United States
International Trade Commission

Recent Trends in U.S. Services Trade:

2020 Annual Report

July 2020
Publication Number: 5094
Investigation Number: 332-345

United States International Trade Commission

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Preface

This report is the 24th in a series of annual reports on recent trends in U.S. services trade that the U.S. International Trade Commission (Commission or USITC) has published. 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 presents expert analysis of trade in services industries. It draws on fieldwork 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)), the USITC instituted investigation no. 332-345, *Annual Reports on U.S. Trade Shifts in Selected Industries*. On December 20, 1994, the USITC on its own motion expanded the scope of this report to include more detailed coverage of services industries. Under the expanded scope, the USITC publishes two annual reports, *Shifts in U.S. Services 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 2019 report focused on distribution services. The previous report covering financial services was published in 2016.

Abbreviations and Acronyms

Terms	Definitions
AD/CV	antidumping and countervailing duty
ATM	automated teller machine
BEA	Bureau of Economic Analysis (USDOC)
CAGR	compound annual growth rate
COVID-19	coronavirus disease 2019
EU	European Union
FINRA	Financial Industry Regulatory Authority
fintech	financial technology
FSP	financial service provider
FTEs	full-time equivalent (employees)
GATS	General Agreement on Trade in Services
GDP	gross domestic product
ICBC	Industrial and Commercial Bank of China
IMF	International Monetary Fund
insurtech	insurance technology (company)
IFC	International Finance Corporation
LIBOR	London Interbank Offered Rate
LiDAR	light detection and ranging
M&As	mergers and acquisitions
MNE	multinational enterprise
MOFA	majority-owned foreign affiliate
MOUSA	majority-owned U.S. affiliate
n.i.e.	not included elsewhere
NTM	nontariff measure
OECD	Organisation for Economic Co-operation and Development
P&C	property and casualty
STRI	Services Trade Restrictiveness Index
STEM	science, technology, engineering, and mathematics
SoFi	Social Finance, Inc.
SWIFT	Society for Worldwide Interbank Financial Telecommunication
UBO	ultimate beneficial owner
UK	United Kingdom
UK ONS	United Kingdom Office for National Statistics
UN	United Nations
USDOC	U.S. Department of Commerce
USITC	U.S. International Trade Commission
WTO	World Trade Organization

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Executive Summary

The United States remained the world's largest services exporter and importer in 2018. U.S. cross-border services exports totaled $827.0 billion in 2018, or 14 percent of global services exports, while imports were $567.3 billion (10 percent). Given the inherently local nature of many services—they often require local in-person delivery and/or provision by locally regulated entities—U.S. trade in services through foreign affiliate sales 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 $1.558 trillion in 2017 (the latest year available), while purchases from the U.S. affiliates of foreign-owned services firms (referred to affiliate purchases) totaled $1.1 trillion.

This report begins with an overview of services trade in all sectors. Its primary focus, however, is developments in U.S. trade in financial services, which are detailed in three chapters that describe trends in banking, insurance, and securities services.

Report Highlights

The United States Ran a Surplus in Cross-border Services Trade, and Affiliate Sales Exceeded Affiliate Purchases by a Wide Margin

In 2018, U.S. cross-border services exports exceed imports, resulting in a trade surplus of $259.7 billion; cross-border trade surpluses were recorded in most major services sectors, with the largest surpluses in travel services, professional services, and financial services. In that same year, the largest U.S. cross-border trading partner in services—in terms of both imports and exports—was the United Kingdom (UK). After the UK, the top export destinations were Canada, China, Japan, and Ireland, and the top import sources were Canada, Japan, Germany, and India.

In 2017, the most recent year which such data are 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 $475.8 billion. The UK was the largest market for U.S.-owned foreign affiliates, followed by Ireland, Canada, Singapore, and Switzerland. 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 the UK, Germany, Canada, and France.

Financial Services Accounted for 16 Percent of U.S. Cross-border Services Exports in 2018 and 20 Percent of U.S. Foreign Affiliate Sales in 2017

Financial services represent a significant share of U.S. cross-border trade. In 2018, U.S. financial services exports totaled $129.5 billion (16 percent of total U.S. cross-border service exports), whereas imports totaled $73.8 billion (14 percent of total imports), resulting in a cross-border trade surplus of $55.7 billion. Banking services accounted for 61.1 percent of total U.S. financial services exports in 2018, followed by securities services (25.4 percent) and insurance services (13.5 percent). Top markets for U.S. cross-border financial services exports included the UK, Canada, and Japan; top import markets were Bermuda, the UK, and Switzerland.

In most years, affiliate transactions account for the vast majority of U.S. trade in financial services. In 2017, the foreign affiliates of U.S. companies supplied $308.7 billion in financial services sales or 20 percent of total foreign affiliate sales, the second-largest category after distribution services. Within the broader category of financial services, finance (except depository institutions) accounted for the largest share of such sales (47 percent), followed by insurance (20 percent), rental and leasing services (19 percent), and depository credit intermediation (14 percent).

Financial services purchased from the U.S.-based affiliates of foreign firms totaled $190.1 billion, or 19 percent of total affiliate purchases of services in 2017. Insurance services represented the largest share of affiliate purchases of financial services (38 percent), followed by finance (31 percent), depository credit intermediation (25 percent), and rental and leasing services (5 percent).

Domestic transactions (and net exports) of financial services contributed $1.4 trillion to U.S. private-sector gross domestic product (GDP) in 2018, representing 8.4 percent of GDP. It also accounted for 5.7 percent of total private sector employment in 2018, or 6.7 million full-time equivalent (FTE) employees.

The Banking Sector Faces Increased Competition from Both Big Tech and Fintech

Over the past few years, the traditional banking industry has faced growing competition from both financial technology (or fintech) startups and more established “big tech” firms. Fintech firms are often companies that use mobile phone applications to offer select financial services, including person-to-person payments, stock trading, and loans. In the United States, popular fintech companies include Venmo, Strip, and SoFi. Big tech refers to more traditional technology companies like Apple, Facebook, and Google. Although big tech’s entry into the banking sector has been limited to payment services like Apple Pay and Google Pay, the emergence of such services is seen as a threat to traditional banks due to the sheer size of many big tech firms’ customer bases. For example, the Google Pay service currently has 67 million users, with potential users totaling 2.5 billion (i.e. the number of Android phone owners worldwide).

Insurance Companies Develop New Lines of Insurance to Address Growing Cyber Risks and Catastrophe Risks

Over the past few years, insurance companies have developed new lines of insurance that address emerging cyber risks, such as corporate data breaches, as well as long-standing risks associated with increasingly frequent (and costly) natural disasters. In the past, insurance against data breaches and natural disasters was included in standard liability or property and casualty policies. However, the increasing incidence of insurable events in these two categories, along with the growing size of actual and anticipated payouts, has led insurance companies to carve these risks out into separate policies.

Cyber liability insurance is designed to cover financial losses that result from data breaches and other cyber events. In the United States, discrete cyber liability insurance is now offered by several large insurers, including Chubb, Nationwide, and Travelers.

Specialized catastrophe insurance policies cover larger amounts of commercial and personal risk, mostly related to natural disasters. The most common forms of discrete catastrophe insurance are flood insurance and, to a lesser extent, hurricane insurance, although more exotic forms of insurance are starting to emerge, most notably earthquake insurance.

Following Regulatory Liberalization, Foreign Securities Firms Are Moving into China

China has recently taken regulatory actions aimed at widening access to foreign securities services companies, though it remains to be seen if these actions will result in sustained market access. For example, foreign companies can now hold 51 percent of equity capital in securities, futures, and mutual fund management firms, with the threshold expected to increase to 100 percent in 2020. In addition, China announced foreign firms are also allowed to be lead underwriters for bond offerings and can have controlling stakes in wealth management firms, pension fund managers, and inter-dealer brokers. Moreover, in 2017 China started allowing foreign credit-rating firms to operate in the country, and according to statements by the central bank, foreign firms will soon be allowed to rate a wider variety of bond issues and other debt instruments. In addition, China announced foreign firms no longer need to obtain prior approval to conduct business in renminbi.

Historically, foreign firms have had limited access to China's securities industry. Recent regulatory actions may have eased some restrictions for U.S. firms in the Chinese market. JP Morgan, for example, received regulatory approval to participate in a local securities joint venture; as of 2019, similar applications were pending for Goldman Sachs and Morgan Stanley. S&P Global Ratings is now offering credit rating services in China, while Moody's and Fitch Ratings have also established wholly owned subsidiaries in China that work in the domestic bond market, and Fitch has applied for a rating license as well.

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 2018, the U.S. services sector accounted for 78.8 percent of U.S. gross domestic product (GDP) and 81.9 percent of total U.S. employment.[2] In that same year, U.S. services exports totaled $827.0 billion, whereas imports totaled $567.3 billion, resulting in a $259.7 billion trade surplus.[3]

The *Recent Trends in U.S. Services Trade* 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 both in the aggregate and in selected industries. This year, *Recent Trends* focuses on a particular category of services—financial services—which was last covered in the 2016 *Recent Trends* report. Since 2013, each year's *Recent Trends* has focused on a particular category of services rather than on all services in the economy. Other categories of services, covered in a four-year rotation, include professional services (2017), electronic services (2018), and distribution services (2019).

The report is organized into six chapters. This 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 sector. A "Special Topic" section also reviews recent efforts to estimate trade in services by mode of supply, as defined in the General Agreement on Trade in Services (GATS) under the World Trade Organization (WTO). In the past year, the WTO, the Bureau of Economic Analysis (BEA) at the U.S. Department of Commerce (USDOC), and the United Kingdom Office for National Statistics (UK ONS) have all published estimates of cross-border trade in services by mode of supply. The WTO estimates are based on older methodologies that rely on its analysts' industry knowledge to determine the primary mode of supply. By contrast, both the BEA and the UK ONS data releases represent a coordinated step forward in data collection by mode of supply, as both statistical offices develop survey questions to ask firms directly about how they provide services to foreign countries.

Chapter 2 gives an overview of financial services and identifies key themes affecting the industry as a whole. It also provides sector-level data on U.S. trade in financial services, as well as the sectors' contribution to U.S. economic output, employment, wages, and labor productivity. Chapters 3–5 focus respectively on banking services (including credit products, financial management, and financial advisory services), insurance services (including property and casualty insurance, life insurance, and reinsurance), and securities services (including brokerage, underwriting, securities lending, and electronic funds transfer services). Each of these chapters provides information on market conditions, emerging trends affecting the supply of and demand for these services, and trends in cross-border trade and foreign affiliate sales. Finally, chapter 6 summarizes the views expressed at the 12th annual USITC Services

[2] USDOC, BEA, "Real Value Added by Industry," October 29, 2019; USDOC, BEA, table 6.5D, "Full-Time Equivalent Employees by Industry," July 30, 2019. 2018 is the latest year for which data is available for cross-border U.S. services trade.
[3] USDOC, BEA, Table 2.1 "U.S. Trade in Services, by Type of Service," October 15, 2019.

Roundtable, hosted by the Commission on October 23, 2019. 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 the most complete picture possible of global trade in services. A large share of the trade data used in this report comes from BEA, which publishes annual data on U.S. trade in services for both cross-border trade and affiliate sales and purchases. Taken 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 WTO's General Agreement on Trade in Services (GATS). Box 1.1 gives further explanation of the type of services trade that falls under each mode of supply, as well as where each mode falls within the trade statistics.

[4] Interactive charts are available at: https://www.usitc.gov/publications/industry_econ_analysis_332/2020/recent_trends_us_services_trade_2020_annual_report.htm.

Box 1.1 Services Trade "Modes of Supply" under the World Trade Organization's 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 would be a firm's digital file of an architectural design emailed (i.e., exported) to a foreign client.

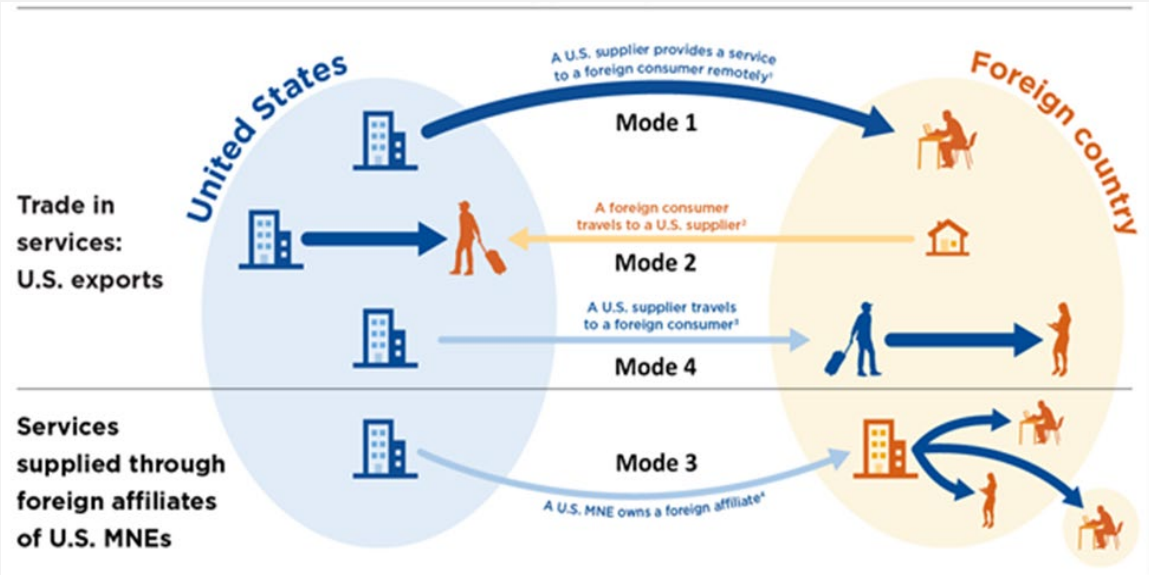
Mode 2 is consumption abroad. In this mode, an individual from one country travels to another country and consumes a service in that country. A classic example of mode 2 trade is travel services. For example, a U.S. export of travel services occurs when a foreign tourist stays in hotels and eats at restaurants 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 would be 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.[a] An example would be a U.S.-based engineer traveling to a foreign country to help local staff on a construction project.

The figure below 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 I Modes of supply in U.S. services trade



Source: Allen et al., "The Basics of How International Services Are Supplied and Received by the United States, "*Survey of Current Business*, October 2018.

[a] WTO, "Basic Purpose and Concepts" (accessed November 15, 2018).

[b] BEA includes 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. Sales of services by foreign affiliates of U.S. firms tend to exceed U.S. cross-border exports of services in value. 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 the BEA's "private services" data. This means that the export and import data presented throughout the report exclude government transactions, which primarily consist of services supplied in support of operations of the 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 cross-border trade data roughly correspond to modes 1, 2, and 4 specified in GATS.

BEA also uses survey data to publish more detailed annual services trade information 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 company respondents. Data on cross-border trade and foreign affiliate transactions are available for three financial services sectors: insurance services, securities services, and banking services. More information on the data coverage for each financial services sector is available in the "Trade Trends" sections of chapters 3 through 5.

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, while for services supplied through affiliates, statistics are based on the affiliate's primary industry.[8] This means that there is limited comparability between cross-border trade and foreign affiliate sales at the sector level. For example, a tech company like Apple that provides digital payment services could report cross-border trade in financial services, but because

[5] This 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 Bureau of Economic Analysis (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. Sales of services by foreign affiliates of U.S. firms tend to exceed U.S. cross-border exports of services in value. USDOC, BEA, U.S. "International Economic Accounts: Concepts and Methods," September 2014.

[7] WTO, Statistics Database, Times Series on International Trade, "Trade in Commercial Services, 2005–onward" (accessed November 8, 2019); USDOC, BEA, table 1.1, "U.S. International Transactions" (accessed December 19, 2019).

[8] See chapter 2 for further discussion of the ways that services trade data are classified, as well as chapters 3–5 for information about sector-specific data collection and classification.

Apple is primarily an electronics manufacturing company, their sales data may not appear under the financial services category in BEA's foreign 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 2018; annual data on cross-border trade from BEA were available through 2018 (with preliminary data available for 2019); and BEA data on affiliate transactions were available through 2017. 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.

The U.S. Services Sector

The U.S. services sector represented the largest portion of the U.S. economy in 2018. In real value-added terms, U.S. private service-supplying industries contributed $12.8 trillion, or 78.5 percent total U.S. GDP output.[9] In contrast, goods-producing industries contributed only $3.5 trillion or 21.5 percent to GDP.[10] In terms of employment, service-supplying industries also represented the majority of full-time equivalent employees (FTEs) in the U.S. economy in 2018, accounting for 81.9 percent of all employment, or 97.0 million FTE employees. Goods-producing industries accounted for 18.1 percent of employment, or 21.5 million FTE employees.[11]

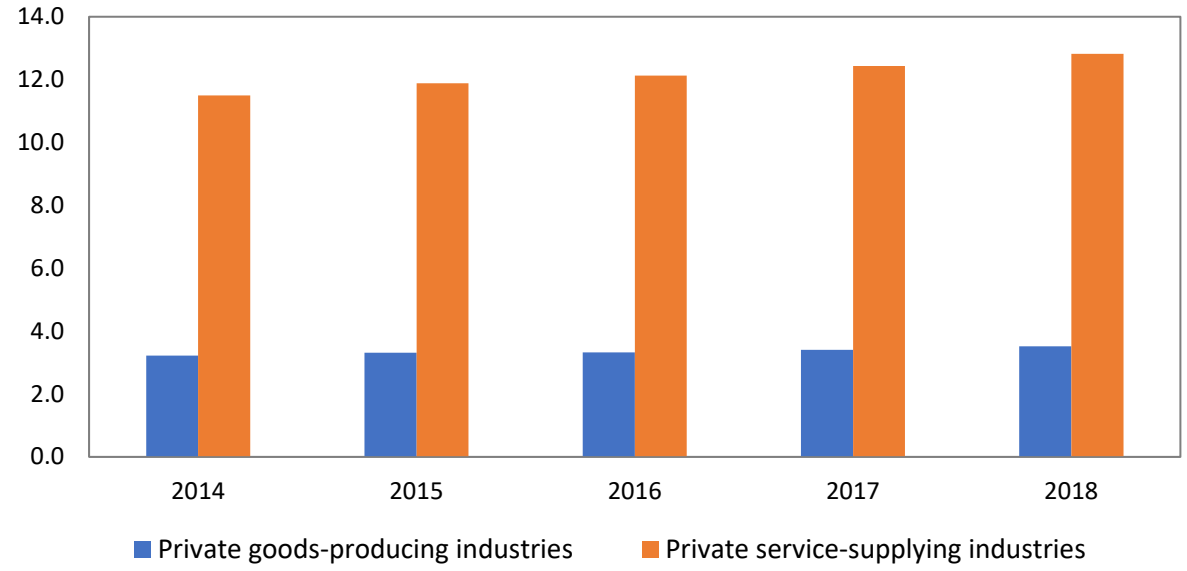
Between 2014 and 2018, U.S. service-supplying industries increased real output by 11.7 percent, from $11.5 trillion to $12.8 trillion (figure 1.1), representing an average annual growth rate of 2.8 percent. This represents a faster growth than goods-producing industries, which grew 9.0 percent from 2014 to 2018, 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 8.6 percent from 2014 to 2018, compared to 7.4 percent for goods-producing industries.

[9] 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," October 29, 2019.

[10] Goods-producing industries include mining; construction; manufacturing; and agriculture, forestry, fishing, and hunting. USDOC, BEA, "Real Value Added by Industry," October 29, 2019.

[11] Full-time equivalent employees (FTEs) 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 FTEs 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 30, 2019.

Figure 1.1 Real value added by U.S. industry, 2014–18 (trillion dollars)

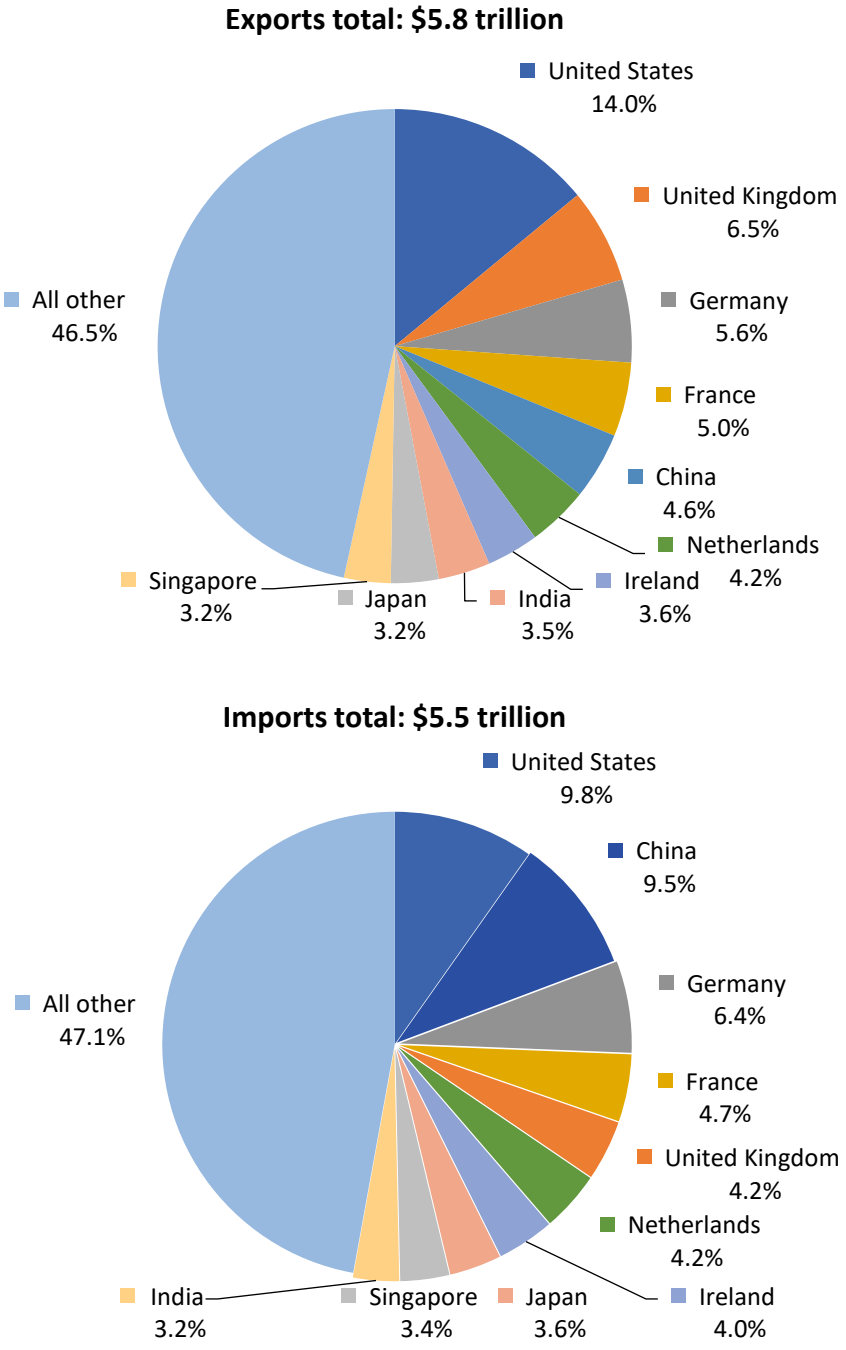


Source: USDOC, BEA, "Real Value Added by Industry," October 29, 2019.
Note: Underlying data for this figure can be found in appendix table B.1.

Global Services Trade

The United States was the largest cross-border exporter of commercial services in the world in 2018, supplying 14.0 percent of global exports ($808.2 billion). It was followed by the UK and Germany, which accounted for 6.5 percent ($372.7 billion) and 5.6 percent ($325.6 billion), respectively, of total global exports. The United States was also the largest global importer of services, accounting for 9.8 percent of all cross-border services imports ($536.2 billion) in 2018. Other large importing countries include China, which accounted for 9.5 percent of imports ($520.6 billion) and Germany, which accounted for 6.4 percent of total imports ($349.7 billion). Overall, the United States was a net exporter of commercial services in 2018, with a cross-border trade surplus of $272.0 billion. Figure 1.2 shows the top 10 cross-border exporters and importers of commercial services by country for 2018.

Figure 1.2 Global services: Cross-border exports and imports of commercial services, by country, 2018 (percent)



Source: WTO, Statistics Database, Times Series on International Trade, "Trade in Commercial Services, 2005–onward" (accessed November 8, 2019).
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.

Services trade is likely to be severely negatively impacted by the COVID-19 pandemic in 2020. In particular, travel restrictions and closures of nonessential business have likely decreased the value of travel services exports.[12] One industry source anticipates that revenue from travel and tourism services—including cruises, hotels, package holidays, and vacation rentals—will decrease by $143.3 billion, or 17 percent, relative to 2019.[13] Declines in goods trade associated with the pandemic have likely also had a negative effect on trade in transportation services.[14]

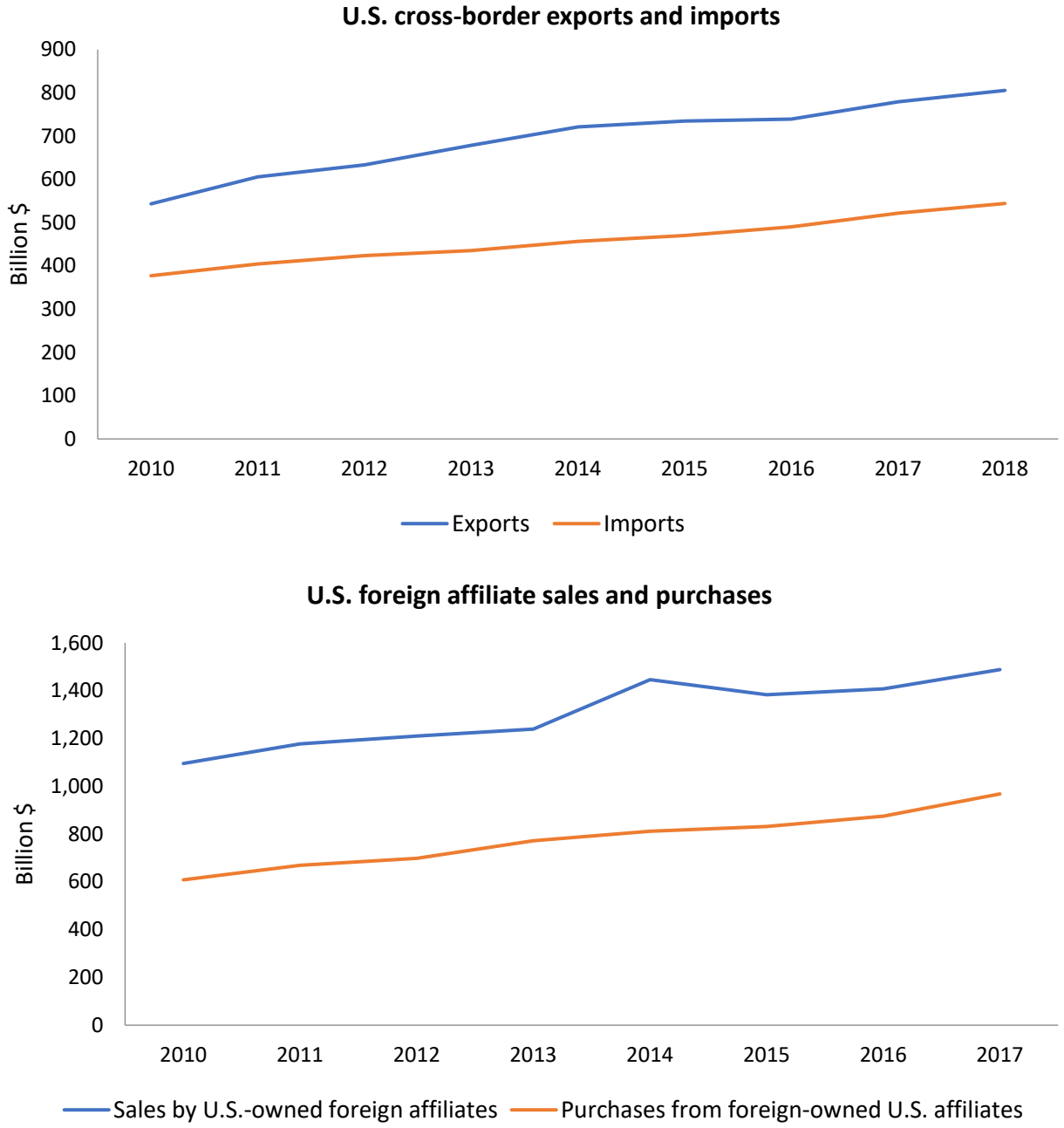
U.S. Trade in Services

This section provides an overview of U.S. trade in services by broad industry sector and by trading partner. Figure 1.3 shows (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 2010–18.

Overall, trade in services through foreign affiliate sales (based on affiliate's primary industry) was consistently larger than cross-border trade in private services (based on type of service) during that 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.[15] In 2018, U.S. cross-border exports in services grew 3.4 percent, slower than the average annual growth rate of 5.3 percent recorded during 2010–17. U.S. cross-border imports grew 4.3 percent in 2018, again slower than the average annual growth rate (4.7 percent) during 2010–17. For foreign affiliate transactions, the value of services supplied by U.S. foreign affiliates increased by 5.7 percent during 2016–17 to $1.5 trillion. Services supplied by the U.S. affiliates of foreign firms also saw strong growth, with an increase of 10.6 percent in 2017 to $967.9 billion.

[12] WTO, "Trade Set to Plunge," April 8, 2020.
[13] *Statista,* "COVID-19," March 24, 2020.
[14] WTO, "Trade Set to Plunge," April 8, 2020.
[15] Due to differences in data collection, and in the definition of private services vs. commercial services, total trade in cross-border services trade in 2018 varies slightly between the BEA data in this section and the WTO global services trade data presented above.

Figure 1.3 U.S. services: Cross-border exports/imports and affiliate sales/purchases, 2010–18 (billion dollars)



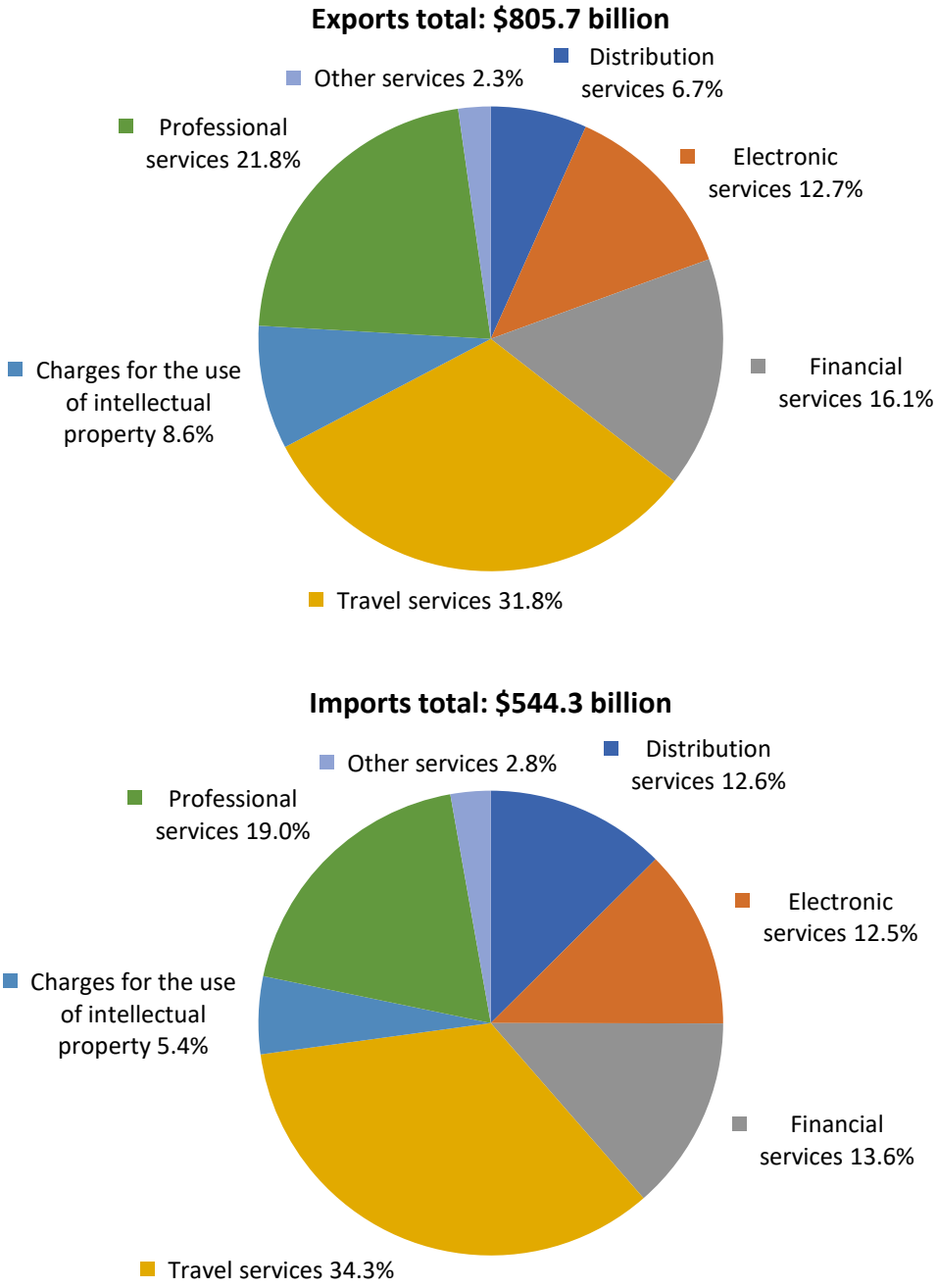
Sources: USDOC, BEA, table 2.1, "U.S. Trade in Services, by Type of Service," October 15, 2019; table 4.1: "Services Supplied to Foreign Persons by U.S. MNEs through Their MOFAs, by Industry of Affiliate and by Country of Affiliate," October 15, 2019; table 5.1, "Services Supplied to U.S. Persons by Foreign MNEs through Their MOUSA, by Industry of Affiliate and by Country of UBO," October 15, 2019. (See appendix table B.3.) MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSA = majority-owned U.S. affiliate; UBO = ultimate beneficial owner.
Note: The BEA *2014 Benchmark Survey of U.S. Direct Investment Abroad* reported that the value of services supplied abroad through the affiliates of U.S. MNEs was 14 percent higher in 2014 than in the previous year. This increase is predominantly attributable to outreach efforts by BEA to improve survey coverage, which increased the number of reporting companies that were ultimately included in the *2014 Benchmark Survey* sample. As a result, the figures for 2014 affiliate sales may not be comparable to figures for sales reported in 2013 or earlier. USDOC, BEA, "U.S. International Services: Trade in Services in 2015 and Services Supplied through Affiliates in 2014," December 2016, 24; Scott, "Activities of U.S. Multinational Enterprises," December 2016, 12. Underlying data for this figure can be found in appendix table B.3.

Cross-border Trade

The largest segment of both U.S. cross-border exports and imports in 2018 was travel services, which made up 31.8 percent of all exports ($256.1 billion) and 34.3 percent of all imports ($186.5 billion). Figure 1.4 presents the breakdown of U.S. cross-border exports and imports of private services by category for 2018. Financial services, the focus of this report, comprised 16.1 percent of cross-border exports ($129.4 billion) and 13.6 percent of cross-border imports ($73.4 billion). In most service sectors, including financial services, the United States ran a surplus in cross-border trade, with the largest surplus in professional services ($72.8 billion), followed by travel services ($69.6 billion) and financial services ($55.7 billion). The only deficit in cross-border trade occurred in the distribution services sector ($14.3 billion).[16]

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

Figure 1.4 U.S. services: Cross-border exports and imports, by industry, 2018 (percent)

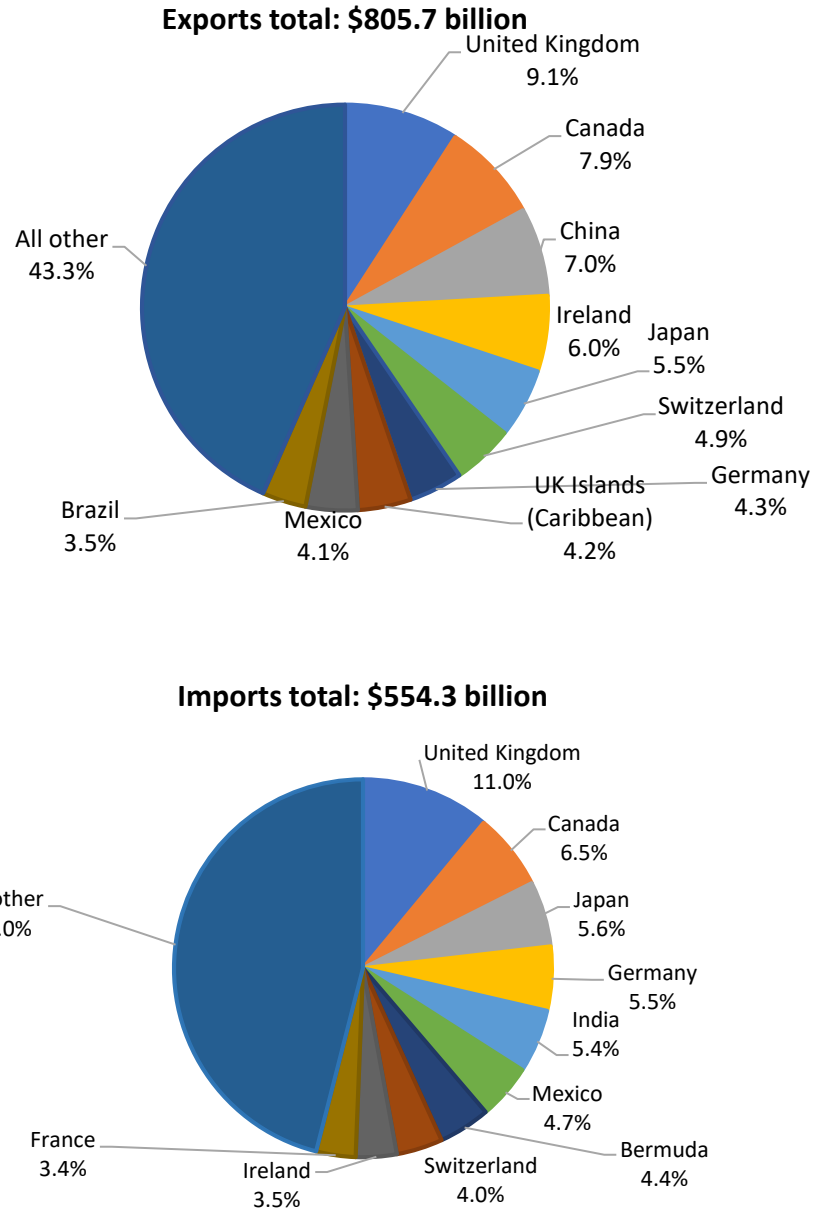


Source: USDOC, BEA, table 2.1 "U.S. Trade in Services, by Type of Service," October 15, 2019.
Note: Data exclude public-sector service transactions. Underlying data for this figure can be found in appendix table B.4.

Figure 1.5 shows 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. In 2018, U.S. exports to the UK were $73.6 billion, or 9.1 percent of total exports, while imports from the UK totaled $60.0 billion, or 11.1 percent of total imports. After the UK, the top destinations for U.S. exports in 2018 were Canada ($63.6

billion), China ($56.7 billion), Ireland ($48.5 billion), and Japan ($44.4 billion). The top sources of imports, following the UK, were Canada ($35.6 billion), Japan ($30.4 billion), Germany ($29.7 billion), and India ($29.5 billion).[17]

Figure 1.5 U.S. services: Cross-border exports and imports, by country, 2018 (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 "UK Islands (Caribbean)" includes the following UK overseas territories: British Virgin Islands, Cayman Islands, Montserrat, and Turks and Caicos Islands. Underlying data for this figure can be found in appendix table B.5.

[17] USDOC, BEA, table 2.2, "U.S. Trade in Services, by Type of Service and by Country or Affiliation," October 15, 2019.

Preliminary data for U.S. cross-border services trade in 2019 (available at a more broadly aggregated level than data used in the rest of this report) show that from 2018 to 2019, total services exports increased by 2.2 percent, while imports increased by 5.0 percent. Cross-border exports of private services totaled $823.7 billion in 2019, while imports were valued at $571.3 billion, resulting in a $252.4 billion trade surplus. Table 1.1 compares these preliminary 2019 data to 2018 data by broad sector category. Two sectors—professional and management consulting services, and telecommunications, computer, and information services—saw the largest export growth between 2018 and 2019 (16.6 percent and 10.7 percent, respectively). The largest export decline was in technical, trade-related, and other business services, with an 8.1 percent drop in exports in 2019, compared to the prior year. Technical, trade-related, and other business services also saw the largest increase in imports, by 17.1 percent, while air transport (excluding passenger fares) saw the largest import decline, at 3.1 percent.

Table 1.1 U.S. private cross-border services exports and imports to the world (preliminary), by category, 2018–19

Services industry	2018 (billion $)	2019 (billion $)	% change, 2018–19	CAGR 2014–18
Exports				
Travel and passenger fares	256.1	254.2	-0.7	3.2
Charges for the use of intellectual property n.i.e.[a]	128.7	128.9	0.1	0.1
Financial services	112.0	111.3	-0.7	3.3
Professional and management consulting services	86.8	101.2	16.6	9.3
Telecommunications, computer, and information services	43.2	47.8	10.7	4.6
Research and development services	42.6	45.3	6.5	7.8
Technical, trade-related, and other business services[b]	36.4	33.5	-8.1	-0.1
Maintenance and repair services n.i.e.	31.0	32.5	5.0	10.8
Air transport (excludes passenger fares)	26.7	26.2	-1.8	2.3
Sea transport	19.5	19.5	0.0	2.4
Insurance services	17.5	18.3	4.7	0.9
Other services	5.1	4.9	-5.6	2.5
Total	805.7	823.7	2.2	3.5
Imports				
Travel and passenger fares	186.5	195.6	4.9	7.5
Charges for the use of intellectual property n.i.e.[a]	56.1	57.1	1.7	7.6
Professional and management consulting services	47.6	49.3	3.5	6.7
Insurance services	42.5	48.6	14.3	-4.5
Telecommunications, computer, and information services	41.2	43.2	4.8	3.3
Sea transport	39.0	39.2	0.6	1.5
Technical, trade-related, and other business services[b]	29.6	34.7	17.1	2.8
Financial services	31.3	33.7	7.6	7.8
Research and development services	34.6	33.6	-3.1	2.6
Air transport (excludes passenger fares)	23.3	23.8	2.1	5.2
Maintenance and repair services n.i.e.	8.7	8.8	1.2	3.3
Other services	3.9	3.8	-0.9	-2
Total	544.3	571.3	5.0	4.6

Source: USDOC, BEA, International Transactions table 3.1, "U.S. International Trade in Services," March 19, 2020.
Notes: Data for 2019 are preliminary; n.i.e. = not included elsewhere. Data exclude public-sector services transactions.
[a] The category "charges for use of intellectual property, n.i.e." (formally classified as royalties and licenses fees) includes industrial processes, computer software, trademarks, franchise fees, audiovisual and related products, and other intellectual property.
[b] Includes construction, architectural and engineering services, waste treatment, operational leasing, trade-related services, and other business services.

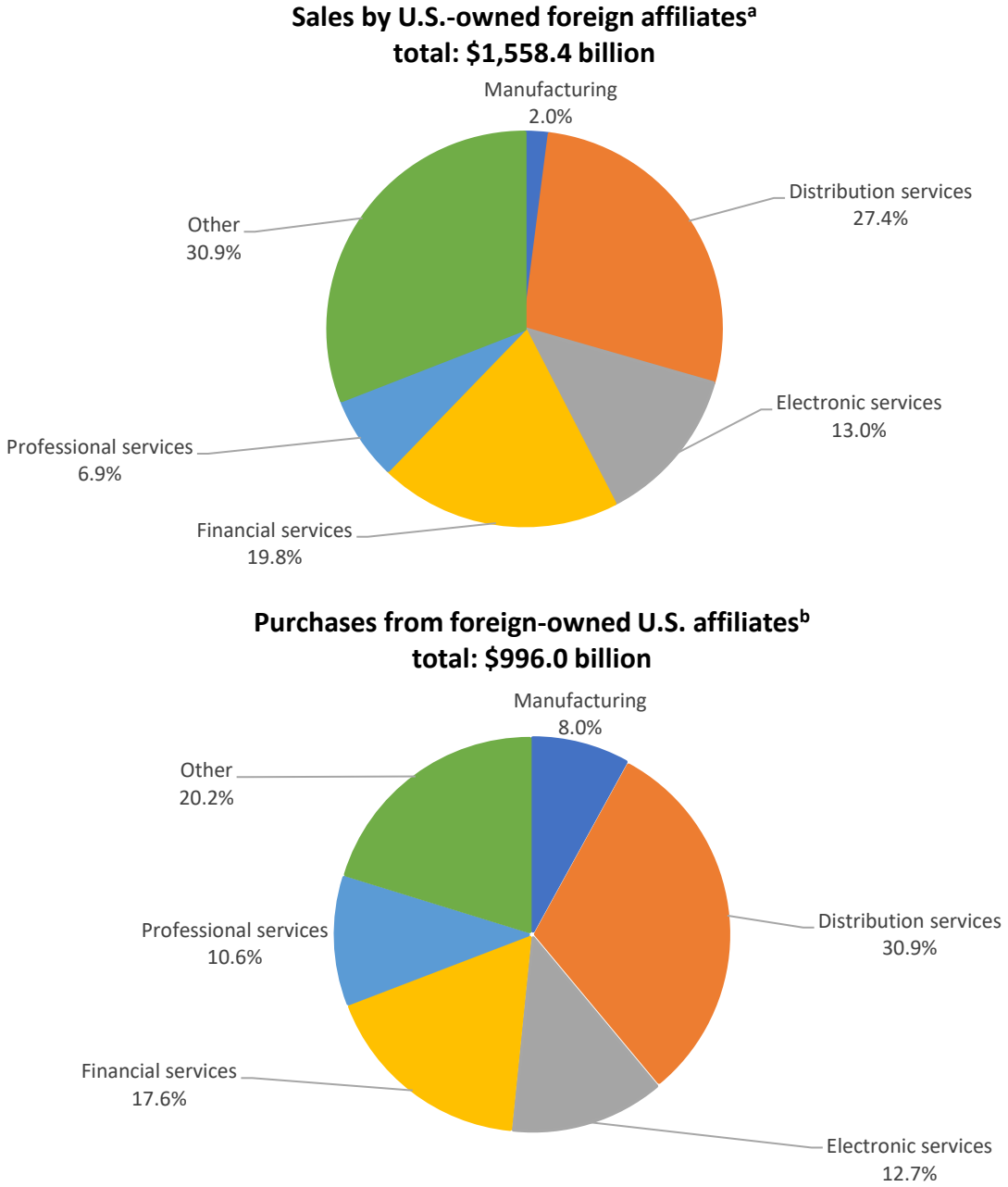
Affiliate Transactions

In 2017, distribution services represented the largest services sector supplied through foreign affiliates of U.S. firms, and provided by the U.S.-based affiliates of foreign firms. Financial services was the second largest sector supplying services through foreign affiliates, accounting for 19.8 percent ($308.7 billion) of these sales. Financial services also represented the second-largest share of purchases from the U.S. affiliates of foreign firms, accounting for 17.6 percent ($190.1 billion) of all such purchases in 2017. Figure 1.6 shows the distribution of affiliate transactions by industry for 2017.

As with cross-border services trade, the UK was a leading source of and destination for U.S. foreign affiliate transactions in 2017. The UK was the largest source of sales by U.S. foreign affiliates, followed by Ireland, Canada, Singapore, and Switzerland.[18] The affiliates of Japanese firms in the United States accounted for the largest share of purchases from all such foreign affiliates, followed by the UK, Germany, Canada, and France.[19]

[18] 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.
[19] USDOC, BEA, table 5.1, "Services Supplied to U.S. Persons by Foreign MNEs though Their MOUSAs, by Industry of Affiliate and by Country of UBO," October 15, 2019.

Figure 1.6 U.S. services: Affiliate sales and purchases, by industry, 2017 (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 though Their MOUSAs, by Industry of Affiliate and by Country of UBO," October 15, 2019.
Notes: "Manufacturing" includes ancillary services provided by goods manufacturers. "Other" includes ancillary services provided in the 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 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. Underlying data for this figure can be found in appendix table B.6.
[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.
MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner.

Special Topic: Estimates of Trade in Services by Mode of Supply

One of the ongoing challenges in measuring services trade is that the WTO "modes of supply" definitions, which were drafted to classify commitments in GATS, are not well aligned with the definitions used by the services trade data sources. Aligning trade statistics with the GATS mode of supply could help researchers more precisely estimate the effect of mode-specific policy changes on trade, as well as better understand how the four services trade modes interact with one another. As explained in box 1.1, GATS defines four modes of supply in international services trade: mode 1, cross-border supply; mode 2, consumption abroad; mode 3, commercial presence; and mode 4, temporary presence of natural persons. While mode 3 trade data are available through foreign affiliate sales data, cross-border trade data combine modes 1, 2, and 4, making it difficult to determine the share of services trade that occurs through each of those three modes.

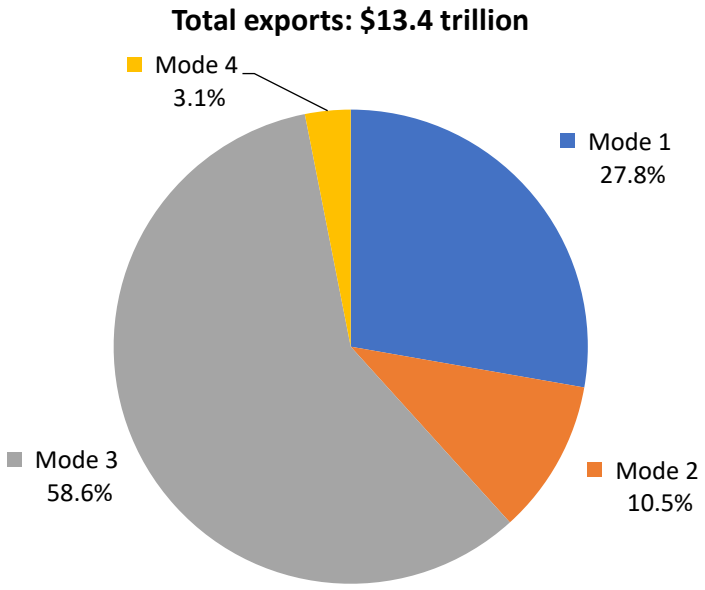
In response to this challenge, in 2019, the WTO, BEA, and the UK ONS published estimates of the share of mode 1, mode 2, and mode 4 trade that is contained in cross-border trade data. This section summarizes these recent measurements of services trade by mode of supply, along with the strengths and limitations of each approach, and potential future considerations.

The United Nations' *Manual on Statistics of International Trade in Services 2010* includes guidelines for estimating trade in services by modes of supply from existing national statistics, such as those published by BEA and described above. These guidelines suggest that foreign affiliate sales data can be used to measure mode 3 trade, and that cross-border services trade data can be used to cover trade in modes 1, 2, and 4. To separate cross-border data by mode of supply, the manual suggests as a first step that each type of service should be allocated "either to one dominant mode or, where there is no single dominant mode, to the most significant mode of supply."[20] In July 2019, the WTO published an experimental dataset applying this suggested methodology to bilateral trade flows between countries for which data are available from 2005 to 2017. Generally, the WTO dataset allocates cross-border trade flows based on the dominant mode of supply. Or, where there is no dominant mode, it allocates shares to each mode based on sector-specific characteristics (such as 75 percent to mode 1 and 25 percent to mode 4 for computer services).[21]

Figure 1.7 shows the WTO estimates of the breakdown of global exports by mode of supply in 2017, the last year for which data were available for this experimental dataset. Mode 3 trade represents the largest estimated share of global services exports, while mode 1 trade represents a little over a quarter of total services exports and the majority of cross-border services exports.

[20] UN, DESA, UNSD, *Manual on Statistics of International Trade in Services 2010*, 2011, 122.
[21] Wettstein et al., "A Global Trade in Services Data Set," 2019, 6.

Figure 1.7 Estimates of world services exports, by mode of supply, 2017 (percent)



Source: WTO, "Trade in Services by Mode of Supply" (accessed November 15, 2019).
Note: Mode 1 = cross-border supply, mode 2 = consumption abroad, mode 3 = commercial presence, mode 4 = temporary presence of natural persons. See box 1.1 for a detailed discussion of modes of supply in services trade. The sum of modes 1, 2, and 4 in this graph is equivalent to total cross-border services exports presented in figure 1.2. Underlying data for this figure can be found in appendix table B.7.

One of the challenges associated with measuring trade by mode of supply, as discussed in previous sections, is building a complete picture of services trade by industry, due to the differences in methods of collecting data on cross-border trade and foreign affiliate sales. While firms report their cross-border trade broken out by type of service provided, they report foreign affiliate sales through the industry category of the foreign affiliate. The WTO dataset mitigates some of this issue by providing data on mode 3 trade only at highly aggregated services levels. For example, in financial services, cross-border estimates by mode are available for "insurance and pension services" and "financial services," but mode 3 trade is only available for "insurance and financial services," a combination of the two subcategories.[22] Another challenge is that the primary mode of supply may change over time. Since this dataset is based on expert estimates of modes of supply rather than survey data, shares allocated to modes 1, 2, and 4 are constant over time. This may not accurately capture technological and regulatory developments that could change the composition of trade in a particular sector. For example, technological advances in videoconferencing systems could decrease the amount of mode 4 trade over time, if firms rely less on sending individuals to a site for meetings in favor of online communication.

In 2017, BEA used a similar methodology to estimate trade in services by mode of supply. However, in October 2019, BEA released new estimates of trade in services by mode collected through its *2017 BE-120 Benchmark Survey of Transactions in Selected Services and Intellectual Property with Foreign Persons,* which primarily captures trade in professional and electronic services. Following a preliminary review to gauge respondents' understanding of modes of services trade, BEA determined that asking

[22]Wettstein et al., "A Global Trade in Services Data Set," 2019, 41.

firms to provide trade data by mode of supply would be burdensome and likely inaccurate, as firms do not tend to keep track of international trade in services data by mode.[23] Instead, the survey asked firms to estimate the percentage of their cross-border trade in services that is supplied via mode 1.[24] Figure 1.8 shows the survey question that firms were asked to respond to on the BE-120 form. Rather than use the GATS modes of trade language, the survey instead explains mode 1 trade.

Figure 1.8 Mode of supply survey question on *BE-120 2017 Benchmark Survey*

Percentage of Services Performed Remotely by the U.S. Reporter's Domestic Offices for Foreign Persons via Internet, Email, Text, Telephone, or Other Means

Exclude the portion of the sales of each service type charged for services performed on-site in the country of the purchaser, or services performed fo a foreign customer temporarily located in the United States.

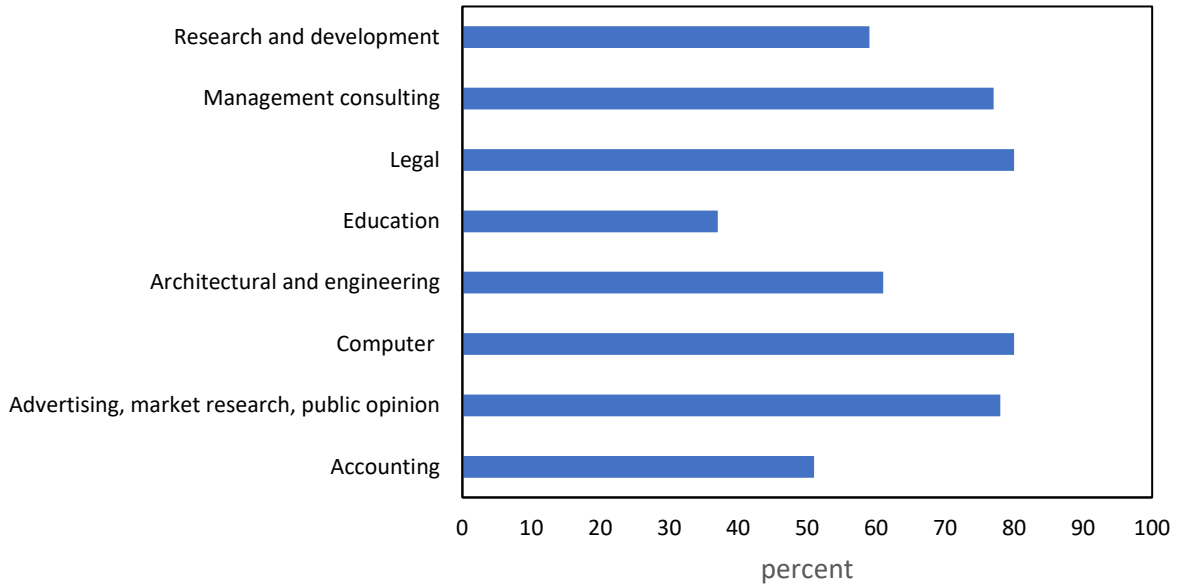
Trans-action code	Transaction type	Did you report this service on Schedule A? (Check yes or no)	For each "Yes" response, check the appropriate percentage range. (Check one)						The information provided is based on (Check one)	
			Less than 25%	25-49%	50-74%	75-89%	90-99%	100%	Accounting records	Recall/ general knowledge of operations
9	Accounting, auditing, and bookkeeping services 51001	1 Yes 2 No	2 1	2 2	2 3	2 4	2 5	2 6	3 1	3 2

Source: Mann, "Measuring Trade in Services by Mode of Supply," August 2019, 8.

From this survey question, BEA still must use expert judgement to classify modes 2 and 4 trade. Nevertheless, since modes 2 and 4 both involve people traveling to a foreign country to perform or purchase services, the distinction between the amount of cross-border trade conducted via travel (either mode 2 or mode 4) versus the amount conducted remotely (mode 1) adds depth to analysis of cross-border trade trends. Figure 1.9 shows the new estimates of the share of cross-border U.S. exports that are mode 1 by sector, for the sectors covered in the *BE-120 Benchmark Survey*.

[23] Mann and Cheung, "Measuring Trade in Services by Mode of Supply," August 2019, 6.
[24] Mann and Cheung, "Measuring Trade in Services by Mode of Supply," August 2019, 7.

Figure 1.9 Share of U.S. cross-border services exports that are mode 1, by sector, 2016 (percent)



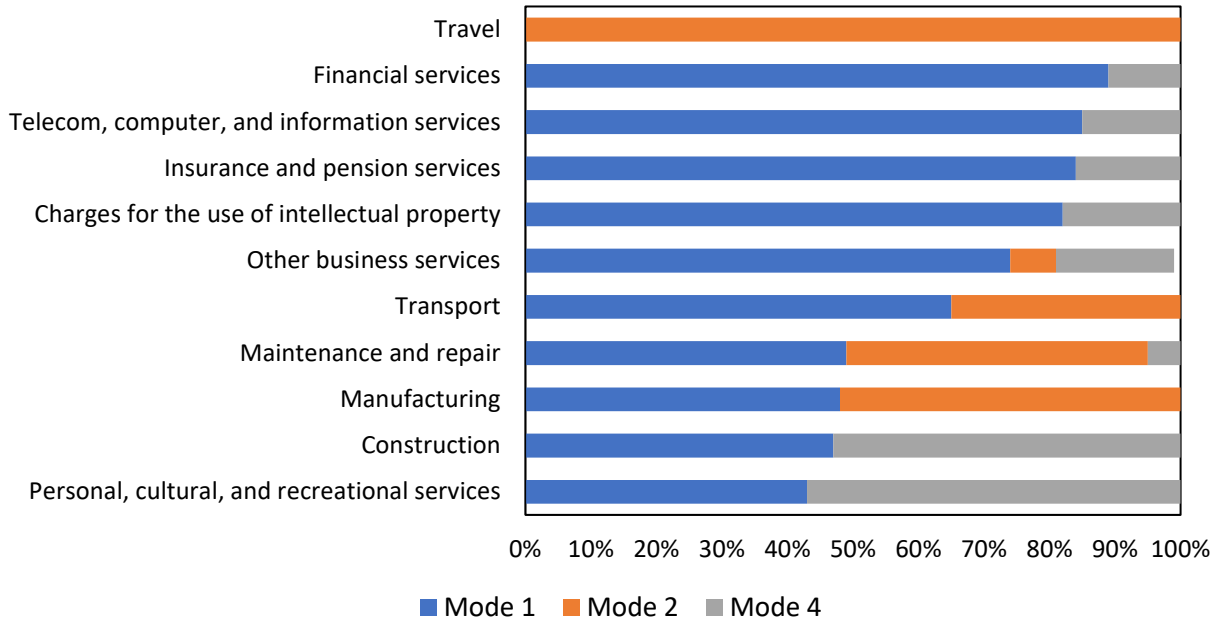
Source: Mann, "Measuring Trade in Services by Mode of Supply," August 2019, 10.
Note: Underlying data for this figure can be found in appendix table B.8.

Of the activities covered in the survey, computer and legal services are those most reliant on mode 1 services trade, with mode 1 trade accounting for 80 percent of total U.S. cross-border services exports in each sector in 2017. By contrast, earlier estimates using the UN method estimated that only 50 percent of U.S. computer services and 75 percent of legal services were exported via mode 1. On the other side, education services are the least reliant on cross-border trade, with only 37 percent of exports estimated to be mode 1 transactions. This pattern likely reflects the large number of foreign students who travel to the United States for higher education (mode 2 trade).[25] One of the downsides of these new data is that, since data on transportation and financial services are collected on a separate survey, comprehensive survey-based data on services trade by mode for the United States do not yet exist.

Finally, UK ONS collected survey data using a methodology similar to BEA's; it covered a broader range of services than the BEA data covered, but in less sector detail.[26] In the UK data, financial services and insurance and pension services both had high shares of mode 1 trade—89 percent and 84 percent, respectively—relative to other categories.[27] Figure 1.10 shows the breakdown of UK cross-border service exports by mode of supply for nine service categories collected by the UK survey.

[25] Mann and Cheung, "Measuring Trade in Services by Mode of Supply," August 2019, 11.
[26] Mann and Cheung, "Measuring Trade in Services by Modes of Supply," October 2019, 18, 20.
[27] Mann and Cheung, "Measuring Trade in Services by Modes of Supply," October 2019, 44.

Figure 1.10 UK cross-border exports, by mode of supply, 2018 (percent)



Source: Mann and Cheung, "Measuring Trade in Services by Modes of Supply," October 2019, 44.
Note: Underlying data for this figure can be found in appendix table B.9.

The efforts by BEA and UK ONS both showcase a new, more detailed methodology for measuring mode 1 cross-border trade in services, but challenges remain. In particular, the burden of annual reporting requirements for this type of data—not to mention differences in surveys used to capture different service sectors—may limit the ability of these two agencies to consistently publish estimates based on mode of supply. Additionally, the differences in collection methodology between cross-border trade and foreign affiliate sales data will continue to limit the comparability of trade via modes 1, 2, and 4 versus mode 3 trade.

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Chapter 2
Financial Services

Overview

The financial services sector encompasses the providers and users of financial services and the government agencies that regulate the market. This report focuses principally on the banking, insurance, and securities industries. The users of financial services include households, commercial enterprises, and governmental entities. Households use the services of banks and other financial services providers (FSPs) to save and invest their income and to finance the purchases of goods and services. Commercial enterprises use FSPs for a wide range of services. These range from basic services, like depositing funds and payment processing, to the provision of various types of loans and debt securities. The latter are used for both short-term needs, such as employee payroll and working capital, and longer-term business investment. Governments also use bank loans and debt securities to finance investment and ongoing operating expenditures.[28]

FSPs fall into two main categories: financial intermediaries and direct finance institutions. Financial intermediaries include deposit-taking entities (like banks, thrifts, and savings institutions) and nonbank entities (like insurance, leasing, and investment companies). Direct finance institutions, mainly brokerage and securities firms, operate in capital markets by facilitating direct transactions between the providers and users of funds, mainly by underwriting and selling bonds and equities.[29]

A well-developed financial services sector provides the economic infrastructure necessary for modern economies to function by mobilizing savings, allocating capital to productive activities, facilitating personal and commercial transactions, and providing instruments to manage risk. As such, financial services are essential to the production of nearly all goods and services and are crucial facilitators of international trade.[30]

U.S. Trade in Financial Services

As in previous years, financial services represented a significant share of U.S. services trade in 2018, accounting for 16 percent of total U.S. cross-border services exports and 14 percent of total services

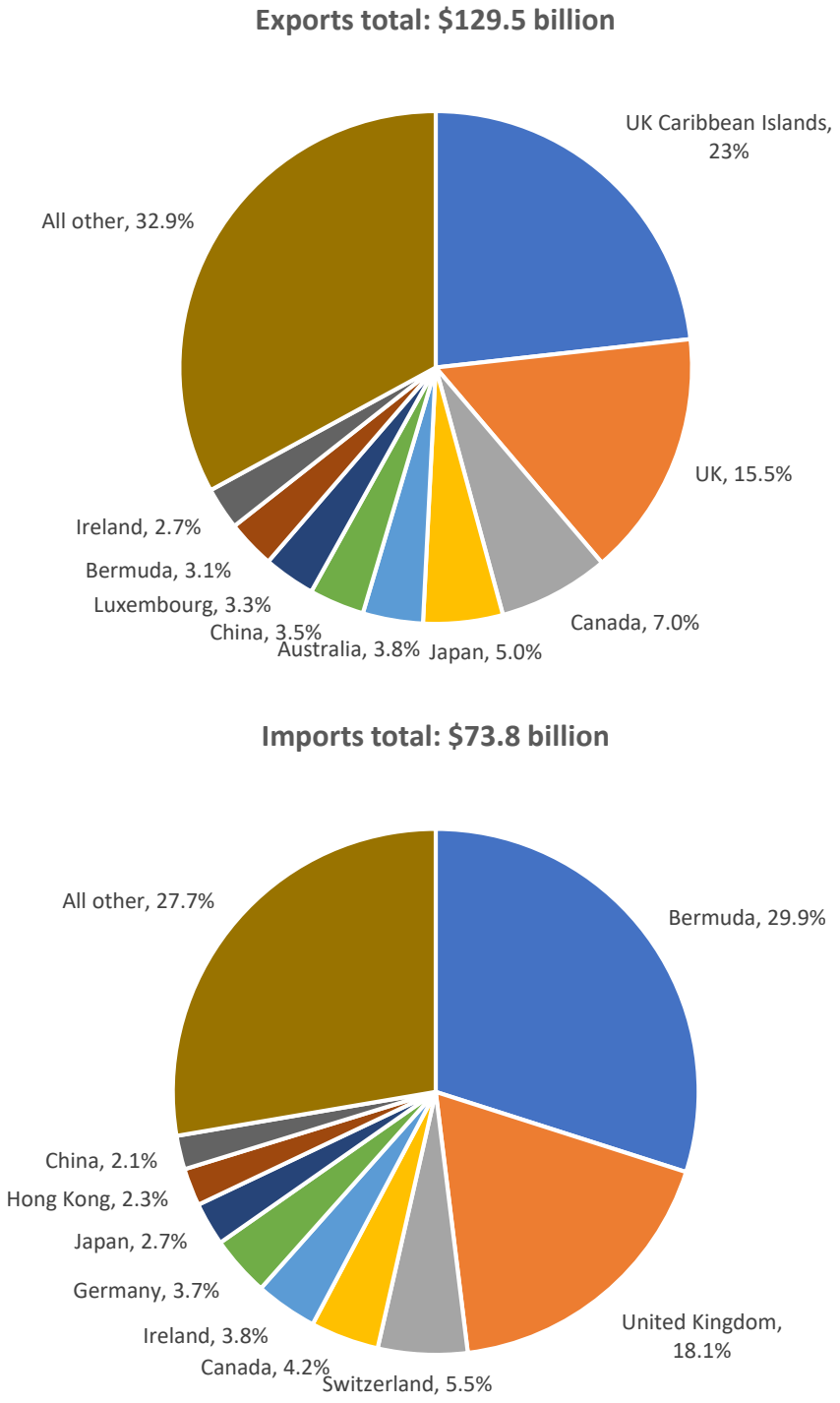
[28] Dobson, "Financial Services and International Trade Agreements," 2008, 289.
[29] Dobson, "Financial Services and International Trade Agreements," 2008, 290.
[30] Barajas, Chami, and Yousefi, "Differing Benefits," September 2011, 38; Federal Reserve Bank of San Francisco, "How Financial Markets Affect Economic Performance," January 2005.

imports.[31] In 2018, U.S. financial services exports totaled $129.5 billion (figure 2.1), whereas imports totaled $73.8 billion, resulting in a cross-border trade surplus of $55.7 billion in financial services.[32] In that year, exports of financial services grew by roughly 2.0 percent, slightly slower than the average annual growth rate of 3.3 percent recorded during 2013–17.

Collectively, several UK overseas territories (the British Virgin Islands, the Cayman Islands (the Caymans), Montserrat, and the Turks and Caicos Islands), categorized by BEA as the "United Kingdom Islands, Caribbean," received 23 percent of U.S. financial services exports (figure 2.1). U.S. financial services exports to these international financial centers likely consist of financial transaction, brokerage, and other financial management services,[33] though BEA does not break out UK overseas territories data by territory or by type of non-insurance financial service. The Caymans and other international financial centers in the Caribbean reportedly provide favorable regulations, streamlined company registration procedures, and zero percent taxation rates for most income.[34] Other top destinations for U.S. financial services exports were the UK (15.5 percent), Canada (7.0 percent), and Japan (5.0 percent). In terms of U.S. financial services imports, Bermuda (29.9 percent) was the largest trade partner, followed by the UK (18.1 percent) and Switzerland (5.5 percent).[35]

[31] USDOC, BEA, table 2.1, "U.S. Trade in Services, by Type of Service," October 15, 2019. For the purposes of the cross-border trade discussion, data on financial services encompass banking services (financial management, financial advisory, custody services, credit card services, and other credit-related services); insurance services (direct insurance, reinsurance, and auxiliary insurance); and securities services (securities brokerage, underwriting, and related services, as well as securities lending, electronic funds transfer, and other services). Other aspects of financial services, such as retail banking, are reported as affiliate transactions and discussed separately. Banking, insurance, and securities are discussed in depth in chapters 3, 4, and 5.
[32] USDOC, BEA, table 2.1, "U.S. Trade in Services, by Type of Service," October 15, 2019.
[33] At the end of 2018, there were 10,992 investment funds, 109 international banks, and 685 international insurance companies registered in the Caymans. The services reported are those likely to be required by the large number of banks, insurance companies, hedge funds, and other asset management companies in the region. Cayman Islands Monetary Authority website, https://www.cima.ky/regulatedsectors (accessed June 8, 2020).
[34] Dunne, "Doing Business in Cayman Islands," April 1, 2020. An initiative led by the Organisation for Economic Co-operation and Development, the Global Forum on Transparency and Exchange of Information for Tax Purposes, was established in 2009 to implement standards on international tax transparency and exchange of information. In 2017, the Cayman Islands agreed to exchange information as part of this effort. OECD, *2019 AEOI Implementation Report*, 2019, 3.
[35] USDOC, BEA, table 2.3, "U.S. Trade in Services, by Country or Affiliation and by Type of Service," October 15, 2019. Imports from Bermuda are primarily insurance services; exports to the UK Islands (Caribbean) are primarily non-insurance financial services.

Figure 2.1 Financial services: U.S. cross-border exports and imports, by country, 2018 (percent)



Source: USDOC, BEA, table 2.2, "U.S. Trade in Services, by Type of Service and by Country of Affiliation," October 15, 2019.
Note: The BEA category "United Kingdom Islands, Caribbean" includes the following UK territories: British Virgin Islands, Cayman Islands, Montserrat, and Turks and Caicos Islands. Underlying data for this figure can be found in appendix table B.10.

Banking services accounted for 61.1 percent ($79.1 billion) of total U.S. financial services exports in 2018, followed by securities services (25.4 percent; $32.9 billion) and insurance services (13.5 percent; $17.5 billion) (figure 2.2). By contrast, insurance services represented the majority (57.6 percent; $42.5 billion) of total financial services imports, following by banking services (29.9 percent; $22.0 billion) and securities (12.6 percent; $9.3 billion).

Affiliate transactions accounted for the vast majority of U.S. trade in financial services in 2017.[36] In that year, U.S.-owned foreign affiliates (i.e., the foreign subsidiaries of U.S. companies) supplied $308.7 billion of such services, or a 20 percent share of total foreign affiliate sales. This made sales of financial services the second-largest category of foreign affiliate sales (after distribution services). Finance (except depository institutions) accounted for the largest share of U.S.-owned foreign affiliate sales within the financial services category (47 percent; $144.6 billion), followed by insurance (20 percent; $62.3 billion), rental and leasing services (19 percent; $58.9 billion), and depository credit intermediation (14 percent; $42.9 billion) (figure 2.3).[37]

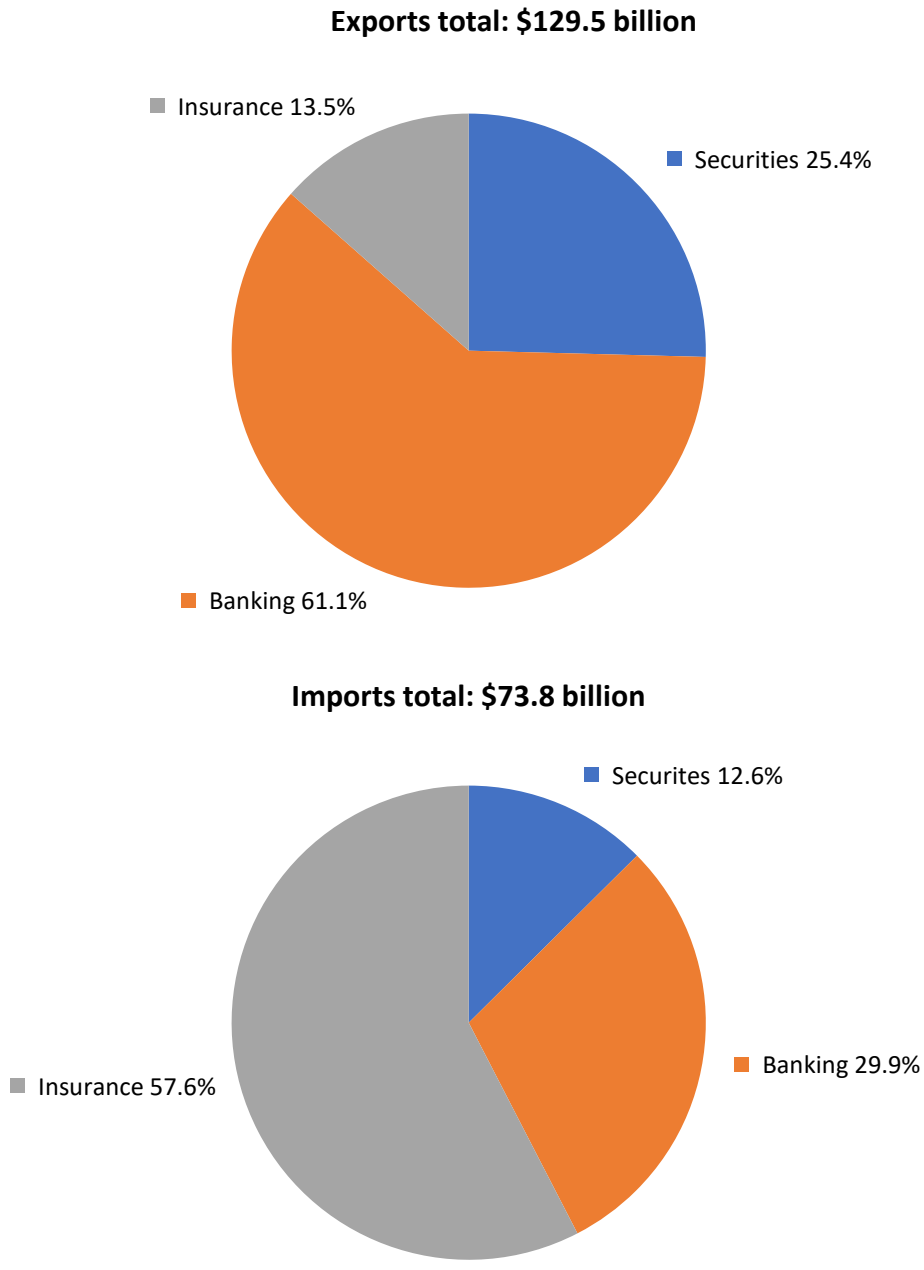
The value of financial services purchased from affiliates of foreign firms located in the United States totaled $190.1 billion, or 17.6 percent of total services purchases in 2017. Insurance services represented the largest share of such purchases (38 percent; $72.0 billion), followed by finance ($59.9 billion; 31 percent), depository credit intermediation ($48.2 billion; 25 percent), and rental and leasing services ($10 billion; 5 percent).[38]

[36] BEA reports U.S. affiliate data differently than cross-border data, due to discrepancies in data availability and company reporting standards. For the purposes of the affiliate transactions discussion, data on financial services are disaggregated into four broad categories: depository credit intermediation (banking), finance (except depository institutions), rental and leasing services (except real estate), and insurance carriers and related activities.

[37] USDOC, BEA, table 4.1, "Services Supplied to Foreign Persons by MNEs through Their MOFAs, by industry of Affiliates and by Country of Affiliate," October 15, 2019. MNE is an abbreviation for multinational enterprise and MOFA is an abbreviation for majority-owned foreign affiliate.

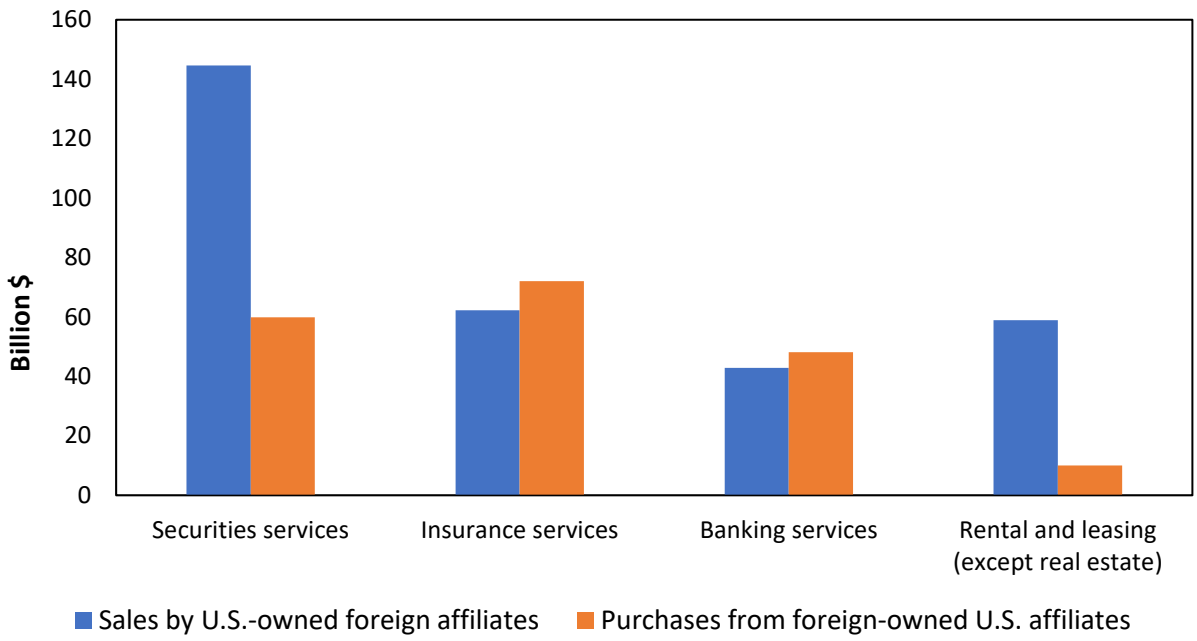
[38] USDOC, BEA, table 5.1, "Services Supplied to U.S. Persons by Foreign MNEs through Their MOUSAs, by Industry of Affiliate and by Country of UBO," October 15, 2019. MNE is an abbreviation for multinational enterprise; MOUSA is an abbreviation for majority-owned U.S. affiliate.

Figure 2.2 Financial services: U.S. cross-border exports and imports, by sector, 2018 (percent)



Source: USDOC, BEA, table 2.1, "U.S. Trade in Services, by Type of Service," October 15, 2019.
Note: Underlying data for this figure can be found in appendix table B.11.

Figure 2.3 Financial services: Affiliate sales and purchases, by sector, 2017 (billion dollars)



Source: USDOC, BEA, table 4.1, "Services Supplied to Foreign Persons by MNEs through Their MOFAs, by Industry of Affiliates 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 15, 2019. Note: Underlying data for this figure can be found in appendix table B.12.

GDP, Employment, Labor Productivity, and Salaries in U.S. Financial Services

In 2018, the total output of the financial services sector throughout the U.S. economy was valued at $1.4 trillion, or 8.6 percent of total U.S. private sector GDP (including both goods and services) (table 2.1). Insurance and banking services accounted for 40.0 percent and 29.3 percent, respectively, of financial services' contribution to U.S. private sector GDP in 2018, whereas securities and leasing services together represented 32.6 percent (table 2.2). In that year, the financial services sector contracted by 1.1 percent, compared to a growth rate of 3.2 percent for private sector GDP as a whole. Among the financial services industries, insurance services and rental and leasing services expanded by 4.7 percent and 2.6 percent, respectively, in 2018, whereas banking declined by 7.2 percent and securities fell by 2.6 percent.

The financial services industry accounted for 5.7 percent of total private sector employment in 2018, or 6.7 million full-time equivalent (FTE) employees. In that year, the insurance and banking industries each employed roughly 2.6 million FTEs, accounting for 78 percent financial services employment, followed by securities services (14 percent) and rental and leasing services (8 percent). In 2018, employment growth in the sector was 1.1 percent, down slightly from the 1.7 percent annual growth rate recorded over the previous five years. Growth within the individual subsectors in 2018 ranged from 2.3 percent in the securities industry to no growth in the banking industry.

Workers in the financial services industry earned, on average, $108,050 per year in 2018, significantly higher than those in the professional ($69,672) and distribution ($52,685) services sectors, but lower than wages in the electronic services sector ($116,539). Financial services workers also earned significantly more than the private sector average wage of $63,306. Within the industry, average annual wages ranged from $60,317 in rental and leasing services to $235,486 in the securities industry. During 2013–17, wages in the financial services sector grew at an annual rate of 3.4 percent, in line with growth in electronic services (3.6 percent), but faster than wages in distribution and in professional services, which both grew by 2.3 percent during the period. In 2018, wages in financial services increased by 2.7 percent, roughly in line with those in professional services (2.6 percent), but noticeably lower than wages in distribution services and electronic services, which grew by 3.1 percent and 5.1 percent, respectively.

In 2018, labor productivity in the financial services sector declined by 2.2 percent, a marked change from the average annual growth rate of 1.0 percent that prevailed during 2013–17. In 2018, average annual output per worker in the financial services sector was $208,461, substantially lower than in electronic services ($330,457) but surpassing productivity in distribution services ($112,862) and professional services ($100,806). Within the financial services sector, output per worker varied by industry, ranging from $157,252 in banking to $426,667 in the rental and leasing subsector.

Table 2.1 United States: Real gross domestic product (GDP), full-time equivalent employees (FTEs), wage and salary accruals, and labor productivity, by goods and services industry, 2013–18

	2013	2017	2018	Average annual growth 2013–17	Change (%) 2017–18
GDP (billions)					
Private sector	14,302.3	15,843.7	16,345.4	2.6	3.2
Goods	3,135.7	3,405.6	3,512.7	2.1	3.1
Manufacturing	1,986.2	2,079.8	2,161.3	1.2	3.9
Nonmanufacturing	1,149.5	1,325.8	1,351.4	3.6	1.9
Services	11,166.6	12,438.1	12,832.7	2.7	3.2
Distribution services	2,435.7	2,705.5	2,782.5	2.7	2.8
Electronic services	877.7	1,171.2.2	1,271.6	7.5	8.6
Financial services	1,274.6	1,418.2	1,401.9	2.7	-1.1
Professional services	2,719.3	3,020.6	3,139.9	2.7	3.9
Other services	3,859.3	4,122.6	4,236.8	1.7	2.8
FTEs (1,000)					
Private sector	106,686.0	116,173.0	118,454.0	2.2	2.0
Goods	19,460.0	20,909.0	21,460.0	1.8	2.6
Manufacturing	11,742.0	12,181.0	12,391.0	0.9	1.7
Nonmanufacturing	7,718.0	8,728.0	9,069.0	3.1	3.9
Services	87,226.0	95,264.0	96,994.0	2.2	1.8
Distribution services	22,833.0	24,501.0	24,654.0	1.8	0.6
Electronic services	3,400.0	3,768.0	3,848.0	2.6	2.1
Financial services	6,218.0	6,654.0	6,725.0	1.7	1.1
Professional services	27,680.0	30,359.0	31,148.0	2.3	2.6
Other services	27,095.0	29,982.0	30,619.0	2.6	2.1
Wages and salary accruals ($ per FTE)					
Private sector	55,439.2	61,347.9	63,305.5	2.6	3.2
Goods	61,025.9	66,558.2	68,574.5	2.2	3.0
Manufacturing	63,543.9	69,416.6	71,279.2	2.2	2.7
Nonmanufacturing	57,195.0	62,568.9	64,878.9	2.3	3.7
Services	54,192.8	60,204.3	62,139.8	2.7	3.2
Distribution services	46,658.2	51,095.3	52,685.2	2.3	3.1
Electronic services	96,211.8	110,857.7	116,539.2	3.6	5.1
Financial services	92,002.1	105,217.9	108,050.3	3.4	2.7
Professional services	62,087.0	67,877.0	69,672.4	2.3	2.6
Other services	38,528.1	43,522.9	45,169.6	3.1	3.8
Labor productivity ($ per FTE)					
Private sector	134,059.8	136,380.2	137,989.4	0.4	1.2
Goods	161,135.7	162,877.2	163,685.9	0.3	0.5
Manufacturing	169,136.4	170,757.7	174,400.8	0.2	2.1
Nonmanufacturing	148,937.5	151,901.9	149,013.1	0.5	-1.9
Services	128,019.2	130,564.5	132,304.1	0.5	1.3
Distribution services	106,674.6	110,424.1	112,862.0	0.9	2.2
Electronic services	258,147.1	310,828.0	330,457.4	4.8	6.3
Financial services	204,985.5	213,135.0	208,461.0	1.0	-2.2
Professional services	98,240.6	99,496.0	100,805.8	0.3	1.3
Other services	142,435.9	137,502.5	138,371.6	-0.9	0.6

Source: USDOC, BEA, "Real Value Added by Industry," October 25, 2019; USDOC, BEA, table 6.5D, "Full-Time Equivalent Employees by Industry," July 30, 2019; USDOC, BEA, table 6.6D, "Wage and Salary Accruals per Full-Time Equivalent Employee by Industry," July 30, 2019.

Table 2.2 United States: Real gross domestic product (GDP), full-time equivalent employees (FTEs), wage and salary accruals, and labor productivity, by financial services industry, 2013–18

	2013	2017	2018	Average annual growth (%) 2013–17	Change (%) 2017–18
GDP (billion $)					
Federal Reserve banks, credit intermediation, and related activities	486	443	411	-2.3	-7.2
Insurance carriers and related activities	380	535	560	9.0	4.7
Rental and leasing services and lessors of intangible assets	181	231	237	6.3	2.6
Securities, commodity contracts, and investments	229	225	220	-0.4	-2.6
FTEs (1,000)					
Federal Reserve banks, credit intermediation, and related activities	2,556	2,613	2,613	0.6	0.0
Insurance carriers and related activities	2,316	2,588	2,635	2.8	1.8
Rental and leasing services and lessors of intangible assets	504	551	555	2.3	0.7
Securities, commodity contracts, and investments	841	901	922	1.7	2.3
Wages and salary accruals ($ per FTE)					
Federal Reserve banks, credit intermediation, and related activities	73,370	86,522	89,778	4.2	3.8
Insurance carriers and related activities	80,069	88,684	91,633	2.6	3.3
Rental and leasing services and lessors of intangible assets	52,869	56,935	60,317	1.9	5.9
Securities, commodity contracts, and investments	205,052	236,573	235,486	3.6	-0.5
Labor productivity ($ per FTE)					
Federal Reserve banks, credit intermediation, and related activities	190,102	169,460	157,252	-2.8	-7.2
Insurance carriers and related activities	163,946	206,801	212,638	6.0	2.8
Rental and leasing services and lessors of intangible assets	358,730	418,875	426,667	4.0	1.9
Securities, commodity contracts, and investments	271,938	250,167	238,178	-2.1	-4.8

Source: USDOC, BEA, "Real Value Added by Industry," October 29, 2019; USDOC, BEA, table 6.5D, "Full-Time Equivalent Employees by Industry," July 30, 2019; USDOC, BEA, table 6.6D, "Wage and Salary Accruals per Full-Time Equivalent Employee by Industry," July 30, 2019.

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U.S. Department of Commerce (USDOC). Bureau of Economic Analysis (BEA). Table 6.5D, "Full-Time Equivalent Employees by Industry." Interactive Tables: National Data, National Income and Product Accounts, October 15, 2019. https://apps.bea.gov/iTable/iTable.cfm?ReqID=62&step=1.

U.S. Department of Commerce (USDOC). Bureau of Economic Analysis (BEA). Table 6.6D, "Wages and Salaries per Full-Time Equivalent Employee by Industry." Interactive Tables: National Data, National Income and Product Accounts, July 30, 2019. https://apps.bea.gov/iTable/iTable.cfm?reqid=19&step=2&isuri=1&1921=survey.

Chapter 3
Banking Services

Summary

By 2019, the global banking services industry had largely recovered from the lows experienced during the 2008 global financial crisis. Global banking revenues totaled $2.3 trillion in that year, increasing by an average annual rate of 2 percent since 2009.

Several trends in the banking industry will likely continue over the next few years. Digital technology continues to be a major theme in the banking industry, due to improved adoption by incumbent banks as well as new entrant firms. These new entrants include large global technology companies as well as fast-growing financial technology (fintech) firms, both of which are inventing new ways to deliver financial services. To reduce costs and improve service offerings in the face of industry regulation and low interest rates, traditional banks are adopting new technology in the delivery of services. As competition intensifies, banks are increasingly collaborating with firms in other industries.

U.S. cross-border exports of banking services grew in 2018, fueled by credit card and other credit-related services. While sales by foreign affiliates of U.S. banks fell in 2017, the latest year for which data were available, certain markets, particularly Singapore and India, experienced rapid growth. Overall, the largest foreign markets for U.S. affiliate sales in the banking industry were the United Kingdom (UK), Canada, and Australia.

Introduction

The banking industry offers traditional deposit-taking and lending services, as well as a wide variety of fee-based services. The latter include financial management and transaction services; advisory services; custody services; credit card services; and other credit-related services. The industry is commonly divided into three categories: retail banking, commercial banking, and investment banking. Retail and commercial banks provide traditional services like deposit taking, loans, transaction services, and credit cards, which are offered to both individual customers (retail banking) and companies (commercial banking). By contrast, investment banks tend to offer securities-related services like underwriting, dealing, and brokerage services to companies and institutional investors. This chapter focuses on the traditional retail and commercial banking industry, while investment banking is covered in chapter 5.

Globally, retail banking accounted for an estimated 62.4 percent of estimated industry revenues in 2019, whereas commercial banking represented 34.9 percent.[39] Banks generate their revenues principally from interest-earning activities. Gross earnings from these activities are typically reflected in a bank's net interest margin, defined as the difference between the interest payments received on loan assets and the interest payments made to depositors or other providers of funding. In addition to these deposit and lending services, banks make money by charging fees and selling financial products and

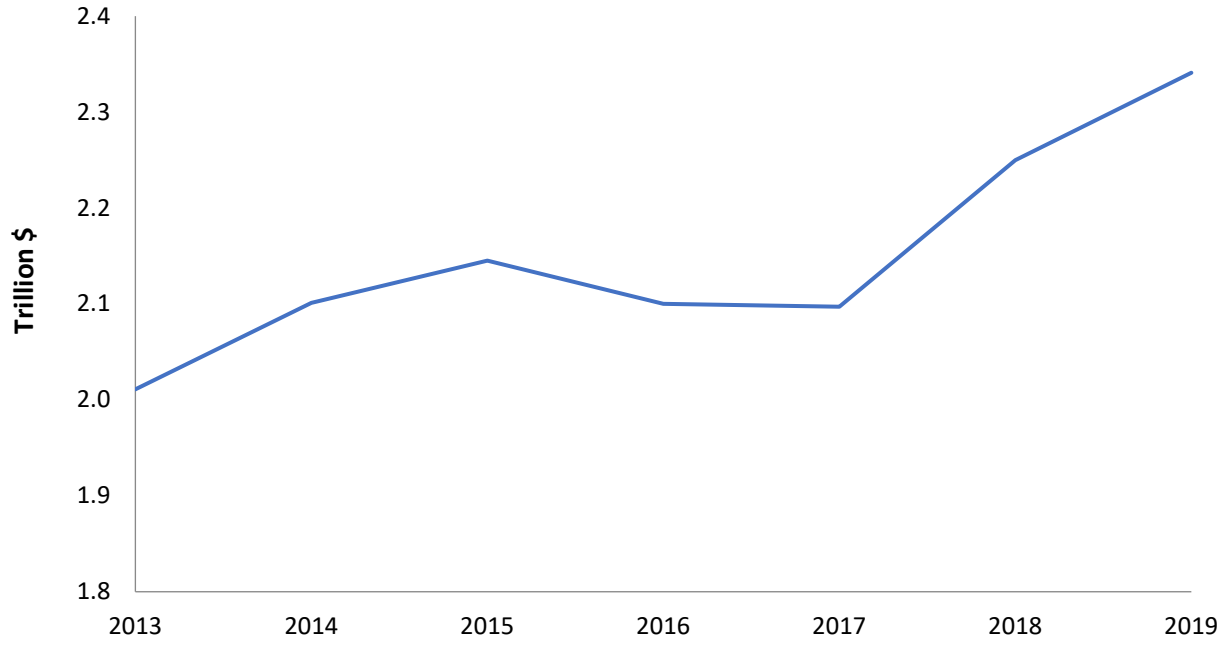
[39] Shares provided for 2019 represent industry estimates, with government entities accounting for the remaining 2.7 percent of industry revenue. IBISWorld, *Global Commercial Banking*, December 2019, 17.

services such as mortgages or credit cards. In 2019, revenues in the banking industry were largely derived from credit products and services, of which residential mortgages were the largest share (30.8 percent), followed by commercial and industrial loans (24.6 percent) and consumer loans (15.0 percent).[40]

Market Conditions

Revenues and profitability in the banking industry have recovered since the lows experienced during the 2008 global financial crisis—albeit at modest growth rates— despite an ongoing low-interest-rate environment. Global banking revenues grew at an average annual rate of 2.3 percent, rising from $1.9 trillion in 2010 to $2.3 trillion in 2019 (figure 3.1).[41] The prevalence of low interest rates during much of this period undermined interest income in the banking industry. Net interest margins, for example, declined by 3.6 percent during 2015–18.[42] Lower interest income, however, was at least partially offset by increased fee income derived from credit provision activities. During 2014–18, for example, fee income from the arrangement and administration of consumer loans grew by 1.4 percent.[43]

Figure 3.1 Global banking revenues, 2013–19 (trillion dollars)



Source: IBISWorld, *Global Commercial Banking*, December 2019, 11.
Note: Totals include revenues for both retail and commercial banking services; revenues for 2019 are estimates. Underlying data for this figure can be found in appendix table B.13.

[40] Shares for 2019 are industry estimates provided by IBISWorld. IBISWorld, *Global Commercial Banking*, December 2019, 9.
[41] Shares for 2019 are industry estimates provided by IBISWorld. IBISWorld, *Global Commercial Banking*, December 2019, 9.
[42] Calculated by USITC staff using data from Bureau van Dijk's Orbis Database (accessed January 22, 2020).
[43] Calculated by USITC staff using data from Bureau van Dijk's Orbis Database (accessed January 22, 2020).

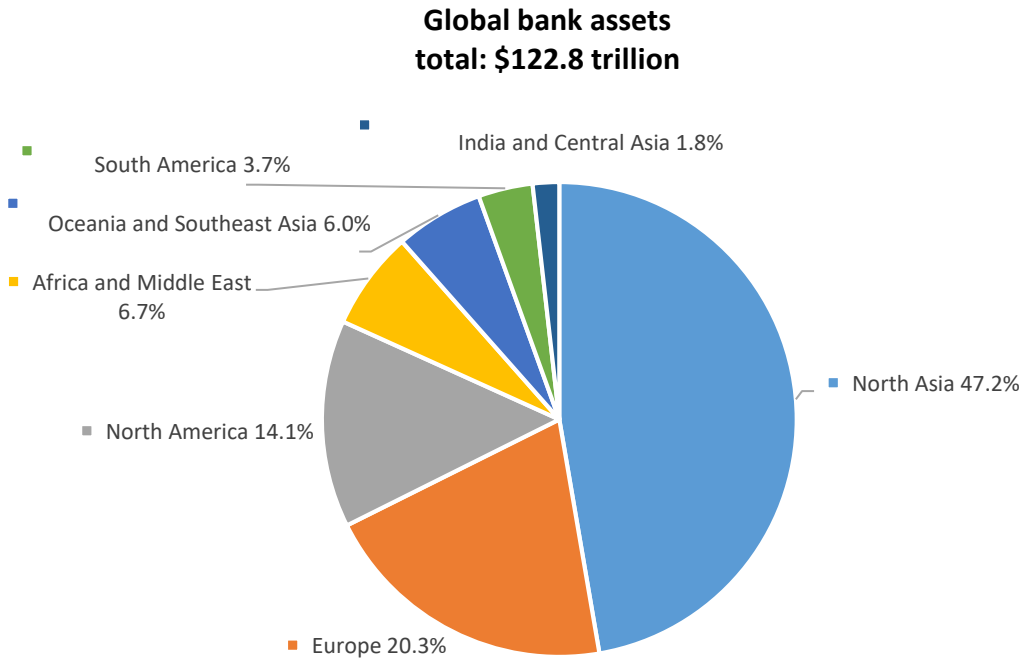
In the United States, the annual rate of growth in commercial lending declined from 10.1 percent in 2015 to a low of 1.0 percent in 2017 before partially recovering to 2.2 percent in 2019.[44] The slowing growth in commercial lending is largely attributable to declining capital investment by businesses.[45] During the same period, growth in U.S. consumer lending also slowed, from 7.6 percent in 2015 to 4.9 percent in 2019, likely due to reduced risk tolerance on the part of banks.[46] In the euro area, lending growth was still weaker: loans to nonfinancial corporations grew at an average annual rate of only 0.5 percent during 2015–18, whereas household lending grew at an average annual rate of 2.5 percent during the same period.[47] Since the 2008 global financial crisis, many European banks have been forced to reduce lending levels due to a stricter regulatory environment, fiscal austerity, and slowing economic activity.[48]

Over the past five years, the global banking industry became more concentrated. The top 15 global banks, for example, controlled 31.1 percent of industry assets in 2019, compared to 25.4 percent in 2015.[49] Such concentration is attributable to regulatory changes since the financial crisis as well as to merger and acquisition activity that, in some cases, blurred the lines between traditional and investment banking activities.[50]

Geographically, banks in "North Asia" accounted for nearly half of the global industry's total assets—47.2 percent in 2019—followed by Europe (20.3 percent) and North America (14.1 percent) (figure 3.2).[51] Chinese banks, often with majority state ownership, moved up the global rankings over the decade, mostly at the expense of European banks, which accounted for 41 percent of global banking assets in 2014.[52]

[44] Board of Governors of the Federal Reserve System, FRED Economic Data, Commercial and Industrial Loans, All Commercial Banks [BUSLOANS] (accessed January 22, 2020).
[45] Board of Governors of the Federal Reserve System, "The January 2020 Senior Loan Officer Opinion Survey," February 3, 2020.
[46] Board of Governors of the Federal Reserve System, "The January 2020 Senior Loan Officer Opinion Survey," February 3, 2020.
[47] The euro area refers to the 19 EU member states that adopted the euro currency. ECB, Statistical Data Warehouse, "Loans Vis-A-Vis Euro Area NFC," January 3, 2020; ECB, Statistical Data Warehouse, "Loans Vis-A-Vis Euro Area Households," January 3, 2020.
[48] IBISWorld, *Global Commercial Banking*, December 2019, 18, 31.
[49] USITC's calculations. FSB, Global Shadow Banking Monitoring Report 2018, February 4, 2019, 13; Deloitte, *2020 Banking and Capital Markets Outlook*, 5; Cunningham, "Biggest Global Banks 2015," November 13, 2015; *Financial Times*, The Banker Database, Top 1000 World Banks (accessed February 24, 2020).
[50] IBISWorld, *Commercial Banking in the US*, December 2019, 13; IBISWorld, *Global Commercial Banking*, December 2019, 9.
[51] IBISWorld, *Global Commercial Banking*, December 2019, 18. IBISWorld defines North Asia as China, Japan, and South Korea.
[52] IBISWorld, *Global Commercial Banking*, December 2019, 18.

Figure 3.2 Banking assets, by geographic region, 2019 (percent)



Source: IBISWorld, *Global Commercial Banking*, December 2019, 18; Deloitte, *2020 Banking and Capital Markets Outlook*, 5.
Notes: North Asia principally includes China, Japan, and South Korea, and Japan. IBISWorld, *Global Commercial Banking*, December 2019, 18.
Underlying data for this figure can be found in appendix table B.14.

In 2019, the top four global banks, measured by total assets, were majority state-owned banks headquartered in China (table 3.1),[53] a reflection of growing market demand for financial services in China and emerging markets.[54] In recent years, China has taken some steps to ease or remove market access restrictions in the traditional banking sector. In 2018, for example, China removed restrictions on foreign ownership in local banks, for the first time allowing full ownership by foreign companies.[55] Such investments had previously been capped at a 20 percent equity stake for an individual foreign investor or 25 percent for a group of foreign investors.[56] Over the past couple of years, China also removed minimum asset requirements for establishing a foreign bank in China (which had been $10 billion) and for setting up a Chinese branch of a foreign bank ($20 billion). In practice, it remains to be seen whether or not foreign investors will be allowed to take full advantage of these measures.[57] In May 2019, foreign banks held only 1.6 percent of total banking assets in China, down from 2.3 percent in 2007.[58] This drop

[53] China's direct ownership stakes in the top four banks are Industrial and Commercial Bank of China, 70 percent; Bank of China, 65 percent; China Construction Bank, 57 percent; and Agricultural Bank of China, 80 percent.
[54] Deloitte, "Review and Outlook of China Banking Industry," May 2019; KPMG, "Amid Global Uncertainties, Banks in Mainland China," August 29, 2019.
[55] USTR, NTE, 2020, 117; Wallace, "Removal of Foreign Investment Restrictions on Chinese Banks," September 7, 2018.
[56] Bloomberg, "China Keeps Promises to Wall Street Even as Trade War Drags On," August 23, 2018; Wallace, "Removal of Foreign Investment Restrictions on Chinese Banks," September 7, 2018.
[57] USTR, NTE, 2020, 117.
[58] Bloomberg, "China's Finance World Opens Up to Foreigners," May 18, 2020.

may be explained in part by the competition faced by foreign banks in China from government-controlled rivals that have long-established relationships with leading state-owned companies.[59]

Recently, some U.S. companies have taken tentative steps into the Chinese banking market, although still as joint ventures with local partners. American Express, for example, recently won approval to set up a payment clearing business in China (as a joint venture) as well as to build a bankcard network. Similarly, Mastercard received approval to set up a bankcard clearing business, also as a joint venture.[60]

Table 3.1 Top 15 global banks by total assets, 2019 (trillion dollars)

Rank	Bank	Country	Total assets (trillion $)
1	Industrial and Commercial Bank of China	China	4.0
2	China Construction Bank	China	3.4
3	Agricultural Bank of China	China	3.3
4	Bank of China	China	3.1
5	Mitsubishi UFJ Financial Group	Japan	2.8
6	JPMorgan Chase & Co	United States	2.6
7	HSBC Holdings	UK	2.6
8	Bank of America	United States	2.4
9	BNP Paribas	France	2.3
10	Crédit Agricole	France	2.1
11	Citigroup	United States	1.9
12	Wells Fargo & Company	United States	1.9
13	Sumitomo Mitsui Financial Group	Japan	1.8
14	Mizuho Financial Group	Japan	1.8
15	Banco Santander	Spain	1.7
	Total		37.8

Source: *Financial Times*, The Banker Database (accessed February 24, 2020).

Demand and Supply Factors

Competition in the banking industry is increasing as both large global technology companies and smaller fintech firms are using technology to compete in certain market segments. Traditional banks are responding to competition by adopting technology to increase the efficiency and cost-effectiveness of service delivery.

Banks Face Increasing Competition from Fintech and Big Tech

Over the past several years, the banking industry has faced competition from nontraditional firms offering banking services, namely fintech and big technology (big tech) firms. Fintech firms are digital technology firms—often startups—that offer online transaction services for payments, currency conversion, share trading, lending, or other digital financial services that do not require a traditional banking license.[61] Popular fintech firms in the United States include Stripe (business payments), Zelle

[59] Bloomberg, "China's Finance World Opens Up to Foreigners," May 18, 2020.
[60] Bloomberg, "China's Finance World Opens Up to Foreigners," May 18, 2020.
[61] BIS, *Annual Report 2018/19*, June 30, 2019, 56; Clark, "*State Regulators Are Critical to Fintech Oversight*," July 15, 2019.

(consumer payments), Robinhood (retail brokerage), and Social Finance (SoFi, student loan refinancing). In addition to the novel use of technology, part of the rapid growth in fintech is explained by the cost advantage of not having to maintain legacy infrastructure (such as brick-and-mortar branches) and by the use of relatively low-cost technology platforms like mobile apps.[62] Globally, lending by fintech firms grew from less than $10 billion in 2013 to nearly $600 billion in 2017, although such lending represented only 1.5 percent of global loans in 2017.[63] In the United States, fintech firms accounted for less than 5 percent of personal loans in 2010, growing to more than 30 percent in 2017.[64]

Many fintech firms are beginning to branch out into a broader array of banking services, potentially increasing competition in a wider range of market segments.[65] SoFi, for example, which began as a student loan refinancing company in 2011, has since started to offer home mortgages, life insurance, automated investment portfolio management, and cash management services.[66] In January 2020, SoFi also announced a partnership with Mastercard for planned debit and credit card offerings.[67]

Big tech firms are also starting to offer financial services—largely payment services—using fintech technology, with notable examples including Alibaba, Amazon, Apple, Google, and Facebook. Big tech companies have several advantages over smaller fintech firms, including brand recognition, large-scale financial resources, and a large user base. Having a large user base, in particular, conveys a tremendous advantage. For example, subscriber numbers for WeChatPay, the digital payment arm of Chinese messaging giant WeChat, totaled 1.2 billion people by the end of 2019 , and Facebook has an estimated 2.6 billion active monthly users as of April 2020.[68] Its service, Facebook Pay, allows users to send money without fees across Facebook, Instagram, WhatsApp, and Messenger.[69] Big tech firms may partly enter the payment business for the purpose of gaining detailed spending data on their subscribers—data which can ultimately be used to boost advertising revenues.[70]

Fintech firms hoping to expand into a wider variety of banking services may face regulatory barriers. In the United States, for example, the U.S. Office of the Comptroller of the Currency started accepting applications for banking charters from fintech firms in 2018 but, to date, has not approved any of these applications.[71] For example, Robinhood, which applied for a banking charter in 2019, later withdrew its application and, instead, chose to place deposits with several traditional banks; customers have access

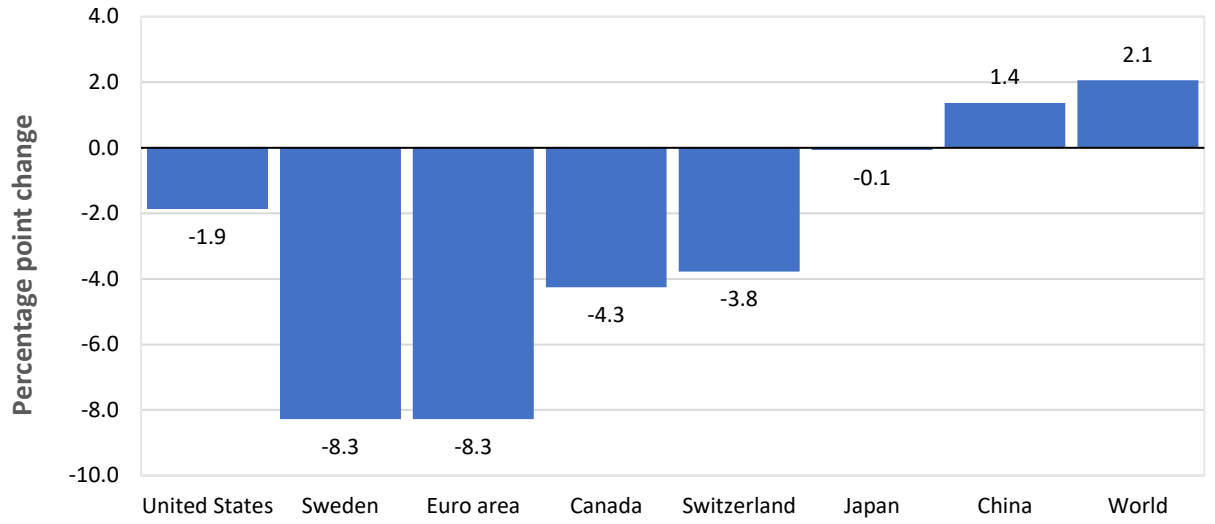
[62] Frost et al., "BigTech and the Changing Structure," April 2019, 8.
[63] Frost et al., "*BigTech and the Changing Structure,*" April 2019.
[64] Detrixhe, "Americans Are Splurging on Personal Loans," July 24, 2018.
[65] *Economist*, "Tech's Raid on the Banks," May 2, 2019; McWaters and Galaski, "Beyond Fintech: A Pragmatic Assessment," August 22, 2017.
[66] SoFi, "SoFi Expands Student Loan Products," April 10, 2013; SoFi, "SoFi Fills Out Insurance Offerings," April 15, 2019; SoFi, "SoFi Says Millennials Can Invest in Their Retirement," September 26, 2019.
[67] SoFi, "SoFi Supercharges Its Debit and Credit Cards," January 23, 2020.
[68] Smith, "110 WeChat Statistics and Facts," July 2020; Clement, "Countries with the Most Facebook Users 2020," Statista, April 24, 2020.
[69] Hutchinson, "Facebook Climbs to 2.5 Billion Monthly Active Users," January 30, 2020; *Guardian*, "You Want an Interactive Map," July 22, 2010.
[70] *Wall Street Journal*, "Why Big Tech Is Getting into Finance," January 13, 2020; Constine, "The Use Cases, Technology and Motive," June 18, 2019.
[71] In October 2019, a federal judge ruled that the OCC had no authority to establish the charter. Pederson, "OCC Files Appeal in Fintech Charter Case," December 19, 2019; OCC, "OCC Begins Accepting National Bank Charter Applications," July 31, 2018; OCC, Corporate Applications Search (CAS) (accessed January 15, 2020).

to their funds via a Robinhood-branded debit card.[72] Globally, some countries are creating fintech-specific supervisors to examine potential risks posed by fintech companies, including risks to consumers and fintech investors—a trend some market participants suggest may limit fintech innovation.[73]

Banks Embrace Online and Digital Services

As customers increasingly conduct banking transactions online, many banks are moving away from the branch-based service delivery model—a phenomenon which is leading to the closure of bank branches in many countries, particularly in Europe (figure 3.3). The euro area experienced the most branch closings, with an annual decline of 8.3 percent during 2015–18. For example, BNP Paribas Fortis, the Belgian subsidiary of France's BNP Paribas, announced the closure of roughly 40 percent of its branches. The company noted that only 14 percent of its customers exclusively conducted business within bank branches; the remainder visited branches less frequently, relying instead on the company's mobile app.[74] Over the past couple of years, several major banks in the United States have also closed branches, largely to reduce costs as consumers gravitated toward digital technologies. During 2017–18, for example, Wells Fargo closed 5 percent of its branches, while BB&T closed 8 percent of its branches and Capital One closed 15 percent.[75]

Figure 3.3 Retail bank branch growth (or decline), average annual percentage point change, 2015–18



Source: World Bank, "Commercial Bank Retail Branches (per 100,000 Adults)" (accessed December 12, 2019).
Note: Underlying data for this figure can be found in appendix table B.15.

[72] OCC, Corporate Applications Search (CAS) (accessed January 15, 2020); Walsh, "Brokerage Robinhood Tries Again in Push," October 8, 2019; Henderson, "Robinhood Shutdown Leaves Users Feeling Robbed," March 3, 2020.
[73] Taylor et al., "Institutional Arrangements for Fintech Regulation and Supervision," January 2020.
[74] Specifically, the bank announced plans to close 267 of its 678 branches. VRT News, "BNP Paribas Fortis to Close," March 15, 2019.
[75] Chase, "Chase Announces Major Branch Expansion in 2019," January 31, 2019; Fox and Pirzada, "US Bank Branch Closures Reach Another High," January 18, 2019; Egan, "Wells Fargo Is Closing Over 400 Bank Branches," January 13, 2017.

Over the past few years, many traditional banks have introduced so-called online "e-banking" services.[76] Such services have become widespread, even in less developed countries. In 2019, for example, e-banking transactions conducted by customers of the Industrial and Commercial Bank of China (ICBC) accounted for 86 percent of total bank transactions. ICBC reported that 460 million of its customers had used e-banking services in that year.[77] As banking services are increasingly conducted online, many banks are making large investments in digital technologies. In 2019, for example, JP Morgan spent $11.4 billion on technology, followed by Bank of America ($10.0 billion), Wells Fargo ($9.0 billion), and Citigroup ($8.0 billion).[78]

Other innovative services increasingly being offered by banks are e-wallets and specialty apps. Over the past year or so, JP Morgan has created e-wallets tailored to companies like Amazon, AirBnB, and Lyft. JP Morgan's e-wallets offer not only virtual bank accounts to its partners' customers, but also offer benefits like car loans or discounts. For its part, JP Morgan manages payment processing and cash movement associated with its e-wallets. Such services are part of JP Morgan's fast-growing wholesale payments business, which represented 10 percent of total revenues in 2018.[79] In Canada, the Royal Bank of Canada recently released an app called RBC Neighbourhood Explorer that helps users searching for a new home to identify neighborhoods that meet their needs.[80]

In many countries, "open banking" schemes are also emerging. The term "open banking" refers to arrangements in which individual consumers and businesses can authorize third-party financial services providers to access banking, transaction, and other financial data from bank and non-bank companies using secure online channels. [81] Examples of the types of data that can be accessed via open banking schemes are identity verification, money transfers, and account management.[82] Over the next few years, one of the primary benefits of open banking to traditional banks will likely be reduced costs for service delivery.[83] Open banking schemes are currently available in Australia, Hong Kong, Mexico, and the UK, and are under consideration in Canada, Nigeria, and the United States, among others.[84] Overall, open banking offers banks the ability to collaborate with fintech firms, improve customer experience, acquire customer behavior data, and integrate banking services with the services offered by a wide variety of industries.[85] Despite such promised benefits, one industry survey found that many consumers had negative feelings towards open banking, with 48 percent citing data and cybersecurity concerns.[86]

Traditional banks also face increasing competition from online-only banks, or banks that do not have physical branches and conduct all transaction online. Currently, the services offered by such banks are largely confined to deposit taking and online payments, although small loans are available in some

[76] For more discussion on e-banking, see USITC, *Recent Trends in U.S. Services Trade 2016*, October 2016, 68.
[77] IBISWorld, *Global Commercial Banking*, December 2019, 9.
[78] DeFrancesco, "Here's a Breakdown of How Much," March 28, 2019.
[79] American Banker, "JPMorgan Has a Plan to Help Amazon and Airbnb," November 6, 2019.
[80] RBC, RBC Neighbourhood Explorer (accessed December 18, 2019).
[81] Government of Canada, Department of Finance, "A Review into the Merits of Open Banking," January 2019; PwC Canada, *Open Banking Is Coming*, January 31, 2019; Warwick-Ching, "Open Banking: The Quiet Digital Revolution," January 11, 2019.
[82] BBVA website, Access to Banking Services (accessed January 24, 2020).
[83] Accenture, *The Brave New World of Open Banking*, 2018.
[84] PwC Canada, "Open banking developments in jurisdictions around the world," January 31, 2019.
[85] Fitch Ratings, "Fitch Ratings: US FinTech Focus," November 4, 2019.
[86] Thomas, Kimber, and Brown, "Five Approaches to Secure Open Banking," March 6, 2019.

cases. Simple Bank, for example, offers high-interest online savings accounts and payment services to about 100,000 users in the United States.[87] Other examples of online-only banks that offer small loans include WeBank (China), N26 (Europe), Monzo (UK), and NuBank (Brazil).[88]

Over the past several years, some online-only banks have experienced dramatic growth. WeBank, which was launched by Tencent in China in 2014, had accumulated deposits totaling $21.5 billion by the end of 2018, an increase of 2,800 percent over the previous year.[89] Similarly, Monzo added more than a million customers—and increased its deposits by more than 500 percent—in 2019 alone.[90] In the United States, investment bank Goldman Sachs' entry into the retail banking market has been through an online-only bank called Marcus. Launched in 2016, Marcus offers high-interest savings accounts and small loans.[91] By the end of 2019, Marcus had amassed $60 billion in deposits, an increase of more than 100 percent over the previous year.[92]

One potential downside to online banking and other digital initiatives is the risk of privacy breaches, data theft, cybercrime, and fraud.[93] Indeed, over the past decade, banks have been the main target for fraud, hacking, and other cybercrimes. According to Statistics Canada, for example, 47 percent of global cybercrimes involved banks in 2017.[94] Banks have actively responded to these concerns, with 84 percent of senior security officers of banks and other financial firms reporting increased cybersecurity spending in 2018.[95]

Trade Trends

Cross-border Exports and Imports

In 2018, U.S. cross-border exports of banking services grew 3.5 percent to $79.1 billion, compared to an average annual decline of 0.3 percent during 2014–17 (figure 3.4). Financial management services made up 67.4 percent ($53.3 billion) of banking services exports in 2018, while credit card and other credit-related services made up 32.6 percent ($25.8 billion).[96] Notably, credit card and other credit-related services grew by 12.8 percent in 2018, much faster than the average annual rate of 3.2 percent during 2014–17.

[87] In 2018, Simple offered 2.02 percent APY in 2018, compared to the national average 0.05 percent. Simple Bank, "Simple Takes the Lead," September 25, 2018; Simple Bank, "About Us" (accessed January 8, 2020); Alden, "BBVA Buys Banking Start-Up Simple," February 20, 2014; Barba, "Valuing a Digital Bank Isn't So Simple," February 3, 2017.
[88] Tesfaye, "Evolution of the US Neobank Market," January 16, 2019.
[89] *Asiamoney*, "WeBank: China's Financial Unicorn," September 26, 2019.
[90] Monzo, *Annual Report 2019,* February 28, 2019.
[91] Marcus website, https://www.marcus.com/us/en (accessed April 14, 2020).
[92] PYMTS, "Goldman Sachs: Marcus at $60 Billion," January 15, 2020.
[93] PwC Canada, *Open Banking Is Coming*, January 31, 2019.
[94] Government of Canada, Department of Finance, "A Review into the Merits of Open Banking," January 2019.
[95] Onaran, "U.S. Financial Firms to Further Increase Cybersecurity," December 3, 2018.
[96] Financial management services include sales/purchases where the service provider has authority over the use or investment of funds or other assets. Credit card services include sales/purchases related to credit-card services, while credit-related services (except credit card services) include fees for credit- or lending-related services, like fees paid (directly or indirectly) for mortgages and lines of credit. BEA, "Form BE-185," November 2018.

Figure 3.4 Banking services: U.S. cross-border exports and imports, 2014–18 (billion dollars)

Source: USDOC, BEA, table 2.2, "U.S. Trade in Services, by Type of Services," October 15, 2019.
Note: Underlying data for this figure can be found in appendix table B.16.

In addition, U.S. cross-border imports of banking services grew 8.3 percent to $22.0 billion in 2018, faster than the 3.6 percent average annual growth during 2014–17. Cross-border trade in credit card services, which accounted for 42.6 percent ($9.4 billion) of such imports in 2018, drove growth in the sector, increasing 15.1 percent in 2018 and rising at an average annual growth rate of 7.5 percent during 2014–17. U.S. imports of financial management services grew by only 3.8 percent to $12.7 billion in 2018, an increase over the average annual growth rate of 1.3 percent recorded during 2014–17.

Box 3.1 Understanding Bureau of Economic Analysis (BEA) Data on Cross-Border Trade and Affiliate Transactions in Banking Services

Official data for U.S. cross-border trade in banking services are not available. Instead, BEA reports data for noninsurance cross-border financial services, broken out into the following six categories:

- Financial management services
- Financial advisory and custody services
- Credit-card and other credit-related services
- Securities brokerage
- Securities underwriting and related services
- Securities lending, electronic funds transfer, and other services

The Commission reports the sum of the first three categories (financial management; financial advisory and custody services; and credit-card and other credit-related services) as cross-border trade in banking services. These services tend to be predominantly provided by banks, though both banks and securities firms engage in all six categories. This report classifies the remaining three categories as securities services, since they tend to be dominated by securities firms.

For affiliate transactions, BEA reports sales and purchases by noninsurance financial firms defined by two activities: (1) depository credit intermediation (banking) and (2) finance, except depository institutions. Only limited country-level data are available on U.S. purchases from foreign-owned affiliates in banking services, as some data are suppressed to avoid disclosing the data of individual firms. As a result, this report presents the country-level data only for purchases from U.S.-owned foreign affiliates.

Trade in banking services can be described in terms of imports and exports for both cross-border trade and affiliate transactions.[a] In terms of cross-border trade, the United States imports banking services when a U.S. resident purchases banking services from a bank located outside the United States. Conversely, the United States exports banking services when a foreign person (nonresident) purchases banking services in the United States. For affiliate transactions, international trade occurs through the commercial presence of the bank in a foreign market. As such, a purchase of banking services by a U.S. resident from a foreign-owned bank in the United States is an import of foreign banking services. Similarly, a sale of banking services to a foreign person by a U.S. bank in a foreign market is an export of U.S. banking services.[b]

In 2014, BEA conducted its *2014 Benchmark Survey of U.S. Direct Investment Abroad*, which reported that the value of services supplied abroad through the affiliates of U.S. multinational enterprises was 14 percent higher in 2014 than in 2013. BEA attributes this increase mostly to improved survey coverage due to increased outreach efforts. Consequently, affiliate transaction levels in the banking services in 2014 may not be comparable to transaction levels reported in 2013.[c]

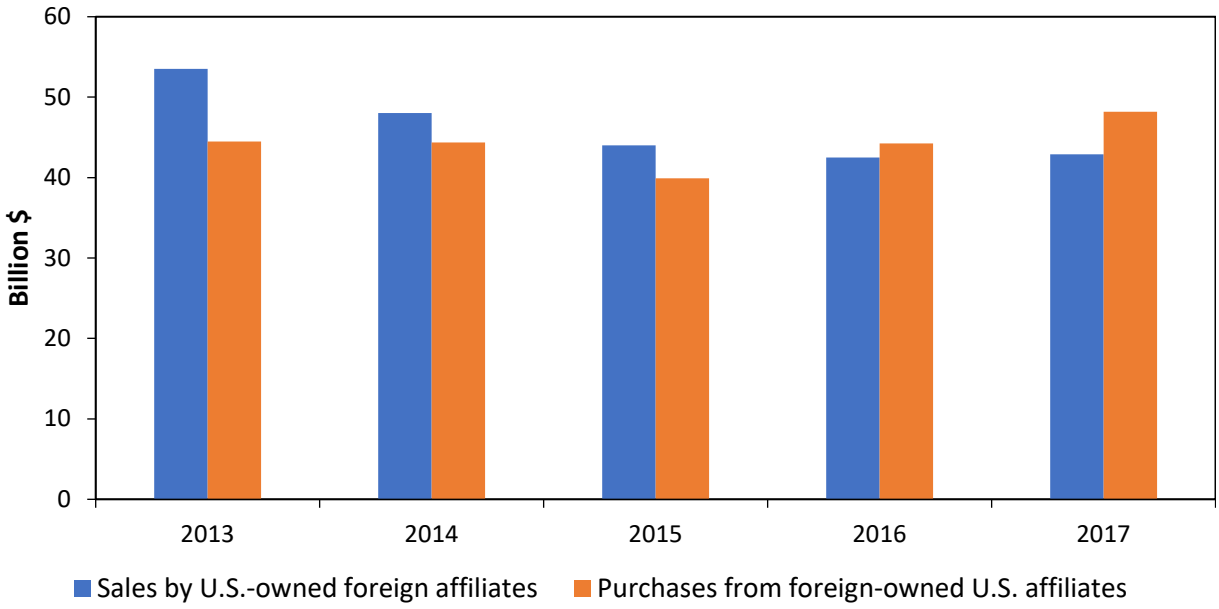
[a] See Introduction to this chapter.
[b] The use of banking services by U.S. residents abroad is considered mode 2 services trade and is not reported by BEA. USDOC, BEA, "A Guide to BEA's Services Surveys," 5 (accessed November 20, 2019).
[c] USDOC, BEA, "U.S. International Services: Trade in Services in 2015 and Services Supplied through Affiliates in 2014," December 2016, 24; USDOC, BEA, "Activities of Multinational Enterprises," December 2016, 12.

Affiliate Transactions

Sales by the foreign affiliates of U.S. banks grew by roughly 1 percent to $42.9 billion in 2017, compared to an average annual decline of 7.4 percent recorded during 2014–16 (figure 3.5). During that same year, purchases from the U.S. affiliates of foreign banks increased by 8.9 percent to $48.2 billion; during the previous five years such sales were essentially flat. The more recent uptick in affiliate transactions in 2017, particularly purchases from the U.S. affiliates of foreign banks, may have marked a post-2008 financial crisis turning point, wherein banks' confidence had improved enough to take on more risk in the low-interest environment.[97]

[97] Arnold, "How US Banks Took Over," September 16, 2018.

Figure 3.5 Banking services: U.S. affiliate sales and purchases, 2013–17 (billion dollars)

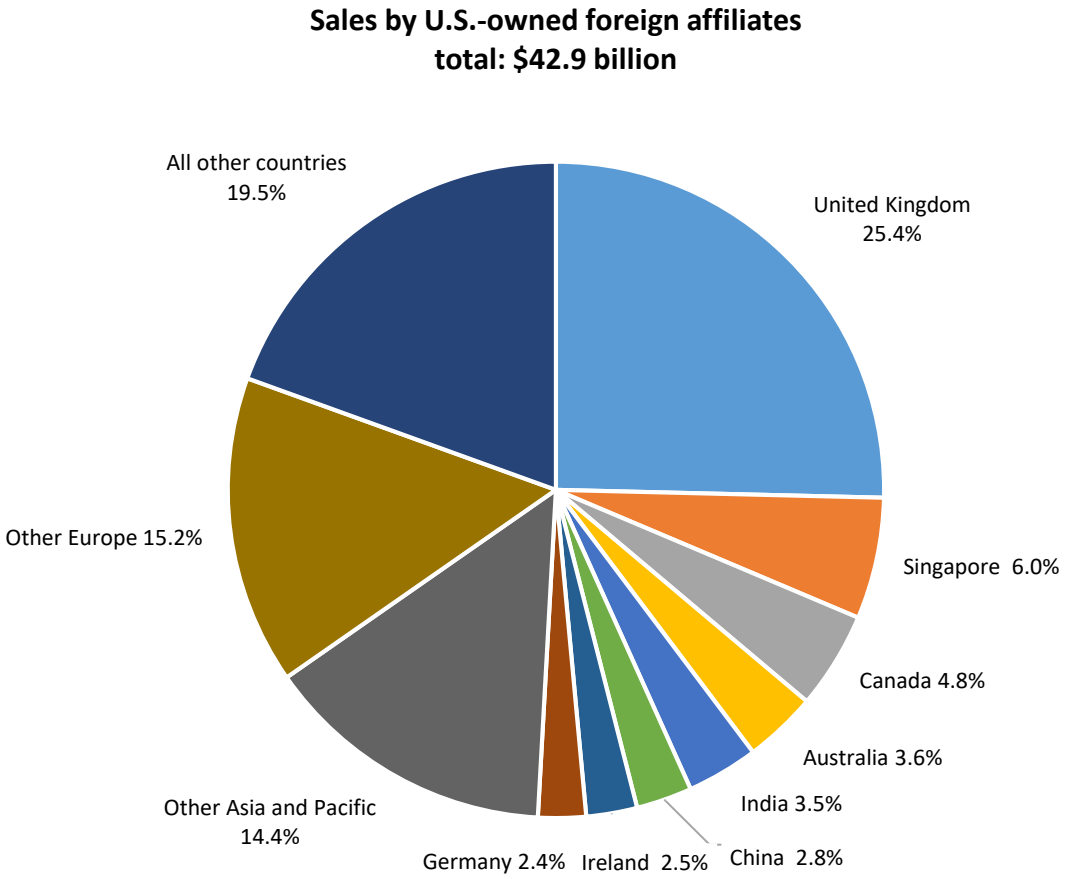


Source: USDOC, BEA, table 4.1, "Services Supplied to Foreign Persons by U.S. MNEs through Their MOFAs, by Industry of Affiliate and by Country of Affiliate," October 15, 2019, and table 5.1, "Services Supplied to U.S. Persons by Foreign MNEs through Their MOUSAs, by Industry of Affiliate and by Country of UBO," October 15, 2019; USITC, *Recent Trends in U.S. Services Trade*, October 2016.
Notes: Affiliate sales in 2014 may not be directly comparable to sales in 2013 (see box 3.1). Underlying data for this figure can be found in appendix table B.17.

In 2017, according to BEA, customers in the UK purchased $10.9 billion of banking services from U.S.-owned affiliates, the largest share (approximately a quarter) of all sales by U.S.-owned foreign affiliates in banking services (figure 3.6).[98] The next four largest markets included Singapore ($2.6 billion), Canada ($2.1 billion), Australia ($1.5 billion), and India ($1.5 billion). Together, the top five markets represented 43.3 percent of sales by the foreign affiliates of U.S. banks. Because bank affiliates are organized on a national-market basis and are regulated by local supervisors, Brexit is unlikely to change the number of U.S. banks that supply the UK market, though Brexit has the potential to increase the costs of foreign banks operating in the UK.[99]

[98] USDOC, BEA, table 4.1, "Services Supplied to Foreign Persons," October 15, 2019, and table 5.1, "Services Supplied to U.S. Persons," October 15, 2019.
[99] Spezzati, "Global Banks Prepare Their Next Moves," August 30, 2019.

Figure 3.6 Banking services: U.S. affiliate sales, by country, 2017 (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," October 15, 2019.
Note: Underlying data for this figure can be found in appendix table B.18.

Outlook

Over the next few years, the coronavirus pandemic and its associated impact on the global economy will likely cause banking revenues to stagnate or decline. Revenue impacts will likely stem from three sources: (1) sharply lower interest rates; (2) slowing demand for credit; and (3) increased risk of customer defaults. First, due to the actions of central banks around the world, benchmark interest rates have fallen dramatically—actions that will likely depress bank revenues from lending activities.[100] Second, despite lower interest rates, business losses and waning consumer confidence stemming from the coronavirus will likely depress demand for credit, particularly in large markets such as the United

[100] Schneider, Dunsmuir, and Saphir, "Fed Slashes Rates, Global Central Banks Coordinate," March 16, 2020; Smith et al., "Fed Cuts US Interest Rates to Zero," March 15, 2020.

States and China.[101] Finally, supply chain disruptions and declining business activity will likely increase default rates on loans and other types of credit.[102]

Short-term growth in the banking industry, particularly within China, depends on how severely output is affected by the coronavirus pandemic policy response and resulting stimulus packages.[103] In the longer term, growth in the global banking sector is likely to be constrained by continued uncertainty in the global economic outlook.[104]

[101] Bloomberg, "China's Credit Growth Slumps," March 11, 2020; FRB, H.8, "Assets and Liabilities of Commercial Banks," March 27, 2020.
[102] Rudegeair, "Everything Is Going Wrong All at Once," March 12, 2020.
[103] Weinland and Yu, "Coronavirus Outbreak Spells Trouble for China's Banks," February 12, 2020.
[104] IMF, *Tentative Stabilization, Sluggish Recovery?* January 2020; Rudegeair, "Everything Is Going Wrong All at Once," March 12, 2020.

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Chapter 4
Insurance Services

Summary

The United States is the world's largest insurance market. It accounted for 28.3 percent of total global premiums in 2018, with total U.S. premiums written increasing by 5 percent over the previous year.[105] U.S. insurers face challenges as well as opportunities: they report that international market uncertainties and climate change are complicating the provision of both life and non-life insurance and are raising costs. At the same time, emerging market demand for insurance services and new lines of insurance, such as cyber liability insurance, represent opportunities for rapid growth.

U.S. trade in insurance services via affiliates—i.e., through sales by U.S.-owned affiliates in foreign markets and purchases from foreign-owned affiliates in the United States—continued to exceed cross-border trade in insurance services by a wide margin. The United States has maintained a deficit in both cross-border and affiliate insurance services trade in recent years. Purchases of insurance from the U.S. affiliates of foreign firms have exceeded sales by U.S.-owned foreign affiliates since 2013, whereas the U.S. deficit in cross-border insurance services totaled $25 billion in 2018, though this deficit has been narrowing since 2010. Going forward, emerging markets will likely be the fastest-growing insurance markets, and the industry will continue to be shaped by regulatory changes, the liberalization of trade barriers, and the introduction of new technologies and lines of insurance.

Introduction

The insurance industry plays a critical role in the global economy by enabling individuals and businesses to manage risk. It is typically broken out into four main segments: life, property and casualty (P&C), reinsurance, and auxiliary services. Insurers underwrite a wide range of personal and commercial risks—that is, they accept liability and guarantee payment in the case of an insured loss—by selling life and non-life (P&C) products. Firms in the sector also provide services such as reinsurance—transactions in which a reinsurance company agrees to cover all or part of the losses and/or loss-adjustment expenses of a primary insurer[106]—and marine and transportation insurance, which covers goods in transit. Auxiliary services include insurance brokerage in which companies in the sector sell and service insurance policies.[107] Net income in the insurance industry is largely a product of collected premiums and investment income, minus claims paid to policy holders.

[105] III, "Top Countries by Life and Nonlife" (accessed January 10, 2020).
[106] NAIC, "Glossary of Insurance Terms" (accessed January 28, 2020).
[107] Brokers work on behalf of the consumer and are independent of the policy issuers, but they receive a commission paid by the insurance companies. NAIC, "Glossary of Insurance Terms" (accessed January 28, 2020).

The ability to purchase insurance encourages economic activity in various ways. First, it mitigates the risks of project failures for business owners, encouraging additional economic activity. Second, insurance increases the volume of investable funds by pooling the premiums of small investors, which encourages the development of stable capital markets. Insurance can also encourage good social behavior by offering insured parties discounts for low-risk behaviors, such as safe driving.

Market Conditions

In total, the value of the world insurance market rose by 1.5 percent in 2018 to $5.2 trillion.[108] The United States is the largest insurance market by far, with $593.3 billion in life premiums and $875.9 billion in non-life premiums together accounting for 28.3 percent of the total premiums written globally in 2018 (table 4.1).[109] China, Japan, and the UK were the second-, third-, and fourth-largest markets, accounting for 11 percent, 8 percent, and 6 percent of total world premiums, respectively. China overtook Japan as the second-largest insurance market in 2016 and has maintained a relatively stable share of the global market ever since. Of the top 10 countries by direct premiums written, Italy had the fastest growth rate in 2018, up 6.9 percent from the prior year. China ranked second, with 6.2 percent growth in premiums written. As emerging economies, such as China, continue to develop, new property is constructed which needs to be insured, meaning that total insurance premiums are likely to rise.

The ratio of life premiums to non-life premiums varies among countries. In the United States, non-life premiums accounted for 59.6 percent of total premiums in 2018, whereas in China and Japan they accounted for 45.5 percent and 24.1 percent, respectively.[110] Statistics published by the Organisation for Economic Co-operation and Development (OECD) show that insurance penetration rates (i.e., the ratio of premiums written to GDP) also vary among countries. For example, penetration rates are estimated at 11.3 percent in the United States and 13.1 percent in the UK, compared to only 1.9 percent in Finland and 2.3 percent in Mexico.[111]

[108] III, "Top Countries by Life and Non-life" (accessed January 10, 2020).
[109] Premiums written is defined as the sum of all premiums for all policies sold during a specific accounting year. Swiss Re, "Glossary," https://reports.swissre.com/2017/servicepages/glossary.html.
[110] Swiss Re Institute, *World Insurance: The Great Pivot East Continues*, July 4, 2019, 35–41.
[111] OECD, OECD.Stat, "Insurance Indicators" (accessed February 28, 2020).

Table 4.1 Top ten countries, by premiums written, 2018

Country	Life premiums (million $)	Nonlife premiums (million $)	Total premiums (million $)	Percent change from prior year	Percent of total world premiums
United States	593,391	875,984	1,469,375	5.0	28.3
China	313,365	261,512	574,877	6.2	11.1
Japan	334,243	106,405	440,648	3.8	8.5
UK	235,501	101,009	336,510	5.2	6.5
France	165,075	92,888	257,963	5.6	5.0
Germany	96,439	145,046	241,485	6.3	4.7
South Korea	98,072	80,951	179,024	-1.2	3.5
Italy	125,341	44,933	170,273	6.9	3.3
Canada	54,070	73,833	121,181	5.5	2.5
Taiwan	102,044	19,864	121,908	3.8	2.4

Source: Staib, Tschekassin, and Puttaiah, "World Insurance," July 4, 2019.
Note: A direct premium is defined as the total amount of an insurance company's written premium during a given year without accounting for the share of the premium ceded for reinsurance. Insuranceopedia, "Direct Premiums Written," March 18, 2018.

In 2018, net premiums written in the United States by reinsurers totaled $63.1 billion, a 29 percent increase from the previous year.[112] In the United States, cross-border trade in insurance is largely dominated by trade in reinsurance, which made up 91.7 percent of total cross-border trade in the industry.[113] Due to Bermuda's favorable regulatory and tax environment for reinsurance —more reinsurers are headquartered in Bermuda than any other country—affiliated and unaffiliated offshore entities[114] accounted for 55 percent and 30 percent, respectively, of total reinsurance premiums ceded to Bermuda by U.S. insurers (table 4.2).[115] Switzerland ranks second in terms of affiliated reinsurers, whereas the UK ranks second in terms of unaffiliated offshore reinsurers.

[112] III, "Net Premiums Written, U.S. Property/Casualty Reinsurers" (accessed January 10, 2020).
[113] USDOC, BEA, International Services table 2.1 (accessed December 11, 2019).
[114] Unaffiliated reinsurers are foreign reinsurance companies not affiliated with any U.S. insurance or reinsurance company. Affiliated offshore reinsurers are offshore entities that are owned or otherwise affiliated with U.S. entities.
[115] Premiums ceded are the share of premiums that a primary insurer transfers to a reinsurance company.

Table 4.2 Top ten countries, by U.S. reinsurance premiums ceded to unaffiliated and affiliated offshore reinsurers, 2017

Unaffiliated offshore reinsurers		Affiliated offshore reinsurers	
Country	**Premiums ceded (million $)**	**Country**	**Premiums ceded (million $)**
Bermuda	10,954	Bermuda	$26,438
UK	5,622	Switzerland	13,817
Switzerland	5,079	Germany	2,510
Germany	4,584	Cayman Islands	1,262
Cayman Islands	4,097	France	1,039
Turks and Caicos	1,736	UK	618
Barbados	651	Turks and Caicos	567
British Virgin Islands	599	Spain	526
Ireland	558	Ireland	491
Channel Islands	510	Japan	399
Total (top 10)	**$34,389**	**Total (top 10)**	**$47,668**
Total (world)	**$36,638**	**Total (world)**	**$48,302**

Source: Reinsurers Association of America, *Offshore Reinsurance in the U.S. Market, 2018*.
Note: In the insurance industry, ceded premiums refer to the portion of an insurance portfolio that is reinsured.

The headquarter countries of the top 10 P&C reinsurers closely track the primary flows of trade in reinsurance—between the United States and Bermuda, and between the United States and Europe. Berkshire Hathaway (U.S.) is the largest reinsurer in the world, with over $27 billion in gross premiums written in 2018. This is four times the total for the next leading company, Everest Reinsurance Co. (Bermuda) (table 4.3).

In 2018, the number of insurance-related mergers and acquisitions (M&As) announced globally was 1,036, a 9 percent increase from the previous year, with the total value of those transactions increasing by 18.1 percent to $150 billion. Overall, the P&C sector accounted for 22 percent ($23.8 billion) of the total dollar value of all M&A transactions in the industry.[116]

Table 4.3 Top ten property and casualty reinsurers, by gross premiums written, 2018

Rank	Company	Headquarters country	Gross premiums written (thousand $)
1	National Indemnity Company (Berkshire Hathaway)	United States	27,120,095
2	Everest Reinsurance Co.	Bermuda	6,566,729
3	Munich Re America Corp.	Germany	5,504,986
4	XL Reinsurance America Inc.	France	5,467,883
5	Swiss Reinsurance America Corp.	Switzerland	4,327,058
6	Transatlantic Reinsurance Co.	U.S.	3,951,542
7	Odyssey Group	Canada	3,086,228
8	General Reinsurance Corp.	U.S.	2,644,515
9	Partner Re Co. of the U.S.	Bermuda	1,979,309
10	SCOR US Corporation	France	1,821,872

Source: Insurance Information Institute, *2020 Insurance Fact Book*, 2020, 62.

[116] III, *2020 Insurance Fact Book* (accessed January 14, 2020).

Supply and Demand Factors

On the supply side, the most significant market trends in the global insurance sector are regulatory changes and trade liberalization, particularly in China and India, and technological innovation, especially for underwriting, claims handling, and fraud detection. On the demand side, in response to increased interest from businesses and consumers, insurers are introducing new lines of insurance designed to address emerging risks, like climate change or the threat of cyberattacks.

Regulatory Changes and Trade Liberalization in Major Emerging Markets

To protect consumers and maintain financial stability, the global insurance industry is highly regulated, although such regulations vary by country and, in some cases, by jurisdictions within countries. In the United States, for example, insurance companies face both federal- and state-level insurance regulations. As a result, insurers must deal with a patchwork of regulations that affect how they operate in both domestic and foreign markets. Due to heightened business volatility, policy makers in many markets around the world are reexamining their domestic insurance regulations as well as their rules for the local provision of insurance products by foreign firms. Some emerging markets, including India and China, have recently announced reforms that could reduce trade barriers in their insurance markets, in line with their efforts to open their financial markets more generally.

For many years, the Indian insurance market has been subject to foreign equity restrictions. Such restrictions establish the maximum level of shareholder equity that foreign insurance companies can hold (or control) in Indian insurance companies, typically expressed as a percentage of total equity capital. Before 2015, foreign investors were not permitted to hold more than 26 percent of the equity in an Indian insurance company. Going forward, the government has established a timeline to raise the equity cap to 74 percent by the beginning of fiscal year 2020, an action that industry observers consider crucial to facilitating market entry by foreign insurance companies. In addition, Indian policy makers increased the foreign equity cap on insurance brokers to 100 percent in September 2019.[117]

In recent years, China has also taken steps to remove some barriers to foreign entry into their domestic insurance market. In December 2019, for example, the China Banking and Insurance Regulatory Commission announced its intention to remove a 51 percent foreign ownership cap in the Chinese life insurance sector, effective January 1, 2020, thereby allowing foreign investors to take a 100 percent equity ownership position in Chinese life insurers.[118] According to Fitch Ratings, the removal of this cap will likely result in international insurers entering the Chinese life insurance market, but large domestic insurers reportedly have distinct advantages, including strong brand recognition and well-established distribution channels. In 2018, the 28 life insurers with foreign shareholders held only 8 percent of direct premiums in the life insurance market.[119]

[117] Dave, Shukla, and Sinha, "FDI Limit in Insurance Companies May Rise," December 10, 2019.
[118] Northover, Wu, and Ao, "China to Allow 100% Ownership in Life Insurers from January 1, 2020; December 11, 2019; Xueqing, "Insurer Ownership Curbs to Be Eased," December 10, 2019.
[119] XinhuaNet, "Lifting of Foreign-Ownership Cap to Have Little Impact on China Life Insurers: Fitch," July 6, 2019.

In 2019, China's State Council also amended the Regulations on the Administration of Foreign-Invested Insurance Companies, removing a requirement that potential foreign investors must have a minimum of 30 years of experience operating in the industry. It also ended the "representative office" rule, which required foreign insurers to have an office performing limited business-related operations in the country for two years before being able to invest in a Chinese affiliate.[120] This same amendment also allowed 1) parent companies or group holding companies of an insurance company to hold equity directly in Chinese subsidiaries;[121] and 2) foreign non-insurance financial companies to coinvest with foreign insurance companies in a Chinese foreign-invested insurance company.[122]

While steps to liberalize markets such as these in China and India certainly represent opportunities for insurers to grow their global operations, barriers to international trade in insurance services remain. In particular, many insurers have pointed to the rise of compulsory "cessions"—essentially, mandatory local reinsurance requirements—in many countries around the world. In the insurance industry, a cession is defined as the portion of insurance that is transferred from a primary insurance company (the ceding insurer) to a secondary insurer (the reinsurer) who reinsures that portion.[123] In some countries, the government requires that a certain share of written policies be placed with a nationally domiciled insurance company or state-owned insurance company, which has the right of first refusal. In other words, such a government imposes "compulsory cessions," restricting the ability of foreign reinsurers to participate in the market. In India, for example, all insurers are required to cede 5 percent of all business sold in the country to the General Insurance Corporation of India (GIC Re), the state-owned reinsurer.[124]

Currently, compulsory cessions are also in place or are being considered in a number of African, Asian, and Latin American markets such as Algeria, Argentina, Brazil, China, Indonesia, and Nigeria. In 2017, for example, more than 87 percent of the insurance policies written by Algeria's National Insurance Company, the sole reinsurer operating in Algeria, were derived through such compulsory cessions.[125] Similarly, Brazilian regulations require that direct insurers offer at least 40 percent of their reinsurance cessions on each contract to the local market.[126]

There can be a variety of reasons why countries might implement compulsory cessions, such as to promote local/domestic reinsurance companies. Countries implementing these policies also argue that such policies help ensure that money remains in the country and accessible if foreign reinsurers cannot supply funds—for example, in the event of a major catastrophic event or global financial crisis. However, the OECD suggests that these policies themselves can introduce risks, and that strong home supervision and greater international regulatory cooperation may be an alternative.[127] While cessions to domestic

[120] Northover, Wu, and Ao, "China to Allow 100% Ownership in Life Insurers from January 1, 2020; December 11, 2019; Xiang, "Foreign Insurer Regulations Relaxed," December 6, 2019.
[121] Previously, the parent had to be an insurance company and operate in the same insurance segment as the Chinese subsidiary. Scott and Deng, "China Implements Revised Regulations," October 21, 2019.
[122] Scott and Deng, "China Implements Revised Regulations," October 21, 2019.Chua et al., "China Amends the Regulation," October 25, 2019.
[123] NAIC, "Glossary of Insurance Terms" (accessed January 28, 2020).
[124] Money Control, "GIC Re to Get 5% Cession" (accessed January 8, 2020).
[125] MEIR team, "Algeria: State-owned Reinsurer Dominates Domestic Market," September 10, 2018.
[126] A direct insurer is only obligated to bind the risk with a local reinsurance company so long as the local company matches international market terms. Guillamont and Avila, "Latin America Regulatory Update" (accessed January 8, 2020).
[127] OECD, *The Contribution of Reinsurance Markets to Managing Catastrophe Risk*, 2018, 52, 56, and 63.

reinsurers can be beneficial to direct insurers by guaranteeing that someone will accept a portion of the risk they take on, they can also lead to a pooling of risk in local markets rather than international markets, which can potentially increase the risk exposure and chances of potential insolvency in some individual markets.[128]

Tech Innovation in the Insurance Sector

Technological innovation is an important driver of growth in any industry, as it can affect how the industry operates, increase efficiencies, and create new opportunities for growth. While in many sectors startup firms based on technological advancements are considered "disruptive," large insurance companies are increasingly embracing industry startups, dubbed "insurtech," a subset of the wider fintech trend.[129]

In mature insurance markets—i.e., markets characterized by high insurance penetration and slow revenue growth—insurers' primary source of revenue is policy renewals. In these markets, technological innovation increasingly focuses on raising efficiency, improving customer experience, and lowering costs for both issuers and consumers. For example, in the auto segment, data pertaining to customers' driving behavior are increasingly being used to price insurance policies more accurately, with "good" drivers being offered reduced premiums to reflect their lower-risk driving behavior. Some insurance companies even offer their customers ways to track their own driving data via onboard telemetry devices.[130] These, in turn, allow insurers to better track and underwrite policies based on individual consumer habits.

New technologies are also improving the internal capabilities of insurance companies. Machine learning,[131] for example, is increasingly being applied to the task of expediting claims processing, enabling some claims to be settled in as little as three seconds.[132] Insurance companies are also in the early stages of applying machine-learning technologies to the identification of fraudulent claims, a phenomenon that currently costs insurance companies billions of dollars per year. Indeed, according to a 2019 report, 40 percent of surveyed insurance company representatives stated an intention to significantly increase investment in fraud-detection technologies.[133]

While tech innovation is helping to improve internal operations in mature markets, innovation is focused on increasing market penetration in emerging markets. Indeed, insurance companies expect growth in emerging markets to be an important driver of global industry growth over the next decade.

In particular, insurtech startups have focused on developing mobile phone applications (apps) to reach previously uninsured customers. In China, for example, the insurance provider Zhong An and the ride-sharing company Grab announced a joint venture to create an insurance marketplace in Southeast

[128] Kagan, "Obligatory Reinsurance," March 1, 2018.
[129] Evans, "Why Insurers Have Embraced Startups," As described by many industry representatives of both small tech firms and large, well-established insurers, large insurers have the industry knowledge to navigate the regulatory and technical landscape, while the smaller insurtech companies are driving technological change and advancement.
[130] TGS Insurance, "How Is Technology Changing the Insurance Industry?" (accessed January 14, 2020).
[131] Machine learning technologies use algorithms to find and apply patterns in large data sets. Hao, "What Is Machine Learning?" November 17, 2018.
[132] Leefeldt, "Digital Disruption Is Rocking the Insurance World," January 31, 2017.
[133] III, "Background on: Insurance Fraud" (accessed January 14, 2020).

Asia[134] in which users can buy various insurance policies through the Grab app, using its vast user base to reach previously uninsured customers. Similarly, Chubb, one of the world's largest insurance companies, recently announced plans to sell travel insurance in Singapore through the Grab app.[135]

New technologies are also being developed to insure populations that have traditionally been difficult to reach—for instance, those in Africa. A prime example of this is crop and livestock insurance. In developed countries, crop insurance has been a staple in the agricultural industry for decades, protecting against crop yield loss due to natural disasters or severe market disruptions. In sub-Saharan Africa (SSA), however, crop insurance is still relatively new, even though more than 60 percent of the population works in agriculture.[136] As a result, some insurance companies are introducing index-based microinsurance.[137] Such schemes use satellite- and aircraft-based remote sensing technologies, weather-tracking algorithms, and benchmark indexes—like annual rainfall, temperature levels, and livestock mortality rates—to calculate insurance payouts when conditions exceed a certain threshold during a given season.

Efforts to introduce index-based insurance programs are being carried out in a variety of SSA countries including Ghana, Nigeria, and Kenya. In Nigeria, the government has taken a primary role in developing this sector by partnering with the International Finance Corporation (IFC). Specifically, the IFC's Global Index Insurance Facility is working with a Nigerian reinsurance company, Africa Re, to help local insurance companies develop agricultural insurance products by offering technical assistance with platform development, including the integration of index technology.[138] Overall, the partnership is intended to reduce the risk (and cost) assumed by local insurers and, in turn, promote local private sector growth.[139]

By contrast, Ghana has invited foreign companies to enter its crop insurance market. New York-based WorldCover, for example, is offering crop insurance in Ghana that is financed via outside investors. In a 2019 funding round, WorldCover raised $6.0 million from venture capital firms MS&AD Ventures, Y Combinator, Western Technology Investment, and EchoVC.[140] WorldCover allows its investors to choose among different sets of pooled farmers, in turn receiving a share of the premiums collected from the pool. Invested funds are used for payouts only if a covered risk occurs.[141] In Kenya, an insurance broker, ACRE, offers rainfall index insurance to rural farmers based upon geographic location and/or crop phase, with the underlying insurance provided by local insurance companies and other stakeholders.[142]

[134] Olano, "ZhongAn, Grab Join Forces for SE Asia," January 17, 2019.
[135] Olano, "Chubb to Offer Travel Insurance through Grab," January 14, 2020.
[136] Goedde, Ooko-Ombaka, and Pais, "Winning in Africa's Agricultural Market," February 2019.
[137] Global Index Insurance Facility, "What Is Index Insurance?" (accessed August 21, 2019).
[138] Ben-hutta, "Africa Re to Develop Agricultural Insurance in Nigeria," April 2019.
[139] *Insurance Journal*, "Africa Re Joins World Bank's IFC," March 29, 2019.
[140] Bright, "WorldCover Raises $6M Round," May 3, 2019.
[141] Curriston, "An Alternative Investment with WorldCover," July 19, 2017.
[142] Sibiko, Veeto, and Qaim, "Small Farmers' Preferences for Weather Index Insurance," July 31, 2018; ACRE website, https://acreafrica.com.

New Lines of Insurance

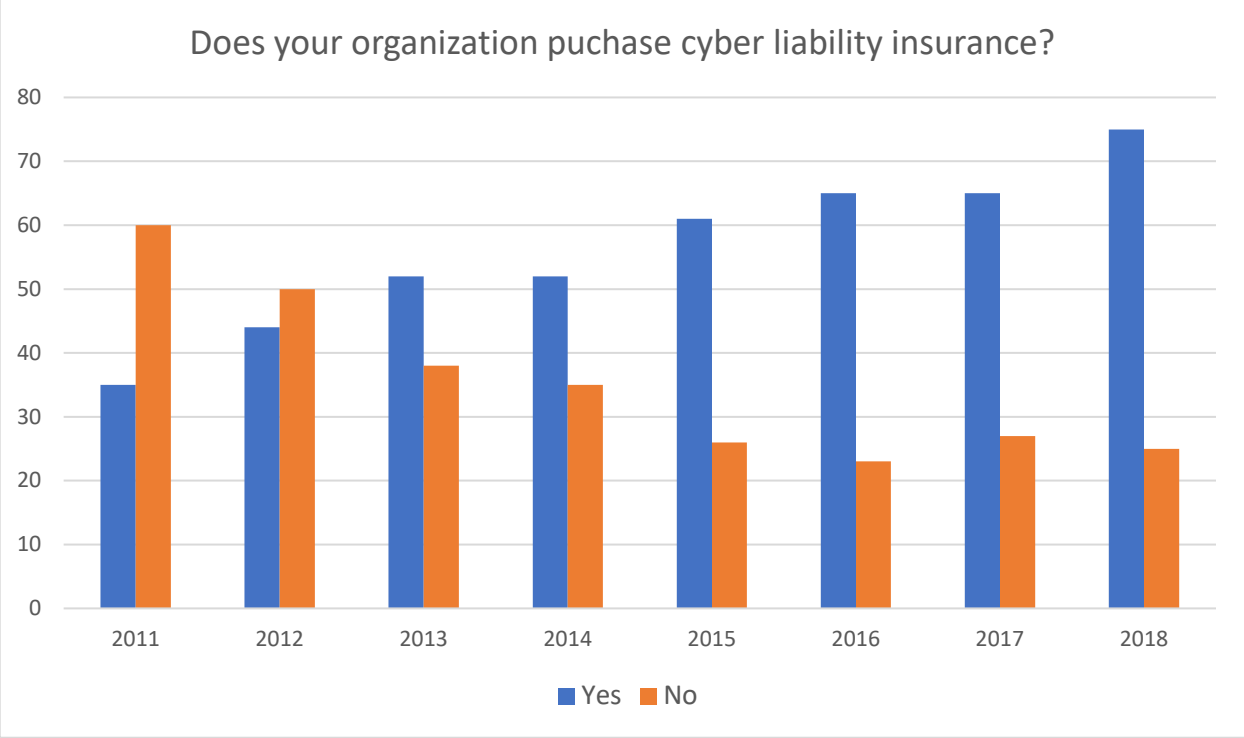
Over the past few years, insurance companies have worked to develop new lines of insurance to address both emerging risks, such as corporate data breaches, and longstanding but increasingly frequent (and costly) risks associated with natural disasters. Currently, the most prominent of these emerging lines are cyber insurance and catastrophe insurance. In the past, insurance for data breaches and natural disasters was included in standard liability policies or P&C policies. However, the increasing prevalence of insurable events in these two categories, along with the growing size of both actual and anticipated payouts, have led insurance companies to carve these risks out into separate policies.[143]

Cyber liability insurance covers financial losses that result from data breaches and other cyber events.[144] For example, the 2013 cyberattack against the U.S. retail chain Target was one of the first large-scale assaults that attracted the attention of the insurance industry. Forty million payment card credentials and 70 million customer records were stolen in the attack,[145] and since then attacks have increased worldwide in terms of both scope and expense. Several major insurers now offer discrete cyber liability insurance. Traditional coverage was often limited in the amount of liability it would cover.[146] Insurers are now willing to insure greater amounts of liability by carving out specific risks, but this coverage is often paired with cybersecurity requirements that the insured must meet. This has led to some insurers offering additional products beyond pure liability coverage. Global insurer Chubb, for example, in addition to cyber liability insurance, offers packages that include not only first-party cyber protection[147] and incident response services, but also damages and claimant costs sustained by a third party resulting from disclosure of confidential information, intellectual property infringement, or reputation disparagement.[148]

In 2018, the market size for cyber liability insurance was approximately $4.0 billion, while the market size for the year 2020 is estimated at $9.0 billion; it is estimated to reach $20 billion by 2025.[149] Overall, the number of entities with cyber liability insurance grew at an average annual rate of 11.5 percent during 2011–18 (figure 4.1) due in large part to an awareness on the part of both state and non-state actors of the growing threat posed by cyberattacks.

[143] Bullard, "Climate Change Puts Insurers to the Test," June 28, 2019.
[144] Nationwide, "Cyber Liability Insurance" (accessed February 3, 2020).
[145] Myers, "Target Targeted: 5 Years On," December 2018.
[146] Burke, "Cyber Insurance 101: What Does Cyber Insurance Cover?" October 7, 2019.
[147] First-party insurance insures the person or entity named in the policy.
[148] Chubb, "Cyber Insurance" (accessed July 7, 2020); Chubb, "Integrity+ by Chubb" (accessed July 7, 2020).
[149] Statista, "Estimated Value of Cyber Insurance Premiums," September 2018.

Figure 4.1 Cyber liability insurance purchase habits, 2011–18



Source: Statista, "Does Your Organization Purchase Cyber Liability Insurance?" October 2018.
Note: Underlying data for this figure can be found in appendix table B.19.

The insurance industry defines a catastrophe as a single incident—or a series of closely related incidents—causing insured property losses totaling more than $25 million.[150] Losses of such a magnitude are typically associated with natural disasters, and there is concern within the industry about the economic risks they pose because of the increasing frequency with which such events are occurring. In 2018, there were 407 natural disasters worldwide, with total insured losses of roughly $98 billion.[151] While such losses are traditionally covered by general homeowners' insurance, some companies have begun to carve out specific policies to deal with these risks. The most common form of discrete catastrophe insurance is flood insurance. However, companies like Farmers Insurance are also offering coverage for other natural disasters such as earthquakes.[152] Additionally, damage from weather-related events like wind and hail are increasingly being excluded from traditional homeowner or commercial coverage and are instead being offered as separate, additional insurance with their own premiums.[153]

The insurance industry is particularly concerned about weather-related events in coastal regions, due not only to their vulnerability to hurricanes and strong storms but also because coastal property has increased in value due to high demand, rapid development, and rising population density.[154] Some catastrophe models even predict that coastal losses will double roughly every decade due to ongoing

[150] III, "Spotlight on: Catastrophes," December 20, 2019.
[151] 2018 was the fourth-costliest year on record for losses. III, "Spotlight on: Catastrophes," December 20, 2019.
[152] Farmers Insurance, "Earthquake Insurance" (accessed July 7, 2020).
[153] Industry representatives, telephone interview by USITC staff, February 4, 2020.
[154] Morris, "It Had to Happen Sometime," May 30, 2019.

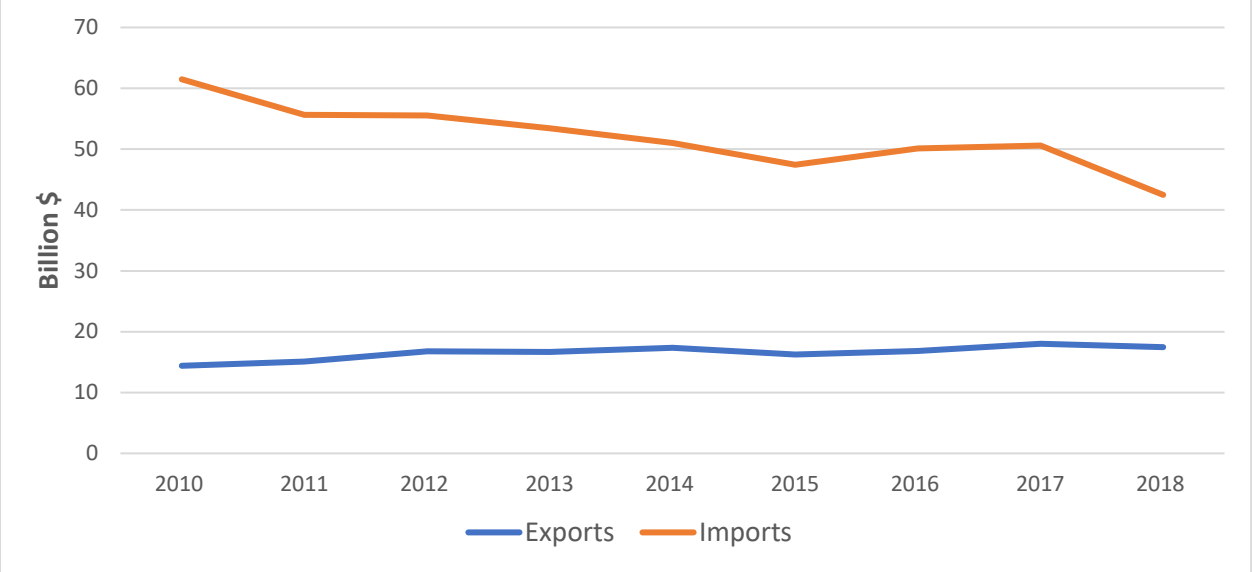
development.[155] Another industry concern is the strain that natural disasters place on reinsurance markets, given that much of the total damage from extreme weather occurs through secondary events that are often not modeled or accounted for in coverage, such as landslides and flash floods.[156] The cost to reinsure policies is based on modeled likelihoods of certain risks, which often rely on a combination of meteorological and historical data. With risks from natural disasters rising, insurers and reinsurers are attempting to capture these uncertainties in updated models.[157]

Trade Trends

Cross-border Trade

The United States exported $17.5 billion and imported $42.5 billion in insurance services in 2018 (a decrease of 3.0 percent and 16.0 percent, respectively, from 2017) for a cross-border deficit of $25.0 billion dollars (figure 4.2), the lowest in more than a decade. While exports have grown by 2.4 percent annually since 2010, imports have contracted, with the most serious annual drop in imports taking place in 2018. This decline in imports was in large part driven by the reinsurance sector: reinsurers changed how they operated in response to the U.S. Tax Cuts and Jobs Act of 2017, which raised the cost of offshore affiliated reinsurance arrangements.[158]

Figure 4.2 Insurance services: U.S. cross-border imports and exports, 2010–18 (billion dollars)



Source: USDOC, BEA, International Services table 2.1 (accessed December 9, 2019).
Note: Underlying data for this figure can be found in appendix table B.20.

Top U.S. trading partners in insurance services differ slightly for imports and exports. The UK is the top destination for insurance service exports, accounting for 17.9 percent of total exports, followed by Japan

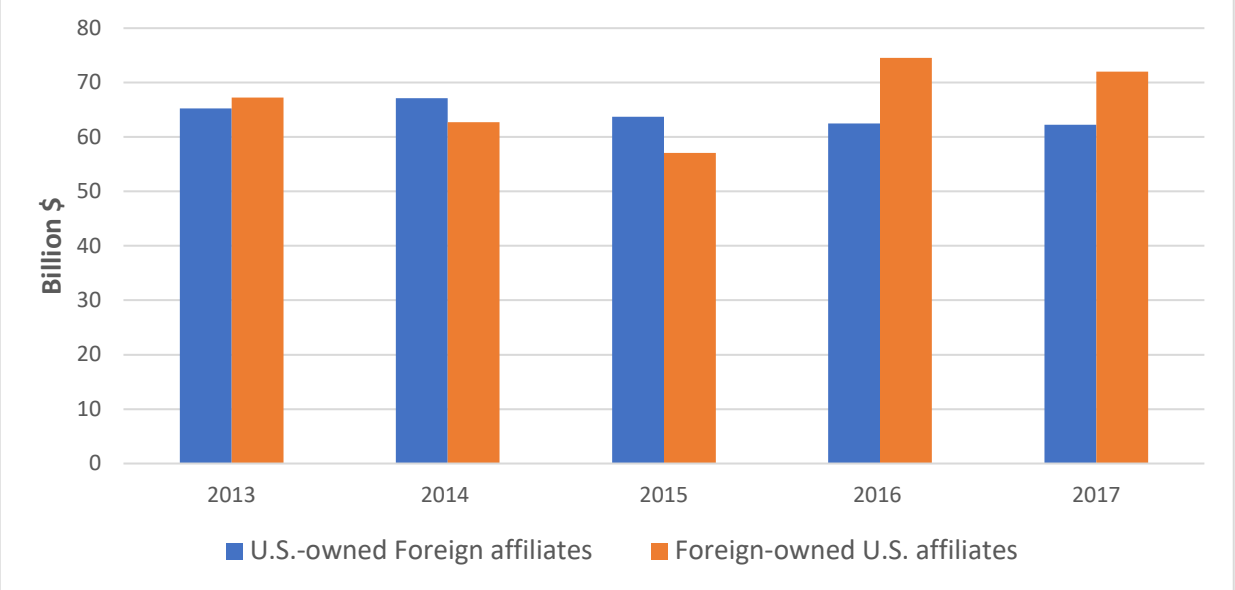
[155] III, "Spotlight on: Catastrophes," December 20, 2019.
[156] Howard, "Insurance Industry Must Wake to Costs," April 12, 2019.
[157] Hope and Friedman, "Climate Change Is Forcing the Insurance Industry," October 2, 2018.
[158] Hough, Thurston, and Stevenson, *Impact of US Tax Reform on Insurance Companies*, December 22, 2017.

(15.9 percent) and Bermuda (12.9 percent). Bermuda, where there is a favorable regulatory and tax environment for reinsurance, is the single largest source of U.S. imports, accounting for $21. 9 billion, or 51.4 percent of the total, followed by Switzerland (8.1 percent) and the UK (6.8 percent). The pattern of U.S. reinsurance imports tracks the location of the world's top reinsurance firms, which include PartnerRe and Everest (Bermuda), Swiss Re and Zurich Insurance Group (Switzerland), Lloyd's of London (UK), AXA (France), Munich Re (Germany) and Hannover Re (Germany).[159]

Affiliate Transactions

In 2017, U.S. insurance companies sold $62.3 billion through their overseas affiliates, whereas foreign insurance companies sold $72.0 billion through their affiliates in the United States, with sales in the U.S. exceeding foreign sales by $9.8 billion (figure 4.3). Sales by foreign affiliates of U.S. insurers have fallen by 4.6 percent since 2013. However, this decline masks a redistribution of U.S. insurance affiliate sales across foreign markets. For example, sales in Canada declined by 13.0 percent during 2013–17, whereas sales in Europe increased by 8.8 percent.[160] Purchases of insurance services from U.S. affiliates of foreign insurers fell in 2017 after rising strongly in 2016, with annual growth averaging only 1.7 percent over the 2013–17 period. This growth was driven by purchases from affiliates of Canadian firms, which increased at an average annual rate of 2.8 percent in 2013–17.[161]

Figure 4.3 Insurance services: Sales by U.S.-owned foreign affiliates and purchases from foreign-owned U.S. affiliates, 2013–17 (billion dollars)

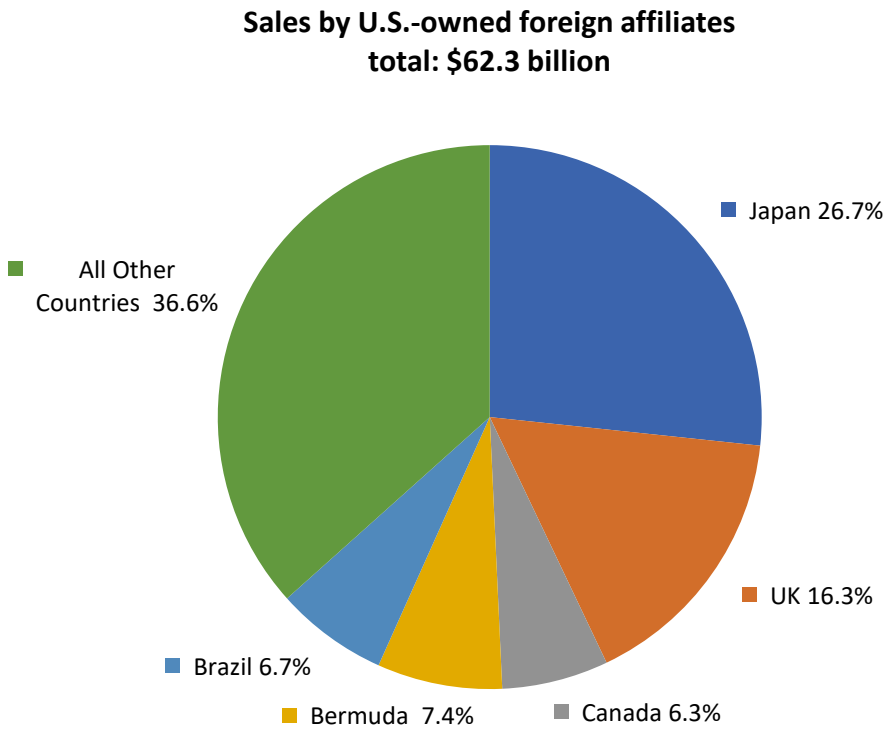


Source: USDOC, BEA, International Services tables 4.1 and 5.1 (accessed December 11, 2019).
Note: Underlying data for this figure can be found in appendix table B.21.

[159] III, "Top 10 Property/casualty Reinsurers of U.S. Business" (accessed December 17, 2020).
[160] BEA data for Latin American foreign affiliate sales for 2016 and 2017 have been suppressed to avoid disclosing the data of individual companies. Percentage is taken from growth between 2013 and 2015.
[161] USDOC, BEA, International Services tables 4.1 and 5.1 (accessed December 11, 2019).

Japan was the top market for sales by U.S.-owned foreign insurance affiliates in 2017, accounting for 26.7 percent of the total, while the UK, Brazil, and Canada accounted for 16.3 percent, 6.7 percent, and 6.3 percent, respectively (figure 4.4). Canadian-owned firms accounted for 20.6 percent of purchases from foreign-owned insurance affiliates in the United States in the same year, with the UK and France representing the second-and third-largest sources, respectively (18.7 percent and 10 percent.) Other sources of foreign-owned U.S. affiliate purchases are Japan (5.9 percent), Switzerland (5.1 percent), and Germany (4.3 percent).[162]

Figure 4.4 Insurance services: U.S. affiliate sales, by country, 2017 (percent)



Source: USDOC, BEA, International Services tables 4.1 and 5.1 (accessed December 11, 2019).
Note: Underlying data for this figure can be found in appendix table B.22.

Outlook

Over the next few years, the coronavirus pandemic is expected to have a significant impact on the insurance industry, particularly on claims and investment portfolio returns. Although the industry expects an overall increase in claims, such activity is likely to vary considerably by business line. In the life insurance sector, the spike in mortality rates caused by the coronavirus will likely lead to increased payouts by life insurance companies.[163] Lower claims in major segments like auto insurance are expected to be only partially offset by higher claims in some smaller specialty segments, including event

[162] The BEA does not report affiliate purchases for Bermuda to avoid disclosing the data of individual companies.
[163] Olano, "Coronavirus Outbreak Places Insurers under Spotlight," February 3, 2020; *Insurance Journal*, "AM Best to Test Insurers for Coronavirus Impact," March 18, 2020.

cancellation and accident and health lines. For example, in the automobile segment, the increasing acceptance of work-from-home arrangements resulting from lengthy shelter-in-place orders may result in fewer people driving to work which, in turn, could lead to fewer road accidents.[164] Event cancellations, however, may trigger large-scale payouts.[165] Notably, Munich Re faces an exposure as high as $500 million if the 2020 Tokyo Olympic Games are ultimately cancelled.[166] At the same time, P&C insurers also expect significant claims due to property damage surrounding widespread protests in major U.S. cities in May–June 2020.[167]

Declining interest rates and the volatility of the stock market also have the potential to depress insurance companies' returns on their investment portfolios in 2020 and into the future. Life insurers, for example, manage more than $20 trillion in assets, with roughly half of such assets in government bonds. Due to declining interest rates—the yield on U.S. 10-year bonds has declined by 50 percent since the start of the year—life insurance companies face declining investment income in 2020. In addition, some nongovernment bonds will likely face increasing credit risk which, in turn, could result in credit rating downgrades.[168] By contrast, the P&C sector is particularly vulnerable to stock market volatility, as companies in the sector typically hold a higher percentage of liquid assets as a backstop against large-scale claims payouts. In 2018, for example, stocks represented 23 percent of the portfolio holdings of U.S. P&C insurers, compared to only 2 percent for life insurers.[169]

Over the longer term, the insurance industry is likely to suffer from a sharp decline in global economic growth, which could impact both the growth in insurance sales and the net income generated by investment portfolios. The International Monetary Fund forecasts that the global economy will contract by 3 percent in 2020.[170]

[164] Lerner, "Coronavirus Expected to Affect Insurer Returns More than Claims," March 11, 2020; FitchRatings, *Special Report on U.S. Property/Casualty Market*, April 2, 2020.
[165] Hay, "Do Insurers Have COVID-19 Covered?" March 2020.
[166] Insurer, "Munich Re Faces $500mn Tokyo Olympics Events Cancelation Exposure," March 20, 2020.
[167] Sams. "Riots in Wake of Floyd's Death Could Become the Most Costly Civil Disorder," June 3, 2020.
[168] Hay, "Do Insurers Have COVID-19 Covered?" March 2020.
[169] Shaw, "Potential Implications of COVID-19 for the Insurance Sector," March 18, 2020.
[170] IMF, *World Economic Outlook*, April 6, 2020, viii.

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Chapter 5
Securities Services

Summary

The United States continues to be a global leader in securities services: it has the largest single-country shares of stock traded, total fund assets, and investment banking revenues, and it is home to six of the ten largest investment banks. It consistently runs a cross-border trade surplus in securities services, and in 2018 exported $32.9 billion and imported $9.3 billion of such services. The United States trades even more securities services through affiliates abroad, in which it also runs a substantial surplus: in 2017, sales of securities services by foreign affiliates of U.S. firms totaled $144.6 billion, while purchases of securities services from U.S. affiliates of foreign firms totaled $59.9 billion.

Several emerging trends have influenced the securities services industry in recent years. China's securities industry has evolved in recent years, and new regulations have made it easier for certain foreign securities services firms to operate in that country, though whether these changes will result in sustained market access is still unknown. Globally, investors have been seeking large volumes of safe assets—those perceived to have little or no risk of default. The withdrawal of the United Kingdom (UK) from the European Union (EU) is a source of uncertainty for U.S. securities firms, which are trying to predict how their UK customers, partners, and affiliates will operate in the future.

Introduction

A security is a negotiable financial instrument that has monetary value and can be traded. The term "security" covers a wide variety of financial assets, such as company stocks and government bonds. When a new stock is introduced to the market via an initial public offering, or a new bond is issued, it is traded and transferred as an asset between market participants. Savers, borrowers, and liquidity providers (i.e., middlemen who both buy and sell assets) use many services to access and participate in global capital markets, including debt and equity underwriting, financial advising, dealing and brokerage, and asset management. These services are offered by intermediaries between the issuers of securities (like companies, governments, and state-owned enterprises), who are raising capital, and investors (like individuals, mutual funds, pension funds, and insurance companies), who provide it. Given the central role of capital markets in the economy, government regulators monitor many aspects of these exchanges.

The major providers of securities services include large global investment banks such as JP Morgan and Goldman Sachs, which help companies raise capital by underwriting equity or debt issuance, locating investors, making markets, and arranging mergers and acquisitions. Many investment banks also offer brokerage and investment services and engage in proprietary trading.[171] Some traditional retail and commercial banks (like Bank of America and Wells Fargo) also have large investment banking arms,

[171] Proprietary trading occurs when financial firms invest their own assets for profit, as opposed to earning commissions for trading on behalf of clients.

while traditional investment banks (like JP Morgan and Goldman Sachs) have started offering bread-and-butter banking services such as deposit taking and lending. Additionally, asset management firms provide investment advice and investment management services to individual, corporate, and institutional clients. These include mutual fund providers like Vanguard, hedge funds like Bridgewater Associates, and diversified investment management companies like BlackRock.

Market Conditions

In recent years the value of traded securities and revenue in the securities industry has fluctuated. Changes in the value of investment funds' total net assets, stock traded, investment banking revenues, and international trade in securities services are largely uncorrelated with each other. Taken together, however, these measures reflect trends within the industry. Globally, net assets of regulated funds totaled $46.7 trillion in 2018, up from $36.4 trillion in 2013.[172] The United States accounted for the largest share (45.1 percent) of this total, or $21.1 trillion (up from $16.7 trillion in 2013). Luxembourg and Ireland, which have relatively low taxes and light regulations on the financial services industry, accounted for 10.0 percent ($4.7 trillion) and 5.9 percent ($2.8 trillion) of net assets, respectively.

The total value of stock traded globally in 2018 was $68.2 trillion, or 97.8 percent of world GDP (table 5.1). This total was higher than the 2013 value ($61.3 trillion), but well below the 2015 peak of $99.8 trillion. At the country level, the largest share of stock traded in 2018 occurred in the United States (48.4 percent; $33.0 trillion), down from a global share of 53.3 percent and a market volume of $39.0 trillion in 2014. During 2014–18, the value of stock traded in South Korea and India grew rapidly, registering a compound annual growth rate of 17.6 percent and 14.6 percent over the period, respectively.

Table 5.1 Top markets by value of stock traded, 2018

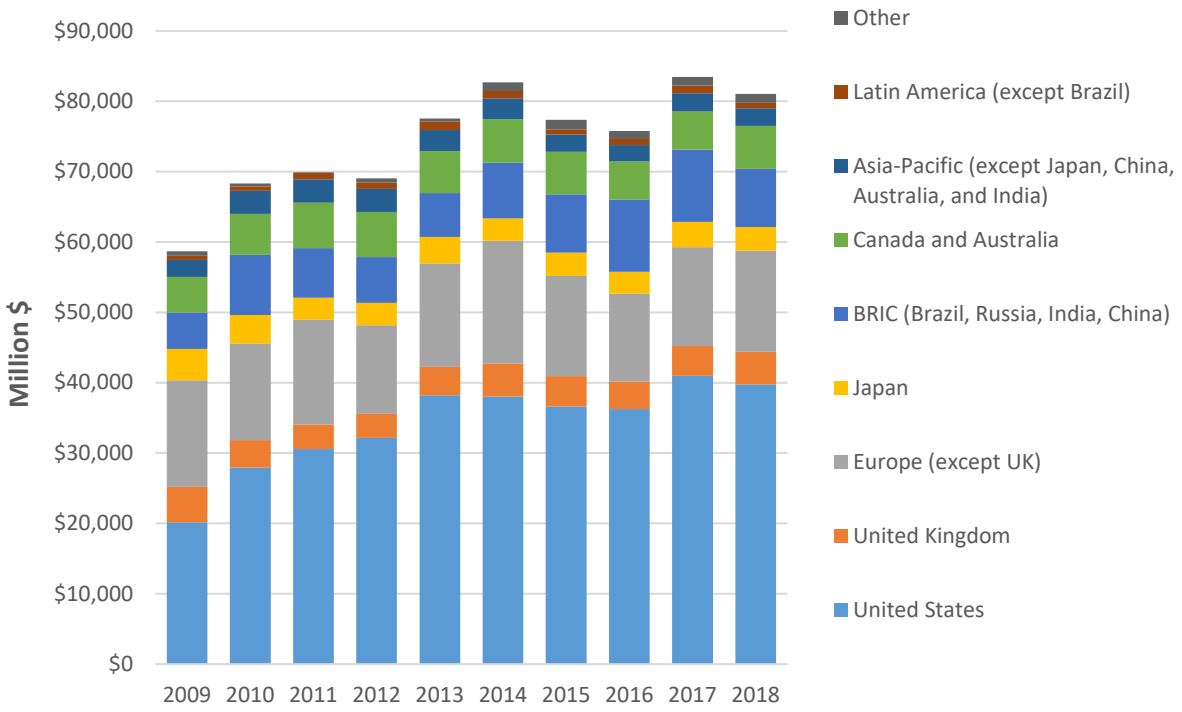
Market	Value of stock traded, 2018 (billion $)	Value of stock traded, 2018 (% of GDP)	CAGR, 2014–18	Total fund assets, 2018 ($ billion)
United States	33,027	161.2	-4.1	21,077
China	13,071	96.1	2.3	1,769
Japan	6,304	126.9	6.8	1,805
South Korea	2,456	151.6	17.6	463
Hong Kong	2,267	624.5	11.8	n.a.
Germany	1,616	40.4	6.2	2,199
Canada	1,373	80.2	0.5	1,163
India	1,260	46.2	15.6	297
Switzerland	938	133.0	6.3	531
Australia	774	54.0	2.4	1,946
OECD	*47,962*	*115.4*	*-2.4*	*n.a.*
World	*68,212*	*97.8*	*-0.9*	*46,700*

Source: World Bank, World Development Indicators (accessed October 28, 2019); ICI, *2019 Investment Company Fact Book*, 2019. These World Development Indicators data do not include the United Kingdom.
Note: CAGR = compound annual growth rate; n.a. = data not available; OECD = the member countries of the Organisation for Economic Co-operation and Development.

[172] ICI, *2019 Investment Company Fact Book*, 2019. "Regulated funds" are defined as collective investment pools that are significantly regulated—for example, as to how they are organized (e.g., as corporations or trusts), their minimum capital requirements, how their assets are valued, and other factors.

In 2018, global investment banking revenue was estimated to be $81.1 billion (figure 5.1),[173] significantly higher than in 2009 ($58.1 billion), but slightly below the level in 2014 ($82.7 billion). The United States accounted for 49 percent of this total, with revenues of $39.7 billion, up from a 46.0 percent market share in 2014 on revenues of $38.0 billion. By contrast, during 2014–18, Latin America, Europe, and the Asia-Pacific region all experienced a net decline in investment banking revenue. In 2019, 8 of the 10 largest investment banks reported declining fee income (table 5.2).

Figure 5.1 Global investment banking revenues (net), 2009–18 (million dollars)



Source: SIFMA, *Capital Markets Fact Book*, 2019, 44.
Note: Underlying data for this figure can be found in appendix table B.23.

The United States was home to the five largest global investment banks during the 2014–18 period: JP Morgan, Bank of America Merrill Lynch, Citigroup, Goldman Sachs, and Morgan Stanley.[174] Other leading global investment banks were headquartered in the UK, Switzerland, Germany, and Japan. The largest securities firms tend to operate on a global basis. For example, 49 percent of Goldman Sachs' workforce was based outside of the United States during the period, while 51 percent of JP Morgan's industry-specific revenue came from foreign countries.[175] Although many securities firms are small, a few large firms account for a significant share of employment in the industry. In the United States, for example, 90 percent of brokerage firms registered with the Financial Industry Regulatory Authority (FINRA) had 150

[173] SIFMA, *Capital Markets Fact Book*, 2019, 44.
[174] IBISWorld Industry Report, "Global Investment Banking and Brokerage," December 2018, 11.
[175] IBISWorld Industry Report, "Global Investment Banking and Brokerage," December 2018, 24.

or fewer employees in 2017, but 81 percent of FINRA-registered representatives worked in firms with at least 500 employees.[176]

Table 5.2 Top ten global investment banks, by 2019 fees (billion dollars)

Firm	Headquarters Location	2019 fees (billion $)	1-year growth (percent)	Market share (percent)
JP Morgan	United States	6.5	-7	6.5
Goldman Sachs & Co	United States	5.7	-12	5.6
Bank of America Merrill Lynch	United States	5.1	1	5.1
Morgan Stanley	United States	5.1	-4	5.0
Citigroup	United States	4.5	-4	4.4
Barclays	UK	3.1	-4	3.0
Credit Suisse	Switzerland	3.0	-10	3.0
Deutsche Bank	Germany	2.3	-12	2.3
Wells Fargo & Company	United States	2.1	-3	2.1
Mizuho Financial Group	Japan	1.9	0	1.9

Source: Refinitiv, "Global Investment Banking Review," 2019.

Supply and Demand Factors

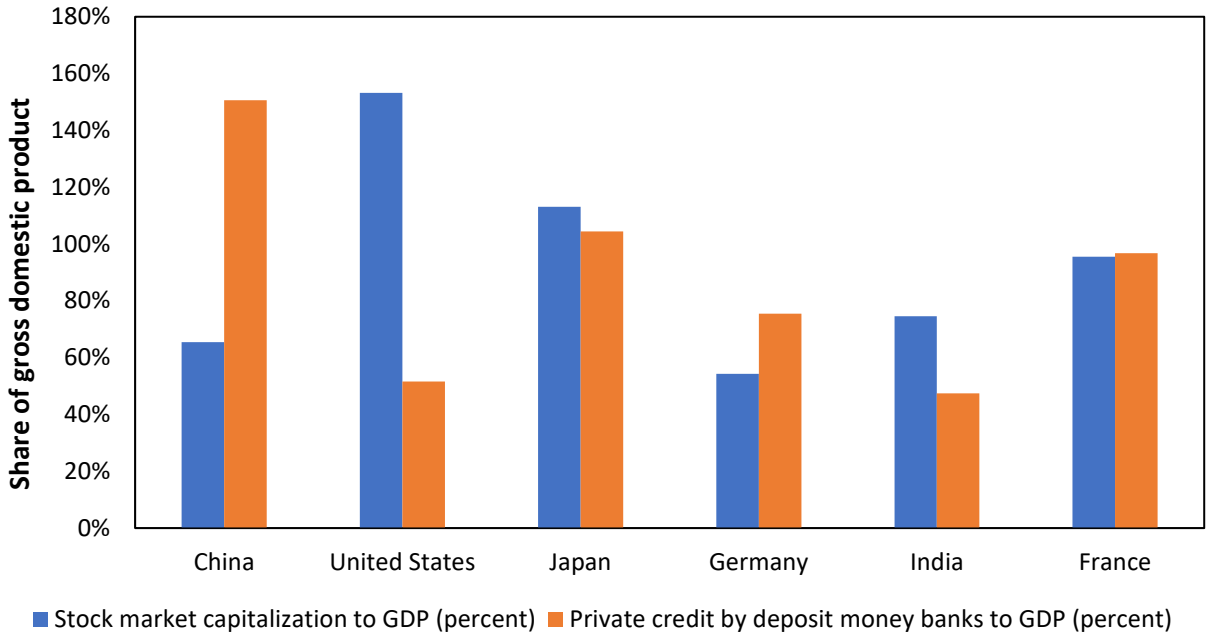
Several emerging trends have influenced the securities services industry in recent years. In China, the government has loosened some regulatory requirements affecting securities markets, which has led to increased foreign involvement in the sector. The withdrawal of the UK from the EU has created uncertainty, making it difficult for securities firms to gauge how customers, partners, and affiliates will operate in the new environment. More broadly, many securities market participants have tried to reduce risk by buying assets they perceive as safe.

Growth and Change in China's Securities Sector

Compared to some countries, China's stock market is small relative to its banking sector (figure 5.2), and China has experienced relatively low returns on its financial assets. From 2012 to 2017, the average rate of return on Chinese financial assets was only 0.4 percent, compared to 3.1 percent in the United States. China's investments are concentrated in real estate: real estate comprised 62 percent of China's financial assets in 2018, compared to 38 percent in Japan and 28 percent in the United States.[177] Compared to developed countries, asset management services in China represented a small share of the revenues of securities services firms: in 2018 such services accounted for only 4 percent of the income of China's domestic securities companies, compared to 18 percent of Goldman Sachs' income and 32 percent of Morgan Stanley's income.[178]

[176] FINRA, "2018 FINRA Industry Snapshot," 2018, 3–12. The Financial Industry Regulatory Authority regulates brokerage firms that provide services to people in the United States.
[177] McKinsey Global Institute, *China and the World*, July 2019, 122.
[178] KPMG, *Mainland China Securities Survey 2019*, 2019, 13.

Figure 5.2 Stock market size compared to banking sector size, by country, 2017 (percent)



Source: World Bank, "World Development Indicators" (accessed October 28, 2019).
Note: Underlying data for this figure can be found in appendix table B. 24.

China's domestic securities companies have grown unevenly over the past few years. On the one hand, the number of qualified institutional investors has more than tripled, from 138 in 2012 to 486 in 2018.[179] On the other hand, the reported operating income of Chinese securities companies fell from about $81 billion in 2015 to $38 billion in 2018, while net profits fell from about $35 billion to $9 billion over the same period.[180] In addition, total assets under management fell from about $4.8 trillion in 2016 to $4.0 trillion by the end of 2018.[181]

The Chinese securities industry has experienced a number of high-profile mergers and/or acquisitions in recent years. For example, in January 2019, China's largest securities firm, Citic Securities, announced that it would pay nearly $2 billion for Guangzhou Securities, the latest in a series of acquisitions which also included Credit Agricole's CLSA, Wantong Securities, and Goldstone Securities.[182] Other examples include Shenwan Hongyuan Group's acquisition of Hong Yuan Securities in 2015 and China International Capital Corp's purchase of China Investment Securities in 2017.[183] Nonetheless, there appears to be less market concentration in the Chinese brokerage industry than in the corresponding U.S. industry. Overall, there were roughly 130 domestic firms in China's securities brokerage market in 2017.[184] The country's

[179] McKinsey Global Institute, *China and the World*, July 2019, 123.
[180] Garrido and Lei, "China's Securities Industry Ripe for Consolidation," March 5, 2019.
[181] KPMG, *Mainland China Securities Survey 2019*, 2019, 27.
[182] Bloomberg News, "Citic Securities Surges on $2 Billion Purchase," January 9, 2019.
[183] Garrido and Lei, "China's Securities Industry Ripe for Consolidation," March 5, 2019.
[184] Tang, "China Securities Industry Braces for Influx," December 30, 2018.

10 largest brokerages accounted for approximately 50 percent of the market (compared to a market share of 70 percent for the top 10 brokerage firms in the United States).[185]

China has recently taken regulatory actions aimed at widening access for foreign securities services companies in the Chinese market, though it remains to be seen if these changes will be implemented fully. Notably, as part of the U.S.-China Economic and Trade Agreement signed in January 2020, China committed to remove foreign equity caps, allowing foreign companies to hold 100 percent equity stakes in Chinese securities, futures, and mutual fund management firms by the end of 2020.[186] In addition, in July 2019 China announced that foreign firms would be eligible for a type A lead underwriting license, allowing them to be lead underwriters for bond offerings.[187] In 2019, BNP Paribas and Deutsche Bank were both granted type A lead underwriter licenses, although some observers have noted that stringent licensing criteria and ongoing fitness testing—along with a preference for Chinese banks among issuing companies—will limit the underwriting activity of foreign banks.[188]

In 2019, China also announced that foreign companies will be allowed to establish controlling stakes in wealth management firms, pension fund management firms, and inter-dealer brokerages.[189] At the same time, China announced that foreign firms also no longer need to obtain prior approval to conduct business in renminbi.[190] In 2017, China started allowing foreign credit-rating firms to operate in the country and, according to statements by the central bank, these firms will be allowed to rate a wider variety of bonds and other debt instruments.[191]

In addition, proposed rules from the Ministry of Commerce may have the effect of making it easier for foreigners to invest in China's stock market. The changes would shorten the "lock-up" period for strategic investments from three years to one year, and would lower minimum capital requirements for foreign investors from $100 million to $50 million (excluding short-term trading).[192] These actions may make China's securities market more accessible to small and medium-sized financial institutions.[193]

Some of these regulatory actions may have encouraged U.S. securities firms to enter China's market. S&P Global Ratings is now offering credit rating services in China, making it the first firm wholly owned by international investors that is allowed to rate domestic Chinese bonds.[194] Moody's and Fitch Ratings

[185] Garrido and Lei, "China's Securities Industry Ripe for Consolidation," March 5, 2019.
[186] USTR, NTE, 2020, 117; CSRC, "CSRC Announces Timetable to Remove Equity Cap," October 15, 2019; Cheng, "Amid Trade War, China Moves to Remove Limits," October 14, 2019.
[187] IMF, *People's Republic of* China, August 9, 2019, 113; USTR, NTE, 2020, 117. The standards by which license requests will be evaluated have not been released.
[188] Feng, "China Opens Up Underwriting Business, But Does it Matter?" August 28, 2019; BNP Paribas, "BNP Paribas Receives Type-A Corporate Bond Lead," September 3, 2020; Deutsche Bank, "Deutsche Bank Receives Approval for China Type-A Lead Underwriting License," September 3, 2019.
[189] Bloomberg, "China Pledged to Give Foreign Financial Firms More Access," September 30, 2019; IMF, *People's Republic of* China, August 9, 2019, 113.
[190] Cheng, "China Talks Up Opportunities for Foreign Investors," October 16, 2019; Yu Wen, "Regulatory Changes to China's Banking, Insurance, and Fund-Management Sectors," January 2, 2020.
[191] Hong, Yang, and Tong, "China Issued 11 New Opening-Up Measures in the Financial Services Industry," July 2019; Agence France-Presse, "China to Open Up Finance Sector," July 21, 2019.
[192] MOFCOM, "Threshold May be Lowered for Foreign Investors," August 2, 2018; Yu, "China Relaxes Foreign Stock Investment Rules," July 30, 2018.
[193] KPMG, *Mainland China Securities Survey 2019*, 2019, 33.
[194] Tu, "S&P Global Gets Approval," January 28, 201.

have also established wholly owned subsidiaries in China that work in the domestic bond market, and Fitch has applied for a rating license. Recently, JP Morgan received regulatory approval for a local securities joint venture[195] and, as of 2019, similar applications were pending for Goldman Sachs and Morgan Stanley.[196] In addition, Vanguard, BlackRock, and Fidelity have told regulators they intend to apply for licenses for 100 percent-owned companies.[197] Non-U.S. firms are also venturing into the Chinese securities market. In 2018, for example, Switzerland-based UBS raised its stake in its Chinese joint venture to 51 percent.[198] As of May 2019, 22 foreign private-equity investment fund management companies had submitted filings with the Asset Management Association of China.[199]

One of China's goals is to improve business management and economic development by attracting capital and skills from abroad. Most corporate debt in China is concentrated in state-owned enterprises, which tend to have lower returns on assets than private companies. China's leaders hope that attracting new foreign firms will increase innovation and productivity in the sector.[200] The Chinese government is also trying to stimulate growth in the securities sector as a response to recent signs of economic weakness, hoping that greater access to foreign securities firms, whether they be local affiliates or offshore companies, will provide people and businesses with more investment options and a wider range of risk management strategies.[201]

These changes are part of ongoing announcements indicating openness to foreign investment. In the early 2000s, China set up a quota system for foreign investors entering its financial sector, although only a third of the quota was filled. The apparent reluctance on the part of foreign investors may have been due to turbulence in China's markets, including significant stock market declines, as well as investors' concerns over their ability to repatriate earnings.[202] After the 2008 global financial crisis, China adopted the new Basel II capital standards,[203] although they had a relatively muted effect on China's financial sector because it was largely composed of traditional banks.[204] In 2015 the China Financial Futures Exchange introduced new regulations on stock index futures transactions, and these have been further relaxed since 2017. Among other changes, the Chinese futures exchange reduced the commission on position-closing transactions for certain stock index futures and lowered the margin requirement on futures contracts in the CSI 500 index.[205]

[195] AFP-JIJI, "China Moves Up Date," July 21, 2019.
[196] Bloomberg, "China Pledged to Give Foreign Financial Firms," September 30, 2019.
[197] Bloomberg, "China's Finance World Opens Up to Foreigners," January 22, 2020.
[198] Tang, "China Securities Industry Braces for Influx," December 30, 2018.
[199] KPMG, *Mainland China Securities Survey 2019*, 2019, 33.
[200] Wu, "Despite China Favoring State-Owned Enterprises," November 29, 2016.
[201] KPMG, Mainland China Securities Survey 2019, 2019, 3.
[202] Bloomberg, "China Pledged to Give Foreign Financial Firms," September 30, 2019.
[203] Basel II (2004) is an internationally agreed set of measures developed by the Basel Committee on Banking Supervision that expanded rules pertaining to minimum capital requirements established under a prior regulatory accord, Basel I. Basel II also sets disclosure requirements for the assessment of capital adequacy and provides a framework for regulatory review. Chen, "Basel II," June 25, 2019; BIS, "Basel II," (accessed July 8, 2020).
[204] Elliott, "Living in Two Worlds," September 22, 2017.
[205] KPMG, *Mainland China Securities Survey 2019*, 2019, 25. This stock market index, compiled by the China Securities Index Company, tracks 500 small and mid-sized firms listed on the Shanghai and Shenzhen stock exchanges.

Despite recent steps toward regulatory liberalization, U.S. securities services firms continue to face challenges in China, including restrictions on cross-border capital transfers, delays to obtain required licenses, and opaque and informal bureaucratic processes. For example, although the payment processing sector is ostensibly open to foreign companies in China, Visa and Mastercard have reportedly faced bureaucratic delays and refusals by the central bank to acknowledge their applications.[206] China also maintains high minimum capital requirements on some financial services. Banks, for example, face a capital requirement of about $5.7 billion to operate in China, or $1.1 billion to provide cross-border services.[207]

[206] Wildau, "China's Central Bank Delays Market Entry," January 13, 2019.
[207] McDonald and AP, "Is China Serious about Opening Its Economy?" October 15, 2019.

Box 5.1 Brexit's Potential Effects on Financial Services

The withdrawal of the UK from the EU on January 31, 2020, or "Brexit," has created uncertainty for U.S. securities firms' operations in the UK and the EU. Although Brexit went into effect earlier this year, the UK and EU agreed to a transition period to last until the end of 2020, and the parties are still negotiating the details of their terms of trade.[a] Any final agreement (or the absence of such an agreement) may change the pattern of demand in the UK and EU for certain securities and other financial products, and may add to firms' costs because of separate regulatory systems and establishment requirements in the UK and EU. Some of the specific uncertainties associated with Brexit apply to complex financial instruments like swaps[b] (which exchange the cash flows from different financial instruments over a specific time period) and institutions like clearinghouses[c] (which intermediate securities market transactions and are regulated as systemically important financial market utilities). At the time of writing, many of these details are still unclear.[d]

Despite initial predictions, the UK has not yet experienced a mass exodus of securities services firms or employees, and London's importance as a financial center has not yet been significantly eroded. For example, the daily average turnover of over-the-counter foreign exchange instruments in the UK grew from $2.4 trillion in 2016 to $3.6 trillion in 2019.[e] Also, one 2019 estimate found that international financial firms have moved fewer than 1,500 jobs out of the UK,[f] perhaps because clients prefer to do business in London.[g]

On the other hand, uncertainty about Brexit implementation has reportedly made some securities firms reluctant to invest in the UK,[h] and several are spending money on planning and preparation for a possible full or partial relocation. In response to Brexit, Bank of America is spending an estimated $400 million to relocate its banking operations to Dublin and its trading operations to Paris.[i] Similarly, Citigroup has established a new broker-dealer in Frankfurt, Germany,[j] although as of 2019, Citigroup had reportedly only moved 80 people out of its London office.[k] Morgan Stanley, too, has established a new hub for its EU operations in Frankfurt, and Goldman Sachs is moving its asset management business to Ireland; by one estimate, these firms are expected to move 400 to 500 people each.[l] Last, JP Morgan has applied for new financial services licenses in Ireland and Luxembourg.[m] Once securities firms have established offices and acquired licenses in other countries, they are typically able to move assets and employees quickly.

[a] Woodcock, "Financial Services Companies Must Accept EU Regulations," February 26, 2020.
[b] Heltman, "Hard Brexit Is a Systemic Risk to U.S. Banks," January 15, 2019.
[c] Stafford, "EU to Extend Temporary Access to UK," November 15, 2019.
[d] Noonan, Morris, and Arnold, "ECB Warns Banks to Curtail Booking Trades," October 7, 2018.
[e] Bank for International Settlements, "Triennial Central Bank Survey," December 8, 2019. These are standardized contracts or securities using foreign exchange as their underlying asset.
[f] Noonan, "Banks Keep Options Open and Hold Fire," April 1, 2019.
[g] Bloomberg, "Brexit: Global Firms Postponing Transfer of Capital," June 19, 2019.
[h] Pooley, "London Slips Further behind New York," September 19, 2019.
[i] Noonan and Morris, "Bank of America Says No Going Back," February 13, 2019.
[j] Morris, "Citi Sets Post-Brexit Frankfurt Trading Hub in Motion," March 19, 2019.
[k] Noonan, "Banks Keep Options Open and Hold Fire," April 1, 2019.
[l] Butcher, "Bank by Bank," October 16, 2019.
[m] Noonan, "Banks Keep Options Open and Hold Fire," April 1, 2019.

High Global Demand for Safe Assets

A general sense of global uncertainty has led a growing number of risk-averse investors to purchase so-called "safe assets," defined as assets that will likely return invested capital with little or no risk of default. Typical examples of safe assets include U.S. Treasury securities and money market funds. There are different dimensions of asset safety, such as short-term liquidity, long-term resistance to inflation,

and protection from exchange rate risk.[208] Government debt is generally classified as very safe, including debt guaranteed by government enterprises (such as Fannie Mae and Freddie Mac). Highly rated securities created by the private sector are also considered to be low-risk assets.

Strong global demand has resulted in rising prices (and lower yields) for many safe assets. For example, yields on U.S. Treasury debt fell from 4.1 percent in 2007 to 2.8 percent in 2018.[209] In recent years, yields on government bonds in other developed countries, including Japan and Germany, have also dropped to historically low levels. Over the past decade, central banks' purchases have been an important factor driving demand for safe assets. Since the global financial crisis, central banks like the U.S. Federal Reserve and the Bank of England have made large-scale purchases of government securities in order to increase liquidity and promote economic activity. Total global central bank reserves increased from $6 trillion in 2007 to $13.3 trillion in 2017.[210] By one 2017 estimate, more than 30 percent of U.S. Treasuries were held by central banks: two-thirds by foreign central banks and one-third by the Federal Reserve.[211] Other market participants also demand safe assets, including banks, which need such assets to manage their day-to-day liquidity needs, and insurance companies and pension funds, which purchase safe assets to offset riskier, high-yielding investments.

Regulations require some financial firms to hold safe assets. For example, banks must hold some government bonds to meet their capital and liquidity requirements. Also, regulations passed after the financial crisis contain specific and significant requirements to hold safe assets. For example, the U.S. Dodd-Frank regulations require systemically important financial institutions to maintain specific ratios of capital to risk-weighted assets, while the international regulatory accord Basel III requires banks to hold high-quality liquid assets equal to 30 days of their outgoing capital.[212] The creation of central counterparties for derivative transactions after the financial crisis of 2008 also increased demand for safe assets as collateral.[213]

Demand for safe assets tends to vary by country. In Japan, households' holdings of such assets are a much larger percentage of GDP than in the United States or Europe, which may partly reflect the preferences of its relatively older population.[214] Illustratively, Japan's government debt was 197.3 percent of its GDP in 2015, compared to 96.8 percent in the United States and 89.3 percent in the EU,[215] though the yield on its long-term government bonds was only 0.3 percent.[216] Emerging markets are also a source of demand for safe assets. Due to concerns about political instability, opaque corporate governance, and legal protections, investors based in some emerging markets are often reluctant to invest in domestic securities.[217] As a result, they "import" safe financial assets from developed countries. China has been highly dependent on safe U.S. assets, acquiring an estimated $1.1

[208] Gourinchas and Jeanne, "Global Safe Assets," December 2012, 6.
[209] Since a bond's yield moves inversely to its price, falling yields indicate that a bond's price is increasing.
[210] Hentov et al., "How Do Central Banks Invest?" 2019.
[211] Caballero, Farhi, and Gourinchas, "The Safe Assets Shortage Conundrum," 2017, 41.
[212] Rybinski, "The Demand for Safe Assets," July 23, 2019.
[213] IMF, *Global Financial Stability Report*, April 2012, 96.
[214] Gourinchas and Jeanne, "Global Safe Assets," December 2012, 8.
[215] St. Louis Fed, "Central Government Debt, Total (% of GDP)" (accessed January 28, 2020).
[216] St. Louis Fed, "Long-term Government Bond Yields" (accessed January 28, 2020).
[217] Karolyi, *Cracking the Emerging Markets Enigma*, 2015.

trillion of U.S. Treasury securities at the end of 2019, up from $477.6 billion in 2007.[218] The vast majority of these assets are likely official foreign exchange reserves. China's monetary authorities purchased a large volume of U.S. dollar-denominated assets as part of official currency operations that reportedly depressed the value of the Chinese currency[219] and, as a result, boosted China's export competitiveness, which, in turn, may have increased the bilateral U.S.-China trade deficit. [220] In August 2019, the U.S. Department of the Treasury designated China as a currency manipulator,[221] but subsequently revoked that designation following China's agreement to undertake certain reforms to its exchange rate regime.[222]

Perceptions of asset safety can change quickly. In the 2000s, many collateralized debt obligations were rated AAA by U.S. ratings agencies, and sovereign debt issued by Greece and Italy was regarded as safe (as evidenced by their low yields). Such overestimation of safety, equivalent to the underpricing of risks, was encouraged both by regulations and by market participants.[223] By some measures, the total global quantity of safe assets shrank very rapidly after the financial crisis, from $20.5 trillion in 2007 to $12.3 trillion in 2011, largely because many assets were re-categorized.[224] In addition, the production of new private-sector safe assets collapsed after the financial crisis: issuance of securities by the private sector fell in the United States and Europe from more than $3.0 trillion in 2007 to less than $750 billion in 2010.[225]

One limiting factor on safe assets is the zero lower bound on the yields they offer, since in theory investors are not expected to hold assets that lose money. In 2019, however, an estimated $11.6 trillion of bonds were trading at negative yields.[226] Most of these negative-yielding bonds were issued by governments, but private bonds are also subject to this phenomenon. In 2015, for example, a euro-denominated bond issued by Swiss food conglomerate Nestlé briefly traded at a negative yield.[227] The willingness of investors to hold securities with negative yields is counterintuitive, but such bonds provide a safe haven, eliminating the need to hoard cash, which can be both risky and inconvenient. Also, in some cases investors can make money from negative-yielding bonds by selling them at a profit before they mature.[228]

[218] U.S. Treasury, "Major Foreign Holders of Treasury Securities," January 16, 2020. China's holdings of U.S. Treasury securities peaked at about $1.3 trillion in 2013.
[219] Salidjanova, "China's Foreign Exchange Reserves," March 21, 2014.
[220] Gagnon, "The Elephant Hiding in the Room," March 2013.
[221] U.S. Treasury, "Treasury Designates China as a Currency Manipulator," August 5, 2019.
[222] U.S. Treasury, OIA, *Macroeconomic and Foreign Exchange Policies*, January 2020, 4–5.
[223] IMF, *Global Financial Stability Report*, April 2012, 82.
[224] Caballero, Farhi, and Gourinchas, "The Safe Assets Shortage Conundrum," 2017, 32.
[225] IMF, *Global Financial Stability Report*, April 2012, 109.
[226] Wigglesworth, "Investors Grit Their Teeth," December 11, 2019.
[227] Salmon, "Apple Just Proved That the Zero Lower Bound," February 20, 2015.
[228] Dryden, "Entering Uncharted Waters," September 10, 2019.

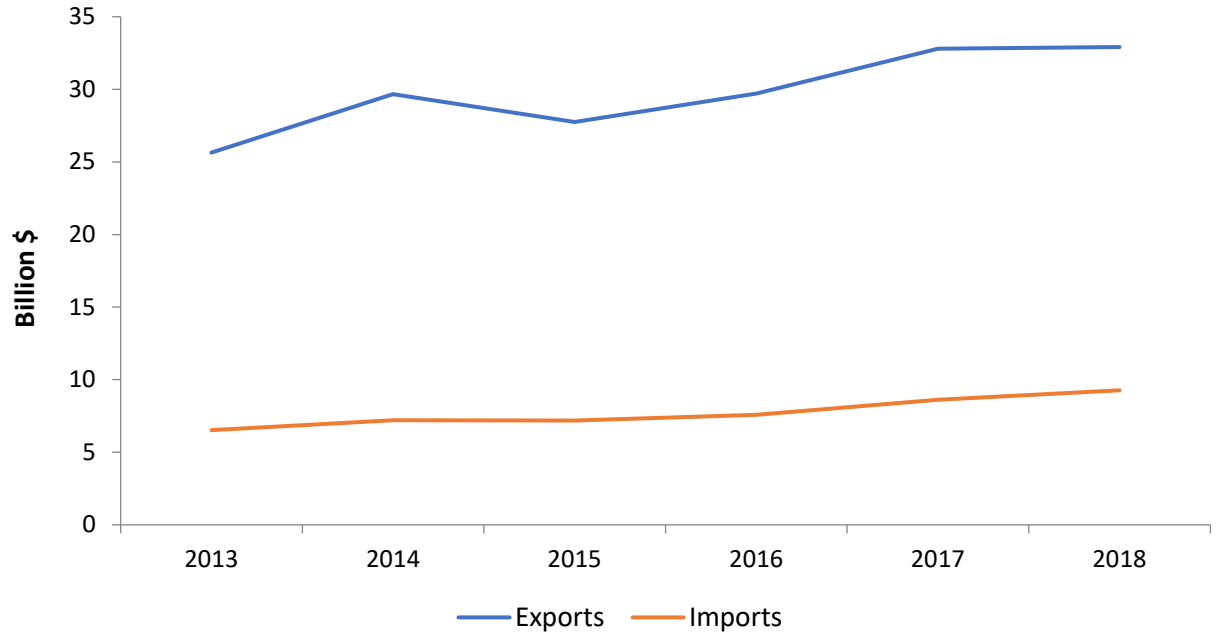
Trade Trends

Cross-border Trade

The United States consistently runs a large cross-border trade surplus in securities services, defined here as the sum of three BEA categories: brokerage services; underwriting and private placement services; and securities lending, electronic funds transfer (EFT), and other services.[229] In 2018, the United States exported $32.9 billion of securities services ($8.7 billion brokerage, $2.8 billion underwriting and private placement, and $21.4 billion securities lending and electronic funds transfer services). At the same time, it imported $9.3 billion of securities services ($4.7 billion brokerage, $539 million underwriting and private placement, and $4.0 billion securities lending and electronic funds transfer services) for a cross-border trade surplus of $23.6 billion (figure 5.3). Securities lending and electronic funds transfer services dominated U.S. securities services exports (65.0 percent) in 2018, while brokerage services represented the largest share of U.S. securities services imports (50.5 percent).

[229] Brokerage services are services related to equity transactions, options, futures, and other financial instruments (like commissions and fees received from foreign customers for executing orders to make purchases or sales). Underwriting and private placement services are defined as earnings from buying and reselling newly issued securities, as well as fees received from an issuer of securities for privately placing its securities (including fees on dealer-placed commercial paper). Securities lending services refer to amounts received directly from or paid directly to foreign persons for lending or borrowing securities. Electronic funds transfer services are fees for the transfer, via electronic funds, of money or financial assets received directly from or paid directly to foreign persons (including payments using the SWIFT international transfer network). Other financial services include asset pricing services, security exchange listing fees, demand deposit fees, securities rating services, check processing fees, overdraft fees, mutual fund exit fees, security redemption or transfer services, ATM network services, securities or futures clearing and settling services, and brokerage services not covered elsewhere (e.g., arranging joint ventures). USDOC, BEA, "Form BE-185," November 2018.

Figure 5.3 Securities services: U.S. cross-border exports and imports, 2013–18 (billion dollars)



Source: USDOC, BEA, table 2.2, "U.S. Trade in Services, by Type of Service and Country or Affiliation" (accessed November 18, 2019).
Note: Underlying data for this figure can be found in appendix table B.25.

U.S. securities services exports grew significantly from 2015 ($27.7 billion) to 2017 ($32.8 billion), but were nearly unchanged from 2017 to 2018. Much of this growth was in securities lending and electronic funds transfer services, which grew by 13.0 percent in 2016 and 14.2 percent in 2017. In 2018, by contrast, growth in this category was much lower, at 4.3 percent. U.S. imports of securities services have increased steadily overall since 2013. Although imports of underwriting and private placement services decreased over the period ($649 million in 2013 compared to $539 million in 2018), imports of brokerage services grew from $3.5 billion in 2013 to $4.7 billion in 2018, and imports of securities lending and electronic funds transfer services grew from $2.3 billion in 2013 to $4.0 billion in 2018.

Cross-border holdings of securities themselves have grown significantly in recent years. Foreign holdings of U.S. securities totaled $19.4 trillion in 2018, up from $14.4 trillion in 2013.[230] These holdings included $8.1 trillion in equities, $10.3 trillion in long-term debt, and $980 billion in short-term debt. The top five countries holding U.S. securities were Japan (10.5 percent of the total), the Cayman Islands (9.1 percent), China (8.3 percent), the UK (8.2 percent), and Luxembourg (7.7 percent). U.S. holdings of foreign long-term securities totaled $10.8 billion in 2018, up from $8.8 billion in 2013.[231] The top five countries in which the United States held securities in 2018 were the Cayman Islands (15.4 percent), the UK (11.9 percent), Japan (9.0 percent), Canada (8.7 percent), and France (5.0 percent). Small countries

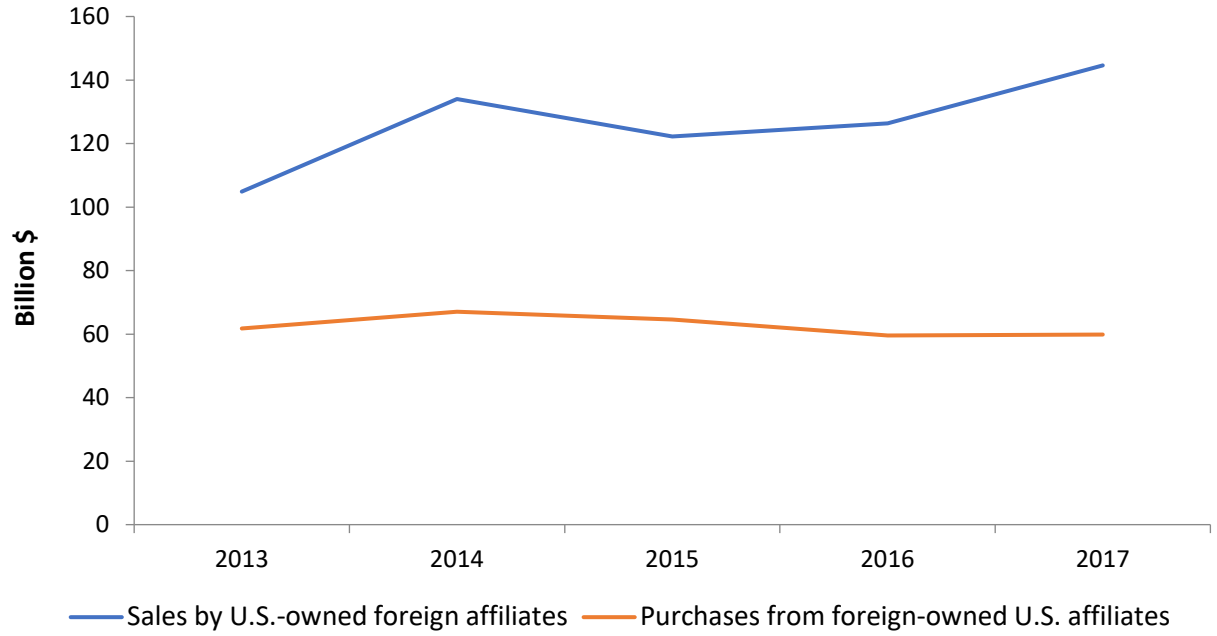
[230] U.S. Treasury, "Foreign Residents' Portfolio Holdings of U.S. Securities" (accessed November 20, 2019).
[231] U.S. Treasury, "U.S. Residents' Portfolio Holdings of Foreign Securities" (accessed November 20, 2019).

and territories like Luxembourg and the Cayman Islands often play a custodial role for third-country purchases of U.S. securities due to their favorable tax and regulatory regimes.[232]

Affiliate Transactions

The United States exchanges more securities services through affiliates than across borders. In 2017, sales of securities services by foreign affiliates of U.S. firms totaled $144.6 billion, a 14.5 percent increase from 2016 (figure 5.4). Also in 2017, purchases of securities services from U.S. affiliates of foreign firms totaled $59.9 billion, almost unchanged from 2016 and below their recent peak of $67.0 billion in 2014.[233]

Figure 5.4 Securities services: Affiliate sales and purchases, 2013–17 (billion dollars)



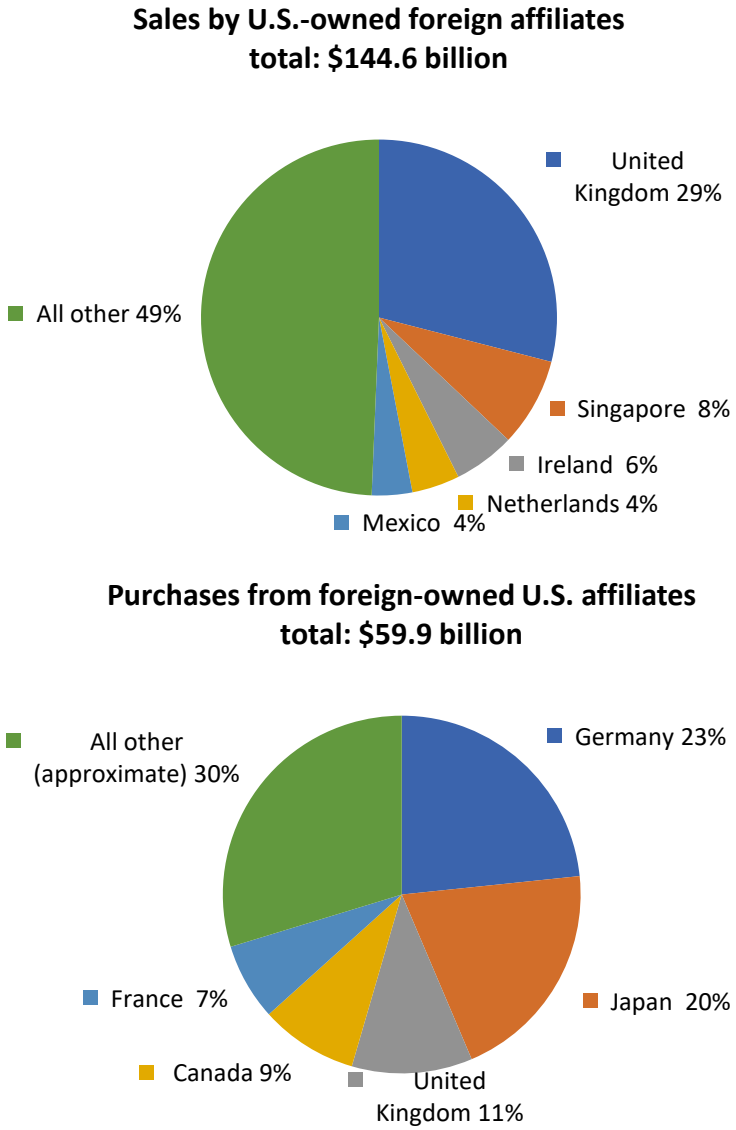
Source: USDOC, BEA, table 4.1, "Services Supplied to Foreign Persons by U.S. MNEs through Their MOFAs, by Industry of Affiliate and by Country of Affiliate," and table 5.1, "Services Supplied to U.S. Persons by Foreign MNEs through Their MOUSAs, by Industry of Affiliate and by Country of UBO, International Services" (accessed November 18, 2019).
Notes: The number for 2013 purchases of securities services from foreign-owned U.S. affiliates was accessed on an earlier date (April 28, 2016). Underlying data for this figure can be found in appendix table B.26.

In 2017, the UK was by far the largest destination for sales by foreign affiliates of U.S. securities services firms, accounting for 29.0 percent of total sales (or $41.9 billion) (figure 5.5). Singapore and Ireland were also significant markets, accounting for 8.1 percent and 5.6 percent, respectively ($11.6 billion and $8.1 billion). BEA suppresses some numbers to avoid disclosing the data of individual companies, but

[232] U.S. Treasury, "Frequently Asked Questions" (accessed November 20, 2019). For example, if a German investor purchased a U.S. security and placed it in the custody of a Swiss bank, the jurisdiction of ownership would be recorded as Switzerland.
[233] In 2014, BEA started including more companies in its estimates of services traded through affiliates. For this reason, affiliate transactions from 2014 to the present may not be directly comparable to affiliate transactions in 2013 or earlier.

combining 2015 and 2017 data suggests that Germany is the largest source of purchases from U.S. affiliates of foreign securities services firms. It accounted for $14.0 billion of purchases in 2015, while Japan's 2017 purchases came to $12.1 billion and the UK's 2015 purchases were $6.5 billion. The five largest markets accounted for 50.7 percent of U.S. exports through U.S. affiliated firms abroad and an estimated 70.3 percent of imports from foreign-owned affiliates in the United States.

Figure 5.5 Securities services: U.S. affiliate sales and purchases, by country, 2017 (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, International Services" (accessed November 18, 2019).
Note: In the category "foreign-owned U.S. affiliates," the data for purchases from Germany and the United Kingdom were suppressed by BEA in 2017 to avoid disclosing the data of individual companies. For these two values the graph uses 2015 numbers. Thus, the "all other" category is approximate. Underlying data for this figure can be found in appendix table B.27.

Box 5.2 Understanding Data on Cross-border Trade and Affiliate Transactions in Securities Services

BEA tracks cross-border trade in "total financial services" on a country-by-country basis. It also breaks financial services down into subcategories, which are recorded at the level of total U.S. exports and total U.S. imports, but not by country. The subcategories are as follows:

- Brokerage
- Underwriting and private placement
- Securities lending, electronic funds transfer, and other
- Credit card and other credit-related
- Financial management
- Financial advisory and custody

The Commission characterizes the first three subcategories in this list as securities services, and the second three as banking services.

These services include explicit fees or commissions, but in some cases financial services involve implicit payments. Examples of implicit financial services payments (sometimes called "Financial Intermediation Services Indirectly Measured") are the difference between the buying and selling price of a financial asset, and the service charge embedded in the interest rate offered to a depositor. The BEA's estimates of cross-border trade include the value of some implicit payments (such as commissions), but other implicitly charged financial services are not included.[a]

BEA also tracks financial services supplied abroad through the foreign affiliates of U.S.-owned firms, and financial services supplied in the United States by the affiliates of foreign-owned firms. BEA shows these values for some individual countries, but often suppresses country-level numbers to avoid disclosing the data of individual companies.

The U.S. Treasury Department reports data on international trade in securities per se, as opposed to securities services. Trade in securities is related to trade in securities services, but the two are not necessarily correlated. (For example, higher volumes of securities transactions may not imply higher fees for securities services firms.) The Treasury International Capital (TIC) data reporting system maintained by the Treasury Department measures gross U.S. purchases of foreign long-term securities (government and corporate bonds as well as company stocks) and gross foreign purchases of U.S. long-term securities, based on the market value of portfolio holdings. These numbers come from reports by banks and broker dealers, annual surveys of cross-border holdings of securities, and quarterly positional data reported by other financial institutions.[b]

[a] Whichard and Borga, "Selected Issues," June 2002, 47.
[b] Bertaut, Griever, and Tryon, "Understanding U.S. Cross-Border Securities Data," 2009.

Outlook

The securities services industry will continue to grow over the long run. The United States will likely maintain its deep and liquid capital markets, as well as its status as headquarters for several leading global securities firms, while growing wealth in emerging markets will continue to increase their demand for financial services. Securities services firms will continue to adopt new technologies—for example, using artificial intelligence for market analysis and for anti-money laundering/know your customer applications. China's securities sector is expected to continue to grow and evolve, though the pace and effectiveness of regulatory reforms are unknown.

One specific factor that will affect securities services is the upcoming replacement of the London Interbank Offered Rate, or LIBOR. LIBOR, which reflects how much financial firms charge to borrow money from each other, is used as a price reference for more than $300 trillion of global financial contracts such as derivatives and bonds.[234] LIBOR is based on submissions from a panel of banks that anticipate their borrowing costs. However, several 2012 settlements by Barclays revealed that some participants had been rigging the rate by falsifying submissions in order to profit from trades. In 2017, Andrew Bailey, the CEO of the UK's Financial Conduct Authority, said that the authority would stop requiring banks to submit quotes for LIBOR by the end of 2021, indicating that LIBOR will no longer be a significant global benchmark. Possible replacements include the U.S.-issued Secured Overnight Financing Rate, which is based on the rates that firms pay to borrow cash overnight using U.S. Treasuries as collateral.[235]

In 2020, the coronavirus pandemic has affected every aspect of the global economy, including securities services. Countries around the world experienced significantly slower GDP growth in the first quarter of the calendar year (Q1), and a large number of countries in Europe and the Americas—including the United States—were expected to suffer outright declines in GDP in Q2, as producers and consumers temporarily halted many normal economic activities in order to comply with government shutdown orders.[236] Global stock indices like the United States' S&P 500, Japan's Nikkei 225, and China's Shanghai Composite have experienced very high volatility.

As a result, investors have increased their demand for assets perceived as safe, like U.S. dollar-denominated government bonds, and as a result yields on U.S. Treasuries of all maturities fell below 1 percent in March 2020, the first time such a phenomenon has occurred.[237] Central banks, including the U.S. Federal Reserve, the European Central Bank, and the Bank of Japan, have all made unprecedented interventions to lower interest rates and increase liquidity.[238] Investment banks saw a surge in trading revenues associated with the market volatility, although other business lines will likely see losses.[239] Globally, bond issuance is largely on hold, and few companies are making initial public offerings given high levels of volatility in global equity markets.[240]

[234] Reuters, "Factbox," October 8, 2019.
[235] Held, "SOFR and the Transition from LIBOR," February 26, 2019.
[236] At the G20 meeting on March 25th, the OECD presented estimates that global annual GDP growth in 2020 will contract by two percentage points for each month that the necessary mitigation measures are in force: "If the shutdown continued for three months, with no offsetting factors, annual GDP growth could be between 4–6 percentage points lower than it otherwise might have been." OECD, "Evaluating the Initial Impact of COVID-19," 2020.
[237] Lee, "6 Charts Show the Coronavirus Impact," March 11, 2020.
[238] Pandey, "Global Central Banks Pull Out All Stops," March 16, 2020.
[239] Morris, "Investment Banks Braced for Pandemic Earnings Wipeout," April 12, 2020.
[240] Gross, "Coronavirus Sell-off Weighs Heavily," March 17, 2020.

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Chapter 6
Services Roundtable

The Commission hosted its 13th annual Services Roundtable on October 23, 2019.[241] The Commission regularly holds roundtables to encourage dialogue among individuals from government, industry, think tanks, and academia about issues affecting services trade. This year, the roundtable focused on (1) the impact of policy uncertainty (such as Brexit or U.S.-China trade negotiations) on output, trade, and liberalization of trade rules in services industries; and (2) the impact of market factors (such as increasing automation or the science, technology, engineering, and mathematics (STEM) skill shortages) on the capital/labor ratio in services industries, as well as the effect of shifts in the relative importance of these factors on trade patterns and competitiveness. Commissioner Rhonda Schmidtlein moderated the first half of the discussion, and Commissioner Randolph Stayin moderated the second.

The Impact of Policy Uncertainty on Trade in Services

The discussion regarding policy uncertainty was opened by Commissioner Schmidtlein, who posed two initial questions to the roundtable: (1) How does uncertainty impact company decisions? and (2) which types of policies have these impacts? The discussion began with one participant observing how trade uncertainty has made it more difficult for their clients to rely on their global supply chain networks. This observation prompted other panelists to note how uncertainty is affecting risk calculations within their respective businesses, with one attendee noting a drop in client investment as a response to perceived uncertainties, which, in turn, had a negative impact on business activity in the entire sector.

Subsequent discussion centered on company-specific approaches to risk mitigation. One participant explained that his firm's risk mitigation analyses are typically subject to many caveats, which result in a range of best-case and worst-case scenarios, a sentiment echoed by many participants. Another participant noted that the impact of uncertainty and/or policy impediments can be difficult to quantify, partly because trade in some services sectors is difficult to measure, a statement that also drew agreement around the table. Participants mentioned several variables that could not be factored into value-added calculations including education levels, institutional stability, and even the movement of people. Several participants stated in response that further research and/or quantification efforts would likely be necessary to determine the impact of a wide variety of factors on the services sector. An area of particular concern among participants was changing international trade rules and norms, and the disruptive effect that such changes can have on company operations.

The roundtable discussion then turned to the various methods of measuring the risks that affect services industries. While one of the participants mentioned that such efforts end up being guesswork, the discussion that followed indicated that historical trends play an important role in risk assessment. In this discussion, policy uncertainty was identified as a factor that had the potential to reduce the reliability of

[241] 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.

trend-based risk models, sometimes making it more difficult and costly to conduct such assessments. These difficulties, in turn, were seen as impacting how companies operated in global markets. One participant went into further detail, stating that trying to quantify uncertainty required analysts to not only measure the potential deviations from best-practice services trade policy, but also quantify the probability of those deviations, which is in itself very difficult.

While the impact of services trade policy uncertainty was the main focus of the discussion, the panelists also elaborated on the different sources of such uncertainty. Issues pertaining to the labor market featured prominently. For example, one participant posed the question of how to create jobs for non-college educated workers, while another raised the issue of employee retention and retraining in the face of growing international labor competition. Yet another participant stated that recognizing where job creation is originating, and taking advantage of that understanding, was a key to dealing with the issue. The software industry, for example, was mentioned as a good example of services job creation in a competitive global economy because many positions in the sector do not require a four-year college degree, yet it is one of the fastest-growing service industries.

Several current events and initiatives were mentioned as being important sources of uncertainty, specifically Brexit, the World Trade Organization e-commerce moratorium, and data localization requirements. Concerns centered around the impact that such uncertainty was having on the operations of international companies. Also noted was the deviation of some initiatives from international best-practice policies, with several participants stating that trade agreement provisions were insufficient to address problems caused by current events and initiatives.

The Impact of Market Factors in the Capital/Labor Ratio in Services Industries

The second topic of the day was introduced by Commissioner Stayin, who laid out some factors for participants to consider: STEM skill shortages; U.S. unemployment; mode 4 restrictions;[242] demographic changes; automation; digitization; and outsourcing patterns.

The discussion immediately focused on the U.S. workforce, with several participants noting that many future jobs in the services sector would likely not require a four-year college degree but would nonetheless require specialized training. Participants also noted that many colleges and universities are not currently offering such specialized training programs, leading some companies to create special programs to address these skills deficits. It was also noted that some companies are pushing educational institutions to offer courses and programs that will help address the skills shortages in the services sector. One participant noted an internship program sponsored by his company that partnered with more than 200 schools in 18 countries.

Current labor shortages were also a topic of active discussion. Several participants agreed that some companies are dealing with skill shortages by introducing technology into systems and processes that automate some or all of the tasks associated with certain jobs and activities, which are increasing the technological intensity of the services industry. Several participants also brought up the importance of

[242] For definition of services modes of supply see box 1.1 in Chapter 1.

retraining, with such efforts focused on not only newly created jobs but also existing jobs that have been impacted by the introduction of new technologies.

Some participants also emphasized the importance of so-called ”soft skills,” such as problem solving. This is largely because workers of the future will need to apply and transfer their skills across a variety of tasks and positions given that certain jobs will be either be automated or removed by technological change, whereas other jobs will be created by it.

The nature of the relationship between capital and labor was discussed. Several participants noted that the high mobility of capital relative to labor has increased the bargaining power of capital, a factor that has exacerbated the offshoring phenomenon and negatively affected wage growth. As one participant mentioned, effective regulations can help address the power imbalance between labor and capital, allowing workers to share in the benefits of services trade. However, it was stressed that the impact of such regulations on the operations of services firms should be considered. A large company, for example, would likely be better able to deal with regulations requiring additional reporting and compliance requirements than small and medium-sized enterprises, due to a lack of resources and technical expertise.

One participant also noted that understanding how new technologies, including automation, effect different segments of the labor market is just as important as understanding the overall capital/labor ratio. For example, according to this participant, the effects of automation and skill training/transfer may vary by age cohort. Younger workers, who have the necessary skill set but only limited work experience in a job affected by automation, may be better able to adapt to another position compared to older workers who have extensive work experience but no transferable skills.

One final thread of discussion focused on the difficulty of measuring the capital/labor ratio in many services industries due to the lack of data. Indeed, several participants voiced a need for more and better data, particularly since services account for the majority of economic activity in the United States. By contrast, according to these participants, the manufacturing and agricultural sectors are notably smaller but much better understood due to a plethora of data.

Lastly, another participant pointed out that current data collection efforts may be suffering from implementation issues that may vary by firm size. According to this participant, a compliance officer in a small or medium-sized firm may be the only person working on data collection and reporting, whereas large firms have the ability to leverage a number of data collection methods, including artificial intelligence, 5G networks, and other advanced technologies. This situation makes the issue of data collection and interpretation more complicated, as the results may skew towards a small number of large, sophisticated companies.

Appendix A
Selected Publications by Commission Staff: Trade in Services

Selected Publications by Commission Staff: Trade in Services

This appendix provides summaries and links to recent U.S. International Trade Commission (USITC or Commission) publications that feature topics in services trade. The publications listed below present results of recent Services Division staff research, including working papers, Executive Briefings on Trade, and articles in the *Journal of International Commerce and Economics*.

The publications summarized in this appendix are the result of the ongoing professional research by Commission staff and are solely meant to represent the opinions and professional research of their authors. They are not meant to represent in any way the view of the Commission or any of its individual Commissioners or the United States government.

Staff Publications and Working Papers

Building Vehicle Autonomy: Sensors, Semiconductors, Software, and U.S. Competitiveness

Sarah Oliver (Office of Industries, Services Division), David Coffin (Office of Industries, Advanced Technologies and Machinery Division), and John VerWey (Office of Industries, Advanced Technologies and Machinery Division), November 2019

https://usitc.gov/sites/default/files/publications/332/working_papers/autonomous_vehicle_working_paper_01072020-_508_compliant.pdf

"Building Vehicle Autonomy" describes the current state of driving automation, the components that go into autonomous vehicles, and U.S. firm participation in the sector. Three main components enable autonomous driving: sensors, semiconductors, and software. Sensors (including cameras), light detection and ranging (LiDAR), and radar are used together to help vehicles see road conditions at various distances and in different weather and lighting conditions. Sensors gather data, and semiconductors facilitate its processing in order to make real-time driving decisions. Machine learning and mapping software provide the tools to improve the operation and decision-making of vehicles. U.S. firms, including vehicle manufacturers, parts suppliers, and tech companies, are competing across all of the components of driving automation. This developing competitive arena offers opportunities for both startups and established firms to move into new areas (e.g., technology companies supply automotive parts and vehicle manufacturers develop chips).

Imports and Foreign Affiliate Sales of Legal Services in the United States

Tamar Khachaturian (Office of Industries, Services Division) and David Riker (Office of Economics, Research Division), August 2019

https://www.usitc.gov/publications/332/working_papers/imports_and_foreign_affiliate_sales_of_legal_services_in_the_united_states_08-20-19.pdf

We analyze the effects of restrictions on trade in legal services using a partial equilibrium version of the international trade and investment model in Helpman, Melitz, and Yeaple (2004). The model includes three different modes of supply: domestic sales, cross-border imports, and foreign affiliate sales. We calibrate the model to data for the U.S. market for legal services in 2012. We estimate how much higher domestic supply would have been if low U.S. trade restrictions were at higher international average levels. In the case of restrictions on foreign affiliate sales—mode 3 under the General Agreement on Trade in Services (GATS) classification—we estimate that foreign affiliates sales would have been $28.1 million lower, cross-border imports would have been $26.7 million higher, and the value of services supplied by domestic firms would have been $1.4 million higher. In the case of restrictions on cross-border imports (mode 1, 2, and 4 under GATS), we estimate that cross-border imports would have been $175.4 million lower, foreign affiliates sales would have been $0.1 million higher, and the value of services supplied by domestic firms would have been $175.3 million higher. These effects are very small compared to the U.S. market for legal services, which totaled $367.0 billion in 2012.

Firm Level Analysis of Trade Restrictions in the Maritime Port Services Industry

Joann Peterson and Arthur Chambers (Office of Industries, Services Division), July 2019

https://www.usitc.gov/publications/332/working_papers/id-059_firm_level_analysis_of_trade_restrictions_in_the_maritime_port_services_industry_final_0729-_checked_0.pdf

This paper examines competition and profitability in the port services sector using data from the Organisation for Economic Co-operation and Development (OECD) Services Trade Restrictiveness Index (STRI) and Orbis. It is part of an ongoing series in the Services Division of the Office of Industries examining firm profitability and barriers to entry in the services sector. The paper begins with an overview of the maritime port services industry, describing industry structure, regulation, and competition. It then discusses how trade restrictions in the maritime cargo-handling segment affect the competitive landscape and, ultimately, the profitability of firms that provide port services. The paper includes a quantitative analysis of the relationship between these factors using the OECD STRI scores for logistics-related cargo-handling services as a proxy for port services, and Orbis-generated firm-level profitability data for cargo-handling firms. The analysis indicates the degree to which high entry barriers in the port services sector lead to less competition and higher profits among cargo-handling firms in the maritime sector. The paper concludes with recommendations for future areas of research on competition in port services.

Executive Briefings on Trade

Understanding Nontariff Measures in Services Trade Using Firm-level Data

Sarah Oliver, Tamar Khachaturian, and Arthur Chambers (Office of Industries, Services Division), January 2020

https://usitc.gov/sites/default/files/publications/332/executive_briefings/ebot_services_ntms.pdf

Analyzing the effects of nontariff measures (NTMs) on services at the firm level is important given the predominance of services trade via commercial presence, and practical given the limitations of data on foreign affiliate sales. This EBOT summarizes a series of USITC Services Division working papers that use firm-level data from Orbis to estimate the impact of NTMs on service firm profitability in telecommunications, life insurance, commercial banking, and maritime port services. Methodologies for assessing the impact of NTMs on services trade are evolving and yielding more detailed insights—distinguishing, for example, between domestic and foreign-owned firms or between vertically integrated and independent firms. Future research could shed light on whether firms in other industry sectors are affected by NTMs in a similar pattern.

Journal of International Commerce and Economics

The Value of U.S. Service Employment in Manufacturing Sectors

Sarah Oliver (Office of Industries, Services Division), September 2019

https://usitc.gov/sites/default/files/publications/332/journals/jice_oliver_services_employment_2019_final.pdf

Using data on service occupations in U.S. manufacturing sectors in 2016, this paper seeks to highlight the value of in-house services in U.S. manufacturing output by assessing the relationship between the share of services occupations in a particular sector (services occupation intensity) and typical education and compensation in service occupations. Overall, this paper finds a positive and significant relationship between services intensity and the typical education level of service workers within sectors. It also finds a positive and significant relationship between service intensity and the average compensation of service occupations across sectors. For U.S. manufacturing sectors, these in-house services represented between $8.7 billion and $17.5 billion in additional services value added in 2016, compared to $56.8 billion for intermediate services inputs in the same year.

Appendix B
Data Tables for Figures

Table B.1 Real value added, by U.S. industry, 2014–18 (billion dollars)

	2014	2015	2016	2017	2018
Private goods-producing industries	3.2	3.3	3.3	3.4	3.5
Private service-supplying industries	11.5	11.9	12.1	12.4	12.8

Source: USDOC, BEA, "Real Value Added by Industry," October 29, 2019 (corresponds to figure 1.1).

Table B.2 Global services: Cross-border exports and imports of commercial services, 2018

Country	Exports (billion $)	Share of exports (%)	Imports (billion $)	Share of imports (%)
United States	808.2	14.0	536.2	9.8
UK	372.7	6.5	229.5	4.2
Germany	325.6	5.6	349.7	6.4
France	291.0	5.0	256.8	4.7
China	265.1	4.6	520.6	9.5
Netherlands	240.5	4.2	228.5	4.2
Ireland	205.3	3.6	218.0	4.0
India	204.5	3.5	175.4	3.2
Japan	187.3	3.2	198.0	3.6
Singapore	183.7	3.2	186.7	3.4
All other	2,685.7	46.5	2,585.7	47.1
Total	5,769.7		5,485.2	

Source: WTO, Statistics Database, Times Series on International Trade, "Trade in Commercial Services, 2005–onward" (accessed November 8, 2019) (corresponds to figure 1.2).

Table B.3 U.S. services: Cross-border exports/imports and affiliate sales/purchases, 2010–18 (billion dollars)

	Cross-border trade		Foreign affiliate transactions	
	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
2010	543.5	377.4	1,095.3	608.4
2011	605.6	404.5	1,177.5	668.6
2012	633.6	424.2	1,209.8	698
2013	678.6	435.7	1,238.8	772.2
2014	721.4	456.5	1,446.5	811.4
2015	735.2	470.4	1,383.2	831.5
2016	739.7	490.1	1,407.3	875.2
2017	779.3	521.8	1,488.1	967.8
2018	805.7	544.3	n.a.	n.a.

Sources: USDOC, BEA, table 2.1, "U.S. Trade in Services, by Type of Service," October 15, 2019; 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 MOUSAs, by Industry of Affiliate and by Country of UBO," October 15, 2019 (corresponds to figure 1.3).

Notes: n.a. = data not available; MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner.

Table B.4 U.S. services: Cross-border exports and imports, by industry, 2018

	Exports (billion $)	Share of exports (%)	Imports (billion $)	Share of imports (%)
Distribution services	54.0	6.7	68.3	12.6
Electronic services	102.6	12.7	67.9	12.5
Financial services	129.5	16.1	73.8	13.6
Travel services	256.1	31.8	186.5	34.3
Charges for the use of intellectual property n.i.e.	69.4	8.6	29.4	5.4
Professional services	176.0	21.8	103.2	19.0
Other services	18.1	2.3	15.2	2.8
Total value	805.7		544.3	

Source: USDOC, BEA, table 2.1, "U.S. Trade in Services, by Type of Service," October 15, 2019 (corresponds to figure 1.4).
Note: n.i.e. is an acronym for "not included elsewhere."

Table B.5 U.S. services: Cross-border exports and imports, by country, 2018

Country	Exports (billion $)	Share of exports (%)	Country	Imports (billion $)	Share of imports (%)
United Kingdom	73.6	9.1	United Kingdom	60.0	11.0
Canada	63.6	7.9	Canada	35.6	6.5
China	56.7	7.0	Japan	30.4	5.6
Ireland	48.5	6.0	Germany	29.7	5.5
Japan	44.4	5.5	India	29.5	5.4
Switzerland	39.2	4.9	Mexico	25.7	4.7
Germany	34.6	4.3	Bermuda	24.0	4.4
UK Islands	33.8	4.2	Switzerland	21.5	4.0
Mexico	33.4	4.1	Ireland	19.0	3.5
Brazil	28.1	3.5	France	18.3	3.4
India	24.8	3.1	n.a.	n.a.	n.a.
All other	358.9	44.5	All other	250.4	46.0
Total value	805.7	100.0	Total value	544.3	100.0

Source: USDOC, BEA, table 2.2, "U.S. Trade in Services, by Type of Service and by Country or Affiliation," October 15, 2019 (corresponds to figure 1.5).
Note: The BEA category "UK Islands (Caribbean)" includes the following UK overseas territories: British Virgin Islands, Cayman Islands, Montserrat, and Turks and Caicos Islands.

Table B.6 U.S. services: Affiliate sales and purchases by industry, 2017 (billion dollars)

	Services supplied by foreign affiliates of U.S. firms[a] (billion $)	Share of total affiliate sales (%)	Services purchased from U.S. affiliates of foreign firms[a] (billion $)	Share of total affiliate purchases (%)
Manufacturing	31.7	2.0	86.6	8.0
Distribution Services	427.2	27.4	335.0	30.9
Electronic Services	202.3	13.0	137.2	12.7
Financial Services	308.7	19.8	190.1	17.6
Professional Services	106.8	6.9	114.7	10.6
Other	481.8	30.9	219.0	20.2
Total value	1,558.4		1,082.6	

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 19, 2018; 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 (corresponds to figure 1.6).

Notes: MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner. "Manufacturing" includes ancillary services provided by goods manufacturers. "Other" includes ancillary services provided in the mining, 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.

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

Table B.7 Estimates of world services exports, by mode of supply, 2017 (billion dollars)

Mode 1 (Cross-border supply)	3,724.5
Mode 2 (Consumption abroad)	1,413.6
Mode 3 (Commercial presence)	7,865.4
Mode 4 (Temporary present of natural persons	416.6
Total	13,420.1

Source: WTO, "Trade in Services by Mode of Supply" (accessed November 15, 2019) (corresponds to figure 1.7).

Table B.8 Share of U.S. cross-border services exports that are mode 1, by sector, 2016 (percent)

	Mode 1
Accounting	51
Advertising, market research, public opinion	78
Computer	80
Architectural and engineering	61
Education	37
Legal	80
Management consulting	77
Research and development	59

Source: Mann, "Measuring Trade in Services by Mode of Supply," August 2019, 12 (corresponds to figure 1.9).

Table B.9 UK cross-border exports, by mode of supply, 2018 (percent)

	Mode 1	Mode 2	Mode 4
Manufacturing	48	52	n.a.
Maintenance and repair	49	46	5
Construction	47	n.a.	53
Insurance and pension services	84	n.a.	16
Financial services	89	n.a.	11
Charges for the use of intellectual property	82	n.a.	18
Telecommunications, computer, and information services	85	n.a.	15
Other business services	74	7	18
Personal, cultural, and recreational services	43	n.a.	57
Transport	65	35	n.a.
Travel	n.a.	100	n.a.

Source: Mann and Cheung, "Measuring trade in Services by Modes of Supply," October 15, 2019, 44 (corresponds to figure 1.10).

Table B.10 Financial services: U.S. cross-border exports and imports, by country, 2018 (percent)

Country	Total exports (billion)	Share of total exports (%)	Country	Total imports (billion)	Share of total exports (%)
UK Islands	30,081	23.2	Bermuda	22,084	29.9
UK	20,125	15.5	UK	13,369	18.1
Canada	9,064	7.0	Switzerland	4,058	5.5
Japan	6,449	5.0	Canada	3,103	4.2
Australia	4,916	3.8	Ireland	2,819	3.8
China	4,506	3.5	Germany	2,734	3.7
Luxembourg	4,228	3.3	Japan	1,961	2.7
Bermuda	3,951	3.1	Hong Kong	1,702	2.3
Ireland	3,852	2.7	China	1,532	2.1
All other	42,259	32.9	All other	20,421	27.7
Total	129,481	100.0	Total	73,783	100.0

Source: USDOC, BEA, table 2.2, "U.S. Trade in Services, by Type of Service and by Country or Affiliation," October 15, 2019 (corresponds to figure 2.1).
Note: The BEA category "UK Islands (Caribbean)" includes the following UK overseas territories: British Virgin Islands, Cayman Islands, Montserrat, and Turks and Caicos Islands. (corresponds to figure 2.1).

Table B.11 Financial services: U.S. cross-border exports and imports, by sector, 2018 (billion dollars)

Service Industry	Exports	Imports
Securities	32.9	9.3
Banking	79.1	22.0
Insurance	17.5	42.5

Source: USDOC, BEA, table 2.1, "U.S. Trade in Services, by Type of Service, October 15, 2019 (corresponds to figure 2.2).

Table B.12 Financial services: U.S. affiliate sales and purchases, by sector, 2017 (billion dollars)

	Sales by U.S.-owned foreign affiliates	Purchases from foreign-owned U.S. affiliates
Securities services	144.6	59.9
Insurance services	62.3	72.0
Banking services	42.9	48.2
Rental and leasing (except real estate)	58.9	10.0
Total	308.7	190.1

Sources: USDOC, BEA, table 2.1, "U.S. Trade in Services, by Type of Service," October 15, 2019; 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 MOUSAs, by Industry of Affiliate and by Country of UBO," October 15, 2019 (corresponds to figure 2.3).
Notes: MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner. n.a. = data not available

Table B.13 Global banking revenues, 2013–19 (billion dollars)

Year	Revenue
2013	2,011
2014	2,101
2015	2,145
2016	2,100
2017	2,097
2018	2,250
2019	2,341

Source: IBISWorld*, Global Commercial Banking*, December 2019, 11 (corresponds to figure 3.1).

Table B.14 Banking assets, by geographic region, 2019

Country	Share of global assets (%)
North Asia	47.2
Europe	20.3
North America	14.1
Africa and the Middle East	6.7
Oceania	4.2
South America	3.7
India and Central Asia	1.8

Source: IBISWorld, *Global Commercial Banking*, December 2019, 18 (corresponds to figure 3.2).

Table B.15 Retail bank branch growth (or decline), average annual percentage point change, 2015–18

Market	2015	2016	2017	2018	CAGR (%), 2015–18
United States	32.7	32.1	31.2	30.9	-1.9
Sweden	19.3	17.5	16.2	14.9	-8.3
Euro area	26.8	24.6	22.9	20.7	-8.3
Canada	22.8	22.3	20.8	20.0	-4.3
Switzerland	44.3	42.5	40.8	39.5	-3.8
Australia	28.7	27.7	29.6	28.2	-0.6
Japan	34.1	34.1	34.0	34.1	-0.1
China	8.5	8.8	8.8	8.8	1.4
South Korea	16.8	16.3	15.4	N/A[1]	
World	12.0	12.4	12.0	12.7	2.1

Source: WTO, commercial bank retail branches (accessed December 12, 2019) (corresponds to figure 3.3).
[1] 2018 data are not available for South Korea.

Table B.16 Banking services: U.S. cross-border exports and imports, 2014–18

	2014 (million $)	2015 (million $)	2016 (million $)	2017 (million $)	2018 (million $)	CAGR (%) 2013–17	Change (%) 2017–18
Exports	77,271	74,692	69,365	76,405	79,101	2.4	3.5
Imports	17,685	18,582	18,128	20,341	22,029	7.9	8.3
Trade Balance	59,586	56,110	51,237	56,064	57,072	6.1	-2.2

Source: USDOC, BEA, Table 2.2, "U.S. Trade in Services, by Type of Services and Country or Affiliation," October 15, 2019 (corresponds to figure 3.4).
Notes: CAGR = compound annual growth rate.

Table B.17 Banking services: U.S. affiliate sales and purchases, 2013–17 (billion dollars)

Year	Sales by U.S.-owned foreign affiliates	Purchases from foreign-owned U.S. affiliates
2013	53.5	44.5
2014	48.0	44.4
2015	44.0	39.9
2016	42.5	44.3
2017	42.9	48.2

Sources: USDOC, BEA, table 2.1, "U.S. Trade in Services, by Type of Service," October 15, 2019; 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 MOUSAs, by Industry of Affiliate and by Country of UBO," October 15, 2019 (corresponds to figure 3.5).
Notes: MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner.

Table B.18 Banking services: U.S. affiliate sales, by country, 2017 (billion dollars)

Country/Region	Purchases
UK	10,884
Singapore	2,567
Canada	2,050
Australia	1,541
India	1,511
China	1,180
Ireland	1,075
Germany	1,010
Other Asia Pacific	6,190
Other Europe	6,520
All other countries	8,353
Total	42,881

Source: USDOC, BEA, 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 15, 2019 (corresponds to figure 3.6).

Table B.19 Cyber liability insurance purchase habits, 2011–18

Response	2011	2012	2013	2014	2015	2016	2017	2018
Yes	35	44	52	52	61	65	65	75
No	60	50	38	35	26	23	27	25

Source: Statista, Finance, Insurance and Real Estate, Insurance, "Does Your Organization Purchase Cyber Liability Insurance?" (accessed December 5, 2019) (corresponds to figure 4.1).

Table B.20 Insurance services: U.S. cross-border exports and imports, 2010–18 (billion dollars)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Imports	61,478	55,654	55,513	53,420	51,011	47,420	50,144	50,599	42,485
Exports	14,397	15,114	16,790	16,696	17,333	16,248	16,819	18,015	17,466

Source: USDOC, BEA, table 2.1, "U.S. Trade in Services, by Type of Service," October 15, 2019 (corresponds to figure 4.2).

Table B.21 Insurance services: Sales by U.S.-owned foreign affiliates and purchases from foreign-owned U.S. affiliates, 2013–17 (billion dollars)

	2013	2014	2015	2016	2017
U.S.-owned foreign affiliates	65.2	67.1	63.7	62.5	62.3
Foreign-owned U.S. affiliates	67.3	62.7	57.1	74.5	72.0

Sources: USDOC, BEA, table 2.1, "U.S. Trade in Services, by Type of Service," October 15, 2019; 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 MOUSAs, by Industry of Affiliate and by Country of UBO," October 15, 2019 (corresponds to figure 4.3).
Notes: MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner.

Table B.22 Insurance services: U.S. affiliates sales, by country, 2017 (million dollars)

Country	Affiliate sales
Japan	16,608
UK	10,122
Canada	3,944
Bermuda	4,631
Brazil	4,159
All other	22,797

Source: USDOC, BEA, table 4.1, "Services Supplied to Foreign Persons by U.S. Multinational Enterprises by Their Majority-owned Foreign Affiliates, by Industry of Affiliate and by Country of Affiliate," October 15, 2019 (corresponds to figure 4.4).

Table B.23 Global investment banking revenues (net), 2009-2018 (million dollars)

	United States	UK	Europe (except UK)	Japan	BRIC (Brazil, Russia, India, China)
2009	20,134.2	5,073.0	15,148.7	4,438.5	5,183.4
2010	27,940.4	3,879.7	13,769.0	4,032.2	8,531.8
2011	30,580.9	3,484.6	14,931.5	3,066.1	7,076.6
2012	32,160.6	3,410.4	12,609.8	3,158.0	6,501.1
2013	38,196.2	4,053.3	14,699.6	3,772.1	6,214.2
2014	38,036.8	4,689.0	17,451.8	3,192.7	7,880.4
2015	36,627.2	4,300.9	14,219.4	3,321.9	8,307.1
2016	36,261.2	3,913.3	12,490.0	3,107.7	10,272.2
2017	40,976.5	4,219.7	14,058.8	3,587.2	10,297.2
2018	39,746.2	4,639.9	14,387.6	3,338.8	8,297.0

Source: SIFMA, *Capital Markets Fact Book*, 2019, 44 (corresponds to figure 5.1)

Table B.24 Stock market size compared to banking sector size, select countries, 2017 (percent)

	Stock market capitalization to GDP	Private credit by deposit money banks to GDP
China	65.5	150.6
United States	153.2	51.6
Japan	113.1	104.4
Germany	54.3	75.5
India	74.6	47.5
France	95.6	96.8

Source: World Bank, "World Data Indicators" (accessed October 28, 2019) (corresponds to figure 5.2).

Table B.25 Securities services: U.S. cross-border exports and imports, 2013–18 (billion dollars)

	2013	2014	2015	2016	2017	2018
Exports	25.6	29.7	27.7	29.7	32.8	32.9
Imports	6.5	7.2	7.2	7.6	8.6	9.3

Source: USDOC, BEA, table 2.2, "U.S. Trade in Services, by Type of Service and Country or Affiliation," October 15, 2019 (corresponds to figure 5.3).

Table B.26 Securities services: U.S. affiliate sales and purchases, 2013–17 (billion dollars)

	2013	2014	2015	2016	2017
Sales by U.S.-owned foreign affiliates	104,867	134,031	122,244	126,333	144,602
Purchases from foreign-owned U.S. affiliates	61,791	67,042	64,631	59,562	59,860

Sources: USDOC, BEA, table 2.1, "U.S. Trade in Services, by Type of Service," October 15, 2019; 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 MOUSAs, by Industry of Affiliate and by Country of UBO," October 15, 2019 (corresponds to figure 5.4).
Notes: MNEs = multinational enterprises; MOFAs = majority-owned foreign affiliates; MOUSAs = majority-owned U.S. affiliates; UBO = ultimate beneficial owner.

Table B.27 Securities services: U.S. affiliate sales and purchases, by country, 2017 (billion dollars)

Country	Affiliate sales	Country	Affiliate purchases
UK	41,946	Germany	13,980
Singapore	11,646	Japan	12,122
Ireland	8,074	UK	6,525
Netherlands	6,277	Canada	5,280
Mexico	5,310	France	4,163
All other	71,349	All other	17,790

Source: USDOC, BEA, 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 15, 2019 (corresponds to figure 5.5).