,” June 11, 2020. Packel, “Arizona OKs Outside Ownership of Law Firms,” August 28, 2020; Packel, “Arizona’s Ownership Rules Have Major Implications,” September 1, 2020; Packel and Jackson, “The Fight over the Future of Law Firm Ownership,” February 24, 2020.

¹²¹ *American Lawyer*, “Pay Cuts, Layoffs, and More,” July 19, 2020; Simmons and Jackson, “Quiet Staff Layoffs Run Through Big Law,” October 28, 2020; Hildebrandt and Citi, “2021 Client Advisory,” 2020, 9.

uncertain,¹²² there will likely continue to be expanded adoption of and investment in technology, as well as increases in remote work and flexible working arrangements across the industry and national markets.¹²³

Partly because of the way the industry has responded to the pandemic, law firm revenue continued to grow during the first half of 2020. Average revenue grew by 5.3 percent, on par with growth in the prior two years, according to detailed metrics for a subset of surveyed U.S. firms.¹²⁴ However, the pandemic has further depressed already stagnant demand for legal services, which dropped during the first half of 2020. This trend was driven by declines in certain practice areas, such as real estate law, but was offset by growth in others such as bankruptcy law.¹²⁵ Going forward, firms with diversified practices (as well as industry areas and geographic focus) are projected to fare better.¹²⁶

Future challenges in demand will likely increase existing pressure for cost-cutting efficiency and innovation. Coupled with changes in regulation and longer-term effects from the COVID-19 pandemic, these pressures may likely further accelerate the growth of ALSPs and their collaboration with law firms.¹²⁷ Across the industry, the drive to meet client needs will require adapting to newer business models that reflect the move toward more integrated, comprehensive “business solutions.”¹²⁸

¹²² For example, on restoration of pay cuts several months into the pandemic, see Maloney, “As Budgets Improve,” October 16, 2020; on potential for continued firm restructuring of staff, see Roe, “The Great Shakeup,” December 2020.

¹²³ Simmons, “In US, Big Firms Plan to Allow,” September 3, 2020; Tillay, “Slaughter and May Reviewing Flexible Working Policy,” September 10, 2020; Lock, “KPMG UK Law Chief: ‘We’ll Never Go Back,’” September 14, 2020; Ready, “The Pandemic is Pushing,” August 6, 2020; Seal, “The COVID Pandemic Could Kill the Partner Office,” September 17, 2020; Hildebrandt and Citi, “2021 Client Advisory,” 2020, 4, 17-19. For additional information on impacts of COVID-19 on the legal industry, including on legal education, see *The Practice*, “The Year So Far,” September/October 2020.

¹²⁴ Segmenting firms by size, the largest group of firms in the sample saw higher growth than smaller firms. At the same time, firms with an international presence had the highest growth rates overall (8.3 percent) and were the only group with growing demand in the period. Grossman and Rusanow, “Despite the Coronavirus, Law Firms Grew Revenue,” August 18, 2020. See article for information on underlying firm survey conducted by Citi Private Bank. Though sample of annual and quarterly surveys conducted by Citi Private Bank may vary, annual reports showed sampled U.S. firms grew at an average rate of 6.3 percent in the first nine months in 2018 and by an average rate of 4.7 percent in the same period in 2019 (with full year growth in 2019 at 5.3 percent). Hildebrandt and Citi, “2020 Client Advisory,” December 2019, 3; Hildebrandt and Citi, “2019 Client Advisory,” December 2018, 3; Rusanow, “Law Firms Posted Impressive Growth in 2019,” February 11, 2020. A similar report on the U.S. market reports 2019 average revenue growth at 5.4 percent in 2019. See Center on Ethics and the Legal Profession and Thomson Reuters LEI, *2020 Report on the State of the Legal Market*, 2020, 3.

¹²⁵ Thomson Reuters, “Peer Monitor Index,” August 10, 2020; Grossman and Rusanow, “Despite the Coronavirus, Law Firms Grew Revenue,” August 18, 2020.

¹²⁶ Hildebrandt and Citi, “2021 Client Advisory,” 2020, 11, 15, 17.

¹²⁷ Hildebrandt and Citi, “2020 Client Advisory,” December 2019, 6, 8; Hildebrandt and Citi, “2021 Client Advisory,” 2020, 21; Center on Ethics and the Legal Profession and Thomson Reuters LEI, *Alternative Legal Service Providers 2019*, 2019, 1; Bantz, “Will Coronavirus Be a Boon for Alternative Legal Service Providers?,” April 16, 2020.

¹²⁸ Wilkins and Esteban Ferrer, “Taking the ‘Alternative’ Out of Alternative Legal Services Providers,” July/August 2019.

Management Consulting

Market Conditions

Management consulting (MC) services provide advice to businesses, public sector entities, and nonprofits on a range of operational functions, such as organizational design and strategy, human resources, marketing, logistics and distribution, and data analysis.¹²⁹ MC services overlap with other services such as accountancy, investment planning, and information technology (IT) and computer systems design, and are facing strong competition from these specialized consultancies, which are not categorized by the North American Industry Classification System (NAICS) as management consultants.¹³⁰ Most MC consulting firms specialize in particular consulting areas, and the global industry overall is characterized as fragmented. However, the leading global MC firms provide full-service advice on a wide range of issues to their corporate, government, and nonprofit clients.¹³¹ Although industries such as manufacturing generate significant demand for consulting services, most MC revenues are derived from services industries.¹³²

Global MC revenues were \$680.0 billion in 2019, with the leading five global firms accounting for about 12.41 percent of total revenues.¹³³ U.S.-based firms represented four of the top five leading firms by revenue in 2019 (table 3.3). Overall, however, the industry is unconcentrated, with the majority of the world's consultants composed of small providers, including many sole proprietors, that supply management advice in "every conceivable niche and expertise."¹³⁴ The United States is the largest MC market, accounting for 40.0 percent of global revenues. Strong demand by U.S. firms had been fueled in recent years by significant growth in the U.S. economy since the 2008 financial crisis. During this period, U.S. firms have increased their demand for advisory services to navigate new financial regulations, develop strategic plans, and seek operational assistance with emerging technologies.¹³⁵ Globally, there has also been strong demand for MC services in fast-growing markets, particularly China and India, as firms in those countries seek operational advice and assistance to expand domestically and in foreign markets.¹³⁶

¹²⁹ U.S. Census, Industry Statistics Portal, "2017 NAICS: 54161—Management Consulting Services," (accessed October 20, 2020); Kennedy, "Management Consulting in the U.S.," October 2020, 5.

¹³⁰ Management consulting comes under NAICS 54161. U.S. Census Bureau, "NAPCS Product List for NAICS 54161: Management Consulting Services" (accessed December 28, 2020); Gonzales, "Global Management Consultants," December 2019, 8.

¹³¹ MC services are provided by a range of professional services firms. For example, accounting firms are expanding into MC. MC services exclude administrative services, recruitment, public relations, training, engineering, and computer systems design, and investment advice. U.S. Census, Industry Statistics Portal, "2017 NAICS: 54161—Management Consulting Services," 2017; Gonzales, "Global Management Consultants," December 2019, 12.

¹³² Gonzales, "Global Management Consultants," December 2019, 24.

¹³³ Gonzales, "Global Management Consultants," December 2019, 6. Share statistic estimated by USITC using data from Gonzales, "Global Management Consultants," December 2019, 6, 36–41.

¹³⁴ Consulting.com, "The Top 50 Consulting Firms" (accessed November 2, 2020); Gonzales, "Global Management Consultants," December 2019, 40.

¹³⁵ Gonzales, "Global Management Consultants," December 2019, 8.

¹³⁶ Gonzales, "Global Management Consultants," December 2019, 11.

Table 3.3 Global management consulting: Top five firms by revenue, 2019

Rank	Firms	Main office location	Total revenue (billion \$)	Period	Market share (%)
1	Accenture PLC	United States ^a	\$24.2	2018–19	3.6
2	Deloitte Touche Tohmatsu Limited	UK, United States ^b	\$18.7	2018–19	3.1
3	PricewaterhouseCoopers	United States	\$15.8	2018–19	2.3
4	KPMG International	Netherlands	\$12.4	2020 ^c	1.8 ^d
5	McKinsey & Company	United States	\$11.1	2019	1.6 ^d

Source: Gonzales, “Global Management Consultants”, December 2019

^a Chartered in Dublin, Ireland.

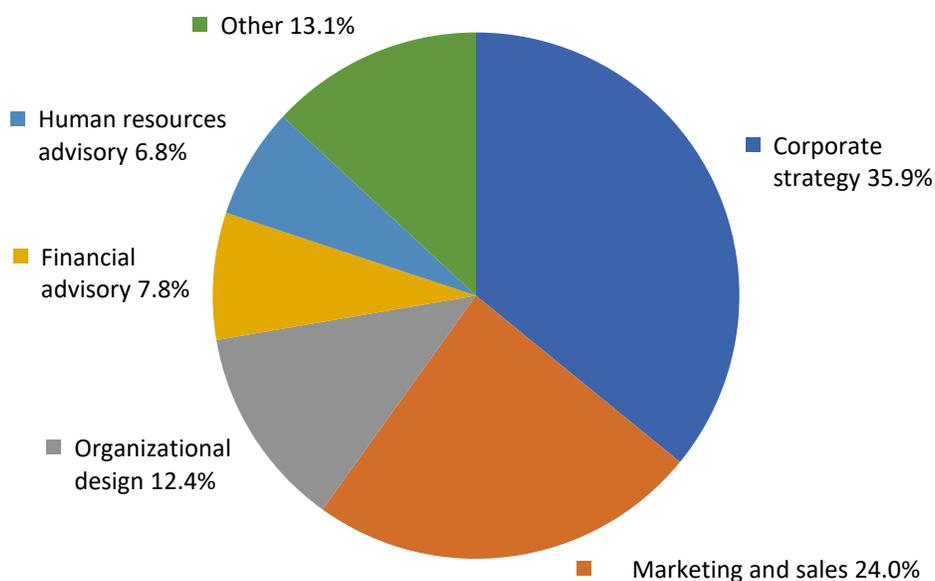
^b Based in London, with global operations handled through the New York office.

^c 2020 estimated revenue estimated by IBIS.

^d USITC estimate.

Corporate strategy advisory services (leadership development, performance improvement, mergers and acquisitions, and corporate portfolio design) was the leading U.S. MC segment by revenue in 2019, accounting for 35.9 percent of total U.S. consulting spending (figure 3.1). The second leading segment, marketing and sales (24.0 percent), experienced significant growth in recent years as firms expanded heavily into digital marketing; however, the pandemic dampened industry spending in this segment in 2020.¹³⁷

Figure 3.1 U.S. management consulting: Revenue shares by segment, 2019



Source: Gonzales, “Management Consulting in the United States,” October 2020, 8.

Underlying data for this figure can be found in [appendix table B.26](#).

¹³⁷ Kennedy, “Management Consulting in the U.S.,” October 2020, 19, 20.

Effects of the COVID-19 Pandemic May Hasten Digital Transformation in Management Consulting Services

The pandemic is affecting how management consultants provide advice, continuing the shift to digital channels. It is also accelerating demand for technology consulting services, which were already the fastest-growing MC segment before the pandemic.¹³⁸ Overall, management consultants are facing substantial revenue losses from the global economic downturn caused by the effects of the COVID-19 pandemic. After posting strong growth in 2019, worldwide MC revenues are forecast to have fallen by between 4.8 and 20.0 percent in 2020.¹³⁹

Not only has demand softened as client companies have been forced to cut back their consulting budgets, but modes of supply have also been substantially affected. The dramatic fall in global travel due to COVID-19 travel restrictions has kept U.S. consultants from visiting domestic and foreign clients. Traveling to and working with clients on-site in their home markets (mode 4 supply) has been an essential supply component for the industry, and this mode of service delivery has been severely curtailed by the pandemic. An estimated 80 percent of management consultants traditionally do more work at their clients' businesses than at their own offices.¹⁴⁰ Like many other services industry professionals, the decrease in travel has prompted MC providers to shift to supplying consulting advice remotely. This move toward using more digital services (including teleconferencing) already had been a cost-cutting trend as MC firms, facing increased price competition from non-consultant IT firms, sought to reduce travel expenses, but it has been accelerated by the pandemic.¹⁴¹

One area of the management consulting industry that has experienced a significant negative impact from COVID-19 has been "change-related work and operational improvement engagements," which have been undercut by pandemic-related developments¹⁴² In this type of work, consultants observe and analyze a firm's operations in person, develop organizational and operational plans, and work on-site with client executives, managers, and other staff to implement those plans.¹⁴³ Demand has especially weakened in industries that have been significantly impacted by the pandemic. For example, leisure, travel, and the broader retail category, as well as the energy, healthcare, and manufacturing industries, have seen large pandemic-related revenue declines.¹⁴⁴

¹³⁸ Kennedy, "Management Consulting in the U.S.," October 2020, 9.

¹³⁹ Statista, "Industry Revenue of 'Management Consulting Services,'" October 20, 2020; Kennedy, "Management Consulting in the U.S.," October 2020, 9.

¹⁴⁰ Beroe Analysis, "Coronavirus Causes Losses for Global Management Consulting," June 25, 2020; Consultancy.eu, "Coronavirus a Blow for Consultants," March 18, 2020.

¹⁴¹ Gonzales, "Global Management Consultants," December 2019, 12.

¹⁴² Consultancy.us, "Coronavirus May Hugely Impact U.S. Consulting Market," March 30, 2020; Allen, "This Is What It Takes," February 26, 2020.

¹⁴³ Consultancy.us, "Coronavirus May Hugely Impact U.S. Consulting Market," March 30, 2020; Allen, "This Is What It Takes," February 26, 2020.

¹⁴⁴ Somers, "How Consulting Firms Are Adapting," April 29, 2020; Kennedy, "Management Consulting in the U.S.," October 2020, 9; Consultancy.org, "The Impact of the Coronavirus on the Global Consulting Industry," March 23, 2020.

Technology-related advisory services, including consulting for digital innovation and transformation, have been less negatively affected by the pandemic.¹⁴⁵ These were the fastest-growing segment in MC services before the onset of COVID-19 and accounted for nearly 20 percent of the global MC market in 2019.¹⁴⁶ These projects typically involve long-term planning and significant client investment.¹⁴⁷ The pandemic has accelerated and underscored the need for businesses to supply and reach customers through digital channels. According to one report, the adoption of digital technologies will be critical for businesses seeking to survive in the post-pandemic environment.¹⁴⁸

Consequently, digital transformation advisory services are expected to be the biggest driver of MC spending as economies recover.¹⁴⁹ As part of their digital transformation advisory services, management consultants are increasingly providing expertise on artificial intelligence (AI), robotics, and the internet of things (IoT). They also conduct statistical analysis of the large quantities of data (“big data”) being generated by these technologies.¹⁵⁰ IT strategy advice is becoming part of “full-service” consulting assistance, which large consultancies are promoting to respond to strong competitive pressure from strictly IT-focused providers that are gaining market share.¹⁵¹ Moreover, the shift to remote work required by social distancing, which many executives expect to be a lasting trend, is also increasing demand for consulting advice on operational and workforce planning.¹⁵²

Outlook

Although MC revenues declined substantially in 2020 as a result of the pandemic, demand for MC advisory services can expand in both weak and strong economic conditions; consequently, industry revenues are expected to recover strongly in 2021 and beyond.¹⁵³ However, large variations in revenue growth in the next five years are expected across regions, countries, and sectors.¹⁵⁴ In particular, the U.S. MC industry is expected to lead all global providers in revenue growth during 2020–25, while fast-growing MC markets in China and India are also likely to recover quickly; markets in the EU are expected to recover more slowly.¹⁵⁵ Digital transformation consulting is expected to be a leading growth sector in MC services as companies draw on consulting expertise to assist in transforming their business models to manage new and emerging technologies.¹⁵⁶ Large MC firms are expected to continue a long-term

¹⁴⁵ For technology, media, telecoms sector, one industry source expects revenues to decline by 17 percent in 2020, less than some other categories and the industry as a whole. Consultancy.us, “Coronavirus May Hugely Impact U.S. Consulting Market,” March 30, 2020.

¹⁴⁶ Consultancy.eu, “How Technology Is Disrupting the Consulting Industry,” June 19, 2019.

¹⁴⁷ Consultancy.us, “Coronavirus May Hugely Impact U.S. Consulting Market,” March 30, 2020.

¹⁴⁸ Consultancy.eu, “Coronavirus a Blow for Consultants,” March 18, 2020.

¹⁴⁹ Consultancy.eu, “Coronavirus a Blow for Consultants,” March 18, 2020.

¹⁵⁰ Consultancy.eu, “How Technology Is Disrupting the Consulting Industry,” June 19, 2019.

¹⁵¹ Kennedy, “Management Consulting in the U.S.,” October 2020, 9, 21.

¹⁵² Gartner, “Gartner CFO Survey Reveals 74 Percent Intend to Shift,” April 3, 2020; Kennedy, “Management Consulting in the U.S.,” October 2020, 9, 15.

¹⁵³ Kennedy, “Management Consulting in the U.S.,” October 2020, 9.

¹⁵⁴ Consultancy.org, “The Impact of the Coronavirus,” March 23, 2020.

¹⁵⁵ Gonzales, “Global Management Consultants,” December 2019, 8.

¹⁵⁶ Wood, “Key Trends in 2020 for Consulting,” January 6, 2020.

trend of consolidation by investing in smaller digital innovation and technology advisory firms.¹⁵⁷ Overall, however, small firms focusing on niche advisory services will continue to dominate the global industry.¹⁵⁸

Education Services

Market Conditions

Education services include formal academic instruction at primary, secondary, and tertiary (higher education) institutions as well as instructional services offered by libraries and vocational, correspondence, language, and special education schools. This section focuses on instruction provided by colleges and universities (hereafter referred to as universities), primarily because university-level students studying at institutions outside their own country represent the majority of international trade in education services.

As illustrated in chapter 2, education services are delivered across different modes of supply. As consumption abroad (mode 2)—when a student travels to a foreign country to study—is the primary means of providing education services to foreign markets, global travel restrictions have sharply reduced trade since the start of the pandemic.¹⁵⁹ Trade via commercial presence (mode 3) also occurs when universities establish programs and campuses in foreign countries. Since the start of the COVID-19 pandemic, cross-border trade (mode 1) in education services (i.e., the provision of online instruction) has grown rapidly due to the wholesale adoption of online classes by nearly all universities.

In 2020, the global market for education services, measured by total revenues earned by colleges and universities, was estimated at \$790.7 billion, up 9.4 percent over the previous year.¹⁶⁰ The United States was the largest national market for education services in 2020, accounting for 22.8 percent of total global revenues. Other large markets included China (18.8 percent), Japan (5.9 percent), Germany (4.6 percent), and India (3.5 percent). In 2020, most of the top-ranked universities were located in the United States, with only five non-U.S. universities appearing in a ranking of the top 15 universities calculated by Times Higher Education (table 3.4).

¹⁵⁷ Palmer, “Rush to Acquire Innovation Agencies,” November 5, 2019; Kennedy, “Management Consulting in the U.S.,” October 2020, 27. This has been a long-term trend. See Consultancy.org, “Mergers and Acquisitions,” (accessed November 12, 2020).

¹⁵⁸ Kennedy, “Management Consulting in the U.S.,” October 2020,9.

¹⁵⁹ For example, the expenses of international students (tuition, fees, room/board, and living expenses) studying in the United States are considered U.S. exports, while the expenses of U.S. students abroad are considered U.S. imports. See chapter 2 for more details on education services that are traded cross-border and via other modes of supply.

¹⁶⁰ Barnes Reports, “Colleges and Universities Industry,” 2020, 12–13.

Table 3.4 Top five universities, by rank, 2020

Rank	College or university	Location	Enrollment (2017)	International students (%)
1	University of Oxford	United Kingdom	20,664	41
2	California Institute of Technology	United States	2,240	30
3	University of Cambridge	United Kingdom	18,978	37
4	Stanford University	United States	16,135	23
5	Massachusetts Institute of Technology	United States	11,247	34

Source: Times Higher Education, "World University Ranking 2020," 2020.

Over the past 20 years, international students have become a growing and financially important constituency for U.S. colleges and universities. During the 2019/20 academic year, there were about 1.1 million international students studying in the United States (5.5 percent of total U.S. students), though this number was 1.8 percent lower than the previous academic year.¹⁶¹ The top sources of international students studying at U.S. universities were China (34.6 percent), India (18.0 percent), South Korea (4.6 percent), Saudi Arabia (2.9 percent), and Canada (2.4 percent). Overall, international students and their dependents contributed an estimated \$44.0 billion to the U.S. economy for tuition, fees, housing, and living expenses during the 2019/2020 academic year and created or supported roughly 416,000 jobs.¹⁶²

During the 2018/19 academic year, 347,099 U.S. students studied abroad, a figure that grew by 1.6 percent over the previous year. Overall, U.S. students preferred destinations in Europe, with the United Kingdom (11.3 percent), Italy (11.2 percent), Spain (9.8 percent), France (5.3 percent), and Germany (3.5 percent) hosting the largest numbers of U.S. students. China also hosted a large number of U.S. students, representing 3.4 percent of the total.¹⁶³

Following several years of falling revenues due to a systemic decline in enrollments, as well as heavy spending on an ever-growing list of campus amenities over the past 15–20 years, many U.S. universities became overly dependent on debt to fund operations.¹⁶⁴ Such spending and borrowing were premised on the assumption that the number of students would continue to grow—particularly international students, who generally pay full, undiscounted tuition or, in the case of state universities, out-of-state tuition. As a result, many universities, particularly those outside the top-ranked category were in a tenuous financial position in the runup to the COVID-19 pandemic.¹⁶⁵ However, the arrival of the pandemic during the first quarter of 2020 completely upended this business model and affected nearly every aspect of the way universities operate. Many students—both domestic and international—deferred admission or took a leave of absence, leaving colleges scrambling with declining revenues in the face of high fixed costs.¹⁶⁶

¹⁶¹ Institute of International Education, "2020 Fast Facts," November 16, 2020.

¹⁶² Institute of International Education, *Open Doors 2020* presentation, November 16, 2020.

¹⁶³ Institute of International Education, "2020 Fast Facts," November 16, 2020.

¹⁶⁴ Lex, "U.S. Colleges: Alma Martyrs," October 25, 2020.

¹⁶⁵ Lex, "US Colleges: Alma Martyrs," October 25, 2020; Korn and Ghiglione, "Coronavirus Pushes Colleges to the Breaking Point," April 30, 2020; Carnevale and Van Der Werf, "Colleges Are Facing Huge Financial Setbacks," May 21, 2020.

¹⁶⁶ Lex, "US Colleges: Alma Martyrs," October 25, 2020.

Several factors undermined U.S. universities' revenue in 2020. Not only did universities suffer from declining student numbers, but enrolled students pushed for tuition discounts due to a suspended "college experience" and online-only course offerings. In an attempt to stop the spread of COVID-19, most universities closed their campuses in March and shifted almost entirely to a format in which professors lectured homebound students over web-based conferencing platforms, a practice that continued at many universities during the fall 2020 semester. Nationwide, U.S. universities lost billions of dollars in the spring 2020 and fall 2020 semesters as closed campuses or social distancing requirements hit a wide range of revenue streams, including dormitory housing, sporting events, food service, and medical research and treatment. Over the next several years, many state universities will likely face large cuts in state funding as states themselves increasingly face declines in tax revenue. In addition, prospects for alumni donations over the next few years are considered unpredictable.¹⁶⁷

Virtually all U.S. universities have high fixed costs for building and campus maintenance, faculty and staff salaries, and debt service, among other obligations. The COVID-19 pandemic has imposed added costs, including increased facilities cleaning, building modifications to accommodate new health and safety requirements, COVID-19 testing and tracing, legal liability losses, and technology related to offering online courses, such as cameras, microphones, and home-studio equipment for at-risk faculty.¹⁶⁸ In all, the American Council on Education estimates that U.S. universities will face a collective negative impact of \$120.4 billion in 2020, a figure which accounts for both losses and extra expenses of \$46.6 billion during the spring 2020 semester and \$73.8 billion related to reopening costs for the fall 2020 semester.¹⁶⁹

In response to declining revenues and increasing costs, most universities are now in the process of cutting costs. In the early days of the pandemic, many universities implemented stopgap measures to cut costs, including hiring freezes and early retirements. However, as the pandemic continued, many have taken more drastic steps. Perhaps the largest area of cost cutting has involved employment. According to the Bureau of Economic Analysis (BEA) of the U.S. Department of Commerce, roughly 337,000 employees in the sector have lost their job since the start of the pandemic—more than 7 percent of the higher education workforce. Most job losses have taken the form of furloughs, layoffs, and nonrenewals of staff contracts, mainly for adjunct professors.¹⁷⁰ To address anticipated budget shortfalls, universities have also cut athletic teams, eliminated both core and non-core academic programs, defunded research centers, deferred campus construction projects, and suspended the intake of new Ph.D. students.¹⁷¹

¹⁶⁷ Korn, "Public Colleges Lose Funding, Effective Immediately," April 23, 2020; Korn and Ghiglione, "Coronavirus Pushes Colleges to the Breaking Point," April 30, 2020; Kelchen, "Looming Financial Fallout," June 8, 2020; Carnevale and Van Der Werf, "Colleges Are Facing Huge Financial Setbacks," May 21, 2020; Sheiner and Campbell, "How Much Is COVID-19 Hurting State and Local Revenues?" September 24, 2020.

¹⁶⁸ Kelchen, "Looming Financial Fallout," June 8, 2020.

¹⁶⁹ American Council on Education, letter to the U.S. Senate and U.S. House of Representatives, October 19, 2020.

¹⁷⁰ Bauman, "Pandemic Has Pushed Hundreds of Thousands," October 6, 2020.

¹⁷¹ Hubler, "Colleges Slash Budgets in the Pandemic," October 26, 2020.

COVID-19's Effects Have Caused a Decline in International Trade in Education Services

The chief impact of the COVID-19 pandemic on trade in U.S. education services is the sharp decline in the number of foreign students studying in the United States. During the fall 2020 semester, the total number of international students studying in the United States fell by 16 percent compared to the fall 2019 semester, while enrollments of new international students fell by 43 percent.¹⁷² This dramatic decline was due in large part to limited international flights, visa processing backlogs, ongoing border and travel restrictions, and 14-day quarantine restrictions upon entering the United States.¹⁷³ In all, the Association of International Educators has estimated that the decline in international student enrollment in U.S. universities in the fall of 2020 could cost schools as much as \$3 billion.¹⁷⁴

A variety of factors have also caused some international students to take a leave of absence or defer enrollment at U.S. universities. For example, some international students are reportedly unwilling to pay full tuition to take online courses from their home country.¹⁷⁵ Altering the cost-benefit calculation, taking online courses from a location outside the United States causes international students to miss many of the intangible benefits of the American residential-college experience: making new friends, participating in extracurricular activities, and taking part in internship programs, among other benefits.¹⁷⁶ Some foreign students also reportedly view the United States as unwelcoming to international students.¹⁷⁷

To stem the decline of international student enrollments, some colleges and universities are taking steps to retain such students. New York University, for example, offered international students the option of studying at one of its overseas campuses. Similarly, Lehigh University in Pennsylvania arranged for students to study at partner universities in several countries, including Ashoka University in India. Some colleges are also working to improve the online experience of international students. The Illinois Institute of Technology, for instance, is designing classes that are viewable on mobile phones and is posting class materials on computer servers located in China.¹⁷⁸

The COVID-19 pandemic also had a dramatic impact on U.S. college students studying abroad, i.e., U.S. imports of education services. Health concerns and travel bans in Canada, the EU, and elsewhere have halted most study-abroad programs at U.S. colleges and universities.¹⁷⁹ In response, some universities have transitioned to stay-at-home “study abroad” programs conducted entirely online.¹⁸⁰

¹⁷² Redden, “International Student Numbers Decline,” November 16, 2020.

¹⁷³ Centers for Disease Control and Prevention, “Travelers Prohibited from Entry,” September 14, 2020; Fischer, “COVID-19 Caused International Enrollments to Plummet,” November 16, 2020.

¹⁷⁴ Berger, “The Pandemic Has Damaged the Appeal,” July 23, 2020.

¹⁷⁵ Lex, “US Colleges: Alma Martyrs,” October 25, 2020.

¹⁷⁶ Garcia, “Online Classes Prompt Students to Take Leave,” September 8, 2020; *Latitude(s)*, “A Fall-off in the Fall,” April 22, 2020.

¹⁷⁷ Fischer, “COVID-19 Caused International Enrollments to Plummet,” November 16, 2020.

¹⁷⁸ Fischer, “To Keep International Students during the Pandemic,” May 22, 2020.

¹⁷⁹ Government of Canada, “Who Can Travel to Canada,” (accessed January 21, 2021); Council of the European Union, “Lifting of Travel Restrictions,” (accessed January 21, 2021).

¹⁸⁰ Barrett, “Coronavirus: Colleges Experiment with Stay-At-Home ‘Study Abroad’ Programs,” April 11, 2020.

Outlook

Many of the major trends observed in 2020 are likely to continue over the next few years. Enrollments, which were declining at many U.S. universities even before the pandemic, are likely to continue to decline, or at least to remain flat. Many revenue streams ranging from tuition to summer tennis camp fees are also expected to shrink over the next few years. At the same time, most universities will continue to face rising costs due to the COVID-19 pandemic, including those related to cleaning, testing, and tracing, facilities modification, and videoconferencing technology. Budget-cutting measures are also likely to continue for the next several years, with cuts to faculty and staff, academic programs, and sports teams likely to become a feature of campus life.¹⁸¹

Institutions ranging from community colleges to top-ranked universities are expected to struggle with the fallout from the COVID-19 pandemic for years to come. Those with large amounts of debt incurred pre-pandemic will likely face the most hardship. Overall, the pandemic is expected to widen the gap between top-tier institutions and lesser-known schools: institutions with prestigious brand names, large endowments, and strong cash flows will likely survive the pandemic in relatively good shape, whereas many small private colleges and regional state universities—particularly heavily indebted ones—will likely suffer years of financial hardship, with some likely facing closure.¹⁸² Some observers are predicting that a growing number of colleges will shut down over the next few years due to the pandemic, with one study predicting, based upon a quantitative modeling exercise, that nearly 90 colleges will close permanently by the summer of 2021.¹⁸³

¹⁸¹ Vasquez, “As the Pandemic Grinds On,” October 12, 2020.

¹⁸² Lex, “US Colleges: Alma Martyrs,” October 25, 2020. Of the 434 colleges covered by S&P Global Ratings, for example, 31 percent are rated triple B plus or lower in October 2020, compared to 9 percent in January 2020; two-fifths of the total also labor under a “negative outlook” assigned by Standard & Poor’s.

¹⁸³ Carnevale and Van Der Werf, “Colleges Are Facing Huge Financial Setbacks,” May 21, 2020; *College Post*, “Close to 90 US Colleges Could Perish,” September 4, 2020; Dickler, “Will Pandemic Force Your College to Go Bankrupt?” May 27, 2020.

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Chapter 4

COVID-19 Impacts on Demand for Professional Services

In some professional services, the COVID-19 pandemic has led to shifts in demand for the types of services provided. This chapter highlights two sectors where demand for particular services has increased in response to pandemic conditions. First, in architecture and engineering services, demand has increased in the short run for critical infrastructure, such as hospitals. In the long run the industry may need to adjust further as demand decreases for office space due to increased teleworking. Second, in the healthcare services sector, U.S. demand for virtual appointments has increased in response to the pandemic.

Architecture and Engineering Services

Market Conditions

Architects provide design and planning services for the construction and renovation of various types of structures and buildings, while engineers employ engineering principles and the laws of science in the design and development of structures, systems, and processes, in addition to machines, instruments, and materials.¹⁸⁴ Key consumers of architecture and engineering (AE) services include the construction industry; government; retailers; mining firms; utilities; schools and universities; the entertainment and recreation industry; and additional entities that need designs for buildings and other structures, spaces, and processes. As such, demand for AE services depends heavily on factors that impact customers' willingness and ability to finance construction, infrastructure, and industrial projects.¹⁸⁵

IBISWorld reports that revenues in the global architectural services industry were \$314.5 billion in 2018, having increased at an average annual rate of 2.5 percent from \$284.7 billion in 2014. Revenues in the global engineering services industry increased at an average annual rate of 2.6 percent during the same period, from \$1,201.4 billion in 2014 to \$1,328.1 billion in 2018. The nonresidential building segment made up the largest share (38.6 percent) of global architectural services revenues, while building construction, transportation, and power and energy each contributed over 20 percent of revenues in the global engineering services industry.¹⁸⁶

Several factors affected the revenues and operations of global and U.S. AE firms during the five years immediately preceding the 2020 COVID-19 pandemic. Economic growth and increased private investment in building projects spurred industry growth in large global markets, since structures account

¹⁸⁴ Blau, *Engineering Services in the US*, July 2016, 2; Morea, *Architects in the US*, June 2016, 2; U.S. Census, 2012 NAICS Definitions, 2012.

¹⁸⁵ Blau, *Engineering Services in the US*, July 2016, 14–16; Morea, *Architects in the US*, June 2016, 13–15.

¹⁸⁶ Gonzales, "Global Architectural Services," December 2019, 18; Irigoyen, "Global Engineering Services," November 2019, 17.

for a substantial share of investor spending.¹⁸⁷ Global architecture firms benefited from increased demand for green buildings as developers looked to reduce energy costs and build community goodwill.¹⁸⁸ Further, AE firms increased their technology investments, as they sought to improve service quality, minimize project risk, reduce costs and project times, and boost worker productivity.¹⁸⁹ Among the challenges were high land and materials costs as well as a reported shortage of qualified workers in the construction industry, which impacted firm performance and productivity.¹⁹⁰ In the energy industry, low oil and gas prices contributed to weak demand among AE clients. However, AE firms expect that a gradual recovery in oil, metal, and mineral prices will boost demand for AE services in that sector.¹⁹¹

According to *Engineering News-Record*, two U.S.-based firms—Jacobs Engineering Group (Jacobs) and AECOM—ranked among the five largest design firms in the world in 2019 (table 4.1). Chinese firms are also prominent on the list, with Power Construction Corp. of China and China Energy Engineering Corp. ranked first and fifth, respectively.¹⁹²

Table 4.1 Top five design firms by global revenues, 2019

Rank	Firms	Headquarters location	Total international revenue (billion \$)	Revenue growth, 2018–19, %
1	Power Construction Corp. of China	China	\$10.9	23.0
2	Jacobs	United States	\$9.7	-10.9
3	AECOM	United States	\$8.0	0.5
4	Wood	United Kingdom	\$7.6	4.7
5	China Energy Engineering Corp.	China	\$7.4	9.4

Source: Tulacz and Reina, “Companies Deal with Twin Crises,” August 3/10, 2020, 59; Tulacz and Reina, “Market Is on an Uncertain Path,” July 22/29, 2019, 55.

Although the global AE services industry remains highly fragmented, several notable acquisitions by large industry players in recent years have led to some consolidation in the industry. For example, Australian firm WorleyParsons acquired the Energy, Chemicals and Resources Division of U.S. firm Jacobs in 2019. A year earlier, Singapore firm Surbana Jurong purchased both Canadian firm B+H Architects and Singapore firm SAA Architects. In 2014, U.S. firm AECOM purchased U.S. firm URS

¹⁸⁷ Irigoyen, “Global Engineering Services,” November 2019, 10–11; Gonzales, “Global Architectural Services,” December 2019, 11.

¹⁸⁸ Gonzales, “Global Architectural Services,” December 2019, 12.

¹⁸⁹ In particular, technology is seen as a way to address the shortage of skilled workers in the architectural services industry. One source reports that such investments have not impacted profitability in the global engineering industry. Irigoyen, “Global Engineering Services,” November 2019, 12; Gonzales, “Global Architectural Services,” December 2019, 37, 38; Deloitte, “2020 Engineering and Construction Industry Outlook,” 4; AIA, *Firm Survey Report*, 2018, 6.

¹⁹⁰ Several sources identify labor shortages in AE services and related sectors—such as the construction industry—as a key factor impacting AE industry growth. For example, see AIA, *Firm Survey Report*, 2018; Associated General Contractors of America/Autodesk, *2019 Worker Shortage Survey Analysis*, 2019; and U.S. Chamber of Commerce, *Commercial Construction Index*, September 17, 2020.

¹⁹¹ AIA, *Firm Survey Report*, 2018, 6; Deltek/Clarity, “Architecture and Engineering Industry Study,” 5; Deloitte, “2020 Engineering and Construction Industry Outlook,” 2–3; Irigoyen, “Global Engineering Services,” November 2019, 8.

¹⁹² Tulacz and Reina, “Companies Deal with Twin Crises,” *ENR*, August 3/10, 2020, 59.

Corporation.¹⁹³ In the U.S. architectural services industry, the share of firms with 50 or more workers increased during 2011–17 to 6.3 percent due to sustained industry growth.¹⁹⁴ Despite these trends, large companies continue to account for a small share of the overall number of firms in the industry.¹⁹⁵ Recent surveys suggest that less than 25 percent of U.S. architecture firms have 10 or more employees, while only 5 percent of architecture firms in Europe employ more than 5 workers.¹⁹⁶ Further, the overall number of AE firms increased from 2014 to 2018 due in part to rising market entry by developing-country engineering firms.¹⁹⁷

COVID-19 Pandemic Impacts on AE Services Demand

The COVID-19 pandemic affected demand for AE services substantially. The suspension of some construction projects and the slowdown in new contracts are expected to put downward pressure on industry growth. At the same time, strong demand for project design in essential business segments—such as healthcare, water, and pharmaceutical manufacturing—as well as demand for pandemic-related redesign are anticipated to benefit firms that provide these services.

Recent trends in the Architecture Billings Index (ABI) illustrate the impact of the COVID-19 pandemic on business conditions in the industry. The ABI is a seasonally-adjusted index based on a monthly American Institute of Architects (AIA) survey of U.S. architectural firms and reflects the proportion of respondents that report growth in nonresidential construction billings as compared to the prior month.¹⁹⁸ As such, scores greater than 50 suggest industry expansion.¹⁹⁹ From February to March 2020, the ABI fell over 20 points, from 53.4 to 33.3—a substantially larger decrease than the initial 9.4- and 8.3-point declines recorded during the 2001 and 2007–08 recessions. The ABI fell again to 29.5 in April 2020 (figure 4.1).²⁰⁰ The AIA also publishes a similar index reflecting increases/decreases in design contracts. This index declined from 52.0 in February 2020 to 27.1 in March 2020. Both the ABI and design contracts indices rebounded substantially by September 2020 (reaching 47.0 and 48.9, respectively). However, the indices

¹⁹³ Tulacz and Reina, “Market Is on an Uncertain Path,” *ENR*, July 22/29, 2019, 48; Madigan, “Engineering Services in the US,” June 2020, 46; Miller, “Architects in the US,” August 2020, 28; Kirkham, “Aecom Finalizes \$6-Billion Acquisition,” October 17, 2014; SJ Connects, “Surbana Jurong Offers Broader Design Expertise,” October 26, 2018.

¹⁹⁴ AIA, *Firm Survey Report*, 2018, 6–7.

¹⁹⁵ Irigoyen, “Global Engineering Services,” November 2019, 25; Gonzales, “Global Architectural Services,” December 2019, 27.

¹⁹⁶ AIA, *Firm Survey Report*, 2018, 7; Gonzales, “Global Architectural Services,” December 2019, 27. The information on European firm size is attributed to the Architects’ Council of Europe (ACE), whose membership includes EU member and accession countries as well as Norway, Switzerland, and the United Kingdom. Architects’ Council of Europe, “Mission and Objectives” (accessed December 14, 2020).

¹⁹⁷ Irigoyen, “Global Engineering Services,” November 2019, 11–12, 39; Gonzales, “Global Architectural Services,” December 2019, 12.

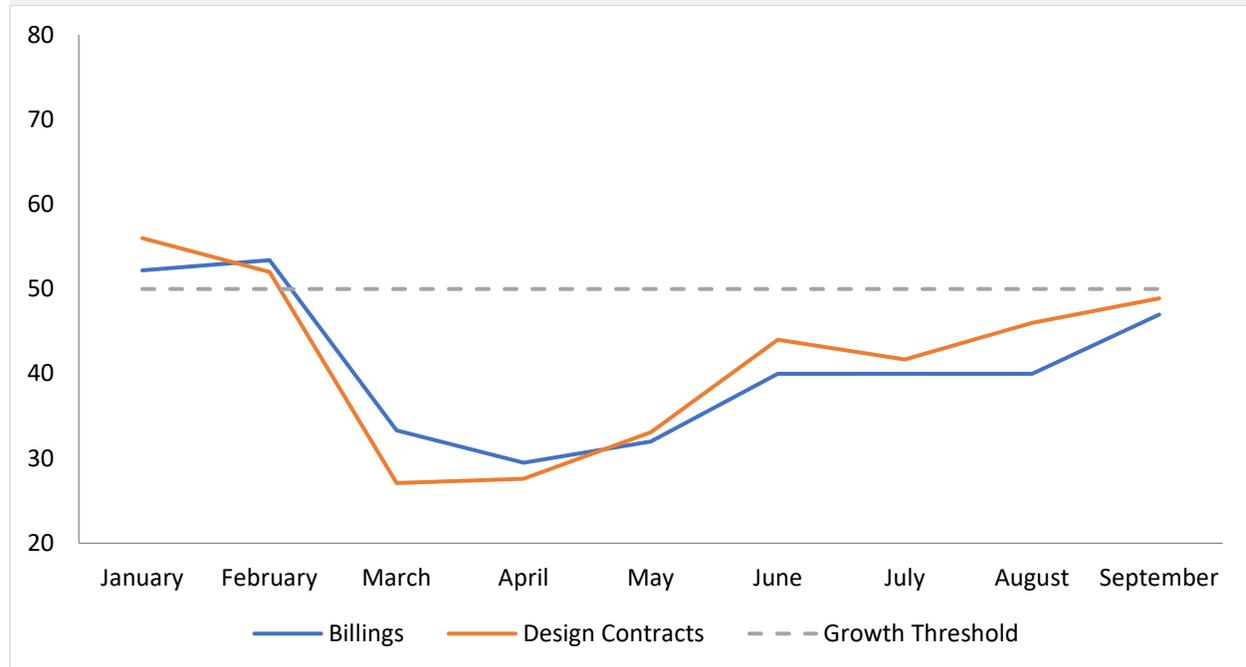
¹⁹⁸ For more information on the construction and pertinence of the ABI, see Baker and Saltes, “Architecture Billings,” October 2005 and Baker, Chu, and Riskus, “Designing the Construction Future,” 2014.

¹⁹⁹ Baker and Diego, “Architecture Billings,” October 2005, 68–69.

²⁰⁰ AIA, “Architecture Billings Index” (accessed October 21, 2020); AIA, “Architecture Billings Continue Growth,” February 19, 2020.

remained below the growth threshold of 50, indicating the industry continued to contract during the period.²⁰¹

Figure 4.1 Architecture Billings Index, January–September 2020



Source: AIA, “Architecture Billings Index” (accessed October 21, 2020); AIA, “Architecture Billings Continue Growth into 2020,” press release, February 19, 2020. Underlying data for this figure can be found in [appendix table B.27](#).

While the ABI points to an overall decline in industry activity, segment-specific estimates vary widely. Based on recent evidence, business in many nonresidential (including commercial) segments of the AE services industry—including hospitality, entertainment, education, offices, and retail, among others—is expected to decrease substantially.²⁰² At the same time, COVID-19-related factors may contribute to revenue growth in some other industry segments. For example, government stimulus programs are expected to boost business in certain infrastructure subsegments such as water and wastewater, transportation, communication, and healthcare.²⁰³ While the pandemic has led to cancellations and budget cuts in airport construction, the slowdown in air traffic resulting from the pandemic has also created an opportunity to fast-track airport projects while facilities are less crowded.²⁰⁴ Observers also

²⁰¹ AIA, “Architecture Billings Index” (accessed October 21, 2020); AIA, “Architecture Billings Continue Growth,” February 19, 2020.

²⁰² FMI, “FMI U.S. Engineering and Construction Outlook” (accessed October 21, 2020); Deloitte, “Midyear Outlook,” 2020, 4.

²⁰² FMI, “FMI U.S. Engineering and Construction Outlook” (accessed October 21, 2020).

²⁰³ FMI, “FMI U.S. Engineering and Construction Outlook” (accessed October 21, 2020); Tulacz and Reina, “Companies Deal With Twin Crises,” August 3/10, 2020, 54; Deloitte, “Midyear Outlook,” 2020, 4.

²⁰⁴ Phillips, “Green, Yellow, Red,” June 22, 2020.

anticipate increased revenues in the residential segment, as growth in refinancing and extended telework may benefit the market for residential improvements.²⁰⁵

Additionally, pandemic-related issues have spurred demand for the redesign of medical, home, education, and office spaces.²⁰⁶ Several hospitals—including Mount Sinai hospital in New York, the University of Virginia Medical Center, and the University of Pennsylvania Health system—have employed AE service providers in their efforts to redesign spaces to accommodate COVID-19 patients and protect worker safety.²⁰⁷ In a recent apartment building design, U.S. firm SO-IL incorporated separations between rooms to address work-from-home acoustical issues.²⁰⁸ There have also been efforts to redesign schools and workspaces in order to address health and safety concerns. For example, UK firm Curl la Tourelle Head Architecture addressed the need for increased social distancing in classrooms by proposing a tent system for expanding lunch and classroom space, which is being tested at a London school.²⁰⁹ UK firm ThirdWay has started a program to design solutions for businesses that combine remote and office-based work.²¹⁰

Outlook

IBISWorld projects that revenues in the domestic AE services industry will decrease substantially in 2020 and may not recover for two to five years. Specifically, U.S. architecture revenues are expected to drop by 6.9 percent from \$49.5 billion in 2019 to \$46.0 billion in 2020 and are not expected to rebound to pre-pandemic levels until 2022. U.S. engineering services revenues are expected to drop by 10.4 percent from \$264.6 billion in 2019 to \$236.9 billion in 2020 and not recover until 2025.²¹¹

Healthcare Services

Market Conditions

Healthcare services comprise firms providing healthcare and social assistance to individuals, including hospitals, dental and physicians' offices, and diagnostic laboratories.²¹² As shown in chapter 2, international cross-border trade in healthcare services is primarily concentrated in two areas: health-related travel services and telemedicine.²¹³ Since the start of the pandemic, international

²⁰⁵ FMI, "FMI U.S. Engineering and Construction Outlook" (accessed October 21, 2020); AIA, "ABI September 2020," October 22, 2020.

²⁰⁶ Tulacz and Reina, "Companies Deal with Twin Crises," August 3/10, 2020, 55–56.

²⁰⁷ Buckley, "Penn Med Rushes Philly Project," April 14, 2020; ENR, "Hospital Work Accelerated," April 14, 2020; PBS NewsHour Weekend, "How the Pandemic is Reshaping," May 10, 2020.

²⁰⁸ Chayka, "How the Coronavirus," June 17, 2020.

²⁰⁹ Harrouk, "Curl la Tourelle Head," June 17, 2020.

²¹⁰ Stathaki, "Architecture Seeks Designs," June 23, 2020.

²¹¹ Madigan, "Engineering Services in the US," June 2020, 46; Miller, "Architects in the US," August 2020, 41.

²¹² USDOC, BEA, *Guide to Industry Classifications for International Surveys*, 2017, 86.

²¹³ Health-related travel services (sometimes called medical tourism) are also delivered via mode 2 (i.e., consumption abroad)—for example, when an individual from one country travels to another country to receive healthcare services – and via mode 3 (foreign affiliates). See chapter 2 for a more details on healthcare services that are traded cross-border and via other modes of supply.

telemedicine—health-related services delivered across borders via phone or internet—has increased, although not as substantially as within domestic markets.²¹⁴

Most telemedicine services are primarily produced and consumed domestically, rather than being traded internationally.²¹⁵ In the United States, one major reason for this is that domestic regulations at the state and federal level require local certifications and qualifications to provide medical advice. (Similar regulations exist in most countries.) A second major factor is the reimbursement practices of insurance companies and Medicare as the largest payers for healthcare in the United States.²¹⁶

Telemedicine services provided in the United States encompass a range of services that can be broken down into three different types, depending on the mode of delivery.²¹⁷ The first type, videoconferencing or telephone calls, allows the delivery of services in a manner most similar to in-person services between a healthcare provider and a patient. Healthcare providers can also use videoconferencing to confer with other providers about a particular issue, in what is known as a remote second opinion (RSO).²¹⁸ The second type, remote patient monitoring, relies on electronic data interchange between sensors on the patient and medical professionals. Patient data are transmitted to healthcare providers who are in another location.²¹⁹ The third type, known as “store and forward” technology, works with images such as an X-ray or magnetic resonance imaging (MRI) scans taken by a primary healthcare provider in one location. A service provider transmits the images to a specialist in another location to remotely diagnose or assess a health issue.²²⁰

Of the three types of telemedicine services mentioned previously, the remote diagnosis segment of store-and-forward and the RSO segment of videoconferencing are the services most frequently traded across international borders.²²¹ For remote diagnosis, radiology and pathology (which rely on medical images to diagnose health issues) were some of the first healthcare specialties to use telemedicine due to the relative ease with which such data could be transmitted over the internet. Medical images would be sent overseas to physicians in countries where costs are lower, such as India, and the results transmitted back to the United States, where they would be verified by a U.S. provider.²²² This would be classified as a U.S. import of cross-border healthcare services from the country where the physician providing the diagnosis is located.

²¹⁴ Industry representative, interview by USITC staff, January 8, 2021. There is also a small amount of “mode 4” trade in healthcare services, where doctors travel abroad to provide services to patients. This is less common on a commercial basis; often such travel involves services for disaster relief or international medical aid.

²¹⁵ Curran, *Telehealth Services*, August 2020, 24.

²¹⁶ Curran, *Telehealth Services*, August 2020, 31.

²¹⁷ Curran, *Telehealth Services*, August 2020, 10.

²¹⁸ Ferriera and Rosales, “Deciphering International Telemedicine Regulations,” April 14, 2020.

²¹⁹ Specialized firms often develop the technology to remotely monitor patients, then transmit the data to the healthcare providers’ IT system. Siwicki, “UPDATED: A Guide to Connected Health,” May 6, 2020.

²²⁰ Curran, *Telehealth Services*, August 2020, 10.

²²¹ Industry representative, interview by USITC staff, April 8, 2019.

²²² McLean and Richards, “Teleradiology: A Case Study,” September/October 2006. Store and forward is used both domestically in the United States (the “Nighthawk” model) and across borders (the outsourcing model). The Nighthawk model in the United States reduces cost by employing radiologists full-time at remote facilities, as the cost of paying a full-time radiological professional is out of the reach of many smaller hospitals. The outsourcing model reduces costs by using radiologists in countries where wages are lower and who may not be licensed to practice in the United States.

U.S. RSO services are primarily supplied to high-net-worth individuals in emerging markets like China.²²³ This is particularly true for specialty areas such as pediatrics and cardiology, where U.S. providers are seen as higher quality. Such services would be classified as a U.S. export of cross-border healthcare services. Other telemedicine-related services such as collaboration on medical research and peer-to-peer educational services are also supplied across borders, but mostly on a noncommercial basis (i.e., there is no monetary transaction).²²⁴ These are especially important because U.S. universities and hospitals are often global hubs for these activities.²²⁵

Before the beginning of the COVID-19 pandemic, the U.S. telemedicine industry was small and relatively concentrated, with one large player and several smaller regional players. In 2020, the U.S. telemedicine industry had an estimated revenue of \$3.2 billion, compared to the total U.S. healthcare industry's annual revenue of \$2.6 trillion.²²⁶ Teladoc Health Inc. is the largest U.S. firm dedicated to telemedicine, and makes up around 24 percent of the industry by market share.²²⁷ Teladoc Health connects healthcare providers to patients through partnerships with insurance companies and self-insured employers and provides the platform and technology that underpins telemedicine services.²²⁸ Many smaller telemedicine companies operate in the United States on a more regional basis; for example, the Cleveland Clinic partnered with Boston-based American Well to launch a company offering virtual health services to patients.²²⁹ Some large hospital systems, such as the Mayo Clinic, have also created their own telemedicine providers in partnership with other technology firms.²³⁰

Even before the COVID-19 pandemic, the industry had experienced robust growth as technology improved and consumer preferences shifted. The U.S. telemedicine market grew at a 17.0 percent average annual growth rate (AAGR) from 2015 to 2019,²³¹ while Teladoc's revenue grew at an AAGR of 65.2 percent over the same period.²³² Other estimates of telemedicine use were also growing pre-COVID-19. One survey found that telemedicine visits in the United States increased from 22 million in 2013 to 30 million in 2017. Another analysis of insurance claims found that the number of telemedicine

²²³ Industry representative, interview by USITC staff, April 8, 2019; Kutscher, "The Long Reach of Medicine," October 20, 2012.

²²⁴ Industry representative, interview by USITC staff, April 8, 2019.

²²⁵ For example, one ranking finds 8 U.S. universities in the top 10 globally for clinical medicine. *U.S. News and World Report*, "Best Global Universities for Clinical Medicine" (accessed January 22, 2021).

²²⁶ Curran, *Telehealth Services*, August 2020, 7; Statista, "Health Care and Social Assistance in the U.S. 2020," December 2020. One estimate valued the global telemedicine industry at \$45.5 billion in 2019, though the definition used for the industry is not clear. Statista, "Global Telemedicine Market Size" (accessed November 19, 2020).

²²⁷ Curran, *Telehealth Services*, August 2020, 32. Teladoc is the largest firm, by revenue, focused specifically on telemedicine. A smaller firm, Amwell, filed for an initial public offering in late 2020 based on strong demand for telemedicine services. Landi, "Telehealth company Amwell Spikes in Public Debut," September 19, 2020.

²²⁸ Teladoc, "Who We Serve" (accessed November 19, 2020).

²²⁹ Cleveland Clinic, "Cleveland Clinic, American Well Partner," October 21, 2019.

²³⁰ Mayo Clinic, "Platform Revolution," July 2, 2020.

²³¹ Statista, "Telemedicine Market Size Forecast United States" (accessed November 19, 2020).

²³² Teladoc, *Teladoc 2019 Annual Report*, February 26, 2020, 3.

claims grew 53 percent from 2016 to 2017—a much higher rate than the growth in claims for other types of healthcare visits.²³³

There are three main drivers of this trend. First, telemedicine can bring higher-quality and specialty healthcare services to rural or remote populations. Second, telemedicine can reduce the time it takes to access medical care (primarily by cutting travel times). Third, telemedicine is able to offer remote medical visits at a lower cost than in-person visits.²³⁴ The quality of some telemedicine services has come into question, however, with one study of dermatologists practicing remotely finding incorrect diagnosis and treatment of certain ailments as well as poor doctor-patient communication.²³⁵

Telemedicine Demand Shifts Due to COVID-19

While trends before COVID-19 already revealed robust growth in telemedicine, the use of telemedicine has expanded even more rapidly since the onset of the pandemic in the United States in March 2020. No comprehensive numbers are available as of late 2020, but surveys and data from individual hospital systems show the scale of this growth, particularly for the early months of the pandemic. One survey found that 46 percent of U.S. consumers had used telemedicine services in 2020, up from just 11 percent in 2019.²³⁶ Other studies have found that the number of telemedicine visits had risen 50- and 175-fold over various periods after the onset of the pandemic, according to surveys of providers.²³⁷ Data from early in the pandemic from the Duke University medical system also show a large rise in the number of telemedicine visits, combined with an increase in volatility in the number of daily visits. One reason for these trends seems to be a shift in consumer preferences away from in-person visits and towards telemedicine due to social distancing related to COVID-19. Two other likely drivers of this trend are an increase in hospital systems' ability to supply telemedicine services and the payment-related changes discussed below.²³⁸ Data compiled by the Centers for Disease Control and Prevention (CDC) show a similar pattern: the number of telemedicine visits reported by four providers rose from 50 percent above baseline in early March 2020 to 154 percent by the end of that month. A significant portion of this increase was due to medical visits related to COVID-19.²³⁹

This trend may be subsiding a bit, after an initial surge of demand for telemedicine visits at least partially tied to COVID-19 precautions and treatment (figure 4.2). Data from one survey of 50,000 providers indicate that for the months of September and October 2020, telemedicine visits had risen only around 6 percent compared to the first week of March 2020.²⁴⁰ This may be partly explained by the fact that

²³³ Statista, "Number of Telehealth Visits in the U.S." (accessed November 19, 2020); FAIR Health, "FH Healthcare Indicators and FH® Medical Price Index 2019," April 2019, 25. However, another survey of older adults from 2019 found that only 4 percent had used telemedicine services in the past year. Kurlander and Saini, "Virtual Visits: Telehealth and Older Adults," October 2019.

²³⁴ Kichloo et al., "Telemedicine, the Current COVID-19 Pandemic and the Future," August 18, 2020, 6; Beck, "How Telemedicine Is Transforming," June 26, 2016.

²³⁵ JAMA, "Study Assesses Performance," May 15, 2016.

²³⁶ Bestsenny et al., "Telehealth: A Quarter-Trillion-Dollar Post-COVID-19 Reality?" May 29, 2020.

²³⁷ Bestsenny et al., "Telehealth: A Quarter-Trillion-Dollar Post-COVID-19 Reality?" May 29, 2020.

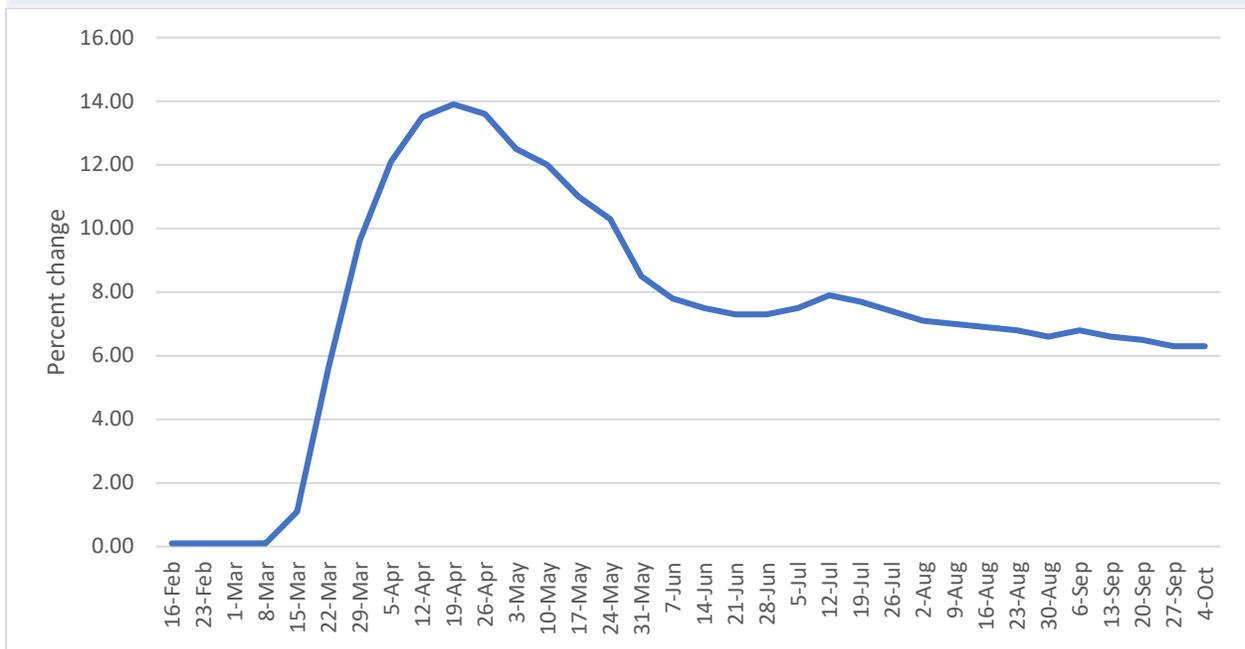
²³⁸ Wosik et al., "Telehealth transformation," May 17, 2020.

²³⁹ Koonin et al., "Trends in the Use of Telehealth," October 30, 2020.

²⁴⁰ Mehrotra et al., "The Impact of the COVID-19 Pandemic on Outpatient Care," October 15, 2020; Statista, "Number of Telehealth Visits in the U.S." (accessed November 19, 2020).

while telemedicine became a preferred option when available, overall demand for routine, non-COVID-19 related healthcare services was suppressed in the early stages of the pandemic. From March through August 2020, total visits (i.e., telemedicine and in-person visits combined) were far below the baseline from early 2020.²⁴¹ This indicates that some people were postponing or avoiding in-person visits to a healthcare provider they would have undertaken in other years. Some healthcare providers have also encouraged patients to avoid in-person appointments for routine visits or canceled elective procedures to reduce the risk of infection and preserve capacity for COVID-19 patients.²⁴² The medical specialty that has seen the largest increase in the use of telemedicine is behavioral health (including mental health and counseling), where the number of visits was up 41 percent over the baseline, compared to 14 percent or less for any other specialty.²⁴³

Figure 4.2 Percent change in the number of telemedicine visits compared to pre-COVID-19 baseline, March–October 2020



Source: Mehrotra et al., “The Impact of the COVID-19 Pandemic on Outpatient Care,” October 15, 2020.
 Note: The baseline week was March 1-7, 2020, with all other dates indexed to this baseline.
 Underlying data for this figure can be found in [appendix table B.28](#).

Several regulations on healthcare provision, often designed to ensure patient safety through close oversight, have likely slowed growth in the adoption of telemedicine in recent years.²⁴⁴ For example, several U.S. states require physicians to be licensed in the same state as the one where their patient is located, which fragments the domestic market and in some cases limits the ability of telemedicine

²⁴¹ The baseline week was March 1-7, 2020, with all other dates indexed to this baseline. Mehrotra et al., “The Impact of the COVID-19 Pandemic on Outpatient Care,” October 15, 2020.

²⁴² Pavoola, “106 Hospitals Postponing Elective Procedures,” December 8, 2020; Rubin, “COVID-19’s Crushing Effects on Medical Practices,” June 18, 2020.

²⁴³ Mehrotra et al., “The Impact of the COVID-19 Pandemic on Outpatient Care,” October 15, 2020.

²⁴⁴ Turner Lee, Karsten, and Roberts, “Removing Regulatory Barriers to Telehealth before and after COVID-19,” May 6, 2020, 11.

providers to achieve economies of scale. Other regulatory challenges include requiring providers to have a pre-existing (in-person) relationship to their patients when using telemedicine; restrictions on the use of audio-only telemedicine (i.e., phone calls as opposed to videoconferencing); and restrictions on prescribing certain medications such as opioids during a telemedicine visit.²⁴⁵ Concerns about liability also encouraged some hospitals using telemedicine services to buy additional malpractice insurance, which in turn raised the cost of providing healthcare, particularly for hospitals that outsource services abroad.²⁴⁶

However, the COVID-19 pandemic has spurred regulatory changes that address concerns about remote provision, allowing faster and wider access to healthcare. For example, regulatory waivers have been issued by several U.S. states, insurance companies, and Medicare to increase the supply of telemedicine services.²⁴⁷ One study by the Federation of State Medical Boards found that as of January 2021, 43 states and 3 U.S. territories had waived one or more of their telemedicine requirements due to COVID-19. The most common requirement waived was that a physician be licensed in the same state as the one where the patient resides.²⁴⁸

Other regulatory changes were implemented by the Center for Medicare and Medicaid Services, the U.S. regulatory agency for Medicare and Medicaid. The agency temporarily authorized more than 80 services to be reimbursable if conducted via telemedicine. In addition, it lifted restrictions on provider location, conducted risk assessments virtually, and introduced other regulatory flexibilities with the intention of making telemedicine services more accessible.²⁴⁹ Many health insurance companies also relaxed rules covering telemedicine and waived certain fees.²⁵⁰ While one industry representative is hopeful that these changes may become permanent,²⁵¹ by October 2020 a few insurance companies had begun to roll back these changes.²⁵²

Outlook

The domestic U.S. industry has seen a surge in the use of telemedicine, which could continue into the future as consumers and providers become more comfortable with its use as a result of their experiences during the COVID-19 pandemic. While the regulatory waivers granted by states are in most cases temporary, if they become permanent they would change the telemedicine delivery landscape by reducing the challenges associated with provider and patient location.²⁵³

U.S. sales of telemedicine services to foreign countries have not been affected by the COVID-19 pandemic in the same way or to the same extent. The use of RSO services was increasing before COVID-

²⁴⁵ Federation of State Medical Boards, “U.S. States and Territories Modifying Requirements for Telehealth,” September 17, 2020; industry representative, interview by USITC staff, April 8, 2019; ITIF, “Will Telehealth Still Be Available?” April 29, 2020.

²⁴⁶ Chesanow, “Do Virtual Patient Visits Increase Your Risk?” October 22, 2014.

²⁴⁷ Industry representative, interview by USITC staff, April 8, 2019.

²⁴⁸ Two states have waived some requirements but are not accepting new waiver applications. Federation of State Medical Boards, “U.S. States and Territories Modifying Requirements for Telehealth,” January 15, 2021.

²⁴⁹ Bestsenny et al., “Telehealth: A Quarter-Trillion-Dollar Post-COVID-19 Reality?” May 29, 2020.

²⁵⁰ AHIP, “Health Insurance Providers Respond to Coronavirus (COVID-19),” November 18, 2020.

²⁵¹ Industry representative, interview by USITC staff, January 8, 2021.

²⁵² Advisory Board, “Insurers are Rolling Back COVID-19 Telehealth Benefits,” October 1, 2020.

²⁵³ Industry representative, interview by USITC staff, January 8, 2021.

19 and will likely continue to increase after, as will cross-border specialty consultations via videoconference.²⁵⁴ The telemedicine model is also being adapted for use in areas such as clinical trials (including vaccine development) and medical research related to COVID-19 to minimize the amount of in-person contact needed for trial participants, as well as allowing healthcare providers and researchers to share their findings despite travel restrictions.²⁵⁵ Before the pandemic, U.S. telemedicine providers such as Teledoc were also expanding into foreign countries by acquiring or partnering with local firms, while UK-based Babylon Health began offering virtual consultations in the United States.²⁵⁶

However, regulations for telemedicine in foreign markets—which may vary at both the national and sub-national level—can be complicated for firms to navigate. This factor leads most telemedicine services to connect healthcare providers to patients in the same country.²⁵⁷ The cross-border market for the digital technology that powers telemedicine, which is not regulated in the same way as telemedicine services themselves, is likely to see more growth in the future.²⁵⁸

²⁵⁴ Industry representative, interview by USITC staff, January 8, 2021.

²⁵⁵ Industry representative, interview by USITC staff, January 8, 2021.

²⁵⁶ Wicklund, “Telehealth Providers Look to Expand Their International Presence,” September 24, 2018; Dawkins, “Britain’s Billion-dollar Babylon Health App Set to Launch,” May 5, 2020.

²⁵⁷ Ferriera and Rosales, “Deciphering International Telemedicine Regulations,” April 14, 2020; Ferriera and Rosales, “International Telemedicine: A Global Regulatory Challenge,” March 9, 2020.

²⁵⁸ Industry representative, interview by USITC staff, January 8, 2021.

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Chapter 5

Services Roundtable

The Commission regularly holds roundtables to encourage dialogue among individuals from government, industry, and academia about issues affecting services trade. On October 27, 2020, the Commission hosted its 14th annual Services Roundtable, which was also its first virtual roundtable.²⁵⁹ This roundtable focused on (1) the impact of the COVID-19 global pandemic on demand, output, modes of supply, business practices, labor, and productivity in U.S. and global services industries, and (2) the impact of establishing a presence in one or more foreign markets on U.S. services firms' operations and overall employment in the United States. Commissioner David Johanson moderated the first half of the discussion, and Commissioner Amy Karpel moderated the second.

The Impact of the COVID-19 Pandemic on Trade in Services

The first discussion was opened by Commissioner Johanson, who asked participants to note services industries that have experienced significant decreases in demand, output, and trade due to the COVID-19 pandemic.

Participants indicated that COVID-19 related travel restrictions have had a substantial impact on industries which rely on the cross-border movement of persons. One individual specifically identified the tourism and transport industries (notably the air passenger transport sector) as the most affected by COVID-19 related travel restrictions. Another participant noted that impacts on the passenger transport industry have spillover effects on goods trade, as a substantial amount of goods are transported in the cargo holds of passenger planes.

The discussion also highlighted other types of pandemic-related challenges. Several participants agreed that government closures and financial concerns due to wider COVID-19 impacts have decreased demand in their industries. One participant noted that inconsistent definitions of "essential services" pose challenges. Another participant noted that small firms have had difficulty obtaining insurance during the pandemic, effectively forcing them to suspend their operations. Further, while health and safety precautions are necessary for individuals to return to work, one participant stated that such precautions are costly.

Firms' Adaption and Transition

One industry representative noted that some firms are seeing this moment as an opportunity to adjust their business models. Adoption of alternative methods of service delivery is accelerating in certain industries, such as alternative legal service providers and telemedicine providers in the health services

²⁵⁹ The Services Roundtable is an off-the-record event. As such, its participants are not named in this summary, and no transcript is available to the general public.

industry.²⁶⁰ As one participant mentioned, several jurisdictions in the legal industry have enacted new regulations to permit nontraditional business models such as direct-to-consumer and technology-based solutions. Another individual, however, stated that the COVID-19 pandemic is hurting the entertainment industry, as even creative alternative business models cannot fully substitute for traditional service delivery.

The ability of small firms to adapt to the current economic conditions was an area of particular concern for participants in the discussion. Several participants agreed that small and medium-sized enterprises (SMEs) were hardest hit by the pandemic due to their small scale, limited access to credit, and vulnerability to demand fluctuations. The vast majority of SMEs have faced serious negative impacts due to the COVID-19 pandemic, according to a survey cited by one participant, who also noted that SMEs constitute half of U.S. private sector employment and nearly 50 percent of the U.S. GDP.

One industry representative also noted that firms have used digital tools—such as by using online marketplaces, app stores, and digital payment options—to remain competitive. Survey results of enduring small businesses found that without digital tools, one in three small-business owners would have closed part of or all their operations, according to one participant. The individual elaborated that these digital tools enabled small business owners to find new customers, given that one-quarter of U.S. SMEs gained revenue from abroad during the COVID-19 pandemic. Another participant noted that international e-commerce has provided a lifeline to businesses, enabling firms that use digital tools and global digital marketplaces to gain a larger share of international business, both before and during the pandemic.

According to one participant, the ability of firms to transition to remote work and maintain productivity mitigated many adverse effects of the pandemic. Education-related, legal, business, and financial services were mentioned as services that are readily adapted to remote work. One industry representative mentioned that small businesses may languish in the transition to online operations, if they lack digital tools and the ability to quickly adapt. Another individual noted that remote work has made it harder for workers in the customer service sector to ensure they are not facing wage discrimination and has impacted the ability of workers to collectively seek redress of shared labor concerns.

COVID-19 Impact on Preexisting Trends

Several participants identified the pandemic as an accelerant of preexisting trends and issues in services—in particular, digitalization. Participants mentioned that the use of online shopping, remote work, contactless payments, and other digital tools has increased among suppliers and consumers. Another individual noted that digitalization, along with remote work, has actually increased efficiency and productivity in the financial sector, partly because government authorities now permit electronically signed and notarized documents. However, because of the increased reliance on digital services, COVID-19 related demand shifts have stressed intellectual property rights protection and enforcement systems, according to one industry representative. Furthermore, one participant from academia mentioned that

²⁶⁰ See discussion of alternative legal service providers and telemedicine services in chapters 3 and 4 of this report, respectively.

for high-skilled services, the ability to provide services online failed to compensate for the negative impacts of travel restrictions, estimating that travel restrictions have raised costs by 12 percent.

The roundtable discussion highlighted another trend that the pandemic has accelerated: data protectionism, or policies that restrict cross-border data flows or domestic data use. Participants noted that as the pandemic increases the demand for and dependency on digital services, growing data protectionism is affecting cross-border services trade. Some mentioned that governments have increased their focus on the importance of data and national sovereignty as it relates to data flows.

Subsequent discussion centered on service sectors that experienced increased demand and new, emerging service offerings. One participant mentioned the increased demand for information and communications technology services, explaining that those services were critical to maintaining productivity and connectedness during the pandemic. Telemedicine was also identified as a sector that experienced increased demand; although extant before the pandemic, telemedicine use quickly surged in 2020 to maintain access to healthcare during COVID-19 restrictions. According to one participant, rising demand for essential medical equipment and growth in online shopping have also increased demand for the express delivery sector; according to one participant, this has been taxing the industry in the face of declining capacity in the freight sector. Overall, participants noted that long-term impacts to their industry will depend on COVID-19 developments and consequent governmental response.

The Impact of Foreign Affiliates on U.S. Services Firms and the U.S. Economy

The second topic was introduced by Commissioner Karpel, who began with a series of questions regarding the establishment and operation of foreign affiliates of U.S. services firms and their impact on the operations of parent firms and the broader U.S. economy.

The discussion immediately focused on the significance of foreign affiliates to the business models of the U.S. service firms, with several participants citing consumer preferences. Participants agreed that foreign affiliates enable U.S. firms to be closer to the consumer, with a technology industry representative noting that 95 percent of that industry's consumers are outside the United States. Another participant noted that the ability to have a presence in major capital markets and emerging markets is particularly important in providing some financial services to high-revenue client firms and multinational enterprises. According to a technology industry representative, being geographically close to the customer (or being in the customer's home market) and understanding the local language and culture is required in providing some services, even services involving internet technologies.

Barriers to Foreign Affiliate Trade

Regulatory challenges featured prominently in the discussion, particularly the requirement that firms maintain a physical presence for some products sold. According to one individual, an increasing number of countries demand local presence, which limits the potential benefits of using digital technology to provide services across the border. One industry representative noted that mandated reliance on foreign affiliates to attain local presence makes their businesses susceptible to fragmentation and other regulatory impacts, especially regulations meant to prevent adverse effects from secondary markets.

Another participant cited a study which found that liberalization of restrictions on affiliate sales in the insurance industry could increase U.S. affiliate sales, U.S. cross-border exports, and, consequently, U.S. jobs and wages.

Other services trade barriers influencing decisions about foreign operations were mentioned. One participant noted that compulsory data localization requirements, including mandatory local storage and processing of data, pose barriers to providing digital services. Another participant noted that India's new tax regime targets foreign-headquartered firms as a means to raise revenue. Participants stated that the COVID-19 pandemic and the uncertainty associated with it have exacerbated these trends, with one participant noting that forced local partnerships are becoming the new norm for foreign-headquartered firms supplying services. Another participant noted that governments' desire for increased local investment, local jobs, or tax revenue may be driving requirements for firms to engage in local joint venture or local investment.

Relationship Between Employment and Foreign Affiliates

The impact of the establishment and operation of foreign affiliates on employment in a parent firm's home market was also discussed. Participants agreed that foreign affiliate activity supported a certain amount of domestic employment. While cross-border services may generate more domestic jobs, one individual mentioned that affiliate transactions create backend employment in the United States. On the other hand, one participant noted that in other cases, foreign affiliates or contracted foreign firms substitute for domestic employment, as firms establish affiliates in markets with lower wages and weaker regulatory standards.

The benefits and challenges of employing foreign nationals in foreign markets were also discussed. One participant emphasized the need for local talent, even in the highest positions, as foreign nationals understand local regulatory environments and markets. Another individual noted that employing foreign nationals makes overall global service provision as effective as possible. Nonetheless, another participant indicated that U.S. immigration policies limiting the flow of expertise to domestic and foreign operations would hamper firms' efficiency, competitiveness, and service delivery. Nonetheless, a third participant noted that while overseas affiliates of U.S. firms in the legal services industry are hiring more local talent, some countries require employees to forfeit domestic licenses if they are affiliated with a U.S. subsidiary.

Characteristics of Domestic Operations of Global U.S. Firms

While U.S. firms and U.S. employment were the focus of the discussion, the participants also elaborated on U.S. innovation and taxes. According to several participants, most research and product development occur in the United States, and one industry representative noted that global earnings support U.S.-focused investment. For example, one participant stated that—based on global tax rules directing that the majority of taxes should be paid where value is being produced—80 percent of its company's taxes are paid to the United States, even though half of its revenue is generated outside of the United States.

The role of headquarters was also a topic of active discussion. Several agreed that U.S. headquarters support overseas operations, such as human resources offices and personnel focused on overseas operations. One participant noted that the U.S. headquarters is where the majority of their new product development takes place, and that this is complemented by their sales presence around the world. An industry representative noted that almost all major international firms in their industry are headquartered in the United States.

Finally, participants discussed the complex relationship between cross-border and affiliate transactions. One industry representative explained that cross-border and affiliate transactions are complementary in that industry, as it is often imperative for U.S. firms to align with local providers that hold local licenses to market services and to gain the necessary approvals to enable cross-border service delivery. Another participant noted challenges in considering cross-border and affiliate services transactions as substitutes for each other. As an example of these issues, the participant mentioned the UK's departure from the EU (Brexit), as non-UK firms move from reliance on "passporting"—which allowed EU firms registered outside of the UK to operate within the UK without additional authorization—to establishing foreign subsidiaries inside the UK (and vice versa). Lastly, one individual noted that the relationship may not be simply described as a complement or substitute, because a single service offering could combine cross-border trade, affiliate transactions, and the movement of persons.

Appendix A

Selected Services-related Commission Publications and Staff Research

This appendix provides summaries of and links to recent U.S. International Trade Commission publications—reports and shorter papers—that feature topics in services trade. Reports are prepared under section 332(g) of the Tariff Act of 1930 (19 U.S.C § 1332 (g)) in response to requests from the U.S. Trade Representative, the U.S. House of Representative’s Committee on Ways and Means, and/or the U.S. Senate’s Committee on Finance. The shorter papers are the results of research by the Commission’s Services Division staff, sometimes in collaboration with staff members from other divisions of the Commission. These papers include Executive Briefings on Trade, articles in the Commission’s *Journal of International Commerce and Economics*, and working papers.

The shorter papers summarized in this appendix are solely meant to represent the opinions and professional research of their authors. They are not meant to represent in any way the views of the U.S. International Trade Commission, of any of its individual Commissioners, or of the United States government.

332 Investigations

U.S. Trade and Investment with Sub-Saharan Africa: Recent Trends and New Developments

Arthur Chambers (Office of Industries, Services Division) and Wen Jin “Jean” Yuan (Office of Economics), project leaders

Investigation Number 332-571, USITC Publication Number 5043

<https://usitc.gov/sites/default/files/publications/332/pub5043.pdf>.

This report considers U.S. trade and investment in both goods and services with countries in sub-Saharan Africa, particularly focusing on South Africa, Kenya, Ghana, Rwanda, Ethiopia, and Côte d’Ivoire. In addition to a high-level overview of the services sectors that saw the strongest export growth from 2016 to 2018, this report also includes case studies that highlight the role of service sectors in sub-Saharan African countries, focusing on digital services, intellectual property protection, and financial services. Relevant case studies include:

- Case Study 5.2: Filmmaking and Creative Content in Nigeria
- Case Study 6.2: Opportunities for Digital Management of the Cocoa Supply Chain Using Blockchain
- Case Study 6.3: Index-based Crop Insurance in Kenya
- Case Study 7.1: Cloud Infrastructure as a Service (IaaS) in Sub-Saharan Africa
- Case Study 7.2: Financial Technology in Sub-Saharan Africa
- Case Study 7.3: E-commerce in Sub-Saharan Africa
- Case Study 7.4: Video Streaming Services in Sub-Saharan Africa
- Case Study 7.5: Internet of Things Devices (including Drone Delivery and Smart Cities) in Sub-Saharan Africa

Additionally, appendix H explores the role of internet connectivity in U.S. trade with sub-Saharan Africa and barriers to internet access.

Working Papers

“Can Trade Barriers Explain Productivity Differences between Foreign and Domestic Services Firms?”

Saad Ahmad (Office of Economics, Research Division), Sarah Oliver (Office of Industries, Services Division), and Caroline Peters (Office of Economics, Country and Regional Analysis Division), May 2020

https://usitc.gov/sites/default/files/publications/332/working_papers/trade_barriers_productivity_differences_services_2020-05-b.pdf.

Modern trade theory posits that foreign affiliates of multinational services firms (foreign firms) in a given national market are more productive than their domestically owned counterparts. By combining a rich firm-level dataset with measures of trade barriers in services sectors at the country and sector levels, this article examines if productivity differences between domestic and foreign services firms are related to the regulatory barriers foreign firms face in entering the domestic market. Overall, at both the firm and sector levels, the article finds a significant and positive relationship between services trade barriers and observed differences in productivity between domestic and foreign firms. The article’s findings support the view that only the most productive foreign firms are able to incur the significant costs associated with regulatory barriers to serving the domestic markets through their foreign affiliates.

“Drone Services in Construction”

Jennifer Powell (Office of Industries, Services Division), January 2021

https://usitc.gov/sites/default/files/publications/332/working_papers/wp_id_21_073_drone_services_in_construction_final-compliant.pdf.

The use of unmanned aerial vehicles, or drones, has grown briskly in recent years. This paper presents evidence of the growth in drone use in the construction industry, outlines the uses of drones in that industry (including the benefits and risks associated with drone use), examines factors affecting the provision of drone services, lists major U.S. and foreign providers of drone services, and concludes with a brief discussion of prospects for growth and increased U.S. competitiveness in the global drone services industry.

Appendix B

Data Tables for Figures

Table B.1 Real value added, by U.S. industry, 2015–19 (billion dollars)Corresponds to [figure 1.1](#).

Type of industries	2015	2016	2017	2018	2019
Private goods-producing industries	3,327.0	3,332.7	3,409.8	3,544.5	3,622.3
Private services-supplying industries	11,905.5	12,172.9	12,486.1	12,866.5	13,176.7

Source: USDOC, BEA, “Real Value Added by Industry,” September 30, 2020.

Notes: Estimates are chained 2012 dollars.

Private goods-producing industries include agriculture, forestry, fishing, and hunting; mining; construction; and manufacturing industries. Private services-supplying industries include utilities; wholesale trade; retail trade; transportation and warehousing; information; finance, insurance, real estate, rental, and leasing; professional and business services; educational services, health care, and social assistance; arts, entertainment, recreation, accommodation, and food services; and other services, except government.

Table B.2 Global services: Cross-border exports and imports of commercial services, 2019Corresponds to [figure 1.2](#).

Country	Exports (billion \$)	Share of exports (%)	Imports (billion \$)	Share of imports (%)
United States	853.3	14.1	564.3	9.8
United Kingdom	411.8	6.8	279.2	4.9
Germany	335.2	5.5	363.0	6.3
France	287.1	4.7	262.8	4.6
China	281.7	4.6	497.0	8.7
Netherlands	262.1	4.3	246.1	4.3
Ireland	238.6	3.9	321.1	5.6
India	213.7	3.5	178.1	3.1
Singapore	204.5	3.4	198.8	3.5
Japan	200.5	3.3	201.7	3.5
All other	2,777.1	45.8	2,618.6	45.7
Total	6,065.6	100.0	5,730.6	100.0

Source: WTO, Statistics Database, Times Series on International Trade, “Trade in Commercial Services” (accessed September 30, 2020).

Note: Due to rounding, figures may not add up to 100 percent.

Table B.3 U.S. services: Cross-border exports/imports and affiliate sales/purchases, 2011–19 (billion dollars)Corresponds to [figures 1.3](#) and [1.4](#).

Year	U.S. cross-border exports of private services	U.S. cross-border imports of private services	Services supplied by U.S. firms' foreign affiliates	Services supplied by U.S. affiliates of foreign firms
2014	737.0	466.7	1,534.8	940.4
2015	748.3	476.2	1,462.8	957.8
2016	761.8	490.4	1,477.0	999.4
2017	810.5	522.8	1,549.9	1,123.8
2018	840.5	539.1	1,704.3	1,175.4
2019	853.3	564.3	n.a.	n.a.

Source: USDOC, BEA, table 2.1, “U.S. Trade in Services, by Type of Service,” June 30, 2020; table 4.1, “Services Supplied to Foreign Persons by U.S. MNEs through Their MOFAs, by Industry of Affiliate and by Country of Affiliate,” October 20, 2020; table 5.1, “Services Supplied to U.S. Persons by Foreign MNEs through Their MOUSAs, by Industry of Affiliate and by Country of UBO,” Interactive tables: International Data, International Services, October 20, 2020. MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner.

Notes: Due to rounding, figures may not add up to 100 percent. n.a. = data not available.

Table B.4 U.S. services: Cross-border exports and imports, by industry, 2019Corresponds to [figure 1.5](#).

Type of services	Exports (billion \$)	Share of exports (%)	Imports (billion \$)	Share of imports (%)
Distribution services	53.0	6.2	62.2	11.0
Electronic services	98.3	11.5	57.8	10.2
Financial services	151.9	17.8	91.9	16.3
Travel services	233.5	27.4	182.4	32.3
Education-related services	44.0	5.2	11.7	2.1
Health-related services	1.2	0.1	0.7	0.1
Other travel services	188.2	22.1	170.0	30.1
Charges for the use of franchise and trademarks	27.0	3.2	4.6	0.8
Professional services	247.1	29.0	131.0	23.2
Other services	42.6	5.0	34.3	6.1
Total value	853.3	100.0	564.3	100.0

Source: USDOC, BEA, table 2.1, "U.S. Trade in Services, by Type of Service," June 30, 2020.

Note: Due to rounding, figures may not add up to 100 percent.

Table B.5 U.S. services: Cross-border exports, by country, 2019Corresponds to [figure 1.6](#).

Country	Exports (billion \$)	Share of exports (%)
United Kingdom (UK)	78.3	9.2
Canada	67.3	7.9
Ireland	57.5	6.7
China	56.0	6.6
Japan	50.1	5.9
Switzerland	46.8	5.5
UK Islands (Caribbean)	39.8	4.7
Germany	36.6	4.3
Mexico	32.5	3.8
Brazil	24.4	2.9
India	24.0	2.8
All other	340.1	39.9
Total value	853.3	100.0

Source: USDOC, BEA, table 2.2, "U.S. Trade in Services, by Type of Service and by Country or Affiliation," July 10, 2020.

Notes: The BEA category "UK Islands (Caribbean)" includes the following overseas territories of the United Kingdom: British Virgin Islands, Cayman Islands, Montserrat, and the Turks and Caicos Islands. Due to rounding, figures may not add up to 100 percent.

Table B.6 U.S. services: Cross-border imports, by country, 2019Corresponds to [figure 1.6](#).

Country	Imports (billion \$)	Share of imports (%)
United Kingdom	61.6	10.9
Canada	38.2	6.8
Germany	34.9	6.2
Japan	31.1	5.5
India	29.7	5.3
Mexico	29.7	5.3
Bermuda	28.4	5.0
Switzerland	24.9	4.4
Ireland	23.2	4.1
France	20.2	3.6
China	20.1	3.6
All other	222.3	39.4
Total value	564.3	100.0

Source: USDOC, BEA, table 2.2, "U.S. Trade in Services, by Type of Service and by Country or Affiliation," July 10, 2020.

Table B.7 U.S. services: Affiliate sales and purchases by industry, 2018Corresponds to [figure 1.7](#).

Type of industry	Services supplied by foreign affiliates of U.S. firms (billion \$)	Share of total affiliate sales (%)	Services purchased from U.S. affiliates of foreign firms (billion \$)	Share of total affiliate purchases (%)
Manufacturing	35.3	2.1	92.8	7.9
Mining	39.1	2.3	42.6	3.6
Distribution services	475.1	27.9	361.5	30.8
Electronic services	411.4	24.1	188.6	16.0
Financial services	322.7	18.9	204.1	17.4
Professional services	255.5	15.0	175.3	14.9
Other	165.1	9.7	110.6	9.4
Total value	1,704.3	100.0	1,175.4	100.0

Source: USDOC, BEA, 4.1, "Services Supplied to Foreign Persons by U.S. Multi National Enterprises through Their Majority Owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate," October 20, 2020; 5.1, "Services Supplied to U.S. Persons by Foreign Multi National Enterprises through Their Majority Owned U.S. Affiliates, by Industry of Affiliate and by Country of Ultimate Beneficial Owner," October 20, 2020. MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner.

Notes: Due to rounding, figures may not add up to 100 percent.

"Manufacturing" includes ancillary services provided by goods manufacturers. "Other" includes ancillary services provided in agriculture and other sectors, as well as suppressed data.

Beginning in the 2018 *Recent Trends in U.S. Services Trade* report, software publishing was reallocated from "Other services" to "Electronic services" to better reflect the industry composition. Therefore, electronic services data in this report and the 2018 report cannot be directly compared with such data in USITC reports published before 2018.

Table B.8 Professional services: Cross-border exports, by country, 2019Corresponds to [figure 2.1](#).

Country	Exports (billion \$)	Share of exports (%)
Ireland	34.9	11.9
Switzerland	32.6	11.2
China	23.9	8.2
United Kingdom	20.5	7.0
Canada	17.6	6.0
Singapore	16.4	5.6
Germany	14.0	4.8
Japan	13.1	4.5
India	10.4	3.6
Netherlands	9.9	3.4
All other	99.0	33.9
Total value	292.3	100.0

Source: USDOC, BEA, table 2.2, "U.S. Trade in Services, by Type of Service and by Country or Affiliation," July 10, 2020.

Notes: "Professional services" include travel for the purposes of education and healthcare. Due to rounding, figures may not add up to 100 percent.

Table B.9 Professional services: Cross-border imports, by country, 2019Corresponds to [figure 2.1](#).

Country	Imports (billion \$)	Share of imports (%)
United Kingdom	19.2	13.4
Japan	13.1	9.1
Germany	9.5	6.6
Ireland	9.4	6.6
Canada	9.3	6.5
India	8.2	5.7
China	7.3	5.1
Netherlands	6.7	4.7
Switzerland	6.4	4.5
Singapore	5.1	3.6
All other	49.3	34.4
Total value	143.4	100.0

Source: USDOC, BEA, table 2.2, "U.S. Trade in Services, by Type of Service and by Country or Affiliation," July 10, 2020.

Notes: "Professional services" include travel for the purposes of education and healthcare. Due to rounding, figures may not add up to 100 percent.

Table B.10 Professional services and related travel services: U.S. cross-border exports and imports, by sector, 2019 (billion dollars)Corresponds to [figure 2.2](#) and [2.3](#).

Service industry	Exports	Imports
Professional services	247.1	131.0
Research and development services	97.4	57.8
Management consulting services	67.0	39.8
Maintenance and repair services n.i.e.	27.9	7.8
Advertising and related services	22.1	6.3
Legal services	13.4	4.5
Architecture and engineering services	12.7	7.4
Accounting, auditing, and related services	2.6	5.0
Education services	2.3	1.7
Health and other professional services	1.8	0.7
Travel services related to professional services	45.2	12.4
Education-related travel services	44.0	11.7
Health-related travel services	1.2	0.7
Total	292.3	143.4

Source: USDOC, BEA, table 2.1, "U.S. Trade in Services, by Type of Service," June 30, 2020.

Notes: Data exclude public-sector transactions. Due to rounding, figures may not add up to 100 percent. N.i.e. = not included elsewhere.

"Research and development services" include licenses for outcomes of research and development.

"Management consulting services" include business consulting and public relations services.

"Accounting, auditing, and related services" include bookkeeping and tax consulting services.

Table B.11 Professional services: Affiliate sales and purchases by industry, 2018Corresponds to [figure 2.4](#).

Service industry	Services supplied by foreign affiliates of U.S. firms (billion \$)	Share of total affiliate sales (%)	Services purchased from U.S. affiliates of foreign firms (billion \$)	Share of total affiliate purchases (%)
Scientific research and development services	20.6	8.1	2.8	1.6
Management consulting services	d.s.	d.s.	26.4	15.1
Advertising and related services	17.3	6.8	38.9	22.2
Legal services	7.6	3.0	0.1	0.1
Architecture and engineering services	32.2	12.6	16.9	9.7
Accounting and related services	14.8	5.8	0.4	0.2
Education services	7.2	2.8	2.6	1.5
Healthcare and social assistance	6.6	2.6	18.7	10.7
Administration, support, and waste management	79.0	30.9	54.8	31.2
Other	70.4	27.5	13.6	7.7
Total value	255.5	100.0	175.3	100.0

Source: USDOC, BEA, 4.1, "Services Supplied to Foreign Persons by U.S. Multi National Enterprises through Their Majority Owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate," October 20, 2020; 5.1, "Services Supplied to U.S. Persons by Foreign Multi National Enterprises through Their Majority Owned U.S. Affiliates, by Industry of Affiliate and by Country of Ultimate Beneficial Owner," October 20, 2020. MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner.

Notes: d.s. = data suppressed to avoid disclosing data of individual companies. "Manufacturing" includes ancillary services provided by goods manufacturers. "Other" includes other professional, scientific, and technical services such as specialized design services as well as suppressed data. "Accounting and related services" include tax preparation, bookkeeping, and payroll services.

Due to rounding, figures may not add up to 100 percent.

Table B.12 Management consulting services: U.S. cross-border exports and imports, 2015–19Corresponds to [figure 2.5](#).

Trade flow	2015 (million \$)	2016 (million \$)	2017 (million \$)	2018 (million \$)	2019 (million \$)	AAGR	Change 2018–19 (%)
						2015–18 (%)	
Exports	43,636	50,065	54,100	59,734	66,997	11.1	12.2
Imports	31,224	32,449	33,805	38,743	39,843	7.6	2.8
Trade balance	12,412	17,616	20,295	20,991	27,154	20.2	29.4

Source: USDOC, BEA, table 2.2, “U.S. Trade in Services, by Type of Service and by Country or Affiliation,” July 10, 2020.

Note: “Management consulting services” includes business consulting and public relations services. AAGR = average annual growth rate.

Table B.13 Management consulting services: Affiliate sales and purchases, 2014–18 (million dollars)Corresponds to [figure 2.6](#).

Year	Services supplied by foreign affiliates of U.S. firms	Services purchased from U.S. affiliates of foreign firms
2014	d.s.	16,364
2015	d.s.	18,654
2016	d.s.	20,629
2017	d.s.	18,957
2018	d.s.	26,421

Source: USDOC, BEA, 4.1, “Services Supplied to Foreign Persons by U.S. Multi National Enterprises through Their Majority Owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate,” October 20, 2020; 5.1, “Services Supplied to U.S. Persons by Foreign Multi National Enterprises through Their Majority Owned U.S. Affiliates, by Industry of Affiliate and by Country of Ultimate Beneficial Owner,” October 19, 2018. MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner.

Notes: d.s. = data suppressed to avoid disclosing data of individual companies.

Table B.14 Legal services: U.S. cross-border exports and imports, 2015–19Corresponds to [figure 2.7](#).

Trade flow	2015 (million \$)	2016 (million \$)	2017 (million \$)	2018 (million \$)	2019 (million \$)	AAGR	Change 2018–19 (%)
						2015–18 (%)	
Exports	9,658	10,122	11,301	11,726	13,353	6.7	13.9
Imports	2,418	2,921	3,584	3,969	4,511	18.1	13.7
Trade balance	7,240	7,201	7,717	7,757	8,842	2.4	14.0

Source: USDOC, BEA, table 2.2, “U.S. Trade in Services, by Type of Service and by Country or Affiliation,” July 10, 2020.

Note: AAGR = average annual growth rate.

Table B.15 Legal services: Affiliate sales and purchases, 2014–18 (million \$)Corresponds to [figure 2.8](#).

Year	Services supplied by foreign affiliates of U.S. firms	Services purchased from U.S. affiliates of foreign firms
2014	7,161	116
2015	6,765	115
2016	6,790	d.s.
2017	7,334	73
2018	7,551	141

Source: USDOC, BEA, 4.1, “Services Supplied to Foreign Persons by U.S. Multi National Enterprises through Their Majority Owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate,” October 20, 2020; 5.1, “Services Supplied to U.S. Persons by Foreign Multi National Enterprises through Their Majority Owned U.S. Affiliates, by Industry of Affiliate and by Country of Ultimate Beneficial Owner,” October 19, 2018. MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner.

Notes: D.s. = data suppressed to avoid disclosing data of individual companies.

Table B.16 Architecture and engineering services: U.S. cross-border exports and imports, 2015–19Corresponds to [figure 2.9](#).

Trade flow	2015 (million \$)	2016 (million \$)	2017 (million \$)	2018 (million \$)	2019 (million \$)	AAGR (%) 2015–18	Change (%) 2018–19
Exports	14,067	12,792	14,647	14,519	12,671	1.5	-12.7
Imports	4,700	4,591	5,874	5,634	7,397	7.2	31.3
Trade balance	9,367	8,201	8,773	8,885	5,274	-1.4	-40.6

Source: USDOC, BEA, table 2.2, “U.S. Trade in Services, by Type of Service and by Country or Affiliation,” July 10, 2020.

Note: AAGR = average annual growth rate.

Table B.17 Architecture and engineering services: Affiliate sales and purchases, 2014–18 (million dollars)Corresponds to [figure 2.10](#).

Year	Services supplied by foreign affiliates of U.S. firms	Services purchased from U.S. affiliates of foreign firms
2014	34,759	15,422
2015	31,663	15,827
2016	28,888	16,185
2017	29,507	17,249
2018	32,198	16,932

Source: USDOC, BEA, 4.1, “Services Supplied to Foreign Persons by U.S. Multi National Enterprises through Their Majority Owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate,” October 20, 2020; 5.1, “Services Supplied to U.S. Persons by Foreign Multi National Enterprises through Their Majority Owned U.S. Affiliates, by Industry of Affiliate and by Country of Ultimate Beneficial Owner,” October 19, 2018. MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner.

Table B.18 Education and education-related travel services: U.S. cross-border exports and imports, 2015–19Corresponds to [figure 2.11](#).

Trade flow	2015 (million \$)	2016 (million \$)	2017 (million \$)	2018 (million \$)	2019 (million \$)	AAGR 2015–18 (%)	Change 2018–19 (%)
Education services							
Exports	2,511	2,627	2,444	1,972	2,269	-7.2	15.1
Imports	1,342	1,463	1,731	d.s.	1,680	d.s.	d.s.
Trade balance	1,169	1,164	713	d.s.	589	d.s.	d.s.
Education-related travel services							
Exports	35,284	40,135	42,191	42,603	44,046	6.6	3.4
Imports	8,796	9,637	10,817	11,419	11,654	9.1	2.1
Trade balance	26,488	30,498	31,374	31,184	32,392	5.8	3.9

Source: USDOC, BEA, table 2.2, “U.S. Trade in Services, by Type of Service and by Country or Affiliation,” July 10, 2020.

Notes: AAGR = compound annual growth rate; d.s. = data suppressed to avoid disclosing data of individual companies.

Table B.19 Education services: Affiliate sales and purchases, 2014–18 (million dollars)Corresponds to [figure 2.12](#).

Year	Services supplied by foreign affiliates of U.S. firms	Services purchased from U.S. affiliates of foreign firms
2014	6,823	1,579
2015	6,807	2,416
2016	6,806	2,035
2017	7,879	2,228
2018	7,167	2,591

Source: USDOC, BEA, 4.1, “Services Supplied to Foreign Persons by U.S. Multi National Enterprises through Their Majority Owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate,” October 20, 2020; 5.1, “Services Supplied to U.S. Persons by Foreign Multi National Enterprises through Their Majority Owned U.S. Affiliates, by Industry of Affiliate and by Country of Ultimate Beneficial Owner,” October 19, 2018. MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner.

Table B.20 Health and health-related travel services: U.S. cross-border exports and imports, 2015–19Corresponds to [figure 2.13](#).

Trade flow	2015	2016	2017	2018	2019	AAGR	Change
	(million \$)	2015–18 (%)	2018–19 (%)				
Health services							
Exports	1,005	d.s.	d.s.	d.s.	d.s.	d.s.	d.s.
Imports	135	183	146	168	d.s.	10.1	d.s.
Trade balance	870	d.s.	d.s.	d.s.	d.s.	d.s.	d.s.
Health-related travel services							
Exports	980	1,030	1,098	1,132	1,180	4.9	4.2
Imports	526	584	639	677	717	8.8	5.9
Trade balance	454	446	459	455	463	0.1	1.8

Source: USDOC, BEA, table 2.2, “U.S. Trade in Services, by Type of Service and by Country or Affiliation,” July 10, 2020.

Notes: AAGR = compound annual growth rate; d.s. = data suppressed to avoid disclosing data of individual companies.

Table B.21 Health care and social assistance: Affiliate sales and purchases, 2014–18 (million dollars)Corresponds to [figure 2.14](#).

Year	Services supplied by foreign affiliates of U.S. firms	Services purchased from U.S. affiliates of foreign firms
2014	6,414	13,094
2015	6,827	14,100
2016	6,738	14,652
2017	6,096	17,427
2018	6,617	18,727

Source: USDOC, BEA, 4.1, “Services Supplied to Foreign Persons by U.S. Multi National Enterprises through Their Majority Owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate,” October 20, 2020; 5.1, “Services Supplied to U.S. Persons by Foreign Multi National Enterprises through Their Majority Owned U.S. Affiliates, by Industry of Affiliate and by Country of Ultimate Beneficial Owner,” October 19, 2018. MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner.

Table B.22 Research and development services: U.S. cross-border exports and imports, 2015–19Corresponds to [figure 2.15](#).

AAGR = average annual growth rate.

Trade flow	2015 (million \$)	2016 (million \$)	2017 (million \$)	2018 (million \$)	2019 (million \$)	AAGR	Change 2018–19 (%)
						2015–18 (%)	
Exports	84,847	90,926	97,145	96,245	97,425	4.4	1.2
Imports	56,412	61,268	65,682	59,871	57,793	2.3	-3.5
Trade balance	28,435	29,658	31,463	36,374	39,632	8.7	9.0

Source: USDOC, BEA, table 2.2, “U.S. Trade in Services, by Type of Service and by Country or Affiliation,” July 10, 2020.

Note: Research and development services include licenses for outcomes of research and development.

Table B.23 Research and development services: Detailed U.S. cross-border exports and imports, 2019Corresponds to [figure 2.16](#).

Services Category	Detail	Exports (million \$)	Share of exports (%)	Imports (million \$)	Share of imports (%)
Charges for the use of intellectual property n.i.e.	Licenses for the use of outcomes of research and development	47,811	49.1	24,021	41.6
Work undertaken on a systematic basis to increase the stock of knowledge	Provision of customized and non-customized research and development services	16,726	17.2	12,719	22.0
	Sale of proprietary rights arising from research and development	529	0.5	64	0.1
Other R&D Services	Other research and development services	32,359	33.2	20,989	36.3

Source: USDOC, BEA, table 2.1, “U.S. Trade in Services, by Type of Service,” June 30, 2020.

Note: Licenses for the use of outcomes of research and development includes patents, industrial processes, and trade secrets.

Table B.24 Scientific research and development services: Affiliate sales and purchases, 2014–18 (million dollars)Corresponds to [figure 2.17](#).

Year	Services supplied by foreign affiliates of U.S. firms	Services purchased from U.S. affiliates of foreign firms
2014	13,416	1,445
2015	18,845	1,428
2016	16,466	1,329
2017	18,369	1,849
2018	20,561	2,791

Source: USDOC, BEA, 4.1, “Services Supplied to Foreign Persons by U.S. Multi National Enterprises through Their Majority Owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate,” October 20, 2020; 5.1, “Services Supplied to U.S. Persons by Foreign Multi National Enterprises through Their Majority Owned U.S. Affiliates, by Industry of Affiliate and by Country of Ultimate Beneficial Owner,” October 19, 2018. MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner.

Table B.25 Business R&D investment in the top five countries, by industry, 2017 (billion dollars)Corresponds to [figure 2.18](#).

Country	Manufacturing	Services	Other	Total
United States	249.9	132.6	6.2	388.7
China	282.9	0.0	50.0	332.9
Japan	115.8	15.7	1.8	133.3
Germany	73.5	12.4	0.6	86.5
South Korea	62.6	5.8	1.5	70.0

Source: OECD, "Business Enterprise R&D Expenditure by Industry," 2017.

Note: China does not report R&D spending in services sectors separately. This spending is contained in the "Other" category.

Table B.26 U.S. management consulting: Revenue shares by segment, 2019 (percent)Corresponds to [figure 3.1](#).

Segment	Share
Corporate strategy	35.9
Marketing and sales	24.0
Organizational design	12.4
Financial advisory	7.8
Human resources advisory	6.8
Other	13.1

Source: Kennedy, "Management Consulting in the United States," October 2020, 8.

Table B.27 Architecture Billings Index, January–September 2020 (percentage)Corresponds to [figure 4.1](#).

Index component	January	February	March	April	May	June	July	August	September
Billings	52.2	53.4	33.3	29.5	32	40	40	40	47
Design contracts	56	52	27.1	27.6	33.1	44	41.7	46	48.9

Source: AIA, "Architecture Billings Index" (accessed October 21, 2020); AIA, "Architecture Billings Continue Growth into 2020," February 19, 2020.

Note: This index is based on a monthly survey of U.S. architectural firms. It reflects the share of respondents that report growth in nonresidential construction billings.

Table B.28 Percentage change in the number of telemedicine visits compared pre-COVID-19 baseline, February–October 2020Corresponds to [figure 4.2](#).

Date	Telemedicine visits
February 16	0.1
February 23	0.1
March 1	0.1
March 8	0.1
March 15	1.1
March 22	5.6
March 29	9.6
April 5	12.1
April 12	13.5
April 19	13.9
April 26	13.6
May 3	12.5
May 10	12
May 17	11
May 24	10.3
May 31	8.5
June 14	7.5
June 21	7.3
June 28	7.3
July 5	7.5
July 12	7.9
July 19	7.7
July 26	7.4
August 2	7.1
August 9	7
August 16	6.9
August 23	6.8
August 30	6.6
September 6	6.8
September 13	6.6
September 20	6.5
September 27	6.3
October 4	6.3

Source: Mehrotra et al., "The Impact of the COVID-19 Pandemic on Outpatient Care," October 15, 2020.

