

US Exports to China

Goods and Services Exports to China and the Jobs They Support, by State and Congressional District



THE US-CHINA BUSINESS COUNCIL
美中贸易全国委员会

2024

Executive Summary

This report explores the latest comprehensive data available for exports of both US goods (2023) and services (2022) to China as well as for the jobs they support.

China is a leading market for both goods and services exports. China was the United States' third-largest goods export market in 2023 and sixth-largest services export market in 2022. When it comes to combined goods and services exports, China was the top export market for three states, in the top three markets for 32 states, and in the top five markets for all but seven states in 2022.

Jobs supported by exports to China outnumber those supported by the next two Asian markets combined. Agriculture and livestock exports to China support more US jobs than any other sector by a wide margin.

After reaching a record high the year before, goods exports to China dropped by 4.3 percent in 2023. Stunted economic growth in China, Russia's war in Ukraine, and challenges in the US-China government-to-government relationship—in addition to long-standing barriers, such as tariffs—are weighing on bilateral trade. Geopolitical tensions and broader economic slowdowns around the world have also led to declines in exports to other leading markets.

Oilseeds and grains remain the United States' top export to China despite falling \$7 billion. Challenges in this sector will worsen if other producers continue to become more competitive or if these products are targeted in a future tariff spat.

Exports of semiconductors and their components have also dropped by several billion dollars. Since peaking in 2021, those exports have fallen by 52 percent. Oregon's exports comprise the bulk of the national decline in this category.

When it comes to services, exports to China increased slightly in 2022 but did not recover from COVID-19 travel restrictions. While travel services have traditionally been among the largest services exports to China, they have only just begun to recover, with their 2022 level reaching just 10 percent of their pre-pandemic value. Similarly, the number of jobs supported by travel exports to China sits at 15,400, just a fraction of the nearly 130,000 jobs supported by Chinese travelers before the pandemic. In 2022, education and royalties from industrial processes were the largest categories of services exports.

\$144.9 billion

US goods exports to China, 2023

931,231

Jobs supported by US exports to China, 2022

\$41.8 billion

US services exports to China, 2022

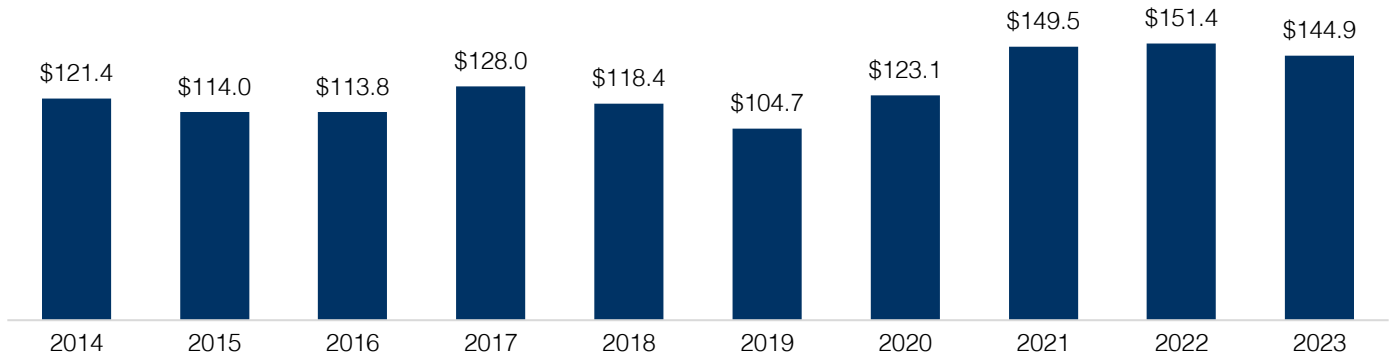
\$151.4 billion

US goods exports to China, 2022

US Goods Exports to China

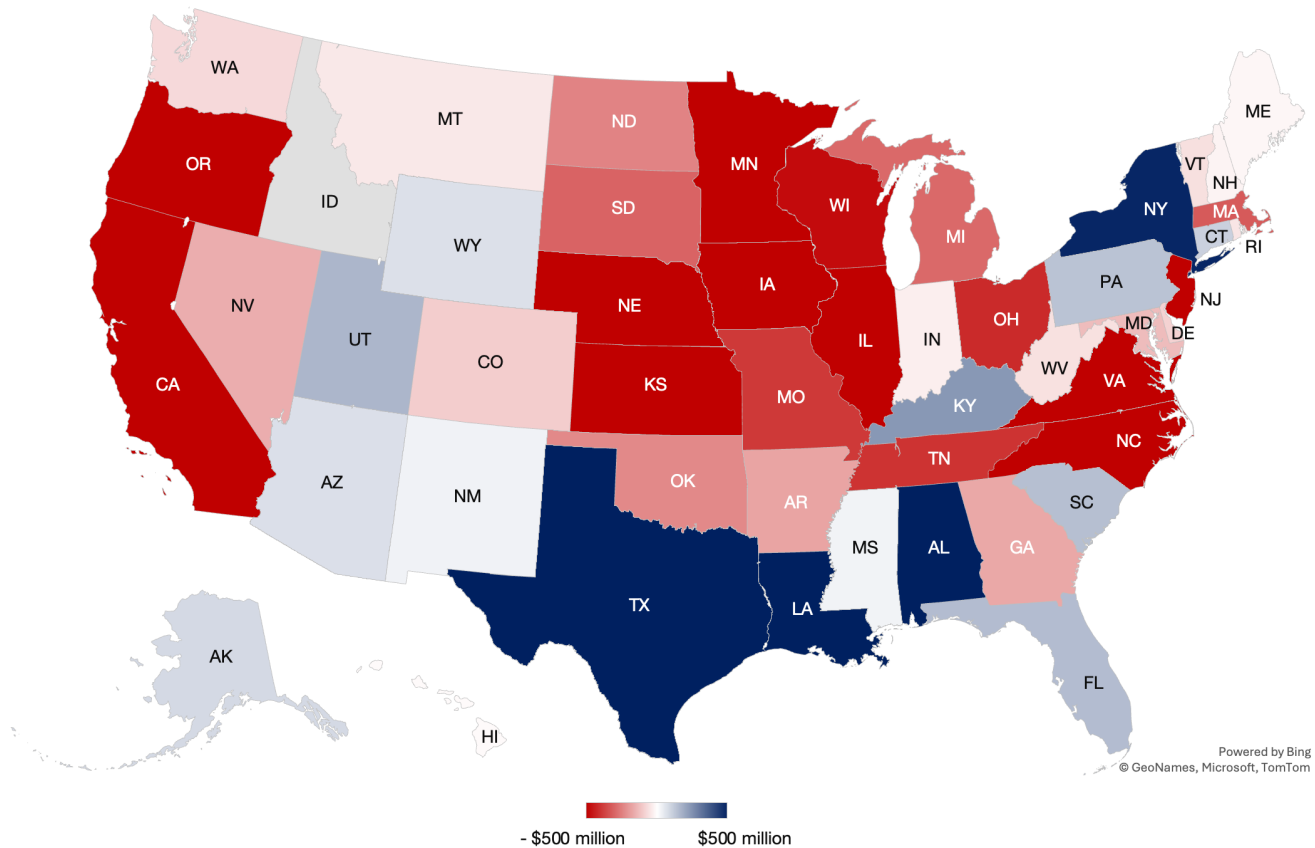
Despite a decrease in US goods exports to China in 2023, China remains among the biggest and most important markets for US goods exports, behind only Canada and Mexico. US goods exports to China were about \$145 billion. This was a slight decline from both 2022 and 2021 but higher than any other year on record.

US goods exports to China, 2014–2023 (billion)



US exports to most other top foreign markets also declined, with the exception of Germany and the Netherlands. Geopolitical events (e.g., the war in Ukraine, slow economic growth in export markets) clearly had a negative impact on US exports to most markets, with goods exports to partners such as Japan, Korea, and Brazil declining even more on a percentage basis than exports to China.

Change in US goods exports to China, 2022–2023



US goods exports to China by category, 2023 (billion)

Oilseeds & Grains, \$18.5

Oil & Gas, \$17.6

All others, \$15.9

Pharmaceuticals & Medicines, \$11.3

Semiconductors & Components, \$6.8

Aerospace Products & Parts, \$6.8

Navigational & Meas. Instruments, \$6.8

Resins & Synthetic Fibers, \$5.5

Industrial Machinery, \$5.0

Meat Products, \$4.5

Basic Chemicals, \$6.5

Medical Equipment & Supplies, \$3.6

Scrap Products, \$2.4

Pulp & Paperboard Mill Products, \$2.1

Misc. Manufactured Commodities, \$2.1

Motor Vehicles, \$6.1

Misc. General Purpose Machinery, \$2.6

Non-ferrous Metal Products, \$1.8

Engines & Turbines, \$1.4

Comm. & Serv. Industry Machinery, \$1.3

Soaps, Cleaning Agents & Toiletries, \$1.3

Misc. Crops, \$2.4

Motor Vehicle Parts, \$1.7

Electrical Equipment, \$1.3

Fruits & Tree Nuts, \$1.1

Coal & Petroleum Gases, \$1.1

Marine Products, \$1.0

Top US goods export markets, 2025

Market	Exports	Growth (y/y)	Growth (10 year)
1. Canada	\$335.2 billion	-2.0%	10.4%
2. Mexico	\$312.2 billion	-0.5%	34.3%
3. China	\$144.9 billion	-4.3%	19.4%
4. Netherlands	\$78.9 billion	11.7%	88.0%
5. Japan	\$73.9 billion	-5.7%	13.0%
6. Germany	\$72.6 billion	5.0%	54.0%
7. United Kingdom	\$67.3 billion	-4.2%	39.4%
8. Korea	\$63.4 billion	-10.2%	44.8%
9. Brazil	\$43.6 billion	-17.0%	5.0%
10. France	\$41.4 billion	-3.9%	40.6%

Top goods exporters to China by state, 2025

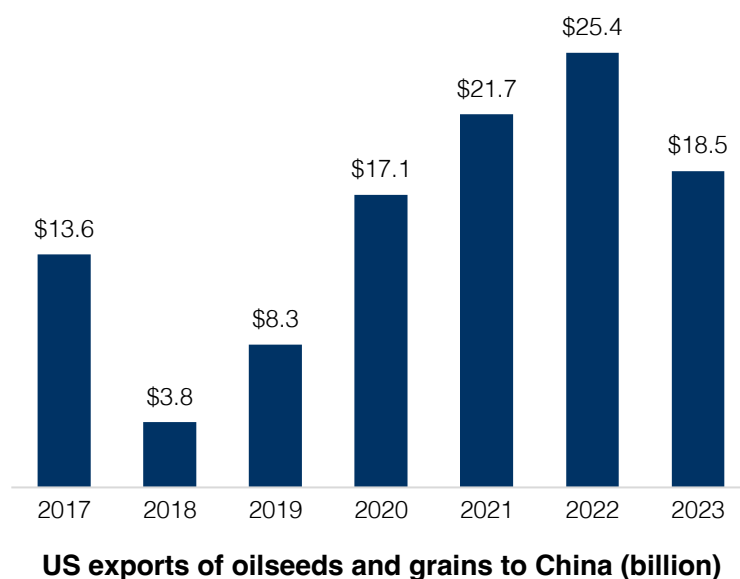
State	Exports	Growth (y/y)	Growth (10 year)
1. Texas	\$25.7 billion	16.4%	145.9%
2. California	\$16.4 billion	-7.0%	7.7%
3. Louisiana	\$6.5 billion	52.7%	158.2%
4. Indiana	\$6.1 billion	18.7%	136.2%
5. Illinois	\$5.9 billion	-10.6%	-2.9%
6. North Carolina	\$5.9 billion	-9.5%	106.2%
7. Washington	\$4.1 billion	-1.8%	-73.6%
8. Oregon	\$4.0 billion	-51.4%	1.1%
9. Georgia	\$4.0 billion	-4.1%	26.5%
10. South Carolina	\$3.9 billion	3.8%	-8.1%

Top US congressional district goods exporters to China, 2023

District	Exports (billion)	Growth (y/y)	Growth (10 year)
1. Texas 38th	\$4.9 billion	48.1%	775.6%
2. Indiana 7th	\$2.3 billion	61.4%	1,195.6%
3. Louisiana 1st	\$2.2 billion	87.2%	1,368.0%
4. Texas 36th	\$1.8 billion	22.5%	81.0%
5. California 17th	\$1.8 billion	-12.1%	3.7%
6. Texas 11th	\$1.7 billion	17.7%	611.3%
7. Texas 7th	\$1.6 billion	42.3%	370.5%
8. North Carolina 4th	\$1.5 billion	-15.9%	266.4%
9. Oregon 6th	\$1.4 billion	-56.7%	16.6%
10. Oregon 1st	\$1.4 billion	-58.1%	5.1%

Oilseeds and grains hold on to their place as the top US export to China

In 2023, oilseeds and grains—crops such as soybeans, wheat, and corn—remained the largest export to China. Even though they reached \$18.5 billion in 2023, that impressive level was down about \$7 billion (-27 percent) from 2022 and measured only about \$850 million more than second-ranked oil and gas. The year before, oilseeds and grains exports were more than twice as large as any other sector. According to the US Department of Agriculture, record soybean production in Brazil and higher crush demand in the United States, which contributed to higher prices for US soybeans, were major contributors to the decline.



The declines have had widespread impacts on states. Exports have fallen by \$500 million to \$1 billion for Illinois, Iowa, Kansas, Minnesota, and Nebraska. Several other states have seen oilseeds and grains exports to China decline by \$300 million to \$500 million. Oilseeds and grains exports to the

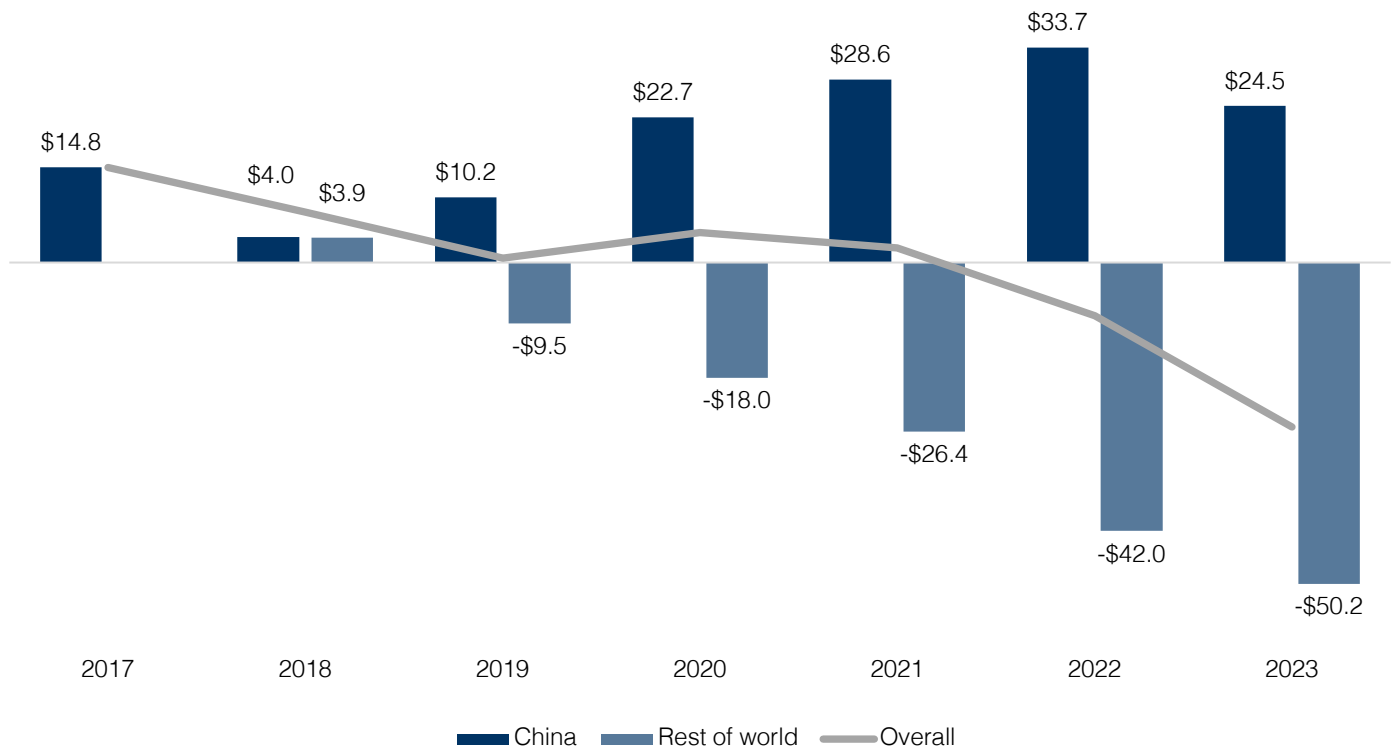
rest of the world have also declined, meaning there are no third markets to which farmers can sell their crops.

A growing US trade deficit in agricultural products is gaining [attention](#) in Congress, leading to demands from Republicans, in particular, to open new markets for US agricultural exports. Agricultural products are an area in which China has been the solution—rather than the concern—regarding trade balances. From 2019 to 2022, the United States ran large and growing agricultural trade surpluses with China that fully or mostly offset growing trade deficits with the rest of the world.

However, the decline in exports to China in 2023—combined with the continued deterioration of the trade balance with other countries—led the overall US trade deficit in those agricultural products to triple from about \$8.3 billion to over \$25 billion. With little chance of market-opening agreements in the immediate future, maintaining a large surplus with China will be critical to reversing the overall trend toward larger US agricultural trade deficits with the rest of the world.

American agriculture exports remain vulnerable to retaliatory actions during trade conflicts. In 2018, agricultural products were among the first exports targeted by Chinese retaliatory tariffs, causing oilseeds and grains exports to China—and associated American jobs—to plummet by over 70 percent from 2017 to 2018. Any new US tariff increases on imports from China, which many lawmakers and political leaders are actively proposing, could adversely impact the American agriculture sector if they trigger retaliatory actions.

US trade balance for agricultural goods with China and the rest of the world (billion)



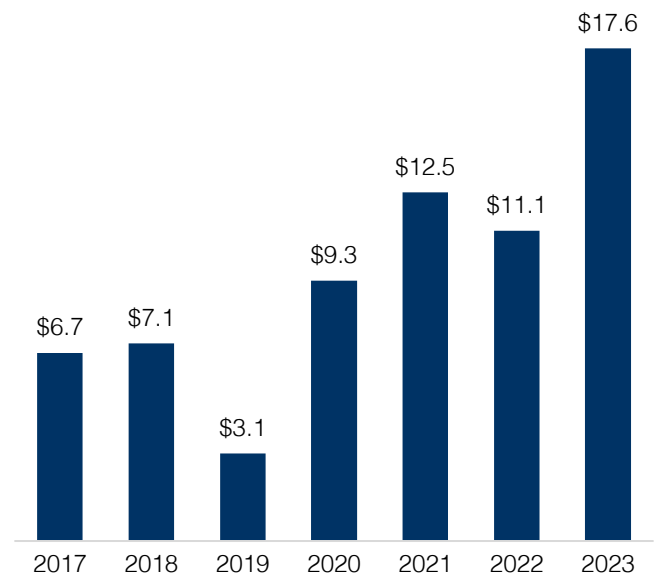
* Reflects trade under North American Industry Classification System sectors 111 (crops), 112 (livestock), 311 (food products), and 312 (beverages and tobacco).

Oil and gas exports from Texas and Louisiana boom

In 2023, US exports of oil and gas to China surged. Their value of \$17.6 billion represented a 59 percent increase over the previous year. The increase came despite lower oil and gas prices and a decline in US exports to the rest of the world by value. As a result, China's share of US oil and gas exports nearly doubled from 5.1 percent to 9.5 percent. According to the US Energy Information Administration, refinery expansions in China and initiatives to ease COVID-19 restrictions also drove large increases in Chinese imports from other countries, including Russia, Iran, and Brazil.

Texas increased exports of oil and gas to China to approximately \$11.7 billion in 2023, while Louisiana increased its exports to \$5.3 billion. These states' exports accounted for 66 percent and 30 percent of total US oil and gas exports, respectively.

US exports of oil and gas to China (billion)

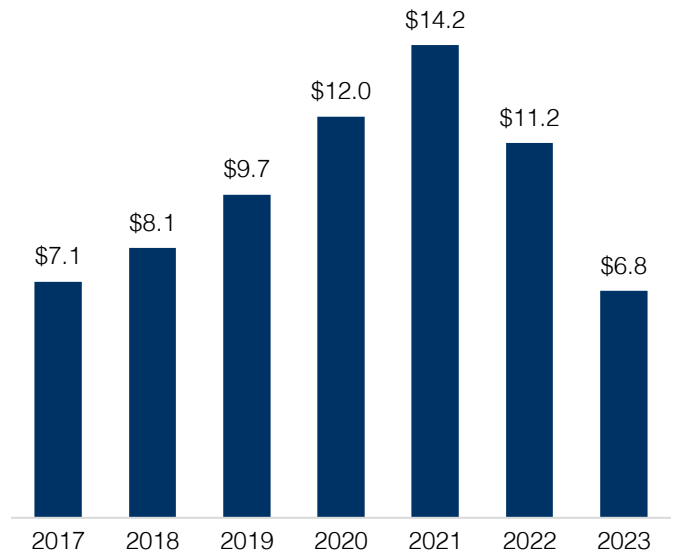


Semiconductor exports continue to falter

Last year, exports of semiconductors and their components fell to their lowest level since 2016. The decline was significant: \$4.4 billion. Since peaking in 2021, these exports have fallen by \$7.4 billion (-52 percent). China's weak recovery in 2023 and expanding US export controls on advanced semiconductors and semiconductor manufacturing equipment both curtailed demand and inhibited exports to China. With the application of export controls and the likelihood of further US restrictions going forward, Chinese customers continue to deprioritize American products when there are viable domestic and third-country suppliers.

Oregon comprises the bulk of the national decline for these products, while Texas and California, the next two largest exporting states, are seeing slight increases. Semiconductors' ranking among goods export sectors has tumbled to fourth place, barely edging out fifth-ranked aerospace products and parts (by \$5 million) and sixth-ranked navigational and measuring instruments (by \$18 million).

US exports of semiconductors and components to China (billion)



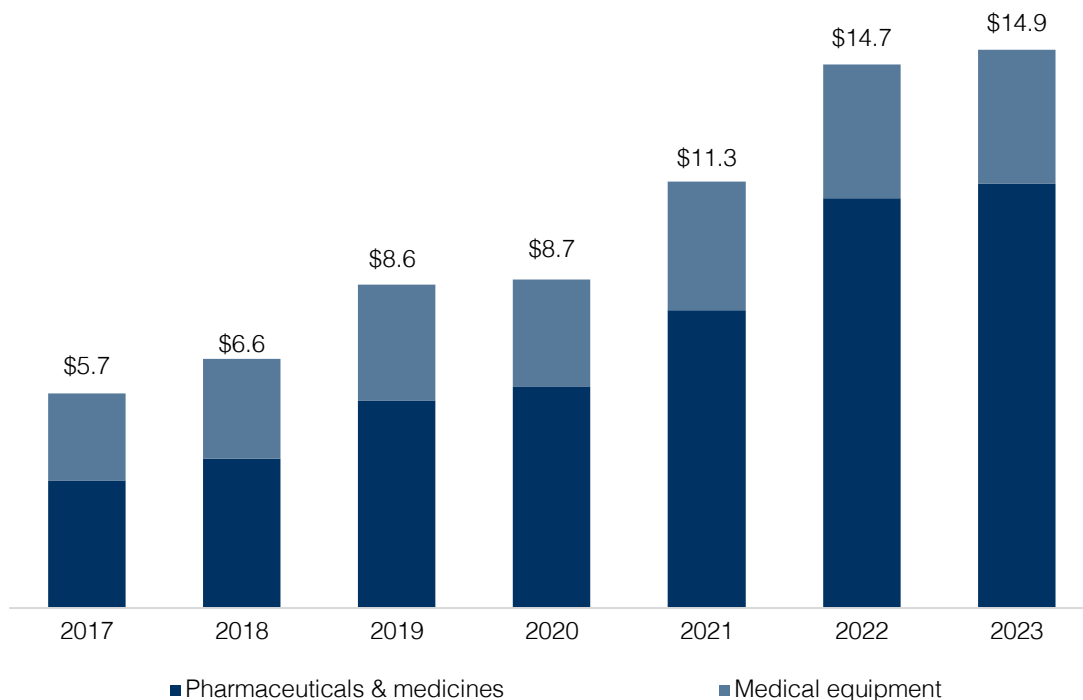
Pharmaceuticals, medicine, and medical equipment exports to China see continued growth

US exports of pharmaceuticals and medicines to China are continuing their growth streak, though not as dramatically as over the prior two years. In 2023, there was sizeable export growth from Indiana (\$1.3 billion), Illinois (\$195 million), and Pennsylvania (\$70 million), but combined exports from all other states declined by nearly \$1.2 billion. Exports that saw the largest declines were from North Carolina (-\$713 million), Massachusetts (-\$117 million), Texas (-\$90 million), and Tennessee (-\$80 million).

This mixed record may reflect a combination of short- and long-term trends in China's market. Over the past few years, China has sped up regulatory processes for new drug approvals, which has allowed US companies to more rapidly bring new drugs to the country's market. While some US companies are able to export a large amount of high-value, high-demand drugs that have no domestic equivalents in China, China's national pharmaceutical procurement program may pose barriers to other US companies in this sector.

Medical equipment exports to China have also been growing. Between 2017 and 2023, these US exports to China grew from \$2.3 billion to \$3.6 billion (54 percent), resulting in combined exports of pharmaceuticals, medicines, and medical equipment of nearly \$15 billion in 2023. Again, the record for individual states was mixed, with the large export increases from California (\$164 million), Mississippi (\$104 million), Indiana (\$53 million), and Tennessee (\$51 million) mostly offset by declines from Massachusetts (-\$139 million), Texas (-\$100 million), Minnesota (-\$52 million), and Puerto Rico (-\$40 million).

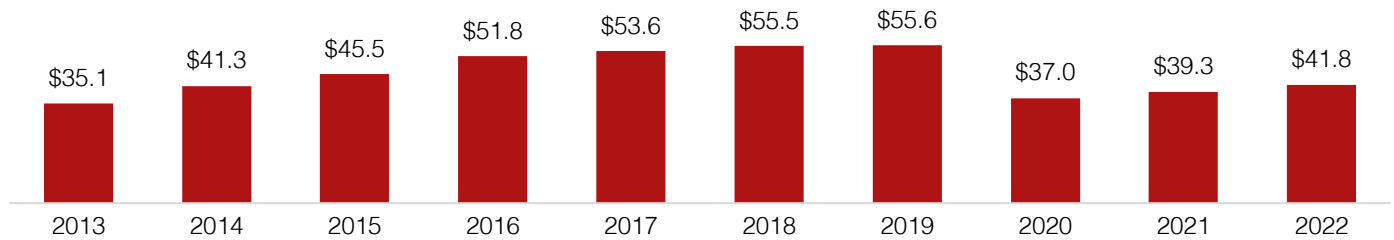
US exports of pharmaceuticals, medicine, and medical equipment to China (billion)



US Services Exports to China

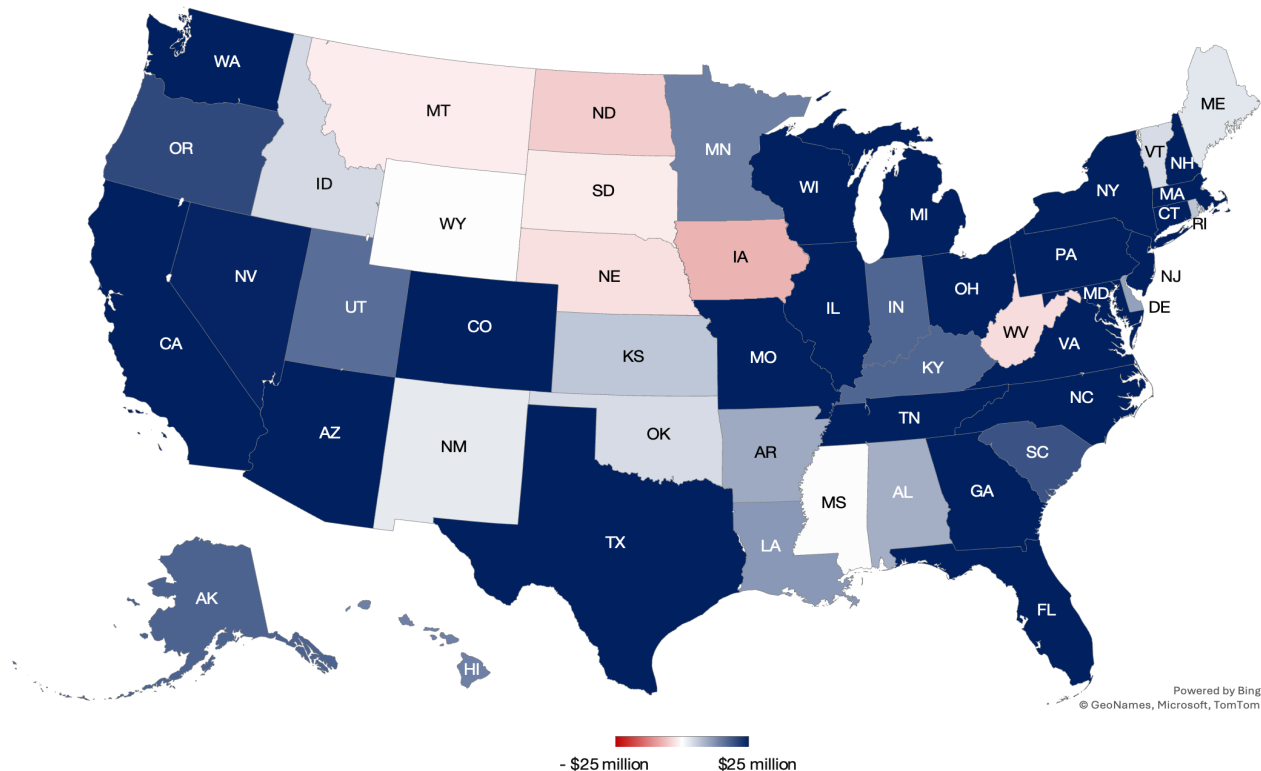
Comprehensive data on services exports lag a year behind those of goods, making 2022 the latest year available. While US services exports to China grew in 2022, the increase was not enough to recover pandemic-related losses. The United States exported \$41.8 billion in services to China in 2022, a 6.2 percent increase from the year prior but still far below the level of US services exports before the COVID-19 pandemic. Travel exports to China, which have historically been among the largest services exports remain well below 2019's and previous years' levels. Export increases in sectors such as business management and consulting, software royalties and services, and ocean freight and port services have not been enough to offset those declines.

US services exports to China, 2013–2022 (billion)



In 2022, China remained the United States' sixth-largest export market for services. While services exports to China increased, the growth lagged behind most of the other top services export destinations. Exports to Germany, Canada, Mexico, and the United Kingdom all grew by over 20 percent from 2021 to 2022. Similarly, most top export markets outperformed China over the 10-year period since 2013, though the 19 percent decline to Japan is a noticeable exception.

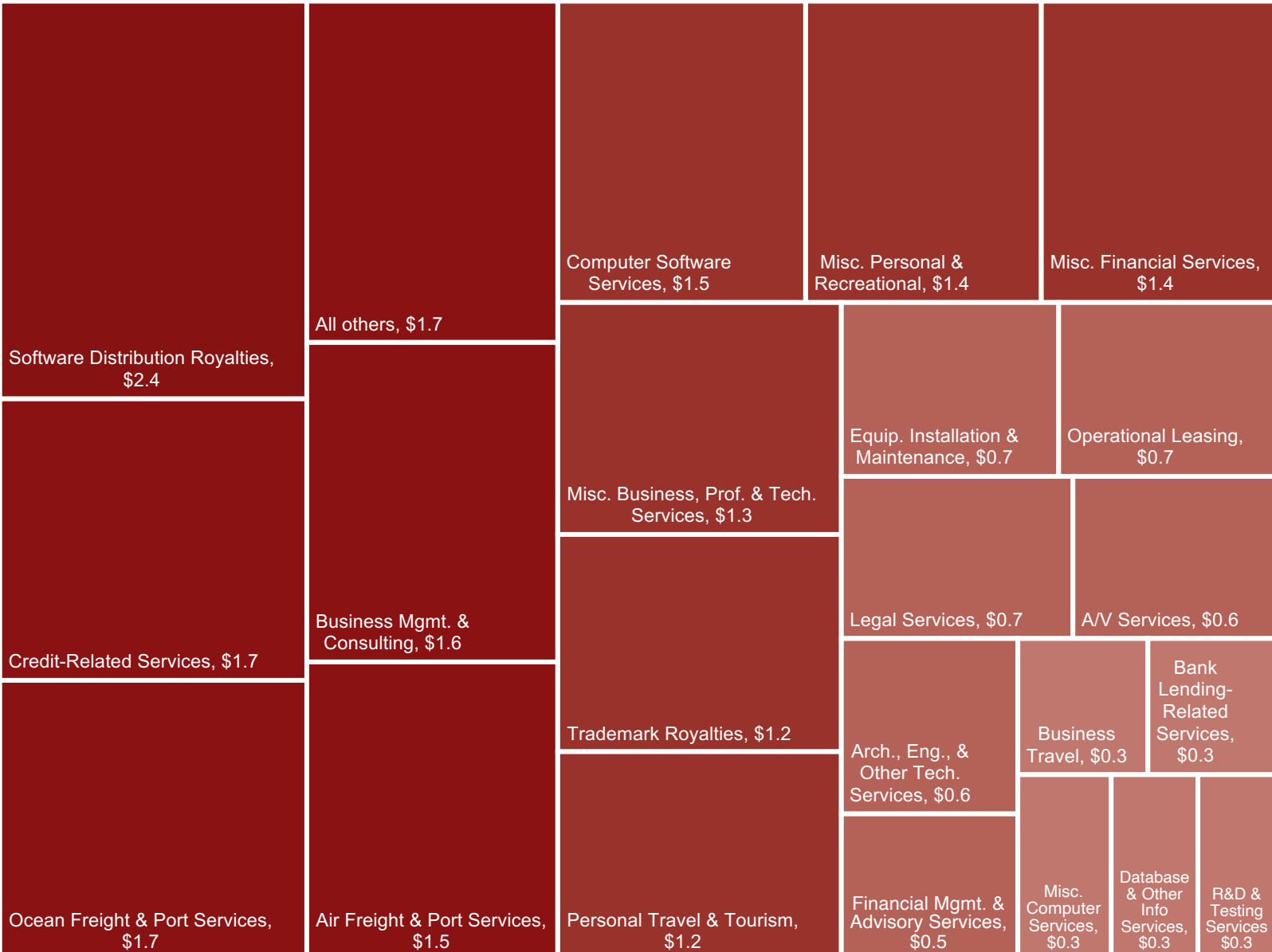
Changes in US services exports to China, 2021–2022



US services exports to China by category, 2022 (billion)

Education, \$13.0

Royalties from Industrial Processes, \$4.6



Top US services export markets, 2022

Market	Exports	Growth (y/y)	Growth (10 year)
1. Ireland	\$84.3 billion	10.7%	155.9%
2. United Kingdom	\$81.6 billion	20.2%	32.3%
3. Canada	\$70.9 billion	25.0%	5.5%
4. Switzerland	\$55.6 billion	13.9%	97.2%
5. United Kingdom, Caribbean	\$52.6 billion	-7.9%	35.8%
6. China	\$41.8 billion	6.2%	19.1%
7. Germany	\$40.5 billion	27.0%	44.4%
8. Japan	\$37.4 billion	4.6%	-18.9%
9. Mexico	\$37.2 billion	21.3%	30.4%
10. Singapore	\$34.2 billion	7.8%	199.2%

Top services exporters to China by state, 2022

State	Exports	Growth (y/y)	Growth (10 year)
1. California	\$8.4 billion	3.9%	31.9%
2. New York	\$4.6 billion	3.8%	23.5%
3. Texas	\$2.9 billion	5.1%	9.1%
4. Illinois	\$2.4 billion	8.5%	31.1%
5. Massachusetts	\$2.2 billion	11.5%	51.5%
6. Florida	\$1.7 billion	7.8%	-10.4%
7. Washington	\$1.6 billion	12.5%	42.1%
8. Pennsylvania	\$1.3 billion	6.6%	23.8%
9. Ohio	\$1.2 billion	2.9%	44.8%
10. Georgia	\$1.2 billion	5.3%	11.9%

Top services exporters to China by district, 2022

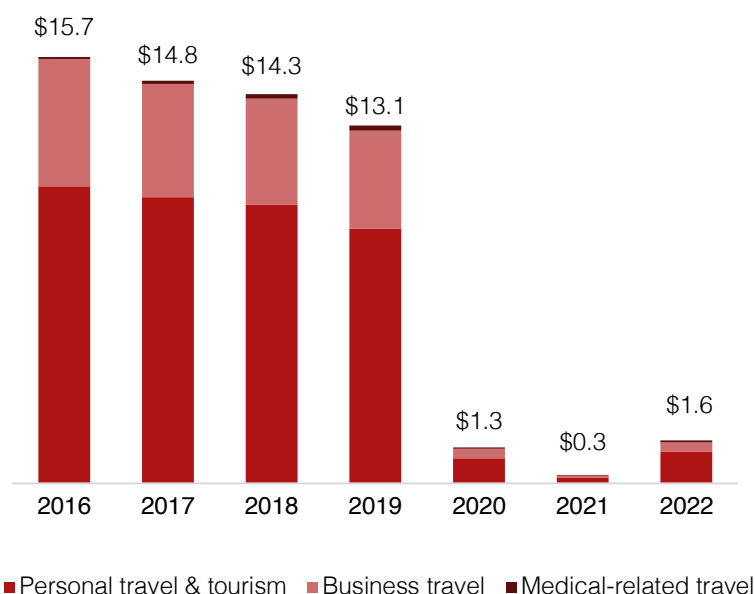
District	Exports	Growth (y/y)	Growth (10 year)
1. New York 12th	\$1.3 billion	-2.5%	37.0%
2. New York 10th	\$982 million	11.5%	56.0%
3. Massachusetts 7th	\$874 million	15.1%	70.1%
4. California 42nd	\$791 million	5.7%	9.5%
5. Illinois 5th	\$768 million	9.9%	72.7%
6. California 16th	\$631 million	13.5%	141.6%
7. California 11th	\$627 million	11.0%	63.6%
8. California 17th	\$531 million	10.4%	139.7%
9. Washington 7th	\$510 million	14.2%	80.0%
10. California 36th	\$437 million	-14.0%	21.5%

Travel remains well below 2019 levels

China was among the slowest countries to reopen its borders to foreign travel after the COVID-19 pandemic, a fact clearly demonstrated by the data on US travel exports to China (i.e., the money spent by Chinese citizens in the United States). Since 2019, personal, business, and health travel exports to China have decreased by 88 percent, 90 percent, and 66 percent, respectively. By comparison, exports of those same categories to the rest of the world decreased by 33 percent, 19 percent, and 56 percent, respectively, over the same period.

While nearly all countries, including the United States, imposed severe travel restrictions in 2020, travel exports to other countries started to rebound much quicker than those to China. Declines have been particularly acute for tourism-dependent states, such as Nevada and Hawaii, whose 2022 services exports to China remained about 70 percent below 2019 levels.

Travel services exports to China, 2016–2022 (billion)



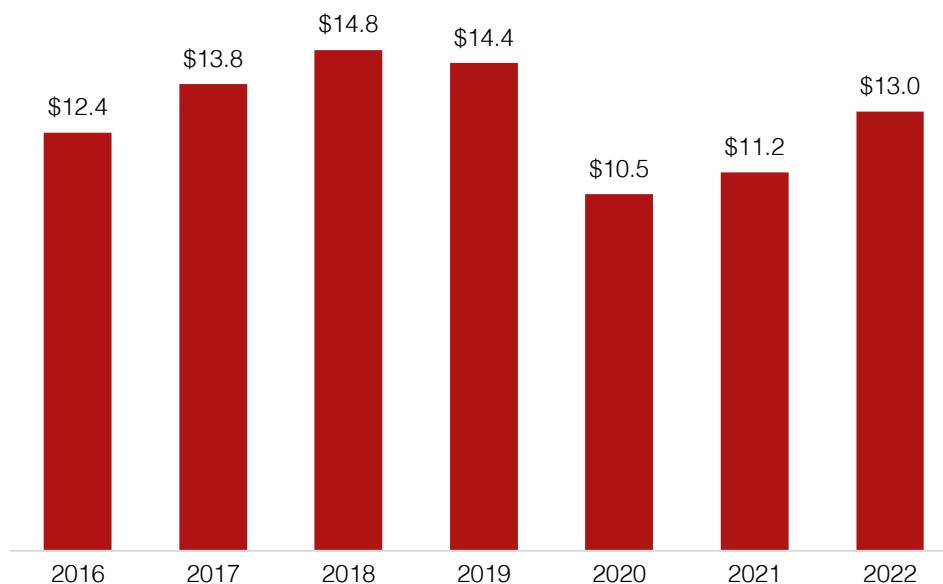
Education is the top services export to China

Education exports to China, also impacted by travel and other factors, rebounded in 2022 but remain below pre-COVID levels. Education exports include money that Chinese students studying in the United States pay for tuition, housing, books, and other related fees, which are all important contributions to local economies. In 2022, these exports increased 16 percent to around \$13 billion, the largest figure for any services category that year. California, New York, and Massachusetts benefited the most from hosting Chinese students, with each seeing more than \$1 billion in contributions from these students. Texas, Illinois, and Pennsylvania all saw contributions from Chinese students of around \$700 million.

Chinese students remain the [largest](#) demographic of international students studying at US universities, but they no longer hold a dominant position among foreign students. Since 2020, the number of Chinese students enrolled at US universities has declined 22.3 percent, and their share of total international students in the United States has fallen from 35 percent to 27 percent. This suggests that the increase in exports to China has been driven largely by more spending per student, rather than an increase in the number of students.

Even as travel continues to rebound, other factors—such as worsening geopolitical tensions between the United States and China; US visa policies; personal safety considerations; and increased competition from universities in Canada, Europe, and elsewhere in Asia, including China—may [play](#) a role in preventing a full recovery in the number of Chinese students in the United States.

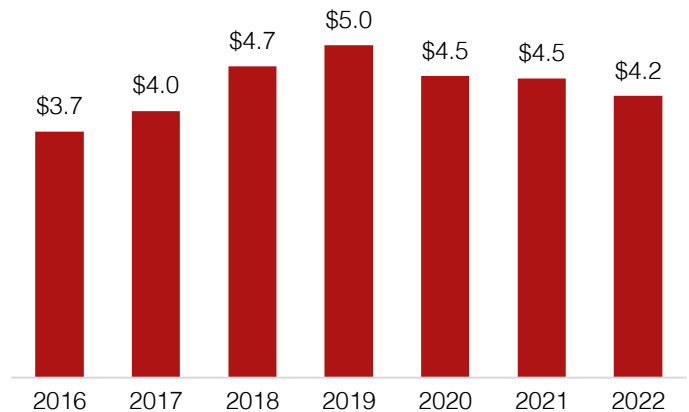
Education services exports to China, 2016–2022 (billion)



Financial services exports continue to fall

Financial services exports to China have been slowly declining for several years. These exports peaked in 2019, both by value (\$5 billion) and as a share of US financial services exports to the world (3.5 percent). In 2022, exports to China were \$4.2 billion and accounted for just 2.5 percent of total US financial services exports. In 2022, at \$1.7 billion, credit-related services accounted for about 40 percent of financial services exports to China. Miscellaneous financial services, such as underwriting and electronic funds transfers, accounted for one-third of financial services exports to China at \$1.4 billion. Combined exports to China of other financial services categories—including services related to bank lending, financial management and advisory services, and securities transactions—were only around \$1 billion. Unsurprisingly, New York was the largest financial services exporter to China.

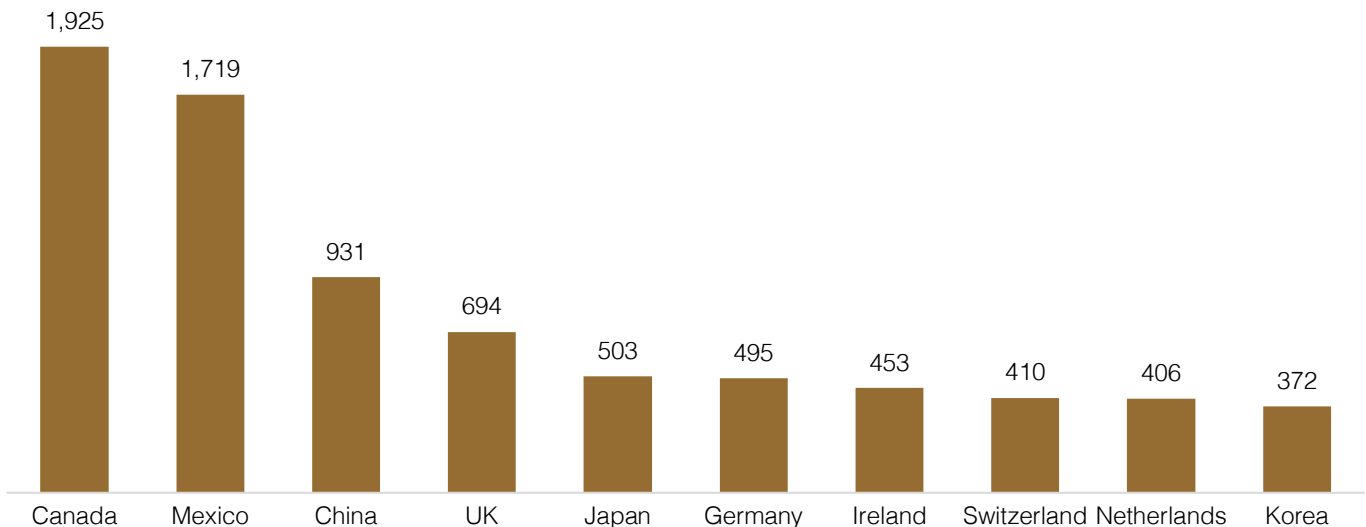
Financial services exports to China, 2016–2022 (billion)



US Jobs Supported by Exports to China

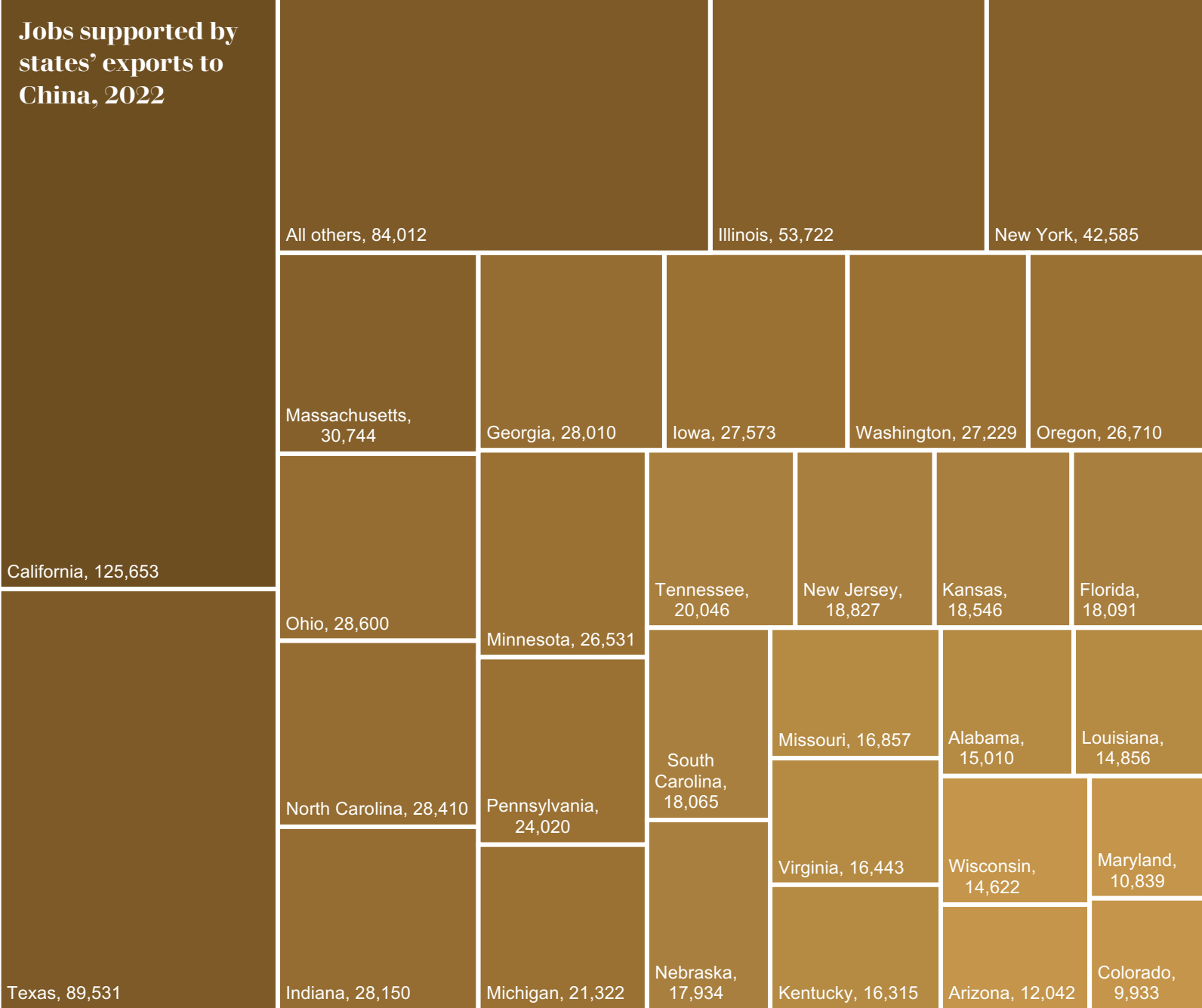
US exports to China continue to matter to US workers. Calculations of how many jobs are supported by exports to China take both goods and services exports into account, so the latest data available are from 2022. That year, China ranked third among all countries in American jobs supported by US exports, behind only Canada and Mexico. The number of American jobs supported by US exports to China was higher than the next two largest Asian markets—Japan and South Korea—combined.

Jobs supported by goods and services exports to top markets, 2022 (thousand)

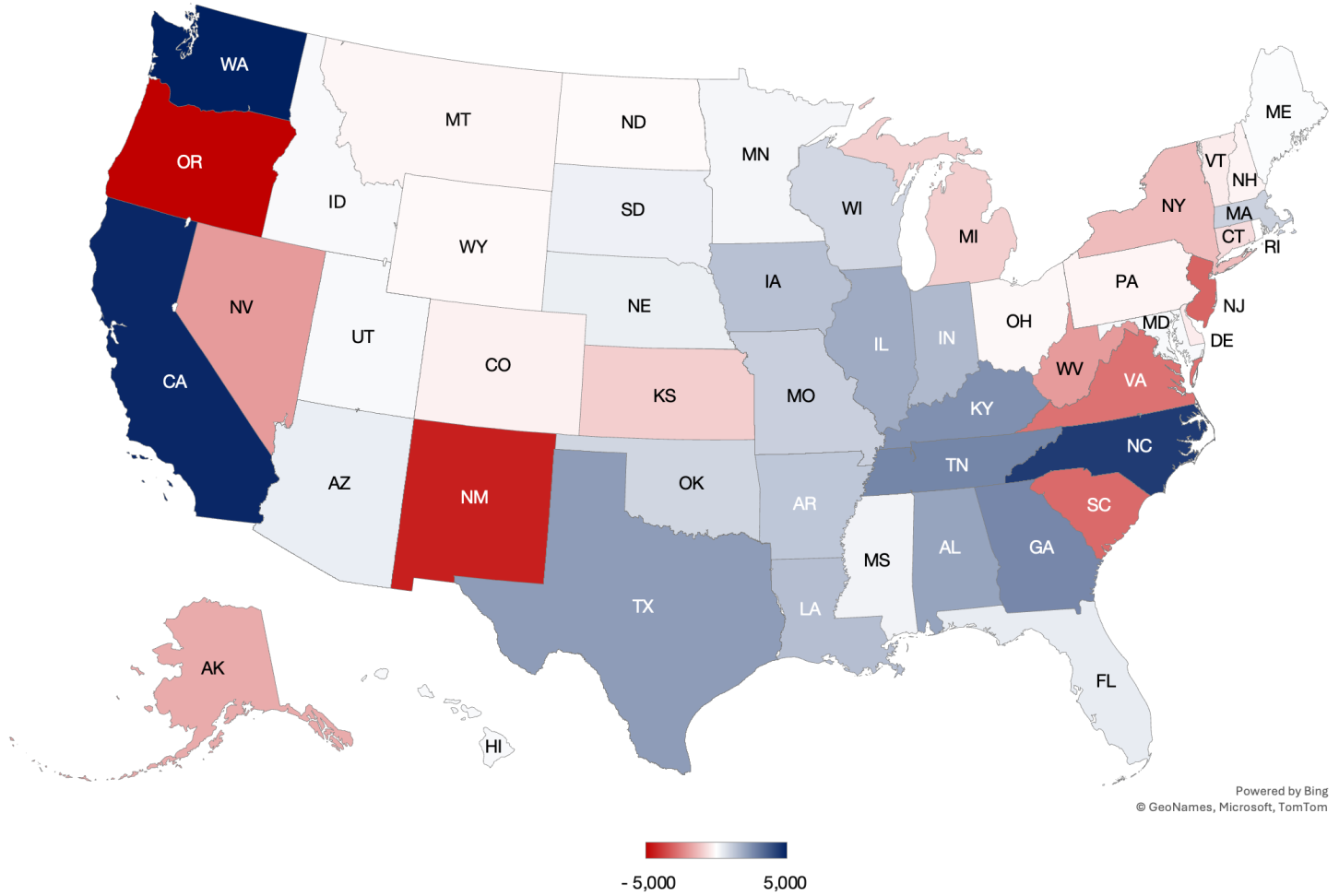


In 2022, both goods and services exports to China increased, creating an overall healthy environment for export-supported employment in the United States. That year, an estimated 931,231 American jobs were supported by US exports of goods and services to China, up slightly from 927,000 in 2021. The 2021 figure has been revised down from last year’s report based on updated employment-requirement tables from the US Bureau of Labor Statistics. Compared to past years, revisions seem particularly large, likely due to the complications of COVID-19 on the labor market.

Exports to China from California and Texas support the most jobs—about 126,000 and 90,000 jobs, respectively. Illinois’ exports to China support about 54,000 jobs, followed by New York’s, which support over 43,000 jobs. A large cluster of states, including Massachusetts, Ohio, North Carolina, Indiana, Georgia, Iowa, Minnesota, Pennsylvania, Michigan, and Tennessee, provide exports supporting between roughly 20,000 and 30,000 jobs.



Change in US jobs supported by all US exports to China, 2021–2022



While the total number of jobs supported by exports to China remained largely unchanged from 2021 to 2022, it was a mixed bag for states based on the types of goods and services they export. Twenty-eight states as well as the District of Columbia and Puerto Rico have seen the number of export-supported jobs grow, while 22 states and the Virgin Islands have seen it decline. In 2022, Washington’s exports to China supported about 6,900 more jobs than the year before, while exports from neighboring Oregon supported about 14,100 fewer jobs than before, largely due to declining semiconductor exports.

Top export categories supporting US jobs, 2022

Sector	Jobs
1. Oilseeds & Grains	178,736
2. Education	117,161
3. Meat Products	32,396
4. Aerospace Products & Parts	28,963

5. Semiconductors & Components	28,791
6. Misc. Crops	28,391
7. Pharmaceuticals & Medicines	26,081
8. Industrial Machinery	24,373
9. Navigational & Meas. Instruments	22,961
10. Motor Vehicles	21,873
11. Oil & Gas	21,187
12. Medical Equipment & Supplies	20,929
13. Misc. Personal & Recreational	18,636
14. Royalties from Industrial Processes	16,286
15. Misc. Business, Prof. & Tech. Services	14,974
16. Pulp & Paperboard Mill Products	13,274
17. Misc. General Purpose Machinery	12,678
18. Petroleum & Coal Products	12,011
19. Personal Travel & Tourism	11,470
20. Basic Chemicals	11,404

Agriculture and livestock continue to support jobs in the heartland

Agriculture and livestock exports to China support more US jobs than any other sector by a wide margin. In 2022, those exports supported an estimated 213,000 jobs. Agricultural exports from Illinois alone supported almost as many American jobs (24,900) as total US exports of pharmaceuticals and medicines (26,100). Starting in 2020, China began eliminating certain structural trade barriers and offered tariff relief for agricultural and other goods in order to fulfill its purchase commitments under the 2020 US-China Phase One Trade Agreement. However, as noted previously, there was a strong decline in US agricultural exports to China in 2023, and the corresponding export-supported jobs will fall to their lowest level since 2019.

Semiconductor competition reduces export-supported jobs

As competition in semiconductor production has heated up in recent years, the number of US jobs supported by semiconductor exports has declined. This is true of US exports to both China and the rest of the world, with the number of export-supported jobs declining by approximately 22,000 jobs and 51,000 jobs, respectively. The declines are even larger when including industrial machinery—the vast majority of which is semiconductor-manufacturing machinery—for which jobs supported by exports to China declined by nearly 9,000 between 2021 and 2022. Over the same period, jobs supported by industrial machinery exports to other countries have increased by about 6,000, offsetting some but not all of the declines. Both exports and the jobs they supported fell further in 2023.

Aerospace equipment and parts jobs rebound

Jobs supported by exports of aerospace equipment and parts to China are seeing the biggest increase of any sector, growing from about 18,000 in 2021 to 29,000 in 2022. Exports from Washington accounted for more than half of the increase, followed by exports from Kentucky, which supported about 1,600 more jobs in 2022 than the year before. The largest declines were related to exports from South Carolina and Connecticut. While aerospace export-related jobs have been growing in recent years, they remain far below their levels of five to ten years ago.

Slow travel recovery continues to have a big impact on jobs

Across the United States, tourism-dependent economies have seen the number of jobs supported by Chinese tourism decrease significantly since 2019, the last year before the COVID-19 pandemic and ensuing restrictions on travel into and out of China. In 2022, the number of jobs supported by Chinese personal, business, and health travel to the United States rose by more than 12,000 to approximately 15,400 jobs, yet that remains a small fraction of the nearly 130,000 American jobs supported by Chinese visitors in 2019. The number of jobs supported by Hawaii's services exports to China fell by an estimated 1,900 jobs, while the number of jobs supported by Nevada's services exports to China decreased by about 4,300 jobs.

Methodology

This year's edition of the US-China Business Council's export report draws on data obtained from Trade Partnership Worldwide, an economic research firm. The report provides a breakdown of each US state's and congressional district's goods and services exports to China. Goods export figures are primarily based on data from the US Census Bureau, the US Department of Agriculture, and Moody's Analytics. Goods export figures are classified according to the US government's North American Industry Classification System. Services export figures are primarily based on data from the US Bureau of Economic Analysis (BEA) and Moody's Analytics. Services export figures are classified according to BEA categories. Job figures include both direct jobs (employment in the exporting sector) and indirect jobs (upstream employment in other sectors supported by exports of a given sector). Jobs estimates are based on export estimates and employment-requirement tables from the US Bureau of Labor Statistics.

This year's edition of the export report uses the same sector categories for goods and services as last year's. Goods exports cover 2014–2023, and services exports cover 2013–2022, the most recent year for which detailed BEA data are available. Because historical data from each of these sources are revised annually, this edition of the report replaces all prior editions. All congressional district data reflect new districts for the 118th Congress. As in previous editions, this report uses a methodology that credits agricultural exports to districts in which crops are grown as opposed to districts with large ports where bulk commodities are aggregated prior to export. Average annual growth is calculated with an average annual growth rate formula. A detailed explanation of the methodology informing our estimates of goods exports, services exports, and jobs is available on Trade Partnership Worldwide's [website](#).