

COMPTIA TECH TRADE SNAPSHOT

IMPORTS AND EXPORTS OF TECH PRODUCTS AND SERVICES



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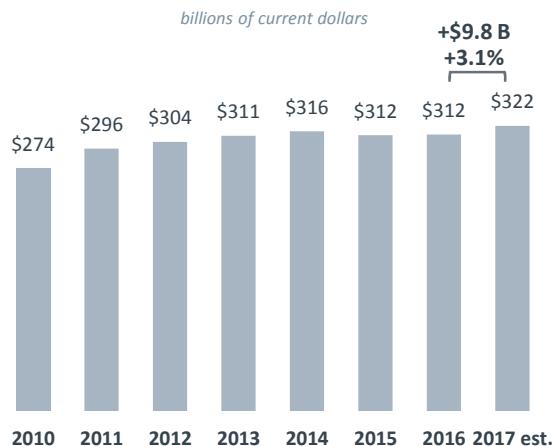
OVERVIEW

- ❖ U.S. information technology¹ exports reached an estimated \$322 billion in 2017, an increase of 3.1 percent over the previous year. Tech is one of the largest sectors for exports in the U.S. economy.
- ❖ Nationally, tech exports directly supported over 800,000 jobs in 2016, the most recent year of available data. Tech product exports accounted for the majority of these jobs (70 percent), with tech services the remainder (30 percent).
- ❖ Exports account for approximately \$1 out of every \$4 generated in the U.S. tech industry. For many tech bellwethers, exports account for an even higher percentage of sales, with some generating more than half of their revenue overseas.
- ❖ Tech product exports rose 3.0 percent to \$208 billion in 2017. Leading the growth in this sector were exports of semiconductors, which increased by \$3.9 billion (+7.2 percent) and computer equipment, up \$1.1 billion (+2.5 percent) from 2016.
- ❖ Tech services exports have increased by 6.1 percent year-over-year since 2007. Between 2007 and 2016, R&D services increased by \$21.6 billion (+10.2 percent annually), and IT services increased by \$10.0 billion (+10.4 percent annually).
- ❖ U.S. tech exports to Canada and Mexico totaled \$75.0 billion in 2016, or about 24.0 percent of all U.S. tech exports.
- ❖ In 2017, the United States ran an \$18.7 billion surplus in tech products with Canada, larger than any other country.
- ❖ In the Asia and Pacific region, China is the largest market for U.S. tech exports.
- ❖ U.S. tech exports to China reached an estimated \$19.0 billion in 2016, an increase of approximately 3.9 percent year-over-year since 2007.

“Exports account for nearly \$1 out of every \$4 generated in the U.S. tech sector.”

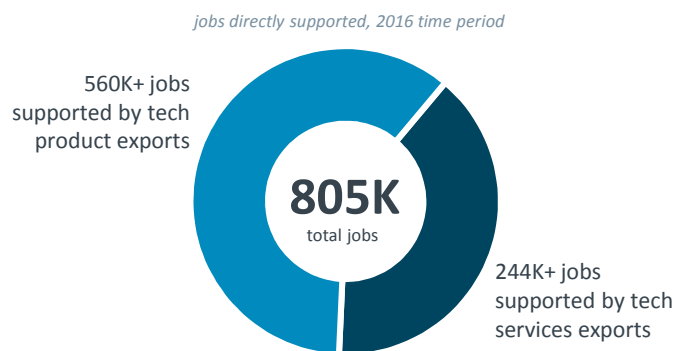
Exports directly support approximately 1 in 2 U.S. tech manufacturing sector jobs.”

TECH PRODUCT + SERVICES EXPORTS



Sources: Foreign Trade Division of U.S. Census Bureau, CompTIA

U.S. JOBS SUPPORTED BY TECH EXPORTS



Source: The Trade Partnership's CDExports database

TOP 5 U.S. SECTORS FOR MFG. GOODS EXPORTS

2017 estimate

	\$ Billions	% of Total
1. Transportation / motor vehicles	\$278	19%
2. Tech products	\$208	14%
3. Chemicals	\$193	13%
4. Machinery	\$134	9%
5. Petroleum & coal products	\$84	6%

TOP 5 U.S. SECTORS FOR SERVICES EXPORTS

2017 estimate

	\$ Billions	% of Total
1. Travel services	\$204	26%
2. Business & professional services	\$114	15%
3. Tech services	\$114	15%
4. Financial services	\$106	14%
5. Intellectual property use (not software)	\$93	12%

¹The category of Tech Products corresponds to the NAICS 334 category of Computer and Electronic Product Manufacturing, including: Computer Equipment, Communications Equipment, Audio & Visual Equipment, Semiconductors, Navigational/Measuring Equipment, and Magnetic & Optical Media. The category of Tech Services corresponds to the Bureau of Economic Analysis' exports for: Computer & Data Processing Services, Computer Software, Database & Information Services, R&D Services, and Telecommunications.

STATE AND TRADING PARTNER SUMMARY, TECH PRODUCTS

- ❖ From 2016 to 2017, tech product exports grew by at least 10 percent in 16 states. These states include: Illinois (+\$890 million), New Jersey (+\$803 million), New York (+\$794 million), Washington (+\$398 million), and New Hampshire (+\$352 million). Tech product exports grew the fastest in Delaware (+51.3 percent).
- ❖ Communications equipment exports grew the fastest among tech product subsectors, up 14.4 percent since 2012. In terms of gains in value, semiconductor exports have increased by \$6.2 billion since 2012.
- ❖ The leading trading partners for U.S. tech product exports and imports remained largely unchanged from 2016. In 2017, the top 10 markets accounted for 67 percent of all tech product exports, while the top 10 source countries accounted for 89 percent of all tech product imports.

LEADING TRADING PARTNERS FOR TECH PRODUCTS, 2017

Exports from the U.S.

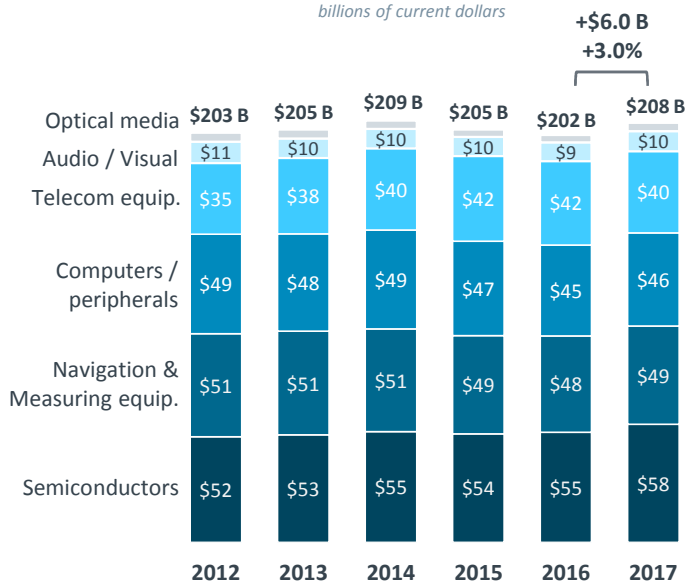
- Mexico
- Canada
- China
- Hong Kong
- Japan
- Germany
- Korea
- Netherlands
- Malaysia
- Singapore

Imports into the U.S.

- China
- Mexico
- Malaysia
- Taiwan
- Korea
- Japan
- Thailand
- Viet Nam
- Germany
- Canada

TECH PRODUCT EXPORTS

billions of current dollars



U.S. TECH PRODUCT EXPORTS BY STATE

billions of current dollars

Rank	State	2016	2017	% change
1.	Texas	\$47.1	\$47.0	-0.4%
2.	California	\$42.4	\$43.7	3.0%
3.	Florida	\$12.0	\$12.9	7.6%
4.	Oregon	\$9.8	\$8.8	-10.9%
5.	Illinois	\$7.7	\$8.6	11.6%
6.	Massachusetts	\$7.0	\$7.5	7.3%
7.	New York	\$6.3	\$7.1	12.6%
8.	Arizona	\$5.6	\$5.9	5.0%
9.	Tennessee	\$5.3	\$5.4	1.7%
10.	New Jersey	\$4.2	\$5.0	19.0%
11.	Washington	\$3.8	\$4.2	10.3%
12.	Minnesota	\$3.4	\$3.6	8.6%
13.	Pennsylvania	\$3.5	\$3.6	3.5%
14.	Michigan	\$3.1	\$3.3	6.0%
15.	Ohio	\$2.6	\$2.8	6.0%
16.	Wisconsin	\$2.9	\$2.7	-4.5%
17.	Georgia	\$2.4	\$2.7	13.2%
18.	North Carolina	\$2.4	\$2.2	-8.0%
19.	Virginia	\$2.2	\$2.0	-7.7%
20.	Colorado	\$1.9	\$1.9	0.3%
21.	Nevada	\$1.6	\$1.9	19.1%
22.	New Mexico	\$2.1	\$1.9	-10.9%
23.	Utah	\$1.7	\$1.8	7.5%
24.	Indiana	\$1.6	\$1.8	15.9%
25.	Kentucky	\$1.6	\$1.8	14.4%
26.	Vermont	\$1.9	\$1.8	-7.7%
27.	Idaho	\$2.2	\$1.7	-26.5%
28.	New Hampshire	\$1.3	\$1.6	27.4%
29.	South Carolina	\$1.2	\$1.2	4.1%
30.	Connecticut	\$1.1	\$1.1	2.1%
31.	Mississippi	\$0.9	\$1.1	25.0%
32.	Maryland	\$1.6	\$1.1	-30.1%
33.	Oklahoma	\$0.7	\$0.8	20.9%
34.	Delaware	\$0.5	\$0.8	51.3%
35.	Kansas	\$0.7	\$0.7	4.2%
36.	Iowa	\$0.6	\$0.6	6.5%
37.	Missouri	\$0.6	\$0.6	-0.6%
38.	Alabama	\$0.6	\$0.5	-5.9%
39.	Maine	\$0.3	\$0.3	-0.4%
40.	District of Columbia	\$0.0	\$0.3	494%
41.	Nebraska	\$0.2	\$0.2	4.0%
42.	Arkansas	\$0.3	\$0.2	-33.1%
43.	Louisiana	\$0.2	\$0.2	2.1%
44.	Rhode Island	\$0.2	\$0.2	3.4%
45.	West Virginia	\$0.1	\$0.1	6.8%
46.	South Dakota	\$0.1	\$0.1	0.4%
47.	North Dakota	\$0.1	\$0.1	32.1%
48.	Montana	\$0.0	\$0.0	13.2%
49.	Alaska	\$0.0	\$0.0	11.3%
50.	Hawaii	\$0.0	\$0.0	-46.2%
51.	Wyoming	\$0.0	\$0.0	47.3%

Source: The Trade Partnership's CDExports database, Foreign Trade Division of U.S. Census Bureau, CompTIA

Source: Foreign Trade Division of U.S. Census Bureau

STATE AND TRADING PARTNER SUMMARY, TECH SERVICES

- ❖ The United States ran a surplus of \$32 billion in tech services trade in 2016, the most recent year of available detailed tech services data.
- ❖ Exports directly support slightly less than 1 in 10 U.S. tech services sector jobs. The lower ratio relative to tech manufacturing reflects the much larger base of tech services employment in the U.S. Moreover, certain types of tech services, such as IT integration or solutions consulting, typically requires a local presence to deliver.
- ❖ From 2015 to 2016, tech services exports grew by at least 10 percent in 11 states. These states include: Texas (+\$564 million), Utah (+\$146 million), Kansas (+\$70 million), North Dakota (+\$40 million), and Alabama (+\$34 million).
- ❖ The leading trading partners for U.S. tech services exports and imports remained largely unchanged from 2015. In 2016, the top 10 markets accounted for 64 percent of all tech services exports.

LEADING TRADING PARTNERS FOR TECH SERVICES, 2016

Exports from the U.S.

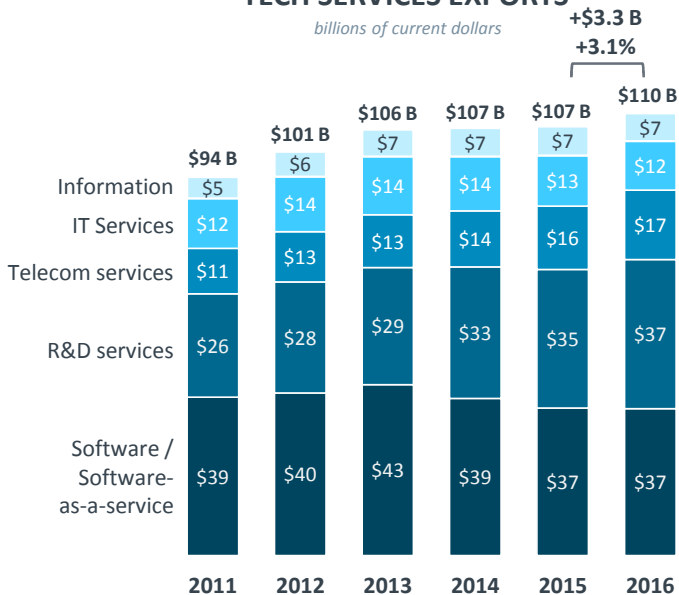
1. Ireland
2. Switzerland
3. Japan
4. United Kingdom
5. Singapore
6. Brazil
7. Canada
8. Germany
9. Bermuda
10. Netherlands

Imports into the U.S.

1. India
2. Germany
3. Canada
4. United Kingdom
5. China
6. Israel
7. Ireland
8. Switzerland
9. Netherlands
10. Japan

TECH SERVICES EXPORTS

billions of current dollars



U.S. TECH SERVICES EXPORTS BY STATE

billions of current dollars

Rank	State	2015	2016	% change
1.	California	\$30.8	\$31.4	2.0%
2.	Washington	\$13.4	\$14.1	4.8%
3.	Massachusetts	\$7.8	\$8.0	2.3%
4.	New York	\$5.6	\$5.7	1.7%
5.	Texas	\$4.7	\$5.2	12.0%
6.	North Carolina	\$4.0	\$4.2	3.7%
7.	Georgia	\$3.4	\$3.4	0.3%
8.	New Jersey	\$3.4	\$3.4	1.3%
9.	Pennsylvania	\$3.2	\$3.3	2.7%
10.	Colorado	\$3.1	\$3.2	2.3%
11.	Virginia	\$2.6	\$2.7	4.2%
12.	Oregon	\$2.3	\$2.4	4.7%
13.	Maryland	\$2.3	\$2.4	5.1%
14.	Illinois	\$2.4	\$2.2	-6.9%
15.	Florida	\$2.0	\$2.1	4.5%
16.	Wisconsin	\$1.6	\$1.7	3.2%
17.	Minnesota	\$1.7	\$1.6	-5.4%
18.	Utah	\$1.4	\$1.5	10.6%
19.	Indiana	\$1.4	\$1.5	5.1%
20.	Connecticut	\$1.5	\$1.5	1.5%
21.	Michigan	\$1.1	\$1.1	3.5%
22.	Missouri	\$0.9	\$1.0	9.6%
23.	Arizona	\$0.9	\$1.0	9.3%
24.	Ohio	\$0.9	\$0.9	1.3%
25.	District of Columbia	\$0.7	\$0.7	2.8%
26.	New Hampshire	\$0.6	\$0.6	2.6%
27.	Kansas	\$0.5	\$0.6	13.0%
28.	New Mexico	\$0.4	\$0.4	6.7%
29.	Alabama	\$0.3	\$0.3	12.7%
30.	Iowa	\$0.3	\$0.3	-8.4%
31.	South Carolina	\$0.2	\$0.2	12.5%
32.	Tennessee	\$0.2	\$0.2	2.8%
33.	Idaho	\$0.2	\$0.2	3.9%
34.	Nebraska	\$0.2	\$0.2	6.4%
35.	Arkansas	\$0.2	\$0.2	-0.4%
36.	Rhode Island	\$0.1	\$0.1	-6.1%
37.	North Dakota	\$0.1	\$0.1	54.3%
38.	Vermont	\$0.1	\$0.1	13.6%
39.	Oklahoma	\$0.1	\$0.1	12.2%
40.	Kentucky	\$0.1	\$0.1	-4.2%
41.	Nevada	\$0.1	\$0.1	3.6%
42.	Maine	\$0.1	\$0.1	5.0%
43.	Mississippi	\$0.1	\$0.1	-10.8%
44.	Delaware	\$0.1	\$0.0	-65.8%
45.	Alaska	\$0.1	\$0.0	-6.4%
46.	South Dakota	\$0.0	\$0.0	-4.7%
47.	Louisiana	\$0.0	\$0.0	14.7%
48.	West Virginia	\$0.0	\$0.0	8.6%
49.	Hawaii	\$0.0	\$0.0	-20.9%
50.	Montana	\$0.0	\$0.0	22.4%
51.	Wyoming	\$0.0	\$0.0	13.0%

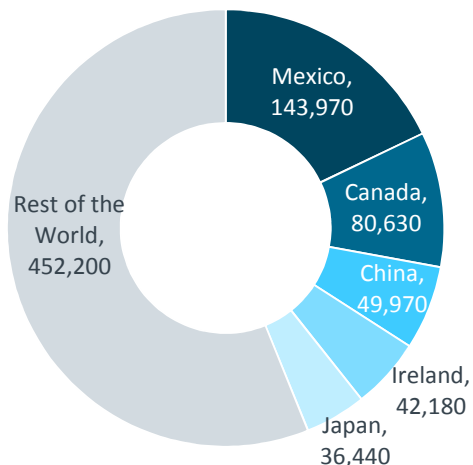
Source: The Trade Partnership's CDExports database, Foreign Trade Division of U.S. Census Bureau, CompTIA

Source: U.S. Bureau of Economic Analysis (BEA)

TRADE SUPPORTED JOBS SUMMARY

- Nationally, tech exports directly supported 805,000 jobs in 2016, or 13.8 percent of all U.S. jobs directly supported by exports. Seventy-percent of these jobs are supported by tech manufactured goods exports, with the remaining 30 percent supported by tech services.
- The states with the highest concentration of tech manufactured goods jobs as percent of overall tech exports: 1. Texas, 2. California, 3. Florida, 4. Oregon, and 5. Massachusetts. The highest concentration of services: 1. District of Columbia, 2. Washington, 3. North Dakota, 4. Maryland, and 5. Missouri.
- Tech exports accounted for more than 30 percent of direct jobs supported by exports from Idaho, New Mexico, Oregon, and Vermont in 2016.
- Direct jobs supported by Texas' exports of computer equipment increased by 47,320 (+230 percent) in the 10 years from 2008 to 2017. Direct jobs supported by California's exports of R&D services increased by 11,050 (+93 percent) in the 10 years from 2007 to 2016.
- Jobs in export-dependent industries pay about 16 percent more than jobs in less export-intensive industries.¹
- U.S. exporting plants increase employment 2 to 4 percent faster annually than plants that do not export. Exporting plants also are less likely to go out of business.²
- In 2015, about 7,500 companies exported tech products, among which 94 percent were either small or medium sized enterprises (SMEs). Likewise, 94 percent of the 3,400 tech product importers were SMEs.³
- Large exporters accounted for approximately two thirds of the value of tech product exports in 2015. On the import side, large tech exporters were responsible for more than three quarters of imports.³

Direct Jobs Supported by Tech Exports to Select Markets, 2016



DIRECT JOBS SUPPORTED BY STATE TECH EXPORTS

2016 time period

State	Goods Jobs	Services Jobs	Total Jobs
California	112,930	69,730	182,660
Texas	147,950	12,280	160,230
Washington	9,780	29,180	38,960
Florida	32,530	4,210	36,740
Massachusetts	18,470	17,870	36,340
Oregon	30,090	5,140	35,230
New York	17,100	11,650	28,750
Illinois	17,660	5,450	23,110
New Jersey	12,120	8,190	20,310
Arizona	15,680	2,330	18,010
North Carolina	7,010	9,310	16,320
Tennessee	15,430	430	15,860
Pennsylvania	9,450	6,380	15,830
Virginia	6,380	7,720	14,100
Georgia	6,870	7,010	13,880
Minnesota	8,870	3,760	12,630
Colorado	5,050	7,010	12,060
Wisconsin	7,590	3,520	11,110
Michigan	7,670	2,710	10,380
Maryland	3,650	5,700	9,350
Ohio	6,720	2,170	8,890
Utah	4,640	3,390	8,030
New Mexico	6,850	850	7,700
Indiana	4,380	3,300	7,680
Idaho	6,330	440	6,770
Vermont	2,650	3,230	5,880
Connecticut	5,590	270	5,860
New Hampshire	3,500	1,430	4,930
Nevada	4,400	120	4,520
Kentucky	4,190	220	4,410
Missouri	1,720	2,570	4,290
South Carolina	3,130	440	3,570
Kansas	1,540	1,320	2,860
Mississippi	2,700	70	2,770
Alabama	1,640	750	2,390
Oklahoma	1,960	160	2,120
Iowa	1,360	580	1,940
District of Columbia	110	1,770	1,880
Delaware	1,200	120	1,320
Nebraska	530	530	1,060
Maine	920	120	1,040
Arkansas	780	240	1,020
Rhode Island	430	360	790
Louisiana	410	50	460
North Dakota	110	230	340
West Virginia	260	60	320
South Dakota	250	50	300
Hawaii	80	50	130
Montana	70	50	120
Alaska	50	50	100
Wyoming	30	10	40
TOTAL	560,810	244,580	805,390

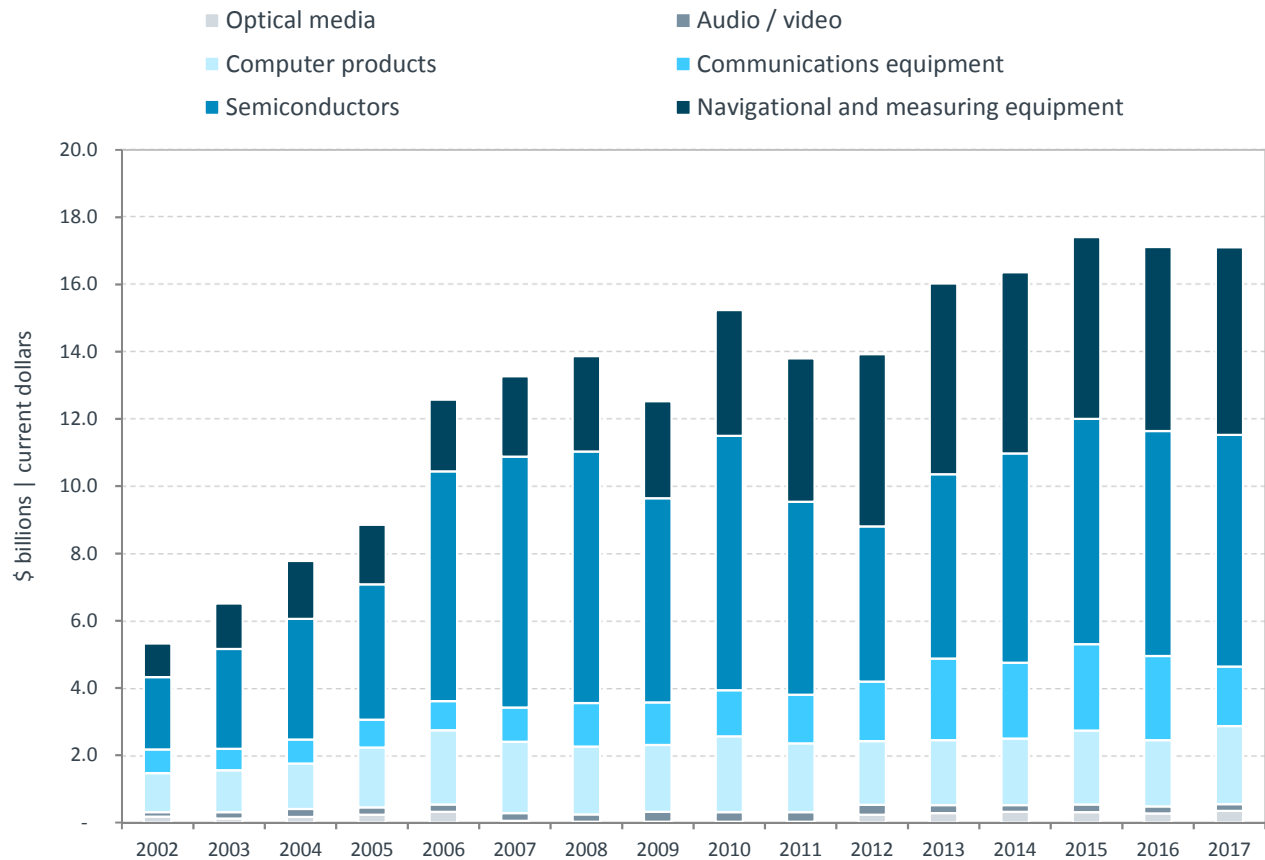
Sources: 1. Riker, "Export-Intensive Industries Pay More on Average: An Update" (2015)
 2. Bernard and Jensen, "Exporting and Productivity in the USA" (2004)
 3. U.S. Census Bureau, "A Profile of U.S. Importing and Exporting Companies, 2014 - 2015"

Source: The Trade Partnership's CDExports database, Foreign Trade Division of U.S. Census Bureau, CompTIA

SUMMARY OF TRADE WITH CHINA

- ❖ U.S. tech product exports to China totaled \$17.1 billion in 2017, remaining approximately the same from the previous year.
- ❖ Exports of tech services to China increased 8.4 percent in 2016 over the previous year. While the growth is robust, the increase of \$149 million in tech services exports is relatively modest when compared to many other markets for U.S. tech services.
- ❖ In the Asia and Pacific region, China is the largest market for U.S. tech exports.
- ❖ Nearly 50,000 U.S. jobs were directly supported by tech exports to China in 2016.
- ❖ In the manufactured goods category, exports of navigational and measuring equipment and communications equipment have grown the most since 2008, adding \$3.2 billion in new revenue.
- ❖ By category, exports of software and IT services recorded increases in 2016 (+8.4 percent and +10.3%, respectively), while telecommunications, information, and R&D services experienced declines (-14.0 percent, -21.2 percent, and -7.4 percent, respectively).
- ❖ Total tech imports from China were an estimated \$165 billion in 2016, down approximately 5.2 percent from the previous year. Communications equipment (e.g., cell phones) alone accounted for 40 percent of all Chinese tech imports.

EXPORTS OF TECH PRODUCTS FROM THE U.S. TO CHINA



U.S. Exports of Tech Products to:		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
China		5.3	6.5	7.8	8.8	12.6	13.3	13.9	12.5	15.2	13.8	13.9	16.0	16.4	17.4	17.1	17.1

U.S. Exports of Tech Services to:		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
China		n.a.	n.a.	n.a.	n.a.	0.8	0.9	1.1	1.0	1.1	1.6	1.5	1.5	1.5	1.8	1.9	n.a.

Sources: Foreign Trade Division of U.S. Census Bureau, USA Trade Online U.S. Bureau of Economic Analysis (BEA)

SUMMARY OF TRADE WITH CANADA AND MEXICO

- ❖ U.S. tech product exports to Canada and Mexico totaled \$67.4 billion in 2017, and service exports totaled \$7.8 billion in 2016. This represents 24 percent of all U.S. tech exports. See table below for the distribution between product and service.
- ❖ In 2017, the United States ran an \$18.7 billion surplus in tech products with Canada, larger than any other country. Computer equipment (+\$7.6 billion) and communications equipment (+\$3.8 billion) accounted for most of the surplus.
- ❖ Trade of tech services is nearly in balance between the United States and Canada (\$5.8 billion vs. \$5.9 billion, respectively). Top U.S. export sectors included computer software (+\$2.0 billion) and information services (+\$369 million).
- ❖ About 225,000 U.S. jobs were directly supported by tech exports to NAFTA partners in 2016.
- ❖ The United States ran a trade surplus with Mexico in tech services (+\$370 million) in 2016. Exports of computer software to Mexico contributed the most to the U.S. surplus (+\$868 million), while a trade deficit in R&D services (-\$606 million) subtracted from it.
- ❖ The United States ran a trade deficit with Mexico in tech products (-\$17.1 billion) in 2017. The United States had a \$7.3 billion surplus in exports of semiconductors to Mexico, but that surplus was offset by imports of audio and visual equipment (-\$8.4 billion).
- ❖ U.S. exports of computer equipment to NAFTA partners increased by \$8.6 billion, or 5.7 percent annually, in the 10 years from 2008 to 2017.
- ❖ U.S. exports of IT services to NAFTA partners grew by \$1.8 billion, or 13.5 percent annually, in the 10 years 2007 to 2016.

SUMMARY OF TECH PRODUCT & SERVICES TRADE BETWEEN THE UNITED STATES AND CANADA/MEXICO



U.S. Exports of Tech Products to:

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Canada	19.9	20.3	23.1	25.0	25.2	25.6	25.4	21.2	25.6	28.2	28.7	28.0	27.8	25.3	24.3	25.4
Mexico	21.5	21.6	24.4	23.3	25.3	22.9	24.4	25.0	33.0	36.4	36.6	38.6	40.5	43.2	42.8	42.0
TOTAL	41.5	41.9	47.5	48.3	50.5	48.5	49.8	46.2	58.6	64.7	65.3	66.6	68.3	68.5	67.1	67.4

U.S. Exports of Tech Services to:

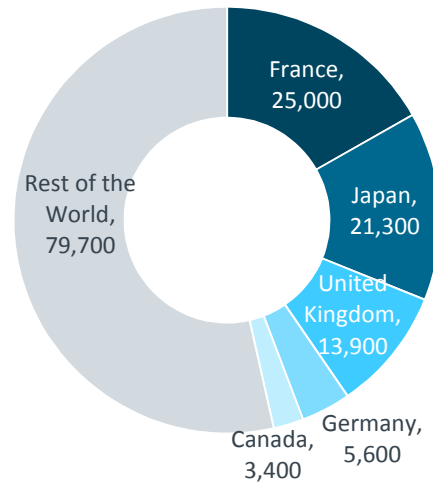
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Canada	n.a.	n.a.	n.a.	n.a.	4.7	4.4	4.5	4.5	5.5	6.2	6.1	6.2	6.1	5.9	5.8	n.a.
Mexico	n.a.	n.a.	n.a.	n.a.	1.2	1.2	1.3	1.2	1.6	1.8	1.9	2.0	2.0	2.0	2.0	n.a.
TOTAL	n.a.	n.a.	n.a.	n.a.	5.9	5.6	5.8	5.8	7.1	8.0	8.0	8.3	8.1	7.9	7.8	n.a.

Sources: Foreign Trade Division of U.S. Census Bureau, USA Trade Online U.S. Bureau of Economic Analysis (BEA)

FOREIGN DIRECT INVESTMENT SUMMARY

- ❖ Foreign-owned subsidiaries operating within the United States employ 148,900 workers in the tech manufacturing sector.
- ❖ Nearly half of all tech product manufacturing workers at foreign-owned subsidiaries are employed in the navigational and measuring equipment sector. Jobs in this sector increased from approximately 24,900 in 2007, the earliest year available, to 70,000 in 2015.
- ❖ Foreign-owned subsidiaries employed 41,400 workers in semiconductor manufacturing in 2015. Employment has steadily expanded since 2011, but is still below its 2010 peak.
- ❖ Subsidiaries of French, Japanese, and the British companies employ the most tech product workers. Together, they accounted for two in every five jobs at U.S. tech manufacturing subsidiaries in 2015.
- ❖ Subsidiaries of foreign-owned tech product manufacturers exported \$13.0 billion in 2015. Navigational & measuring equipment and semiconductors together accounted for over 90 percent of these exports.
- ❖ The average compensation of employees working at tech product foreign subsidiaries was \$96,050 in 2015. The communications equipment sector averaged over \$100,000 in annual compensation for their employees.
- ❖ Foreign subsidiaries in tech products contributed \$4.9 billion to R&D expenditures in 2015.
- ❖ Total assets owned by foreign subsidiaries in tech products manufacturing amounted to \$107 billion in 2015. Europe in general accounted for more than two thirds of owned assets, with France specifically owning nearly a quarter.

Jobs at Foreign-Owned Tech Product Manufacturers by Country, 2015



Source: U.S. Bureau of Economic Analysis (BEA)

“ **Nearly half of all workers in tech product manufacturing supported by FDI are employed in the navigational and measuring equipment sector.** ”

The average compensation of employees working at tech product foreign subsidiaries was \$96,050 in 2015. ”

APPENDIX

- ❖ The ICE dollar index, which measures the dollar against a basket of six other currencies, fell nearly 10 percent in 2017. This represents the largest annual decline since 2003 when the US dollar fell almost 15 percent. Despite the 2017 fall, the dollar remains well above its low point of 2011. A strong dollar provides greater purchasing power, making international travel or imports relatively cheaper. The tradeoff, though, U.S. exports become more expensive to many overseas buyers.
- ❖ There is likely some degree of undercounting of tech products and services exports. This stems from the ongoing blurring of lines between what constitutes tech, as well as how tech is categorized by government data sources. For example, an automobile company exporting its own autonomous vehicle technology or a financial services firm providing big data services abroad, is not included in the tech products and services export figures. Rather, they are captured within the motor vehicles and financial services export categories, respectively.
- ❖ The jobs ratios for tech goods and services use data from CompTIA's Cyberstates report as the denominator in the calculation. Because trade data is not available at the same level of detail as domestic employment data from the U.S. Bureau of Labor Statistics, the ratios should be viewed as an approximation for the number of jobs supported by exports as a percentage of the overall employment base.
- ❖ At the time of publication, the U.S. Bureau of Economic Analysis released its 2017 trade in services data for top level industry categories only. Data for the more detailed underlying categories was available only through 2016. For this reason, CompTIA estimated the software and R&D services categories for 2017 to provide an overall tech trade figure encompassing goods and services.
- ❖ Note regarding use of data from The U.S. Office of Trade and Economic Analysis: "given the data used to estimate jobs supported by state-level exports, care should be taken in the interpretation of the results. The figures presented should best be thought of as representing the number of jobs supported by the exports from a state as opposed to the number of jobs supported by exports within a state."
- ❖ For additional detail and methodology on state services exports and jobs tied to exports, see The Trade Partnership's CDxports database: <http://tradepartnership.com/data/cdxports-and-cdxjobs/>
- ❖ For additional data and detail on manufactured product exports, see the U.S. International Trade Administration: <http://tse.export.gov/tse/tsehome.aspx>.
- ❖ For additional data and detail on services exports, see U.S. Bureau of Economic Analysis: https://www.bea.gov/iTable/index_ita.cfm.

ABOUT COMPTIA

The Computing Technology Industry Association (CompTIA) is a leading voice and advocate for the \$4.8 trillion global information technology ecosystem; and the technology and business professionals who design, implement, manage, and safeguard the technology that powers the U.S. economy. Through education, training, certifications, advocacy, philanthropy, and market research, CompTIA is the hub for advancing the tech industry and its workforce.

Through its public advocacy efforts, CompTIA champions member-driven business and IT priorities that impact the continuum of information technology companies – from small IT service providers and software developers to large equipment manufacturers and communications service providers. CompTIA gives eyes, ears and a voice to technology companies, allowing them to quickly and comprehensively understand policy developments – and then do something about it. CompTIA fosters an environment for members to succeed in information technology through comprehensive global, national and regional advocacy as well as high-level business intelligence that delivers an edge in the marketplace.

CompTIA advocates for trade policies that expand export destinations and open new markets for the U.S. technology sector. For more details on CompTIA's trade work, visit:

<https://www.comptia.org/advocacy/policy-issues/global-trade-and-market-access>.

