THE TRANSATLANTIC ECONOMY 2024

Annual Survey of Jobs, Trade and Investment between the United States and Europe

Daniel S. Hamilton and Joseph P. Quinlan

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Foreign Policy Institute
The Paul H. Nitze School of Advanced International Studies
The Johns Hopkins University
Email: dhamilton@jhu.edu
www.transatlanticrelations.org

Transatlantic Leadership Network
http://transatlantic.org

American Chamber of Commerce to the European Union (AmCham EU)
Avenue des Arts/Kunstlaan 56
1000 Brussels, Belgium
Tel: +32 2 513 68 92
Email: info@amchameu.eu
www.amchameu.eu
@AmChamEU

U.S. Chamber of Commerce
1615 H Street NW
Washington, DC 20062, USA
Tel: +1 202-659-6000
Email: europe@uschamber.com
www.uschamber.com
@USCC_Europe

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21st Edition

Daniel S. Hamilton and Joseph P. Quinlan

Paul H. Nitze School of Advanced International Studies,
Johns Hopkins University

Transatlantic Leadership Network

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THE TRANSATLANTIC ECONOMY 2024

The $8.7 trillion transatlantic economy is proving to be remarkably resilient in the face of global economic and strategic disruptions. The U.S. and Europe remain each other's most important markets and geo-economic base. No two other regions in the world are as deeply integrated as the U.S. and Europe.

16 million jobs
on both sides of the Atlantic

$6.9 trillion
in total commercial sales a year

Half of total
global personal consumption

One third of global GDP
(in terms of purchasing power)

Digital

+50% of digitally-enabled services between the U.S. and the EU are used to produce export products on each side

2x more data flows via transatlantic cables than over transpacific and intra-Asian routes

Innovation

R&D spending

$37.5 billion U.S. affiliate R&D in Europe (2021)

$54 billion European affiliate R&D in the U.S. (2021)

Jobs

Workers

5 million U.S. employees of European companies (direct jobs due to investment, 2022)

4.7 million European employees of U.S. companies (direct jobs due to investment, 2022)

Energy

+60% of U.S. LNG exports goes to Europe (2023)

+50% long-term renewable energy purchase agreements in Europe with U.S. companies

Investment

62% of global investment into the U.S. comes from Europe (2022)

61.2% of U.S. global investment goes to Europe (2021)

Trade in goods

$1.22 trillion U.S.-Europe goods trade (2022)

$946 billion U.S.-EU goods trade (2022)

Trade in services

$402 billion U.S. to Europe (2022)

$293 billion Europe to the U.S. (2022)

Preface and Acknowledgments

Daniel S. Hamilton

Joseph P. Quinlan

We are pleased to present the 21st edition of our annual review of the dense economic relationship binding European countries to America's 50 states.

In seven chapters we present the most up-to-date survey of this $8.7 trillion economy. Chapter One unveils some record-breaking achievements in 2023, underscoring the robust nature of the transatlantic economy in the face of ongoing geopolitical surprises and economic shocks. It also updates Western support for Ukraine and the impact of Western sanctions against Russia. Chapter Two refreshes our basic framework for understanding the deeply integrated transatlantic economy via "eight ties that bind." Chapter Three discusses how the United States, Europe and China are each advancing a "protect, promote and partner" agenda when it comes to derisking their mutually asymmetric dependencies. Chapter Four looks at three major shifts that are transforming the transatlantic energy economy. Chapter Five explores the transatlantic digital economy, which in many ways has become the backbone of commercial connections across the Atlantic. Chapter Six offers an overview of European commercial ties with the United States, and Chapter Seven an overview of U.S. commercial relations with Europe. The appended charts provide the most up-to-date information on European-sourced jobs, trade and investment with the 50 U.S. states, and U.S.-sourced jobs, trade and investment with the 27 member states of the European Union, as well as Norway, Switzerland, Türkiye, Ukraine and the United Kingdom.

This annual survey complements our other writings in which we use both geographic and sectoral lenses to examine the deep integration of the transatlantic economy, and the role of the U.S. and Europe in the global economy, with particular focus on how globalization affects American and European consumers, workers, companies, and governments.

We would like to thank the many individuals who have helped us over many seasons. We are grateful for the generous support of our annual survey from the American Chamber of Commerce to the European Union (AmCham EU), the U.S. Chamber of Commerce and their member companies, as well as the American Chambers of Commerce in Denmark, Finland, Greece, Ireland, Luxembourg, Slovenia and Sweden. We are thankful for the assistance of Marjorie Chorlins, Laura Escobar Diaz, Thibaut L'Ortye, Wendy Lopes, Zach Helzer and Ivana Zuzul in producing this study.

The views expressed here are our own, and do not necessarily represent those of any sponsor or institution. Other views and data sources have been cited, and are appreciated.

Daniel S. Hamilton
Joseph P. Quinlan

Executive Summary

- The transatlantic economy is proving to be remarkably robust in the face of global economic and strategic disruptions. The U.S. and Europe remain each other's most important markets and geo-economic base. The $8.7 trillion transatlantic economy employs more than 16 million workers in mutually "onshored" jobs on both sides of the Atlantic. It is the largest and wealthiest market in the world, accounting for half of total global personal consumption and close to one-third of world GDP in terms of purchasing power.

- Ties are particularly thick in foreign direct investment (FDI), portfolio investment, banking claims, trade and affiliate sales in goods and services, digital links, energy, mutual R&D investment, patent cooperation, technology flows, and sales of knowledge-intensive services.

- 2023 was record-breaking on multiple fronts:
  - Sales by European affiliates of U.S. companies reached a record high of $3.8 trillion; sales by U.S. affiliates of European firms hit a record high of $3.1 trillion.
  - U.S.-Europe goods trade reached an all-time high of $1.22 trillion in 2023 – double U.S.-China goods trade of $575 billion.
  - U.S.-EU goods trade hit a record of $946 billion, 39% higher than U.S-China goods trade of $575 billion and 16% higher than EU-China goods trade of $798 billion.
  - U.S. goods exports to Europe reached a record high of $498 billion.
  - U.S. company affiliates in Europe earned an estimated $350 billion, a record high; European affiliates in the U.S. earned an estimated $190 billion, a record high.
  - The U.S. became Europe's most important supplier of liquefied natural gas (LNG) and of petroleum oil, accounting for 50% of EU LNG imports and 18% of EU petroleum oil imports.
  - Europe became the top purchaser of U.S. crude oil and the U.S.'s most important LNG export market, accounting for more than 60% of U.S. LNG exports in 2023, double U.S. flows going to Asia.

Transatlantic Investment: Still Driving the Transatlantic Economy

- Trade alone is a misleading benchmark of international commerce; mutual investment dwarfs trade and is the real backbone of the transatlantic economy. The U.S. and Europe are each other's primary source and destination for foreign direct investment.

- U.S. and European goods exports to the world (excluding intra-EU trade) accounted for 20% of global goods exports in 2022, the last year of complete data. But together they accounted for 65% of both the inward and outward stock of global FDI. Moreover, each partner has built up the great majority of that stock in the other economy. Mutual investment in the North Atlantic space is very large, dwarfs trade, and has become essential to U.S. and European jobs and prosperity.

- Combined output of U.S. foreign affiliates in Europe (est. $800 billion) and of European foreign affiliates in the U.S. (est. $730 billion) in 2022 of $1.53 trillion was larger than the total output of such countries as Mexico, the Netherlands, or Indonesia.

- U.S.-based foreign firms generated $412 billion in U.S. exports to the world in 2021; European firms accounted for 59% of the total. U.S-based German companies exported over $59 billion in goods made in the U.S., followed by those from the UK ($52 billion) and the Netherlands ($38 billion).

- U.S. foreign affiliate sales in Europe of $3.8 trillion in 2022 were 55% more than total U.S. global exports of $2.1 trillion and roughly half of total U.S. foreign affiliate sales globally.

- Total transatlantic affiliate sales, estimated at $6.9 trillion in 2022, easily rank as the most integrated commercial partnership in the world.

- Foreign investment and affiliate sales drive transatlantic trade. 65% of U.S. imports from the EU consisted of intra-firm trade in 2021 – much higher than U.S. intra-firm imports from Asia-Pacific nations (around 40%) and well above the global average (48%). Percentages are notably high for Ireland (85%) and Germany (68%).

- Intra-firm trade also accounted for 39% of U.S. exports to the EU+UK, and 54% to the Netherlands, 40% to Germany and to the Netherlands, 34% to France.

The U.S. in Europe

- Over many decades no place in the world has attracted more U.S. FDI than Europe. During the past decade, Europe has attracted 55.9% of total U.S. global investment, slightly less than during the previous decade, but equivalent to the first decade of this century.

- Measured on a historic cost basis, the total stock of U.S. FDI in Europe was $4 trillion in 2022 – 61.2% of the total U.S. global investment position and more than four times U.S. investment in the Asia-Pacific region ($951 billion). U.S. investment stock in the EU of $2.7 trillion in 2022 was 21 times greater than U.S. FDI stock in China of $126.1 billion.

- U.S. investment stock in the UK alone ($1.08 trillion) in 2022 was more than U.S. investment in the entire Asia-Pacific region and 8.5 times greater than U.S. investment stock in China.

- In the first three quarters of 2023, U.S. companies invested $110 billion in Europe – more than six times what they invested in the BRICs ($18 billion total in Brazil, Russia, India, and South Africa) and nearly 20 times more than what they invested in China ($5.6 billion)

- U.S. companies in the first nine months of 2023 earned an estimated $260 billion from their operations in Europe – 2.7 times what they earned from operations in all of Asia ($85 billion).

- Official figures can be misleading if they do not distinguish between "phantom" and "real" FDI or between "immediate" and "ultimate" investors. Adjusted figures offer new insights. For instance, U.S. companies ultimately controlled $1.12 trillion (40.8%) of the UK's total inward FDI stock in 2021 – $195 billion more than reflected by immediate investor metrics. And while official statistics indicate that immediate U.S. FDI outflows to France and Germany have been relatively low for some time, a good deal of ultimate investment from the United States makes its way to France and Germany via other countries, and a closer look indicates that U.S. FDI that eventually ends up in France and Germany remains robust.

- The activities of nonbank holding companies have often confounded official accounting. In 2022, they accounted for $2.2 trillion, or about 55%, of total U.S. FDI stock in Europe. When FDI related to holding companies is stripped from the numbers, the U.S. FDI position in Europe is not as large as officially reported. Nonetheless, even with these adjustments, Europe still accounted for over half of total U.S. FDI outflows between 2009 and 2022. Europe's share was still more than double Asia's share.

- Of the top twenty global export platforms for U.S. multinationals in the world, nine are in Europe. For U.S. companies, Ireland is the number one platform in the world from which their affiliates can reach foreign customers. Switzerland, ranked third, remains a key export platform and pan-regional distribution hub for U.S. firms.

- U.S. foreign assets in Europe rose 4% to an estimated $19.3 trillion in 2022. In 2021, Europe accounted for roughly 64% – $18.6 trillion – of corporate America's total foreign assets globally. Largest shares: the UK (22% of global total, $6.5 trillion) and the Netherlands (10% of global total, $3.1 trillion).

- America's asset base in Germany topped $1.2 trillion in 2021, more than a third larger than its asset base in all South America and more than double its assets in China.

- America's asset base in Poland, the Czech Republic and Hungary (roughly $225 billion) was greater than corporate America's assets in South Korea ($161 billion).

- America's assets in Ireland ($2 trillion in 2021) were light years ahead of those in China ($527 billion).

- Ireland has also become the number one export platform for U.S. affiliates in the entire world.

- Aggregate output of U.S. affiliates globally reached $1.6 trillion in 2022; Europe accounted for half.

- U.S. affiliate output in Europe ($771 billion) in 2021 was 76% larger than affiliate output in the entire Asia-Pacific region ($437 billion).

- U.S. foreign affiliate sales in Europe were an estimated $3.8 trillion in 2022, roughly half the global total.

- Sales of U.S. affiliates in Europe were roughly 56% larger than the sales of U.S. affiliates in the entire Asian region in 2021. Affiliate sales in the UK ($723 billion) were double total sales in South America. Sales in Germany ($387 billion) were roughly double combined sales in Africa and the Middle East.

- U.S. affiliate income from Europe reached a record $350 billion in 2023, about 2.7 times U.S. affiliate income in all of Asia.

- Europe accounted for roughly 56% of U.S. global foreign affiliate income in the first nine months of 2023.

- U.S. affiliate income from China and India in 2022 ($20 billion) was a fraction of what U.S. affiliates earned in the Netherlands, Ireland, or the UK.

Europe in the U.S.

- Europe accounted for half of global FDI that flowed into the U.S. in the first three quarters of 2023. Annualizing data, U.S. FDI inflows from Europe are estimated to have totaled $170 billion in 2023, down from $219 billion the year before.

- Total European investment stock in the U.S. of $3.4 trillion in 2022 was more than three times the level of Asian investment stock in the U.S. Of the overall European level, EU FDI investment stock in the U.S. was $2.4 trillion in 2022, up 4% from 2021.

- The UK was the largest European investor in the United States in 2022, with total investment stock totaling $663 billion. The Netherlands ranked second in Europe ($617 billion), followed by Germany ($431 billion) and Switzerland ($307 billion).

- The UK's investment stock in the U.S. was 23 times Chinese investment stock in the U.S. of $28.7 billion. Germany's investment stock was 15 times greater.

- Europe accounted for 62% of the $5.3 trillion of foreign capital invested in the U.S. as of 2022 on a historic cost basis.

- In 2022 total assets of European affiliates in the U.S. were an estimated $9.3 trillion. UK firms ranked first, followed by those from Germany, Switzerland, and France.

- In 2021 European assets accounted for over 51% of total foreign assets in the United States.

- We estimate that European-owned assets in the U.S. rose in 2022 to $9.3 trillion.

- European affiliates in the U.S. earned an estimated $190 billion in 2023, a record high.

- Both UK and German affiliate output in the U.S. rose 5% in 2022. UK firms accounted for an estimated 25% ($180 billion) and German companies for 20% ($140 billion) of total European affiliate output in the U.S. in 2022.

- European companies operating in the U.S. accounted for nearly 61% of the roughly $1.2 trillion contributed by all foreign firms to U.S. aggregate production in 2021.

- Chinese affiliate output in the U.S. of just $15 billion in 2021 was less than that of Sweden ($21 billion).

- Affiliate sales, not trade, are the primary means by which European firms deliver goods and services to U.S. consumers. In 2022 European affiliate sales in the U.S. ($3.1 trillion) were more than triple U.S. imports from Europe.

- Sales by British and German affiliates in the U.S. were the largest ($632 billion each) in 2021, followed by Dutch affiliate sales ($423 billion).

Transatlantic Trade

- U.S.-Europe goods trade reached an all-time high of $1.22 trillion in 2023 – double U.S.- China goods trade of $575 billion.

- U.S.-EU goods trade in 2023 hit a record of $946 billion, 39% higher than U.S-China goods trade and 16% higher than EU-China goods trade of $798 billion.

- U.S. goods exports to Europe reached a record high of $498 billion, 1.2% more than 2022 ($491.6 billion).

- The EU+UK accounted for 22% of U.S. goods exports and 21% of U.S. goods imports in 2023; China accounted for 7.3% of U.S. goods exports and 13.9% of U.S. goods imports.

- 48 of the 50 U.S. states, including the Pacific coast's largest state of California, export more goods to Europe than to China, in many cases by a wide margin.

- Texas is the top U.S. state exporter of goods to Europe, followed by New York, Louisiana, and California.

- In 2022, New York exported 13 times more goods to Europe than to China. Florida exported 9 times more, Texas 4.5 times more, and Kentucky 3 times more goods to Europe than to China. California exported twice as many goods to Europe as to China.

- Germany was the top European goods customer for 18 U.S. states, the Netherlands for 10, and the UK for 9 in 2022. Germany was also the top European goods supplier to 36 U.S. states, Ireland for 5 states.

Transatlantic Services

- The U.S. and Europe are the two leading services economies in the world. The U.S. is the largest single country trader in services, while the EU is the largest trader in services among all world regions. The U.S. and the EU are each other's most important commercial partners and major growth markets when it comes to services trade and investment. Moreover, deep transatlantic connections in services industries, provided by mutual investment flows, are the foundation for the global competitiveness of U.S. and European services companies.

- Five of the top ten export markets for U.S. services are in Europe. Europe accounted for 43% of total U.S. services exports and for 42% of total U.S. services imports in 2022.

- U.S. services exports to Europe reached a record $402 billion in 2022. The U.S. had a $107 billion trade surplus in services with Europe in 2022, compared with its $202 billion trade deficit in goods with Europe.

- U.S. imports of services from Europe rose to $293 billion in 2022. The UK, Germany, Switzerland, Ireland, and France are top services exporters to the U.S.

- EU27 services trade with the U.S. of $704 billion in 2022 was 4.6 times larger than EU-China services trade of $154 billion.

- Putting goods and services together, EU-U.S. trade totaled $1.61 trillion in 2022. EU-China trade of $1.06 trillion was only 66% as large, and U.S.-China trade of $758.42 billion was only 47% as large.

- China-Germany trade in goods and services of $348.45 billion in 2022 was 12% less than U.S.-Germany trade of $394.15 billion.

- Moreover, foreign affiliate sales of services, or the delivery of transatlantic services by foreign affiliates, have exploded on both sides of the Atlantic over the past few decades and become far more important than exports.

- Sales of services by U.S. affiliates in Europe totaled $1.1 trillion, or 57% of the global total, in 2021 – 2.7 times more than U.S. services exports to Europe of $402 billion.

- Services by U.S. firms based in the UK and UK companies based in the U.S. totaled $489 billion in 2021 – over three times more than U.S.-UK overall trade in services.

- The UK alone accounted for 30% of all U.S. affiliate services sales in Europe in 2021 – more than combined U.S. affiliate services sales in Latin America and the Caribbean, Africa, and the Middle East.

- European affiliate sales of services in the U.S. of $753 billion in 2021 were about 70% of U.S. affiliate sales of services in Europe.

- Nonetheless, European companies are the key providers of affiliate services in the U.S. German affiliates led in terms of affiliate sales of services ($196 billion), followed closely by U.S.-based UK firms ($172 billion). German and UK affiliates each supplied more services in the U.S. than did USMCA partners Canadian and Mexican affiliates combined. German affiliate services alone were more than 16 times those provided by Chinese affiliates in the U.S.

- European companies operating in the U.S. generated an estimated $775 billion in services sales in 2022 – roughly 2.6 times more than European services exports to the U.S. of $293 billion.

The Transatlantic Digital Economy

- Transatlantic data flows are critical to enabling the $8.3 trillion EU-U.S. economic relationship. They account for more than half of Europe's data flows and about half of U.S. data flows globally. Over 90% of EU-based firms transfer data to and from the United States.

- European and U.S. cities are major hubs of cross-border digital connectivity. Europe is the global leader, with tremendous connected international capacity. Frankfurt, London, Amsterdam, and Paris substantially outpace North American and Asian cities.

- The United States currently accounts for over 53% of the world's operational hyperscale infrastructure, measured by critical IT load. More than one-third of U.S. hyperscale capacity is in one state – Virginia. Virginia has far more hyperscale data center capacity than either China or all of Europe.

- The transatlantic data seaway is the busiest and most competitive in the world. Submarine cables in the Atlantic carry more than twice the traffic of transpacific routes and intra-Asian routes.

- The U.S. and Europe are each other's most important commercial partners when it comes to digitally-enabled services. The U.S. and the EU are also the two largest net exporters of digitally-enabled services to the world.

- In 2022, the United States exported $307 billion in digitally-deliverable services to Europe – more than double what it exported to the entire Asia-Pacific region ($141 billion), and more than combined U.S. exports of digitally-deliverable services to the Asia-Pacific, Latin America and other Western Hemisphere, Africa, and the Middle East.

- Europe accounted for 49% of all U.S. digitally-deliverable exports to the world. Within Europe, the EU accounted for 61%, and the EU+UK+Switzerland accounted for 97%, of U.S. digitally-deliverable exports. The U.S. had a $103 billion trade surplus with the EU in digitally-deliverable services in 2022.

- In 2021, the U.S. accounted for 25% of the EU's digitally-enabled services exports to non-EU countries, and 30% of EU digitally-enabled services imports from non-EU countries.

- The U. S. purchased $208.4 billion, making it the largest recipient of EU27 digitally-enabled services exports – roughly the same as the entire region of Asia and Oceania ($210.9 billion).

- Digitally-enabled services are not just exported directly, they are used in manufacturing and to produce goods and services for export. Over half of digitally-enabled services imported by the U.S. from the EU is used to produce U.S. products for export, and vice versa.

- In 2021, EU member states imported about $1.45 trillion in digitally-enabled services. 44% originated from other EU member states. Another 17% ($244.2 billion) came from the U.S., making it the largest single-country supplier of these services. EU imports of these services from the U.S. were 30% more than EU imports from the UK ($169.8 billion) and more than twice EU imports from the entire region of Asia and Oceania ($119.7 billion).

- Even more important than both direct and value-added trade in digitally-enabled services, however, is the delivery of digital services by U.S. and European foreign affiliates. U.S. services supplied by affiliates abroad were $1.95 trillion in 2021, roughly 2.4 times global U.S. services exports of $801.14 billion. Moreover, half of all services supplied by U.S. affiliates abroad are digitally-enabled.

- In 2021, Europe accounted for 67% of the $434 billion in total global information services supplied abroad by U.S. multinational corporations through their majority-owned foreign affiliates.

- U.S. overseas direct investment in the "information" industry in the UK alone was triple U.S. information industry investment in the entire Western Hemisphere outside the United States, and 15 times more than such investment in China. Equivalent U.S. investment in Germany was 3.8 times more than in China.

- The U.S. leads the world in international trade in products delivered through data flows, followed by the UK, France, Germany, India, Ireland, the Netherlands, and Switzerland.

Transatlantic Jobs

- European companies in the U.S. employ millions of American workers and are the largest source of onshored jobs in America. Similarly, U.S. companies in Europe employ millions of European workers and are the largest source of onshored jobs in Europe.

- U.S. and European foreign affiliates directly employed an estimated 10 million workers in 2022.

- These figures understate overall job numbers, since they do not include:
  - jobs supported by transatlantic trade flows;
  - indirect employment effects of nonequity arrangements such as strategic alliances, joint ventures, and other deals; and
  - indirect employment generated for distributors and suppliers.

- U.S. affiliates directly employed an estimated 4.7 million workers in Europe in 2022.

- Roughly 33% of the 13.8 million people directly employed by U.S. majority-owned affiliates around the world in 2021 lived in Europe; that share is down from 41% in 2009.

- U.S. affiliates employed more manufacturing workers in Europe in 2021 (1.8 million) than they did in 1990 (1.6 million), and about the same as in 2000 (1.9 million). Manufacturing employment has declined in some countries but has rebounded in others.

- Poland has been a big winner. Between 2000 and 2021, U.S. manufacturing affiliates in Poland employed 2.7 times more people (51,000 vs. 136,000). They employed 26,000 fewer people in Germany (388,000 vs. 362,000), 67,000 fewer in France (249,000 vs. 182,000), and 147,000 fewer in the UK (431,000 vs. 284,000).

- U.S. affiliates employ more Europeans in services than in manufacturing and this trend is likely to continue. Manufacturing accounted for 38% of total employment by U.S. affiliates in Europe in 2021. U.S. affiliates employed nearly 312,000 European workers in transportation and 262,000 in chemicals. Wholesale employment was among the largest sources of services-related employment, which includes employment in such areas as logistics, trade, insurance and other related activities.

- European majority-owned foreign affiliates directly employed an estimated 5 million U.S. workers in 2022.

- European firms employed roughly two-thirds of all U.S. workers on the payrolls of majority-owned foreign affiliates in 2021.

- The top five European employers in the United States in 2021 were firms from the UK (1.2 million jobs), Germany (924,000), France (741,000), the Netherlands (603,000) and Switzerland (380,000).

- UK firms were the largest sources of onshored jobs in 21 U.S. states in 2021. Japanese and Canadian companies each led in 10 states, German companies in 5 states. French and Dutch companies each led in 2 states.

- The top five U.S. states in terms of jobs provided directly by European affiliates in 2021 were California (458,700), Texas (392,900), New York (360,300), Pennsylvania (244,000), and Illinois (225,400).

The Transatlantic Energy Economy

- The U.S. is Europe's most important supplier of liquefied natural gas (LNG), accounting for 50% of EU total LNG imports – and around 20% of EU total gas imports. In turn, Europe has become the U.S.'s most important LNG export market, accounting for more than 60% of U.S. LNG exports in 2023, double U.S. flows going to Asia.

- The U.S. has also become the EU's largest supplier of petroleum oil, accounting for about 18% of imports. U.S. oil shipments to Europe have jumped 82% since Russia's invasion of Ukraine, and now account for 12% of Europe's oil supplies. Europe is the top purchaser of U.S. crude oil. Russia's share of Europe's oil and petroleum products imports declined from nearly 45% in 2021 to under 4% in 2023.

- U.S. companies in Europe have become a driving force for Europe's green transition, accounting for more than half of the long-term renewable energy purchase agreements signed in Europe since 2007.

- European companies are the leading source of FDI in the U.S. energy sector.

- Between 2017 and 2022, U.S. investors participated in 758 EU-based cleantech deals and EU investors joined 682 U.S.-based cleantech deals. On average, U.S. and EU companies that received transatlantic investments reached growth stage, and received growth funding, faster than those that did not: 20% faster for EU-based companies; 8% faster for U.S.-based companies. Deal sizes for EU innovator investment rounds that included U.S. risk capital were significantly larger than those that did not involve a U.S. investor.

The Transatlantic Innovation Economy

- Bilateral U.S.-EU flows in R&D are the most intense between any two international partners. In 2021 U.S. affiliates spent $37.5 billion on R&D in Europe, 54% of total U.S. R&D conducted globally by affiliates.

- R&D expenditures by U.S. affiliates were the greatest in the UK ($7.7 billion), Germany ($6.7 billion), Switzerland ($6.1 billion), Ireland ($4.8 billion), Belgium ($2.7 billion) and France ($2.2 billion). These six nations accounted for roughly 83% of U.S. spending on R&D in Europe in 2021.

- In the U.S., R&D expenditures by majority-owned foreign affiliates totaled $78.3 billion in 2021; European affiliates accounted for 69% of that total.

- Swiss firms were the largest foreign source of R&D in the United States in 2021, spending some $13 billion, or 24% of the total of European R&D. German firms ranked second ($11.2 billion, 21% of the total).

Shaken, Not Stirred: The Transatlantic Economy in 2024

The transatlantic economy is proving to be remarkably robust in the face of global economic and strategic disruptions. It has been shaken, but its foundation has not stirred. Despite full-blown war in the heart of Europe, deadly conflict in the Middle East, lingering COVID-19 uncertainties, supply chain disruptions, climate changes, dramatic energy shifts, inflationary pressures, tight financial conditions, and tensions with China, key drivers of the transatlantic economy – trade, income, and energy flows – posted strong results again in 2023.

2023 was record-breaking on multiple fronts:

- Sales by European affiliates of U.S. companies reached a record high of $3.8 trillion; sales by U.S. affiliates of European firms hit a record high of $3.1 trillion.
- U.S.-Europe goods trade reached an all-time high of $1.22 trillion in 2023 – double U.S.-China goods trade of $575 billion.
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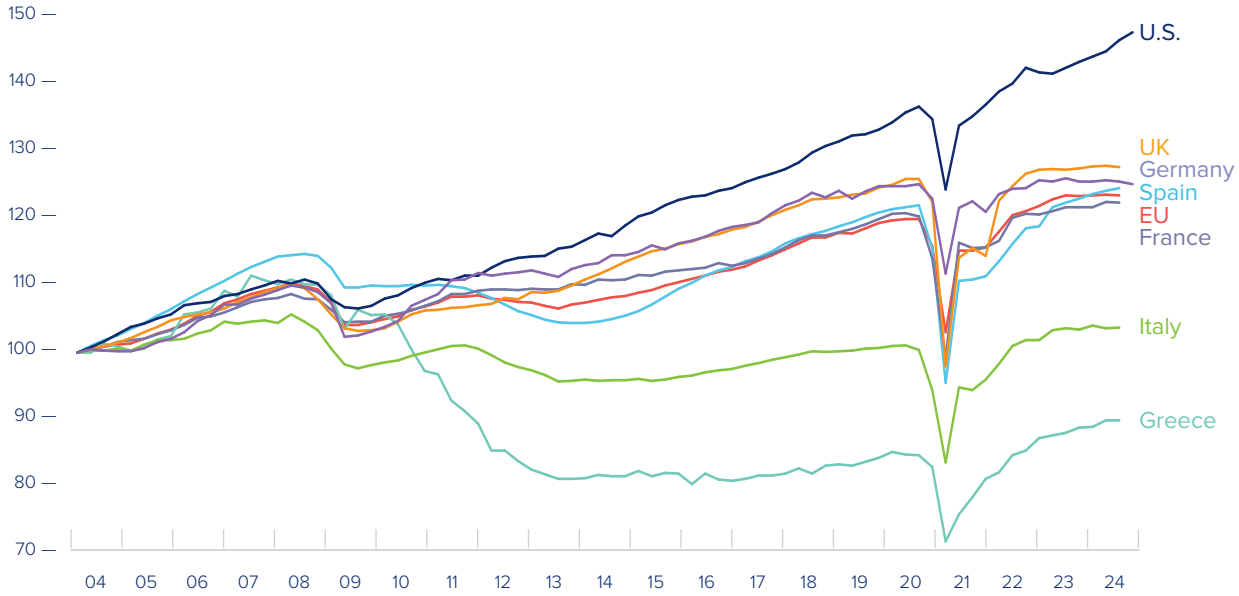
- The U.S. became Europe's most important supplier of liquefied natural gas (LNG) and of petroleum oil, accounting for 50% of EU LNG imports and 18% of EU petroleum oil imports.
- Europe became the top purchaser of U.S. crude oil and the U.S.'s most important LNG export market, accounting for more than 60% of U.S. LNG exports in 2023, double U.S. flows going to Asia.

As we near the half-way mark of this decade, and with the 21st century nearly one-quarter old, these figures are emblematic of the dense ties that bind North America to Europe and form the solid geoeconomic and geostrategic ground from which each side of the North Atlantic can address tremors still to come in 2024 and beyond. The $8.7 trillion transatlantic economy remains the largest and wealthiest market in the world, employing 16 million workers in mutually "onshored" jobs on both sides of the Atlantic. No two other regions of the world are as deeply integrated as the U.S. and Europe. Ties are particularly thick in foreign direct investment (FDI), portfolio investment, banking claims, trade and affiliate sales in goods and services, digital links, energy, mutual R&D investment, patent cooperation, technology flows, and sales of knowledge-intensive services.

Cyclical Challenges

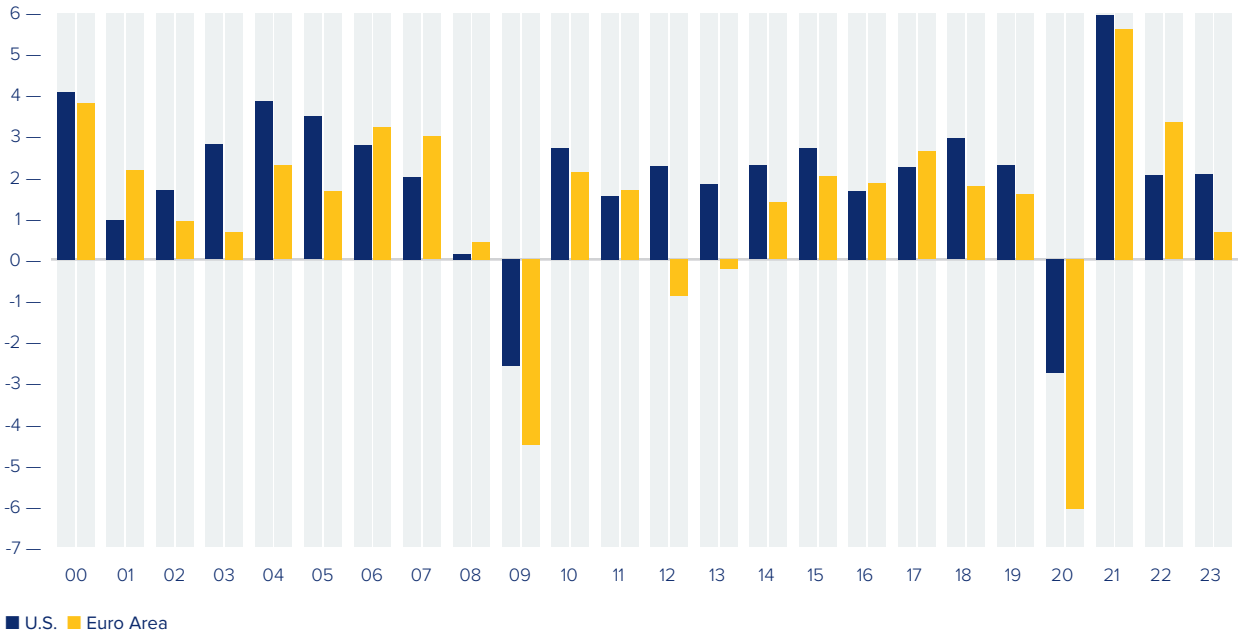
Real economic growth across Europe was better than feared in 2023, with the region successfully shifting its energy imports away from Russia and towards the United States and other suppliers. Consumer prices have declined steadily, while Europe's labor market remains taut. In the face of rising interest rates and insecure energy

Table 1. COVID-19 Economic Downturn in the U.S. and Eurozone Economies (Real GDP level, Q1 2004 = 100)



Source: Haver Analytics.
Data through Q3 2023.

Table 2 **U.S. vs. Euro Area** (Real GDP, Annual % Change, 2000-2003)



Data as of January 2024.
Source: International Monetary Fund.

supplies, many thought Europe was bound for recession last year. In the end, rebounding southern European economies helped the region to eke out modest growth for 2023 as a whole, even though lackluster performances by Europe's largest economies in the second half of the year delayed a fuller recovery, as Germany shrank, France stalled, and the UK sputtered.

Even as Europe's big three economies surprised to the downside by decelerating in the last quarter of 2023, the U.S. surprised to the upside by accelerating during that same period, defying consensus expectations of a recession. The U.S. economy expanded by a stunning 4.9% annualized rate in the third quarter of 2023, followed by 3.3% annualized growth in the fourth quarter. Growth has slowed entering 2024, but the consensus expects the U.S. to avoid a recession, with growth supported by strong personal consumption, fiscal spending, and accelerating wage growth that continues to outpace inflation. The U.S. unemployment rate has been below 4% for two years – the longest stretch since the 1960s.

The Near-term Outlook Remains Uncertain

Transatlantic economic prospects for 2024 remain challenging, especially since the two sides of the North Atlantic find themselves in different cycles of recovery and growth. The U.S. economy is expected to expand by 2.5% this year, with inflation falling to just 2.2% in 2024 and 2% in 2025.

Yet questions loom over the U.S. economic outlook, including the staying power of the U.S. consumer, the lagged effects of higher interest rates, and geopolitical risks that could disrupt critical global supply chains. Uncertainty surrounding the U.S. presidential election could also emerge as a headwind to growth by curtailing capital investment and depressing consumer spending. Also being watched very carefully in the U.S. is the federal budget deficit (more than 6% of GDP in fiscal year 2023) and its effects on interest rates and future public sector spending.

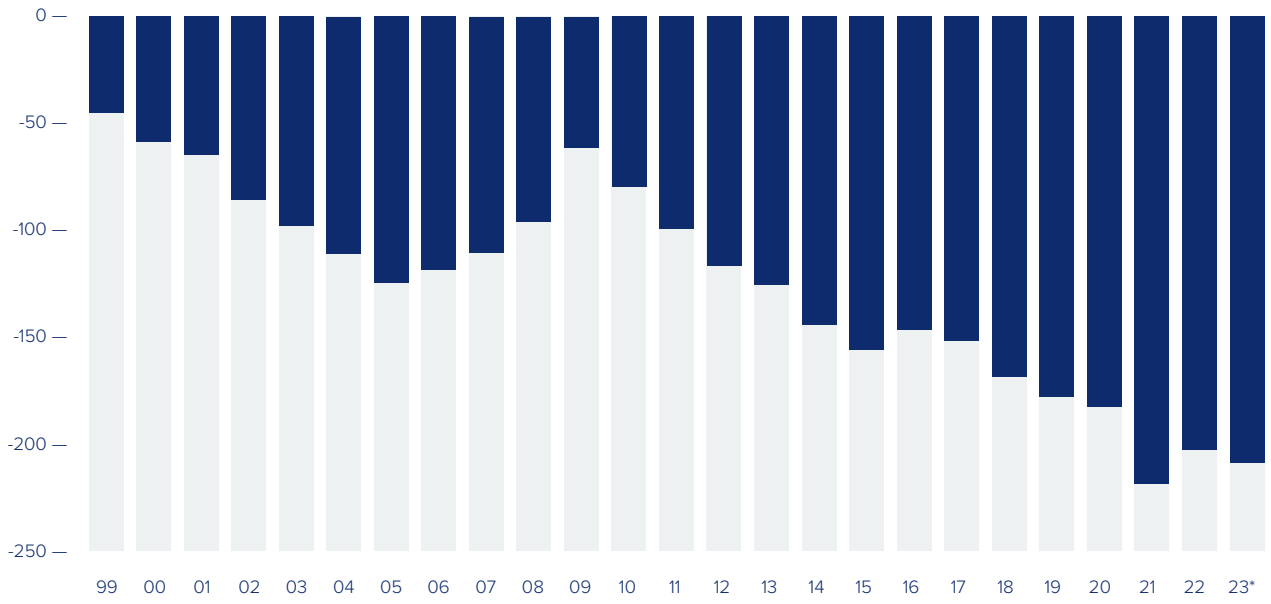
Budget constraints and a renewed focus on reducing deficits across Europe could also emerge as a drag on real growth across Europe this year. Tighter spending limits, greater debt-servicing outlays, and Germany's constitutional debt ceiling – all these factors could curb near-term fiscal spending and weigh on growth. Trade tensions with China and the volatility and uncertainty of Russia's war against Ukraine and conflict in the Middle East could do the same. On the other hand, some headwinds show signs of easing – inflation, monetary policies, energy shocks. The European Commission expects the GDP of the

2023: a record-breaking year

Transatlantic trade in goods
$1.22 trillion

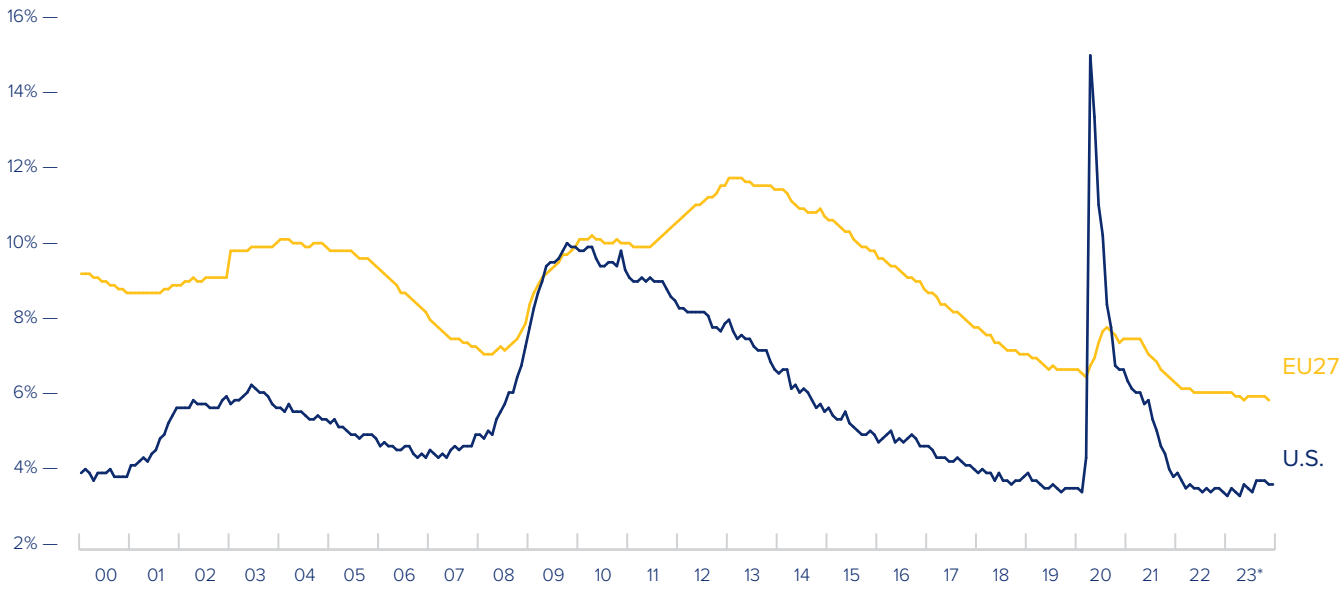
Foreign affiliate earnings
U.S. in Europe
$350 billion
Europe in the U.S.
$190 billion

Table 3. **U.S. Merchandise Trade Balance with the EU** ($Billions)



**2023 Estimate.*
Source: United States Census Bureau.

Table 4. **U.S. vs. EU Unemployment Rate** Harmonized Unemployment Rate (% of labor force, monthly)



**2023 EU data is average through November. 2023 U.S. data is average through December.*
Source: OECD.

The transatlantic economy remains the most interconnected, robust, and resilient commercial artery in the world.

EU to expand by 0.9% and that of the eurozone by 0.8%, with growth picking up in 2025 by 1.7% for the EU and 1.5% for the eurozone. Eurozone inflation is expected to fall by half to 2.7% this year, from 5.4% in 2023, and to be at 2.2% in 2025. Germany's anemic growth prospects of just 0.2% makes it the G7 laggard. And while the OECD expects UK growth to expand by 0.7% in 2024 and 1.2% in 2025, it also predicts the UK to struggle with the G7's highest inflation rate – 2.8% in 2024 and 2.4% in 2025.

Against this backdrop, we expect transatlantic trade and investment ties to grow modestly again in 2024, following the surprisingly strong advances generated by trade, income, and energy flows in 2023. One important additional driver, transatlantic FDI flows, declined markedly last year, reflecting several factors, like the higher cost of capital, depressed merger and acquisition (M&A) activity, and uncertain economic prospects. The push by both the U.S. and Europe to encourage firms to invest at home, including via massive public sector incentives, also contributed to the downturn in transatlantic FDI flows. In the first nine months of 2023, U.S. FDI flows to Europe declined by nearly one-third, while European inflows to the U.S. dropped nearly 30%. For the year as a whole, we estimate that U.S. FDI outflows to Europe totaled $145 billion, while inflows tallied an estimated $169 billion.

We would not be surprised if investment flows remained weak again in 2024, given uncertainties surrounding a spate of elections in the U.S., across Europe, and in many other countries around the world. All told, 2 billion people – a quarter of the world's population, representing 60% of global output – will go to the ballot box in 2024, and for the first time ever, the U.S., the UK and the EU will hold major elections in the same calendar year. The risk to investment flows is that firms take a "wait-and-see" attitude towards these elections and hold off spending until after the voters are heard. More encouraging, interest rates on both sides of the Atlantic are expected to fall this year, and are supportive of a new round of capital expenditures over the medium term. In the end, the downturn in investment is more cyclical than structural, with both the U.S. and Europe continuing to leverage each other's strengths to promote economic growth and prosperity.

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Europe and America in a New Era of Globalization

In the face of a major war in Europe, a bloody conflict in the Middle East, elevated tensions with China, and snarled shipping lanes in key transit hubs, the transatlantic economy confronts multiple geopolitical hotspots in the year ahead. The ultimate effects have yet to play out, but the costs associated with unpredictable geopolitics run from rising global defense spending and widening budget deficits to higher prices and inflation due to supply chain vulnerabilities and increased global populism/nationalism fueled by rising levels of cross-border migrants dislocated by conflict. Over 180 conflicts are ongoing around the world, and annual global defense expenditures reached a record high of $2.2 trillion in 2023, according to the International Institute for Strategic Studies. NATO officials continue to underscore that Russia's war against Ukraine has created the most dangerous security situation in Europe in decades. We track Western support for Ukraine in Box 1, and Western sanctions against Russia in Box 2.

Add in the lingering effects of the 2007-2009 Great Financial Crisis (GFC), more restrictions on trade and FDI, and the worldwide disruptions generated by the COVID-19 pandemic, and the result is a new narrative that the world has entered an era of de-globalization. A closer look, however, reveals that globalization is evolving, not retreating. Technological drivers are accelerating global flows, even as policy and commercial considerations are reshaping them. Global flows of people, capital, goods, and data confront higher barriers to entry today. However, four years after the pandemic shut down the world, cross-border travel, trade, investment, and data are above pre-pandemic levels and expected to expand further.[1]

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One key measure of globalization is international goods trade. During the post-Cold War period of "hyperglobalization," from the early 1990s until the GFC, global goods exports grew by about 10% a year, while global GDP rose by only 6% annually. Trade as a percentage of GDP rose to almost two-thirds; the share of exports in national economies grew from less than 20% to more than 30%. Goods trade slowed in the GFC's wake, however, as further trade liberalization faltered and many countries adopted protectionist measures. When the pandemic induced capitals to apply new trade restrictions in 2020, China's trade-to-GDP ratio tumbled to 35% from a high of 67%, while that for the U.S. fell from 27% to 23%. Since then, however, trade values have rebounded and are getting stronger, slightly exceeding global GDP growth and hitting a historical high of $24.9 trillion in 2022.[2]

Goods trade is also being reshaped. Since Russia invaded Ukraine in February 2022, trade among politically aligned countries has grown about 1.5% more than trade between countries that are not politically aligned, according to the IMF.[3] Trade is also being re-routed through third countries as companies caught in geopolitical struggles seek to evade tariffs and other restrictions by re-routing their supply chains via third countries. In short, goods trade remains a driver of globalization, but is now influenced more by geopolitical dynamics and is growing at a slower pace. One result has been a revitalization of transatlantic goods trade, which hit record levels in 2023.

Moreover, trade doesn't just consist of goods, it also includes services. Services trade also boomed during the period of hyperglobalization. After the GFC, trade in goods as a share of GDP plateaued, but global services trade as a share of world GDP continued to surge so that it now accounts for over a fifth of worldwide export earnings. Services are currently a more important driver of globalization than goods.[4] And services are a core strength of the U.S. and European economies, as we discuss in later chapters.

Data is the most dynamic flow binding societies and continents together. Flows of data have grown by more than 40% annually over the past ten years, according to McKinsey. Trade in technology and ideas has grown faster than trade in both goods and services. Flows of patents and ideas have been growing at about 6% a year since 2010, compared to trade in resources, which have averaged about 2%. Trade in R&D and information and communications technologies has not only outpaced trade in the rest of the services economy, it is fundamentally reshaping it.[5] Globally, the most intense and valuable cross-region data flows continue to run between North America and Europe. The United States and European economies are major hubs for international trade in products delivered through data flows. Digitally-deliverable services are a dynamic element of today's globalization, led by the U.S. and Europe, as we explain in Chapter 5.

Financial flows tell a similar story. Gross flows of portfolio finance and FDI surged from the early 1990s until the GFC. After the GFC, both forms of financial flows decelerated sharply: portfolio flows from a peak of 7% of global GDP to about 3.0–3.5%, and FDI flows by about 2 percentage points.[6] Following the pandemic, these flows have been volatile but on the rebound. According to UNCTAD, the stock of global FDI more than doubled between 2010 and 2021, to $44 trillion. FDI dipped in 2023 following further growth in 2022, but is higher than before the pandemic and the GFC. FDI has also become more concentrated among geopolitically aligned countries, anchored by dense investment links between the United States and Europe.

All told, the transatlantic partners are well-positioned to benefit from new patterns of global interconnections, and have ample opportunities to address the associated risks – if they can stick together. U.S. and European companies over many decades have woven a dense web of deep transatlantic connections that is proving to be a strength, not a burden, for both in a more competitive and disruptive age. The transatlantic economy remains the most interconnected, robust, and resilient commercial artery in the world, as we explain in the following chapters.

Box 1. Supporting Ukraine

Russia's ongoing aggression against Ukraine has not only devastated Ukraine and resulted in over half a million people dead or injured, it has amplified global financial instabilities and supply chain distortions, wreaked havoc on food and energy markets, and generated the largest refugee crisis in Europe since World War II. Ending the war, says U.S. Treasury Secretary Janet Yellen, "is the single best thing we can do for the global economy."

The transatlantic partners have spearheaded international efforts to support Ukraine. EU member states and EU institutions combined committed $153.8 billion between January 24, 2022 and January 15, 2024, according to the Kiel Institute for the World Economy. The United States has been the single largest country donor, with commitments of $74.2 billion. Other donor countries have committed an additional $43.4 billion. In addition, in March 2023 the IMF approved a $15.6 billion extended fund facility (EFF) program as part of a $115 billion support package. This includes structural reforms aimed at preparing the country for EU membership.

If contributions via EU channels are reapportioned to the individual EU states that provided them, then the U.S. remains the largest individual donor ($74.2 billion), followed by Germany ($44.28 billion) (Table 5). In terms of bilateral commitments in percent of donor country GDP, the top five donors are Estonia, Denmark, Lithuania, Norway, and Latvia (Table 6).

As of this writing, continued U.S. commitments to Ukraine are uncertain. The last U.S. assistance package in December 2023 exhausted available support. The Biden administration has asked Congress for $60 billion in new funds; the Senate has approved an aid package for Ukraine, but the House has not yet agreed to any additional appropriations.

European assistance continues. On February 1, the EU approved a Ukraine economic support package of up to $54 billion, to be allocated between 2024 and 2027 to support Ukrainian resilience and reconstruction, budgetary and financial assistance, and EU accession support. While generous, the package amounts to $13.6 billion in annual support – not enough to meet the $36.8 billion Ukraine estimates it will need in external contributions this year alone. In addition, the Kiel Institute points to a major lag between EU commitments and allocations. The EU and its member states have allocated only $82.2 billion of the $153.8 billion they have committed.

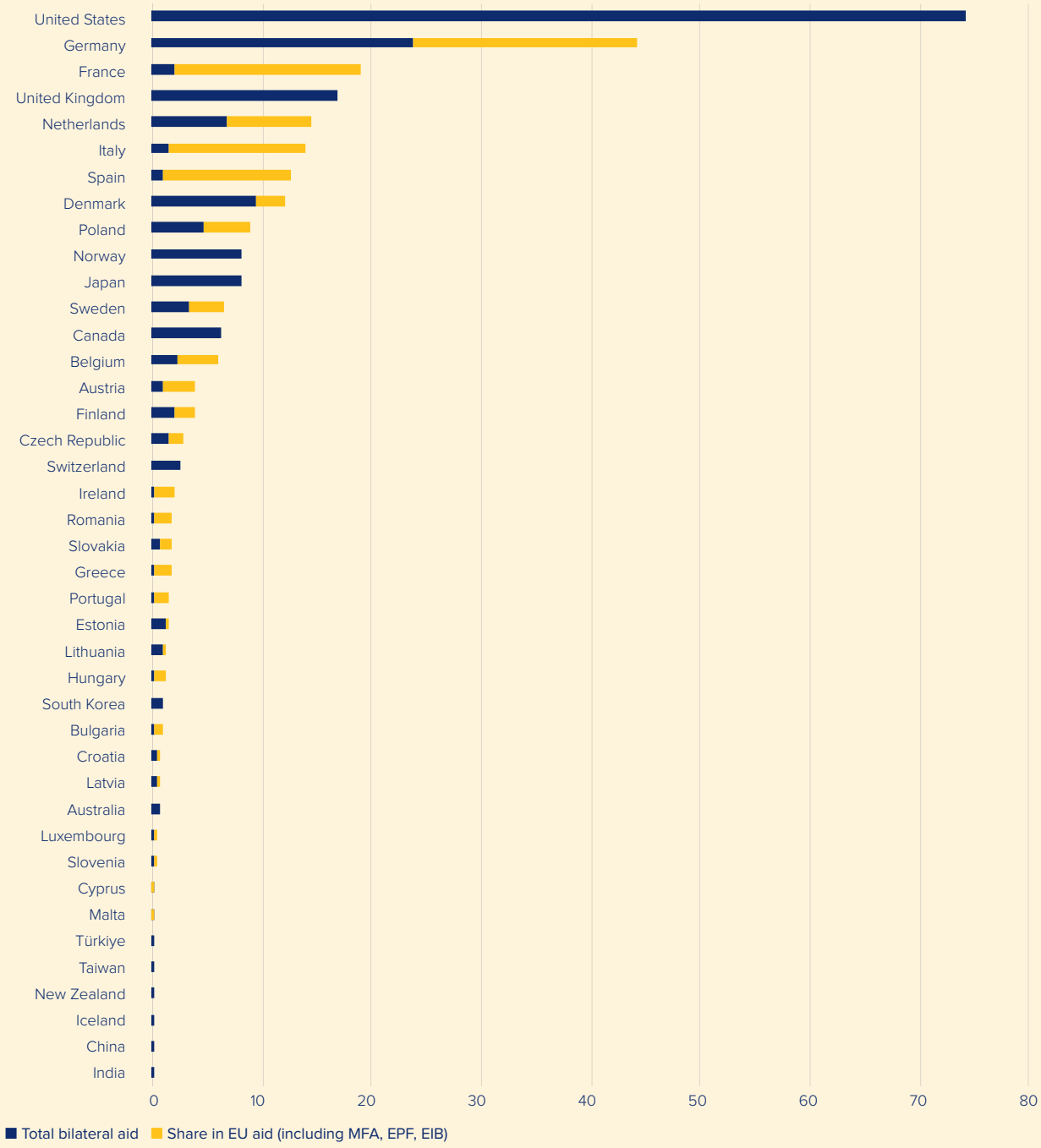
Moreover, if U.S. military assistance is not forthcoming, the EU and its member states would need to double their military aid to compensate. That seems difficult. The EU's "Ukraine Facility" economic assistance package did not resolve ongoing intra-EU squabbles over how or whether to allocate more than $22 billion to a common fund, the "European Peace Facility," that would reimburse member states for bilateral military support they would provide to Ukraine over the next four years. The Kiel Institute also notes big gaps between the military aid Europeans have already promised and the actual delivery of hardware.

Since the war started, more than 10 million Ukrainians have fled their homes, 6.4 million of whom left the country. Six million are hosted in countries across Europe, and another 400,000 outside of Europe, primarily in Canada and the United States. As of November 2023, the main EU countries hosting beneficiaries of temporary protection from Ukraine were Germany (1.236 million people), Poland (955,000) and Czechia (369,000).

When the Kiel Institute adds estimated refugee costs to bilateral support levels, the United States remains in first place ($77.23 billion), followed by Germany ($46.46 billion, including $22.90 billion in refugee costs) and then Poland, the UK, and Denmark.

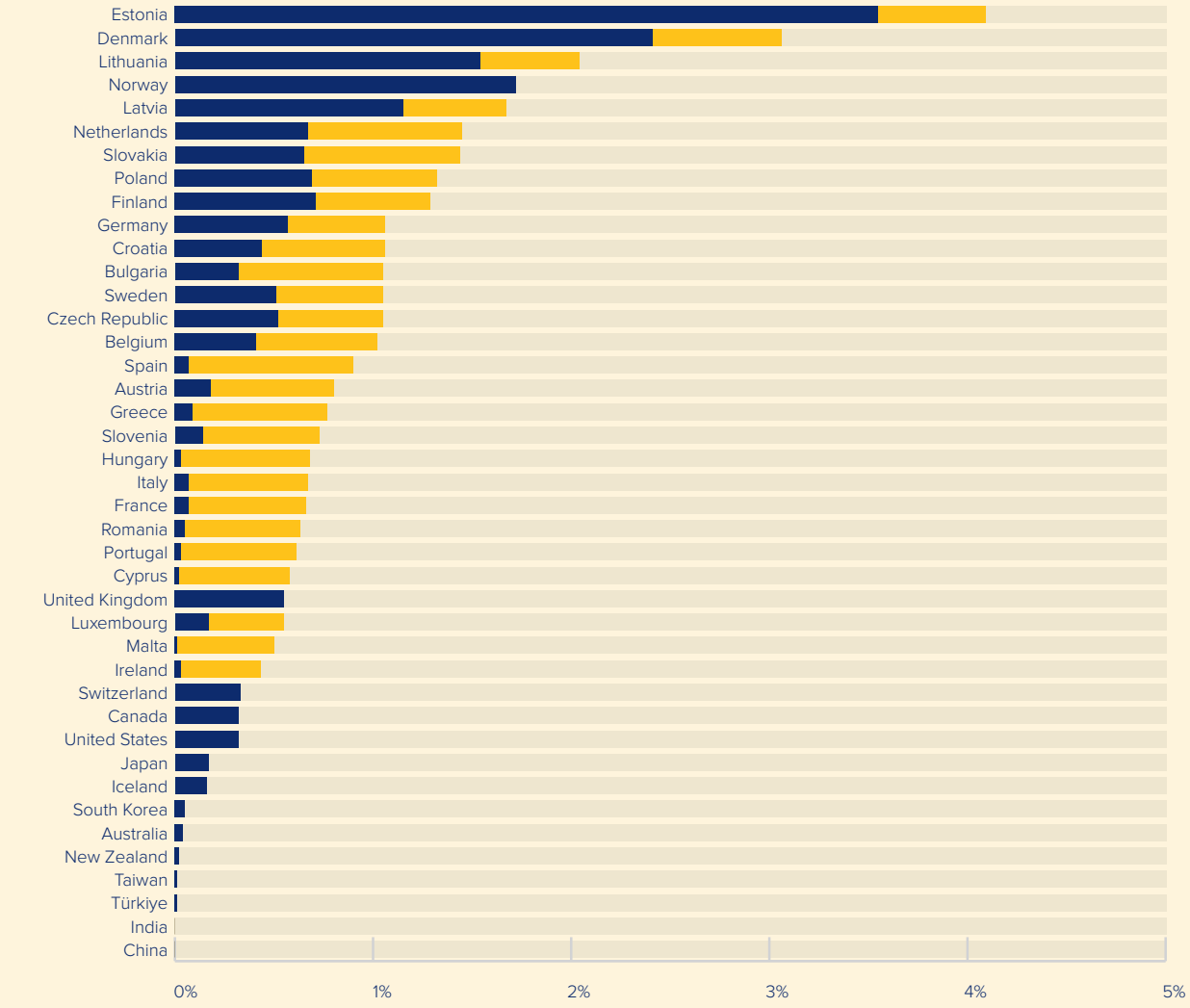
Ukraine's GDP shrank by a staggering 29% in 2022, then grew nearly 5% in 2023. The IMF predicts 3.2% growth for 2024.

Table 5. Top 25 Donors to Ukraine, January 2022-January 2024: Total Bilateral Commitments plus Refugee Costs ($Billions)



Commitments Jan. 24, 2022 to Jan. 15, 2024. Exchange rate: EUR 1 = USD 1.08.
Source: The Ukraine Support Tracker, Kiel Institute for the World Economy, https://www.ifw-kiel.de/topics/war-against-ukraine/ukraine-support-tracker/.

Table 6. Donors to Ukraine By Share of GDP, January 2022 to January 2024 ($Billions)



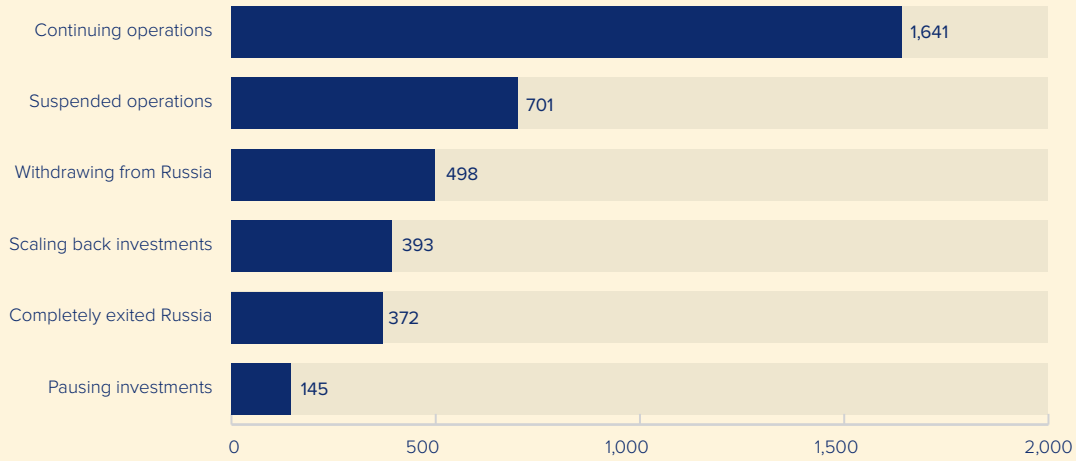
Commitments Jan. 24, 2022 to Jan. 15, 2024.
Source: The Ukraine Support Tracker, Kiel Institute for the World Economy, https://www.ifw-kiel.de/topics/war-against-ukraine/ukraine-support-tracker/.

Box 2. Sanctioning Russia: "A Slow Puncture"

North America and Europe continue to sharpen and expand the sanctions they have imposed on Russia because of Moscow's aggression against Ukraine. The sanctions, unprecedented in scope and scale, encompass over 15,300 designations against individuals, entities, and assets.[7] They are intended to impose severe consequences on Moscow for its actions and to hamper its ability to sustain its war. More than $300 billion of Russian central bank assets and $22 billion of Russian oligarchs' money have been frozen; the G7 is considering whether to seize those funds to use as a backstop to issue debt for Ukraine. Much of the Russian financial sector has been disconnected from the SWIFT payments network. Exports of high-tech components and other materials critical to the Russian economy have been blocked, as have flights, shipping, maintenance, and insurance services. The G7 has banned imports of Russian non-industrial diamonds, another important source of revenue. In February 2024, the EU approved its 13th package of sanctions; the U.S. sanctioned an additional 500 individuals and entities and added 90 companies to the Entity List; and the UK added an additional 50 sanctions. In December 2023, the U.S. issued a new executive order targeting any institutions determined to be conducting or facilitating any significant activities related to Russia's military industrial base. The EU is considering a ban on imports of Russian aluminum. Foreign investment has dried up. Broadcasting activities and licenses of several Kremlin-backed disinformation outlets have been banned in many countries. Additional sanctions have been imposed on Belarus, for its involvement in Russia's invasion, and on Iran over the supply of drones to Russia. Notably, the sanctions do not block the export of and transactions related to food and agricultural products.

Following the February 2022 invasion, more than 1,000 foreign companies announced plans to leave Russia. Data from the Kyiv School of Economics reveals a more complicated picture. As of February 2024, 870 companies have withdrawn or exited Russia completely. 846 have paused or suspended operations, while 393 have scaled back. 2,179 companies are continuing their activities. Many familiar brands have left the country; most that are left are smaller companies. Those seeking to withdraw are finding it difficult. Moscow is demanding that they pay donations to the state and sell their holdings in rubles and at deep discounts.[8]

Table 7. How Foreign Companies Are Changing Their Relationships with Russia (Number of Companies)



As of February 2024.
Source: "Stop Doing Business with Russia," Kyiv School of Economics Institute, March 2, 2024, https://leave-russia.org/leaving-companies.

In the critical energy field, the U.S. banned all imports of Russian oil, liquefied natural gas and coal. The EU banned imports of Russian coal and other solid fossil fuels, crude oil, and refined petroleum products, with limited exceptions. In December 2022, the G7 determined that any buyers of Russian oil would have to pay less than $60 per barrel if they wanted to use G7-registered ships, trading or insurance services. The allies reasoned that the price cap was just high enough to keep Russian oil on the market, avoiding further energy disruptions, while low enough to limit the Kremlin's ability to finance its war in Ukraine.[9]

Despite these efforts, Western countries continue to import Russian enriched uranium to fuel their nuclear reactors. The United States is the largest global purchaser, accounting for 42% of all Russian enriched uranium exports in 2022. Russia, in turn, is the United States' number one supplier of enriched uranium supplies, sending almost a quarter of the nuclear fuel (valued at around $1 billion) used in the U.S. commercial reactor fleet. Most of the rest is imported from Europe, led by a British-Dutch-German consortium operating in the United States called Urenco.[10] European enriched uranium dependencies are similar. Nearly a third of EU enriched uranium came from Russia in 2022, even though several EU countries have significant enrichment capacity. France (18.6%), the Netherlands (2.7%), and Germany (2%) collectively imported 23% of Russian enriched uranium and associated products.[11]

Impact on Russia

The short-term impact of these measures on Russia has been mixed. The pain points are numerous. Russian living standards have eroded. The Russian economy is 5% smaller than predicted prior to the war. The Russian central bank estimates that a record $253 billion in private capital left the country in the 16 months following the invasion, four times the previous level of outflows. Western restrictions have cost Russia $100 billion in oil revenues since February 2022, according to the Kyiv School of Economics. Russian companies have been cut off from Western markets and have been forced to reorient their supply chains. The values of some state-owned enterprises have slumped 75% since the invasion, and many private-sector assets have halved in value. Inflation is running at 7.5%. Serious labor shortages are afflicting both the civilian economy and the military-industrial sector. Moscow's weapons production capacity has been degraded, and it has been forced to turn to Iran for drones and drone parts, and to North Korea for artillery shells and rockets. Moscow has allocated 39% of its 2024 budget to defense; military spending will exceed social spending.[12]

In other respects, however, the Russian economy has weathered the situation better than expected. Russia's central bank avoided a catastrophic financial crisis by imposing capital controls and hiking interest rates. The IMF estimates that the Russian economy grew 2.2% in 2023, fueled by a fiscal stimulus that was greater than the Kremlin's efforts to keep the Russian economy afloat during the COVID-19 pandemic. The IMF expects the Russian economy in 2024 to grow 2.6%, fueled by massive military spending. Many Russian banks, including Gazprombank, still have access to SWIFT, enabling Russia to conduct cross-border payments and transactions for imports and exports.

China has stepped in to become an important source of finance for Russian firms. Many critical raw materials still flow from Russia to the EU. Businesses have found ways to work around the sanctions. Despite the EU's determination to wean itself from Russian gas, Russian LNG exports to Europe have increased, and more than a fifth of those flows are transshipped through European ports to other parts of the world, boosting Russian revenues.[13] According to the Kyiv School of Economics, Russia obtained at least one-third of its foreign-sourced priority battlefield components, valued at $7.3 billion, from U.S. and allied companies in 2023. Russia imported more than $1 billion in U.S. and European advanced chips last year. Russian entities are able to obtain dual-use technology from Western companies through resellers and manufacturers in countries that are not part of the sanctions coalition. The largest share of these goods — worth around $1.9 billion – was produced in China.[14]

Russia is also circumventing the oil price cap. Russia is selling crude oil above the G7 price cap of $60 per barrel and is moving 71% of its oil to Indian, Chinese, Turkish and other buyers through a "shadow fleet" of tankers that operate without Western insurance or other services.[15]

India increased its purchases 140% in 2023 to become the world's leading importer of Russian

crude oil, according to Kpler. India is buying discounted Russian crude oil, then refining that oil and selling the refined products in Europe and elsewhere. EU imports of refined oil products from India soared 115% in 2023 to a record 231,800 barrels per day. Due to these types of circuitous mechanisms, the EU remains the largest importer of fossil fuel energy from Russia despite Western restrictions.[16]

As time wears on, Russian prospects look much bleaker. EU sanctions lead David O'Sullivan describes Western efforts as a "slow puncture" of the Russian economy. Russian Central Bank Elvira Nabiullina has acknowledged that the economy "might go fast, but not for long."[17] Bloomberg Economics estimates that Russia's economy is on track to lose $190 billion in GDP by 2026, relative to its prewar path. Heavy government spending on the war is bleeding the Kremlin's reserves. The ruble's seeming stability relies on unsustainably strict currency controls. Moscow is still selling oil to countries like India and China, but mostly at steep discounts. Moreover, its land-based energy infrastructure points west; it cannot easily switch out China and India for Europe. And it will be unable to maintain, let alone expand, its energy production without Western technology. The International Energy Agency forecasts that Russia's oil and gas exports could fall by at least 40-50% by 2030 if Western restrictions on Russia's energy industry are maintained.[18] Russian planes are flying only because those on the ground have been cannibalized for parts. Hundreds of thousands of talented and educated Russian professionals are leaving the country. In the end, this vast brain drain may prove to be the most crippling for Russia's economy and society.[19]

Notes

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2

Jobs, Trade and Investment: Cyclical Weakness, Structural Strength

Share of world GDP

30%

U.S. and EU27 + UK

31%

Regional Comprehensive Economic Partnership (RCEP)

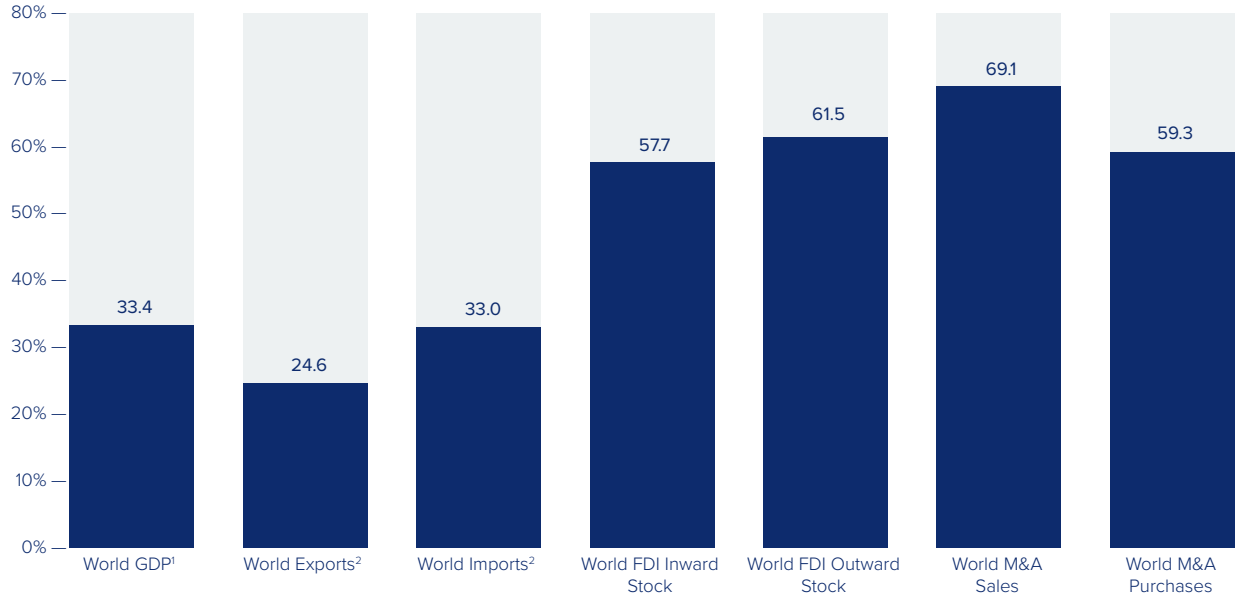
Lenin once quipped that "there are decades where nothing happens; and there are weeks where decades happen." So it is with the 2020s. While barely at the half mark of this decade, the world economy has been buffeted by a global pandemic, Russia's stunning war of aggression in the heart of Europe, an Israel-Hamas conflict that could engulf the broader Middle East, ongoing violence across large swathes of Africa, massive movements of displaced peoples, major disruptions to flows of goods, services, and commodities, and a spike in inflationary pressures reminiscent of the 1970s. Rarely have the challenges seemed so acute.

Compounding matters, the contours of globalization are shifting. Even before this decade began, the world economy was being splintered by great power rivalries, weaponization of interdependencies, rising barriers to trade and investment, resource protectionism, and calls for firms to "reshore," "near-shore," or "friend-shore" production.

Globalization is not dead, but it is being refined and reconfigured. U.S. and European multinationals confront a more challenging environment. Firms are increasingly focused on building more resiliency into their supply chains and securing critical inputs to production. This doesn't mean they are turning their backs on the world. Instead, they are diversifying their sourcing and reinforcing the foundations of their success. Most are derisking rather than decoupling, as we discuss in Chapter 3. And for many, the dense transatlantic linkages they have built over decades are an anchor in the storm.

The two sides of the North Atlantic remain deeply intertwined and embedded in each other's markets. This is not likely to change any time soon, given the deep and entangled commercial ties that link the transatlantic economy, and the fact that shareholders and stakeholders on both sides of the pond directly benefit from deep transatlantic integration. The fact that the United States and Europe are each embroiled in increasingly contentious commercial and geopolitical tensions with Russia and China also suggests transatlantic cooperation will endure. And the post-pandemic world of tighter energy supplies and tighter labor markets portends thicker transatlantic ties.

Table 1. The Transatlantic Economy vs the World (Share of World Total)



Sources: UN, IMF, figures for 2022.Transatlantic economy measured as U.S., EU, UK, Norway, Switzerland and Iceland.
1. Based on PPP estimates.
2. Excluding intra-EU, U.K., Norway, Switzerland and Iceland trade.

The two sides of the North Atlantic remain deeply intertwined and embedded in each other's markets.

The transatlantic economy remains a central pillar of the global economy. The combined output of the United States and the EU 27 plus UK accounted for roughly 30% of world GDP in terms of purchasing power parity in 2023. That is higher than the combined output of China and India (26% of world GDP) and on par with the combined output of the Regional Comprehensive Economic Partnership (RCEP) in Asia of 31% of GDP.

The transatlantic economy is not only larger than the twin giants of Asia but also significantly wealthier. And because wealth matters, it is little wonder that consumers in the United States and the EU easily outspend their counterparts in China and India. The transatlantic consumer accounted for 51% of global personal consumption in 2022, the last year of available data, versus a combined share of just 15.7% for China and India. Per capita incomes – a key metric of a nation's wealth – matter and on this score, it is no contest. The United States (with an estimated per capita income of roughly $80,000 in purchasing power parity terms in 2022) and the European Union (est. $57,000) are far wealthier than China ($23,000) and India ($9,000).

In addition to the above, the transatlantic economy is a repository of innovation and technological advancement, and at the forefront of global foreign direct investment and global mergers and acquisitions (M&A) activity. Taken together, U.S. and European goods exports to the world (excluding intra-EU trade) accounted for roughly 20% of global goods exports in 2022, the last year of complete data. But the two parties accounted for 65% of global inward stock of foreign direct investment (FDI) and 65% of outward stock of FDI. Each partner has built up the great majority of that stock in the other economy. Mutual investment in the North Atlantic space is very large, dwarfs trade, and has become essential to U.S. and European jobs and prosperity. Over 70% of M&A purchases are by U.S. and European companies.

It is no surprise, therefore, that the largest commercial artery in the world stretches across the Atlantic. Total transatlantic foreign affiliate sales were estimated at $6.5 trillion in 2022, easily ranking as the most integrated commercial partnership in the world, on account of the thick investment ties between the two parties. Below, we further dissect the activities of foreign affiliates on both sides of the pond.

Beyond Europe, only Canada and Japan have a significant economic presence in the United States.

The Ties That Bind – Quantifying the Transatlantic Economy

We have long made the case that when it comes to global commerce, traditional trade statistics are incomplete and misguided metrics when measuring the level of global engagement between two parties. Global commerce beats to the tune of foreign direct investment and affiliate sales, not cross-border trade. Hence, it is the activities of foreign affiliates – the foot soldiers of the transatlantic partnership – that bind the United States and Europe together. Investment, not trade, drives U.S.-European commerce. Understanding this dynamic is essential to understanding the enduring strength and importance of the transatlantic economy.

Over the past years, we have outlined and examined eight key indices that offer a clear picture of the "deep integration" forces binding the U.S. and Europe together. This chapter updates those indices with the latest available data and our estimates. Each metric, in general, has ebbed and flowed with cyclical swings in transatlantic economic activity, but has nevertheless grown in size and importance over the past decade.

1. Gross Product of Foreign Affiliates

As standalone entities, U.S. affiliates in Europe and European affiliates in the United States are among the largest and most advanced economic forces in the world. The total output, for instance, of U.S. foreign affiliates in Europe (an estimated $800 billion in 2022) and of European foreign affiliates in the United States (estimated at $730 billion) was greater than the total gross domestic product of most countries. Combined, transatlantic affiliate output – more than $1.5 trillion – was larger than the total output of such countries as Mexico, the Netherlands, or Indonesia.

Affiliate output has rebounded from the depressed levels of 2020, when transatlantic activity came to a near standstill due to the pandemic. European affiliate output in the United States has continued to rise, owing to stronger-than-expected growth in the U.S., with European affiliates in the United States operating in one of the most dynamic

Total output of foreign affiliates

$800 billion

U.S. affiliates in Europe (2022 estimate)

$730 billion

European affiliates in the U.S. (2022 estimate)

U.S. foreign assets in Europe (2021)

$18.6 trillion

64%

of total U.S. foreign assets globally

economies in the world. On the other side of the pond, growth across Europe has slowed over the past few years, but U.S. firms have continued to expand and profit from their affiliate activities.

On a global basis, the aggregate output of U.S. foreign affiliates was around $1.6 trillion in 2022, with Europe (broadly defined) accounting for around half of the total. According to the U.S. Bureau of Economic Analysis (BEA), U.S. affiliate output in Europe ($771 billion) in 2021 was 76% greater than affiliate output in the entire Asia-Pacific region ($437 billion).

In the United States, meanwhile, European affiliates are major economic producers, with British and German firms of notable importance.

In 2021, the most recent year for which complete data is available, British companies' output in the U.S. reached $172 billion. That represents about one-quarter of the European total. For the same year, output from German affiliates operating in the United States totaled $135 billion, or nearly 20% of the European total. Off the back of strong U.S. economic growth in 2022, we estimate that output of both British and German affiliates in the U.S. rose by 5%, with the former totaling an estimated $180 billion in 2022, and the latter $140 billion.

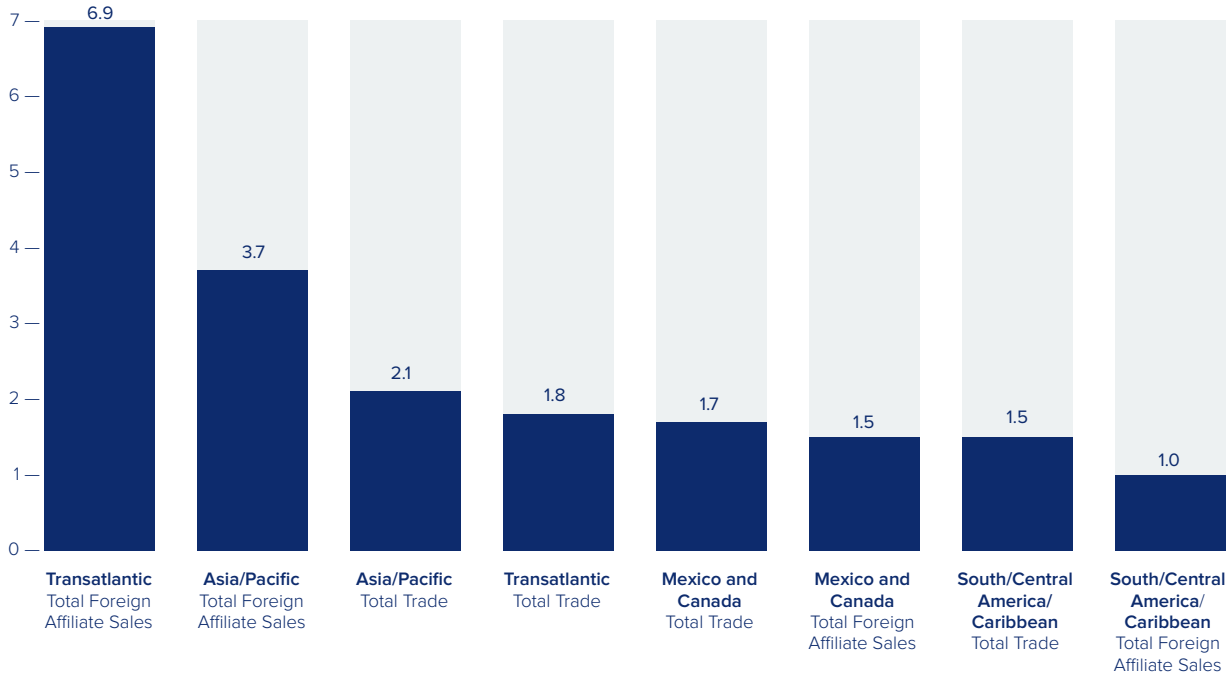
In 2021, the last year of available data, European affiliates in the United States accounted for nearly 61% of the roughly $1.2 trillion that affiliates of foreign multinationals contributed overall to U.S. aggregate production.

Beyond Europe, only Canadian and Japanese investors have any real economic presence in the United States. Japanese affiliate output totaled nearly $159 billion in 2021, the last year of complete data, while Canadian affiliate output totaled $136 billion. Foreign direct investment from China in the United States over the past few years has plummeted due to bilateral commercial tensions and tighter U.S. scrutiny of such investments. Chinese affiliate output in the U.S. totaled just $15 billion in 2021, less than that of Sweden ($21 billion).

2. Assets of Foreign Affiliates

The global footprint of corporate America and corporate Europe is second to none, with each party each other's largest foreign investor. According to the latest figures from the BEA, U.S. foreign assets in Europe totaled $18.6 trillion in 2021, representing roughly 64% of the global total.

Table 2. **America's Major Commercial Arteries** ($Trillions)



Foreign Affiliate Sales: Author's estimates for 2022. Total Trade: Data for goods & services, 2022. South/Central America and Caribbean includes Mexico.
Source: Bureau of Economic Analysis.

For 2022, we estimate that U.S. foreign assets in Europe rose 4% to $19.3 trillion as the continent emerged from the pandemic. The bulk of U.S. assets in Europe was in the United Kingdom: $6.9 trillion in 2021, the last year of available data, or around 22% of the global total.

U.S. assets in the Netherlands (around $3.1 trillion) were the second largest in Europe in 2021. America's significant presence in the Netherlands reflects its strategic role as an export platform/ distribution hub for U.S. firms doing business across the continent. To this point, more than half of U.S. affiliate sales in the Netherlands are for export, particularly within the EU.

Meanwhile, America's asset base in Germany topped $1.2 trillion in 2021, more than a third larger than its asset base in all South America. America's asset base in Poland, the Czech Republic and Hungary (roughly $225 billion) was greater than corporate America's assets in South Korea ($161 billion). America's assets in Ireland ($2 trillion in 2021) were light years ahead of those in China ($527 billion).

Europe's stakes in the United States are also sizable and significant. Total assets of European affiliates in the United States were valued at $9.3 trillion in 2022, by our estimation. UK firms ranked first, followed by German, Swiss and French companies. In 2021, the last year of available data, European assets in the United States accounted for over 51% of all foreign owned assets in the United States.

3. Affiliate Employment

U.S. and European foreign affiliates are a major source of employment for the general transatlantic workforce. Indeed, on a global basis, affiliates of both U.S. and European parents employ more workers in the United States and Europe than in other places in the world. Most foreign workers on the payrolls of U.S. foreign affiliates are employed in developed countries, notably in Europe.

U.S. foreign affiliate employment in Europe has increased steadily since the turn of the century, with affiliate employment in Europe rising from 3.7 million workers in 2000 to 4.6 million workers in 2021, the last full year of available data. That represents a near 25% increase. We estimate that U.S. foreign affiliates in Europe employed over 4.7 million workers in 2022.

Of the overall total, U.S. affiliate employment in manufacturing in Europe totaled 1.8 million workers in 2021, a modest decline from 1.9 million in 2000. The country composition has changed, with more investment shifting to lower-cost locales like Poland and Hungary versus high-cost economies like the UK and France. The largest employment declines were reported in the UK, with the total U.S. affiliate manufacturing workforce falling from 431,000 in 2000 to 284,000 in 2021. U.S. manufacturing employment in France dropped from 249,000 to 182,000, while a smaller decline from 388,000 to 362,000 was reported in Germany between 2000 and 2021. In terms of net gains in manufacturing jobs, Poland has been a significant winner, with U.S. affiliate manufacturing employment growing almost three times, from 51,000 in 2000 to over 136,000 in 2021.

Table 3. Transatlantic Jobs
(Thousands of employees, 2022*)

Country	U.S. Companies in Europe	European Companies in the U.S.
Austria	30.3	39.7
Belgium	121.9	78.6
Czech Republic	76.1	3.2
Denmark	39.5	50.0
Finland	22.6	35.4
France	502.7	767.1
Germany	667.2	955.9
Greece	19.3	3.8
Hungary	60.2	0.2
Ireland	165.4	365.9
Italy	244.6	103.3
Luxembourg	29.7	46.0
Netherlands	240.4	624.2
Norway	38.7	7.5
Poland	227.3	1.2
Portugal	35.2	0.9
Spain	187.2	85.8
Sweden	65.1	216.0
Switzerland	99.4	393.6
United Kingdom	1,374.5	1,265.6
Europe	**4,749.0**	**5,066.2**

Source: Bureau of Economic Analysis.
**2022 Estimates. Majority-owned bank and non-bank affiliates.*

U.S. foreign affiliate employment in Europe
(2022 estimate)
4.7 million workers

European foreign affiliate employment in the U.S.
(2022 estimate)
5 million workers

Roughly 33% of all manufacturing workers employed by U.S. foreign affiliates outside the United States in 2021 were based in Europe.

On a global basis, U.S. majority-owned affiliates (including banks and non-bank affiliates) employed 13.8 million workers in 2021, with the bulk of these workers – roughly 33% – toiling in Europe. That share is down from 41% in 2009. That decline is in part a consequence of Europe's cyclical slowdown for some years, and in part because U.S. overseas capacity is expanding at a faster pace in faster-growing emerging markets than slower-growth developed nations. Another factor at work: more and more U.S. firms are opting to stay home due to competitive wage and energy costs, as opposed to shipping more capacity abroad. The sweeping overhaul of the U.S. corporate tax code in 2017, which significantly lowered America's tax rate relative to many in Europe, has spurred more investment to come home or stay in the United States. So too have the massive U.S. fiscal programs that incentives and subsidies for semiconductors, clean energy, and infrastructure production. More on those in Chapters 3, 4 and 6. That said, however, with the U.S. labor market at its tightest in decades, U.S. firms are even more dependent on European workers to drive production and sales.

Most employees of U.S. affiliates in Europe live in the UK, Germany, and France. Meanwhile, U.S. majority-owned firms are on balance hiring more people in services activities than in manufacturing. The latter accounted for 38% of total U.S. foreign affiliate employment in Europe in 2021. The key industry in terms of manufacturing employment was transportation equipment, with U.S. affiliates employing nearly 312,000 workers, followed by chemicals (262,000). Wholesale employment was among the largest sources of services-related employment, which includes employment in such activities as logistics, trade, insurance, and other related functions.

Although services employment among U.S. affiliates has grown at a faster pace than manufacturing employment over the past decade, according to our estimates U.S. affiliates employed slightly more manufacturing workers in Europe in 2022 (1.8 million) than in 1990 (1.6 million). This reflects the EU enlargement process, and hence greater access to more manufacturing workers, and the premium U.S. firms place on highly skilled manufacturing workers, with Europe one of the largest sources in the world.

When it comes to affiliate employment, trends in the United States are like those in Europe. Despite stories on the continent about local European companies relocating to lower cost locales in eastern Europe and Asia, most foreign workers of European firms are employed in the United States. Based on the latest figures, European majority-owned foreign affiliates directly employed 4.9 million U.S. workers in 2021. We estimate the number to have reached 5 million in 2022. The top five European employers in the United States were firms from the UK (1.2 million jobs), Germany (924,000), France (741,000), the Netherlands (603,000) and Switzerland (380,000). European firms employed roughly two-thirds of all U.S. workers on the payrolls of majority-owned foreign affiliates in 2021.

In the aggregate, by our estimation, the transatlantic workforce directly employed by U.S. and European foreign affiliates totaled close to 10 million workers in 2022.

One reminder: as we have stressed in the past, these figures understate the employment effects of mutual investment flows, since these numbers are limited to direct employment, and do not account for indirect employment effects on nonequity arrangements such as strategic alliances, joint ventures, and other deals. Moreover, foreign employment figures do not include jobs supported by transatlantic trade flows. Trade-related employment is sizable in many U.S. states and many European nations. In the end, direct and indirect employment remains quite large. We estimate that the transatlantic workforce numbers more than 16 million workers, counting both direct affiliate employees as well as those whose jobs are supported by transatlantic trade. Europe is by far the most important source of "onshored" jobs in America, and the United States is by far the most important source of "onshored" jobs in Europe.

4. Research and Development (R&D) of Foreign Affiliates

This decade has seen an acceleration in the globalization of R&D. A significant portion of global R&D expenditures now emanates from Asia, particularly China. Beijing is unrelentingly focused on being a global leader in artificial intelligence, quantum computing, space exploration, cyber security, life sciences, electric vehicles, supercomputing, semiconductors and 5G wireless devices. Beijing's long-term goal is to become an "international innovation leader" by 2030 and a "world powerhouse of scientific and technological innovation" by 2050.

While governments and corporations are the main drivers of R&D spending, foreign affiliates of

multinationals are also in the thick of things. In fact, foreign affiliate R&D has become more prominent as firms seek to share development costs, spread risks, and tap into the intellectual talent of other nations. Alliances, cross-licensing of intellectual property, mergers and acquisitions, and other forms of cooperation have become more prevalent characteristics of the transatlantic economy. The digital economy has become a powerful engine of greater transatlantic R&D. The complexity of scientific and technological innovation is leading innovators to partner and share costs, find complementary expertise, gain access to different technologies and knowledge quickly, and collaborate as part of "open" innovation networks. Cross-border collaboration with foreign partners can range from a simple one-way transmission of information to highly interactive and formal arrangements. Developing new products, creating new processes, and driving more innovation – all these activities result from more collaboration between foreign suppliers and U.S. and European firms. And all this collaboration, regardless of sector or industry, is dependent on the ability to transfer data across borders, as we discuss in Chapter 5.

Transatlantic flows in R&D are the most intense between any two international partners.

Table 4. Top 20 R&D Spenders

		R&D Spending			
Rank	Company	2022 (€Billions)	Change from 2021 (%)	Country	Industry
1	Alphabet	37.0	25.2	U.S.	Software & Computer Services
2	Meta	31.5	36.4	U.S.	Software & Computer Services
3	Microsoft	25.5	10.9	U.S.	Software & Computer Services
4	Apple	24.6	19.8	U.S.	Technology Hardware & Equipment
5	Huawei Investment & Holding	20.9	10.6	China	Technology Hardware & Equipment
6	Volkswagen	18.9	21.3	Germany	Automobiles & Parts
7	Samsung Electronics	18.4	10.3	South Korea	Electronic & Electrical Equipment
8	Intel	16.4	15.4	U.S.	Technology Hardware & Equipment
9	Roche	14.3	2.5	Switzerland	Pharmaceuticals & Biotechnology
10	Johnson & Johnson	13.7	-0.8	U.S.	Pharmaceuticals & Biotechnology
11	Merck Us	11.1	14.2	U.S.	Pharmaceuticals & Biotechnology
12	Pfizer	10.7	-1.5	U.S.	Pharmaceuticals & Biotechnology
13	General Motors	9.2	24.1	U.S.	Automobiles & Parts
14	Astrazeneca	8.9	18.5	UK	Pharmaceuticals & Biotechnology
15	Bristol-Myers Squibb	8.8	-10.5	U.S.	Pharmaceuticals & Biotechnology
16	Toyota Motor	8.8	10.4	Japan	Automobiles & Parts
17	Novartis	8.5	0.5	Switzerland	Pharmaceuticals & Biotechnology
18	Mercedes-Benz	8.5	-5.2	Germany	Automobiles & Parts
19	Tencent	8.2	18.4	China	Software & Computer Services
20	Oracle	8.1	19.4	U.S.	Software & Computer Services
		265.5	**17.9**		

Source: The 2022 EU Industrial R&D Investment Scoreboard. Data as of December 2023.
Note: Only companies that disclose their R&D figures according to the Scoreboard methodology can be included in the ranking. Excluded from the ranking is Amazon which, according to the Scoreboard, would be positioned at #1 in the world R&D ranking if it had separated its R&D and content investments in its annual report

R&D spending of foreign affiliates
(2021)
$37.5 billion
U.S. in Europe
$54 billion
Europe in the U.S.

Bilateral U.S.-EU flows in R&D are the most intense between any two international partners. In 2021, the last year of available data, U.S. affiliates spent $37.5 billion on research and development in Europe. On a global basis, Europe accounted for roughly 54% of total U.S. R&D in 2021. R&D expenditures by U.S. affiliates were the greatest in the United Kingdom ($7.7 billion), Germany ($6.7 billion), Switzerland ($6.1 billion), Ireland ($4.8 billion), Belgium ($2.7 billion) and France ($2,2 billion). These six countries accounted for roughly 83% of U.S. spending on R&D in Europe in 2021.

In the United States, meanwhile, expenditures on R&D performed by majority-owned foreign affiliates totaled $78.3 billion in 2021. As in previous years, a sizable share of this R&D spending emanated from world-class leaders from Europe, given their interest in America's highly skilled labor force and world-class university system. Most of this investment by European firms took place in such research-intensive sectors as autos, energy, chemicals, and telecommunications. In 2021, R&D spending by European affiliates accounted for $54 billion, or 69%, of total foreign R&D spending in the United States. On a country basis, Swiss firms were the largest foreign source of R&D in the United States in 2021, spending some $13 billion, or 24% of the total of European R&D. German firms ranked second, with $11.2 billion, or 21% of the total, followed by British and Dutch companies. As Table 4 highlights, almost all the world's most innovative enterprises are domiciled in the United States or Europe.

5. Intra-firm Trade of Foreign Affiliates

While cross-border trade is a secondary means of delivery for goods and services across the Atlantic, the modes of delivery – affiliate sales and trade – should not be viewed independently. They are more complements than substitutes, since foreign investment and affiliate sales increasingly drive cross-border trade flows. Indeed, a substantial share of transatlantic trade is considered intrafirm or related-party trade, which is cross-border trade that stays within the ambit of the company. Intra-firm or related party-trade occurs when BMW or Siemens of Germany sends parts to BMW of South Carolina or Siemens of North Carolina; when Lafarge or Michelin sends intermediate components to their Midwest plants, or when General Motors or 3M ships components from Detroit, Michigan or St. Paul, Minnesota to affiliates in Germany or the UK. All these examples are at the core of interconnected global supply chains.

Table 5. Related-Party Trade (2020)

Country	U.S. Imports: "Related Party Trade" (% of total)	U.S. Exports: "Related Party Trade" (% of total)
EU+UK	65	39
Germany	69	38
France	47	35
Ireland	85	38
Netherlands	74	58
UK	54	31

As of 2020. Source: U.S. Census Bureau. Data as of January 2022.

The tight linkages between European parent companies and their U.S. affiliates are reflected in the fact that roughly 65% of U.S. imports from the EU+UK consisted of intra-firm trade in 2021, the last year of available data. That is much higher than the intra-firm imports from Pacific Rim nations (around 40%) and well above the global average (48%). The percentage was even higher in the case of Ireland (85%) and Germany (68%).

Meanwhile, 39% of U.S. exports to the EU+UK in 2020 represented intra-firm trade, but the percentage is much higher for some countries. For instance, more than half of total U.S. exports to the Netherlands (58%) was classified as related-party trade. The comparable figure for Germany was 38% and for France it was 35%.

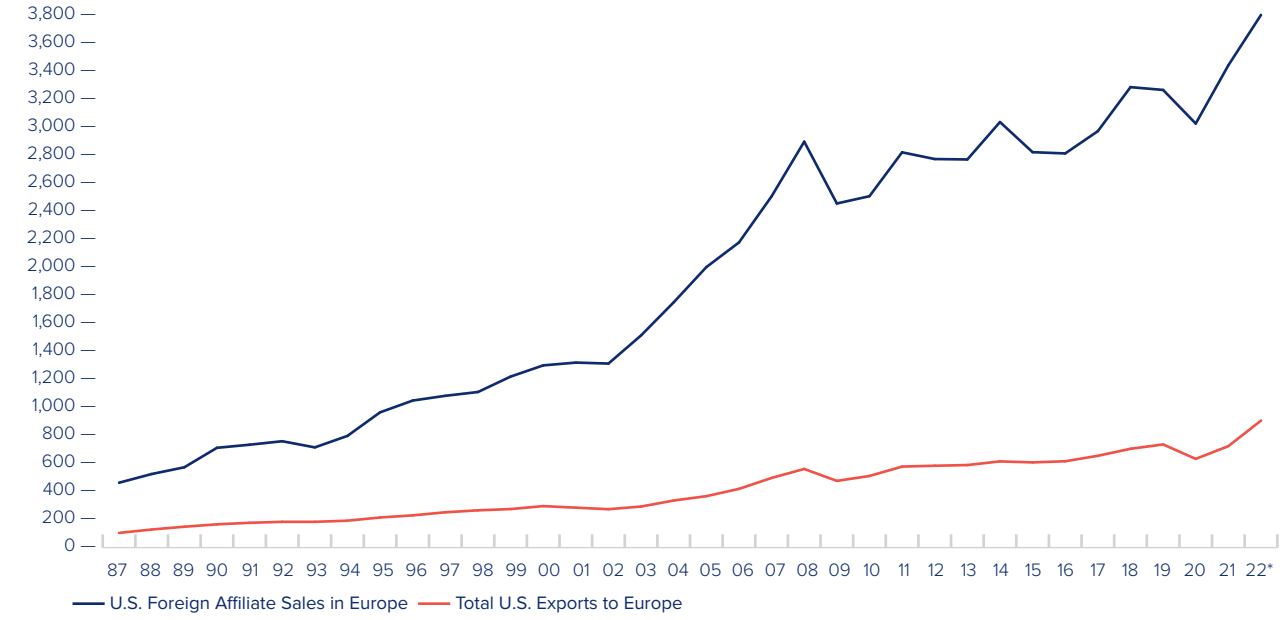
6. Foreign Affiliate Sales

U.S. majority-owned foreign affiliate sales on a global basis (goods and services) totaled an estimated $7.7 trillion in 2021. Total U.S. exports, in contrast, were $2.5 trillion in 2021, or roughly 33% of foreign affiliate sales. This gap underscores the primacy of foreign affiliate sales over U.S. exports. As we have noted many times before, one of the best kept secrets in Washington is how U.S. firms actually deliver goods and services to foreign customers.

As usual, Europe accounted for the bulk of U.S. affiliate sales in 2022. We estimate that U.S. foreign affiliate sales in Europe totaled $3.8 trillion, roughly half of the global total.

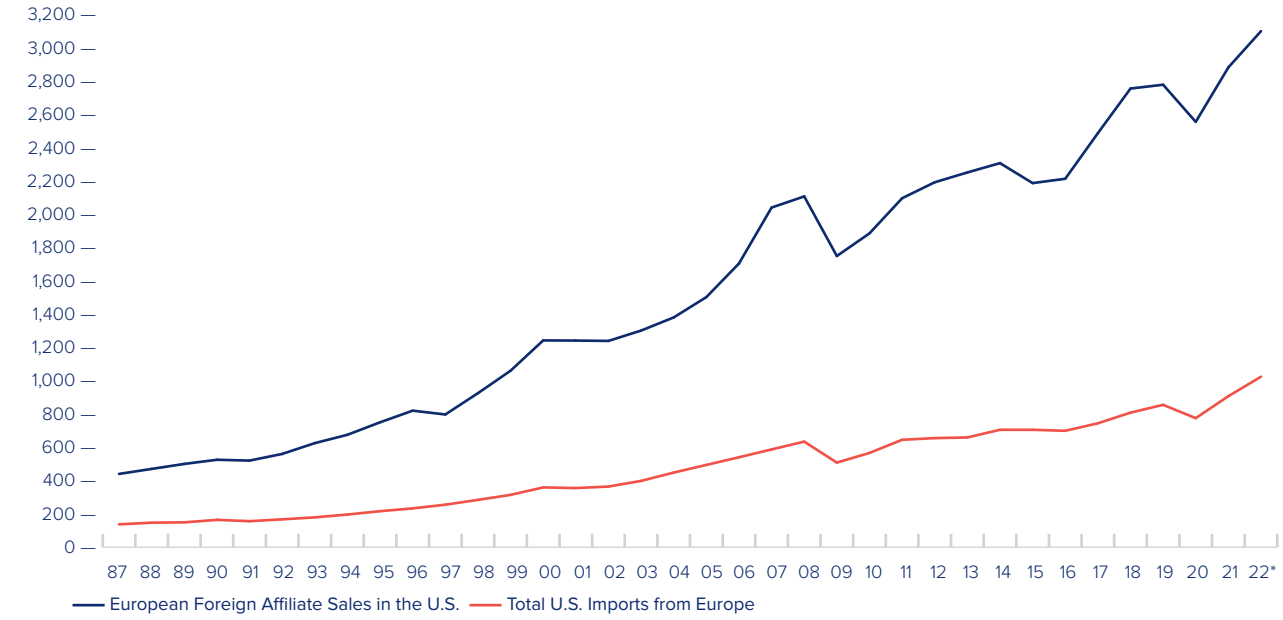
Foreign affiliate sales
(2022 estimate)
$3.8 trillion
U.S. in Europe
$3.1 trillion
Europe in the U.S.

Table 6. Sales of U.S. Affiliates in Europe vs U.S. Exports to Europe ($Billions)



Source: Bureau of Economic Analysis.
Majority-owned non-bank affiliates data: 1987 - 2008. Majority-owned bank and non-bank affiliates: 2009 - 2022.
**Foreign Affiliate Sales: Estimates for 2022.*

Table 7. Sales of European Affiliates in the U.S. vs U.S. Imports from Europe ($Billions)



Source: Bureau of Economic Analysis
Majority-owned non-bank affiliates: 1987 - 2006. Majority-owned bank and non-bank affiliates: 2007 - 2022.
**Foreign Affiliate Sales: Estimates for 2022.*

Transatlantic profits set record highs in 2023.

Foreign affiliate profits
(2023 estimate)
$350 billion
U.S. in Europe
$190 billion
Europe in the U.S.

Reflecting the primacy of Europe when it comes to U.S. foreign affiliate sales, sales of U.S. affiliates in Europe were roughly 56% larger than the comparable figures for the entire Asian region in 2021, the last full year of available data. Affiliate sales in the United Kingdom, totaling $723 billion, were notably double the total sales in South America, highlighting the UK's significant role in transatlantic commerce. Sales in Germany ($387 billion) were roughly double combined sales in Africa and the Middle East.

Affiliate sales are also the primary means by which European firms deliver goods and services to customers in the United States. In 2022, for instance, we estimate that majority-owned European affiliate sales in the United States ($3.1 trillion) were more than triple U.S. imports from Europe. By country, sales of British and German firms were the largest ($632 billion each) in 2021, followed by the Netherlands ($423 billion). For virtually all countries in Europe, foreign affiliate sales were easily more than their U.S. imports in 2021.

7. Foreign Affiliate Profits

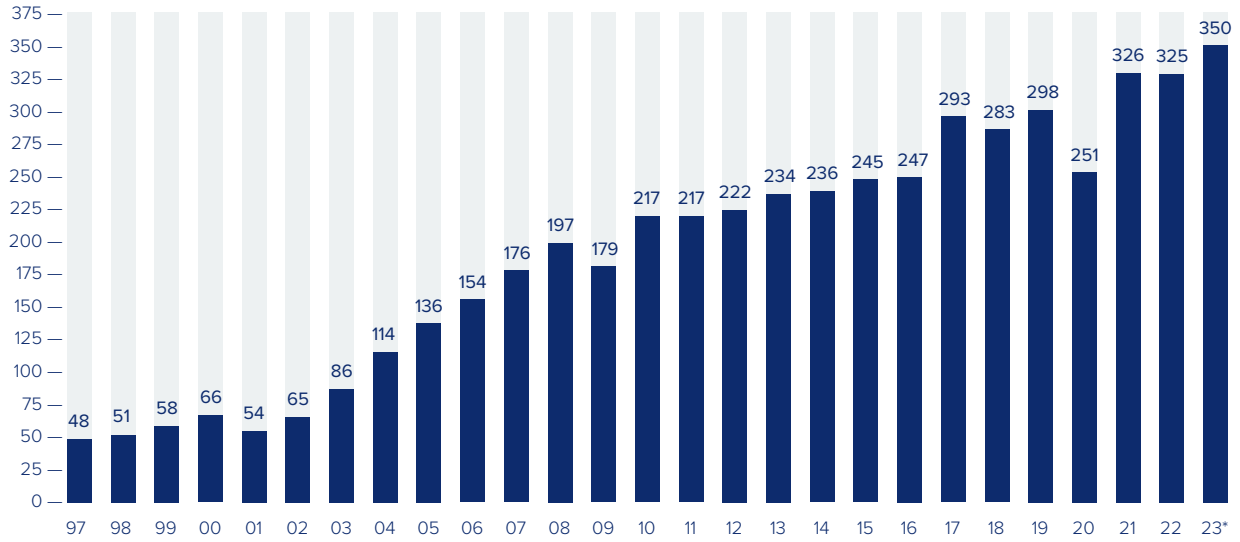
As we outlined in Chapter 1, transatlantic profits set record highs in 2023 by our estimates. U.S. affiliate income in Europe rose to a record $350 billion in 2023, while European affiliate income in the United States reached an all-time high of $190 billion. It was another solid year for profits – notwithstanding the tumult ripping through the global economy. As the key source of foreign profits for U.S. firms, the EU accounted for nearly 56% of U.S. global foreign affiliate income in the first nine months of 2023.

On comparative basis, U.S. affiliate income from Europe is simply staggering: $260 billion in the first nine months of 2023, about 2.7 times more than U.S. affiliate income in all of Asia ($85 billion). As a reminder, we define Europe here in very broad terms, including not only the EU27 but also the United Kingdom, Norway, Switzerland, Russia, and smaller markets in Central and Eastern Europe.

It is interesting to note that combined U.S. affiliate income from China and India in 2022 ($20 billion), the last year of full data, was a fraction of what U.S. affiliates earned/reported in the Netherlands, the United Kingdom, or Ireland.

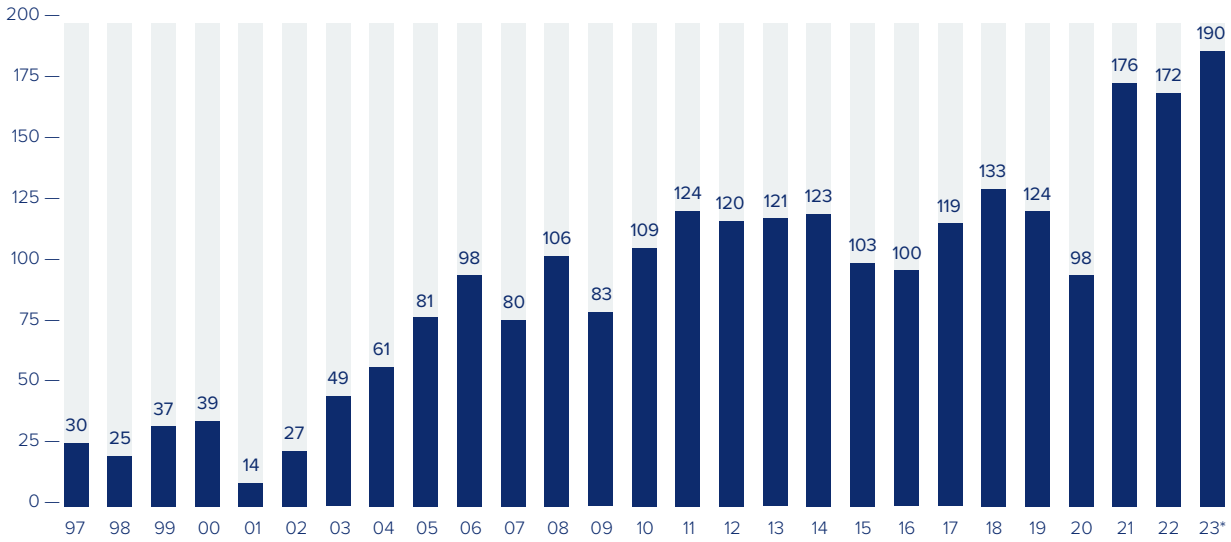
Still, there is little doubt that the likes of China, India and Brazil are becoming more important earnings engines for U.S. firms – notwithstanding strained U.S. trade relations with China. To this point, in the first nine months of 2023, U.S. affiliate income in China ($8.6 billion) was more than affiliate income in Germany ($7.8 billion), France ($5.2 billion), and Spain ($1.1 billion). U.S. affiliates in India earned $6.7 billion in the January-September period, well more than that earned in many European countries.

Table 8. **U.S. Foreign Affiliate Income Earned in Europe** ($Billions)



Source: Bureau of Economic Analysis.
**Data for 2023 is annualized using 3 quarters of 2023 data*

Table 9. An Historic High: European Affiliate Earnings in the U.S. ($Billion)



Source: Bureau of Economic Analysis.
**Data for 2023 is annualized using 3 quarters of 2023 data.*

All that said, we see rising U.S. affiliate earnings from the emerging markets as a complement, not a substitute, to earnings from Europe. The latter very much remains a key source of prosperity for corporate America. Similarly, the United States remains the most important market in the world in terms of earnings for many European firms.

8. Transatlantic Services

The United States and Europe are the largest services economies in the world. They are each other's largest services market, which means that when an exogenous shock like COVID-19 strikes, transatlantic services activities are most vulnerable. Although the pandemic battered numerous U.S.-European services activities in 2020, the transatlantic services markets have since rebounded robustly.

U.S. services exports to Europe totaled $402 billion in 2022, a sharp rise from the depressed levels of the pandemic-scarred years. The UK remains the largest market for U.S. services exports and the largest source of U.S. services imports.

U.S. services imports from Europe also rebounded in 2022, rising to $293 billion, up from $235 billion the year before. Against this backdrop, the U.S. services surplus with Europe, after falling to $94 billion in 2020, rose to $107 billion in 2022. This compares to a $202 billion trade deficit in goods for the same year. On a regional basis, Europe accounted for 43% of total U.S. services exports in 2022 and for 42% of total U.S. services imports.

Five out of the top ten global export markets for U.S. services in 2022 were in Europe. Ireland ranked first, followed by the United Kingdom (2nd), Switzerland (3rd), Germany (7th), and the Netherlands (10th). Of the top ten services providers to the United States in 2022, five were European states, with the UK ranking first, Germany second, Switzerland sixth, Ireland seventh, and France tenth.

Table 10. Top Markets for U.S. Services Trade ($Billions, 2024)

U.S. Services Exports

Rank	Total Services		Travel		Other Business		Financial		IP Charges		Transport		Telecom/Info Svcs	
1	Ireland	84.3	Mexico	15.5	Ireland	46.3	UK	22.2	Ireland	26.2	Germany	7.3	Canada	7.6
2	UK	82.0	China	13.9	Switzerland	26.0	Canada	9.6	Switzerland	18.3	UK	6.8	UK	7.1
3	Canada	71.3	Canada	13.2	Singapore	23.7	Luxembourg	6.8	China	8.4	Canada	6.7	Switzerland	4.6
4	Switzerland	55.6	India	12.4	Canada	20.2	Ireland	5.5	Canada	7.3	South Korea	6.2	Japan	4.2
5	China	41.5	UK	9.5	UK	18.3	Japan	5.3	Netherlands	7.0	Japan	6.1	Germany	3.8
6	Germany	40.9	Brazil	5.1	Germany	12.4	Australia	4.3	Japan	5.9	France	4.3	Ireland	3.6
7	Japan	38.3	Germany	4.5	Netherlands	11.6	China	4.2	Germany	5.6	Mexico	3.5	Australia	2.9
8	Mexico	37.7	South Korea	4.2	Japan	8.7	Germany	4.1	UK	5.5	China	3.5	Brazil	2.8
9	Singapore	34.3	France	3.9	Mexico	6.7	Mexico	3.4	Singapore	3.9	Brazil	3.3	China	2.4
10	Netherlands	27.8	Australia	3.5	China	5.6	Netherlands	3.3	Hong Kong	3.7	Switzerland	2.7	Mexico	2.3
	Total	**928.5**	**Total**	**136.9**	**Total**	**245.2**	**Total**	**167.7**	**Total**	**127.4**	**Total**	**91.0**	**Total**	**66.2**

U.S. Services Imports

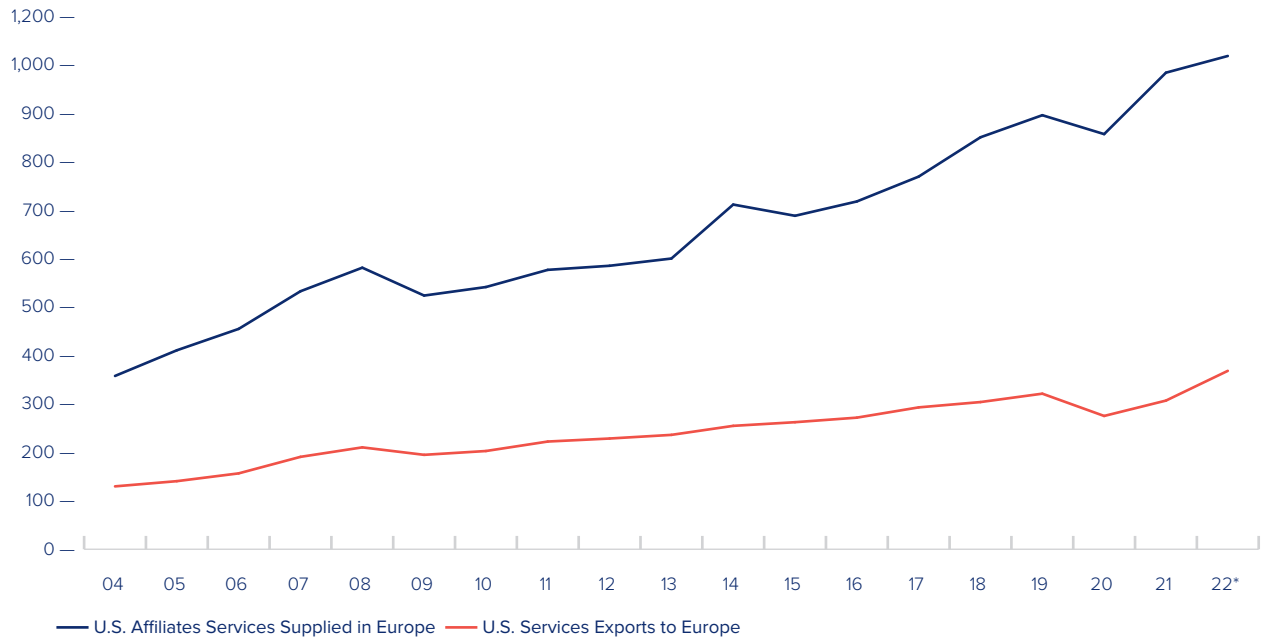
Rank	Total Services		Travel		Other Business		Financial		IP Charges		Transport		Telecom/Info Svcs	
1	UK	73.5	Mexico	23.1	UK	18.2	UK	17.4	Japan	12.2	Japan	13.4	India	12.7
2	Canada	44.6	UK	7.3	India	14.3	Canada	4.8	Germany	6.9	Germany	13.0	Canada	10.3
3	Germany	43.0	D.R.	5.6	China	10.9	Japan	2.5	Switzerland	6.4	France	12.1	Ireland	6.7
4	Japan	40.8	Canada	5.4	Canada	10.4	France	2.4	UK	4.9	Taiwan	10.8	UK	4.4
5	Mexico	38.3	Italy	5.4	Germany	8.9	Hong Kong	2.3	Ireland	3.5	Switzerland	10.7	Philippines	1.7
6	Switzerland	34.1	France	3.8	Ireland	6.7	Singapore	2.2	France	2.9	China	10.5	Netherlands	1.5
7	India	33.2	Spain	3.3	Switzerland	6.3	Australia	2.1	Netherlands	2.5	Denmark	9.3	Germany	1.1
8	France	26.7	Germany	2.8	Mexico	5.4	China	1.7	India	2.2	UK	8.4	Cyprus	1.1
9	China	26.6	Greece	2.7	Netherlands	4.2	Germany	1.3	Canada	2.0	Mexico	6.9	Japan	0.8
10	Ireland	22.4	India	2.2	Israel	4.2	Switzerland	1.3	Denmark	1.0	Canada	6.6	Switzerland	0.8
	Total	**696.7**	**Total**	**115.3**	**Total**	**138.1**	**Total**	**57.7**	**Total**	**53.2**	**Total**	**157.6**	**Total**	**53.6**

Source: Bureau of Economic Analysis.
Data as of January 2024.

Trade figures, while significant, do not do full justice to the importance of the transatlantic services economy. Transatlantic foreign affiliate sales of services are much deeper and thicker than traditional trade figures suggest. Indeed, sales of affiliates have exploded on both sides of the Atlantic over the past few decades thanks to falling communication costs and the rise of the digital economy. Affiliate sales of services have not only supplemented trade in services, they have become the overwhelming mode of delivery in a rather short period of time. Worldwide affiliate sales of U.S. services almost doubled from 2005 to 2021, the last year of available data, totaling $2 trillion, up from the year before.

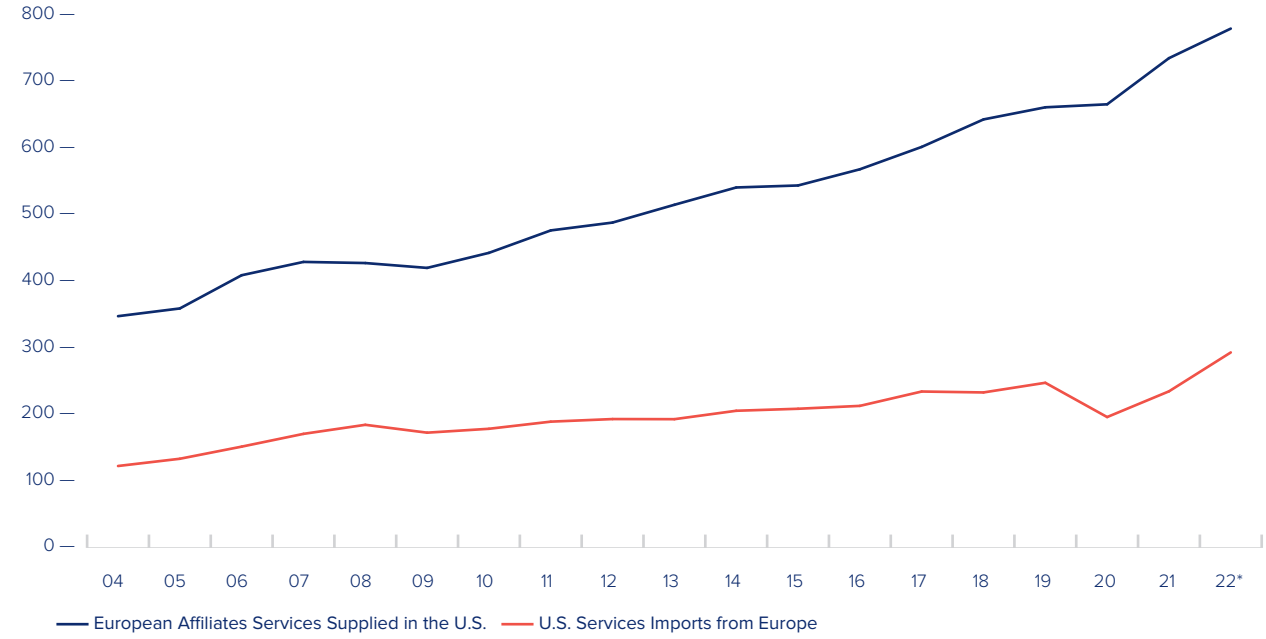
The United States and Europe are the largest services economies in the world.

Table 11. U.S.-Europe Services Linkages ($Billions)



Source: Bureau of Economic Analysis.
Majority-owned bank and non-bank affiliates. Services supplied in Europe estimates for 2022.

Table 12. Europe-U.S. Services Linkages ($Billions)



Source: Bureau of Economic Analysis.
Majority-owned bank and non-bank affiliates. Services supplied in the U.S. estimates for 2022.

Sales of services of U.S. foreign affiliates in Europe totaled $1.1 trillion, or 57% of the global total in 2021. U.S. services exports to Europe in the same year totaled $402 billion, well below sales of services by affiliates. In other words, like goods, U.S. firms primarily deliver services in Europe (and vice versa) via their foreign affiliates rather than by trade.

According to the BEA, services by U.S. companies based in the UK totaled $317 billion in 2021, while services by UK firms based in the U.S. totaled $172 billion in 2021. That is over 3 times greater than U.S.-UK overall trade in services.

The UK accounted for roughly 30% of all U.S. affiliate services sales in Europe – more than combined U.S. affiliate sales in Latin America and the Caribbean, Africa, and the Middle East. Affiliate sales in Ireland remain quite large, reflecting strong U.S-Irish foreign investment ties, underlined by the presence of several leading U.S. internet, software, and social media leaders.

U.S. affiliate sales of services in Europe continue to exceed sales of services by U.S. affiliates of European firms. In 2021, the last year of complete data, European affiliate services sales in the United States totaled $753 billion, roughly 70% of comparable sales of U.S. affiliates in Europe. That said, European affiliates are the key provider of affiliate services in the United States. German affiliates lead in terms of affiliate sales of services in the United States ($196 billion), followed closely by British affiliates ($172 billion). We estimate that European affiliate services sales in the United States rose modestly to around $775 billion in 2022, after rising 13% the year before due to the post-pandemic-rebound. That is well above U.S. services imports from Europe ($293 billion) in 2022. The difference between affiliate sales of services and services imports reflects the ever-widening presence of European services leaders in the U.S. economy.

Table 13a. U.S. FDI Roots in Europe

Industry	U.S. FDI to Europe ($Billions)	Europe's % of Total U.S. FDI
European Total, all industries	4,027	61
Manufacturing	536	53

Table 13b. Europe's FDI Roots in the U.S.

Industry	U.S. FDI from Europe ($Billions)	Europe's % of Total U.S. FDI
Total from Europe, all industries	3,396	65
Manufacturing	1,693	76

Note: Historic-cost basis, 2022.
Source: Bureau of Economic Analysis.

In the end, the United States and Europe owe a good part of their competitive position in services globally to deep transatlantic connections in services industries provided by mutual investment flows. A good share of U.S. services exports to the world is generated by European companies based in the United States, just as a good share of European services exports to the world is generated by U.S. companies based in Europe.

This mutually reinforcing dynamic between transatlantic services investments and trade means that the world's services leaders – the U.S. and Europe – are well positioned for a world in which global services trade continues to grow, even while global goods trade slows or plateaus.

These eight indices convey a more complex and complete picture of U.S.-European engagement than trade figures alone. Transatlantic commerce goes well beyond trade. Foreign direct investment and foreign affiliate sales, not trade, represent the backbone of the transatlantic economy.

Foreign direct investment and foreign affiliate sales, not trade, represent the backbone of the transatlantic economy.

3

Derisking in a World Gone MAD: American, European and Chinese Characteristics

The economic relationship with China is one of mutually asymmetric dependence. China has become reliant on Western technology, markets, and finance, while many Western countries and companies have developed significant dependencies on Chinese suppliers, markets, and inflows of critical raw and processed materials under Chinese control. All sides have also come to appreciate that their economies are so deeply intertwined that they would face high costs should geopolitical tensions disrupt their relationships.

Global supply chains are undergoing an epic shift as companies around the world adapt to ongoing geopolitical tensions and economic disruptions. Russia's aggression against Ukraine has spurred Western democracies to support Kyiv while sanctioning Moscow, reducing their dependencies on Russian fossil fuels, and disentangling themselves from the Russian economy (Chapter 1, Boxes 1 and 2). Their deeper reassessment centers around China, given U.S. and European concerns about inordinate dependencies on another potent strategic rival, and the country's far greater importance as a critical node in global supply chains. Beijing, in turn, is reevaluating the risks and benefits of its dependence on Western economies.

America, Europe, and China: The New World Is MAD

During the Cold War, the U.S.-Soviet nuclear standoff was determined by the doctrine of mutually assured destruction, or MAD. Both sides knew that if either attacked first, devastating retaliation would follow. Since the Cold War ended, the United States and Europe have each built an economic relationship with China that can also be described as MAD. Yet, this time it is not one of mutually assured destruction, it is one of mutually asymmetric dependence. China has become reliant on Western technology, markets, and finance, while many Western countries and companies have developed significant dependencies on Chinese suppliers, markets, and inflows of critical raw and processed materials under Chinese control. All sides have also come to appreciate that their economies are so deeply intertwined that they would face high costs should geopolitical tensions disrupt their relationships. Yet Western capitals and Beijing are eyeing each other warily as all seek to maximize their leverage and minimize their vulnerabilities.

"Decoupling" has become a favorite buzzword to depict these efforts, yet it misrepresents what is happening. The term suggests completely unplugging from one another. Reality is more complex: some commercial ties between the U.S. and China, and the EU and China, are weakening, while others are not.

Capitals and companies are not looking to cut the cord with China. Instead, they are adjusting the terms of their interdependence, the shorthand for which has become known as "derisking" – a term pioneered by European Commission President Ursula von der Leyen, embraced by the Biden administration, and endorsed by all G7 leaders at their 2023 Hiroshima Summit. For governments, derisking means seeking ways to both promote trade and investment and protect core economic and security interests and human rights values. For companies, derisking means identifying strategies to maintain and expand commercial ties with China while mitigating supply chain vulnerabilities and being careful not to run afoul of growing government restrictions. As we shall see, however, derisking began in China, not Europe or North America. And derisking with Chinese characteristics is decidedly different than the strategies being pursued by the West.

Table 1. EU and U.S. Dependencies on China and the Rest of the World

	Number of Dependent products	Potential for Diversification				Share in Total Import Value
		Low	*Medium*	*Medium-High*	*High*	
U.S./EU Dependencies on China	20	61%	9%	9%	21%	EU: 2.8% U.S.: 4.1%
U.S./EU Dependencies on Rest of the World	70	25%	8%	22%	45%	EU: 4.6% U.S.: 5.1%

Source: Sources: European Commission; United States Government; Ganyi Zhang, "EU-US: Public policies take up the challenges of the supply chain," Upply, July 23 2021, https://market-insights.upply.com/en/eu-us-public-policies-take-up-the-challenges-of-the-supply-chain.

Table 2. EU and U.S. Mutual Dependencies on China and the Rest of the World: Examples by Sector

	Health	Critical Materials	Renewables	Digital/ICT
U.S./EU Dependencies on China	APIs; COVID-19 related goods (face masks, gloves)	Tungstates, ferro-alloys, etc.	Permanent magnets	Laptops, cell phones, radio-broadcast receivers
U.S./EU Dependencies on Rest of the World	APIs; COVID-19 related goods (face masks, gloves)	Various	Permanent magnets Type electric accumulators	Laptops, cell phones, radio-broadcast receivers

Source: European Commission; United States Government; Zhang.

Western Dependencies

Western leaders are concerned that their respective dependencies on China could become security liabilities. Von der Leyen and U.S. Secretary of State Antony Blinken have each said that Beijing intends to "make China less dependent on the world and the world more dependent on China."[1]

These concerns drove the EU and the United States to review their respective supply chains in 2021. Each identified semiconductors, pharmaceuticals, batteries, and critical materials as strategic sectors with vulnerable supply chains due to highly concentrated reliance on a small number of suppliers.[2]

Washington and Brussels identified 20 product imports for which they were dependent on China, where there was relatively low potential for diversification. Those products accounted for 2.8% of EU imports and 4.1% of U.S. imports. A later study by Allianz Research found that China is a "critical supplier" for 276 types of goods for the U.S., from consumer electronics to household equipment to chemicals, accounting for 1.3% of U.S. gross domestic product (GDP), up from 0.7% in 2018 and 0.4% in 2010.[3]

Overall, the G7 countries directly source an average of only 4-5% of their industrial inputs from China. However, because Chinese inputs are also used to make the intermediate goods that other countries export to the United States and Europe, indirect dependencies on China are likely to be higher.[4] Moreover, those dependencies grow significantly for specific sectors of each economy. The U.S. and the EU are particularly focused on their inordinate dependence on China for many critical materials, and products needed for the green and digital transitions, such as solar panels, wind-turbine components, permanent magnets, electric accumulators, cell phones, and radio broadcast receivers.[5]

Critical Raw Materials

The United States is reliant on 50 metallic elements and minerals for its commercial and

For governments, derisking means seeking ways to both promote trade and investment and protect core economic and security interests and human rights values. For companies, derisking means identifying strategies to maintain and expand commercial ties with China while mitigating supply chain vulnerabilities and being careful not to run afoul of growing government restrictions.

military capabilities. Of these, the United States is 100% import-dependent for 12 raw and processed critical minerals such as graphite and manganese, and more than 50% import-dependent for 31 additional minerals.[6] The EU and the UK are reliant on 34 critical raw materials, 80% or more of which are imported.[7] At the mining stage, the EU is 100% import-dependent for antimony and borate and more than 80% import dependent for another six materials. At the refining stage, the EU is 100% import-dependent on six critical materials and over 80% import-dependent on 7 additional materials.[8] The UK government determined that "the UK is almost completely dependent on imports for critical minerals and mineral products."[9]

These dependencies are of growing concern, as governments and companies demand more critical raw and processed materials to make the energy transition real. Producing an electric car, for instance, requires six times more critical raw materials than a combustion vehicle. Wind turbines, batteries, and power grids all require large quantities of critical raw materials. According to the OECD, accelerated demand fueled a 38% increase in trade in critical raw materials over the past decade – 7% higher than global merchandise trade. Lithium trade recorded the largest increase of all critical raw materials (438%), while manganese, natural graphite, cobalt, titanium, lead, and rare earths elements as well as arsenic and zinc all recorded higher growth rates than the average for all critical raw materials. In the EU, demand for platinum is expected to surge 30 times by 2030 and 200 times by 2050; lithium and graphite demand for batteries is expected to grow 12-fold by 2030 and 21 times by 2050.[10]

The International Energy Agency estimates that achieving global net-zero emissions by 2050 requires a six-fold increase in the world's supply of critical materials. Yet as demand grows, global raw materials production has become more concentrated among a few countries. China's role has become particularly significant.

China has long been an important source of rare earths, a group of 17 elements needed for clean energy breakthroughs and advanced manufacturing, from smartphones and hard drives to weapons systems. It accounts for the global production of nearly all heavy rare earth elements, 91% of magnesium, 85% of all light rare earth elements, and 76% of silicon. China's control of rare earths began three decades ago with targeted industrial policies and export subsidies, helped by cheap labor and a willingness to withstand the heavy environmental toll of mining and processing. Chinese leader Deng Xiaoping quipped already in 1992 that "the Middle East has oil; China has rare earths."[11]

China remains a critical source of supply for the United States. Between 2018 and 2021, 74% of U.S. imports of rare earths came from China. China is the largest source of imports for 26 of the 50 minerals classified as critical by the U.S. government. Between 2016 and 2022, U.S. import dependence on China for graphite as a percentage of total imports rose from 37% to 75%; magnesium increased from 38% to 51%; rare earth minerals jumped from 41% to 62%; and yttrium rose from 50% to 74%.[12]

The EU is 100% import-dependent on heavy rare earth elements processed from China, with significant dependences in additional areas, as shown in Table 3.

Table 3. The EU's Critical Raw Materials Import Dependence on China

Critical Raw Material	EU Import Dependence on China
Heavy rare earth elements	100%
Magnesium	97%
Light rare earth elements	85%
Lithium	79%
Gallium	71%
Scandium	67%
Bismuth	65%
Vanadium	62%
Baryte	45%
Germanium	45%
Natural graphite	40%
Tungsten	32%

Source: European Commission; Victor D. Cha, "Collective Resilience: Deterring China's Weaponization of Economic Interdependence", International Security, Summer 2023.

China is not only a central source for many critical materials, it has also come to dominate their value chains. In this sense, China is not only the "factory to the world," it is also the "refinery to the world." When it comes to refining iron ore into steel or pulverizing cobalt into fine purity particles for batteries, most roads lead through China. The nation's processing infrastructure – think smelters, refiners, cracking activities, chemicals, and related capabilities – is second to none.[13] Measured by its share of global mined or refined production, China is the leading producer of 20 critical raw materials, and is among the top three producers of six of the ten most production-concentrated critical raw materials. It performs at least 60% of the refining and processing of most minerals – 60% of the world's lithium, 63% of the nickel, 73% of the cobalt, and all the world's natural graphite.[14]

Thanks to these activities, China plays a central role in critical material value chains, particularly for electric vehicles (EVs). China controls much of the EV value chain – mining, refining, processing, battery-making, and manufacturing. Chinese companies are the world's biggest producers of the four key components needed in EV battery production – cathodes, anodes, electrolytes, and separators. North America and Europe produce only small amounts of cathodes and anodes, and are each largely dependent on China. China also has a chokehold over much of the capacity needed to refine metals such as lithium, cobalt, and manganese for battery production. The EU, for instance, imports more than four-fifths of its lithium-ion batteries from China. China is responsible for 78% of global battery cell supply, including 99% of lithium iron phosphate battery cathodes, a cheaper alternative to traditional methods that has now captured half the global cathode market.[15]

China's Dependence on the West

Deeper interdependence with the West has also created Chinese dependencies. While the Chinese economy overall is less reliant on G7 industrial imports than vice versa, specific sectors exhibit higher dependencies. Western companies are China's most important suppliers of goods, accounting for 53% of Chinese imports in 2021, valued at $1.48 trillion. According to an analysis by Victor Cha, China is more than 70% dependent on imports of 412 goods (worth $46.6 billion in 2021) from the United States, Europe, and other allied countries. China is highly dependent on Japan for 124 items, followed by the U.S. (87), Germany (64), South Korea (28) and France (27) (Table 4). China's high-dependency exposure to the West amounts to just a fraction of the value of its $2.7 trillion in annual imports. But as Cha notes, any disruption to these flows would generate costly knock-on effects throughout China's supply-chains and its broader economy.[16]

Table 4. China's High-Dependence Imports by Country (2022)

Country	Number of Items (>70% Dependence)	Total Value of Imports ($Millions)
Japan	124	4,960
United States	87	11,548
Germany	64	828
South Korea	28	5,354
France	27	2,491
New Zealand	20	3,918
Canada	18	5,091
Australia	14	10,563
Norway	7	545
United Kingdom	6	480
G7+Australia	**395**	**37,173**

Source: Victor D. Cha, "Collective Resilience: Deterring China's Weaponization of Economic Interdependence," International Security, Summer 2023, drawing on UN Comtrade data.

Research by the German Economic Institute indicates that China's import dependency on the West is high or very high for many key products. China's highest dependency (97.5%), with few alternative suppliers on hand, is on air and space vehicles and related parts and components. Other sectors demonstrating relatively high import dependency include pharmaceutical products (96%), precision instruments (64%) and machines (63%).[17]

China may have cornered the global solar panel market, but for its supply of silver powder, a critical intermediate good for producing solar panels, it is 99% dependent on Japan (about 90%), the United States (7.2%) and South Korea (1.2%). For its supply of copper alloys, which are used in the construction sector, China is more than 90% dependent on Japan (nearly 70%), Germany (13.5%) and the United States (7.8%). The United States accounts for more than 81% of China's zinc powder imports, more than 72% of China's grass seed imports, and almost 64% of China's grain sorghum imports. The next major suppliers of these goods to China are U.S. allies.[18]

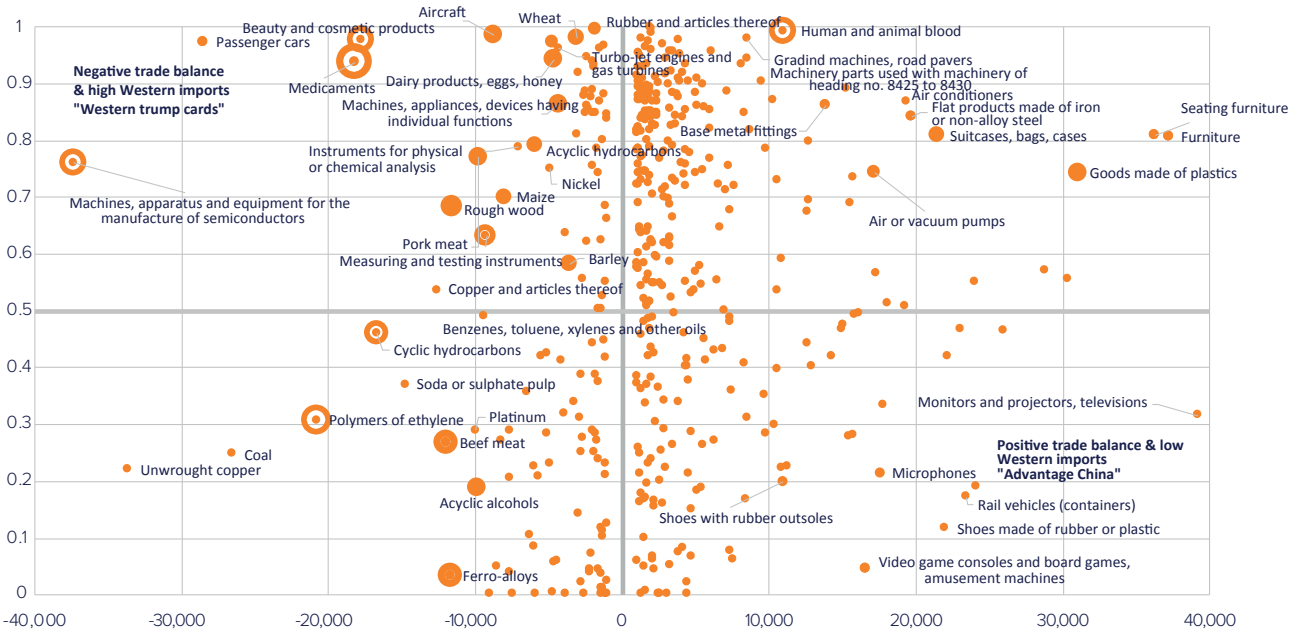
Even though China has registered significant strides in many telecommunications technologies, it still lags in many areas. In 2021 the West and Taiwan accounted for 68% of China's semiconductor imports. A key vulnerability is China's inability to produce leading-edge semiconductors, an area where it is completely dependent on the West, and where its companies have been subjected to significant Western restrictions.[19]

While China plays a central role in the EV battery market, it is dependent on the United States and the UK for 73% of its imports of cobalt materials, which are used for battery production, and on the Philippines and Australia for nearly 70% of its global supply of nickel ores and concentrates, which are used to produce battery cathodes. Japan and Germany provide more than 82% of China's imported supplies of alloyed steel ingots, used for shipbuilding. China has no alternative domestic supply for these products.[20]

The West also accounts for over 90% of China's imports of other important goods, such as some foodstuffs like meat and grain, certain raw materials like iron ore and gold, and some luxury products like perfume. China imports significantly more raw materials and foodstuffs than it exports – the discrepancy is 60 to 1 for ores, 36 to 1 for meat and 18 to 1 for grain. The U.S. and Canada account for 52% of China's grain imports, followed by Ukraine (20%).[21]

Table 5 depicts China's varying degrees of dependence.

Table 5. China's Import Dependencies



Vertical axis: Western company shares in Chinese imports. Horizontal axis: China trade balance. Size of dots indicate product share of total Chinese imports.
Source: Institut der Deutschen Wirtschaft, with permission.

No, China Is Not Your Top Commercial Partner

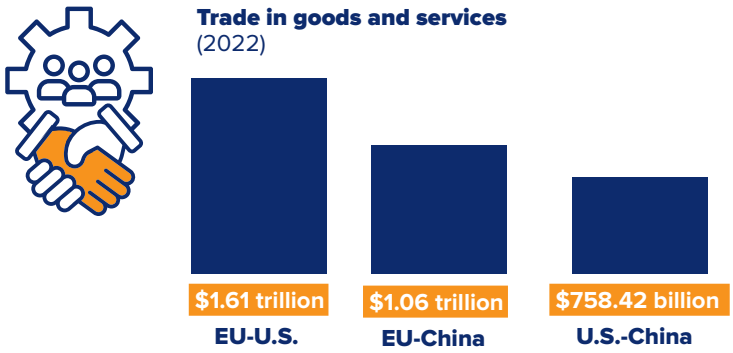
Goods Trade

China remains a powerhouse in goods trade. China's gains in higher-end manufactured products have eaten into the global market share of countries such as Germany and Japan, which traditionally excel at making and exporting such products. In 2023, China surpassed Japan to become the world's largest auto exporter. Five years earlier, China was still an auto importer. State-subsidized Chinese firms are also making inroads in more technology-intensive areas that have been strengths for the U.S. and several European countries. China's export drivers are changing from its "Old Three" mainstays of household appliances, furniture, and clothing to a high-tech "New Three" of electric vehicles, lithium-ion batteries, and solar cells. Exports of "New Three" products rose 30% to reach $139.3 billion in 2023, according to Chinese officials. The European Union has become the largest market for these products.[22]

China's rise has led pundits, politicians, and many business leaders regularly to proclaim that China is the main trading partner of Europe and of the United States. This is simply not true. Such statements usually refer only to goods trade, and so ignore trade in services, as we explain below. Yet even when it comes to goods trade, these assertions are not supported by the facts: U.S.-EU goods trade in 2023 was 39% higher than U.S.-China goods trade and 16% higher than EU-China goods trade.[23]

In 2023, U.S.-EU goods trade amounted to $945.74 billion (U.S. goods exports of $368.76 billion and U.S. goods imports of $576.98 billion), compared to U.S.-China goods trade of $575.04 billion (U.S. goods exports of $147.80 billion and U.S. goods imports of $427.24 billion). U.S.-EU goods trade was 16% more than EU-China goods trade of $798.67 billion.[24]

Despite rising "New Three" exports, sluggish global demand in 2023 led China's overall goods exports to contract for the first time since 2016, falling 4.6% to $3.38 trillion, according to China's customs office. Exports to the U.S. led the decline. Demand also fell from the EU and Southeast Asian countries. China's 2023 imports dropped even more, by 5.5%, to $2.55 trillion. China's trade with Russia was a remarkable exception to this trend: major growth in both imports and exports generated a 26% boost in bilateral goods trade.[25]



U.S. goods trade with China, while still sizable, is shrinking. U.S. goods imports from China in 2023 was 20% less than in 2022; U.S. goods exports to China were 4% less. U.S.-China goods trade of $575 billion in 2023 has fallen back to the level of a decade earlier ($562 billion in 2013), and is far off the record levels of some intervening years. If one looks at mutual exports standardized by GDP of the exporting country, China's goods exports reliance on the U.S. peaked in 2005, and that of the U.S. on China, in 2017. Looking at mutual exports standardized by GDP of the importing country, China's reliance on U.S. goods imports peaked in 2006, and U.S. reliance on Chinese goods imports, in 2014.[26] As we discussed earlier, certain sectors in each country are reliant on the other country. Overall, however, direct trade links are weakening.

EU-China trade tells a similar story. Between the first quarter of 2022 and the third quarter of 2023, China's share of EU imports decreased 2.2% and China's share of EU exports fell by 0.9%, according to Eurostat. During this same period, the U.S. share of EU imports increased by 3%, while the U.S. share of EU exports grew by 0.5%.

Germany is one of China's largest goods trading partners. However, Germany's China trade is also shrinking. German goods exports to China in 2023 of $105.27 billion were 8.9% less than in 2022, and German goods imports from China of $168.49 billion were 19.3% less than in 2022, according to Germany's Federal Statistical Office. Meanwhile, Germany's goods trade with the U.S. is growing – exports of $170.87 billion and imports of $102.49 billion. In the end, Germany's goods trade with the U.S. ($273.1 billion) in 2023 was only slightly less than Germany's good trade with China ($273.9 billion).

These trends could continue as ongoing disruptions redraw the global trade map. Boston Consulting Group (BCG) projects that, by the end of 2032, U.S.-China goods trade could fall $197 billion from its 2022 level while EU-China goods

The largest trading partner for the EU is actually the United States, and the largest trading partner for the United States is the EU.

trade could grow by $135 billion. While the latter figure would represent a 19% rise in EU-China goods trade, BCG forecasts that U.S.-EU goods trade will grow much faster, by $318 billion (38%), that U.S. trade with Canada and Mexico will grow even more, by $466 billion, and that the U.S. and the EU will each expand goods trade considerably with ASEAN countries, Africa, the Middle East, and India.[27]

Services Trade

Many commentators equate international commerce only with trade in goods. Trade between countries, however, does not just consist of trade in goods. It also includes trade in services, which most media accounts do not include. Services trade has been growing faster than goods trade, and as we explain in Chapter 2, services are a source of U.S. and European strength. More European and American jobs depend on services than on goods, and the United States and the EU remain by far each other's top services trade partner. EU27 services trade with the United States totaled $703.74 billion in 2022, the last year of available data, according to Eurostat. That was 4.6 times more than EU-China services trade of $153.78 billion.

EU27 exports of services to the United States in 2022 of $315.24 billion accounted for 22% of all EU services exports outside the bloc. The next largest destinations were the UK ($270.75 billion, 19%) and Switzerland (11%). China accounted for only 5% ($68.13 billion). The United States was also the top services supplier to the EU – $417.19 billion, equivalent to 34% of total EU services imports from non-EU countries. The next highest shares were from the UK ($221.90 billion, 18%) and Switzerland ($85.63 billion, 7%). China accounted for only 4% ($50.88 billion).

Putting goods and services together, EU-US trade totaled $1.61 trillion in 2022, the last year of available data. EU-China trade of $1.06 trillion was only 66% as large, and U.S.-China trade of $758.42 billion was only 47% as large.[28] China-Germany trade in goods and services of $348.45 billion was 12% less than U.S.-Germany trade of $394.15 billion. And as we mentioned, both U.S.-China trade and EU-China trade weakened in 2023, while EU-U.S. trade strengthened. If you look at overall trade flows and not just one kind of flow, it is clear that the largest trading partner for the EU is actually the United States, and the largest trading partner for the United States is the EU, as it has been for decades.

Investment Ties

Moreover, just as trade is more than just flows of goods, international commerce is more than just trade. Reducing complex commercial ties to just trade in goods and services ignores the importance of a host of additional economic ties that bind Europe and the United States in far deeper ways than those that bind either to China.[29]

U.S. and European commercial ties with China are each akin to a two-lane highway, whereas their commercial ties with each other are more like a twelve-lane *Autobahn*.

The highways to and from China are full of goods. They are busy, and they are crowded. Any type of accident on a two-lane highway can really snarl traffic – as we saw when supply chains were disrupted by the pandemic and by the U.S.-China tariff war.

Alongside the China goods highway is another lane for trade in services, but that remains narrow, as we have shown.

A further lane for investment has been under construction for some years, but it continues to face many roadblocks, as U.S. and European officials sanction China for human rights abuses, express security concerns about Chinese investments, tighten investment screening and export control procedures, and unveil new laws and directives aimed at boosting their respective competitive positions vis-à-vis China. The EU-China Comprehensive Investment Agreement (CAI), inked in December 2020, remains in the deep freeze. The European Chamber of Commerce in China recently made more than 1,000 recommendations for improving the treatment of foreign companies in China.

U.S-European investment lanes, in contrast, are wide and they are open; they drive a huge amount of transatlantic commerce. The total stock of U.S. foreign direct investment (FDI) in Europe in 2022 was $4 trillion – more than four times the amount of comparable U.S. investment

in the entire Asia-Pacific region ($951 billion). U.S. investment stock in the EU of $2.7 trillion in 2022 was 21 times greater than U.S. FDI stock in China of $126.1 billion. U.S. investment stock in the UK alone ($1.08 trillion) was 8.5 times greater. Total European investment stock in the United States of $3.4 trillion in 2022 was over three times the level of comparable investment from all of Asia. The UK's investment stock in the U.S. of $663.4 billion in 2022 was 23 times Chinese investment stock in the U.S. of $28.7 billion. Germany's investment stock of $431 billion was 15 times greater.

In 2023, China experienced a massive reversal in foreign investment flows, triggered by a host of factors, including Beijing's onerous restrictions on foreign ownership, its forced technology transfer rules, its opaque and politically-influenced regulatory procedures – such as a new national security law and restrictions on cross-border data flows – and its closure of foreign consultancy and due diligence firms. This adds to the country's structural economic challenges, sluggish growth prospects and geopolitical tensions, including its own sanctions on Western officials and legislators. JPMorgan estimates that half of the roughly $250-300 billion of international money that flowed into Chinese bonds since 2019 has now left. Nearly nine-tenths of the foreign money that flowed into China's stock market in 2023 had already left by year's end. In the third quarter of 2023, so much money flowed out of China that net FDI actually went negative for the first time since record-keeping began. Foreign firms are not just declining to reinvest their earnings, for the first time ever they are large net sellers of their existing investments to Chinese companies and repatriating the funds. For the first time in six years, net inflows from foreign investors into other Asian emerging markets ($41 billion) exceeded those into mainland Chinese equities ($33 billion) in 2023.[30]

The bellwether country for this turn away from China is Germany, which accounted for 52% of EU+UK FDI in China in 2022 but registered falling FDI to China in 2023. According to Germany's central bank, total FDI outflows from Germany in the first three quarters of 2023 dropped 30% to $8.5 billion. Reinvested earnings by German companies in China exceeded FDI inflows, indicating further consolidation of German investment in China by a few large companies – notably VW, BMW, Daimler and BASF. Recessionary pressures at home, and new limits on investment guarantees for German companies, are further factors limiting overall German FDI outflows.[31]

U.S. and European commercial ties with China are each akin to a two-lane highway, whereas their commercial ties with each other are more like a twelve-lane *Autobahn*.

FDI from China to the U.S. and Europe is also meager. Chinese FDI in the United States is very modest: just 7 deals worth $1.8 billion in 2023 and 5 deals valued at $2.6 billion in 2022. Both are far below the 2016 peak of 63 deals worth $53.5 billion.[32] The value of Chinese investments and takeovers in Europe fell to a 12-year low of just $2 billion in 2023, a far cry from the record $86 billion Chinese investors plowed into Europe in 2016, according to accounting firm EY. Chinese mainland investments in Europe were dwarfed by those announced by Taiwan, notably in Germany, where Taiwan's TSMC announced plans to invest in a $10.74 billion chip fabrication plant in Dresden – the most most capital intensive project announced anywhere in the world last year.[33]

Low and declining Chinese FDI in the U.S. and Europe contrasts greatly with overall Chinese greenfield FDI, which hit a record $110 billion in 2023, according to estimates by fdi Markets. Some of China's investment outflows are being driven by overcapacity and slowing domestic economic growth; others can be understood as a kind of low-risk 'geopolitical arbitrage' that enables Chinese firms to circumvent tariffs, and possible sanctions, by rerouting supply chains via third country destinations. Chinese FDI in Vietnam and in Mexico are two notable examples, as we discuss later in this chapter.

China's arbitrage strategy has transatlantic implications. China is capitalizing on the fact that European investment restrictions are far less extensive than those in the United States. Chinese investments in European strategic infrastructure like ports and electricity grids, for instance, have no equivalents in the United States. Currently, the most prominent example of this divergence is the EV industry. In the U.S., high tariffs have essentially blocked direct auto exports from China. Chinese investors are only bit players in the FDI boom in America's EV sector, due to provisions that exclude them from U.S. subsidies and that restrict other companies from using certain components sourced from China. Some of the few investments that have been announced, like an EV battery plant in Michigan

to be built by Ford, using technology supplied by Chinese battery maker CATL, have been scaled back after fire from U.S. lawmakers.[34]

In Europe, in contrast, Chinese firms wary of scrutiny of their M&A investments are turning to greenfield investments as a low-risk way of gaining entry to the Single Market, and to use their presence to export their "Made in the EU" products throughout Europe and elsewhere. Chinese EV firms are leading the way. CATL started to produce battery cells in Germany in December 2022, BYD is building a mega-factory in Hungary, Ningbo Shanshan plans to construct a anode factory in Finland, and Shanghai Putailai New Energy Technology has announced plans for a Swedish plant.[35] Moreover, since there are no "Buy European" rules for European EV subsidies, EVs imported from China can qualify for those handouts.

The Two-Lane Highway vs. the Twelve-Lane *Autobahn*

As we have explained in previous editions and outline elsewhere in this report, not only are transatlantic investment lanes bigger and busier than those with China, they are joined by transatlantic innovation lanes hosting research and development flows that are the most intense between any two international partners. Jobs lane provide employment for 16 million Europeans and Americans. And transatlantic digital lanes carry the most global digital content. In short, the commercial highway connecting Europe with the United States looks less like a two-way road than a twelve-lane *Autobahn*, with busier traffic and fewer speed limits.

When one compares the full spectrum of commercial relations between the U.S. and Europe with those each partner has with China – or with any other partner – it becomes clear that the transatlantic partners are each other's most significant commercial partners, as they have been for decades. Even though European and American companies developed their trade, investment, and innovation connections with less geopolitically aligned countries after the Cold War, those connections remained relatively thin compared to the dense arteries carrying services activities and investment projects between the transatlantic partners and related like-minded countries. Now countries big and small are reviewing their ties to geopolitical rivals, particularly in sectors where economic dependencies could be security liabilities.

This Is How You Do It: Derisking Made in China, America and Europe

Derisking with Chinese Characteristics

Derisking began in Beijing, not Brussels or Washington. In the early 2000s, the Chinese leadership launched several industrial plans to reduce the nation's dependence on imported technology to 30% or less by 2020. Beijing's "Made in China 2025" program, announced in 2015, sought to free China from dependence on Western technologies and to direct massive government support to make the country a world-beater in several critical sectors. It has since adjusted some aspects of this effort, but the essentials remain.

Washington likes to break de-risking down into three parts: "protect, promote, and partner." While Beijing does not use this phrasing, for years it is also been trying to "protect, promote and partner" – albeit with Chinese characteristics.

Protect

China's "protect" agenda has two prongs. The first aims to lessen China's dependence on Western technology while making the West more dependent on Chinese products and materials. It has registered successes: China's imports as a share of GDP have fallen to slightly more than 15% today, compared to 30% in 2005.[36] The second part of the agenda seeks to protect the Chinese Communist Party (CCP) from its own people. China's "Great Firewall" of censorship and digital controls blocks domestic and foreign content the government considers to be dangerous and prevents mass organizing online.[37] As geopolitical tensions have risen, Chinese authorities have also acted to rein in Western companies through a series of restrictive actions, including arbitrary fines, raids on businesses, counter-espionage law changes, data localization rules and local content requirements. Beijing has approved only about a quarter of applications to export data since the introduction of new data security laws in September 2022, creating uncertainty for many companies. It has created an "unreliable entity list" to "punish companies that act contrary to Chinese interests" and to retaliate against U.S. measures. It has expanded "national security" investment reviews and ordered the removal of foreign computer equipment and software from all public institutions. It has also threatened or employed coercive economic measures against countries ranging from Australia, Japan, the

Philippines, South Korea and Taiwan to the U.S. and Canada, Czechia, France, Germany, Lithuania, the Netherlands, Norway, Sweden, and the UK.[38]

According to the OECD, Beijing increased the number of restrictions on critical raw materials needed for electric cars and renewable energy, such as lithium, cobalt and manganese, by a factor of nine in the 11 years to 2020. Last year, ostensibly in response to U.S. technology restrictions, Beijing imposed export restrictions on gallium, germanium and related compound metals, materials essential for electric vehicles, optical fiber, renewable energy, semiconductors, and military tech. It then banned the export of technology for making rare earth magnets and tightened export controls on rare earths, requiring exporters to report rare-earth types and their export destinations, and it introduced export controls on graphite, which is used in electric vehicle batteries. As discussed earlier, all these markets are highly dependent on China.

China uses export restrictions on critical raw materials to limit foreign competitors while privileging Chinese companies. For instance, China stopped exporting graphite for battery anodes to Sweden for roughly three years through 2022, hindering Swedish battery startup Northvolt's access to materials. At the same time, Beijing encouraged Chinese businesses to build anode production facilities in Sweden. As a result, Chinese companies built a supply chain that made European companies more dependent on them.[39]

China is also establishing its own raw materials trading hubs and benchmarks priced in renminbi, as part of its effort to lessen commodities market reliance on the U.S. dollar. China's drive to convert its dominance over the flow of commodities into global pricing power faces substantial hurdles, including using a currency that cannot be freely traded, and the absence of a global warehousing network for any of China's five domestic futures exchanges.[40]

Promote

China's "promote" agenda includes massive government subsidies for home-grown industries as well as state-sponsored efforts to acquire foreign technologies – through joint ventures, strategic takeovers of foreign companies, or outright theft. It is estimated that China spends up to 5% of its GDP on directed industrial support.[41] Beijing's current 5-year plan emphasizes industrial strategies to catch up and lead in critical technology domains. It has prioritized the capability to master "choke point" technologies. Its "military-civil fusion strategy" is intended to use technological advances to build synergies between its commercial and defense sectors. These policies are having an effect: according a study by the Australian Strategic Policy Institute, China now leads the world in 37 of 44 critical technologies, including advanced materials, synthetic biology, and quantum communications.[42]

Beijing's "protect and promote" agendas are synergistic: the state favors priority industries with subsidies and protection from foreign competition, enabling them to develop quickly and at scale, with production exceeding the needs of the domestic market. Those industries then surge their production further to become export juggernauts that squeeze out international competition to become globally dominant. The pattern has become familiar in industries ranging from steel and aluminum to shipbuilding and solar panels.[43]

China's position in the solar industry is particularly dramatic. In 2005, European companies were the global leaders; Germany accounted for a fifth of global solar manufacturing. Today, indigenous European production has largely vanished in favor of imports from China, which manufactures 83% of the world's supply of solar panels, 85% of solar cells, 91% of solar-grade polysilicon, and 97% of the silicon ingots and wafers that form the core of solar cells.[44] In 2023, China commissioned as much solar photovoltaics (PV) as the entire world did in 2022, according to the IEA. China accounts for almost 60% of new renewable capacity expected to become operational globally by 2028. Despite the phasing out of national subsidies in 2020 and 2021, deployment of onshore wind and solar PV in China is accelerating.

The American Chamber of Commerce in China says the country's industrial overcapacity is "here to stay," and is likely to lead to "spillover distortions on a global scale." As Beijing faces sluggish growth at home, Western observers are concerned it is trying to replicate its tried-and-true pattern in other industries – notably "foundational" semiconductors, electric vehicles and battery technologies, and wind power.

In the semiconductor industry, Beijing formed the China Integrated Circuit Industry Investment Fund in 2014 to foster its indigenous capabilities and reduce its heavy reliance on imports. Chinese subsidies of $290.8 billion in 2021 and 2022 were vastly greater than those of the U.S., the EU and Japan combined. Despite this massive state support, Chinese companies have been unable to produce leading-edge semiconductors

and remain completely dependent on Western suppliers, who themselves are under pressure from their governments to limit deliveries of their highest-end products. Chinese firms are evading Western restrictions via shell companies, smuggling and the creative use of old machines. The extent of their success became evident last summer, when Huawei launched the 5G-capable Mate 60 Pro smartphone, powered by an advanced chip seemingly made entirely in China by SMIC, a Chinese company on the U.S. sanctions list. Just a few months later, Huawei released a laptop that features a chip a generation beyond the one in the Mate 60 Pro smartphone.[45]

China is also engaged in a massive build-out of foundational processor chips, also known as "mature" or "legacy" chips, which are widely used in household goods, transportation, consumer devices, and military systems. The country's chip production capacity could grow 60% in the next three years, and could double over the next five, according to estimates. Western companies and policymakers are concerned that China is applying its solar industry playbook to foundational chips – selling huge amounts of heavily-subsidized products at a discount to price out foreign competitors and to create new dependencies on Chinese components.[46]

EVs and batteries tell a similar tale. After designating EVs a "strategic emerging industry" in 2009, Beijing doled out more than $125 billion in support schemes over the next 12 years. Electric battery makers were offered subsidies that could account for more than 50% of the cost of their product. By 2022, China was spending nearly $80 billion on clean-energy manufacturing, around 90% of all such investment worldwide. Beijing ended a 13-year subsidy scheme for EV purchases that year, but it extended consumer tax credits, and local authorities continue to offer subsidies and rebates to consumers and producers.[47]

The results have been striking. China produced 78% of the world's batteries and almost 60% of EVs in 2022. China is surging overcapacity in EVs and battery plants to nearly four times what the country needs by 2027.[48]

Now Beijing has brought EV battery rivals CATL and BYD together with other firms, government officials, and researchers into a "whole of nation" consortium called the China All-Solid-State Battery Collaborative Innovation Platform (CASIP), which aims to build a supply chain for next-generation solid-state batteries by 2030.

China produced 78% of the world's batteries and almost 60% of EVs in 2022.

Faced with a bloated home market and still enjoying sizable subsidies, Chinese companies are ramping up their exports. Europe is the biggest prize, given growing demand for EVs, the continent's need to accelerate the energy transition, and its open market, which contrasts with U.S. tariffs of 27.5% on imported EVs from China and restrictions on purchase subsidies to vehicles made in America. China's share of EVs sold in the EU has grown from 1% in 2019 to 8% today, and could reach 15% in 2025, according to the European Commission. Fearing that European EV and battery makers could suffer the same fate as European solar producers, the European Commission has launched an investigation into Chinese EV subsidies.

China's EV challenge comes with a transatlantic twist: most China-based EVs being sold in Europe are made by U.S. automaker Tesla. Tesla's EV gigafactory in Shanghai accounts for more than half of all Tesla EVs produced worldwide. Two-thirds of those vehicles are made for the China market; the other third is exported to Europe and other markets. European automakers BMW and Renault also sell vehicles in Europe that are produced in China, and VW has announced plans to do the same. But Tesla already accounts for 40% of China's EV exports, both to Europe and to the world.[49]

Since Tesla began production in China in 2018, the company has enjoyed tax breaks, cheap loans, and other forms of state support. These have been important enablers for the company, even if they are not likely to have been as generous as the subsidies enjoyed by China's indigenous EV-makers. This has introduced some drama into the European Commission's current investigation into Chinese EV subsidies. The Commission excluded Tesla from its probe, choosing instead to focus on Chinese carmakers BYD, SAIC and Geely. If the Commission determines that these three companies benefitted from unfair state subsidies, it will calculate the level of countervailing duty to be imposed on all Chinese EV exports to Europe based on those higher subsidies. Tesla, and most likely China-based European car exporters, would thus face the same high levies as the Chinese companies, even though the Chinese state support they receive is lower. Some analysts suggest that this could be a tactic by the EU

to pressure Tesla and European carmakers to produce more cars in Europe than in China.[50]

Wind energy looms as another potential Chinese challenge. All told, the European Commission has said that China's public support programs are likely to have a larger impact on the competitiveness of the EU clean tech sector than the U.S. Inflation Reduction Act.[51]

Partner

China's "partner" agenda aims to secure access to foreign markets and critical resources, circumvent Western tariffs, offer an alternative to Western-centric norms and institutions, and position Beijing as champion of the non-Western world. China has spent a trillion dollars on its flagship network, the Belt and Road Initiative, to expand its influence across Asia, Africa and Latin America. Between 2013 and 2020 BRI countries voted with the Chinese position at the UN 75% of the time.[52] Initiatives like the BRI and the Asian Infrastructure Investment Bank have made China the world's largest creditor. While many BRI projects have been successful, some have gone sour, embroiling participating countries in heavy debt, and prompting Beijing to step back and repackage the BRI within a newly unveiled Global Development Initiative.

As mentioned earlier, China has worked hard to lock in its position as "refinery to the world" by partnering with producers of critical raw materials to feed their products into Chinese-owned refineries, where raw materials from around the world are processed into the high-grade materials needed for advanced manufacturing.[53]

Beijing is also partnering with other countries to expand use of the Chinese RMB to challenge the dollar-dominated monetary system. It launched its Cross-Border Interbank Payment System (CIPS) in 2015 to promote the internationalization of its currency and as a rival to the U.S. CHIPS payment system. It uses shell companies and bilateral arrangements with authoritarian countries like Russia and Iran to bypass Western sanctions. It has signed bilateral trade agreements with countries ranging from Singapore, South Korea and Australia to Georgia, Serbia, Nicaragua and Ecuador. It has joined trade groupings where the US is not present, like the Regional Comprehensive Economic Partnership (RCEP) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) to build regional supply chains and markets. These efforts have been accompanied by Beijing's Global Security Initiative, a budding alternative international defense framework to Western-led institutions and alliances, one that connects various groupings where China plays a major role, such as the expanded BRICS and the Shanghai Cooperation Organization, and that downplays human rights principles and promotes favored Chinese foreign policy concepts like non-interference in domestic affairs.[54]

The U.S. Protect, Promote and Partner Agenda

The United States seeks to give content to "derisking" by what it informally calls the "protect, promote and partner" agenda.

Protect

The "protect" element of the policy seeks to impede technological and military advances in countries of concern, like China, Russia, North Korea and Iran. Washington's tools are tougher export controls, stricter inbound and outbound investment screening, and human rights measures such as the Uyghur Forced Labor Prevention Act and forced labor bans in the US-Mexico-Canada Agreement (USMCA). As part of the "protect" agenda, the Biden administration has left in place Trump-era tariffs on roughly $300 billion of Chinese goods (and suspended, without retracting, tariffs on EU). Beyond that, the agenda is shaped by what U.S. National Security Advisor Jake Sullivan has dubbed "small yard, high fence:" intensified efforts to stop China from accessing a limited number of key technologies, while allowing much non-critical commerce to continue flowing. One key tool is the "Entity List" of companies which must apply for permission to buy goods with potential military uses. The number of firms on this list has grown dramatically from 130 in 2018 to over 1,400 today, 600 of which are Chinese. A second tool is investment screening. The measures Washington has introduced to curb U.S. outbound investments, particularly in advanced technologies in China, is the first time the U.S. federal government has ever exerted such authority over U.S. industry.[55]

A third tool, the Foreign Direct Product Rule (FDPR), restricts sales of items using U.S. technology, even if they are designed and manufactured abroad. The Trump administration used the FDPR to cut Chinese company Huawei off from American technology, and the Biden administration issued additional FDPRs to cut off Russia from all U.S. elements of global technology supply chains. It has followed these actions with severe FDPR restrictions that block U.S. firms from shipping high-end microchip manufacturing equipment to China, expand the geographic scope of those restrictions to 21 other countries

covered by U.S. arms embargoes. It has created a "gray list" requiring companies producing less advanced chips to submit notification of sales to China and other countries of concern.[56]

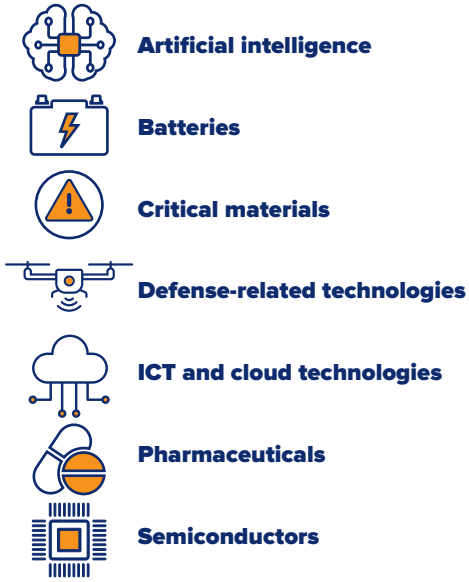
In addition to these actions, the U.S. Federal Communications Commission (FCC) in November 2022 barred Huawei and Chinese tech company ZTE from selling equipment in the United States – the first time the FCC banned electronics equipment on national security grounds. The U.S. Commerce Department has issued rules prohibiting CHIPS funds recipients from expanding material semiconductor manufacturing capacity in foreign countries of concern for ten years, and restricting recipients from certain joint research or technology licensing efforts with foreign entities of concern.[57]

In February 2024, the Biden administration suspended export licenses for U.S. suppliers of SMIC's most advanced factory; issued an executive order to control bulk transfers of sensitive personal data to China and other countries of concern; and announced a probe whether connected vehicles made with Chinese parts could capture sensitive personal data from Americans.

Promote

These measures are proceeding in tandem with the "promote" agenda, a $2 trillion overhaul of the U.S. economy that seeks to do many things at once: address climate change, boost manufacturing, accelerate innovation, curb dependence on China, and revive regions of the country that had been lagging. The "promote" strand seeks to maintain "as large of a lead as possible" in sectors where there is a "national security imperative," including semiconductors, quantum computing, artificial intelligence, biotechnology and clean energy.[58] It comprises the largest set of U.S. industrial policies since the New Deal, embodied in three major pieces of legislation: the $1.2 trillion Infrastructure Investment and Jobs Act; the $280 billion CHIPS and Science Act; and the Inflation Reduction Act (IRA), which was valued initially at $396 billion, yet could be much more, since some of the tax credits it offers are not capped. The CHIPS and Science Act has triggered $200 billion of private investment in U.S. chipmaking capacity. The Biden administration wants the U.S. to produce a fifth of the world's most advanced logic chips by 2030, up from zero today, supported by a complete domestically-based supply chain. The IRA could spur $1.7 trillion in public and private investments, according to Credit Suisse. We discuss the IRA in Chapter 4. In addition to these initiatives, the U.S. Defense Department helped to reopen rare earth production at California's Mountain Pass Mine, moving the U.S. from zero percent of global rare earth mining to 15% in 2022. These federal outlays, which are already reshaping supply chains, are being complemented by subsidies offered by some individual states.

Strategic sectors with vulnerable supply chains for both the U.S. and the EU



Partner

The "partner" element seeks to harness existing alliances and partnerships, and to build new ones, to form a broader base of support for these efforts. It has resulted in closer G7 coordination on de-risking issues; bilateral technology and economic security partnerships with such capitals as Tokyo, Seoul, Taipei and London; closer defense supply chain ties with Japan and India; bilateral Security of Supply Arrangement deals with Tokyo, Seoul and SIngapore; formation of the Pacific Quadrilateral Dialogue with Australia, Tokyo and India and its related Quad Investors Network, and incremental progress by the Indo-Pacific Economic Framework. Washington designated certain firms in the UK and Australia as domestic sources under the Defense Production Act, opening the door to subsidies for those companies to produce critical minerals and other strategic materials. The CHIPS Act provides $500 million to expand U.S. chipmaker links with selected low- and middle-income countries. The U.S.-Vietnam Comprehensive Strategic Partnership signed in September 2023 promises to facilitate investment in Vietnam's rich rare earth reserves.

In North America, Washington and Ottawa have agreed to a Joint Action Plan on Critical Minerals Collaboration. Across the Atlantic, Washington and Brussels have turned to their Trade and Technology Council (TTC) to facilitate joint efforts to enhance the

resiliency and robustness of their respective supply chains, especially in highly-vulnerable ecosystems. Additional areas of shared concern include COVID-19-related goods and active pharmaceutical ingredients (APIs, including vitamins, antibiotics, and hormones), semiconductors, ICT and cloud technologies, artificial intelligence, and defense-related technologies.

The U.S., EU, and other like-minded countries created the Mineral Security Partnership to prioritize the development of key critical-minerals projects as another way to build alternative sources of supply than can lessen China's dominant position in critical raw materials supply chains. They are developing climate financing programs with Indonesia, Senegal, South Africa, Vietnam, and India. Further examples include the India–Middle East–Europe Economic Corridor, a project co-founded by the United States that is meant to boost economic connections across Asia, the Persian Gulf, and Europe, as well as the Lobito Corridor project, which connects Angola, the Democratic Republic of Congo, and Zambia to global markets and is funded by the U.S., the European Commission, and several development banks. The Partnership for Atlantic Cooperation, signed by 32 Atlantic coastal countries in September 2023, provides a forum for members to collaborate on economic, energy, environmental, and maritime issues.

The Biden administration has balanced these efforts with attempts to partner with China on climate change, and to form several bilateral working groups to tackle dangerous narcotics flows, address financial and economic issues, and exchange information about their respective export controls.

The EU's Protect, Promote, and Partner Agenda

While the EU and its member states do not use the phrase "protect, promote, and partner" to describe their derisking agenda, essentially this is also what they, and the UK, are doing.

The European Commission has become increasingly hawkish on China, due to concerns about Beijing's support for Moscow, its challenges to Taiwan and other neighbors, Europe's critical dependencies on China for critical materials, and a widening bilateral trade deficit. It has released two economic security documents that outline a de-risking strategy intended to lessen EU dependence on China and to promote EU competitiveness, including by working with other like-minded partners.[59]

Washington and Brussels have turned to their Trade and Technology Council (TTC) to facilitate joint efforts to enhance the resiliency and robustness of their respective supply chains, especially in highly-vulnerable ecosystems.

Protect

The EU's "protect" agenda includes assessments of risks in supply chains, critical infrastructure, technology leakage, and coercion. In 2023 the EU conducted its first set of collective risk assessments, beginning with four key technologies: advanced semiconductors, artificial intelligence, bio- and quantum technologies. Six additional areas, including energy, robotics and manufacturing technology, could be subject to review in 2024.

The "protect" agenda is complicated because member states, not the European Commission, retain authority over many sensitive areas, such as screening investments or restricting exports for national security reasons. Member states closely guard their prerogatives, and each tends to address dependency issues differently. This has been particularly true regarding China, in part because of diverging degrees of reliance. For instance, despite agreement on excluding high-risk vendors from technology investments, only a third of EU countries have banned Huawei from critical parts of their 5G communications, prompting debate whether the Commission should move to impose a mandatory ban if member states continue to delay.

Nevertheless, the EU does have tools at its disposal. It has long had the ability, if not always the will, to use trade defense instruments to impose anti-subsidy and antidumping duties on unfairly cheap imports. It has opened anti-dumping investigations in several sectors. These include Chinese electric vehicle subsidies and Chinese biodiesel exports. It has developed a toolkit to identify and tackle foreign interference in research and innovation. It has imposed a broad range of export controls on Russia, as we discuss in Chapter 1, and is working on an EU-wide export controls regime. Member states have extended the Xinjiang sanctions they first imposed in March 2021. In 2023 they agreed to an Anti-Coercion Instrument that empowers the Commission to impose trade controls, customs

duties and other measures against companies or countries determined to be engaged in coercive behavior. The EU can also now block investment by companies funded by non-EU governments and cut businesses out of procurement contracts if their own domestic market is closed to EU bidders. It is investigating a Chinese trainmaker under these provisions. While the rule was originally intended with China in mind, it could negatively affect U.S. companies deemed to be enjoying state subsidies under the IRA or related legislation.[60] The EU Critical Raw Materials Act, which passed the European Parliament in December, sets an overarching target that no third country should provide more than 65% of the EU's annual need for a strategic raw material, and contains provisions for coordinated strategic stockpiling, incentives for recycling, and investment in research and development.

Moreover, at the urging of the Commission, nearly all member states now have inward investment screening mechanisms, and some have tightened the laws they already had, as has the UK. This year, the Commission is looking at ways to screen outbound investments, although there is no consensus for an EU-wide mechanism.

Despite their differences, member states have shown a willingness to act when serious challenges arise. In the year following Russia's full-scale invasion of Ukraine in February 2022, European governments spent $600 billion to shield their own societies from the energy shocks generated by the war.[61] The Netherlands joined the U.S. and Japan to stop exports of high-end chipmaking machines to China. It also issued a blanket warning on apps from countries that have an "offensive cyber program," citing China by name. France has tweaked the terms of its EV subsidy program in a way that excludes most Chinese makers from eligibility. Italy's government used its "golden power" to limit a Chinese shareholder's influence over tiremaker Pirelli in June, deeming tire sensors a "critical technology of strategic national importance." Rome withdrew from China's Belt and Road Initiative in December 2023. Germany's Supply Chain Due Diligence Act requires companies to meet extensive obligations to ensure human rights and environment best practices in their supply chains.

Still, EU-wide agreements can be elusive. For instance, member states have blocked approval of the EU Corporate Sustainability Due Diligence intended to vet human rights and environmental abuses in supply chains.

Promote

The EU's "promote" agenda has centered on NextGenerationEU, a $917 billion funding program to help EU member states recover and revive from the pandemic. It is the largest stimulus package ever financed in Europe. The funds are being reinforced by elements of the EU's long-term budget, bringing the total of deployable funds to $2.38 trillion in current prices, to help create, in the EU's words, a "greener, more digital and more resilient" Europe.

Elements of the package have been reshaped in response to ongoing events, particularly the need to reduce energy dependencies on Russia. Debates about repurposing the funds were further reenergized by European concerns over massive cleantech subsidies being offered by China and the United States, as we discuss in Chapter 4. In response, in February 2023 the Commission unveiled the Green Deal Industrial Plan to enhance EU competitiveness in the energy transition. Notably, the Plan proposes to temporarily loosen state aid rules until the end of 2025, and to allow member states to draw on $243 billion of loans and $22 billion of grants remaining under NextGenerationEU. The Plan includes three key initiatives; electricity market reform; the Critical Raw Materials Act; and the Net-Zero Industry Act.

The EU's Critical Raw Materials Act eases financing and permitting for new mining and refining projects at home to help the EU meet a target to extract 10%, recycle 25% and process 40% of its annual consumption by 2030 for 18 strategic raw materials. The Net-Zero Industry Act aims to ensure that at least 40% of the EU's demand for clean tech is made domestically by 2030. The European Parliament added a goal for the EU to produce 25% of the entire world's clean technology by 2030. The legislation includes incentives to help the EU hit these goals, including fast-track permitting and easier access to funding for certain industries. Since the EU still relies heavily on China for key ingredients for the green transition, the legislation would effectively lock Chinese firms out of public contracts for relevant technologies. It remains unclear how much funding might be allocated under the Act; earlier ambitions have been tempered. Supporters hope both Acts will survive the EU's multi-institutional approval process and be enacted by June 2024.

The "promote" agenda also includes the European Chips Act, which provides subsidies to strengthen semiconductor value chains within the EU, with a goal of achieving 20% of worldwide production capacities, compared to 9% today.

While the Act boasts a budget of more than $45 billion, much of the money is drawn from existing EU programs, from member states, or assumed private investments.

With the EU's General Data Protection Regime, Digital Services Act, Digital Markets Act, and AI Act, the bloc has also been pushing its role as a global standard-setter on technology regulation, often called the "Brussels effect."

Partner

The EU's "partner" agenda has included enhanced coordination among G7 members, cooperation with the U.S. and with India as part of their respective Trade and Technology Councils (TTC), and a dedicated workstream on economic security as part of the EU – Japan High Level Economic Dialogue. Like the U.S., it has established several working groups directly with China. Brussels has sought on its own, as well as with Washington and others, to invigorate its Global Gateway, and the Partnership for Global Infrastructure Investments. It is seeking to finalize additional free trade agreements, sign bilateral raw materials and Just Transition partnerships, promote the Minerals Security Partnership, and create a "Critical Raw Materials Club" of like-minded actors to enhance security of raw materials supply. It has signed trade agreements with Japan (2019), New Zealand (2022) and Chile (2023). However, its most ambitious goal – a trade deal with South America's Mercosur trade bloc – remains in limbo.

Corporate Strategies

Companies are adapting their supply chain strategies to ongoing geopolitical tensions and economic uncertainties. While headline disruptions have been linked to Russia's war against Ukraine and the Israel-Hamas conflict, the epicenter of the supply-chain earthquake is China.

Most firms not already active in China are simply not coming, while others have opted to leave. In 2023, the President of the European Union Chamber of Commerce in China said he had not seen a single European company entering China since COVID-19 began, and called business confidence in China the lowest on record. Quitting China completely is a path being chosen by such prominent firms as AirBnB, Carrefour, Gap, Yahoo, Epic Games, Hasbro and Microsoft-owned Linkedin. Amazon.com closed its official app store, and IBM closed its China Research Laboratory after a quarter of a century. This year, Dell will stop using chips made in China, and it has told its suppliers to significantly reduce the amount of other "made in China" components that go into its computers. U.S. company Teradyne, a manufacturer of testing equipment for chip fabrication, has relocated its key production facility from China to Malaysia. The share of non-Chinese companies in 14 of 20 industries with sizable multinational presence has declined over the past three years.[62]

Many corporations are shifting from supply chains to supply webs. They are replacing single-sourcing of critical components with multiple, and sometimes geographically diverse, suppliers to prioritize reliable deliveries over just-in-time efficiencies – a practice known as "multishoring."

Many corporations are shifting from supply chains to supply webs. They are replacing single-sourcing of critical components with multiple, and sometimes geographically diverse, suppliers to prioritize reliable deliveries over just-in-time efficiencies – a practice known as "multishoring." For most companies active in China, this has meant diversifying their supply chains via "China plus one" or "China plus many" strategies. Some firms are adopting separate supply chains for the China and non-China markets. Apple, AstraZeneca, McDonald's, Sequoia Capital, STMicroelectronics and Yum! Brands are among the companies that have split out parts of or all their China business. Consultancies such as McKinsey, Boston Consulting Group and Oliver Wyman are among the firms separating their Chinese IT systems in response to Beijing's tightened anti-espionage and data protection laws.[63]

According to the Asian Development Bank, more than 83% of North American businesses and about 90% of European firms have announced plans to relocate at least part of their supply chains away from China. Some are engaged in "nearshoring" operations to countries closer to key markets or "friendshoring" their sourcing to more reliable partners. Companies plowed more than $82 billion into 15 nearshoring locations close to western Europe between 2022 and 2023 - the highest two-year figure ever.[64]

There is also evidence that some finishing stages of production within supply chains are

being “reshored” back to the U.S. and Europe. According to Kearney’s annual reshoring index, U.S. gross manufacturing output rose faster in 2022 than U.S. manufacturing imports from China and 13 other Asian countries, a trend that likely continued in 2023.[65]

As a result, China’s share of U.S. manufacturing imports from low-cost countries in Asia fell from nearly 70% in 2013 to less than 50% in 2023. According to Deutsche Bank, 95% of products for which the U.S. relies on China could be supplied from elsewhere in Asia.[66]

Semiconductors, fueled by offers of massive government subsidies, lead the field when it comes to friend-shoring initiatives. Intel, TSMC, and Samsung, the world’s three biggest chipmakers, have announced commitments to invest at least $380 billion over the next decade to build new factories in Germany, Ireland, Israel, Japan, Poland, South Korea, Taiwan, and the United States. Intel says its goal is to reduce Asia’s share of its global semiconductor manufacturing from 80% to 50% by the end of the decade, with the U.S. accounting for 30% and Europe for 20%. Intel is building government-subsidized chip plants in the U.S. states of Arizona and Ohio. It also plans to expand its global production capacity with new or bigger facilities in Germany, Poland, Israel, Malaysia, and other places.[67]

Vietnam is profiting greatly from the friendshoring trend. U.S. manufacturing imports from Vietnam have doubled in the past five years and tripled over the past ten, while China’s share has fallen significantly. The United States accounts for nearly a quarter of Vietnam’s goods exports. Half of Google’s newest Pixel phones will be made in Vietnam this year. In 2022, Dell said it would move at least 20% of laptop production to Vietnam. Apple is supplementing its operations in China by producing IPads, MacBooks, AirPods and smartwatches in Vietnam, and for the first time is allocating product development resources for the iPad to Vietnam. Its many suppliers are following.[68]

India is also benefitting from shifting supply chains. It has gone from making 9% of the world’s smartphone headsets in 2016 to a projected 19% in 2023. Apple plans to shift 18% of its global iPhone production to India and says the country will be a “major focus.” J.P. Morgan estimates India will produce a quarter of all iPhones by 2025. India is the key Asian R&D base for top European chipmaker Infineon, which is expanding its activities there. In fact, India supplanted the U.S. as the top global R&D FDI destination in 2022. These investments are powering the country’s electronics exports, which have tripled since 2018. India's domestic electronics production is expected to grow rapidly at a 30% compound annual growth rate in the next five years to reach $400 billion.[69]

India must still overcome entrenched problems that have kept it a bit player in global supply chains. Its labor force remains mostly poor and unskilled, infrastructure is underdeveloped and the business climate, including regulations, can be burdensome. Manufacturing remains small relative to the size of India’s economy. Those tariffs discourage industries that import many components. Nonetheless, after decades of disappointment, the country is making progress.[70]

Mexico is another big beneficiary of reshuffled supply chains, as we discuss in Box 1.

Box 1. Mexico's "Geopolitical Planetary Alignment"

Mexico is the new face of nearshoring, as companies seeking to avoid China tensions and supply chain disruptions relocate production facilities just outside the United States but very much inside the integrated North American market created by the U.S.-Mexico-Canada free trade agreement. In 2023 Mexico became the U.S.' top trading partner and largest source of imports, winning ground lost by China.

Mexico has become a choice destination for nearshoring projects looking at the U.S. market, which absorbs nearly 80% of Mexico's exported goods. The overall value of the investment projects announced by foreign investors rose to a record $40.2 billion in 2022, led by those from the U.S. (41% share), Asia and Europe (27.9% each), according to FDI Markets. U.S. investors have put more money into Mexico than into China in each of the past three years.

Nearshoring has the potential to boost the growth of Mexican manufacturing exports to the U.S., from $455 billion today to an estimated $609 billion in the next five years. New investment driven by nearshoring could help to boost Mexico's annual GDP growth to around 3% in 2025 to 2027. These trends reflect the deeply intertwined nature of supply chains across the North American market; roughly 40% of the value of Mexico's exports to the U.S. consists of parts and components made at U.S. factories. This contrasts greatly with U.S. imports from China, only 4% of which are U.S.-made.[71]

These moves are refashioning supply chains within North America. Rather than offloading containers from Asia at Southern California ports, more U.S. - and Chinese - companies are using Mexico's Pacific port of Manzanillo. A significant number of those containers are then transported to the Mexican border state of Nuevo Leon, where their contents are either further processed or brought across the border to Texas. "Nuevo Leon is having a geopolitical planetary alignment," says the state's governor.[72]

These new dynamics are also reconfiguring supply routes within the United States, as more goods flow to America's largest inland port of Laredo, Texas, and from there on to the U.S. Midwest and East Coast. Previously, Midwest/East Coast demand accounted for two-thirds of the shipments out of Southern California ports.

There is also evidence that China is trying to sidestep U.S. tariffs and other restrictions by using Mexico's USMCA membership as a back door to the U.S. market. Chinese investment in Mexico grew by more than 200% in the last two years. Accurate statistics are hard to come by but, according to some estimates, Chinese foreign direct investment in Mexico increased from a total of $500 million in 2000-04 to $2.5bn in 2022 alone. That is below a peak of nearly $6 billion in 2016, but more than twice the figure in 2018, and rising.[73]

Six years ago, Chinese carmakers were largely absent from the Mexican market. Now three of China's largest electric-vehicle makers – MG, BYD and Chery – are preparing to build factories there. Chinese companies account for nearly a fifth of Mexico's auto sales, a fifth of Mexico's car imports, and 40% of investment in auto parts. Chinese companies exported $9 billion in parts to Mexico in 2023. Many of these components are assembled into products destined for the United States. Producing parts, components and final products in Mexico helps Chinese firms meet the USMCA's rules-of-origin requirements. And while the U.S. IRA stipulates that no EV parts or components can come from China or other "foreign entities of concern," EVs and related parts made in Mexico are covered by the IRA's consumer tax credit. Chinese companies based in Mexico exported $1.1 billion in parts to the U.S. in 2023.[74]

Under U.S. pressure, Mexico has announced tariffs ranging from 5-25% on goods from China and other countries, and signed an agreement with Washington to conduct national security reviews of foreign investments, including planned new Chinese EV plants.[75]

Back Doors, Workarounds, and Transshipments

Even though Western companies are reducing direct sourcing from China, many remain indirectly bound to China via supply chain links with third countries. This is most evident in Asia, but also apparent in Europe, and now noticeable in Mexico. China is sidestepping U.S. tariffs and other U.S. and EU restrictions by exporting goods or intermediate products to third countries, which then send final goods to the North American and European markets. These transshipments make it look like Chinese exports to Western markets are falling, even though many are just being re-routed through other countries. During the past five years, China's share of Vietnam's imports has gone from a quarter to a third, while Vietnam's share of exports to the U.S. has risen from 20% to just under 30% – an indication that Vietnam is becoming an important intermediary in China-U.S. commerce.

This means that when Americans or Europeans buy from factories in places such as Vietnam, they could be buying from Chinese companies, or from Vietnam-based firms utilizing intermediate goods sourced from China. For example, even though Apple has moved production to Vietnam, 9 of its 25 suppliers in Vietnam are Chinese enterprises. Chinese producers of solar panel materials tried to escape U.S. tariffs by rerouting their components for final assembly in Vietnam, Cambodia, Malaysia, and Thailand, and then shipping the products to the United States. After uncovering the subterfuge, the U.S. slapped new tariffs as high as 254% on foreign solar panel makers.[76]

Investment trends are similar. Western companies are investing to replace China's role in supply chains with allies or friendly nations; Chinese companies are moving plants and other facilities to third countries to facilitate exports to the U.S. and Europe. These efforts are reflected in FDI figures. Foreign direct investment in 11 Southeast Asian countries, for example, grew 40% between 2017 and 2022, when it reached a record $222.5 billion. U.S. firms are the leading investors, spending $74.3 billion on plant construction and other projects between 2018 and 2022. They are followed by Chinese firms, which invested $68.5 billion in the same period.[77]

In addition, while China's share in U.S. imports has fallen, its share in Europe's imports has risen. A portion of those imports are intermediate parts and components that are assembled into final products exported to countries around the world, including the United States. For instance, over the past decade China's share of central and eastern EU member states' imports of car parts has risen from 2% to 10%, more than any other country outside the EU.[78]

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4

Transatlantic Energy Transformations

The transatlantic energy economy is undergoing significant transformation. First, the United States has become a critical energy supplier to Europe, as U.S. crude oil and natural gas production reached record highs in 2023 and the United States became the world's largest producer of both oil and natural gas. Second, groundbreaking U.S. and EU policy initiatives are accelerating each party's efforts to address climate change, supercharge the transition to cleaner energies, boost competitiveness, and reduce strategic vulnerabilities. Third, energy investors, innovators and firms are capitalizing on dense transatlantic commercial linkages to spearhead the next generation of clean technologies.

The United States: A Critical Energy Partner for Europe

In 2022, Moscow shut off more than 80% of its pipeline gas spigots to Europe. Since then, Europe has largely navigated the crisis by diversifying supplies, chiefly through liquefied natural gas (LNG); accelerating renewables deployments; using less gas; boosting storage reserves; and improving efficiencies. Europe entered 2024 with gas storage levels at a record 86%, and has weathered its second winter since Moscow's 2022 invasion of Ukraine. It is building new infrastructure to boost its import capacity, adding six new port terminals in two years. By 2030 it will be able to receive 25% more LNG than in 2022.[1]

Europe's gas supply mix has changed considerably over the past two years. Russian pipeline gas as a share of EU natural gas imports fell precipitously from 41% in 2021 to just 9% in 2023. Russian LNG and Russian pipeline gas together only accounted for 13% of the EU's overall supplies in 2023, down from 40% in 2021, although as part of that mix, EU imports of Russian LNG actually increased by about 26% between 2021 and 2023.[2]

Norway has replaced Russia as the EU's largest gas supplier, providing half of the bloc's piped gas and 30% of its LNG imports. The United States has overtaken Qatar to become Europe's most important supplier of LNG, accounting for 50% of EU total LNG imports – and around 20% of EU total gas imports. In turn, Europe has become the U.S.'s most important LNG export market, accounting for more than 60% of U.S. LNG exports in 2023, double U.S. flows going to Asia (Table 1). By 2032, EU imports of U.S. energy are predicted to almost double in value, to around $114 billion.[3]

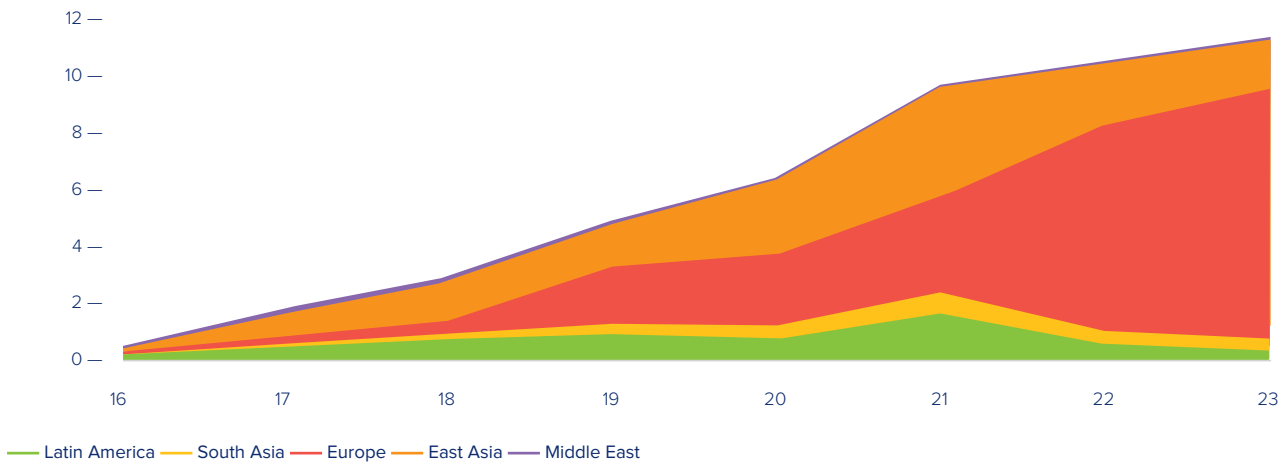
Three major shifts

U.S. as critical energy supplier to Europe

New policy initiatives to accelerate green transition and boost competitiveness

Substantial investment and capitalization of transatlantic commercial linkages

Table 1. **U.S. LNG Export Destinations** (Bcfd)



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Risks continue. Further sabotage could follow damages to the Nordstream pipeline in September 2022 and the Balticconnector in October 2023. Russia, which still accounts for 13% of the EU's total gas imports, could sever its remaining pipeline gas exports to Europe, notably via Türkiye or Ukraine, especially since the Russia-Ukraine gas transit agreement ends in December 2024. Brussels policymakers are preparing legislation to fully ban Russian exports of LNG and piped gas, but the Iberian Peninsula relies heavily on imported LNG and the landlocked countries of Austria and Hungary are significantly dependent on Russian pipeline gas. U.S. LNG producer Cheniere Energy agreed in November to provide Austrian energy group OMV with LNG beginning in 2029, but Hungary has done little to wean itself off Russian imports, and Rosatom is building two new reactors there.[4]

In addition, the Biden administration has paused licenses for new LNG export terminals to assess their impact on domestic energy prices and global greenhouse gas emissions. While this action's tangible effect on energy flows is likely to be felt later in this decade, the decision to pause has already caused U.S. exporters and European importers to question the reliability of the U.S. as a strategic partner for energy security in Europe, especially since the continent could face a gas shortfall of 2100 bcm, or 37% of demand, between 2028 and 2040 if Russian natural gas imports are eliminated in the coming years as expected.[5]

Moreover, Europe's response has been costly – its gas import bill ran about $400 billion in 2022, more than three times 2021 levels. Gas prices have lowered significantly since then, but remain above their historical average. Estimates are that

The EU reduced its dependence on Russian gas from 40% in 2021 to 13% in 2023.

gas in Europe, which was twice as expensive than in the United States before Russia's 2022 invasion, will be 4 times more expensive than in the United States for the foreseeable future. This also puts upward pressure on the cost of electricity in the EU, which is generating concerns about EU industrial competitiveness.[6]

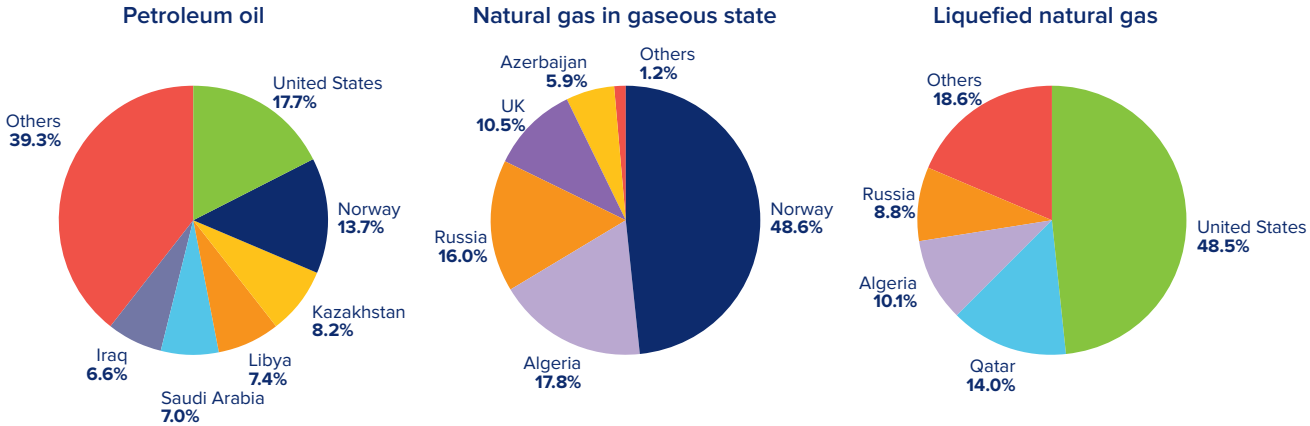
A similar shift is underway in Europe's oil markets. Russia's share of Europe's oil and petroleum products imports declined from nearly 45% in 2021 to under 4% in 2023, whereas U.S. oil shipments to Europe have jumped 82% since Russia's invasion of Ukraine, according to Kpler. The United States has become the EU's largest supplier of petroleum oil, accounting for about 18% of imports, followed by Norway (14%) and Kazakhstan (8%) in the third quarter of 2023 (Table 2).[7]

Extended production cuts by OPEC+, together with tensions generated by the Israel-Hamas war and Yemeni rebel attacks on shipping in the Red Sea, have spiked prices and raised concerns about disruptions of oil supplies. Yet large production increases by the U.S., Brazil and Guyana have dented the influence of OPEC+, which now controls barely half of global crude oil supply. The U.S. was on course to increase oil output by 1.4 million barrels per day in 2023, three times the 400,000 barrels a day cut from OPEC+ countries, even as the U.S. pushed ahead with its green transition.[8]

Inflation Reduction Act subsidies and tax credits

$369 billion

Table 2. **EU Imports of Energy Products by Partner** (% of trade in value, Q3 2023)



Source: Eurostat.

Comparing U.S. and EU Green Subsidies

The Inflation Reduction Act

The U.S. Inflation Reduction Act (IRA) passed by the U.S. Congress in 2022 is by far the single biggest climate investment in U.S. history. It puts the U.S. on a path to roughly 40% emissions reductions by 2030. It is fueled by at least $369 billion in subsidies and tax credits to qualifying parties. As we discuss in Chapter 3, it is part of an even larger U.S. effort to position its domestic economy for a cleaner energy future, to be more globally competitive, and to mitigate critical materials dependencies on China and other suppliers.

In its first year, the IRA led to over $110 billion of capital investments announced for clean energy manufacturing projects in the U.S., including over $70 billion towards electric vehicles and battery supply chains. U.S. battery power capacity doubled in 2023 and is slated to double again in 2024. Today about 30 U.S. battery factories are operating, under construction, or being planned. In 2019 only two were in operation.[9]

The boom in clean energy and manufacturing investment accounted for a record 10% of U.S. GDP growth in 2023. The Biden administration says its full agenda, discussed in Chapter 3, will unleash $3.5 trillion in public capital and private investment over the next decade. The IRA alone could spur $1.7 trillion in public and private investments, according to Credit Suisse. BCG forecasts that the IRA could lower global clean-energy costs by as much as 25% ($120 billion) this decade.[10]

IRA Conditions

The IRA provides tax breaks for electric vehicle (EV) buyers and offers battery-makers a tax credit which covers about one-third of the cost of production, but only if the products contain no parts from a "foreign entity of concern" – China, Russia, Iran, and North Korea. The rules apply to battery components starting in 2024 and the minerals that go into them in 2025. Other arrangements that involve Chinese companies, such as licensing technology, might be permissible under the rules.[11]

Europe's investment outlook is also conditioned by distortive subsidies offered by other countries, particularly China.

In addition, the IRA stipulates that at least 40% of the value of the critical minerals, including lithium, contained in a battery "must be extracted or processed in the United States or a country with which the United States has a free trade agreement, or be recycled in North America". The applicable percentage will increase each year from 2024, rising to 80% from 2027. At least 50% of the value of the battery components must be manufactured or assembled in North America. The percentage will rise from 2024, reaching 100% from 2029.[12]

Beyond tax credits, the IRA provides $11.7 billion in new federal funding to the U.S. Department of Energy's (DOE) Loan Programs Office – whose loans helped Tesla scale its manufacturing more than a decade ago – enabling it to unlock more than $312 billion in additional private sector investment, according to the Environmental Defense Fund. The DOE also operates a $6 billion battery-grant program under the U.S. 2021 infrastructure law, for which the "foreign entity of concern" restrictions also apply.[13]

European officials have hailed the IRA's climate goals yet expressed concerns about the Act's discriminatory local content provisions, and its market-distorting manufacturing subsidies that might induce European firms to shift their production to the United States. Such concerns are amplified by far lower U.S. energy costs. Following U.S.-EU discussions, some apprehensions were addressed. Used clean vehicles, which comprise 70% of the market, will benefit from tax credits and are not subject to local sourcing requirements. The new implementing rules also allow subsidies for "commercial clean vehicles" produced by European and other foreign carmakers if they are leased and not purchased, a favored option of U.S. consumers. Currently half of German electric vehicles in the United States are leased.[14] U.S. Treasury guidance confirms that EU companies can benefit from the Commercial Clean Vehicle Credit scheme (covering leased vehicles) under the IRA, although certain concerns remain with regards to the market for private cars. The EU-U.S. Clean Energy Incentives Dialogue, launched in March 2023 as part of the EU-U.S. Trade and Technology Council (TTC), aims to ensure that respective EU and U.S. incentive programs are mutually reinforcing.

Discussions regarding batteries continue. The IRA stipulates that batteries must meet a gradually increasing threshold of critical minerals extracted and processed in countries with "free trade agreements" with the U.S., beginning at 40% in

2023 and increasing by 10% each year through 2026. Neither the EU nor the UK has a free trade agreement with the United States. The EU and the U.S. are negotiating a Critical Minerals Agreement, modeled after a U.S.-Japanese agreement signed in March 2023, that seeks to ensure that the EU is granted the equivalent status of an FTA partner under the provisions of the IRA, although the two sides have clashed over a U.S. proposal to allow labor inspections at mines and facilities producing minerals outside the United States and Europe.[15]

U.S. carmakers have joined their European counterparts in their concern about how fast they will be able to meet the IRA's provisions that restrict tax credits to new electric vehicles that do not include battery components or critical materials coming from "foreign entities of concern," including China, which is the source for many such materials.

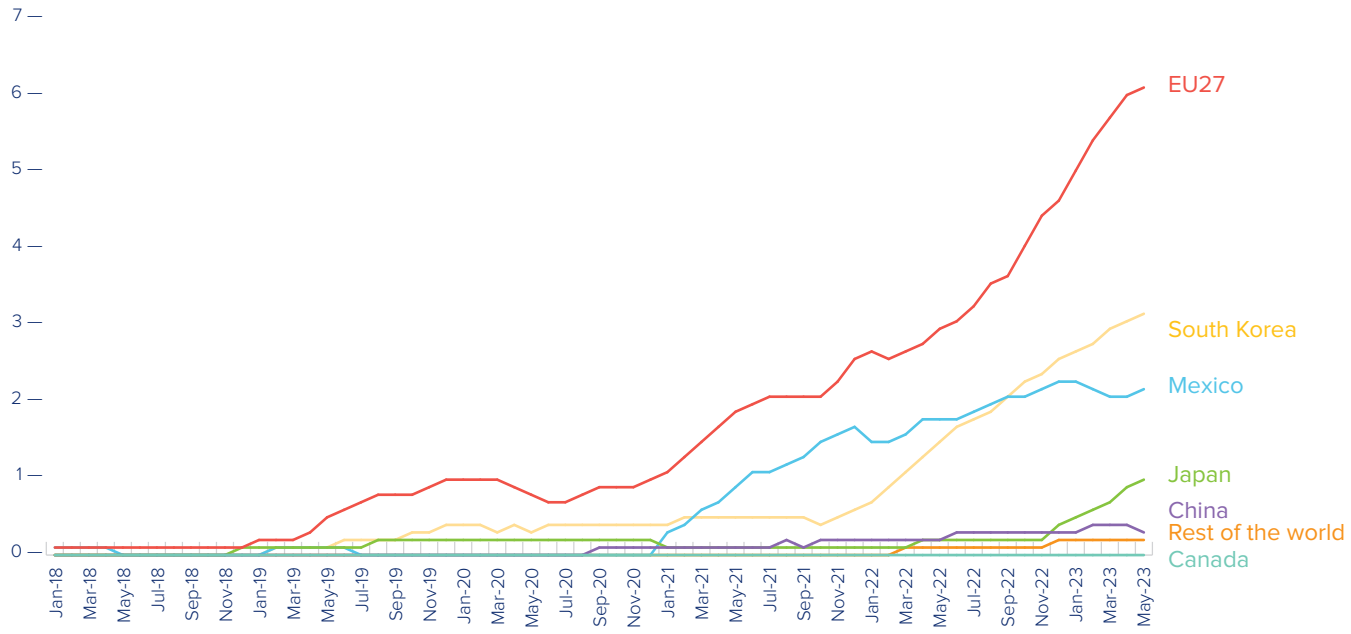
Some European carmakers have complained that their exports could be hit by IRA provisions limiting tax credits to manufacturers that complete "final vehicle assembly" in North America. This ignores the dense transatlantic linkages that underpin the auto industry. The main European automakers already conduct "final vehicle assembly" at their plants in the United States. Volkswagen, which is the largest European seller of electric vehicles in the U.S., also became the first foreign carmaker to qualify for the full EV tax credit of $7,500 because its best-selling model, the ID.4, is produced in Chattanooga, Tennessee. Mercedes produces its electric EQS in Tuscaloosa, Alabama. Two of BMW's electric vehicle brands are produced at its plant in Spartanburg, South Carolina, which is bigger than its home plant in Munich.

Moreover, the evidence thus far shows that the IRA has not suppressed U.S. imports of electric vehicles, it has turbocharged them: imports from the EU, South Korea, and Japan are all steadily climbing to new highs (Table 3). This is because non-domestically manufactured EVs can qualify for tax credits if they are leased instead of bought, which has led to a massive surge in the leasing of foreign-made EVs.[16]

Global clean technology market value by 2030

$650 billion annually

Table 3. **U.S. Imports of Electric Vehicles by Source** ($Billions)



Sources: U.S. International Trade Commission Dataweb; Chad P. Bown, "How the United States solved South Korea's problems with electric vehicle subsidies under the Inflation Reduction Act," Working Papers 23-6, Peterson Institute for International Economics, July 2023, https://www.piie.com/publications/working-papers/how-united-states-solved-south-koreas-problems-electric-vehicle.

U.S. companies in Europe have become a driving force for Europe's green revolution, accounting for more than half of the long-term renewable energy purchase agreements signed in Europe since 2007. European companies are the leading source of FDI in the U.S. energy sector.

This surge underscores another U.S-EU difference: European exports of finished electric vehicles to the United States face a 2.5% tariff when they enter the U.S., a far lower levy than the 10% tariff the European Commission imposes on every U.S. car exported to the EU. The 10% tariff corresponds to a subsidy for European vehicles of around $3,750 for an average price of around $50,000.[17]

The EU's Green Subsidies

The EU and its member states are pushing a flurry of initiatives to power the green transition. Following the COVID-19 pandemic and Russia's renewed invasion of Ukraine in February 2022, new spending programs were created to accelerate the green transition. The EU's Recovery and Resilience Facility (RRF)'s national recovery plans include $218 billion of expenditure for the green transition. RePowerEU, the EU's plan to rapidly reduce dependence on Russian fossil fuels and accelerate the green transition, aims to mobilize $327 billion by 2030 (most from the RRF but with an additional $22 billion in grants) to reduce energy consumption, increase energy efficiency and renewables deployment.[18]

Following passage of the U.S. IRA in 2022, and with an eye to Chinese energy subsidies, in early 2023 the European Commission drew on this funding base but proposed to go further with a $560 billion Green Deal Industrial Plan (GDIP). As originally conceived, the plan would consist of four main initiatives: the Net-Zero Industry Act (NZIA); the Critical Raw Materials Act (CRMA); a Strategic Technologies for Europe Platform (STEP), intended as a precursor to a larger so-called European Sovereignty Fund to drive joint investment in specific clean technology projects; and a Temporary Crisis and Transition Framework (TCTF), an amended and extended version of a 2022 mechanism the EU adopted to cope with the severe energy consequences of Russia's invasion of Ukraine. The TCTF loosens EU rules on state aid, which in principle is incompatible with the EU Single Market. Not all elements of this package have survived.[19]

The Net-Zero Industry Act aims to ensure that at least 40% of the EU's demand for clean tech is made domestically by 2030. It seeks to promote manufacturing in a predetermined set of specific "strategic" clean technologies, including solar photovoltaic and solar thermal, onshore wind and offshore renewables, batteries and storage, heat pumps and geothermal energy, electrolysers and fuel cells, sustainable biogas and biomethane, carbon capture and storage (CCS) and grid technologies. Member states would identify strategic projects in these areas. The NZIA would accelerate permitting, facilitate private funding via a so-called Net-Zero Europe Platform, allow limited public subsidies by member states, and include sustainability and resilience criteria in public procurement processes. EU member states and the European Parliament have reached a provisional deal on the NZIA; it is expected to go into effect in spring 2024.[20]

The Critical Raw Materials Act eases financing and permitting for new mining and refining projects at home to help the EU meet a target to extract 10%, recycle 25% and process 40% of its annual consumption by 2030 for 18 strategic raw materials. The Act also aims to ensure that no third country should provide more than 65% of any strategic raw material. The CRMA does not provide new resources but would establish a European Critical Raw Materials Board where representatives from member states and the Commission would coordinate existing financing mechanisms. The CRMA is due to be formally adopted after the European Parliament and the Council reached agreement on its text in fall 2023.[21]

The stillborn European Sovereignty Fund was originally conceived to be funded by common EU borrowing, following the model of the bloc's pandemic-related Recovery and Resilience Fund. After member states failed to agree, a far more modest Strategic Technologies for Europe Platform has been devised, but with only $1.65 billion in a common fund to be used for defense-related projects rather than clean tech, leaving this element of the GDIP adrift.[22]

The Temporary Crisis and Transition Framework, in force until December 31, 2025, allows member states to offer certain forms of aid and measures to support the green transition. With U.S. and Chinese subsidies in mind, the TCTF enables the EU to help member states match aid offered by a third country if such offers might otherwise lure investments away from the EU. It has sparked billions in subsidies by the Commission and individual EU member states, headlined by a $3.2 billion French tax credit scheme to support renewable energy companies, and Germany's $983 billion subsidy of Swedish battery manufacturer Northvolt's investment in the state of Schleswig-Holstein, to dissuade the company from considering $850 billion in U.S. subsidies for a production site in the state of Nebraska.[23]

Several EU funding schemes existed prior to the announcement of the GDIP, and a number continue in addition to the elements mentioned above. For instance, the EU's primary R&D financing mechanism, Horizon Europe, has allocated up to $13 billion for net-zero technology R&D in its current 2021-2027 budget cycle. An additional $44 billion is available until 2030 for demonstration projects in energy-intensive industries via the EU Innovation Fund. Moreover, lower-income member states can access $52 billion until 2030 for clean and decarbonization technologies via the EU's Modernization Fund, and another $78 billion is available to improve energy efficiency in buildings and decarbonizing heating and cooling via the EU's Social Climate Fund. A further $93 billion for energy and cleantech projects is included under the EU's Cohesion Fund, the European Regional and Development Fund, and the Just Transition Fund.[24]

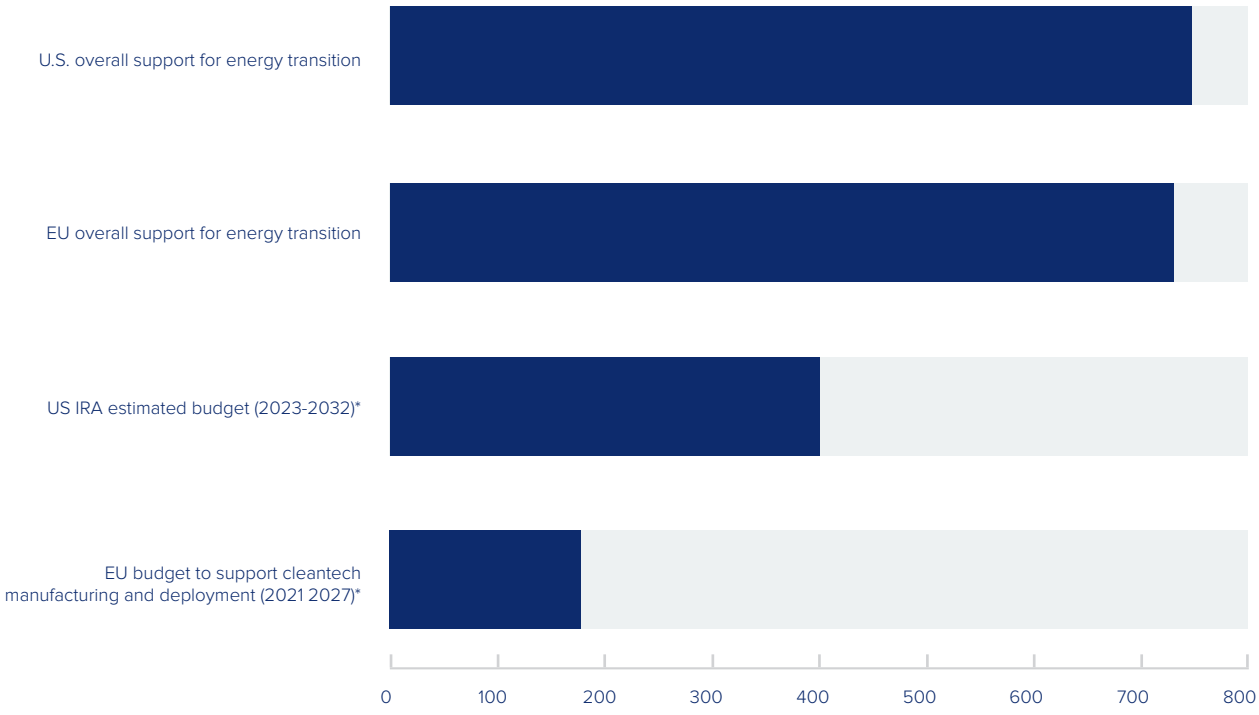
Many EU member states offer additional support measures. For instance, almost every EU country subsidizes the purchase of electric vehicles. Bruegel estimates such support totaled $6.5 billion and averaged about $6,500 per vehicle in 2022 (compared to IRA tax credits of up to $7,500 per vehicle). Member states spent over $92 billion on state aid for environmental protection and energy savings in 2021, the last year of available data. Such spending varies widely among countries. Germany alone accounted for 60% of the $523 billion spent on EU environmental aid between 2014 and 2021.[25]

Private capital is also significant. European investment funds that prioritize climate impacts grew to record levels in 2023. According to Morningstar, Europe's climate-themed funds grew sevenfold in value between 2019, when the European Commission first presented its Green Deal, and the first half of 2023. At $447 billion, these funds' net assets were five times the size of similar funds across the rest of the world combined.[26]

Comparing U.S. and EU Initiatives

Several estimates released over the course of 2023 comparing the U.S. IRA with EU support schemes concluded that EU subsidies are of equivalent size, or even higher, than those in the United States. The Franco-German Council of Economic Experts concluded that "the overall funding level of EU programs is comparable to the IRA". Bruegel concluded that EU and U.S. IRA subsidies for electric vehicles and cleantech manufacturing are roughly similar in size, and that European subsidies for renewable energy production are four times higher than subsidies foreseen by the IRA. The International Renewable Energy Agency estimated that subsidies for renewable energy account for 0.5% percentage of EU GDP – twice as high as the IRA's share of U.S. GDP. Since these studies were completed, the European Commission has proposed additional support schemes, including offering battery makers in the EU an additional $3.3 billion in subsidies from the EU's Innovation Fund.[27]

Table 4. Clean and Green: Comparing U.S. and EU Energy Transition and Cleantech Support ($Billions)



**Euro exchange rate as of 27 feb 2024.*
Source: own elaboration, based on German Council of Economic Experts, "The Inflation Reduction Act: Is the new U.S. industrial policy a threat for Europe?" Policy Brief 1/2023; Milan Elkerbout, Edoardo Righetti, Christian Egenhofer, "Different Roads, Aligned Goals," CEPS Explainer, 2023-16; European Commission, "Investment needs assessment and funding availabilities to strengthen EU's Net-Zero technology manufacturing capacity," Staff Working Paper, March 2023; The White House, "Building a Clean Energy Economy: A Guidebook to the Inflation Reduction Act's Investments in Clean Energy and Climate Action," January 2023, Version 2.

Most analysts suggest that Europe's challenge is not a lack of financial or state resources, but its own fragmentation and the legacy effects of its overreliance on cheap Russian energy. They conclude that U.S.-EU differences are less about the sheer size of their respective efforts and more about how those initiatives are being rolled out. They judge IRA clean tech subsidies to be simpler, faster, and less disjointed than those in Europe. For instance, the EU's NZIA is mostly regulatory, whereas the IRA is essentially an enormous public investment. Easy tax credits are the IRA's primary tool, whereas NZIA funding consists largely of direct subsidies for projects, since fiscal policy remains with the member states and thus is not available to EU policymakers in Brussels. The IRA's credits are straightforward, transparent, predictable, uncapped and immediately available, while applicants seeking EU subsidies must endure slow and cumbersome application procedures that can take months or years. The U.S. IRA does discriminate against foreign producers. European analysts tend to argue that EU subsidies do not. However, the EU's CRMA provision that no third country should provide more than 65% of any strategic raw material is discriminatory, as is its TCTF provision that bends EU state aid rules to enable member states to match aid offered by a third country.[28]

A transatlantic cleantech alliance could highlight and support synergies among existing EU and U.S. cleantech efforts.

Some Europeans are concerned that these discrepancies could lead to investors leaving Europe for U.S. destinations. It is still too early to tell whether this will happen. The European Commission in October 2023 assessed that

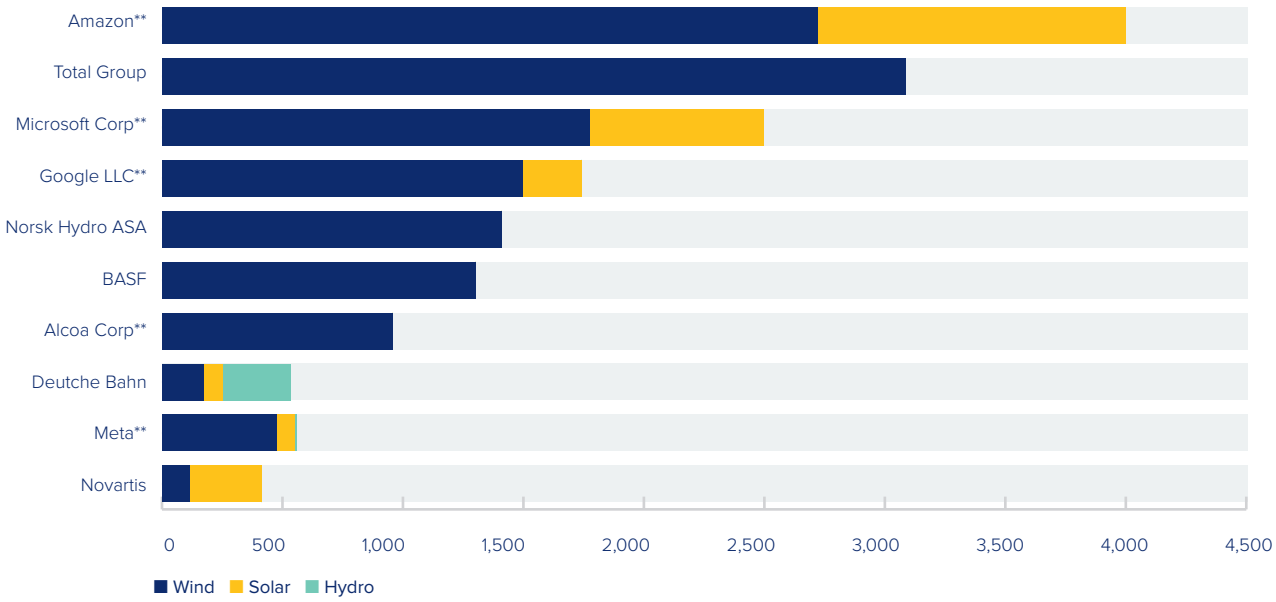
the IRA's macroeconomic effect on Europe had thus far been limited. And since IRA tax credits can only be claimed after the end of fiscal year 2023, with tax returns filed in 2024, we do not yet know the initial size of those credits. The Franco-German Council of Economic Experts concluded that the IRA would "exert minimal overall macroeconomic impact" on the EU, and that "a closer examination at the sectoral level fails to yield evidence linking the IRA to significant risks for the EU." They pointed instead to "sizeable energy price differentials," not the IRA, as a key challenge to Europe's attractiveness and the competitiveness of its industries. Europe's investment outlook is also conditioned by other factors, including interest rates, inflation and recession pressures, and distortive subsidies offered by other countries, particularly China, as we note in Chapter 3. According to President von der Leyen, "The true pressure, the unleveling of the playing field, is not our American friends, it's China – with massive hidden subsidies, with a lot of denial of access to our companies to the Chinese market and of course there is strategic shopping towards here, the European Union."[29]

The Franco-German Council of Economic Experts also underscored a point we have made consistently in this annual survey: the deep intra-industry links that bind the North American and European economies mean that these cleantech support schemes could actually boost transatlantic commercial ties. "The Inflation Reduction Act will provide a demand stimulus for European high technology in green power generation," the Council concludes, and adds that "despite domestic content requirements, the IRA is likely to strengthen these commercial links."[30] Table 3 shows that this is already evident in electric vehicles.

Powering the Transatlantic Energy Innovation Economy

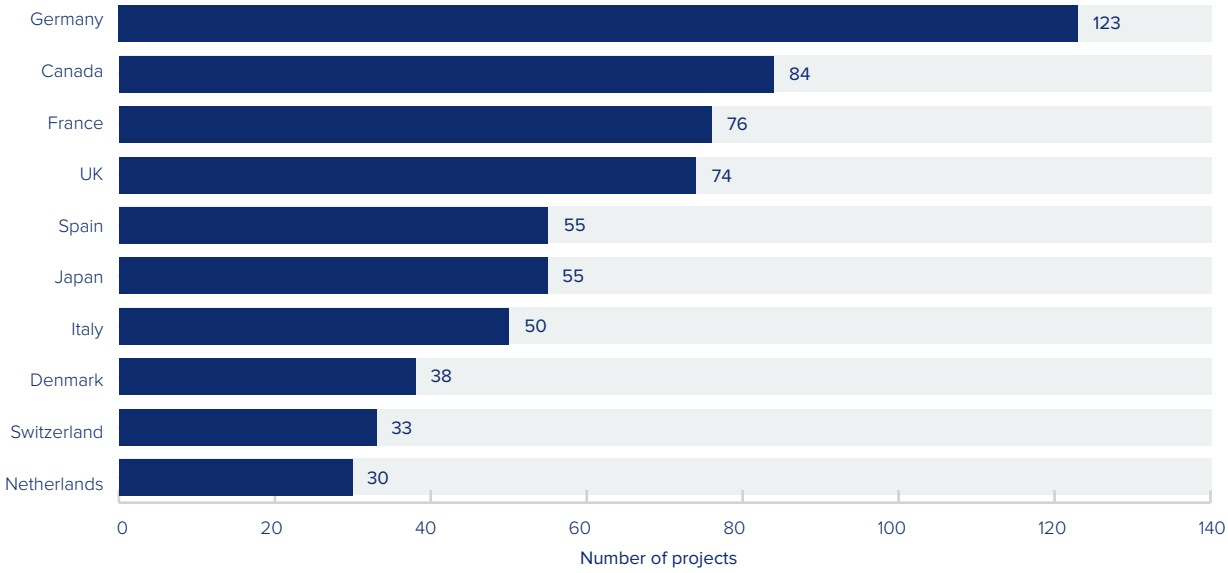
Transatlantic investment is not a zero-sum game, as we demonstrate throughout this book. That is particularly true regarding the transatlantic energy economy. U.S. and European firms are deeply embedded in each other's fossil-fuel and renewable energy markets – through trade, foreign investment, cross-border financing, and collaboration in research and development (R&D).[31] U.S. companies in Europe have become a driving force for Europe's green revolution, accounting for more than half of the long-term renewable energy purchase agreements signed in Europe since 2007 (Table 5), and European companies are the leading source of foreign direct investment (FDI) in the U.S. energy sector (Table 6).

Table 5. Top Purchasers of Renewable Energy in Europe, 2008-2021 (Megawatts)



*** Companies with asterisks are U.S. companies and represented by darker shading of bars.*
Europe is the EU plus Norway, Iceland, Switzerland and the UK.
Source: Bloomberg New Energy Finance.
Data as of February 2022.

Table 6. Top Sources of Inward FDI in U.S. Energy (825 Total Announced Greenfield Projects, July 2011 – August 2022)



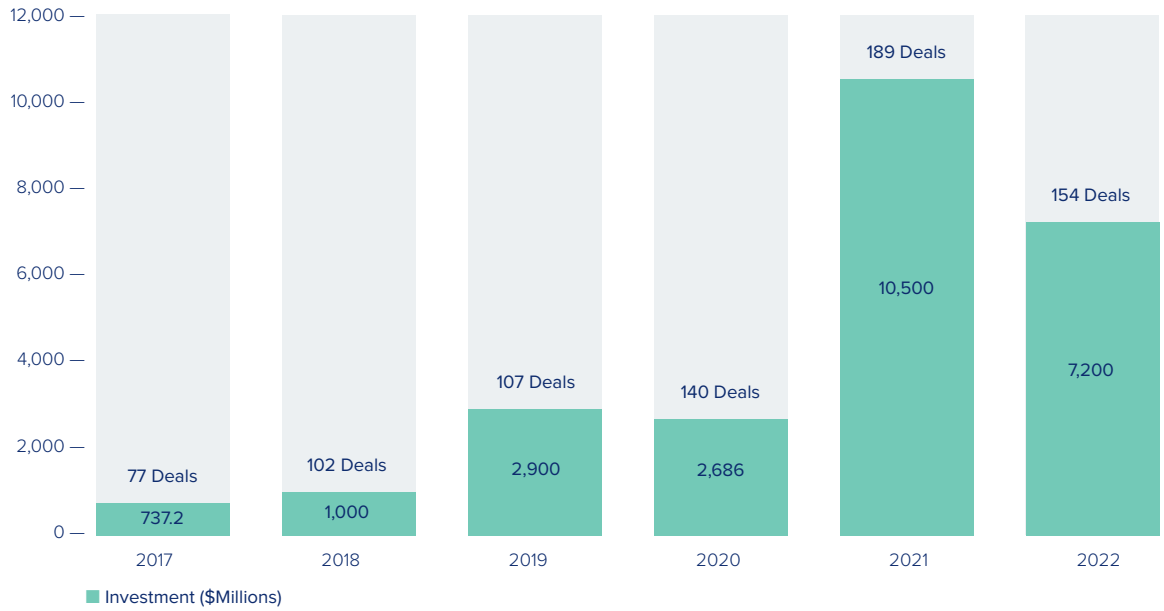
Source: SelectUSA, U.S. Department of Commerce, https://www.trade.gov/sites/default/files/2023-03/Energy.pdf. Data as of October 2022.

The U.S. and EU share both interest and capacity to accelerate innovative frontier technologies that can provide abundant, affordable, clean energy and manufactured goods. The potential is significant. According to the International Energy Agency, the global clean tech market is set to triple by 2030 to around $650 billion annually.[32]

Technological innovations, such as promising new approaches to energy storage, could reduce U.S. and European dependencies on critical materials or batteries found elsewhere. Advances in artificial intelligence promise to halve the time it takes to develop new battery materials.[33] New cobalt-free iron-phosphate based battery technologies have helped to reduce the price of cobalt by 60% since 2022. Sodium-based batteries are beginning to compete with traditional lithium batteries; the price of lithium has fallen 75% since 2022. Tesla, Mercedes-Benz and Porsche are adopting a silicon anode powder that replaces graphite in traditional lithium-ion batteries. Nonetheless, out of 20 sodium battery factories now planned or already under construction around the world, 16 are in China, according to Benchmark Minerals. In two years, China will have nearly 95% of the world's capacity to make sodium batteries. The challenge now is to scale the technology to compete with Chinese battery producers.[34]

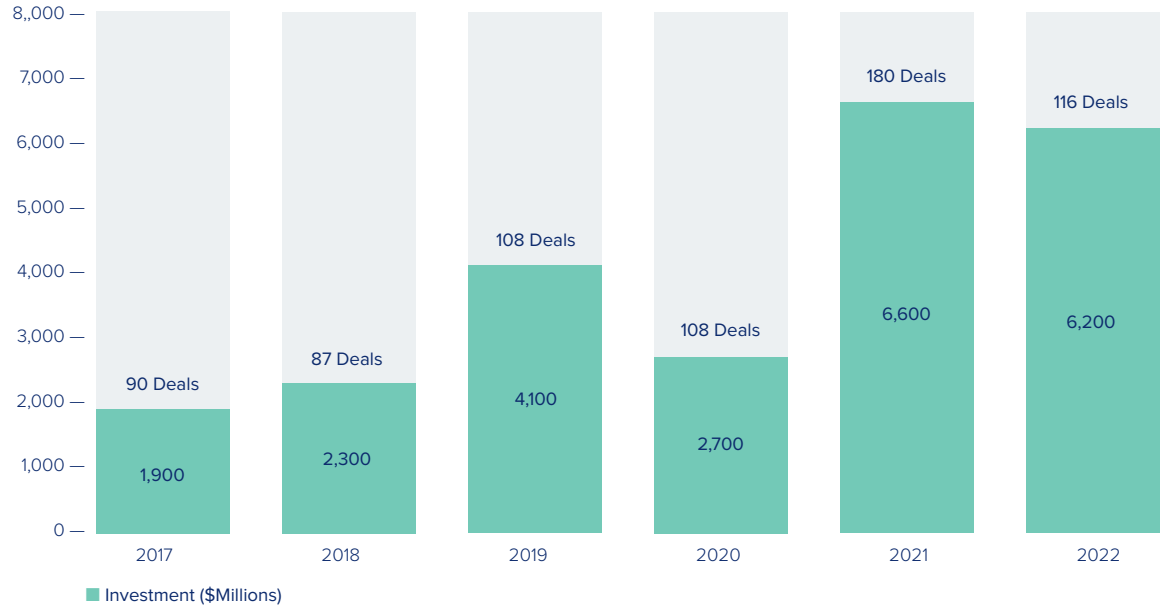
Transatlantic flows of risk capital are critical to cleantech innovation. EU investors are tapping into U.S. innovation and U.S. venture investors are providing scale-up capital for EU startups. Between 2017 and 2022, U.S. investors participated in 758 EU-based cleantech deals and EU investors joined 682 U.S.-based cleantech deals, according to CleanTech Group analysis (Tables 7 and 8). On average, U.S. and EU companies that received transatlantic investments reached growth stage, and received growth funding, faster than those that did not: 20% faster for EU-based companies; 8% faster for U.S.-based companies (Tables 9 and 10). Deal sizes for EU innovator investment rounds that included U.S. risk capital were significantly larger than those that did not involve a U.S. investor. 31% of EU deals that included U.S. investors were over $100 million. Only 8% of EU deals without a U.S. investor were over $100 million (Table 11).[35]

Table 7. **U.S. Investment in EU Innovators** ($ of Investments Represent Total $ Raised in the Rounds By Innovator)



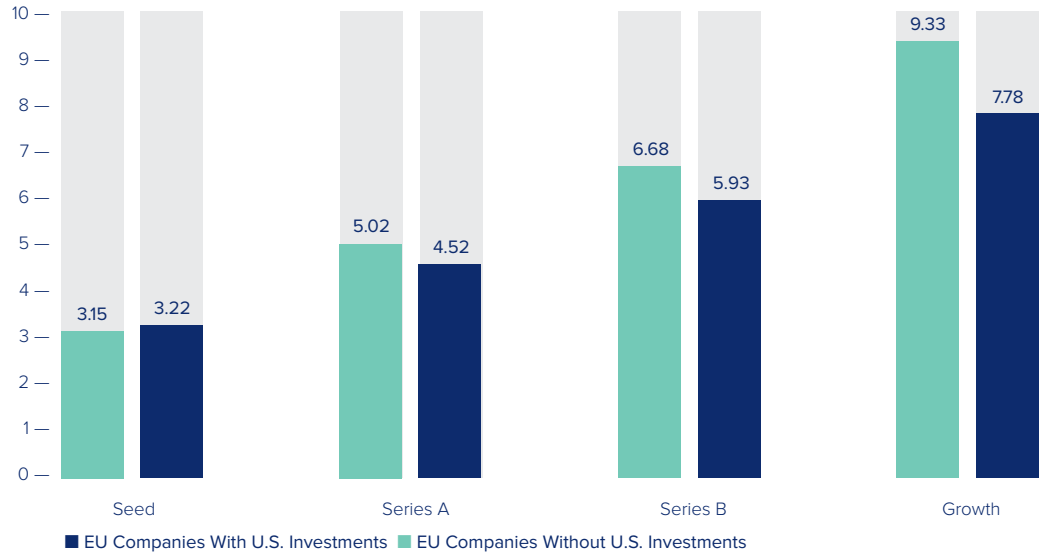
Source: Cleantech Group analysis.

Table 8. **EU Investment in U.S. Innovators** ($ of Investments Represent Total $ Raised in the Rounds By Innovator)



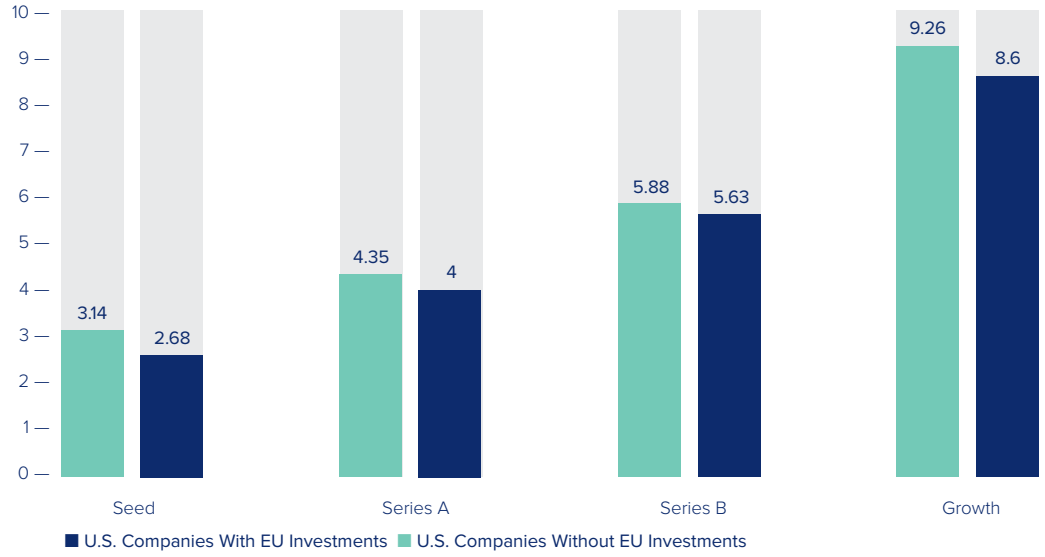
Source: Cleantech Group analysis.

Table 9. **Average Growth Timeline for EU Companies With and Without U.S. Investments** (Time from Founding to Investment, Years, Average)



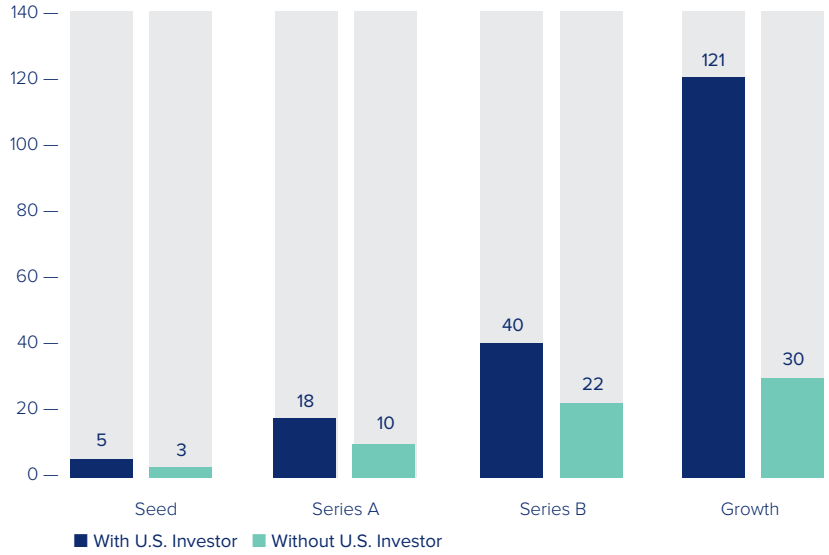
Source: Cleantech Group.

Table 10. **Average Growth Timeline for U.S. Companies With and Without EU Investments** (Time from Founding to Investment, Years, Average)



Source: Cleantech Group.

Table 11. VC Investment in EU Innovators: Average Deal Size (2017-2022, $Millions)



31% of EU deals that included US venture investors were over $100mn.

Only 8% of deals without a US investor were over $100mn for growth stage.

Source: Cleantech Group.

The potential for transatlantic cleantech investment is great on each side of the Atlantic. The carbon and energy sector, which includes cleantech, accounted for 27% of all capital invested in European tech in 2023, more than twice its share of investment in 2021. In the United States, companies boosted their investment in clean energy production by 41%. At the end of 2023, U.S. and European investors were sitting on a combined total of $419 billion worth of dry powder, or unspent cash.[36]

Clean transport technologies (CTT) offer special promise. The United States and the EU lead the world in terms of international cooperation on CTT inventions. CTT patenting cooperation between Germany and the U.S. alone accounted for around 45% of global high-value co-applications between 2010 and 2019.[37]

Advancing a Transatlantic Clean Tech Alliance

These figures underscore that transatlantic risk capital can be deployed successfully by venture investors to advance clean technologies at the innovation frontier. As we discussed in last year's survey, transatlantic synergies could be catalyzed more effectively if the U.S. and the EU moved forward on the pledge they made at the June 2021 U.S.-EU Summit to "work towards a Transatlantic Green Technology Alliance that would foster cooperation on the development and deployment of green technologies, as well as promote markets to scale such technologies." As a platform for officials, demand owners, and the investor/innovation community to share perspectives and identify priorities, a transatlantic cleantech alliance could highlight and support synergies among existing EU and U.S. cleantech efforts, identify and close gaps, and prioritize innovations that reduce, rather than exacerbate, their critical materials dependencies.[38]

Notes

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5

The Transatlantic Digital Economy

More data was generated over the last two years than in the entirety of human history.

69%
of EU firms have implemented advanced digital technologies since 2022

The digital jet stream is still flowing fast. More data was generated over the last two years than in the entirety of human history. By 2027, global data creation is projected to grow to more than 260 zettabytes. That is 260 followed by 21 zeros – about 3 billion times the Internet's size in 1997. Only about 2% of that data survives year-to-year. Still, 2% of 260 zettabytes is huge. By 2026, monthly global data traffic is expected to surge to 780 exabytes – more than three times data usage rates in 2020.[1] Global internet bandwidth has nearly tripled since 2019, even as growth slowed from a torrid pandemic-driven surge of 34% in 2020 to a more "normal" pace of 23% in 2023. According to Telegeography, total international bandwidth in mid-2023 stood at 1,217 Tbps (Terabits/one trillion bits per second).[2]

5.4 billion people – 67% of the world's population – were using the internet at the end of 2023, typically spending more than 40% of their waking life online. 95% of those users use a mobile phone to go online at least some of the time, and 93.5% use social media every month. 5.16 billion people own a smartphone. Mobile phones now account for roughly 57% of our online time and 53% of the world's web traffic.[3] In 2022, mobile technologies and services generated $5.2 trillion of economic value (5% of global GDP) and supported 28 million jobs. 5G will underpin future mobile innovation and services, building on ongoing deployments and adoption. 5G adoption is estimated to have reached 17% this year and projected to rise to 54% (5.3 billion connections) by 2030. The technology is on track to add almost $1 trillion to the global economy in 2030, with benefits spread across many industries.[4]

Over 60% of global GDP is now linked to digital transactions, according to the European Commission. More than 2 billion digital payments are made every day, and 1 of every 2 companies generates more than 40% of its revenues from digital products and services.[5] GSMA Intelligence forecasts that more than 38 billion devices will be connected to the internet by 2030, up from 15.1 billion in 2021.[6] The global Internet of Things (IoT) market, valued at $690.3 billion in 2021, is projected to grow to $1.5 trillion in 2026 and $1.85 trillion in 2028.[7]

Over the next three years, global spending on digital transformation is forecast to reach $3.9 trillion, with a five-year CAGR of 16.1%. The United States is the largest market for such spending, accounting for nearly 36% of the worldwide total. Western Europe will account for another 23% of all spending on digital transformation.[8] The World Economic Forum estimates that 70% of the new value created in the global economy over the next ten years will be digitally enabled.[9]

Digital Divides: Persistent, But Narrowing

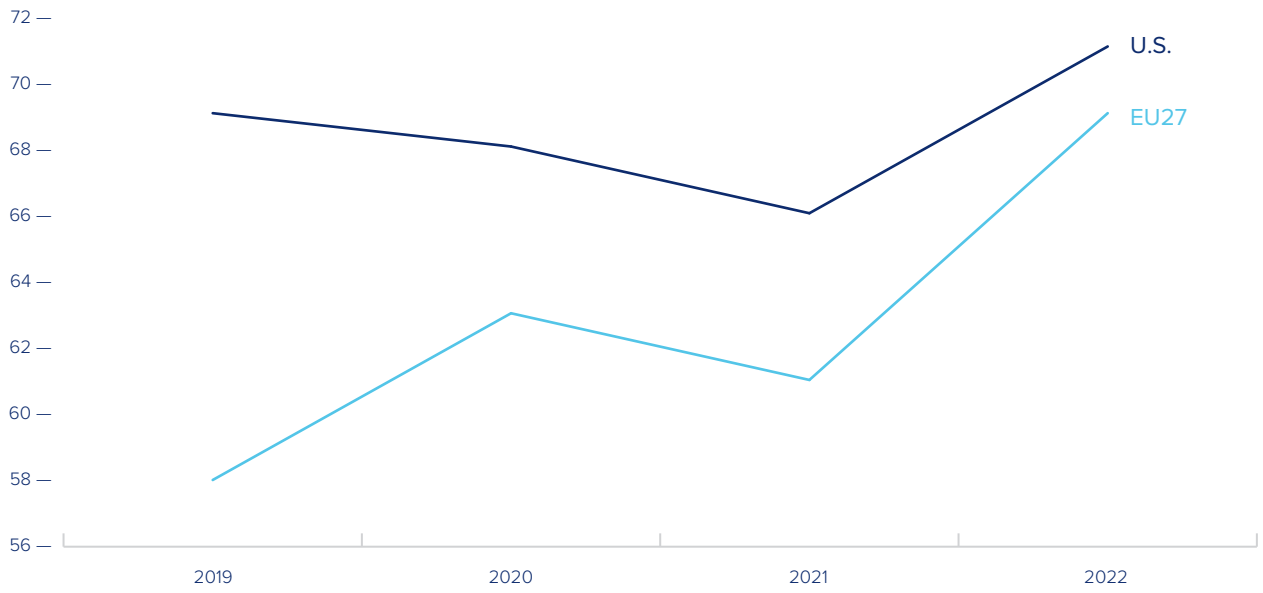
One unheralded consequence of the COVID-19 pandemic is that digital divides have narrowed across the transatlantic space, both within the United States and within Europe as well as between the two sides of the North Atlantic. The pandemic pushed many digital laggards – geographic regions, industrial sectors, and individual firms – to expand their digital operations and to extend their access. All told, digitalization increased by an average of 6% across advanced economies, according to the International Monetary Fund (IMF).

The pandemic narrowed the digital divide between European countries. For example, in 2019 more than four-fifths of workers in Sweden had computers with internet access, while Greece had less than two-fifths. By the time the pandemic subsided, the Greek share had surged almost 8 percentage points, to 45%, narrowing the gap with Sweden. Similar changes were evident across other European laggard countries.[10]

U.S. rural areas also closed the digital gap with urban metros. In 2016, only 63% of rural residents reported having home broadband. By 2021 that figure had risen 9 percentage points, to 72%, compared to 77% of adults living in urban areas and 79% in suburban areas. These and other critical disparities continue – by age, income, education, and racialized groups.[11] Overall, however, digital divides are narrowing across the country, spurred by a $42 billion initiative to help U.S. states accelerate broadband infrastructure deployment.

European companies are also closing the digital adoption gap with their U.S. counterparts. The share of EU firms implementing advanced digital technologies reached 69% in 2022, compared with 71% of U.S. enterprises, according to the European Investment Bank (EIB). The gap in the adoption of Internet of Things (IoT) technologies

Table 1. **Closing the Gap: Adoption of Advanced Digital Technologies by EU and U.S. Firms** (% of Total Firms, 2019-2022)



Source: EIBIS 2019-2022

between EU and U.S. firms also narrowed, from 18 percentage points in 2021 to 12 percentage points in 2022.[12]

A look beyond this broad comparison reveals wide disparities among EU countries when it comes to the adoption of advanced digital technologies. More than 75% of firms report using advanced digital technologies in Sweden, Austria, Slovenia, Czechia, Denmark, Belgium, Luxembourg, and Spain. The share was 66-75% for firms in Germany, Finland, Estonia, Poland, Italy, Croatia, the Netherlands and Romania, and fell to 50-65% for companies in France, Bulgaria, Ireland, Latvia, Portugal, Lithuania, Slovakia, and Greece.[13]

Digital transformations affecting the transatlantic economy

Opportunities for SMEs

Evolution of 3D printing

Development of the metaverse

Digital twinning technology

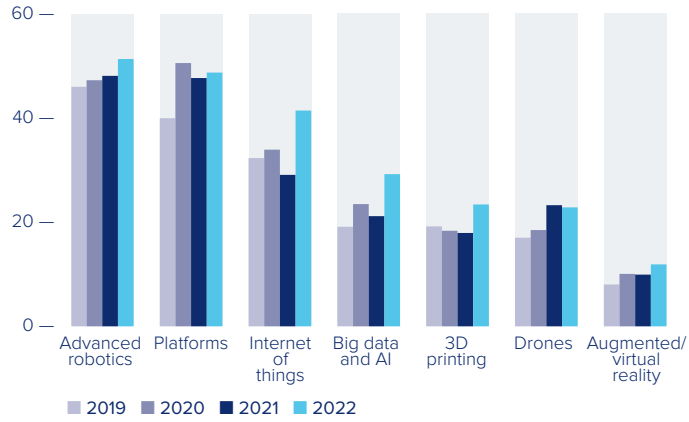
Emergence of Web3

Promise of the connected factory

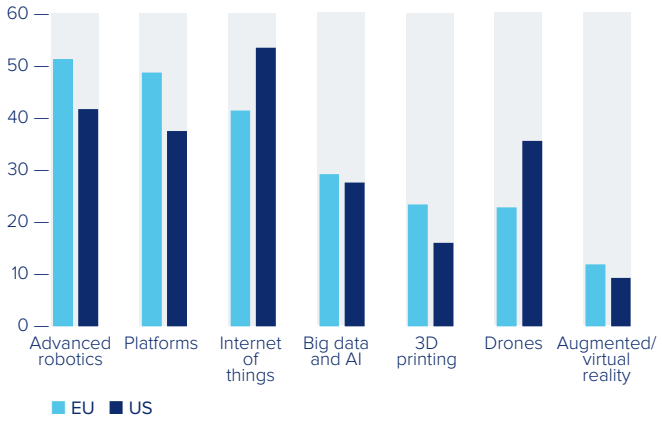
Advent of digital currencies

Table 2. Adoption of Specific Digital Technologies (% of firms)

a) European Union, 2019-2022

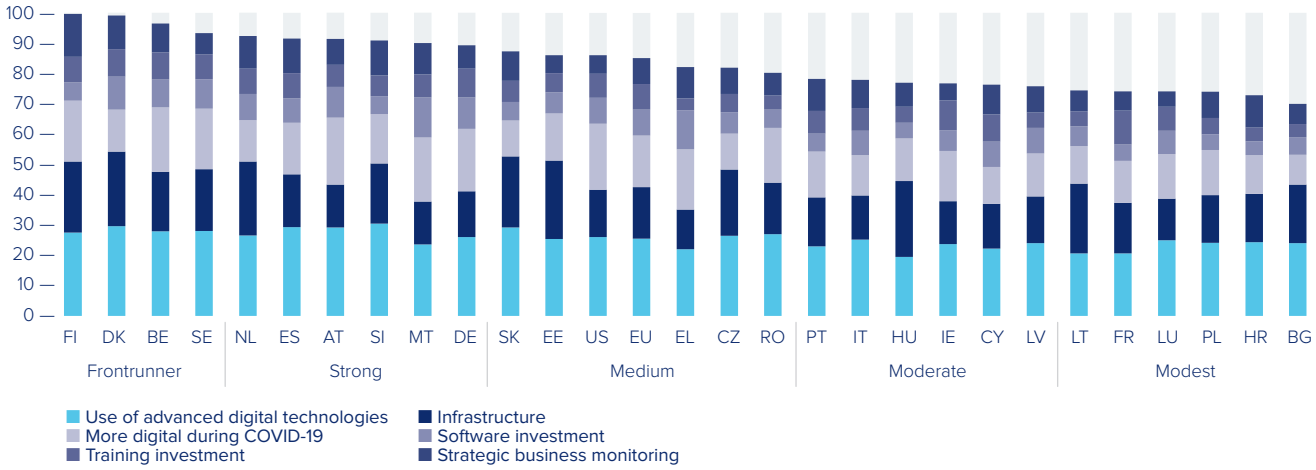


b) European Union vs. the United States, 2022



Source: European Investment Bank.

Table 3. Corporate Digitalization in the United States and EU Member States (EIBIS Index, by country)



Source: European Investment Bank.

Digital disparities continue within Europe and across the Atlantic. Several European countries outperform the United States (Table 3). The European Investment Bank ranks Finland and Denmark as the EU's top two digital countries, followed by Belgium and Sweden. Slovenia leads for the use of advanced digital technologies, Austria for boosting digitalization during the pandemic, Estonia for digital infrastructure, Malta for investment in software and data, France for investment in employee training, and Finland for the use of formal strategic business monitoring.

The Influencer Economy, Digital Finance, and Generative AI

For the transatlantic economy, several digital transformations bear watching. In previous surveys we have discussed opportunities for small- and medium-sized enterprises, the evolution of 3-D printing, the metaverse, digital twinning, the emergence of Web3, the promise of the connected factory, and the advent of digital currencies. Each of these developments remains significant.

Perhaps one of the most intriguing digital phenomena of recent years has been the rise of the "influencer" or "creator" economy, which Goldman Sachs estimates is now a $250 billion global industry with tens of millions of workers creating online content for hundreds of millions of customers.[14] YouTube estimates that its creators' work supported roughly 390,000 full-time jobs in the United States in 2022 – four times the number of people employed by General Motors. Linktree analysts expect the market to more than double to $480 billion by 2027, ahead of global revenue from video games, which PwC estimates will reach $312 billion by 2027. The *Washington Post* notes that an industry once "dismissed as a frivolous craze for tweens and teens" has "reshaped American culture, transformed how we get information, rewritten the rules for modern fame and amassed huge levels of wealth and influence."[15] Yet despite the creator economy's size and importance to the labor force, official records have yet to classify "social media" as an industry worth tracking.

Conflicting digital developments are whipsawing the financial world. On the one hand, digital transformation is rippling through the industry. Nine out of ten of the world's central banks are exploring digital versions of their own currencies. Digital payments accounted for 75% of all transactions in the U.S. in 2021, and even higher percentages in Finland, Sweden, and the UK, as the global share of cash-based payments continues to fall. McKinsey estimates that the global banking industry could boost productivity by up to 4.7% and generate up to $340 billion in additional annual revenues by embracing generative AI. And more developing countries searching for relevant digital models are turning from closed systems such as China's Alipay, and looking instead at India's Unified Payments Interface (UPI), an open platform that processed over $1 trillion in transactions in 2022, equivalent to a third of India's GDP.[16]

Even though "digital globalization" evokes the image of a seamless global marketplace, digital connections are "thicker" between some continents and "thinner" between others – and they are "thickest" between North America and Europe.

At the same time, concerns are growing that financial volatility can be triggered by taps on an app. On March 9, 2023, in what has been called "the first Twitter-fueled bank run," Silicon Valley Bank's panicked customers used their apps to pull an unprecedented $42 billion from their accounts – more than $1 million per second – for ten straight hours, and were on track to withdraw another $100 billion the next day before the bank was seized by federal regulators.[17]

The digital health market is projected to reach $612.4 billion by 2028

Relatedly, booming cryptocurrency and fintechs boosted their share of the global market capitalization of large listed and private payment firms, including banks and card networks, from about 9% in 2019 to 15% in autumn 2021, and then imploded in 2022. Their share has now fallen back to around 10%. Central banks warn that digital platforms that enable crypto investors to transact with each other, without oversight by central intermediaries, enables money-laundering and can generate greater financial volatility. And central bank digital currencies (CBDCs) already in circulation – such as China's e-cny, the Bahamas sand dollar, and Nigeria's e-naira, have thus far failed to take hold, as the U.S. Federal Reserve and a number of European central banks now question the need for CBDCs.[18]

As digital transformations envelop these fields, the buzz continues to center around generative AI, which promises to be more transformative than the smartphone. Open AI's ChatGPT broke all records by reaching 100 million monthly active users just six weeks after its debut – far faster than Instagram (2.5 years), WhatsApp (3.5 years), YouTube or Facebook (each 4 years). McKinsey estimates that generative AI could add up to $4.4 trillion annually to the global economy (the UK's entire GDP in 2021 was $3.1 trillion).[19] Hundreds of start-ups are engaged in the field, and venture capital is pouring in, despite ongoing concerns

related to bias, safety, mis- and disinformation, intellectual property, and the potential for massive labor displacements.[20] Generative AI tools can already churn out original prose, images, sounds and even code in response to human prompts. Companies are now tailoring new applications to more customized needs for specific industries. Gartner projects that by 2026, generative design AI will automate 60% of the design effort for new websites and mobile apps. Morgan Stanley foresees that 40% of all professions will be affected by generative AI by 2026, while research firm Valoir estimates that AI has the potential to automate 40% of the average work day.[21]

What's more, generative AI is integrating with predictive analytics into a form of predictive AI that is already affecting whole economic sectors.[22] In late 2023, for instance, the GraphCast AI model demonstrated that it was more consistently accurate – and at far less cost – than the world's leading weather forecasting system, although less so for sudden weather events.[23] In life sciences, predictive AI is poised to reshape clinical trials, genomic sequencing, therapeutics and preventive medical practice; enable drug discover; and facilitate more effective antibody treatments.[24] In 2022 the medical field led the way in AI investment, drawing just more than $6 billion, ahead of data management, processing and cloud ($5.86 billion) and fintech ($5.52 billion).[25] The overall global digital health market, valued at $276.36 billion in 2023, is projected to reach $612.40 billion by 2028.[26]

The Onrushing Bio-Cognitive Age

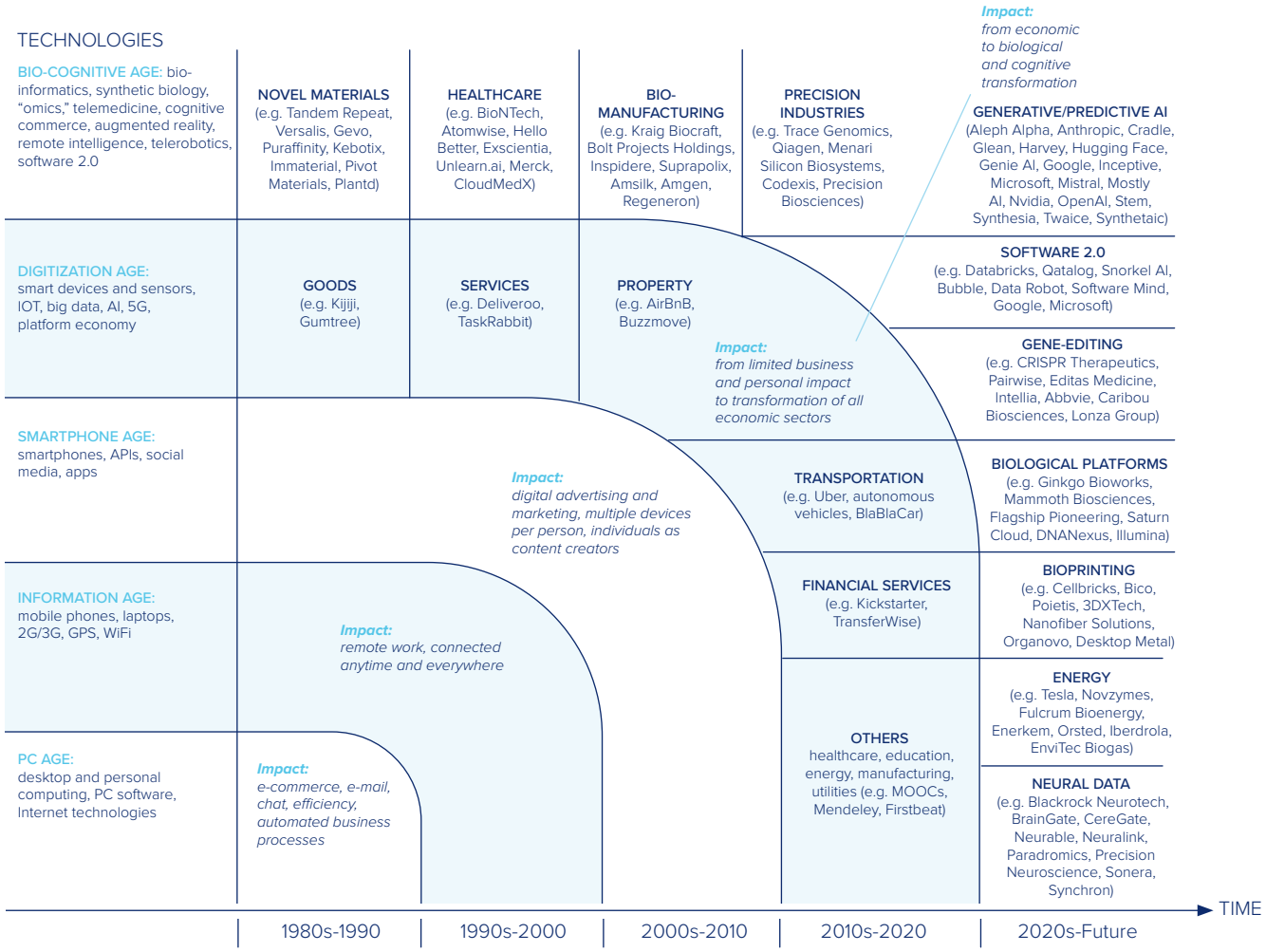
Breakthrough advances in the cognitive and biological sciences are further evidence that companies on both sides of the Atlantic are pioneering a new Bio-Cognitive Age.[27] Table 4 offers our updated view of this digital frontier, which showcases fields ranging from novel materials and bio-engineering to gene editing, bio-printing, and more.

Advances across these many fields continue to astound. MRNA tools, which were critical to tackling the COVID-19 pandemic, are now being applied to deal with malaria, tuberculosis, HIV, Zika, and RSV, and are opening a whole new world of weight-loss drugs. Spatial omics, which combine advanced imaging techniques with DNA sequencing, are being used to map a new generation of molecular-level "cell atlases" that could help doctors customize tumor treatments and unravel the complexities behind Alzheimer's disease and rheumatoid arthritis.[28] Scientists have now compiled a "pan-genome," a greatly expanded database that gives a more accurate representation of the genome of people from around the world, and that should eventually improve diagnosis and treatment of genetic diseases, aid drug discovery and bolster personalized medicine.[29] In 2023 several countries approved a therapy based on Crispr gene editing, by authorizing a treatment for sickle cell disease and beta thalassemia that could be used to replace bone marrow transplants. Even the stethoscope, which has not been redesigned for 200 years, is now being equipped with AI to detect heart disease instantly.[30]

Major breakthroughs have also been recorded in computational biology. Meta AI created a public atlas of 617 million predicted proteins, and DeepMind announced it could now predict the three-dimensional structure of nearly all proteins known to science, essentially solving a problem that researchers had been trying to crack for the past 50 years.[31] And while much commentary focuses on the potential for many routine medical decisions may be made by AI alone, healthcare is more likely to be influenced by highly-trained human medical professionals teamed with advanced generative and predictive AI tools – a phenomenon characterized as "centaur AI" or "centaur doctors."[32]

A next frontier is neural data and what scientists call "organoid intelligence." Stunning strides in neurotechnology are giving neurobiologists the ability to access brain activity. Brain-computer interfaces are being developed that can record data from brain cells and turn that information into applications that can help impaired individuals restore communicative and motor functions. Neuralink announced its first human brain chip implant in January. Wearable brain sensing devices coming to market could improve cognitive functions, diagnose mood disorders, even enable touch-free typing. These advances will further enhance the value of personal data, and are reviving debates about the importance of "cognitive liberty," which bioethicist Nita Farahany defines as "the right to control our thoughts and the data generated by our brains."[33]

Table 4 **The Expanding Digital Frontier**



Sources: GSMA Intelligence; McKinsey Global Institute; Author's own estimates.

Digital Apples and Oranges

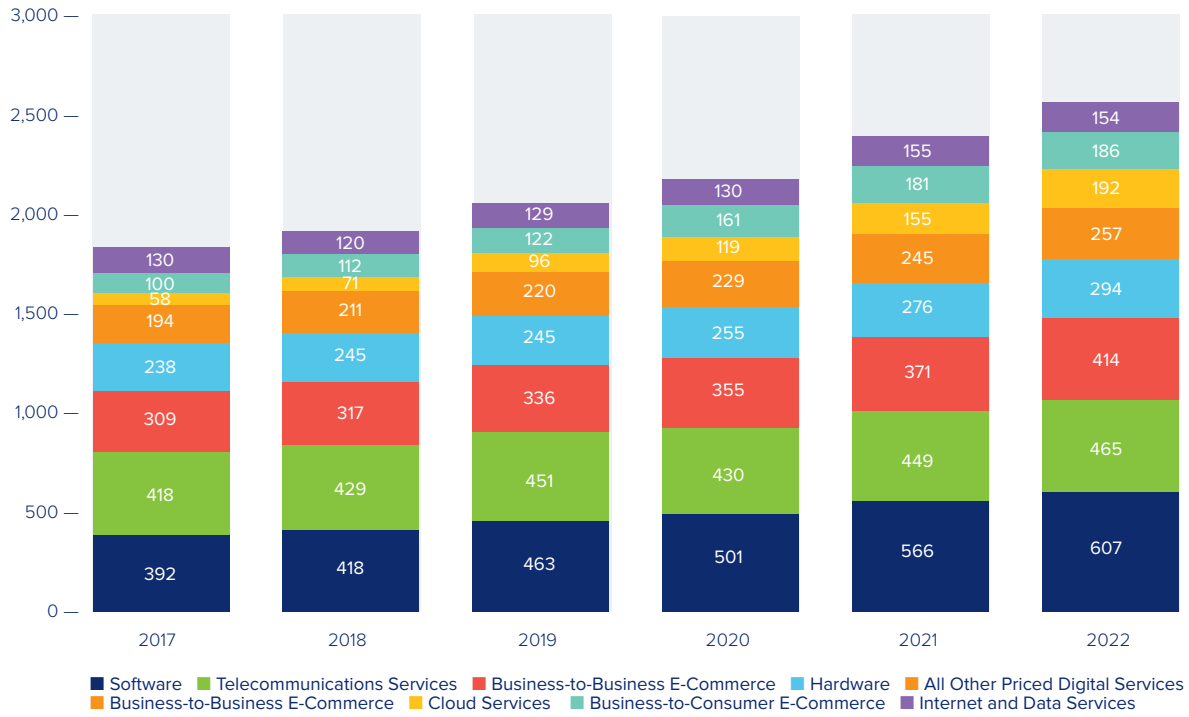
Given data's peculiar qualities, economists and governments have struggled to devise quality metrics to measure the digital economy. Some recent efforts are relevant to this year's survey.

The U.S. Bureau of Economic Analysis (BEA) now defines the digital economy to include four major types of goods and services: supportive and enabling infrastructure; electronic commerce; priced digital services charged to customers; and the annual budget of U.S. federal nondefense agencies whose services are directly related to supporting the digital economy. This definition begs many questions, including why the sizable, digitally-intense U.S. defense sector would be excluded. Nonetheless, based on these metrics, BEA estimates that real value-added growth of the U.S. digital economy (6.3%) far outpaced real GDP growth of the overall economy (1.9%) in 2022, accounting for $2.6 trillion of value added (10% of U.S. GDP), $1.3 trillion in compensation, and 8.9 million jobs.[34]

In 2022, software represented the largest share of value added in the U.S. digital economy (24%), followed by telecommunication services (18%) and business-to-business e-commerce (16%) (Table 5). Cloud services are growing the fastest (232.1% between 2017 and 2022) with an annual average growth rate of 27.2%.

The European Union takes a different tack. Its member states have not agreed on an official definition of what constitutes the digital economy. Instead, between 2014 and 2022 it published a flagship annual assessment, the Digital Economy and Society Index (DESI), that tracked the digital progress of EU member states according to four metrics: human capital; connectivity; integration of digital technology; and digital public services. Based on this assessment, Finland, Denmark, the Netherlands and Sweden had the most advanced

Table 5. U.S. Digital Economy Value Added by Detailed Activity Type, 2017-2022 ($Billions)



Source: U.S. Bureau of Economic Analysis.

digital economies in the EU, followed by Ireland, Malta and Spain. Romania, Bulgaria and Greece had the lowest DESI scores.

In 2023 DESI was transformed into a dashboard of indicators summarizing EU and member state progress toward four key goals set out in the EU's Digital Decade. According to the first EU digital target, at least 80% of all adults should have minimum basic digital skills by 2030. In 2021 only 54% had reached this level. The second digital target states that at least 20 million ICT specialists should be employed in the EU by 2030; in 2022, around 9 million people were so employed. According to the third digital target, more than 90% of SMEs should reach at least a basic level of digital intensity, and 75% of EU companies should use cloud computing services, perform big data analysis, or use artificial intelligence. In 2022, the SME share was 69%, around 20 percentage points below the target, and in 2021, 41% of businesses in the EU bought cloud computing services – 34 percentage points below the target. The fourth EU digital decade target states that all key public services for businesses and citizens should be fully online by 2030. In 2022, 42% of EU people used the internet to obtain information from public authorities' websites.[35]

Europe and the U.S. remain each other's main commercial trading partners in digitally-deliverable services.

How Prepared are Europe and the United States for the Digital Transformation?

A global assessment is offered by the 2023 Network Readiness Index, which measures how prepared countries are to leverage opportunities offered by technological innovation. It does so by looking at the state of technology infrastructure, the ability of individuals, businesses, and governments to use ICT productively, how conducive the national environment is for a country's participation in the network economy, and the economic, social, and human impact of a country's participation in the network economy. Based on these metrics, Europe and North America represent 8 of the top 10 countries, and 17 of the top 25, when it comes to technology readiness and adoption (Table 6). Singapore and South Korea were the lone Asian countries in the top ten.[36]

Table 6. Top Ten Network-Ready Countries, 2023

Country	NRI Rank	Technology	People	Governance	Impact
United States	1	1	4	7	23
Singapore	2	5	6	10	1
Finland	3	10	7	1	1
Netherlands	4	4	15	2	5
Sweden	5	9	9	5	4
Switzerland	6	2	14	13	6
Republic of Korea	7	17	1	18	11
Denmark	8	11	11	3	8
Germany	9	6	8	14	10
United Kingdom	10	8	10	16	9

Source: Soumitra Dutta and Bruno Lanvin, eds., The Network Readiness Index 2023 (Washington, DC: Portulans Institute, 2023), https://networkreadinessindex.org.[37]

Five Lenses on the Evolving Transatlantic Digital Economy

Due to these apples-and-oranges approaches, it is difficult to come up with a clear estimate of the overall size or value of the transatlantic digital economy. Our interest in this annual survey, however, is more on how North America and Europe connect, rather than on how they compare. With that in mind, we present five ways to look at the transatlantic digital economy. These metrics are not mutually exclusive; they are best understood as different lenses through which one can better understand the importance of transatlantic digital connections.

Together, these five metrics convey one clear message: even though "digital globalization" evokes the image of a seamless global marketplace, digital connections are "thicker" between some continents and "thinner" between others – and they are "thickest" between North America and Europe.

1. Cross-Border Trade and Investment in Digital Services and Digitally-Deliverable Services

Digitalization is changing the scale, scope, and speed of trade. It has blurred the distinction between goods and services. It has lowered shipping and customs processing times. It offers alternative means of payment and finance. It can boost growth, reduce costs, foster innovation, and promote resilience to disruptive shocks. At a time when trade in many traditional goods and services has flagged, digital trade is booming.

Cross-border digitally delivered services are the fastest growing segment of international trade, registering an almost fourfold increase in value since 2005, with an 8.1% average annual growth rate for almost two decades. This has outpaced growth in goods exports (5.6%) and other services exports (4.2%) (Table 7). The value of global trade in digitally delivered services rose to $3.82 trillion in 2022, accounting for a record 54% share of overall services trade.[38]

Europe and North America accounted for two-thirds of global exports of digitally delivered services in 2021 (Table 8). The EU is the global leader, with a 37% share, followed by the U.S. (16%), the UK (9%), Canada and other European countries.[39]

In 2022, U.S exports of digital services totaled $93.3 billion, while U.S. digital services imports were $51.2 billion, resulting in a U.S. digital services trade surplus of $30.2 billion. U.S. trade in digitally-deliverable services was much higher: exports of $626.0 billion and U.S. imports of $370.0 billion. The result: a digitally-deliverable trade surplus of $256.0 billion.[40]

The UK was the U.S.' top overall trading partner in digitally-deliverable services, and its largest source of digitally-deliverable services imports. Ireland maintained its position as the top recipient country for U.S. exports of digitally-deliverable services for the fourth year in a row.[41]

In terms of world regions, Europe and the U.S. remain each other's main commercial trading partners in digitally-deliverable services. In 2022

Digitally-enabled services exports (2021)

$244.2 billion

U.S. exports to the EU

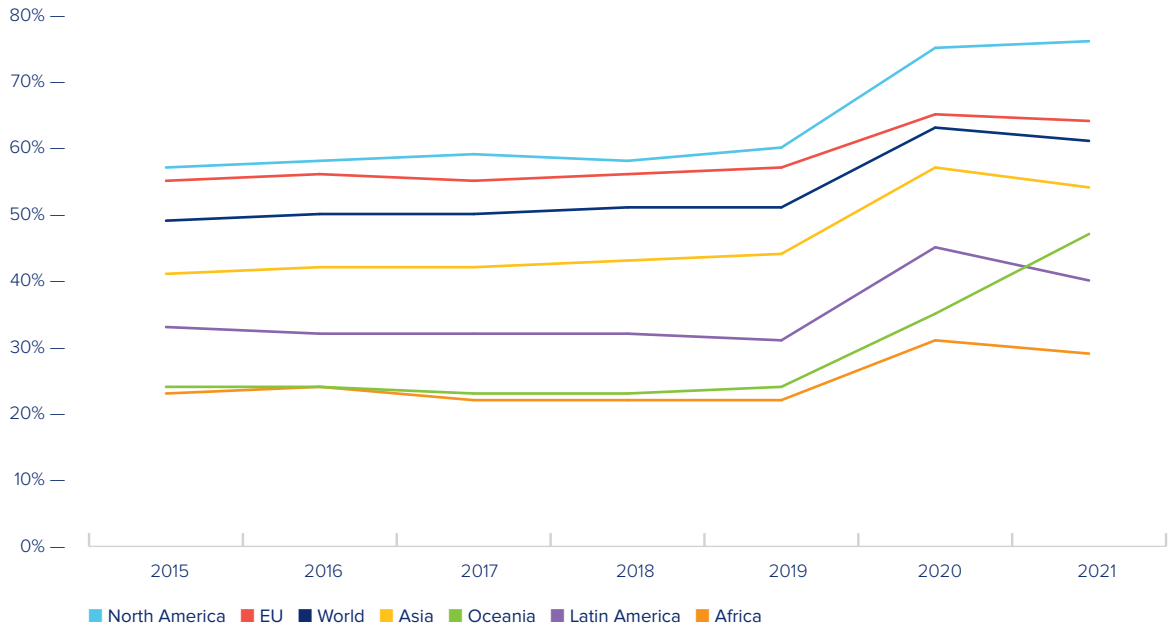
$208.4 billion

EU exports to the U.S.

Table 7. Digitally Delivered Services: The Fastest Growing Segment of International Trade
Export Growth Index (2005=100)

Source: IMF, OECD, UNCTAD, World Bank, WTO, Handbook on Measuring Digital Trade, 2nd Edition, 2023, https://www.oecd-ilibrary.org/docserver/ac99e6d3-en.pdf.

Table 8. Digitally Deliverable Services Exports by Region (Share in total services exports)



Source: UNCTAD;WTO; OECD.

the United States exported $307 billion in digitally-deliverable services to Europe – more than double what it exported to the entire Asia-Pacific region ($141 billion), and more than combined U.S. exports of digitally-deliverable services to the Asia-Pacific, Latin America and other Western Hemisphere, Africa and the Middle East. Europe accounted for 49% of all U.S. digitally-deliverable exports to the world. Within Europe, the EU accounted for 61%, and the EU+UK+Switzerland accounted for 97%, of U.S. digitally-deliverable exports. The U.S. had a $103 billion trade surplus with the EU in digitally-deliverable services in 2022.[42]

In 2021, EU member states exported about $1.52 trillion in digitally-enabled services. 46% went other EU member states. The United States was the largest customer for EU digitally-enabled services exports, accounting for 25% ($208.4 billion) of the EU's digitally-enabled services exports to non-EU countries.[43] The EU exported about the same to the U.S. alone as to the entire region of Asia and Oceania ($210.9 billion) (Table 9).

In 2021, EU member states imported about $1.45 trillion in digitally-enabled services. 44% originated from other EU member states. Another 17% ($244.2 billion) came from the United States, making it the largest single-country supplier of these services. EU imports of these services from the U.S. were 30% more than EU imports from the UK ($169.8 billion) and more than twice EU imports from the entire region of Asia and Oceania ($119.7 billion) (Table 10).

Digitally-Enabled Services Supplied Through Foreign Affiliates

The digital economy has transformed the way trade in both goods and services is conducted across the Atlantic and around the world. Even more important, however, is the delivery of digital services by U.S. and European foreign affiliates – another indicator reinforcing the importance of foreign direct investment, rather than trade, as the major driver of transatlantic commerce.

In 2021, U.S. services supplied by affiliates abroad were $1.95 trillion, roughly 2.4 times U.S. global services exports of $801.14 billion. Half of all services supplied by U.S. affiliates abroad are digitally-enabled – also larger than U.S. global services exports.[44]

Table 9. Destination of EU27 Exports of Digitally-Enabled Services, 2021 ($Billions)

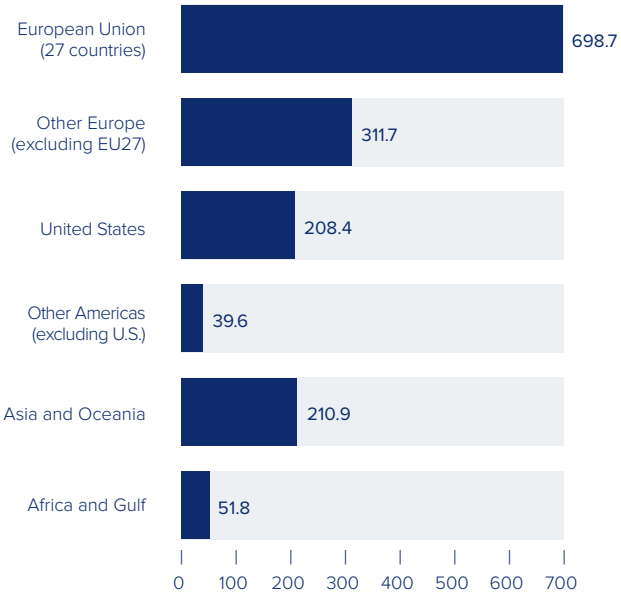
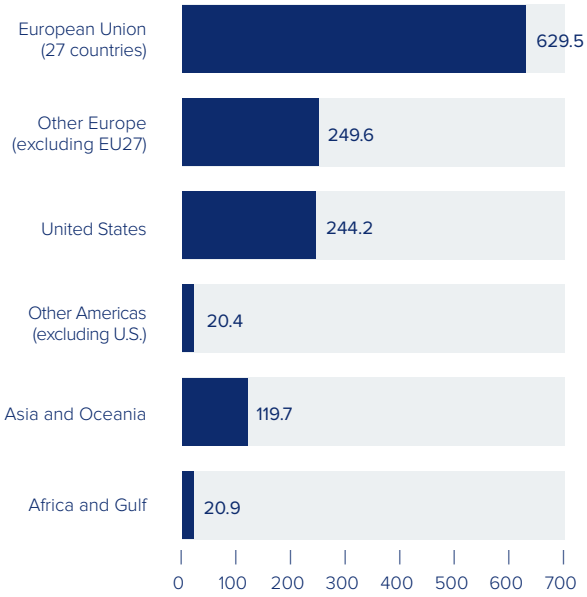


Table 10. Origin of EU27 Imports of Digitally-Enabled Services, 2021 ($Billions)



Note: Digitally-enabled services includes finance; insurance; IP charges; telecommunications, computer, information services; R&D services; professional and management services; architectural, engineering, scientific and other technical services; trade-related services; audiovisual services; and other personal, cultural, and recreational services.
Source: Authors' own calculations based on OECD, Eurostat.

Transatlantic data flows account for more than half of Europe's data flows and about half of U.S. data flows globally.

EU-based firms transferring data to and from the U.S. (2020)

Over 90%

The significant presence of leading U.S. service and technology leaders in Europe underscores Europe's position as the major market for U.S. digital goods and services. In 2021, Europe accounted for 67% of the $434 billion in total global information services supplied abroad by U.S. multinational corporations through their majority-owned foreign affiliates. This is not surprising given the massive in-country presence of U.S. firms throughout Europe, with outward U.S. FDI stock in information overwhelmingly positioned in Europe. U.S. overseas direct investment in the "information" industry in the UK alone, for instance, was triple U.S. information industry investment in the entire Western Hemisphere outside the United States, and 15 times more than such investment in China. Equivalent U.S. investment in Germany was 3.8 times more than in China.

2. E-Commerce

Electronic commerce (e-commerce), which refers to transactions in which goods or services are ordered over a computer network (usually over the Internet), offers a second window into transatlantic digital connections.[45] Here again we run into some definitional and data challenges. Most estimates of e-commerce do not distinguish whether such commerce is domestic or international. Many metrics do not make it clear whether they cover all modes of e-commerce or only the leading indicators of business-to-business (B2B) and business-to-consumer (B2C) e-commerce. Finally, in most economies, there are simply no national statistics on the value of e-commerce, and those that do exist vary in terms of definitions, data sources and methods, and approaches to e-commerce value. Many are based on surveys rather than on real data.[46]

Nevertheless, we can evaluate and compare many different estimates and surveys that have been conducted. B2B and B2C global e-commerce revenue reached an estimated $32.5 trillion in 2023. Projections indicate a rise to $40 trillion in 2025 and to over $79 trillion by 2030.[47]

When most people hear the term 'e-commerce,' they think of consumers buying things from businesses via websites, social networks, crowdsourcing platforms, or mobile apps. These business-to-consumer transactions (B2C), however, pale in comparison to business-to-business (B2B) e-commerce, which accounts for most global e-commerce. In 2023 B2B e-commerce was valued at $26.2 trillion, over four times that of the B2C e-commerce market ($6.3 trillion). Projections indicate the B2B e-commerce market will grow to $56.9 trillion in 2028.[48]

Official estimates of the value of combined B2B and B2C e-commerce sales indicate that the United States has the largest overall e-commerce marketplace.[49] China has the largest B2C e-commerce market, reflecting its billion-plus population. China is underweight, however, when it comes to B2B e-commerce, whereas the U.S. B2B e-commerce marketplace is significant.

In the U.S., 74.9% of e-commerce is B2B and 25.1% is B2C. The U.S. B2B e-commerce market was valued at $3.6 trillion in 2023; projections indicate it will grow to $6.6 trillion in 2028. The U.S. accounted for 13.8% of global B2B ecommerce in 2023. North America's B2B e-commerce market was worth $3.9 trillion in 2023, equivalent to 15% of the global market. Europe's B2B e-commerce was worth $1.8 trillion in 2023, 6.3% of the global market.[50]

Global B2C e-commerce reached an estimated $6.3 trillion in 2023, up 10.4% from 2022 ($5.7 trillion). Projections indicate that value will increase to $8 trillion in 2027. China accounts for 52.1% of global B2C e-commerce sales, followed by the U.S. (19%) and the UK (4.8%). Japan, South Korea, and Germany rank 4th, 5th, and 6th, respectively. U.S. B2C e-commerce sales reached $1.21 trillion in 2023, up 16.3% from 2022. Projections indicate that U.S. retail e-commerce sales will exceed $2 trillion in 2027. B2C e-commerce accounts for 14.4% of all U.S. retail sales.[51]

21% of all e-commerce purchases made in Europe crosses a border. 25% of EU consumers purchase from e-commerce sellers from non-EU countries. The European B2C e-commerce market generated $465.4 billion in revenue in 2021.[52]

While B2B e-commerce accounts for the bulk of global e-commerce, most B2B e-commerce does not cross a border. Most B2B e-commerce

users are manufacturers or wholesalers who are dependent on physically moving goods, and often heavy freight; the lack of freight digitalization ultimately poses a barrier to cross-border B2B e-commerce. The sheer volume of B2B e-commerce, however, means it still is the most important component of cross-border e-commerce sales.[53]

There are 2.64 billion online shoppers worldwide, or one-third of the global population. The American shopping event Black Friday has gone global to become the world's biggest online shopping day.[54] Global e-commerce retail sales are predicted to reach $9.4 trillion by 2026. Around 22% of all B2C e-commerce sales worldwide are cross-border sales. Cross-border B2C e-commerce sales were an estimated $992.92 billion in 2022, up 25.1% from their 2021 total of $793.7 billion. The global cross-border B2C e-commerce market is expected to reach $3 trillion by 2028.[55]

56% of online shoppers in Canada, and 52% of online shoppers in Spain, purchased items from other countries in the past year. Next was Italy at 47%, followed by France (46%), UK (43%), and Germany (33%). 32% of U.S. online shoppers purchased from a foreign online retailer in the past year.[56]

More than 75% of European internet users buy goods or services online.[57] In 2022, the total cross-border B2C e-commerce market in Europe, including the UK, Switzerland and Norway, amounted to a turnover of $292 billion (excluding travel). Among 16 prominent European e-commerce markets, 27.3% of total B2C turnover was cross-border in 2022. Cross-border turnover accounted for 35% or more of total ecommerce turnover for Austria, Belgium, Denmark, Finland, Ireland, Italy, Luxembourg, Norway, Portugal, Sweden, and Switzerland.[58]

3. The Platform Economy

Platform companies that connect individuals and companies directly to each other to trade products and services continue to reshape the U.S. and European economies, as well as the commercial connections between them. Platforms have swiftly become a prominent business model in the transatlantic and global economy, both by matching supply and demand in real time and at unprecedented scale, and by connecting code and content producers to develop applications and software such as operating systems or technology standards.[59] Seven of the world's ten most valuable firms currently operate using a platform business model.[60] In 2020 a team at MIT found that the top 43 publicly-listed platform companies had nearly twice the operating profits, growth rates and market capitalizations of the 100 largest firms in the same businesses over a 20-year period – with half the workers.[61] By 2025, platform models are projected to expand to around $60 trillion, or nearly one-third of all global commerce.[62]

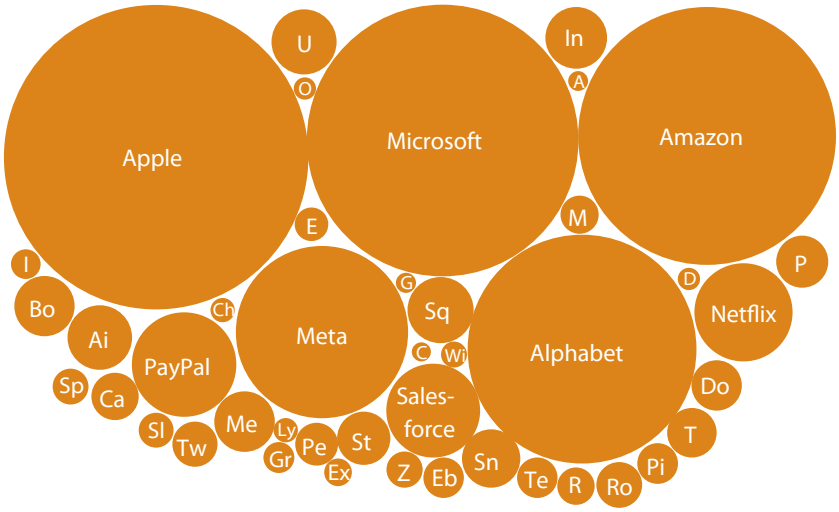
Size matters in the platform economy. The biggest are U.S. companies, which account for about two-thirds of the global platform economy. According to a study by DinarStandard, a consultancy, U.S.-based companies accounted for 90% of the 371 billion average monthly users of digital platforms in 2022.[63] Next come Chinese companies. European platform companies on average are markedly smaller than their U.S. and Chinese counterparts, and together represent only 3% of global market value (Table 11).

The dramatic rise of U.S. and Chinese platform companies has generated considerable concern among Europeans that they may be missing out on a major economic transformation. Europe certainly faces some challenges. However, size is not everything. Platform economics have rewarded entrepreneurship and the adoption of new business models. Those who can develop both their digital and their entrepreneurial ecosystems stand to profit greatly from the platform revolution.

The Digital Platform Power Index (Table 12) explores which countries could best gain from this transformation. It compares the current economic influence of countries' current platforms, the degree to which countries offer a supportive enabling environment for further platform development, and the readiness of countries to spawn next-generation platforms. According to this Index, North America and Europe account for 16 of the top 25 countries.

Table 11. Geographical Distribution of the Top Global Platforms. Based on MarketCap/last-known venture round valuation. (December 2021)

America



Airbnb
Alteryx
Booking
Carvana
Chegg
Doordash
Dropbox
Ebay
Etsy
Expedia
Grainger
Grubhub
Instacart
Intuit
Lyft
Match
MercadoLibre
Opendoor
Palantir
Peloton
Pinterest
Roblox
Roku
Slack
Snap
Splunk
Square
Stripe
Teladoc
Twilio
Twitter
Uber
Wish
Zillow

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Edenred
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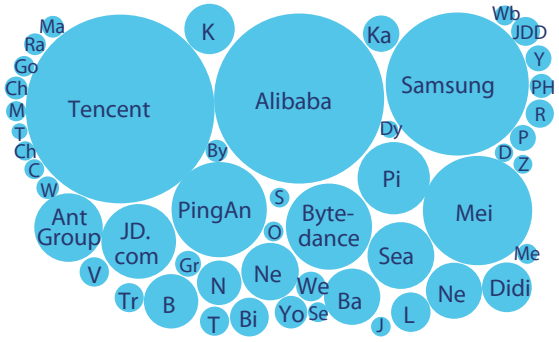
Klarna
Spotify
Just Eat T.
Yandex

Asia-Pacific



Baidu
Beike
Bilibili
BYJU
Chehaoduo
Coupang
Dada Nexus
Didi Chuxing
Go-Jek
Grab
JD Digits
Kakao
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Paytm
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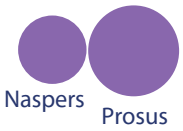


Share in total value, by region (%)

Number of top 100 platforms, by region

Source: Holger Schmidt, available at www.netzoekonom.de/vortraege/#tab-id-1 (data as of December 2021).

Table 12. Global Digital Platform Power Index

Rank	Country	Economic Influence of Domestic Platforms	Enabling Environment	Readiness for Next Gen Platforms
1.	U.S.	7.0	8.7	9.1
2.	China	5.0	6.9	6.4
3.	Japan	3.0	9.0	7.7
4.	Netherlands	2.0	8.9	8.7
5.	South Korea	2.5	8.6	7.7
6.	Singapore	2.0	8.8	8.3
7.	Germany	1.5	9.5	8.4
8.	Russia	3.9	7.5	6.1
9.	Canada	2.0	8.4	8.7
10.	UK	1.5	8.9	8.3
11.	Sweden	1.0	9.3	8.6
12.	Spain	1.0	8.7	7.3
13.	Switzerland	<0.5	9.2	8.7
14.	Denmark	<0.5	9.4	8.4
15.	Israel	1.0	8.0	7.4
16.	Australia	0.5	8.0	8.0
17.	Belgium	<0.5	9.1	7.7
18.	France	<0.5	8.9	7.9
19.	Norway	<0.5	8.5	8.0
20.	Poland	0.5	8.3	6.6
21.	Hong Kong	<0.5	8.1	7.7
22.	Czechia	0.5	7.7	7.0
23.	Italy	0.5	7.8	6.9
24.	Estonia	<0.5	8.0	7.1
25.	Taiwan	1.0	6.9	5.9

Ranking on scale of 10. Source: DinarStandard, "Global Digital Platform Power Index 2023," https://2feea378-8f71-46c9-9424-36229a900f86.usrfiles.com/ugd/2feea3_b69dbe6fa1ea49548d3768008b168446.pdf.

In the end, it is Europe's larger ecosystem that is like to shape its future in the platform economy. This underscores the importance of a true European Single Market, including a more integrated Digital Single Market, that would transcend fragmentation of languages, consumer preferences, rules and regulations to facilitate cross-border research, development and commercialization that could introduce new technologies and fresh business models to reach the kind of scale that platform companies have achieved in the large continental markets of the United States or China.[64]

4. Cross-Border Data Flows

Another lens through which we can better understand transatlantic digital connections is to appreciate the role of cross-border data flows, which not only contribute more to global growth than trade in goods, they underpin and enable virtually every other kind of cross-border flow.[65]

Transatlantic data flows are critical to enabling the $8.7 trillion EU-U.S. economic relationship. They account for more than half of Europe's data flows and about half of U.S. data flows globally. Over 90% of EU-based firms transfer data to and from the United States.[66]

However, despite the broad recognition of its value, and the need to develop appropriate policy frameworks, there is still no consensus method for empirically determining the value of data.[67] One reason is that data is a special resource different than goods and services. UNCTAD calls cross-border data flows "a new kind of international economic flow, which lead to a new form of global interdependence."[68] Data flows are not necessarily a proxy for commercial links, since data traffic is not always related to commercial transactions.[69] Knowing the volume of data flows does not necessarily provide insight on the economic value of their content. The Bureau of Economic Analysis puts it succinctly: "Streaming

a video might be of relatively little monetary value but use several gigabytes of data, while a financial transaction could be worth millions of dollars but use little data."[70]

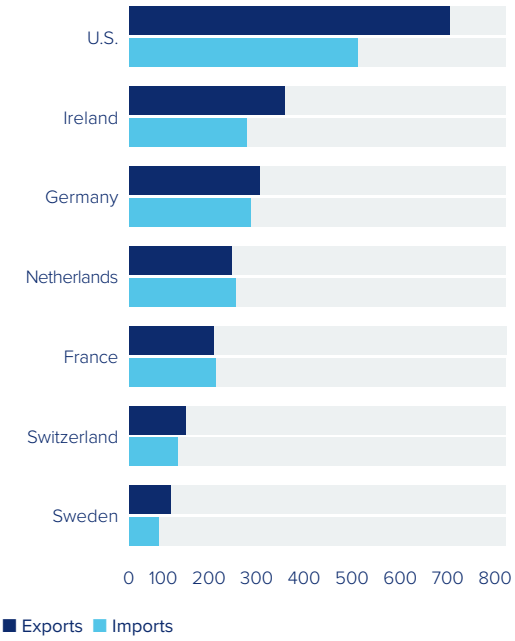
In addition, commercial transactions do not always accompany data, and data do not always accompany commercial transactions. For instance, multinational companies often send valuable, but non-monetized, data to their affiliates.[71] User-generated content on blogs and on YouTube drives very high volumes of internet traffic both within countries and across borders, but consumers pay for very little of this content. Since it does not involve a monetary transaction, the significant value that this content generates does not show up in economic or trade statistics.[72]

In short, data flows are commercially significant, yet their extent, as well as their commercial value, are hard to measure and are in constant flux.

Cross-Region Data Flows

Globally, the most intense and valuable cross-region data flows continue to run between North America and Europe. They are also almost certainly the most valuable, even if their worth is difficult to measure. The OECD devised metrics to determine the most active countries when it comes to delivering products across borders through data flows, as opposed to considering all transactions facilitated through data flows. It determined that the United States is a major hub for international trade in products delivered through data flows, and that France, Germany, India, Ireland, the Netherlands, Switzerland, and the United Kingdom also feature heavily in trade underpinned by data, all ahead of China (Table 13).[73]

Table 13. International Trade Underpinned by Data Flows, Top Countries ($Billions)



Note: Trade underpinned by data flows includes four categories: (1) "ISIC J production", or trade in products produced by firms classified in ISIC section J (Information and Communication); (2) "ISIC J products," or trade in the products mainly associated with firms classified in ISIC section J but including production by firms classified in other sectors; (3) "Digitally deliverable services," or "potentially ICT-enabled products" per UNCTAD (2015); and (4) "Digitisable products," or products within the WTO HS commodity classification per Banga (2019).
Source: OECD, Perpectives on the Value of Data and Data Flows, December 2020.
Data as of October 2020.

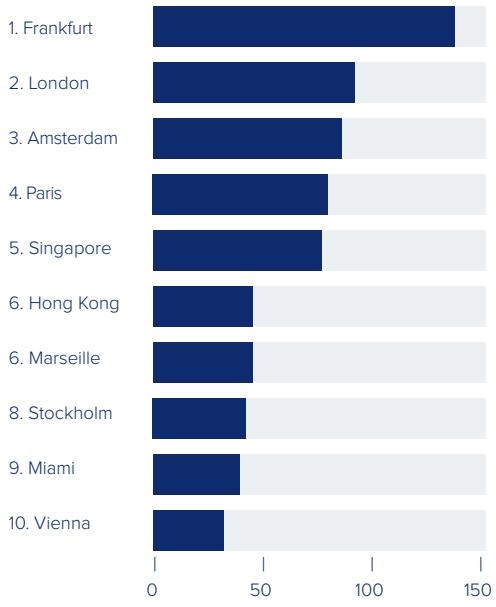
5. Digital Wiring: Land-Based Hubs and Sea-Based Spokes

The Digital Landscape: Hubs and Hyperscalers

The United States and Europe host key land-based hubs and sea-based spokes of the global digital economy.

European and U.S. cities are major hubs of cross-border digital connectivity. Europe is the global leader, with tremendous connected international capacity. Frankfurt, London, Amsterdam, and Paris – together known as FLAP – substantially outpace North American and Asian cities (Table 17). Frankfurt is home to the largest Internet node in the northern hemisphere. Frankfurt's connected capacity is over four times greater than that of New York and almost double that of Singapore, the Asian leader.[74]

Table 14. Top 10 Highest Capacity International Internet Hub Cities (Tbps)



Domestic routes omitted.
Source: Telegeography, Global Internet Map 2022.

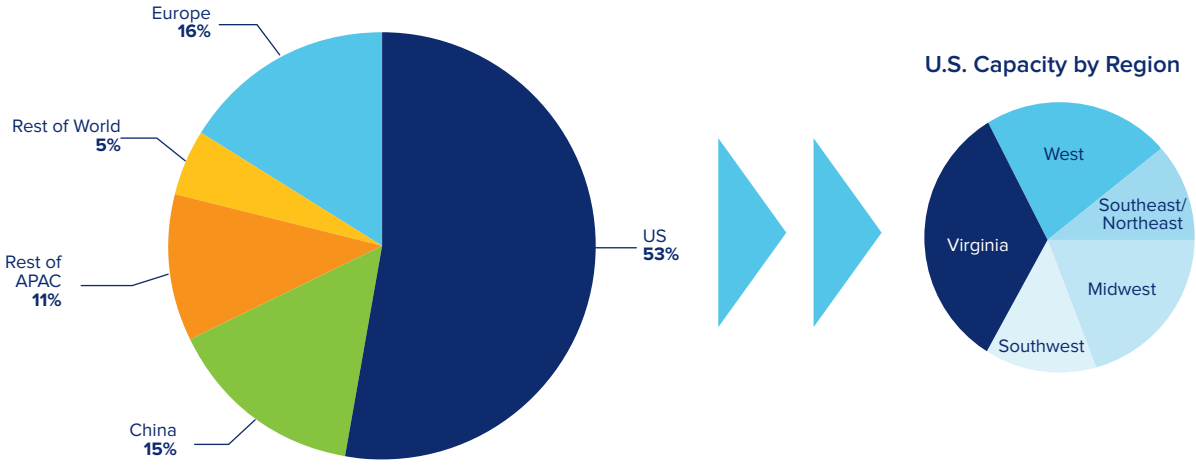
The role of the United States and Europe as critical digital hubs is also underscored by looking at interregional connections and capacity. Over 80% of global interregional bandwidth is connected to the U.S and close to 60% is connected to Europe, compared to less than 40% for Asia. Almost all of Latin America's interregional bandwidth is U.S.-connected, and most interregional bandwidth of Africa and the Middle East is connected to Europe.[75]

The hard-wiring of the transatlantic digital landscape continues to evolve. One key development, which we discussed in more detail in last year's survey, is the shift in providers of data centers and cloud-like services from European and U.S. telecommunication companies and related data-center management enterprises to "hyperscalers," mainly from the United States. Many commentators simplify the term "hyperscalers" to refer to the three largest providers: Amazon Web Services (AWS), Microsoft Azure, and Google Cloud. These three firms account for about two-thirds of hyperscale data market share. Nonetheless, other hyperscalers include Meta, Oracle, Apple, IBM, Scaleway, Switch, Alibaba, Huawei, QTS, Digital Realty Trust, Equinix and SAP.[76]

The average capacity of hyperscale data centers to be opened over the next six years will soon be more than double that of current ones. Total capacity of all operational hyperscale data centers will grow almost threefold in the next six years. Large data centers operated by hyperscale providers account for 37% of the worldwide capacity of all data centers and will account for over half of all capacity in the next five years. The hyperscale data center market is projected to be worth $413.1 billion by 2030.[77]

The United States accounts for over 53% of the world's operational hyperscale infrastructure, measured by critical IT load.[78] More than one-third of U.S. hyperscale capacity is in one state – Virginia.[79] Virginia has far more hyperscale data center capacity than either China or all of Europe. Much of that is in Northern Virginia, along the border with Washington, DC. The second-largest concentration of hyperscale infrastructure is in the western United States, primarily Oregon and California. The U.S. Midwest follows, with large concentrations of hyperscale infrastructure in Iowa and Ohio (Table 15).[80]

Table 15. Hyperscale Data Center Capacity (Q2 2022)



Source: Synergy Research Group. APAC: Asia-Pacific.

The other half of global hyperscale infrastructure is relatively evenly split between China, Europe, and the rest of the world.

Europe's hyperscale data center market is expected to grow from $28.42 billion in 2022 to $39.69 billion by 2028. Nordic and Western Europe remain attractive for hyperscale investments, while Spain and Portugal have emerged as new destinations for hyperscale data center development.[81]

While many U.S. and European regions have embraced these investments, others have raised concerns about data centers' size and heavy energy and water use. By 2030, data centers are projected to account for 3.2% of electricity demand within the EU – an 18.5% jump from 2018, at a time when Europe is under severe pressure to cut its energy demand. The Netherlands has tightened permitting for hyperscale site development. Authorities in the Netherlands, Ireland and Germany, as well as in Loudon County, Virginia have introduced restrictions on new centers to comply with more stringent environmental requirements.[82]

These concerns are amplified by related European anxieties about U.S. dominance, which could inhibit some possible avenues for deeper transatlantic cooperation. In last year's survey we discussed in more detail how two other trends – migration to the "edge" and the evolution of "cloud-as-a-service" to "cloud-as-a-product" – have the potential to mitigate such concerns, depending on how they unfold.

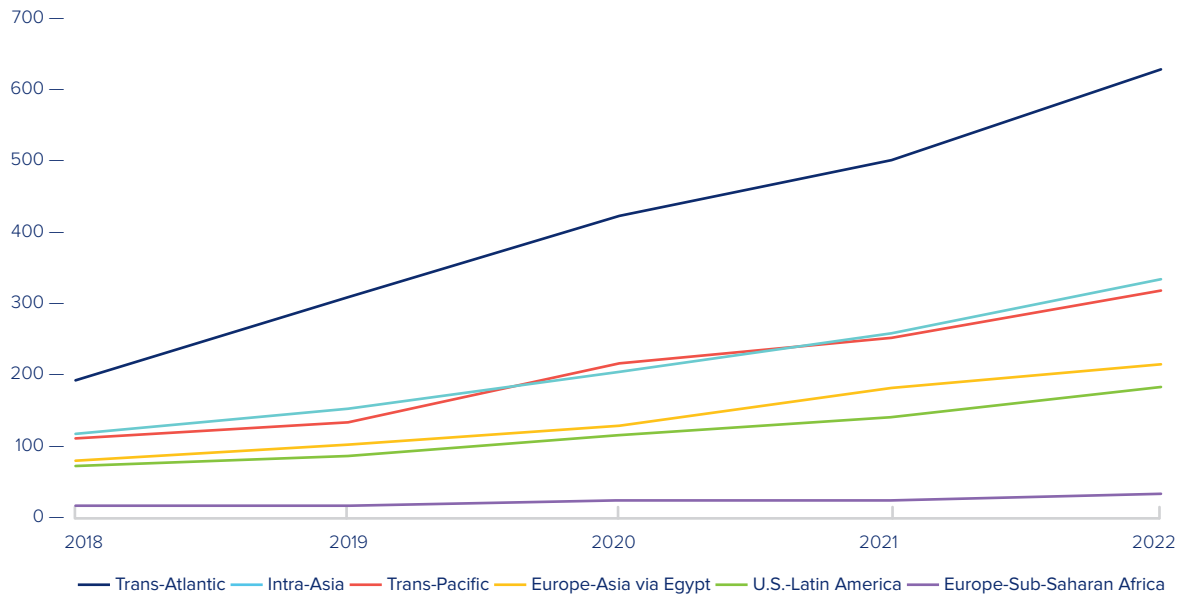
The Digital Atlantic Seascape

Land-based digital hubs are connected to sea-based digital spokes – roughly 500 undersea fiber optic cables that span over 870 million miles and transmit over 99% of all intercontinental data traffic, carry more than $10 trillion of financial transactions every day, and serve as the backbone for the global internet. Elon Musk's Starlink and Amazon's Project Kuiper may have popularized the idea of satellite internet, but the digital world is connected by sea, not by air. Satellites cannot compete with submarine cables when it comes to digital communication capacity, cost, speed, or transaction time (latency). They transmit less than one-half of one percent of such traffic.[83]

Globally, demand for international bandwidth is nearly doubling every two years. The market for submarine fiber optic cables, estimated at $18.2 billion in 2022, is slated to reach $48 billion by 2030, growing at a compound annual rate of 12.9%.[84]

Subsea cables serve as an additional proxy for the ties that bind continents. The transatlantic data seaway is the busiest and most competitive in the world. Submarine cables in the Atlantic carry more than twice the traffic of transpacific routes and intra-Asian routes. In recent years the trans-Atlantic route has also registered the most rapid pace of growth: between 2018 and 2022, trans-Atlantic lit capacity – the amount of capacity actually running over a cable – increased over 3-fold (Table 16).[85]

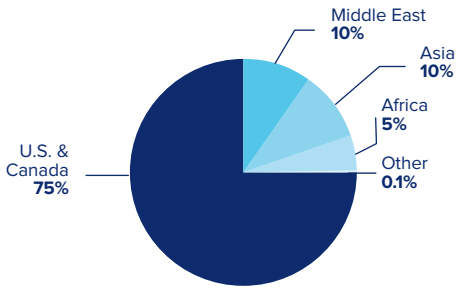
Table 16. Lit Submarine Cable Supply by Route (Lit Capacity, Tbps)



Lit capacity means the amount of capacity actually running over a cable. Trans-Atlantic capacity refers to the North Atlantic. Trans-Pacific capacity refers to the North Pacific. Intra-Asian capacity only includes cables with landings in both Hong Kong and Japan.
Source: Telegeography, "Transport Networks Forecast Service," 2023.

The trans-Atlantic route accounted for 75% of Europe's total interregional bandwidth in 2021. The Middle East and Asia each accounted for 10%, Africa 5%, and other regions for 1%. There are land-based networks that link Europe to Asia, but they boast far less capacity than subsea cables – and all of them go through Russia.[86]

Table 17. Share of European Interregional Bandwidth by Region



Data for 2021. Source: Telegeography.

North America and Europe are connected via 17 subsea cables. The extend from the U.S. East Coast, primarily from New York, New Jersey, Massachusetts, and Virginia. They land in the UK, France, Denmark, Norway, Ireland, Spain and Portugal. Transatlantic subsea routes are building out fast, as capacity demands grow. In 2022, total transatlantic capacity was boosted 70% just by two new powerful transatlantic cables: Grace Hopper, which now extends over 3,800 miles from New York to the Cornish seaside resort town of Bude in the UK and over 3,900 miles from New York to Bilbao in Spain; and Amitié, which now connects Massachusetts with Bude and with Le Porge in France across 4,100 miles of subsea terrain.[87]

Myrtle Beach, South Carolina, is quickly emerging as a new Atlantic cable hub. In 2024, it will be home to two new cables: Google's Firmina, stretching 8,700 miles to Las Toninas, Argentina, with landing points in Praia Grande, Brazil and Punta del Este, Uruguay; and Meta's Anjana, stretching 4,400 miles to Santander, Spain. In 2026 another new cable, dubbed Nuvem – Portuguese for "cloud" – will connect South Carolina with Portugal via Bermuda.[88]

The digital Atlantic continues to build out to the south and to the north. 2Africa, the world's longest subsea cable project covering 28,000 miles, is slated in 2024 to connect Europe and the Middle East with 21 landing sites in 16 African countries. The cable is expected to provide more than the total combined capacity of all subsea

Submarine cables in the Atlantic carry more than twice the traffic of transpacific routes and intra-Asian routes.

cables serving Africa at present. In the northern Atlantic, the Leif Erikson Cable System, the first transatlantic cable to be powered with 100% renewable energy, is slated to run 2,600 miles from southern Norway to Goose Bay, Canada, and then on Montreal. The Digital Arctic may also become reality. The Far North Fiber project, led by Alaskan company Far North Digital, Finland's Cinia, and Japan's Arteria Networks, would extend 8,700 miles to connect Scandinavia and Ireland to Japan, passing via the Arctic Northwest Passage, with landings in Greenland, Canada and Alaska. The cable would be the first to be laid on the Arctic seabed and the first to connect Europe to Asia without passing via the Suez Channel.

Security Concerns

Subsea cables are relatively fragile. On average, 2-4 cables break somewhere in the world every week. Most incidents are caused by shipping or environmental damage. In 2012, for instance, Hurricane Sandy cut 11 of the 12 high-capacity cables that connected the U.S. and Europe at that time.[89] More recently, concerns about intentional sabotage have been sparked by disruptions in the Norwegian Ocean and on Norway's Svalbard; explosive damage to the Nord Stream pipelines in the Baltic Sea; and damage to Swedish-Estonian communications cables and a Finland-Estonian natural gas pipeline.

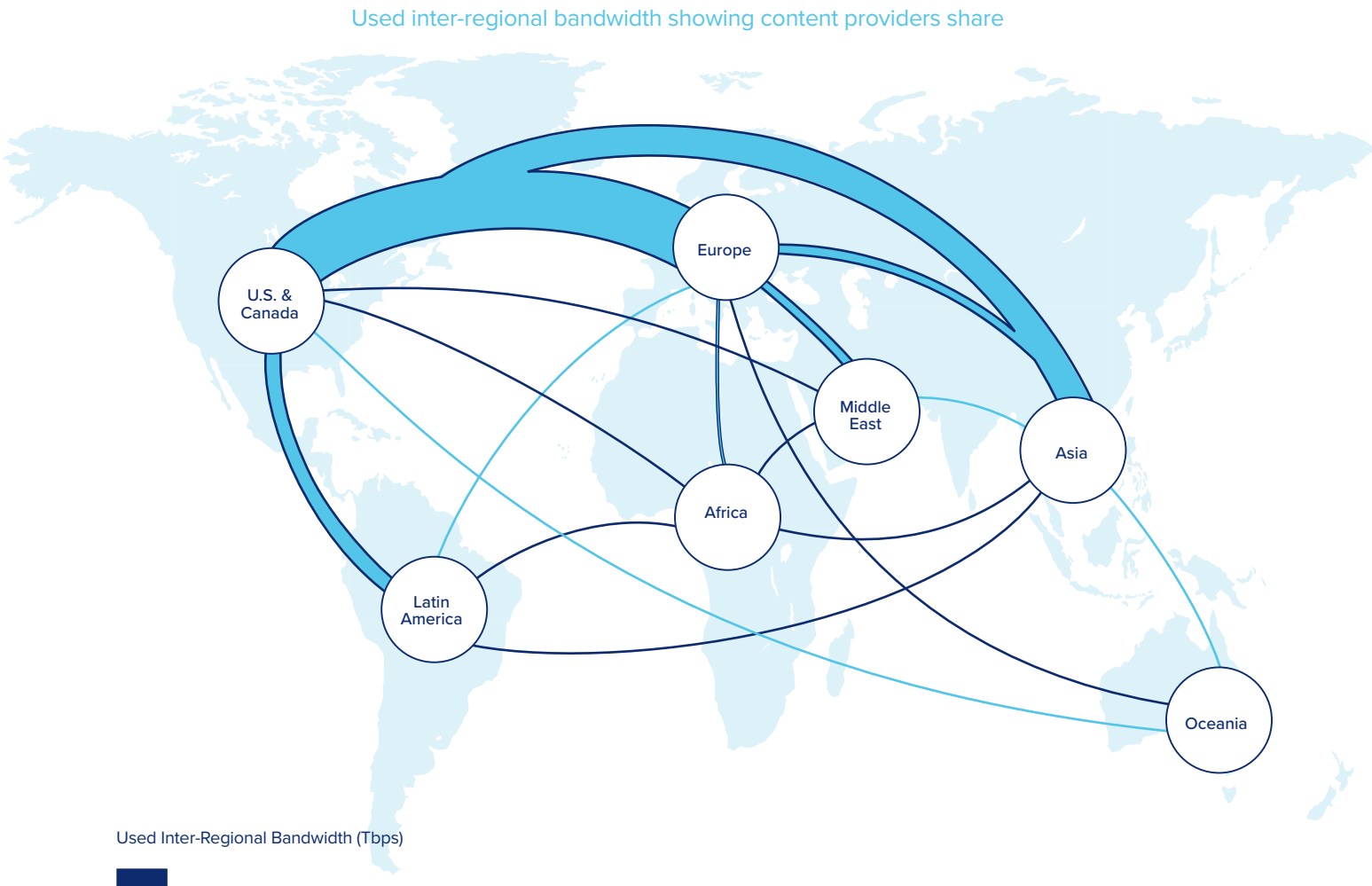
In response, NATO governments are ramping up their own surveillance and deep-sea defensive capabilities to protect maritime infrastructure. NATO leaders have said that "the threat to critical undersea infrastructure is real and it is developing," and have committed the Alliance to protect that infrastructure. Concerns about subsea cable fragility has also prompted subsea cable providers to generate greater redundancy and diversification across their own networks.

Such concerns are not limited to northern Europe. The "most vital bottleneck for the EU," according to a European Parliament study, is the passage between the Mediterranean and the Indian Ocean, where sixteen subsea cables, responsible for 90% of all Europe-Asia capacity, converge in Egypt and the Red Sea.[90] The fragility of this major chokepoint has been highlighted by repeated Yemeni Houthi rebel attacks against commercial shipping vessels. A foretaste of what such disruption could mean came in 2022, when the Asia-Africa-Europe-1 Internet cable connecting Hong Kong to Marseille was severed where it briefly crosses across land in Egypt. Millions were plunged offline; Ethiopia lost 90% of its connectivity; Somalia lost 85%. Several cable providers had planned to generate cable connections that would cross Israel, bypassing Egypt and the Suez Canal, but the Israel-Hamas conflict has cast doubt on the feasibility of those initiatives.[91]

The Hyper-Providers

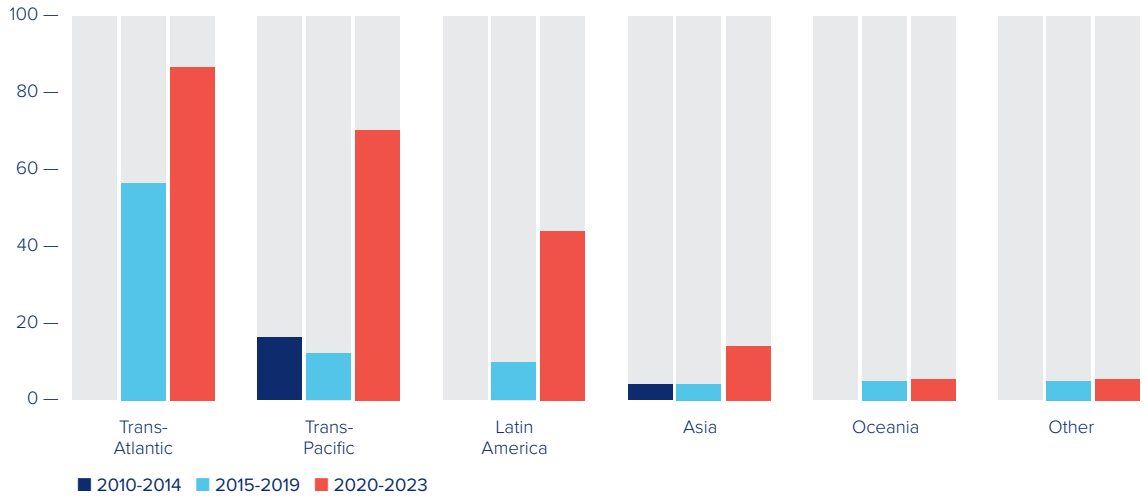
In 2010, most international cable capacity was used by telecommunications companies, governments, and research-educational networks. Only 6.3% was consumed by private network providers of content and cloud services. By 2022, the numbers had flipped: content providers accounted for 71% of used international bandwidth globally and for 92% of used capacity on transatlantic routes. Moreover, the content providers now build and either wholly or partially own those cables themselves. They are largely responsible for the new surge in global subsea digital capacity, and their densest connections are between North America and Europe (Tables 18 and 19).[92]

Table 18. Inter-Regional Capacity and the Cloud



Source: Telegeography.

Table 19. Content Provider Investments Share as % of CAPEX on New Submarine Cables



Source: Telegeography.

Bypassing the Internet

The rise of private content providers as drivers of submarine cable traffic is related to yet another significant yet little understood phenomenon shaping the transatlantic digital economy: more and more companies are working to bypass the public internet as a place to do business in favor of private channels that can facilitate the direct electronic exchange of data among companies.[93]

This move is exponentially increasing demand for "interconnection" – direct, private digital data exchanges that bypasses the public internet – and is another fundamental driver behind the proliferation of transatlantic cable systems. According to Equinix, private interconnection bandwidth is not only distinct from public internet traffic, it is already 20 times the size and is growing twice as fast.[94]

The public internet will remain a pervasive force in most people's lives and a key to digitally-delivered services, e-commerce and the platform economy.[95] Yet private interconnection rivals, and in many cases exceeds, the public internet as a powerful vehicle for business. And as we have shown here, its deepest links are across the Atlantic.

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6

The 50 U.S. States: European-Related Jobs, Trade and Investment

America's highly diversified economy – whether goods or services – combined with its wealthy consumers, sets it apart from the rest and is one key reason why the United States remains the global leader in attracting foreign capital.

Jobs directly supported by European companies in the U.S.
(2022 estimate)
5 million

The United States handily outperformed other major economies in 2023, with real GDP growth of roughly 3.1%. Growth in the second half of the year was close to 3.5%. The U.S. economy defied expectations of a recession, and will likely do the same in 2024. Meanwhile, China struggled to break free from its pandemic-induced slowdown, Japan faltered and the European Union floundered.

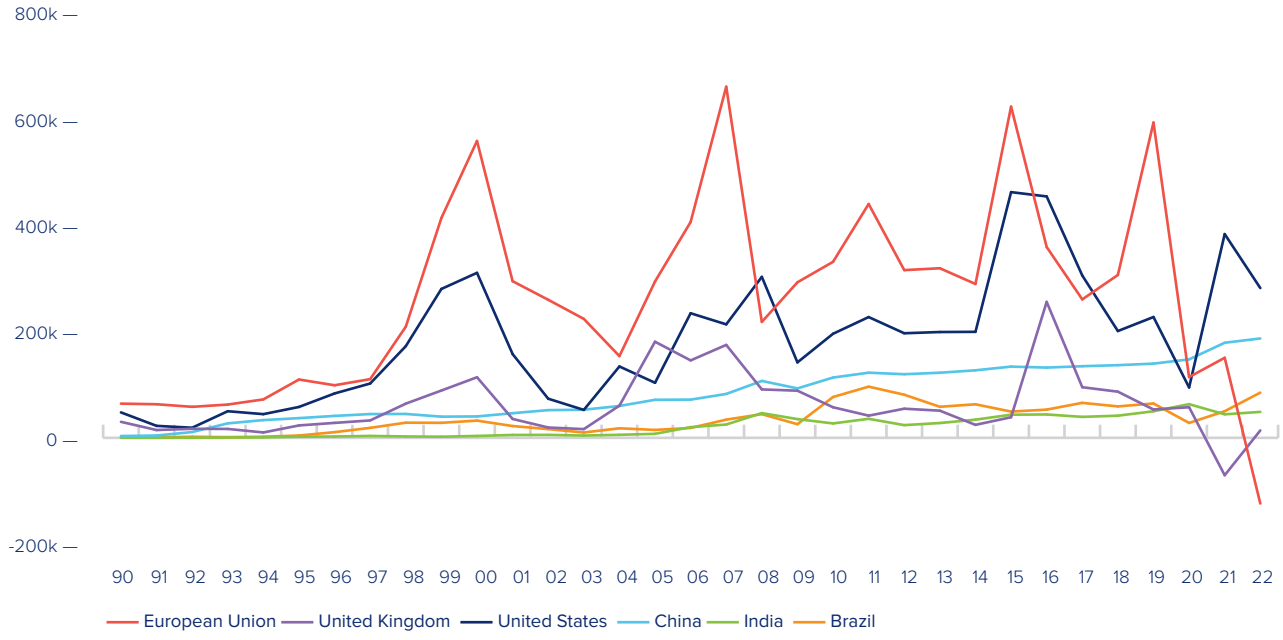
Notwithstanding periodic cyclical slowdowns, the U.S. economy remains one of the most dynamic and resilient in the world. No country produces as much output (over $27 trillion in 2023) with so few people (less than 5% of the world population) than the United States. The U.S. is not only large, it is wealthy. According to the latest figures from the Federal Reserve, U.S. household net worth was more than $150 trillion last year. It is these attributes that attract European firms to invest in the United States.

Another reason: the U.S. economy is also extraordinarily diversified, which gives European firms wide breadth in terms of participating in and leveraging the U.S. market. From agriculture to aerospace, and everything in between, the United States remains a global leader and a prime market for non-U.S. firms. Energy, education, health care, life sciences, biotechnology, finance, manufacturing, steel, R&D, entertainment, transportation, social media – pick your sector, and there is a good chance there is a mature or budding firm in the United States. America's highly diversified economy – whether goods or services – combined with its wealthy consumers, sets it apart from the rest and is one key reason why the United States remains the global leader in attracting foreign capital.

To this point, according to the latest figures from the UN, foreign direct investment (FDI) flows last year rose modestly by 3%, although the increase was largely due to a few European conduit economies. Excluding these nations (Luxembourg and the Netherlands), global FDI flows were some 18% lower in 2023 than the prior year (Table 1).

That said, the United States again ranked as the number one destination for FDI inflows. As Table 2 depicts, no country has attracted more FDI this century than the United States, taking in $5.2 trillion (16.9% of the global total) cumulatively since 2000, twice that of China ($2.5 trillion, 8.1%) and triple that of the UK.

Table 1. **Foreign Direct Investment Flows, Selected Economies, 1990-2022** ($Millions)



Source: UNCTAD World Investment Report 2022.

Table 2. Cumulative Investment Inflows 2000-2022 Rankings

Rank	Economy	Cumulative Flows ($Billions)	Percent of World Total
1	United States	5,212.7	16.9%
2	China	2,502.3	8.1%
3	Hong Kong	1,780.1	5.8%
4	United Kingdom	1,707.1	5.5%
5	Singapore	1,220.5	4.0%
6	Brazil	1,080.2	3.5%
7	Germany	1,019.1	3.3%
8	Canada	986.3	3.2%
9	Ireland	808.4	2.6%
10	Australia	797.4	2.6%

Source: United Nations Conference on Trade and Development (UNCTAD).
Data as of January 2024.

Multiple factors underpin America's dominance in foreign investment flows. First is America's large and wealthy consumer base, with a population of roughly 335 million and per capita income of over $70,000. Income per person in the United States is about 30% higher than in western Europe. Second, the United States boasts a hypercompetitive and dynamic economy, driven by strong institutions, advanced technological readiness, world-class universities, a strong capacity and culture of entrepreneurship, and a dense web of university-industry collaborative activities in research and development (R&D). The ability to attract R&D from companies abroad is important to the innovative culture of the U.S. economy. R&D performed by affiliates of foreign companies accounts for roughly 15% of total R&D conducted by all businesses in the United States. European companies account for two thirds of foreign-funded R&D in the United States.

Additionally, European companies investing in the United States gain access to a desirable pool of skilled, flexible, and productive labor. We estimate that U.S. jobs supported directly by affiliates of foreign companies totaled 8 million in 2022, or about 6% of total private industry employment in the United States. European companies accounted for 61% of that figure, or nearly 5 million jobs.

Meanwhile, transparent rule of law, sophisticated accounting, auditing, and reporting standards, secure access to credit, ease of entrepreneurship, and respect for intellectual property rights have all contributed to the stable and supportive business environment in the United States.

Drivers of foreign investment into the U.S.

- **Large and wealthy consumer base**
- **Strong institutions and rule of law**
- **Advanced technological readiness**
- **World-class universities**
- **Strong entrepreneurial capacity and culture**
- **University-industry R&D partnerships**
- **Skilled, flexible, and productive workforce**
- **Sophisticated accounting, auditing and reporting standards**
- **Secure access to credit**
- **Respect for intellectual property rights**

European firms maintained their dominant foreign investment position in the United States in 2023.

Total European FDI stock in the U.S.
(2022)
$3.4 trillion

62%
of total FDI in the U.S.

Europe's Stake in the United States

European firms maintained their dominant foreign investment position in the United States in 2023. In the first three quarters of the year, FDI inflows from Europe represented 50% of total U.S. inflows. FDI inflows from Europe receded from the robust levels of 2021 and 2022 last year, owing to the higher cost of capital, softer corporate earnings, and weaker economic activity. In the January-September period 2023, inflows from Europe fell by nearly 30%. Inflows from Europe are estimated to have totaled $170 billion in 2023, down from $219 billion the year before.

Investment inflows from individual European countries to the United States in 2023 was generally downward. Some countries posted growth in FDI flows; others saw a pullback. The traditional European leaders in terms of FDI inflows to the U.S. – the Netherlands, Germany, the UK, and Italy – posted year-over-year decreases last year, while investment from Ireland was up for the year. The German numbers require a deeper look, however: M&A and other forms of equity investments may have been down, but German companies in 2023 announced a record $15.7 billion in new greenfield or expansion projects in the United States.[1]

In 2024, we expect FDI inflows to the U.S. to "normalize" and trend higher in part due to the incentives in the U.S. Inflation Reduction Act, which strongly encourages U.S. in-country production via tax credits and subsidies. Domestic content requirements around renewable energy have run afoul of EU policymakers but have nevertheless captured the attention of European multinationals looking to expand their footprint in the massive U.S. market. As we discuss in Chapter 4, U.S.-EU discussions are ongoing to determine how and whether products imported from Europe may be able to benefit from at least some of these provisions.

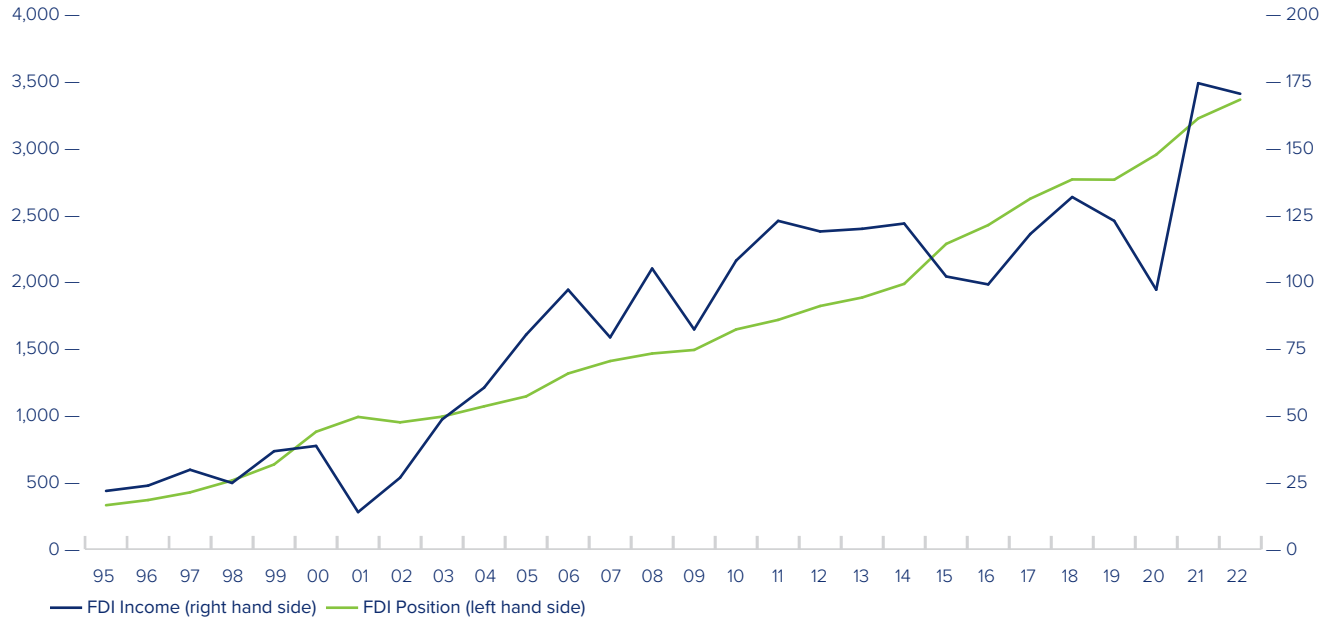
Europe continues to have an outsized investment presence in the United States, as reflected by its FDI position, which is a more stable metric of foreign investment. In terms of foreign capital stock in the United States, Europe leads the way. The region accounted for 62% of the total $5.3 trillion of foreign capital sunk in the United States as of 2022. Total European investment stock in the United States of $3.4 trillion was over three times the level of comparable investment from Asia. Of the overall European level, European Union FDI in the United States (stock) was $2.4 trillion in 2022, up 4% from 2021.

The United Kingdom was the largest European investor in the United States, based on FDI on a historic cost basis, with total FDI stock in the United States totaling $663 billion in 2022. The Netherlands ranked second in Europe ($617 billion), followed by Germany ($431 billion) and Switzerland ($307 billion). Many firms from these countries are just as embedded in the U.S. economy as in their own home markets. Only Japan has a greater investment footprint in the U.S. than the major producers of Europe.

Whether Swiss pharmaceutical corporations, German auto manufacturers, or British services providers, European firms' commercial links to America have driven corporate sales and profits higher in recent decades. European firms in the United States earned record income in 2023 by our estimates – some $190 billion. Through the first nine months of 2023, European affiliate income earned in the U.S. rose to $142 billion, a 7.2% rise from a year ago. Firms in Europe's Stoxx 600 benchmark index made 23% of their sales in the U.S. – their single biggest market. Companies in London's FTSE 100 made more sales in the U.S. than in the UK.[2] Taking the long view, affiliate earning levels for most European firms are significantly higher today than they were at the start of the century. As European firms have built out their U.S. operations, the payoff has been rising affiliate earnings in one of the largest markets in the world.

Table 3 highlights this connection between European investment in the United States and European affiliate earnings. The two metrics are highly correlated – the greater the earnings, the greater the likelihood of more capital investment, and the more investment, the greater the upside for potential earnings and affiliate income. The bottom line is that Europe's investment stakes in the United States have paid handsome dividends over the years, notably since the Great Recession, given the growth differential between the United States and Europe. These higher earnings in the United States have also allowed these companies to be more successful back home in Europe – including by expanding their operations and by hiring more workers.

Table 3. European Foreign Direct Investment and Income in the United States ($ Billions)



Sources: Bureau of Economic Analysis.
Data as of January 2024.

Europe's Stakes in America's 50 States

European firms can be found in all 50 states, and in all economic sectors – manufacturing and services alike. The employment impact of European firms in the United States is quite significant. Table 4 provides a snapshot of state employment supported directly by European affiliates across the United States. It is important to note that the chart represents only those jobs that have been directly created by European investment, and thus underestimates the true impact on U.S. jobs of America's commercial ties to Europe. Jobs tied to exports and imports of goods and services are not included, nor are many other jobs created indirectly through suppliers or distribution networks and related activities.

UK firms were the largest sources of onshored jobs in 21 U.S. states in 2021. Japanese and Canadian companies each led in 10 states, German companies in 5 states. French and Dutch companies each led in 2 states.

In general, the presence of European affiliates in many states and communities across the United States has helped improve America's jobs picture. The more European firms embed in local communities around the nation, the more they tend to generate jobs and income for U.S. workers, increase sales for local suppliers and businesses, expand revenues for local

Table 4. Ranking of Top 20 States by Jobs Supported Directly By European Investment
(Thousands of employees)

U.S. State	2019	2020	2021
California	486.2	459.7	458.7
Texas	413.8	389.7	392.9
New York	367.3	359.0	360.3
Pennsylvania	245.9	241.9	244.0
Illinois	233.4	222.7	225.4
Florida	232.5	208.7	216.3
North Carolina	206.5	202.4	207.5
Michigan	206.3	200.1	203.0
New Jersey	207.7	192.5	200.1
Massachusetts	168.1	159.3	163.9
Ohio	174.4	160.4	163.3
Georgia	164.4	151.9	156.9
Virginia	152.2	148.1	154.9
Indiana	128.0	114.8	116.3
South Carolina	115.4	110.7	115.3
Tennessee	111.7	115.1	114.2
Minnesota	99.7	93.3	94.1
Maryland	93.1	87.9	93.5
Missouri	86.6	93.2	91.4
Connecticut	88.4	84.7	87.9

Source: Bureau of Economic Analysis.
Data as of January 2024.

European affiliate earnings in the U.S. (2023)
$190 billion

European firms can be found in all 50 states, and in all economic sectors – manufacturing and services alike.

communities, and encourage capital investment and R&D expenditures for the United States.

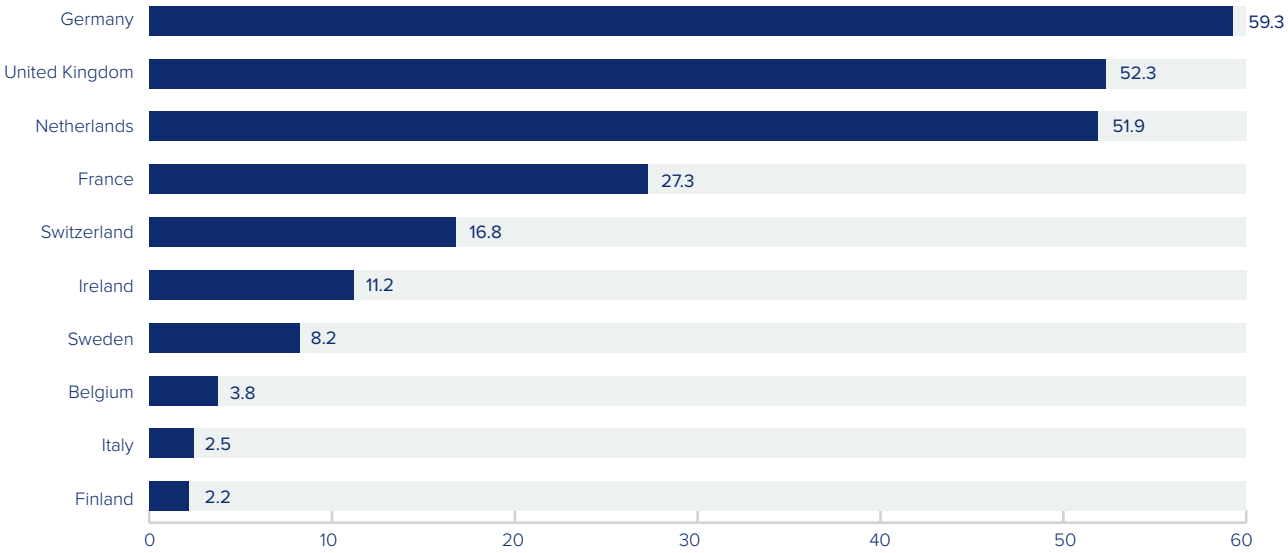
Deep investment ties with Europe have also boosted U.S. trade. Table 5 illustrates the export potential of European affiliates operating in the United States. As a point of reference, in any given year, foreign affiliates based in the United States and exporting from there typically account for one-fourth of total U.S. merchandise exports. The bulk of these exports are intra-firm trade, or trade between the affiliate and its parent company. In 2021, the last year of available data, U.S. exports shipped by all majority-owned foreign affiliates totaled $412 billion, with European affiliates accounting for 59% of the total. German companies exported more than $59 billion in products made in the U.S., while British and Dutch firms exported $52 billion and $38 billion, respectively.

Wholesale trade, transportation equipment, and chemical manufactures represented the largest categories of exports by affiliates to markets outside the United States. In the end, the more European affiliates export from the United States, the higher the number of jobs for U.S. workers and the greater the U.S. export figures.

Every U.S. state maintains cross-border ties with Europe, with various European countries serving as key export markets for many U.S. states, a dynamic that creates and generates growth in the United States. Table 6 ranks the top 20 state goods exporters to Europe in 2022, the last year of full-year state data. Texas ranked number one, followed by New York, Louisiana, and California. Overall, U.S. goods exports to Europe reached a record high in 2023 of $498 billion, 1.2% more than 2022 ($491.6 billion).

U.S. merchandise exports to Europe are still more than two and half times U.S. exports to China, as shown in Table 7. Forty-eight of the fifty U.S. states exported more goods to Europe than to China. New York's good exports to Europe were 13 times more than its goods exports to China. Florida exported 9 times more, Texas 4.5 times more, and Kentucky 3 times more goods to Europe than to China. The largest Pacific coast state of California exported roughly twice as many goods to Europe as to China.

Table 5. U.S. Exports of Goods Shipped by European Companies Operating in the United States ($Billions)



Source: Bureau of Economic Analysis.
Data for 2021.

Table 6. Ranking of Top 20 U.S. States Total Goods Exports to Europe, By Value

U.S. State	2022 ($Billions)	2000 ($Billions)	% Change from 2000	% Change from 2021
Texas	99.2	12.3	708	57
New York	44.8	15.3	192	54
Louisiana	37.6	6.4	490	187
California	34.9	27.9	25	0
Pennsylvania	15.2	7.3	108	24
Illinois	15.0	4.7	220	5
New Jersey	13.9	2.8	398	-13
Florida	13.1	8.0	64	35
Massachusetts	11.8	13.1	-10	1
Georgia	11.3	3.3	244	14
Kentucky	11.0	3.9	182	24
Indiana	10.9	1.3	713	6
South Carolina	10.4	4.0	162	12
North Carolina	9.7	4.6	110	16
Ohio	9.4	3.1	199	5
Utah	9.3	3.1	203	-14
Tennessee	9.1	2.7	237	17
Washington	8.8	5.0	75	-8
Alabama	8.0	-	-	30
Michigan	7.8	5.0	55	13
U.S. Total	**491.6**	**187.4**	**162**	**27**

Source: Foreign Trade Division, U.S. Census Bureau.
Data as of January 2024.

The presence of European affiliates in many states and communities across the United States has helped to improve America's jobs picture.

48/50

states export more goods to Europe than to China (2023)

In addition, while these figures are significant, they underestimate Europe's importance as an export destination for U.S. states because they do not include U.S. state exports of services. This is a significant additional source of jobs and incomes for U.S. workers, with most U.S. jobs tied to services. As we explain in more detail in Chapters 2 and 5, Europe is by far the most important market in the world for U.S. services, the United States consistently records a significant services trade surplus with Europe, and services are the fastest growing segment of international trade. Suffice it to say that if services exports were added to goods exports by state, the European market becomes even more important.

Appendix A highlights European-related jobs, trade, and investment for each of the 50 states.

Table 7. U.S. State Exports of Goods to Europe and China, 2022 ($Millions)

U.S. State	Europe	China
Alabama	7,997	3,252
Alaska	1,184	1,084
Arizona	5,560	1,495
Arkansas	1,256	379
California	34,899	18,155
Colorado	2,401	916
Connecticut	7,212	888
Delaware	1,004	497
Florida	13,053	1,482
Georgia	11,279	4,110
Hawaii	33	25
Idaho	333	216
Illinois	14,956	3,980
Indiana	10,938	3,554
Iowa	3,140	1,019
Kansas	2,359	724
Kentucky	10,965	2,522
Louisiana	37,553	15,242
Maine	468	140
Maryland	7,063	1,125
Massachusetts	11,834	3,656
Michigan	7,773	2,603
Minnesota	5,711	2,447
Mississippi	2,842	650
Missouri	2,766	673
Montana	333	155
Nebraska	1,035	689
Nevada	2,765	943
New Hampshire	3,093	372
New Jersey	13,913	3,140
New Mexico	593	227
New York	44,821	3,405
North Carolina	9,709	6,279
North Dakota	336	31
Ohio	9,422	2,918
Oklahoma	1,344	412
Oregon	4,824	8,454
Pennsylvania	15,198	2,854
Rhode Island	1,127	144
South Carolina	10,391	3,711
South Dakota	200	123
Tennessee	9,102	3,279
Texas	99,237	22,330
Utah	9,254	1,058
Vermont	409	210
Virginia	7,095	2,850
Washington	8,834	14,389
West Virginia	2,512	603
Wisconsin	5,636	1,806
Wyoming	35	14
Total United States	**491,578**	**154,012**

Source: U.S. Census Bureau, Foreign Trade Division. Data as of January 2024.

Notes

1 Jamie Smyth and Patricia Nilsson, "German companies flock to US with record pledges of capital investment," Financial Times, February 19, 2024.

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7

European Countries: U.S.-Related Jobs, Trade and Investment

Europe remains the most attractive region in the world for U.S. companies investing abroad.

Total U.S. FDI stock in Europe (2022)

$4 trillion

61.2%

of total U.S. global investment

Many European economies have exhibited a remarkable degree of resilience over the past few years, having confronted not just a pandemic to start the decade, but also a war in the heart of Europe, a Russian-induced energy shock, disruptions to shipping in the Middle East, a spike in inflation, and ongoing trade tensions with China and the United States. In 2022, in fact, the eurozone economy managed to grow faster than either the U.S. or Chinese economies.

All these pressures, however, are weighing on Europe's economy. Eurozone growth was just 0.5% in 2023, significantly lagging the United States. The German economy, Europe's largest, contracted by 0.3%. For 2024, the IMF forecasts eurozone growth of 0.9%, compared to 2.1% growth in the United States.

Still, euro area debt of 88% of GDP compares favorably to the U.S., where federal, state, and local borrowing will hit 127% of GDP this year, according to the IMF. And European productivity growth, as measured by GDP per hour worked, has been faster than in the U.S.

There are other bright spots: in 2022 and 2023 combined, Italy had the best-performing stock market in the Group of Seven leading advanced economies, in dollar terms, followed by France and the UK.[1] Central and eastern European economies are catching up in terms of growth; GDP per capita in Poland has increased by over 50% since 2010. It is now nearly 70% that of Germany, up from only 42% in 2003.[2]

Europe is in a cyclical downturn; the U.S. is on a high. But some European headwinds show signs of easing – inflation, monetary policies, energy shocks. Looking to 2025, the IMF forecasts that each side of the North Atlantic will grow the same amount: 1.7%.

Europe's economic performance is important to the United States for the simple reason that on a global basis, no region of the world offers more opportunities in terms of market size and wealth, and access to skilled resources, than Europe. And outside the United States, no region has more sway on corporate America's bottom line than Europe. Europe remains the most attractive region in the world for U.S. companies investing abroad.

The latest investment figures underscore corporate America's enduring commitment to its long-standing transatlantic partner. Measured on a historic cost basis, the total stock of U.S. foreign direct investment (FDI) in Europe was $4 trillion in 2022, or 61.2% of total U.S. investment abroad. This is more than four times the amount of comparable U.S. investment in the Asia-Pacific region ($951 billion).

Of this overall European total, U.S. FDI in the EU was $2.7 trillion in 2022, a 5.5% increase from 2021, according to the U.S. Trade Representative's office. U.S. FDI in the UK was $1.1 trillion, a 3.9% increase from 2021, and more than U.S. FDI in the Asia-Pacific region. U.S. FDI in Switzerland was $212.2 billion, a 3.7% decrease from 2021.

Global FDI flows into the EU jumped from a negative $150 billion in 2022 to a positive $141 billion in 2023, according to the UN, but the swing was due to large inflows to Luxembourg and the Netherlands, two conduit economies. Excluding both countries from the total, inflows to the rest of the EU were down 23% last year.

Box 1. FDI Outflows to Europe Adjusted for Flows of Holding Companies

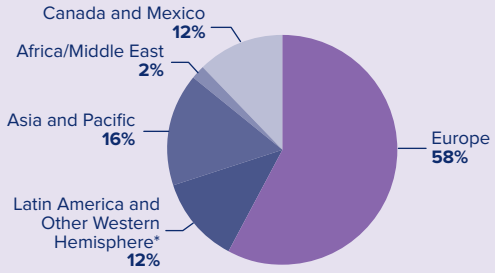
U.S. holding companies have played an important role in the rise of U.S.-Europe FDI over the past few decades. As of 2022, the last year of available data, nonbank holding companies accounted for $2.2 trillion, or about 55% of total U.S. FDI stock in Europe.

As the U.S. Bureau of Economic Analysis notes, "[t]he growth in holding company affiliates reflects a variety of factors. Some holding-company affiliates are established primarily to coordinate management and administration activities – such as marketing, distribution, or financing – worldwide or in a particular geographic region. In addition, the presence of holding company affiliates in countries where the effective income tax rate faced by affiliates is relatively low suggests tax considerations may have also played a role in their growth. One consequence of the increasing use of holding companies has been a reduction in the degree to which the U.S. Direct Investment Abroad position (and related flow) estimates reflect the industries and countries in which the production of goods and services by foreign affiliates actually occurs."

Tables 1a and 1b, drawing on BEA data, reflect the significance of holding companies in the composition of U.S. FDI outflows. European markets accounted for roughly 58% of total U.S. FDI outflows between 2009 and 2020. However, when flows to nonbank holding companies are excluded from the data, the share of outflows to markets such as Europe and Other Western Hemisphere declines. In 2020, U.S. FDI flows to holding companies in Europe rebounded sharply to $62.8 billion. This represented over half of total U.S. FDI outflows to Europe. In prior years, FDI outflows to Europe were negative (-$189 billion in 2018 and -$87 billion in 2019), as U.S. companies repatriated a large amount of accumulated foreign earnings.

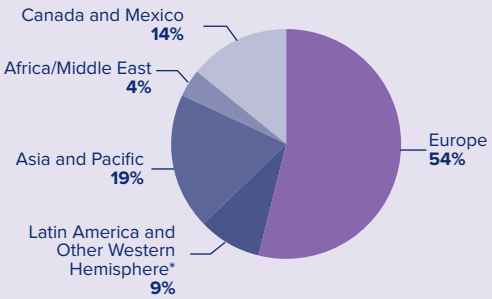
In the long run, when FDI related to holding companies is stripped from the numbers, the U.S. foreign direct investment position in Europe is not as large as typically reported by the BEA. Nonetheless, Europe remains the destination of choice among U.S. firms even after the figures are adjusted. Between 2009 and 2022, Europe still accounted for over half of total U.S. FDI outflows when flows from holding companies are removed from the aggregate. Europe's share was still more than double the share to Asia, underscoring the deep and integrated linkages between the United States and Europe.

Table 1a. Total U.S. FDI Outflows, 2009-2020
(% of Total)



**Excluding Mexico.*
Source: Bureau of Economic Analysis. Data as of January 2022.

Table 1b. U.S. FDI Outflows Excluding Flows to Nonbank Holding Companies, 2009-2020
(% of Total)



**Includes Central America (excluding Mexico) and Other Western Hemisphere.*
Source: Bureau of Economic Analysis. Data as of January 2022.

Of the top twenty global export platforms for U.S. multinationals in the world, nine are located in Europe, a trend that reflects Europe's intense cross-border trade and investment linkages and the strategic way U.S. firms leverage their European supply chains.

Phantoms, Ultimates, and Roundtrippers

The overall level of U.S. investment in Europe remains substantial, even accounting for cyclical ups and downs. However, the figures do not tell us much about the reasons for such investment or the countries where U.S. companies focus their investments. As we have stated in previous surveys, official statistics do not distinguish a) between "real FDI" and "phantom FDI;" b) between immediate and ultimate investors; or c) between investments that actually end up in another country and those that simply take a round trip flight to that country and then return home.

Researchers have sought to disentangle what they call "real FDI" – the relation between an investor in one economy and a business in another economy – from what they call "phantom FDI" – investments into corporate shells with no link to the local real economy. According to one estimate, phantom investments accounted for around $15 trillion, or 37.5%, of total global FDI in 2017. For some conduit countries, like Luxembourg and the Netherlands, "phantom FDI" can be significant: more than $3 trillion in each country in 2017, according to these calculations. In that year, for instance, the UK recorded inward FDI of around $160 billion from Luxembourg, even though it was clear that most of those funds passed through Luxembourg from investors based in other countries.[3]

Several countries have sought to address these issues by distinguishing between an "immediate" investor – the direct investor in a foreign economy – and the "ultimate" investor, who controls the immediate investor and who in the last instance is the one bearing the investment's risks and reaping its rewards.[4]

Eleven EU countries have reported inward FDI positions by ultimate investing economy for 2022. The total value of $3.57 trillion came from a small number of countries, led by the United States ($478 billion, with a 13.4% share), followed by Germany ($376 billion, 10.5%), France ($351 billion, 9.8%), the UK ($328 billion, 9.2%) and Switzerland ($222 billion, 6.2%). In contrast, inward FDI positions of these same countries by immediate investing economy – the usual metric employed – offers a very different perspective: total value of $3.57 trillion, led by Luxembourg ($629 billion, 17.6%), the Netherlands ($501 billion, 14%), Germany ($322 billion, 9%), the UK ($318 billion, 8.9%) and France ($229 billion, 6.4%). The fact that the United States was the leading ultimate investor country but not even among the top five immediate investors indicates that U.S. companies use countries like Luxembourg and the Netherlands as conduits for investments that end up in other European countries.[5]

The UK reports similar discrepancies: U.S. companies ultimately controlled $1.12 trillion (40.8%) of the UK's total inward FDI stock in 2021 – $195 billion more than reflected by immediate investor metrics. Official UK analysis shows that ultimate U.S. parent companies directed some of their investments into the UK via Japan and Canada, as well as through EU members Ireland, Luxembourg, the Netherlands, and Germany. This is reflected in the data for these countries. Dutch companies ultimately controlled only $59 billion (2.1%) of UK inward FDI, far less than the $299 billion (10.9%) recorded by immediate investor metrics. Ultimate investor values for Luxembourg were $78 billion less than immediate investor values, and those for Germany were $69 billion less.

Earnings tell a similar tale. Ultimate investors from North America earned $37 billion from their direct investments in 2021, accounting for over one-third (37.7%) of the inward UK FDI total. Ultimate Dutch earnings from inward UK FDI ($3.7 billion) were far lower than immediate earnings ($10.9 billion).

Distinguishing FDI by ultimate and immediate investor also can help clarify how much investment consists of parent companies investing back into their domestic economies through their foreign affiliates, a phenomenon known as

"roundtripping." This practice is so prevalent that roundtripping was the ninth-highest ultimate UK inward FDI position in 2020 ($79.7 billion, 3% of the UK's total inward FDI position), according to the UK Office of National Statistics. The country through which UK companies invested the most into the UK in 2020 was the United States, which accounted for one-fifth of the UK round-tripping value.[6]

Multinational companies employ these practices for a variety of reasons, including tax arbitrage among various jurisdictions. Since 2017, however, the role of offshore financial centers has been declining, due in part to sustained international attempts to illuminate these activities. The most prominent effort began three years ago, when more than 135 countries accounting for more than 90% of global GDP agreed to rewrite global tax rules on corporate income. In 2024, a core group of countries, including the entire EU, the UK, Australia, South Korea, Japan, Canada, and Norway are beginning to apply these rules, the most prominent of which is a 15% minimum tax on profits of large multinationals.[7] If a country taxes multinationals below this rate, other countries can impose a corresponding levy on that company's operations in their jurisdiction, effectively nullifying the original tax advantage and reducing any incentive to shift profits. The OECD estimates that "investment hubs" where inward FDI accounts for more than 150% of GDP – countries like Ireland, Luxembourg, and the Netherlands – initially stand to gain the most from these arrangements, since the global minimum tax could boost government revenues by up to a third. Countries like France, Germany and the UK could receive an additional 7-10% in revenue. The OECD estimates that all countries that adopt the global minimum tax would gain at least 3% in their tax revenues.[8]

Despite these steps, the overall agreement remains uncertain. The world's two largest economies – the United States and China – backed the arrangements in 2021, but have not passed legislation to implement them. Progress has stalled on the other half of what was a two-pillar deal — getting multinationals to pay more tax in countries where they have sales and profits but little physical presence.

Taking the Long View

These dynamics illustrate the extremely volatile nature of U.S. FDI annual outflows. Table 2 provides a more long-term view of U.S.-European investment ties. As shown in the chart, standard metrics indicate that the share of U.S. FDI in both Germany and France declined sharply this past decade, with France accounting for just 1.9% of U.S. FDI flows to Europe from 2010 through the third quarter of 2023. Germany's share is higher, 4.9%, but still off the levels of previous decades. However, as mentioned, these figures need to be interpreted very carefully, since a good deal of ultimate investment from the United States makes its way to France and Germany via other countries, and a closer look indicates that U.S. FDI that eventually ends up in France and Germany remains robust.

It is also important not to label all small countries receiving sizable U.S. FDI as "conduit countries." Ireland, for instance, has become a favored destination for FDI among U.S. companies looking to take advantage of the country's flexible and skilled English-speaking labor force, low corporate tax rates, strong economic growth, membership in the European Union, and pro-business policies. Even when adjusting U.S. FDI figures to take account of flows of U.S. holding companies, Ireland still ranks as one of the most attractive places in the world for U.S. businesses.

Just as U.S. firms leverage different states across America, with certain activities sprinkled around the Northeast, Midwest, South and West, U.S. firms deploy the same strategies across Europe, leveraging the specific attributes of each country. Economic activity across the EU is just as distinct and differentiated by country. Different growth rates, differing levels of consumption, varying degrees of wealth, labor force participation rates, financial market development, innovation capabilities, corporate tax rates – all these factors, and more, determine where and when U.S. firms invest in Europe.

Table 2. U.S. FDI Flows to Europe: The Long View ($Millions, (-) inflows)

Country	1990-1999		2000-2009		2010-3Q2023	
	$ Aggregate Total	% of Total Europe	$ Aggregate Total	% of Total Europe	$ Aggregate Total	% of Total Europe
Europe	465,337		1,149,810		2,003,630	
Austria	2,908	0.6	501	0.0	9,171	0.5
Belgium	12,028	2.6	40,120	3.5	31,140	1.6
Czech Republic	155	0.0	1,941	0.2	4,544	0.2
Denmark	2,798	0.6	5,782	0.5	11,505	0.6
Finland	1,485	0.3	1,598	0.1	4,317	0.2
France	29,063	6.2	42,963	3.7	39,028	1.9
Germany	31,817	6.8	60,363	5.2	97,521	4.9
Greece	413	0.1	943	0.1	2,715	0.1
Hungary	2,929	0.6	1,376	0.1	3,236	0.2
Ireland	21,369	4.6	115,085	10.0	335,345	16.7
Italy	13,825	3.0	26,462	2.3	21,327	1.1
Luxembourg	15,912	3.4	126,989	11.0	340,218	17.0
Netherlands	70,770	15.2	295,889	25.7	431,953	21.6
Norway	4,198	0.9	4,997	0.4	18,092	0.9
Poland	2,681	0.6	4,699	0.4	5,537	0.3
Portugal	1,993	0.4	2,212	0.2	2,907	0.1
Russia	1,555	0.3	11,289	1.0	-4,368	-0.2
Spain	11,745	2.5	28,371	2.5	15,993	0.8
Sweden	10,783	2.3	16,974	1.5	7,266	0.4
Switzerland	32,485	7.0	97,869	8.5	131,413	6.6
Türkiye	1,741	0.4	5,994	0.5	10,204	0.5
United Kingdom	175,219	37.7	237,906	20.7	470,154	23.5
Other	17,465	2.6	19,487	1.4	14,402	0.7

Source: Bureau of Economic Analysis.
Data as of January 2024.

Europe's share of U.S. FDI outflows

55.9%

Table 3 underscores this point. The figures show U.S. affiliate sales from a given country to other destinations, or the exports of affiliates per country. Of the top twenty global export platforms for U.S. multinationals in the world, nine are in Europe, a trend that reflects Europe's intense cross- border trade and investment linkages and the strategic way U.S. firms leverage their European supply chains. For U.S. companies, Ireland is the number one platform in the world from which their affiliates can reach foreign customers. Switzerland, ranked third, remains a key export platform and pan-regional distribution hub for U.S. firms.

On a standalone basis, U.S. affiliates' exports from Ireland are greater than the total export volumes of most countries. Such is the export-intensity of U.S. affiliates in Ireland and the strategic importance of Ireland to the corporate success of U.S. firms operating in Europe and around the world. Moreover, the UK's exit from the EU may further solidify Ireland's spot as the number one location for U.S. affiliate exports. When exporting from the UK, new barriers to trade, including regulatory checks and rules of origin requirements, in addition to stricter immigration rules, could cause some companies to relocate operations to Ireland in search of easier access to the EU market.

The cyclical and structural challenges before Europe are substantial – war against Ukraine, energy price hikes, supply-chain shocks, a declining and aging labor force.

The UK still plays an important role for U.S. companies as an export platform to the rest of Europe. However, the introduction of the euro, the Single Market, EU enlargement and Brexit (Box 1) have enticed more U.S. firms to invest directly in EU member states. The extension of EU production networks and commercial

Table 3. **Global Export Platforms for U.S. Multinationals** (U.S. Affiliate Sales From Abroad to Other Destinations*) ($Millions)

	1982		1990		2000		2021	
Rank	Country	Value	Country	Value	Country	Value	Country	Value
1	United Kingdom	33,500	United Kingdom	51,350	United Kingdom	94,712	Ireland	417,011
2	Switzerland	27,712	Canada	46,933	Canada	94,296	Singapore	376,745
3	Canada	25,169	Germany	41,853	Germany	69,522	Switzerland	300,889
4	Germany	19,117	Switzerland	38,937	Netherlands	67,852	United Kingdom	218,211
5	Netherlands	15,224	Netherlands	33,285	Singapore	56,961	Belgium	163,062
6	Belgium	11,924	France	24,782	Switzerland	56,562	Canada	160,061
7	Singapore	11,579	Belgium	21,359	Ireland	51,139	Netherlands	147,895
8	France	11,255	Singapore	15,074	Mexico	37,407	Germany	127,596
9	Indonesia	8,289	Hong Kong	9,951	France	35,797	Hong Kong	123,264
10	Hong Kong	4,474	Italy	9,562	Belgium	32,010	Mexico	102,298
11	Italy	3,993	Ireland	9,469	Hong Kong	22,470	China	93,169
12	Australia	3,710	Spain	7,179	Malaysia	16,013	France	54,041
13	Ireland	2,842	Japan	7,066	Sweden	15,736	India	43,567
14	United Arab Emirates	2,610	Australia	6,336	Italy	14,370	Australia	36,426
15	Brazil	2,325	Mexico	5,869	Spain	12,928	Brazil	29,668
16	Japan	2,248	Indonesia	5,431	Japan	11,845	Malaysia	25,321
17	Malaysia	2,046	Brazil	3,803	Australia	9,370	Italy	24,407
18	Panama	1,662	Norway	3,565	Brazil	8,987	Spain	23,788
19	Spain	1,635	Malaysia	3,559	China	7,831	Thailand	22,680
20	Mexico	1,158	Nigeria	2,641	Norway	6,238	Japan	21,183
	All Country Total	252,274	All Country Total	398,873	All Country Total	857,907	All Country Total	2,932,183

Source: Bureau of Economic Analysis.
Data as of January 2024.
**Destination = affiliate sales to third markets and sales to U.S. for majority-owned foreign affiliates.*

infrastructure throughout a larger pan-continental Single Market has shifted the center of gravity in Europe eastward within the EU, with Brussels playing an important role in shaping economic policy.

Despite these changes, the UK remains an attractive investment location. It has the third highest stock of assets owned through FDI in the world, behind only the United States and China. Moreover, this stock more than doubled between 2012 and 2021, rising from $1.2 trillion to $2.8 trillion. As a proportion of GDP, the UK's FDI stock is the highest in the G20, at 88% in 2022. The UK has also been the leading European destination for greenfield FDI for 15 consecutive years between 2008 and 2022. In 2022, the UK secured greenfield FDI flows of $108 billion, more than the next two highest European competitors, Spain ($51 billion) and Germany ($37 billion), combined.[9]

In an age of scarce workers, resources, and markets, Europe has never been more important to American businesses.

Why Europe Matters

The cyclical and structural challenges before Europe are substantial: Russia's war against Ukraine, energy price hikes, supply-chain shocks, a declining and aging labor force – these, and other variables, have weighed on growth this decade and generated different growth trajectories for the U.S. and Europe.

Part of the EU's challenge is the unmet promise of completing the Single Market. The European Commission estimates that doing so would boost growth by more than $767 billion between now and 2030. The IMF finds that deeper integration within the EU could boost its GDP by 7%.

That said, it is important to see the forest from the trees, and to recognize that, first, Europe on a standalone basis remains one of the largest and wealthiest economic entities in the world and, second, the region remains a critical cog in the corporate success of U.S. firms.

Europe is home to more than 500 million people across the EU, the UK, Norway, Switzerland, Iceland, and a host of eastern countries. This cohort accounted for roughly 23% of world output in 2022 – slightly lower than the U.S. share of 25%, but greater than that of China (18%). On a purchasing power parity basis, Europe's share was greater than that of the United States but less than that of China in 2022.

Europe remains a key pillar of the global economy and critical component to the corporate success of U.S. firms. As Table 4 highlights, Europe attracts more than half of U.S. aggregate FDI outflows. The region's share of total U.S. FDI during the last decade is still substantial at 55.9%, which is down slightly from the previous decade, but equivalent to the first decade of this century. Part of this dynamic reflects weakening U.S. investment flows to China.

Europe claims a larger resident population of highly-skilled AI professionals than does the U.S.

Table 4. Cumulative U.S. FDI Outflows ($Millions)

Decade	All Countries	Europe	Europe as a % of World
1950-1959	20,363	3,997	19.6
1960-1969	40,634	16,220	39.9
1970-1979	122,721	57,937	47.2
1980-1989	171,880	94,743	55.1
1990-1999	869,489	465,337	53.5
2000-2009	2,056,007	1,149,810	55.9
2010-2019	2,404,739	1,378,601	57.3
2020 - Q3 2023	1,142,127	638,034	55.9

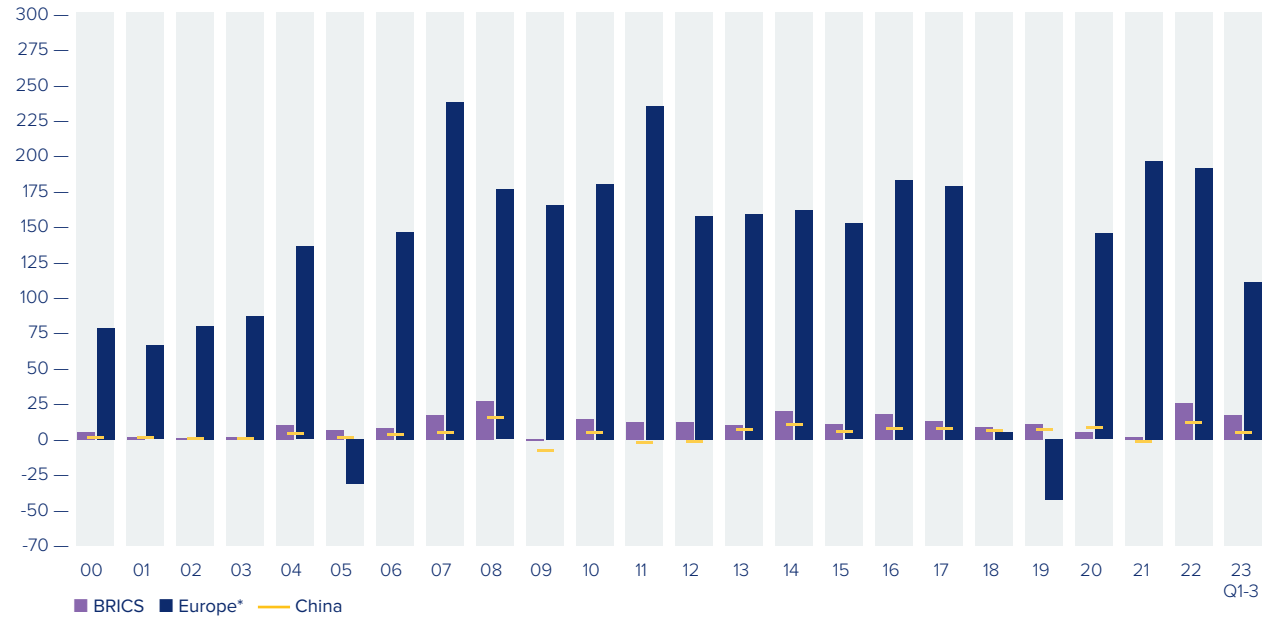
Source: Bureau of Economic Analysis.
Data as of January 2024.

Even after adjusting for FDI flows related to holding companies, Europe remains the favored destination of U.S. firms. This runs counter to the fashionable but false narrative that corporate America prefers low-cost nations in Asia, Latin America, and Africa to developed markets like Europe.

Investing in emerging markets such as China, India, and Brazil remains difficult, with indigenous barriers to growth (poor infrastructure, dearth of human capital, corruption, etc.) as well as policy headwinds (foreign exchange controls, tax preferences favoring local firms) reducing the overall attractiveness of these markets to multinationals. As shown in Table 5, there has been a wide divergence between U.S. FDI to the BRICS (Brazil, Russia, India, China, South Africa) and U.S. FDI to Europe. After a drop in flows to Europe in 2019 due to U.S. domestic tax reform, investment in Europe rebounded in 2020 and continues to gather momentum this decade. In the first three quarters of 2023, U.S. FDI outflows to Europe totaled $110 billion, nearly 20 times more than U.S. FDI outflows to China of $5.6 billion and more than six times U.S. FDI outflows to the BRICS of $18 billion.

Europe is also profitable for U.S. companies. Meta and Apple, for instance, draw 22% and 24% of their revenue, respectively, from Europe – second only to the U.S. Other large U.S. tech firms do not separate out their European revenues in public reporting, but their published figures are consistent with Europe being their most important foreign market.[10]

Table 5. Foreign Direct Investment Outflows to the BRICS vs. Europe ($Billions)



**Europe does not include flows to Russia.*
Source: Bureau of Economic Analysis. Data as of January 2024.

Gaining access to wealthy consumers is among the primary reasons why U.S. firms invest overseas, which explains the continued attractiveness of affluent Europe to American companies. Fourteen of the twenty-five wealthiest nations in the world are European. GDP per capita in the EU ($38,234 in 2022) is significantly higher than that in China ($12,556) or India ($2,277).

Wealth drives consumption, with the EU+UK accounting for roughly 21% of global personal consumption expenditures in 2022. That is a lower share than that of the U.S. (30%) but well above that of China (12%), India (3.4%) and the BRICS combined (18.6%). Between 2000 and 2022, personal consumption expenditures in the EU+UK have more than doubled from $5.2 trillion to $10.6 trillion, representing an increasing market opportunity for large global corporations.

Wealth in Europe is also correlated with a highly skilled and productive workforce, advanced innovation capabilities, and a world-class R&D infrastructure – underpinning the attractiveness of the EU to corporate America. The EU's labor force is not only more than twenty percent larger than America's; its labor force participation rate is more than ten percentage points higher (74.3%) than it is in the U.S. (62.4%).

Drivers of foreign investment into Europe

- **Access to a large market**
- **Purchasing power of consumers**
- **Skilled and productive workforce**
- **Advanced innovation capabilities**
- **World-class R&D infrastructure**
- **Business-friendly policies**
- **Respect for the rule of law**
- **Strong financial markets**

Number of researchers hosted
(2021 estimate)

2.5 million
EU + Iceland + Norway + UK + Switzerland

2.3 million
China

1.6 million
U.S.

Business-friendly policies surrounding property rights, the ability to obtain credit, employment regulations, starting a business and cross-border trade have been a major draw for foreign investors over the years. According to the International Institute for Management Development (IMD) latest World Competitiveness Rankings for 2023, fourteen European economies ranked in the top twenty-five. Among the top ten, Denmark was ranked #1, followed by Ireland (2), Switzerland (3), the Netherlands (5), and Sweden (8). Other factors, such as shared values, respect for the rule of law, credible institutions, advanced infrastructure, and strong financial markets continue to set Europe apart when it comes to U.S. business investment. Finally, Europe continues to be a world leader when it comes to innovation and knowledge-based activities. According to the 2023 Global Innovation Index, twelve European economies rank among the top twenty most innovative countries in the world (Table 6). The index considers a wide range of factors such as institutions, education quality, research & development, information & communication technologies (ICT) infrastructure, and more.

A related measure of knowledge-based capabilities is science & technology (S&T) intensity – or the sum of the patent and scientific publication shares divided by the population. By this measure, many European and U.S. regions have more scientific output per capita than their Asian counterparts. In fact, of the world's top 20 science & technology clusters, ranked by S&T intensity, 10 are in Europe, 6 in the United States, and 4 are in Asia (Table 6).

Since R&D expenditures are a key driver of value-added growth, it is interesting to note that EU- and UK-based organizations accounted for more than one-fifth of total global R&D in 2021 in purchasing-power parity terms. That lagged the share of the United States and China but exceeded the share of Japan and South Korea. Over the past two decades, China has steadily advanced its R&D capabilities, and is projected to overtake the United States as the top R&D spender in the world (Table 7).

Europe remains a leader in several cutting-edge industries, including life sciences, agriculture and food production, automotives, nanotechnology, energy, and information and communications. Innovation requires talent, and on this basis, Europe is holding its own relative to other parts of the world. Europe is the world leader in terms of full-time equivalent research staff. Of the world's total pool of research personnel, the EU plus the UK, Switzerland, Norway, and Iceland housed an estimated 2.5 million researchers in 2021, versus 1.6 million in the United States and 2.3 million in China, according to OECD estimates.

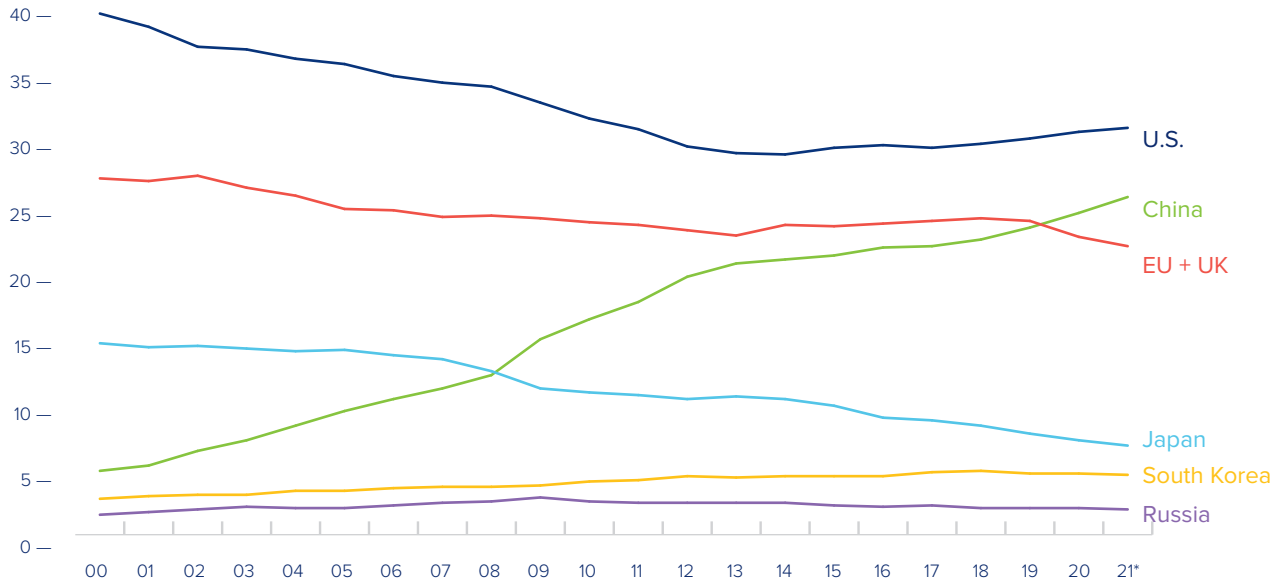
Table 6. **Global Innovation Index** (2023)

Overall Global Innovation Index	
Rank	Country
1	Switzerland
2	Sweden
3	United States
4	United Kingdom
5	Singapore
6	Finland
7	Netherlands
8	Germany
9	Denmark
10	Korea
11	France
12	China
13	Japan
14	Israel
15	Canada

Science and Technology (S&T) Intensity		
Rank	S&T Cluster	Country
1	Cambridge	UK
2	San Jose-San Francisco, CA	U.S.
3	Oxford	UK
4	Eindhoven	Netherlands
5	Boston-Cambridge, MA	U.S.
6	Daejeon	Korea
7	Ann Arbor, MI	U.S.
8	San Diego, CA	U.S.
9	Seattle, WA	U.S.
10	Munich	Germany
11	Kanazawa	Japan
12	Raleigh, NC	U.S.
13	Göteborg	Sweden
14	Beijing	China
15	Stockholm	Sweden

Source: Cornell University, INSEAD, and the World Intellectual Property Organization, Global Innovation Index 2023.
Data as of 2024.

Table 7. Global R&D Expenditures and the Rise of China (% of Total)



R&D share calculated in terms of current purchasing-power parity dollars. Global R&D is a sum of the OECD countries plus Argentina, China, Russia, Singapore, South Africa, Chinese Taipei and Romania.
**2021 authors' estimate for the following countries: Russia, Singapore & South Africa.*
Source: OECD.
Data as of January 2024.

Europe is home to one of the most educated workforces in the world. In countries such as Ireland, Switzerland, Lithuania, Luxembourg, Belgium and the Netherlands, the share of the working age population with a bachelor's degree or higher exceeds 40%. The comparable figure for the U.S. is 39%. While U.S. universities remain a top destination for foreign students, the UK, Germany, and France are also notable attractions. In the end, Europe remains among the most competitive regions in the world in terms of science and technology capabilities. The U.S. National Science Board has explicitly recognized EU research performance as strong and marked by pronounced intra-EU collaboration.

Europe claims a larger resident population of highly-skilled AI professionals than does the U.S. Many of these AI professionals work at the European affiliates of U.S. tech companies. Atomico notes that these European-based pools of AI talent offer a rich breeding ground for the founders and talent behind the next generation of European AI companies. French startup Mistral AI, founded by European former leading AI researchers at Meta and DeepMind, is a prominent example of how cross-fertilization of transatlantic talent can help jumpstart European innovation.[11]

These examples underscore that Europe remains a magnet for talent from the rest of the world. In fact, slightly more talent is moving from the U.S. to work in European tech than European talent is moving to join the U.S. tech scene. Europe is a net gainer of talent from essentially every single region of the world except Australia.[12]

These attributes make Europe an attractive place for innovators. For instance, according to Atomico, more founders have been starting new tech startups in Europe than in the U.S. in every one of the past five years. On average, around 15,200 new tech startups have been founded per year in Europe, compared to 13,700 in the U.S. The UK leads the way, accounting for approximately a quarter of all new tech companies each year in Europe. France is gaining ground, accounting for 22% of new tech startups in 2023, up from 18% in 2019.[13]

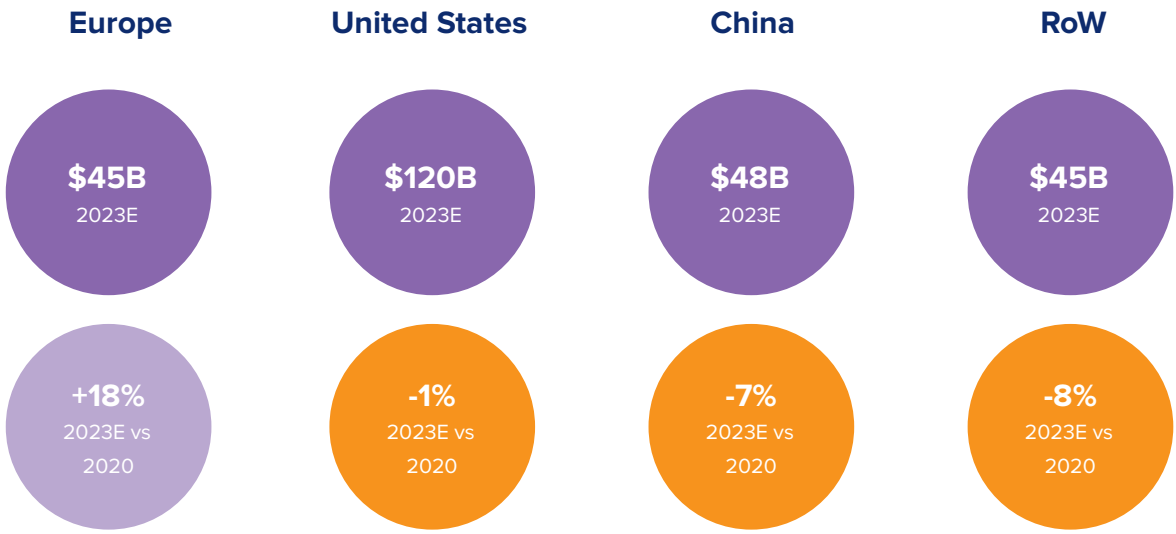
Moreover, while the value of new European tech investments lags the U.S., Europe was the only region of the world to have recorded positive inflows of tech investment in 2023. Investment in European tech companies in 2023 was 18% higher than in 2020, compared to a 1% decline in the U.S., a 7% decline in China, and 8% decline in the rest of the world (Table 8). Although down

from the historic levels of 2021, 2023 was the third-largest year on record by total capital invested in European tech, and was four times the volume of a decade ago. Moreover, investors are sitting on $108 billion worth of dry powder – the largest trove of deployable capital that Europe has ever seen.[14]

U.S. investments are critical to Europe's innovation growth. Capital from U.S. investors accounted for 25% of that going to European start-ups seeking "growth stage" funding in 2023; Asian investors accounted for only 7%. While the U.S. participation in European funding rounds declined from recent record highs, it still topped historical norms (Table 9).[15]

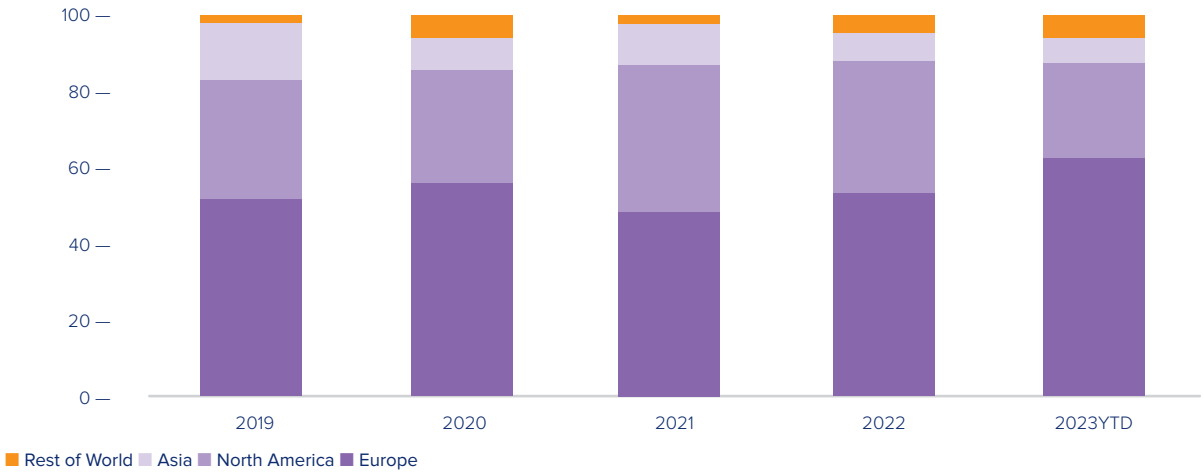
A particularly bright light on Europe's innovation landscape is the purpose-driven digital company, which Atomico defines as a firm trying to address at least one of the UN's 17 Sustainable Development Goals (SDGs). Over the past five years, investment

Table 8. Capital Invested and Change in Capital Invested (%), by Region, 2023 vs. 2020



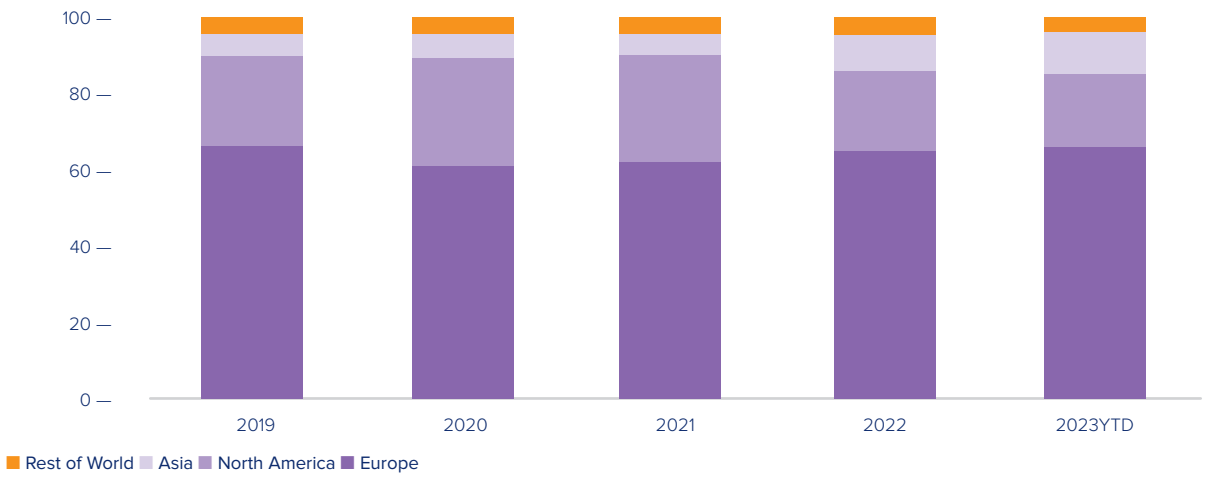
RoW: Rest of the World
Sources: Atomico; Dealroom.co; crunchbase; State of European Tech 2023.

Table 9. Capital Invested in European Tech by Geographic Source Region, 2019-2023 (% of total)



Data as of September 30, 2023. Excludes biotech, secondary transactions, debt, lending capital, and grants.
Sources: Atomico; Dealroom.co; State of European Tech 2023.

Table 10. Share of Capital Invested in Purpose-Driven Companies by Region, 2019-2023 (% of total)



Data as of September 30, 2023. Excludes biotech, secondary transactions, debt, lending capital, and grants.
Source: Dealroom.co; Atomico, State of European Tech 2023.

in these purpose-driven companies has increased at a huge scale globally, but largely in Europe, followed by North America. In 2023, Europe accounted for 41% of worldwide capital invested in purpose-driven tech companies, leapfrogging the U.S. (32%). For the earliest stages rounds of less than $5 million, Europe's share is even more significant, equating to 66% of all capital invested globally (Table 10).

The Bottom Line

These are very challenging times for Europe. The near-term economic outlook remains fraught with risks and uncertainty as the continent struggles with war and its consequences. Slower growth and/or a recession in Europe is a significant risk to U.S. firms. However, bright spots are apparent, and an even greater risk to corporate America is being absent from the continent. In an age of scarce workers, resources, and markets, Europe has never been more important to American businesses.

Add it all up and Europe – large, wealthy, competitive, innovative, and well-endowed with a large pool of skilled labor – remains a formidable economic entity with a great deal of upside. Past and future, America's transatlantic partnership with Europe continues to yield significant dividends.

Add it all up and Europe – large, wealthy, competitive, and well-endowed with a large pool of skilled labor – remains a formidable economic entity with a great deal of upside.

Box 2. Exceptional: UK-EU Commercial Relations

Three years after the UK left the EU, commercial ties between the two parties remain exceptional, in two ways. First, the EU remains the UK's top trading partner, accounting for 46% of the UK's total trade, and the UK remains the EU's third largest trading partner overall, behind the US and China.[16] Second, the parties continue to carve out exceptions, generate new rules, and institute phase-ins and delays to the original terms they negotiated under the EU-UK Withdrawal Agreement and its Northern Ireland Protocol, and under their Trade and Cooperation Agreement (TCA), which governs trade and other forms of bilateral cooperation. The TCA is the most valuable preferential trade arrangement to both the UK and the EU. Among the EU's preferential trade partners, the UK accounts for 46% of all value in services trade and 22.5% of all value in goods.[17]

Points of convergence and divergence continue to emerge as the two parties recraft their relationship. One example of convergence is that the UK has rejoined the EU's $104 billion Horizon Europe research program as an "associate country." Another has been agreement on sensitive issues surrounding Northern Ireland. The Withdrawal Agreement treats Northern Ireland, which is part of the UK, as being within the EU customs area, to prevent the need for a hard border on the island of Ireland. But it also required checks on goods within the UK flowing from Great Britain to Northern Ireland. To prevent a customs border from being established in the middle of the Irish Sea, London and Brussels in 2023 completed a "Windsor Framework" that simplifies and clarifies arrangements. Chief among them was agreement to channel goods within the UK coming from Great Britain to Northern Ireland through paperwork-light "green lanes" if destined for Northern Ireland and paperwork-heavy "red lanes" if intended for the EU. The EU will accept the UK's public health standards so agri-food can enter Northern Ireland, although those goods must be labeled "not for EU" by 2025. These provisions entered into force on October 1, 2023. In January 2024, London and Northern Ireland's Democratic Unionist Party, which had been blocking the work of the local parliament, agreed to abandon the "green lane" term, affirmed unfettered access for flows between Northern Ireland and Great Britain, and further reduced checks on those flows to instances related to potential crime or disease. The arrangement enabled the Northern Ireland parliament to resume, with Sinn Féin's Michelle O'Neill now serving as the region's first prime minister to favor unity with the country of Ireland.[18]

Another area of convergence in 2023 was UK-EU agreement to extend the TCA's current rules of origin for electric vehicles and batteries until the end of 2026. This prevented the entry into force from January 1, 2024 of more stringent rules that would have required at least 60% of batteries and 45% of overall parts of electric vehicles shipped between the UK and the EU to be sourced from within the two regions or face 10% tariffs. The battery limit was of particular concern, as the UK and EU still import most from China, South Korea, or Japan. The EU sweetened the pot by offering its manufacturers $3.25 billion to expand EU-sourced EV battery production.

These changes are happening amidst broader signs of divergence. On January 1, 2024, the UK's Retained EU Law (Revocation and Reform) Act came into effort. It repeals the principle of the supremacy of EU law, revokes specific EU pieces of EU-derived legislation, and re-labels and downgrades what remains as "assimilated law," giving UK courts wider powers to depart from EU-retained case law. By 2026 the government seeks to revoke or remove over 2,000 items, reform another 1,000, and keep about 2,000 unchanged.[19]

Also in January, the UK began to put into place long-delayed controls at the UK-EU border. While Brussels had instituted controls on goods from Great Britain to the EU already in January 2021, London delayed checks on goods coming the other way due to concerns about disruptions. On January 31, London began to phase in implementation of its Border Target Operating Model, which restricts animal products, plants, and foods of non-animal origin from the EU. Physical checks and additional document checks will be introduced on April 30, and safety and security import declarations will become mandatory on October 31.[20]

Another area where divergence is increasingly likely is the financial sector, which was excluded from the TCA. The two parties signed a memorandum of understanding on financial services regulatory cooperation, but are moving sluggishly on sector-by-sector arrangements instead of reaching an overall agreement on equivalence. In the meantime, regulatory changes in each jurisdiction are beginning to pull the two sides further apart.

The nature of UK-EU arrangements is important to the UK's economic relationship with the United States. In recent years, U.S. companies in Europe have expressed concerns about new regulatory barriers to trade, geographic restrictions on services, and rules-of-origin requirements. The loss of access to the EU Single Market from the UK had repercussions for U.S. services companies and manufacturers operating in Europe. U.S.-UK talks on a possible free trade agreement are still on hold.

Still, U.S.-UK commercial ties are robust and thriving. Measured on an historic cost basis, U.S. companies had invested a record $1.1 trillion in the UK economy and British firms roughly $663 billion in the U.S. economy by 2022 – directly supporting 2.59 million jobs in both countries. Estimated sales of American and British affiliates in each other's markets were a combined $1.4 trillion in 2022. U.S. FDI in the UK of $1.1 trillion in 2022 was more than U.S. FDI in the entire Asia-Pacific region. The United States is the UK's top trading partner in both goods and services, with total bilateral trade reaching an estimated $295.6 billion in 2022.

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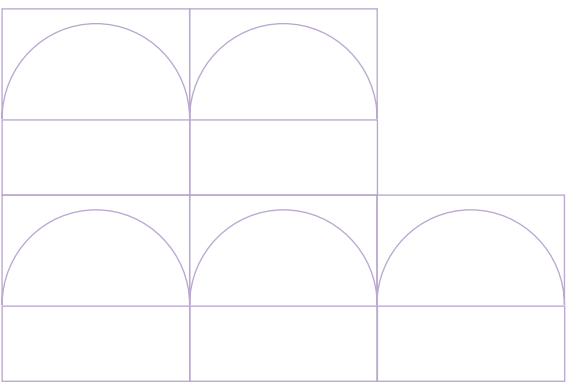


Appendix A

European Commerce and the 50 U.S. States:

A State-by-State Comparison

Alabama and Europe

Jobs

52,900

Since 2012: +6,600 (+14.3%)

European companies account for **44%** of foreign affiliate jobs

Employment within Alabama, 2021

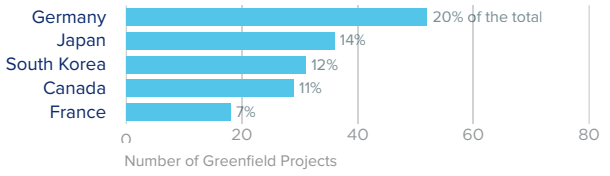
Country	Employment
Japan	21,500
Germany	15,900
Canada	15,800
United Kingdom	12,100
France	8,300

On a country basis, German companies operating in Alabama represented 13% of total foreign affiliate employment in Alabama, with German multinationals supporting approximately 4,700 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



260

Greenfield Projects (July 2013 - June 2023)

Number of projects does not directly translate to value of projects or jobs added. Greenfield FDI is investment in new assets. Greenfield projects listed on the right hand side are Greenfield projects in the state from all countries.

Trade

Alabama Goods Exports to Europe, 2022

$8.0 bn

56% of total exports from Alabama to Europe was transportation equipment, reflecting the state's linkages with European auto manufacturers.

Alabama Goods Imports from Europe, 2022

$8.8 bn

Transportation equipment and machinery manufactures were the top product imports from Europe.

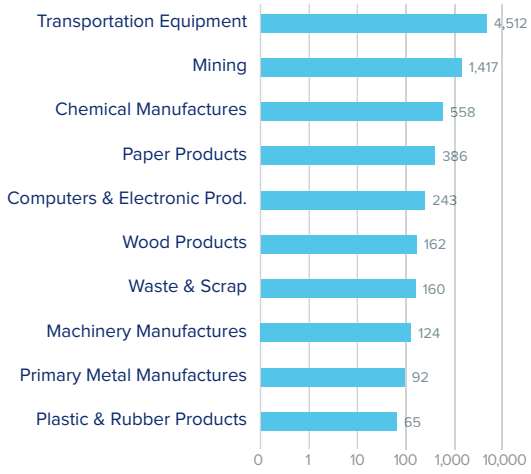
Top European Export Markets, 2022

Country	Exports ($ millions)
Germany	4,342
United Kingdom	541
Belgium	541
France	371
Austria	364

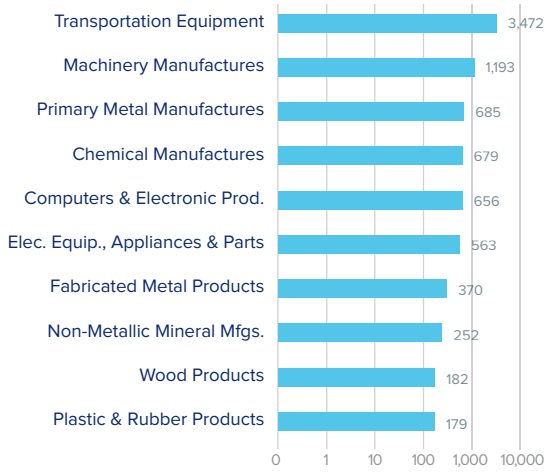
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	4,365
France	820
United Kingdom	546
Italy	408
Russia	290

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Alaska and Europe

Jobs

5,000

Since 2012: -1,700
(-25.4%)

European companies account for

37%

of foreign affiliate jobs

Employment within Alaska, 2021

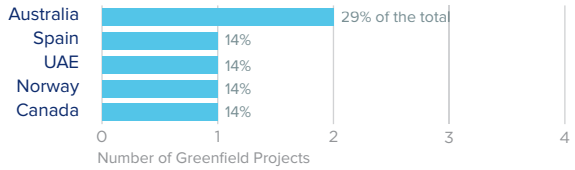
Country	Employment
Canada	5,500
United Kingdom	2,200
Japan	2,100
France	1,300
Germany	400

On a country basis, U.K. companies operating in Alaska represented 16% of total foreign affiliate employment in Alaska, with U.K. multinationals supporting approximately 2,500 fewer jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



7

Greenfield Projects
(July 2013 - June 2023)

Number of projects does not directly translate to value of projects or jobs added. Greenfield FDI is investment in new assets. Greenfield projects listed on the right hand side are Greenfield projects in the state from all countries.

Trade

Alaska Goods Exports to Europe, 2022

$1.2 bn

The bulk of the state's exports consist of primary commodities.

Alaska Goods Imports from Europe, 2022

$119.3 m

Imports of transportation equipment from Europe fell from $157 million in 2021 to $7 million in 2022.

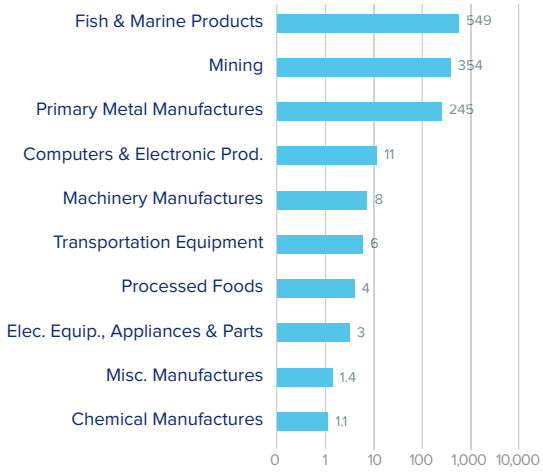
Top European Export Markets, 2022

Country	Exports ($ millions)
Netherlands	279
Switzerland	251
Spain	174
Belgium	104
Germany	91

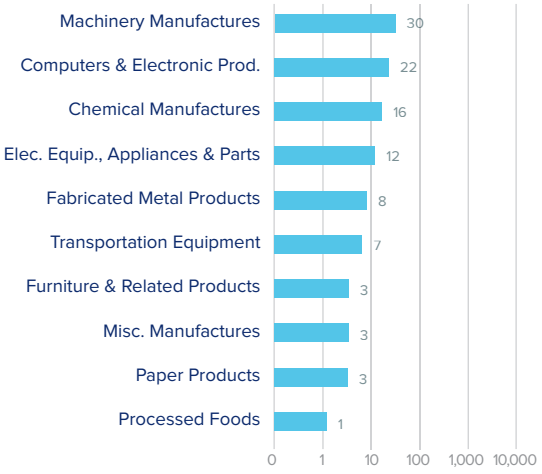
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	31
United Kingdom	16
Italy	14
Russia	10
France	7

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Arizona and Europe

Jobs

85,200

Since 2012: +34,800 (+69.0%)

European companies account for

61%

of foreign affiliate jobs

Employment within Arizona, 2021

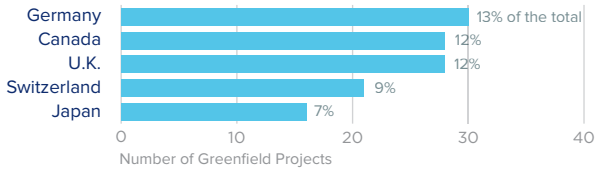
Country	Employment
United Kingdom	29,900
Canada	22,300
France	13,400
Germany	12,700
Japan	12,500

On a country basis, U.K. companies operating in Arizona represented 21% of total foreign affiliate employment in Arizona, with U.K. multinationals supporting approximately 16,200 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



231

Greenfield Projects (July 2013 - June 2023)

Number of projects does not directly translate to value of projects or jobs added. Greenfield FDI is investment in new assets. Greenfield projects listed on the right hand side are Greenfield projects in the state from all countries.

Trade

Arizona Goods Exports to Europe, 2022

$5.6 bn

About two thirds of the state's exports to Europe consists of transportation equipment and computers & electronic products.

Arizona Goods Imports from Europe, 2022

$5.1 bn

Arizona's largest merchandise imports from Europe were computers & electronic products and transportation equipment, which combined represent almost half of the state's total imports from Europe.

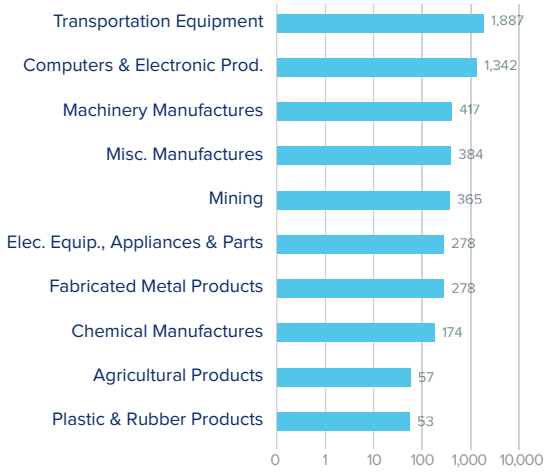
Top European Export Markets, 2022

Country	Exports ($ millions)
Netherlands	1,135
United Kingdom	788
Ireland	696
Germany	684
France	636

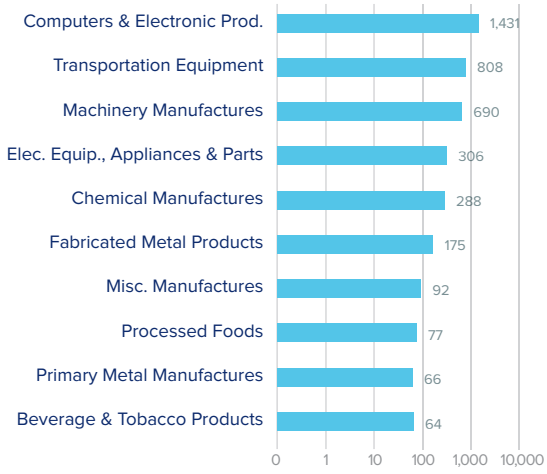
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	1,136
Italy	659
United Kingdom	649
France	454
Spain	423

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Arkansas and Europe

Jobs

31,400

Since 2012: +3,000 (+10.6%)

European companies account for **53%** of foreign affiliate jobs

Employment within Arkansas, 2021

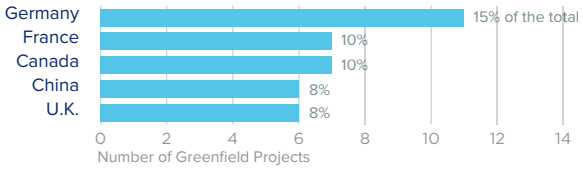
Country	Employment
United Kingdom	8,000
France	5,800
Switzerland	5,800
Canada	4,900
Japan	4,700

On a country basis, U.K. companies operating in Arkansas represented 14% of total foreign affiliate employment in Arkansas, with U.K. multinationals supporting approximately 3,300 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



72

Greenfield Projects (July 2013 - June 2023)

Number of projects does not directly translate to value of projects or jobs added. Greenfield FDI is investment in new assets. Greenfield projects listed on the right hand side are Greenfield projects in the state from all countries.

Trade

Arkansas Goods Exports to Europe, 2022

$1.3 bn

Transportation equipment made up 50% of exports to Europe in 2022.

Arkansas Goods Imports from Europe, 2022

$2.2 bn

Transportation equipment is the top imported product from Europe, representing 53% of total imports.

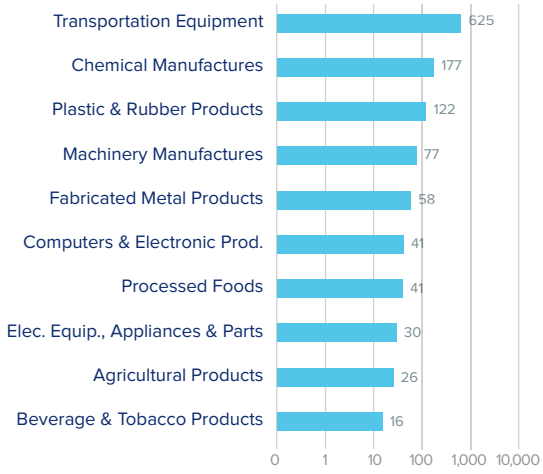
Top European Export Markets, 2022

Country	Exports ($ millions)
United Kingdom	246
Netherlands	210
France	185
Türkiye	90
Belgium	77

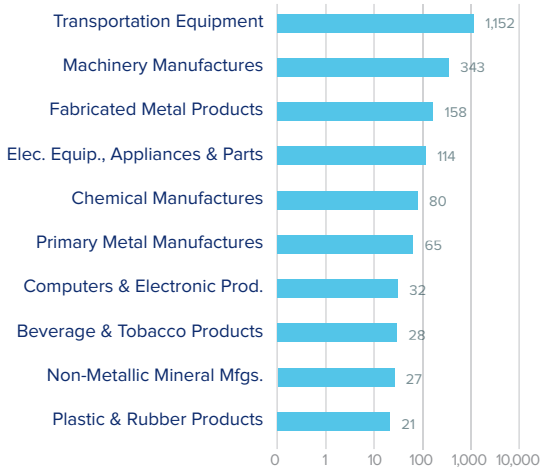
Top European Import Markets, 2022

Country	Imports ($ millions)
France	1,055
Germany	316
Italy	163
United Kingdom	143
Netherlands	57

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

California and Europe

Jobs

458,700

Since 2012: +83,700 (+22.3%)

European companies account for

57%

of foreign affiliate jobs

Employment within California, 2021

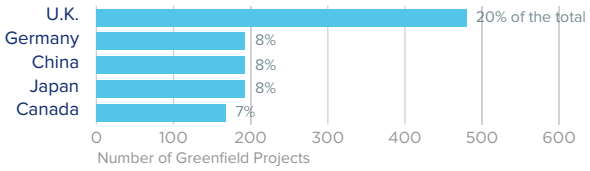
Country	Employment
United Kingdom	124,900
Japan	112,800
Germany	93,900
Canada	76,600
France	69,800

On a country basis, U.K. companies operating in California represented 15% of total foreign affiliate employment in California, with U.K. multinationals supporting approximately 33,700 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



2,400

Greenfield Projects (July 2013 - June 2023)

Number of projects does not directly translate to value of projects or jobs added. Greenfield FDI is investment in new assets. Greenfield projects listed on the right hand side are Greenfield projects in the state from all countries.

Trade

California Goods Exports to Europe, 2022

$34.9 bn

24% of California's exports to Europe in 2022 consisted of high-tech goods (computers & electronic products).

California Goods Imports from Europe, 2022

$49.2 bn

Transportation equipment was the top product import, representing 24% of the state's total imports from Europe.

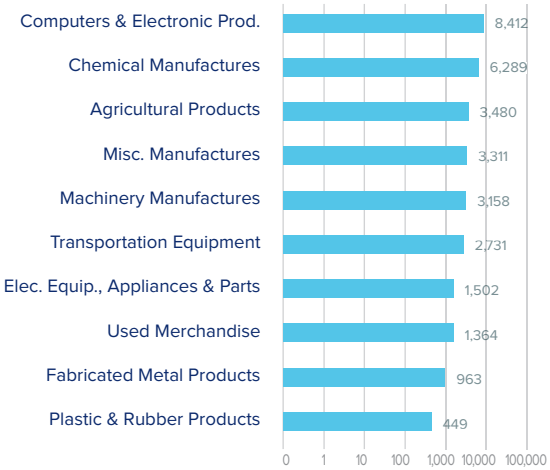
Top European Export Markets, 2022

Country	Exports ($ millions)
Netherlands	6,518
Germany	6,251
United Kingdom	4,693
Belgium	2,739
France	2,527

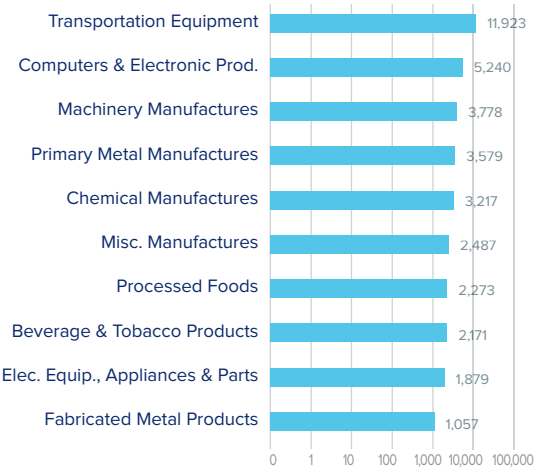
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	14,208
Italy	4,943
France	4,370
United Kingdom	4,120
Switzerland	3,481

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Colorado and Europe

Jobs

69,000

Since 2012: +19,200 (+38.6%)

European companies account for **56%** of foreign affiliate jobs

Employment within Colorado, 2021

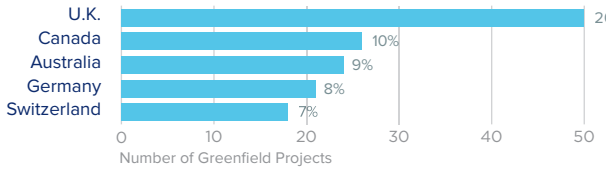
Country	Employment
Canada	21,500
United Kingdom	18,600
Japan	10,000
Germany	9,600
France	9,200

On a country basis, U.K. companies operating in Colorado represented 15% of total foreign affiliate employment in Colorado, with U.K. multinationals supporting approximately 5,900 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



263

Greenfield Projects (July 2013 - June 2023)

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Trade

Colorado Goods Exports to Europe, 2022

$2.4 bn

About 19% of the state's exports to Europe consisted of chemicals in 2022.

Colorado Goods Imports from Europe, 2022

$3.6 bn

Colorado's largest import from Europe was transportation equipment, followed by machinery.

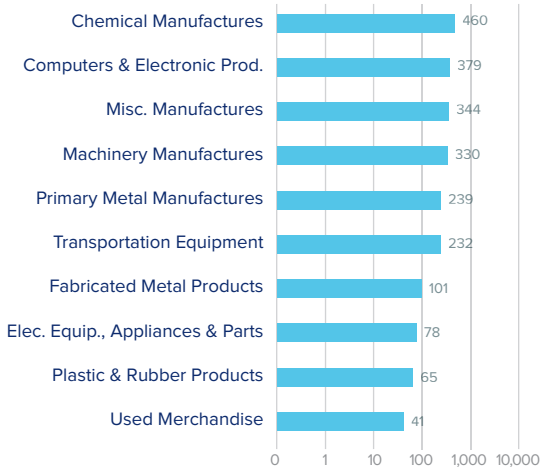
Top European Export Markets, 2022

Country	Exports ($ millions)
Switzerland	726
Netherlands	311
Germany	289
United Kingdom	260
France	191

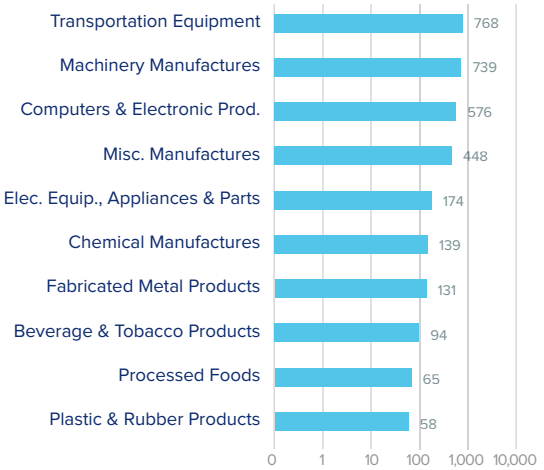
Top European Import Markets, 2022

Country	Imports ($ millions)
Switzerland	948
Germany	803
Italy	303
United Kingdom	268
France	247

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Connecticut and Europe

Jobs

87,900

Since 2012: +3,800 (+4.5%)

European companies account for

78%

of foreign affiliate jobs

Employment within Connecticut, 2021

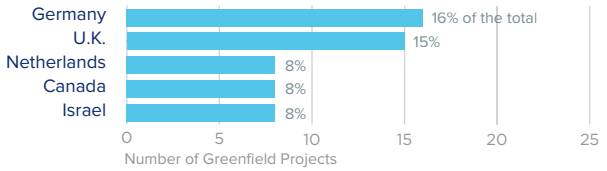
Country	Employment
United Kingdom	22,400
Netherlands	19,100
Germany	14,100
Canada	7,100
France	6,700

On a country basis, U.K. companies operating in Connecticut represented 20% of total foreign affiliate employment in Connecticut, with U.K. multinationals supporting approximately 3,000 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



101

Greenfield Projects (July 2013 - June 2023)

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Trade

Connecticut Goods Exports to Europe, 2022

$7.2 bn

Exports are heavily skewed towards transportation equipment, which represents 48% of the state's total exports to Europe.

Top European Export Markets, 2022

Country	Exports ($ millions)
Germany	2,096
United Kingdom	1,364
France	1,095
Netherlands	1,030
Türkiye	237

Connecticut Goods Imports from Europe, 2022

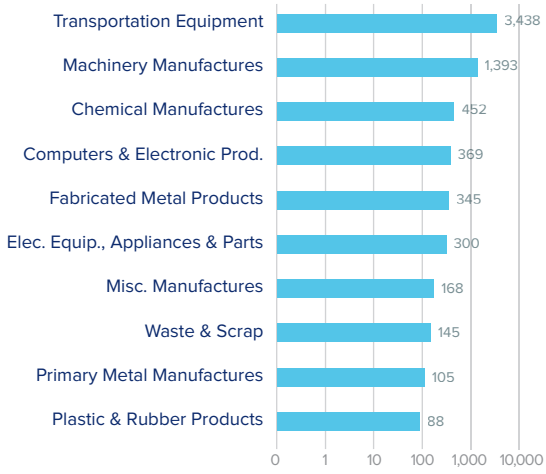
$7.6 bn

Machinery along with petroleum & coal products were Connecticut's main import from Europe, representing 18% and 15% of the state's total merchandise imports from Europe, respectively.

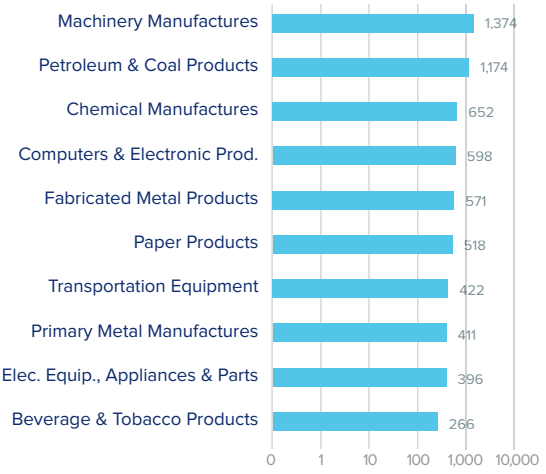
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	1,524
Netherlands	1,035
United Kingdom	894
France	580
Italy	569

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Delaware and Europe

Jobs

22,200

Since 2012: +1,900 (9.4%)

European companies account for **76%** of foreign affiliate jobs

Employment within Delaware, 2021

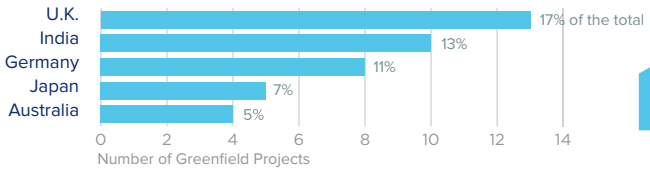
Country	Employment
United Kingdom	8,700
Netherlands	3,750
Germany	3,400
Canada	3,000
Japan	1,800

On a country basis, U.K. companies operating in Delaware represented 30% of total foreign affiliate employment in Delaware, with U.K. multinationals supporting approximately 400 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



76

Greenfield Projects (July 2013 - June 2023)

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Trade

Delaware Goods Exports to Europe, 2022

$1.0 bn

Chemicals are Delaware's primary export to Europe, representing 36% of the state's total exports. That share is down from 50% in 2019, representing a diversification of state exports.

Delaware Goods Imports from Europe, 2022

$6.4 bn

Chemicals are also Delaware's top import, accounting for 63% of the state's total imports from Europe.

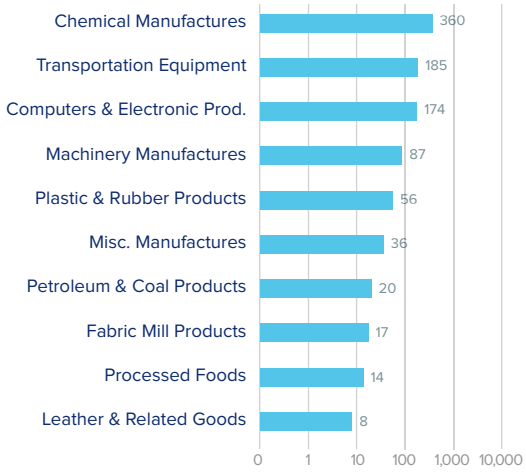
Top European Export Markets, 2022

Country	Exports ($ millions)
United Kingdom	291
Germany	249
Belgium	124
Netherlands	94
Switzerland	30

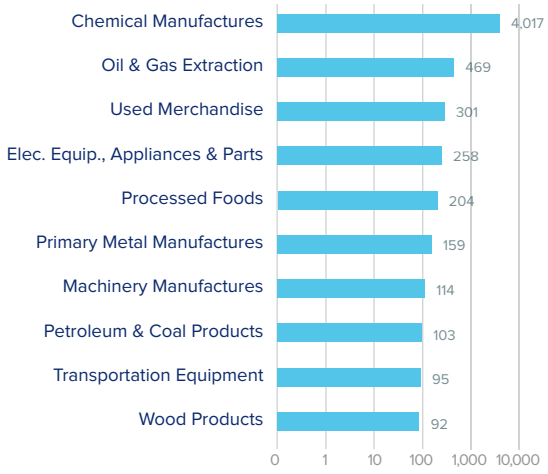
Top European Import Markets, 2022

Country	Imports ($ millions)
Switzerland	2,174
Belgium	700
France	517
United Kingdom	428
Germany	414

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Washington, District of Columbia (D.C.) and Europe

Jobs

16,700
Since 2012: -2,700
(-13.9%)

European companies account for
80%
of foreign affiliate jobs

Employment within D.C., 2021

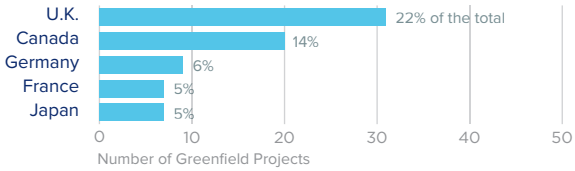
Country	Employment
United Kingdom	6,800
Germany	2,100
France	2,100
Canada	1,700
Netherlands	1,600

On a country basis, U.K. companies operating in Washington D.C. represented 33% of total foreign affiliate employment in DC, with U.K. multinationals supporting approximately 2,900 fewer jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



143
Greenfield Projects
(July 2013 - June 2023)

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Trade

Washington, D.C. Goods Exports to Europe, 2022

$778.1 m

Transportation Equipment accounts for 56% of Washington, D.C.'s total exports to Europe.

Washington, D.C. Goods Imports from Europe, 2022

$364.3 m

Washington D.C.'s top imports from Europe are chemicals and computers & electronic products.

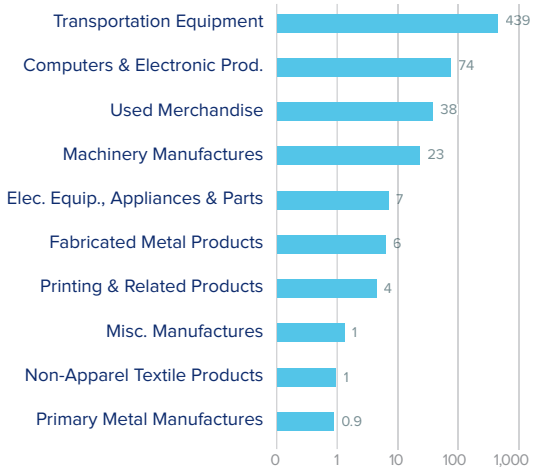
Top European Export Markets, 2022

Country	Exports ($ millions)
United Kingdom	314
Poland	186
France	65
Sweden	60
Denmark	41

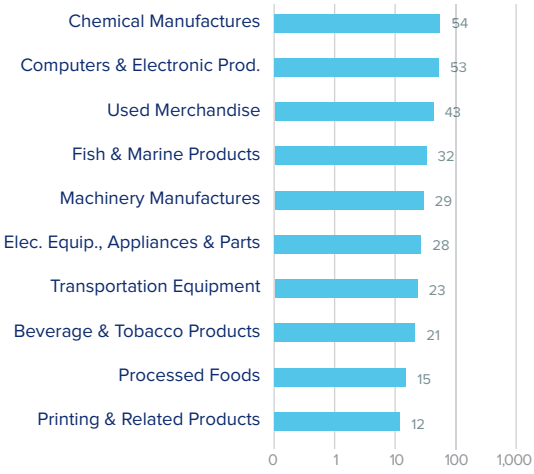
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	100
Denmark	58
France	33
United Kingdom	33
Italy	26

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



*Exports of "special classification provisions" of $292 billion excluded from chart.
Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Florida and Europe

Jobs

216,300

Since 2012: +49,400 (+29.6%)

European companies account for

60%

of foreign affiliate jobs

Employment within Florida, 2021

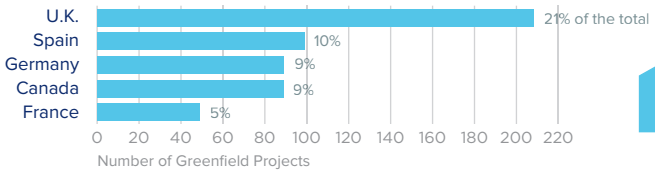
Country	Employment
United Kingdom	67,500
Canada	62,500
Germany	37,300
France	33,000
Japan	21,600

On a country basis, U.K. companies operating in Florida represented 19% of total foreign affiliate employment in Florida, with U.K. multinationals supporting approximately 21,000 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



989

Greenfield Projects (July 2013 - June 2023)

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Trade

Florida Goods Exports to Europe, 2022

$13.1 bn

Chemicals account for about 25% of Florida's total exports to Europe.

Florida Goods Imports from Europe, 2022

$32.4 bn

Florida's imports from Europe are concentrated in chemicals and transportation equipment, representing a 21% and 20% share of the state's total imports from Europe, respectively.

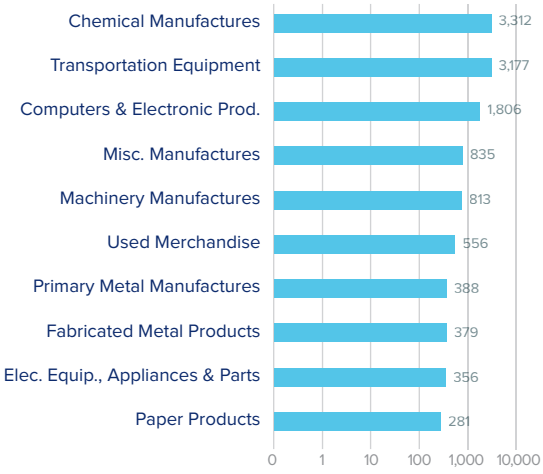
Top European Export Markets, 2022

Country	Exports ($ millions)
United Kingdom	3,863
Germany	1,805
Netherlands	1,359
France	1,182
Italy	973

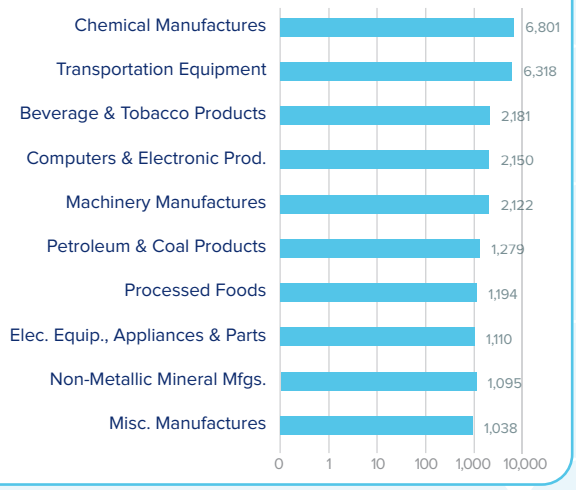
Top European Import Markets, 2022

Country	Imports ($ millions)
Ireland	5,551
Germany	5,136
France	4,530
Italy	3,480
United Kingdom	2,709

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Georgia and Europe

Jobs

156,900

Since 2012: +33,200 (+26.8%)

European companies account for **56%** of foreign affiliate jobs

Employment within Georgia, 2021

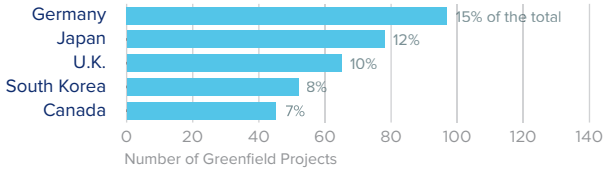
Country	Employment
Japan	37,100
Canada	36,400
Germany	34,700
United Kingdom	34,600
France	27,100

On a country basis, German companies operating in Georgia represented 12% of total foreign affiliate employment in Georgia, with German multinationals supporting approximately 11,800 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



647

Greenfield Projects (July 2013 - June 2023)

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Trade

Georgia Goods Exports to Europe, 2022

$11.3 bn

Around third of Georgia's exports to Europe consist of transportation equipment.

Georgia Goods Imports from Europe, 2022

$37.5 bn

Transportation equipment, chemicals and machinery were the top product imports from Europe.

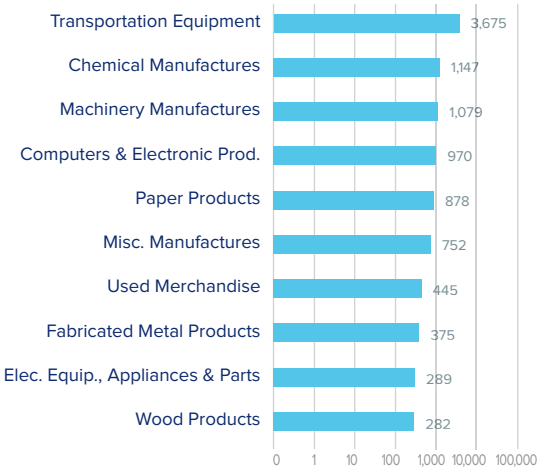
Top European Export Markets, 2022

Country	Exports ($ millions)
Germany	2,488
Netherlands	1,324
United Kingdom	1,128
Belgium	1,019
Poland	859

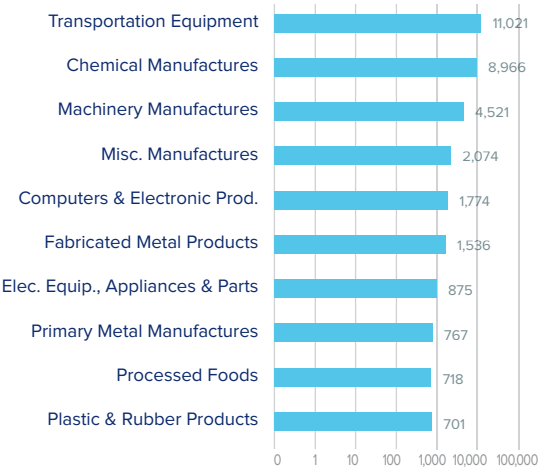
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	11,179
United Kingdom	3,891
France	3,202
Belgium	3,143
Italy	2,844

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Hawaii and Europe

Jobs

11,700

Since 2012: -2,600 (-18.2%)

European companies account for **29%** of foreign affiliate jobs

Employment within Hawaii, 2021

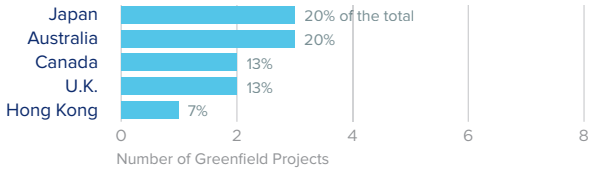
Country	Employment
Japan	21,300
France	3,300
United Kingdom	2,200
Germany	1,800
Canada	1,100

On a country basis, French companies operating in Hawaii represented 8% of total foreign affiliate employment in Hawaii, with French multinationals supporting approximately 2,700 fewer jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



15

Greenfield Projects (July 2013 - June 2023)

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Trade

Hawaii Goods Exports to Europe, 2022

$32.5 m

Transportation equipment accounted for 71% of exports to Europe in 2022.

Hawaii Goods Imports from Europe, 2022

$378.6 m

Hawaii's top European import category was oil & gas, which made up 40% of total imports in 2022, followed by computers & electronic products.

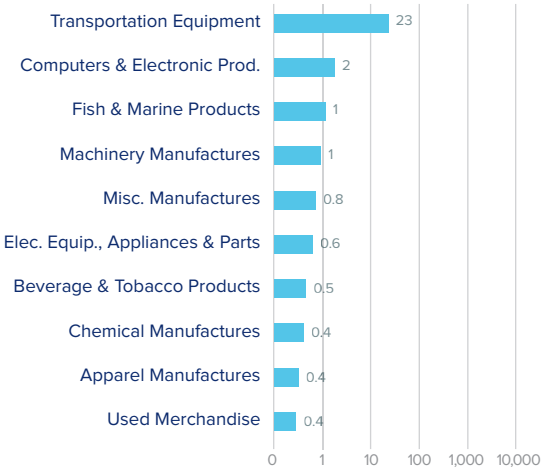
Top European Export Markets, 2022

Country	Exports ($ millions)
Luxembourg	16
Germany	6
United Kingdom	3
France	1
Italy	1

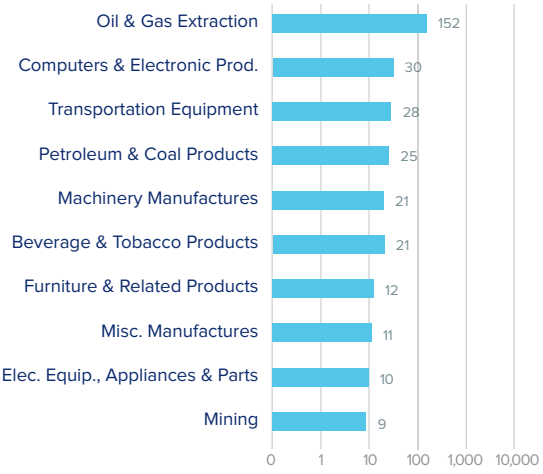
Top European Import Markets, 2022

Country	Imports ($ millions)
Russia	152
Spain	56
Germany	34
France	31
Italy	28

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Idaho and Europe

Jobs

13,200
Since 2012: +2,100 (+18.9%)

European companies account for
64%
of foreign affiliate jobs

Employment within Idaho, 2021

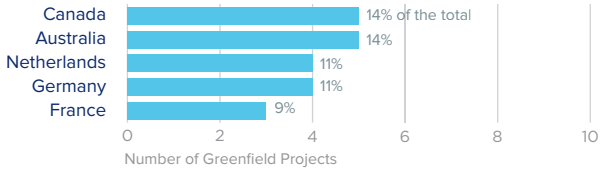
Country	Employment
Canada	4,700
Germany	3,000
United Kingdom	2,600
France	2,600
Japan	1,000

On a country basis, German companies operating in Idaho represented 15% of total foreign affiliate employment in Idaho, with German multinationals supporting approximately 1,100 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



35
Greenfield Projects (July 2013 - June 2023)

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Trade

Idaho Goods Exports to Europe, 2022

$333.3 m

Processed foods, machinery, and agricultural products were Idaho's top export products to Europe.

Idaho Goods Imports from Europe, 2022

$647.9 m

Machinery and computers & electronic products represented a combined 56% share of the state's total imports from Europe.

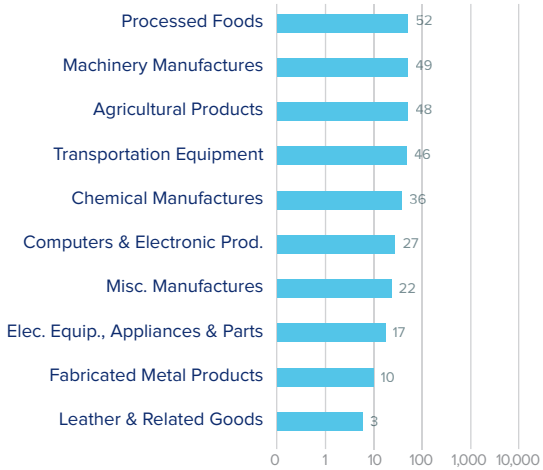
Top European Export Markets, 2022

Country	Exports ($ millions)
Netherlands	84
United Kingdom	63
Germany	30
Ireland	28
France	22

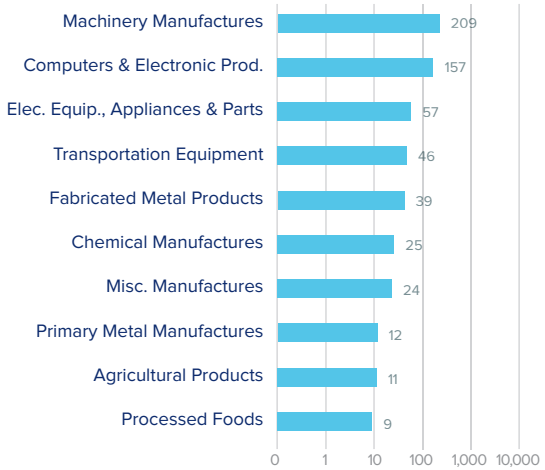
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	135
Greece	79
United Kingdom	61
Slovenia	59
Netherlands	53

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Illinois and Europe

Jobs

225,400

Since 2012: +35,600 (+18.8%)

European companies account for

60%

of foreign affiliate jobs

Employment within Illinois, 2021

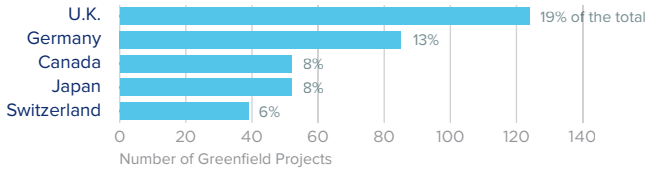
Country	Employment
Japan	58,500
United Kingdom	57,000
Germany	46,800
Canada	39,300
France	33,000

On a country basis, U.K. companies operating in Illinois represented 15% of total foreign affiliate employment in Illinois, with U.K. multinationals supporting approximately 1,500 fewer jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



653

Greenfield Projects (July 2013 - June 2023)

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Trade

Illinois Goods Exports to Europe, 2022

$15.0 bn

Chemicals and computers & electronic products were top exports, followed by machinery and transportation equipment.

Illinois Goods Imports from Europe, 2022

$42.0 bn

Chemicals, machinery and metals were the state's top imports from Europe.

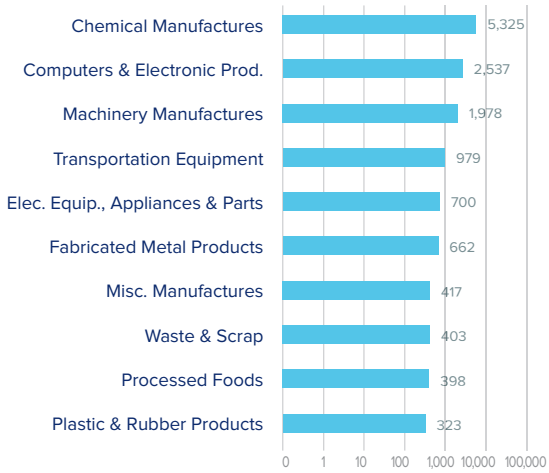
Top European Export Markets, 2022

Country	Exports ($ millions)
Germany	4,283
Netherlands	2,064
United Kingdom	1,942
France	1,088
Belgium	1,064

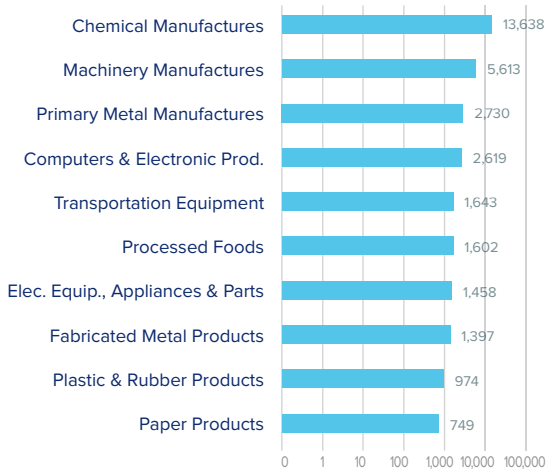
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	12,634
Netherlands	6,379
Italy	3,541
United Kingdom	3,136
Ireland	3,034

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Indiana and Europe

Jobs

116,300

Since 2012: +25,300 (+27.8%)

European companies account for

56%

of foreign affiliate jobs

Employment within Indiana, 2021

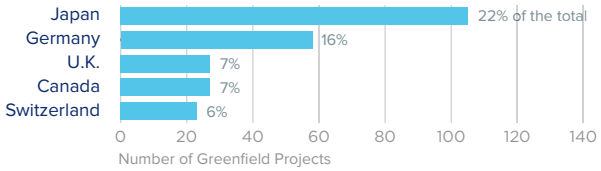
Country	Employment
Japan	60,900
France	30,900
United Kingdom	26,300
Germany	19,700
Canada	16,900

On a country basis, French companies operating in Indiana represented 15% of total foreign affiliate employment in Indiana, with French multinationals supporting approximately 16,100 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



351

Greenfield Projects (July 2013 - June 2023)

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Trade

Indiana Goods Exports to Europe, 2022

$10.9 bn

Trade in chemicals represented 46% of total exports.

Indiana Goods Imports from Europe, 2022

$42.4 bn

Chemicals were also the state's largest import from Europe, representing 74% of total imports.

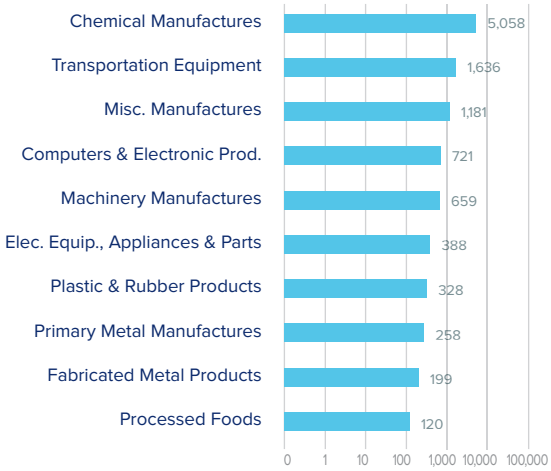
Top European Export Markets, 2022

Country	Exports ($ millions)
Germany	2,719
Netherlands	1,411
United Kingdom	1,385
France	1,282
Italy	983

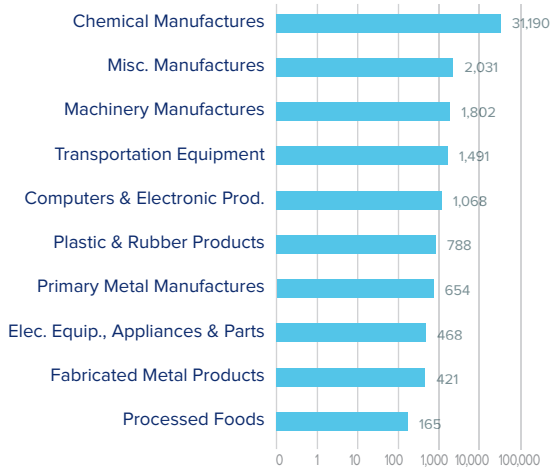
Top European Import Markets, 2022

Country	Imports ($ millions)
Ireland	18,100
Switzerland	5,981
Denmark	5,743
Germany	4,933
United Kingdom	1,749

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Iowa and Europe

Jobs

35,200

Since 2012: -300
(-0.8%)

European companies account for

53%

of foreign affiliate jobs

Employment within Iowa, 2021

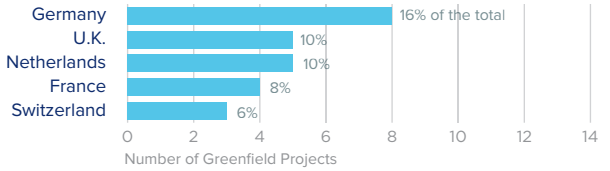
Country	Employment
Germany	7,600
United Kingdom	7,500
Canada	6,600
Netherlands	5,500
Japan	5,300

On a country basis, German companies operating in Iowa represented 11% of total foreign affiliate employment in Iowa, with German multinationals supporting approximately 3,200 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



50

Greenfield Projects
(July 2013 - June 2023)

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Trade

Iowa Goods Exports to Europe, 2022

$3.1 bn

Machinery accounted for 34% of total exports, or roughly one billion. Chemicals, the second largest export category, represented about half of that amount.

Iowa Goods Imports from Europe, 2022

$3.1 bn

Machinery and chemicals were also the top product imports from Europe.

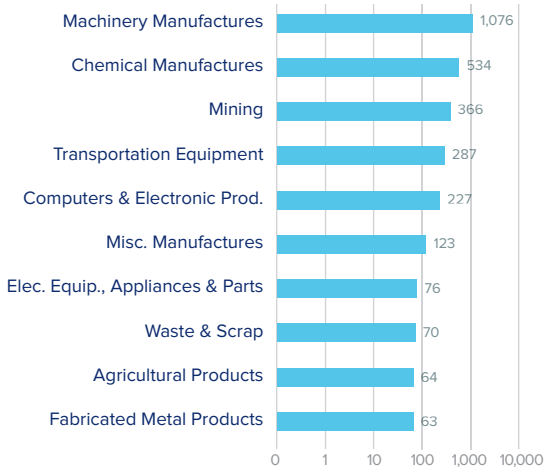
Top European Export Markets, 2022

Country	Exports ($ millions)
Germany	778
Netherlands	518
United Kingdom	341
France	228
Belgium	190

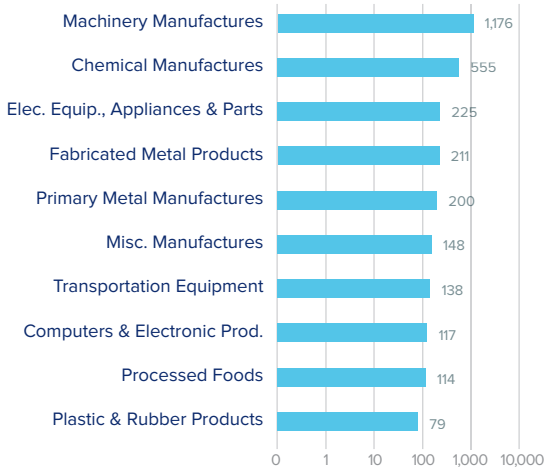
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	908
Italy	495
Switzerland	266
Netherlands	259
France	179

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Kansas and Europe

Jobs

42,600
Since 2012: +8,000 (+23.1%)

European companies account for
57%
of foreign affiliate jobs

Employment within Kansas, 2021

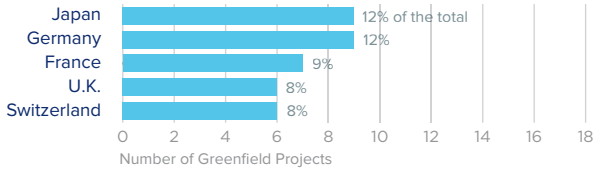
Country	Employment
Canada	10,600
Germany	10,200
United Kingdom	9,000
Switzerland	7,200
Japan	6,400

On a country basis, German companies operating in Kansas represented 14% of total foreign affiliate employment in Kansas, with German multinationals supporting approximately 4,300 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



75
Greenfield Projects
(July 2013 - June 2023)

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Trade

Kansas Goods Exports to Europe, 2022

$2.4 bn

Over 75% of Kansas's exports to Europe was concentrated in four main export categories: transportation equipment, computer & electronic products, machinery and chemicals.

Kansas Goods Imports from Europe, 2022

$2.7 bn

Machinery represented 23% of the state's total imports from Europe.

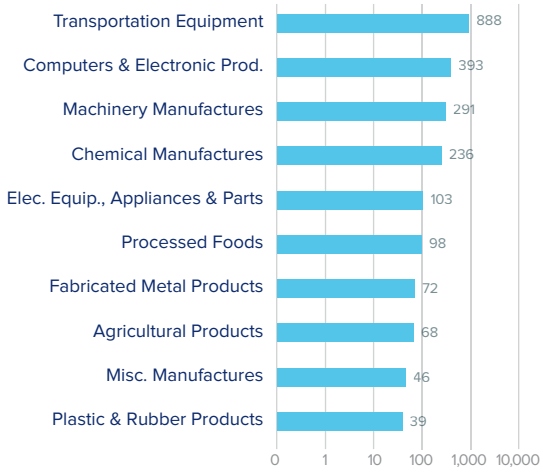
Top European Export Markets, 2022

Country	Exports ($ millions)
Germany	528
United Kingdom	335
France	279
Netherlands	154
Italy	138

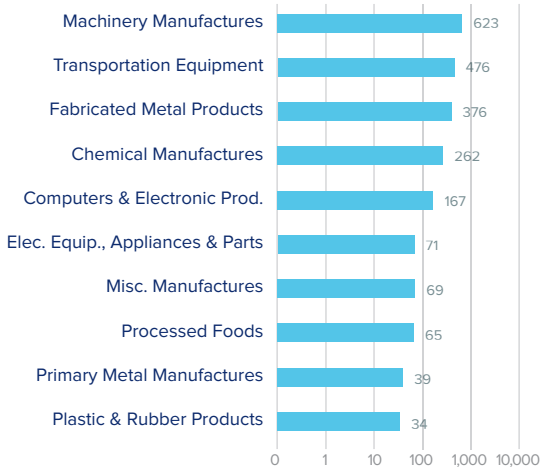
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	792
United Kingdom	336
Italy	252
France	174
Ireland	153

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Kentucky and Europe

Jobs

61,300

Since 2012: +19,200 (+45.6%)

European companies account for

44%

of foreign affiliate jobs

Employment within Kentucky, 2021

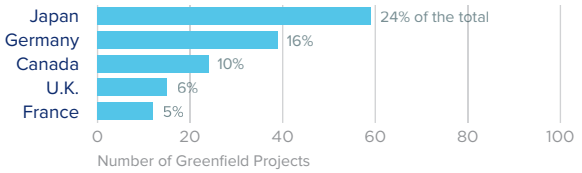
Country	Employment
Japan	44,000
Germany	16,800
Canada	11,400
France	11,200
United Kingdom	9,500

On a country basis, German companies operating in Kentucky represented 12% of total foreign affiliate employment in Kentucky, with German multinationals supporting approximately 7,900 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



244

Greenfield Projects (July 2013 - June 2023)

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Trade

Kentucky Goods Exports to Europe, 2022

$11.0 bn

Reflecting the large presence of automobile manufacturers in the state, Kentucky's top export to Europe in 2022 was transportation equipment (48% of total exports).

Kentucky Goods Imports from Europe, 2022

$25.3 bn

Chemical manufactures were the state's largest import, followed by transportation equipment.

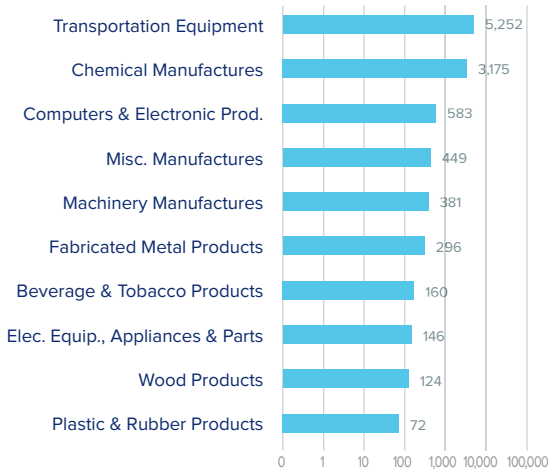
Top European Export Markets, 2022

Country	Exports ($ millions)
United Kingdom	3,478
France	2,389
Netherlands	1,381
Austria	1,031
Germany	890

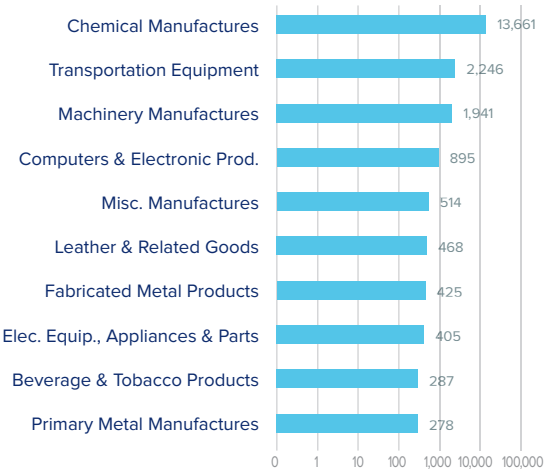
Top European Import Markets, 2022

Country	Imports ($ millions)
Ireland	4,869
Switzerland	3,893
Germany	3,225
Netherlands	2,770
Italy	2,487

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Louisiana and Europe

Jobs

46,200

Since 2012: +6,000 (+14.9%)

European companies account for

59%

of foreign affiliate jobs

Employment within Louisiana, 2020

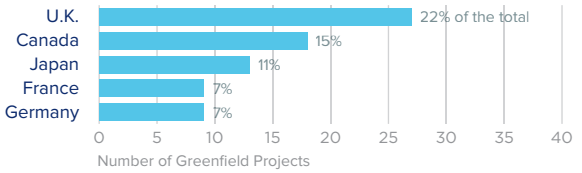
Country	Employment
United Kingdom	15,600
Canada	14,100
France	9,600
Germany	7,200
Netherlands	5,400

On a country basis, U.K. companies operating in Louisiana represented 20% of total foreign affiliate employment in Louisiana, with U.K. multinationals supporting approximately 2,100 fewer jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



121

Greenfield Projects (July 2013 - June 2023)

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Trade

Louisiana Goods Exports to Europe, 2022

$37.6 bn

The state's exports are primarily oil and gas, petroleum & coal products, and chemicals.

Louisiana Goods Imports from Europe, 2022

$8.5 bn

Chemicals and petroleum & coal products were Louisiana's top imported goods from Europe.

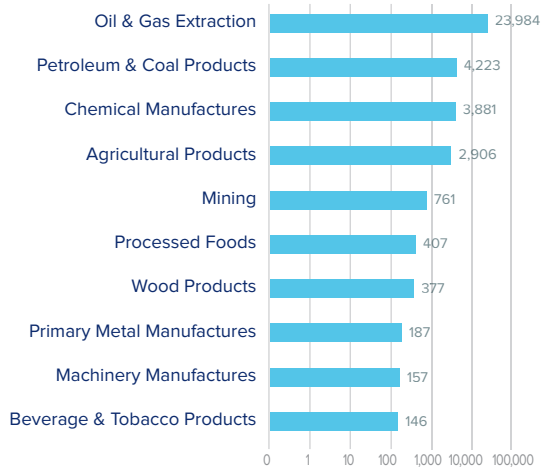
Top European Export Markets, 2022

Country	Exports ($ millions)
Netherlands	7,328
United Kingdom	6,746
France	5,156
Spain	4,119
Belgium	2,543

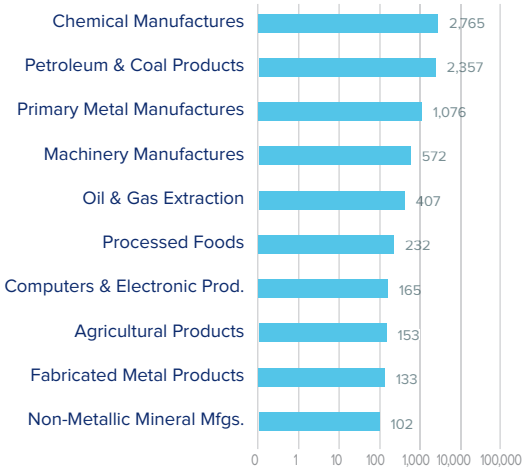
Top European Import Markets, 2022

Country	Imports ($ millions)
Russia	3,271
United Kingdom	802
Germany	666
France	444
Switzerland	424

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Maine and Europe

Jobs

23,800

Since 2012: +1,900 (+8.7%)

European companies account for

64%

of foreign affiliate jobs

Employment within Maine, 2021

Country	Employment
Netherlands	17,500
Canada	9,300
United Kingdom	2,300
Germany	1,800
Switzerland	1,500

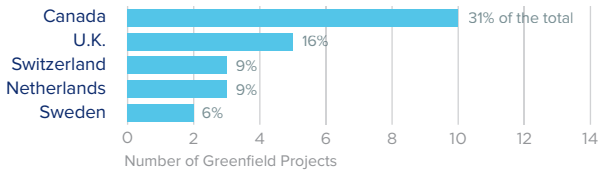
On a country basis, Dutch companies operating in Maine represented 47% of total foreign affiliate employment in Maine, with Dutch multinationals supporting approximately 17,200 more jobs in 2021 than in 2012.

*Netherlands employment data suppressed to avoid disclosure of individual company data. Range of 10,000 - 24,999 employees given.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



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Greenfield Projects (July 2011 - June 2021)

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Trade

Maine Goods Exports to Europe, 2022

$0.5 bn

Maine's exports to Europe are relatively diverse, with top products including computer & electronic products, chemicals, paper products, and transportation equipment.

Maine Goods Imports from Europe, 2022

$1.1 bn

Petroleum & coal products represent 25% of Maine's total imports from Europe, followed by machinery and transportation equipment.

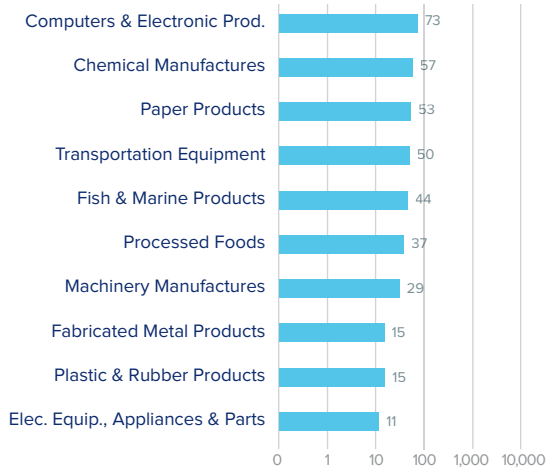
Top European Export Markets, 2022

Country	Exports ($ millions)
Netherlands	91
Belgium	59
Germany	53
United Kingdom	51
Italy	38

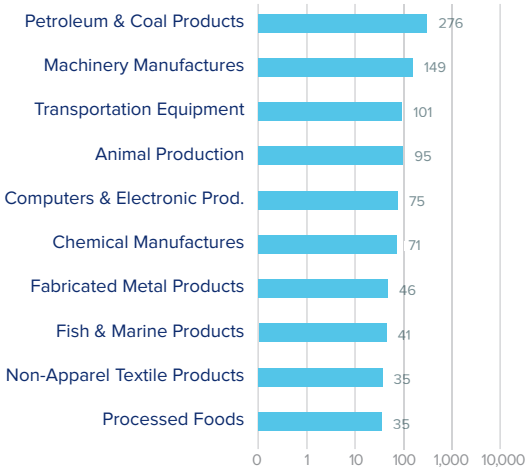
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	165
Netherlands	139
Faroe Islands	106
France	95
Italy	87

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Maryland and Europe

Jobs

93,500

Since 2012: +8,900 (+10.5%)

European companies account for

79%

of foreign affiliate jobs

Employment within Maryland, 2021

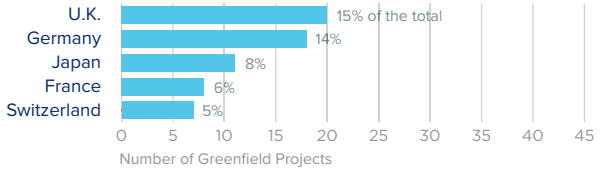
Country	Employment
United Kingdom	28,700
Netherlands	26,200
Germany	12,000
Canada	12,000
France	8,800

On a country basis, U.K. companies operating in Maryland represented 24% of total foreign affiliate employment in Maryland, with U.K. multinationals supporting approximately 10,600 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



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Greenfield Projects (July 2013 - June 2023)

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Trade

Maryland Goods Exports to Europe, 2022

$7.1 bn

Oil & gas was the top export to Europe in 2022, representing 24% of exports. Transportation equipment made up a similar portion of total exports.

Maryland Goods Imports from Europe, 2022

$17.9 bn

Transportation equipment and machinery were the top product imports.

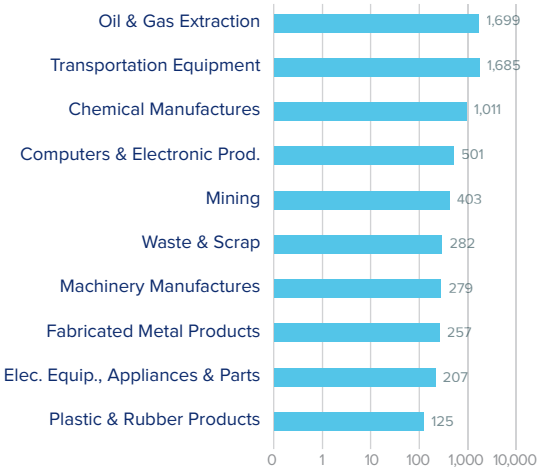
Top European Export Markets, 2022

Country	Exports ($ millions)
France	1,662
Netherlands	1,545
United Kingdom	908
Germany	797
Türkiye	415

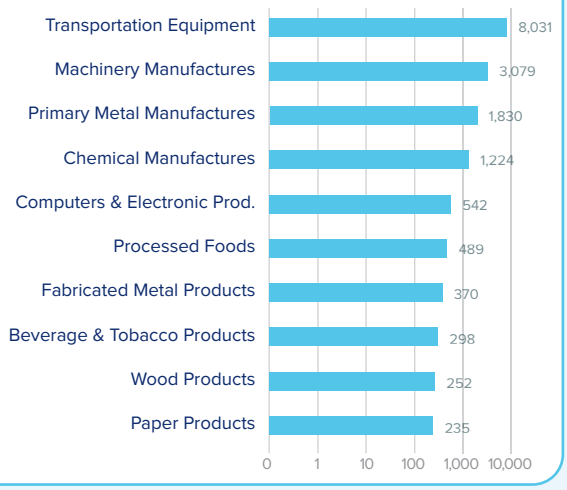
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	7,009
United Kingdom	1,547
Italy	1,157
Sweden	1,015
Finland	898

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Massachusetts and Europe

Jobs

163,900

Since 2012: +19,400 (+13.4%)

European companies account for **72%** of foreign affiliate jobs

Employment within Massachusetts, 2021

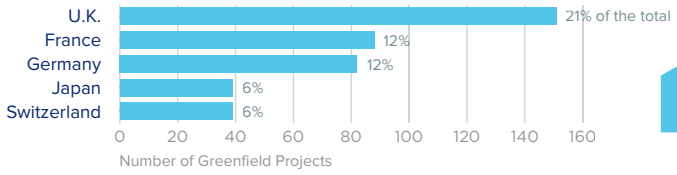
Country	Employment
United Kingdom	46,400
Netherlands	34,200
France	25,800
Japan	24,300
Canada	23,800

On a country basis, U.K. companies operating in Massachusetts represented 20% of total foreign affiliate employment in Massachusetts, with U.K. multinationals supporting approximately 8,400 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



714

Greenfield Projects (July 2013 - June 2023)

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Trade

Massachusetts Goods Exports to Europe, 2022

$11.8 bn

Chemicals and computers & electronic products were the top exports to Europe, followed by machinery.

Massachusetts Goods Imports from Europe, 2022

$15.8 bn

Key imports from Europe include miscellaneous manufactured products, chemicals and machinery.

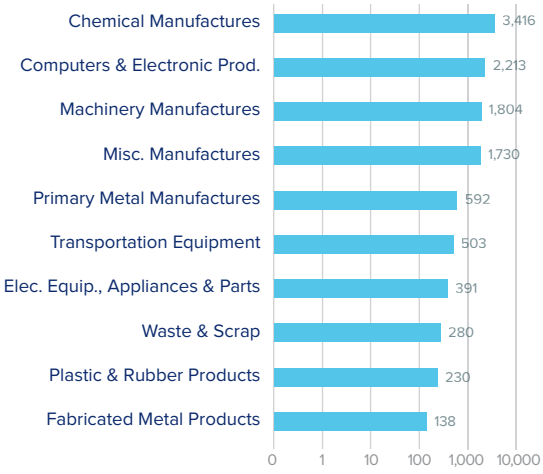
Top European Export Markets, 2022

Country	Exports ($ millions)
Germany	2,167
Netherlands	2,054
France	1,146
United Kingdom	1,088
Switzerland	945

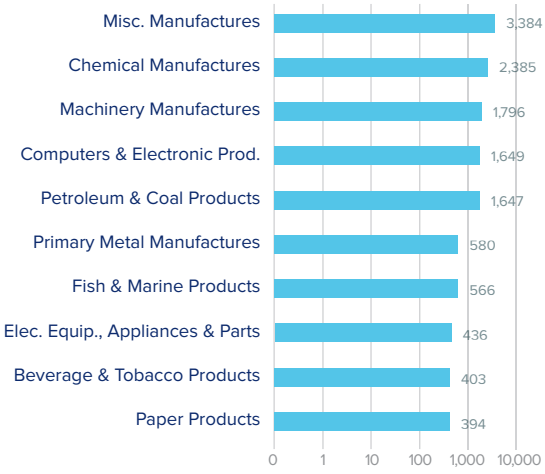
Top European Import Markets, 2022

Country	Imports ($ millions)
United Kingdom	3,064
Ireland	2,730
Germany	2,490
Italy	1,173
Switzerland	1,061

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Michigan and Europe

Jobs

203,000

Since 2012: +77,500 (+61.8%)

European companies account for

63%

of foreign affiliate jobs

Employment within Michigan, 2021

Country	Employment
Germany	54,400
Japan	38,200
Netherlands	37,500
United Kingdom	36,100
Canada	32,200

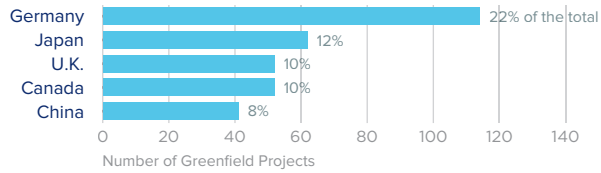
On a country basis, German companies operating in Michigan represented 17% of total foreign affiliate employment in Michigan, with German multinationals supporting approximately 24,900 more jobs in 2021 than in 2012.

*Netherlands employment data suppressed to avoid disclosure of individual company data. Range of 25,000 - 49,999 employees given.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



516

Greenfield Projects (July 2013 - June 2023)

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Trade

Michigan Goods Exports to Europe, 2022

$7.8 bn

Transportation equipment was the largest exported product in 2022, representing 32% of the state's total exports to Europe.

Michigan Goods Imports from Europe, 2022

$14.6 bn

Imports from Europe mainly consist of transportation equipment and machinery.

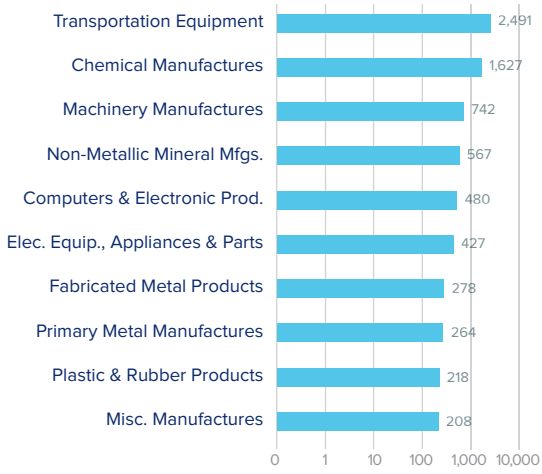
Top European Export Markets, 2022

Country	Exports ($ millions)
Germany	1,902
Belgium	901
Spain	705
Italy	697
United Kingdom	681

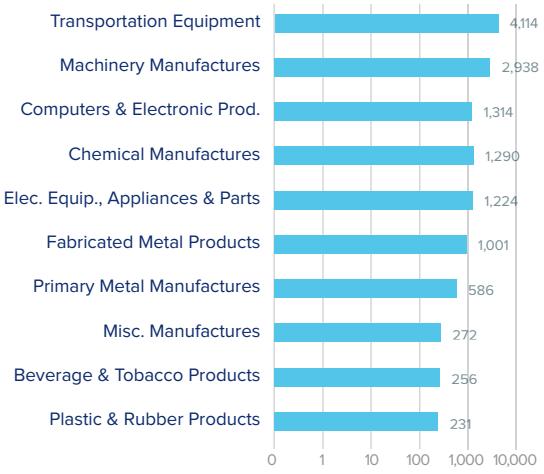
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	4,825
Italy	2,540
France	909
Spain	778
Hungary	725

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Minnesota and Europe

Jobs

94,100

Since 2012: +32,300 (+52.3%)

European companies account for

60%

of foreign affiliate jobs

Employment within Minnesota, 2021

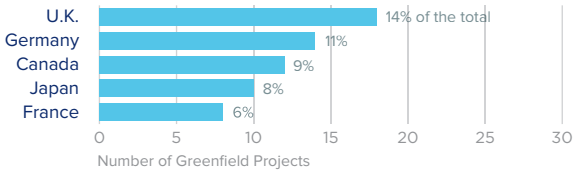
Country	Employment
Canada	28,400
Germany	22,800
United Kingdom	19,300
Japan	13,000
France	8,800

On a country basis, German companies operating in Minnesota represented 14% of total foreign affiliate employment in Minnesota, with German multinationals supporting approximately 12,700 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



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Greenfield Projects (July 2013 - June 2023)

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Trade

Minnesota Goods Exports to Europe, 2022

$5.7 bn

Computers & electronic products account for almost one-quarter of Minnesota's exports to Europe.

Minnesota Goods Imports from Europe, 2022

$6.3 bn

Computers & electronic products were also the state's top import category from Europe, followed by machinery.

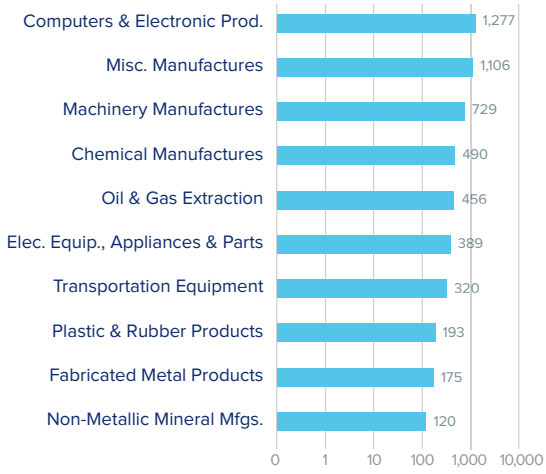
Top European Export Markets, 2022

Country	Exports ($ millions)
Germany	897
Netherlands	771
Belgium	727
Ireland	589
United Kingdom	571

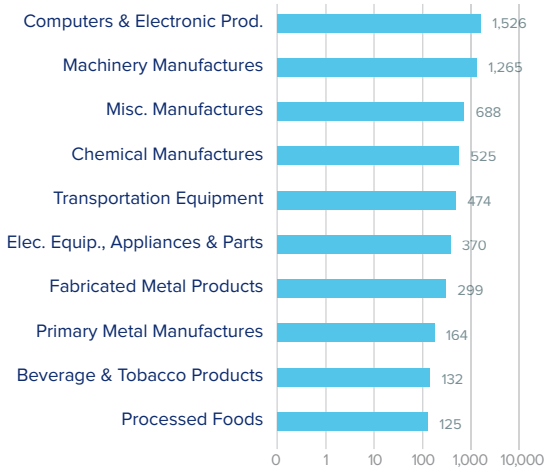
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	1,476
Ireland	1,226
Italy	624
United Kingdom	520
France	516

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Mississippi and Europe

Jobs

21,900
Since 2012: +1,000 (4.8%)

European companies account for
47%
of foreign affiliate jobs

Employment within Mississippi, 2021

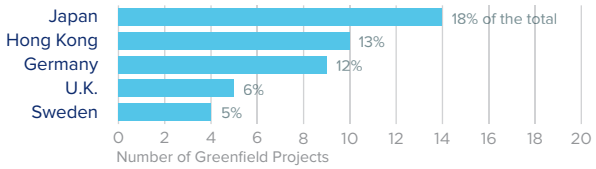
Country	Employment
Japan	10,100
Canada	5,500
United Kingdom	5,300
France	5,100
Germany	4,400

On a country basis, U.K. companies operating in Mississippi represented 11% of total foreign affiliate employment in Mississippi, with U.K. multinationals supporting approximately 600 fewer jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



78
Greenfield Projects
(July 2013 - June 2023)

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Trade

Mississippi Goods Exports to Europe, 2022

$2.8 bn

Petroleum & coal products represented about 29% of Mississippi's total exports to Europe in 2022. The next largest export category was miscellaneous manufactures, accounting for 20% of total exports.

Mississippi Goods Imports from Europe, 2022

$4.3 bn

Imports from Europe were relatively diverse, with nine different product categories each accounting for over $200 million worth of European imports in 2022.

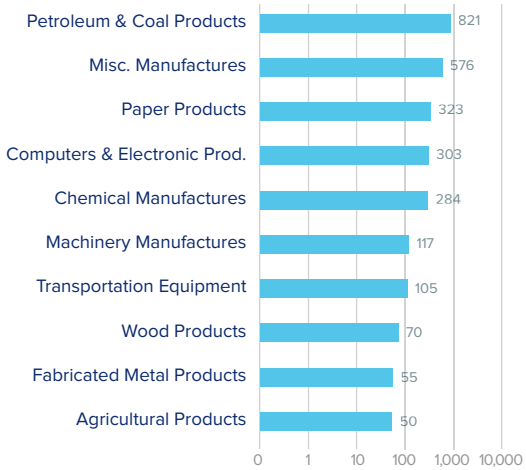
Top European Export Markets, 2022

Country	Exports ($ millions)
Belgium	912
Netherlands	730
United Kingdom	250
Germany	248
Türkiye	147

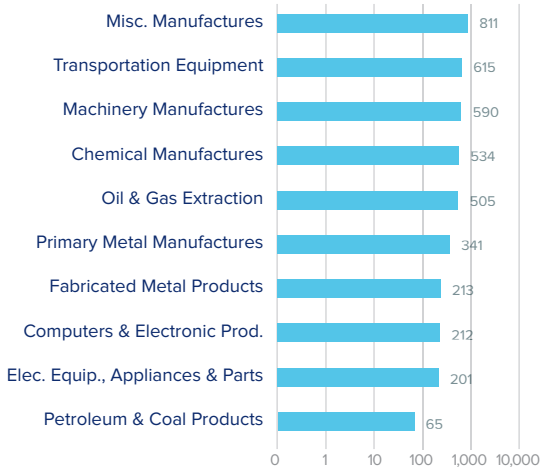
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	1,012
United Kingdom	725
Ireland	588
France	457
Italy	349

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Missouri and Europe

Jobs

91,400

Since 2012: +26,900 (+41.7%)

European companies account for

61%

of foreign affiliate jobs

Employment within Missouri, 2021

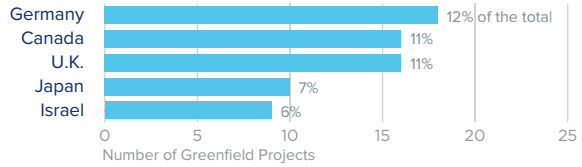
Country	Employment
Canada	23,700
Germany	21,900
United Kingdom	17,600
Japan	16,000
Switzerland	13,400

On a country basis, German companies operating in Missouri represented 15% of total foreign affiliate employment in Missouri, with German multinationals supporting approximately 10,200 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



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Greenfield Projects (July 2013 - June 2023)

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Trade

Missouri Goods Exports to Europe, 2022

$2.8 bn

Chemicals accounted for 43% of exports from the state to Europe in 2022.

Missouri Goods Imports from Europe, 2022

$5.8 bn

Chemicals and computers & electronic products were the top imported goods from Europe.

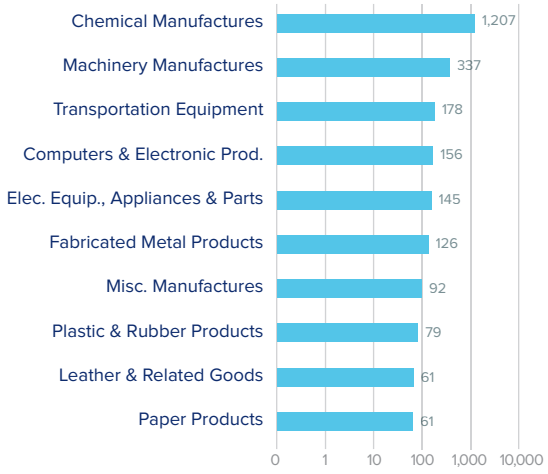
Top European Export Markets, 2022

Country	Exports ($ millions)
Germany	678
France	361
Belgium	327
United Kingdom	322
Netherlands	243

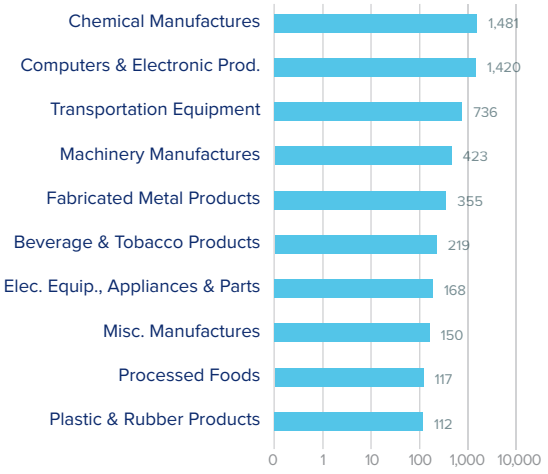
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	2,674
Italy	442
France	342
Türkiye	323
United Kingdom	275

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Montana and Europe

Jobs

5,100
Since 2012: +300 (6.3%)

European companies account for
52%
of foreign affiliate jobs

Employment within Montana, 2021

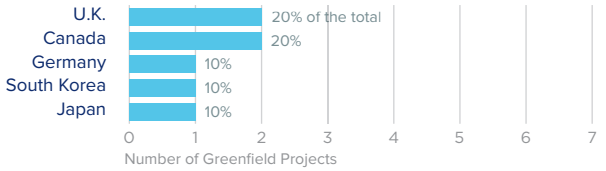
Country	Employment
United Kingdom	2,100
Canada	1,700
France	1,200
Japan	500
Germany	400

On a country basis, U.K. companies operating in Montana represented 21% of total foreign affiliate employment in Montana, with U.K. multinationals supporting approximately 200 fewer jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



10
Greenfield Projects
(July 2013 - June 2023)

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Trade

Montana Goods Exports to Europe, 2022

$333.2 m

Exports are relatively small and skewed towards chemicals (40% of total exports in 2022).

Montana Goods Imports from Europe, 2022

$256.7 m

Montana's imports from Europe are also small and diverse, led by used merchandise, machinery, and computers & electronic products.

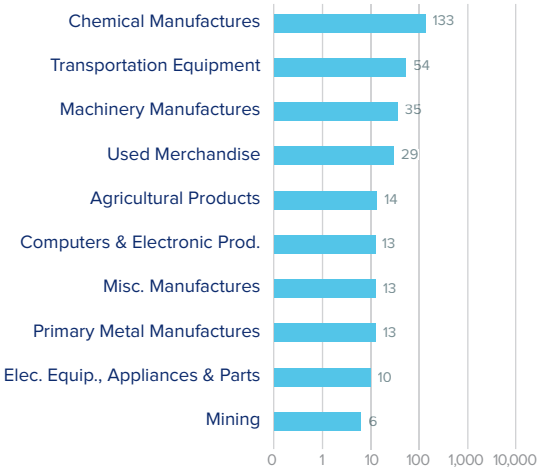
Top European Export Markets, 2022

Country	Exports ($ millions)
Belgium	56
Switzerland	50
Netherlands	46
United Kingdom	43
France	32

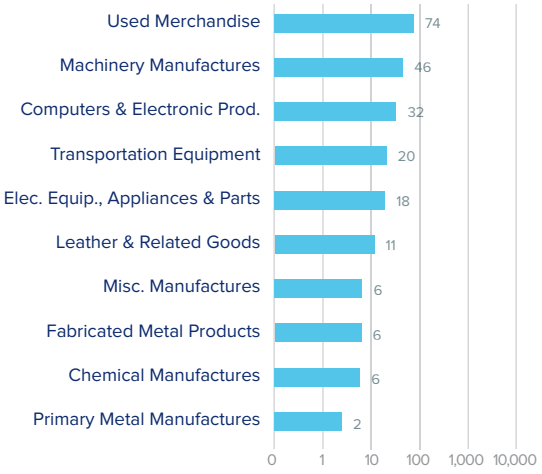
Top European Import Markets, 2022

Country	Imports ($ millions)
Italy	64
Germany	62
United Kingdom	43
Netherlands	23
France	18

Top Ten Exports to Europe, 2022 ($ millions)



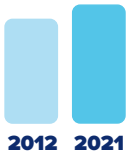
Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Nebraska and Europe

Jobs



17,500

Since 2012: +2,100 (+13.6%)

European companies account for

45%

of foreign affiliate jobs

Employment within Nebraska, 2021

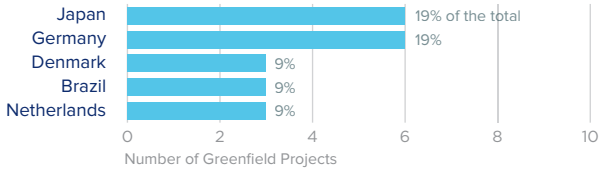
Country	Employment
Japan	5,500
United Kingdom	4,500
Canada	4,200
France	4,100
Germany	3,200

On a country basis, U.K. companies operating in Nebraska represented 12% of total foreign affiliate employment in Nebraska, with U.K. multinationals supporting approximately 4,500 fewer jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



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Greenfield Projects (July 2013 - June 2023)

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Trade

Nebraska Goods Exports to Europe, 2022

$1.0 bn

The top exports to Europe consist of chemicals, machinery, and miscellaneous manufactures.

Nebraska Goods Imports from Europe, 2022

$1.7 bn

Chemicals represented 43% of Nebraska's total imports from Europe in 2022.

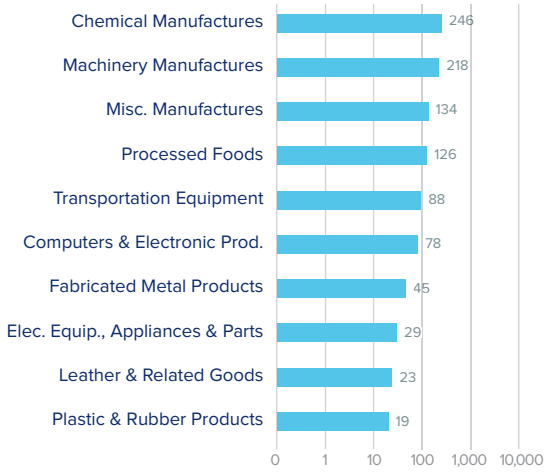
Top European Export Markets, 2022

Country	Exports ($ millions)
Belgium	220
Netherlands	154
Germany	123
France	88
Spain	82

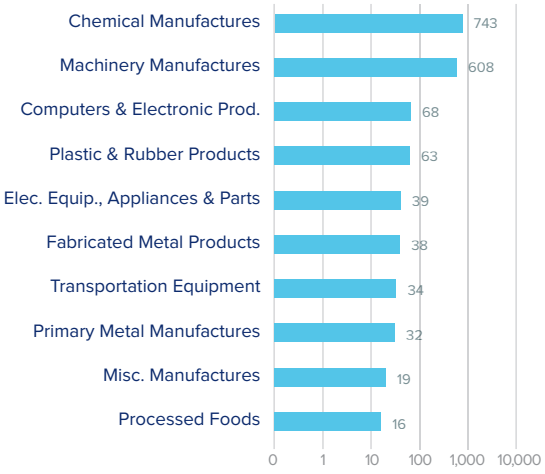
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	497
Switzerland	443
United Kingdom	238
France	160
Italy	93

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Nevada and Europe

Jobs

34,000
Since 2012: +9,800 (+40.5%)

European companies account for
56%
of foreign affiliate jobs

Employment within Nevada, 2021

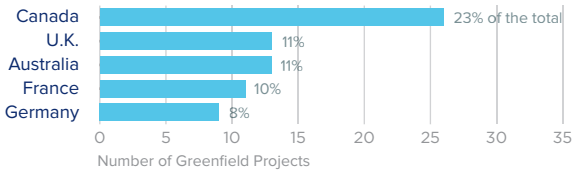
Country	Employment
Canada	10,600
United Kingdom	10,200
France	8,800
Japan	7,000
Germany	4,800

On a country basis, U.K. companies operating in Nevada represented 17% of total foreign affiliate employment in Nevada, with U.K. multinationals supporting approximately 4,700 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



114
Greenfield Projects
(July 2013 - June 2023)

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Trade

Nevada Goods Exports to Europe, 2022

$2.8 bn

Primary metal manufactures account for over half of Nevada's total exports to Europe.

Nevada Goods Imports from Europe, 2022

$2.0 bn

Imports from Europe to Nevada are diverse, with top imports consisting of machinery, computers & electronic products, and chemicals.

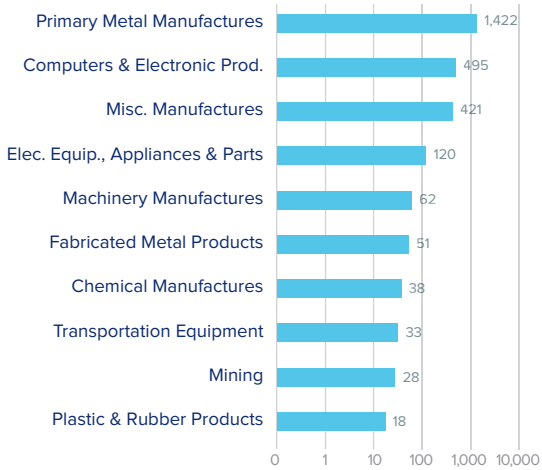
Top European Export Markets, 2022

Country	Exports ($ millions)
Switzerland	1,485
Germany	269
Hungary	207
United Kingdom	200
Netherlands	134

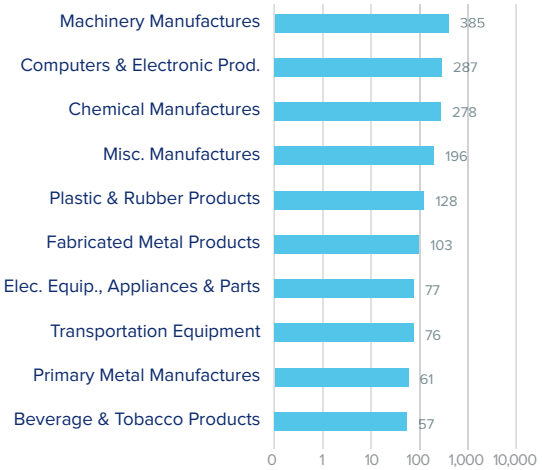
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	438
France	335
Switzerland	205
United Kingdom	166
Italy	165

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

New Hampshire and Europe

Jobs

36,300

Since 2012: +8,100 (+28.7%)

European companies account for

72%

of foreign affiliate jobs

Employment within New Hampshire, 2021

Country	Employment
United Kingdom	13,100
Netherlands	7,500
Canada	6,400
Japan	4,700
Germany	4,500

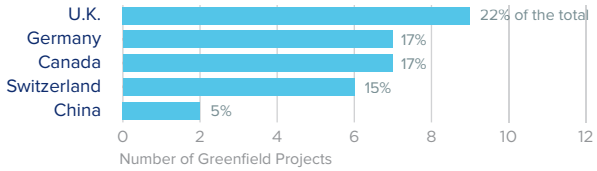
On a country basis, U.K. companies operating in New Hampshire represented 26% of total foreign affiliate employment in New Hampshire, with U.K. multinationals supporting approximately 2,800 more jobs in 2021 than in 2012.

*Netherlands employment data suppressed to avoid disclosure of individual company data. Range of 5,000 to 9,999 employees given.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



41

Greenfield Projects (July 2013 - June 2023)

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Trade

New Hampshire Goods Exports to Europe, 2022

$3.1 bn

Transportation equipment and chemicals were the top two exports to Europe from New Hampshire in 2022. Combined, these two exports made up almost 57% of the state's total exports to Europe.

New Hampshire Goods Imports from Europe, 2022

$3.5 bn

Transportation equipment represented 36% of the state's total imports from Europe.

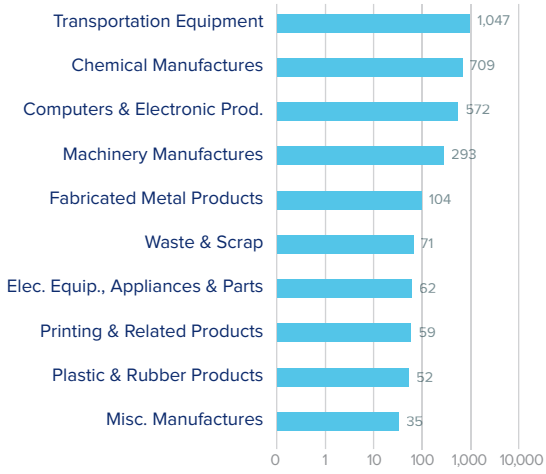
Top European Export Markets, 2022

Country	Exports ($ millions)
Germany	1,095
Ireland	401
Italy	173
Romania	171
United Kingdom	166

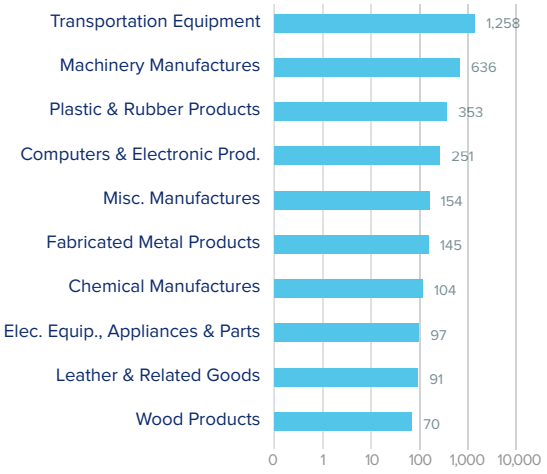
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	735
Poland	716
Italy	281
Sweden	270
United Kingdom	259

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

New Jersey and Europe

Jobs

200,100

Since 2012: +33,900 (+20.4%)

European companies account for

68%

of foreign affiliate jobs

Employment within New Jersey, 2021

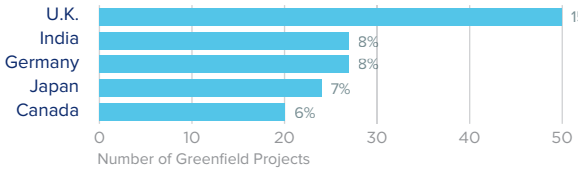
Country	Employment
France	39,300
United Kingdom	35,600
Switzerland	35,200
Germany	34,100
Canada	25,000

On a country basis, French companies operating in New Jersey represented 13% of total foreign affiliate employment in New Jersey, with French multinationals supporting approximately 9,400 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



337

Greenfield Projects (July 2013 - June 2023)

Number of projects does not directly translate to value of projects or jobs added. Greenfield FDI is investment in new assets. Greenfield projects listed on the right hand side are Greenfield projects in the state from all countries.

Trade

New Jersey Goods Exports to Europe, 2022

$13.9 bn

Top exports consisted of chemicals and primary metal manufactures in 2022, representing a combined 41% of exports.

New Jersey Goods Imports from Europe, 2022

$66.9 bn

26% of New Jersey's imports from Europe in 2022 were related to the chemicals industry.

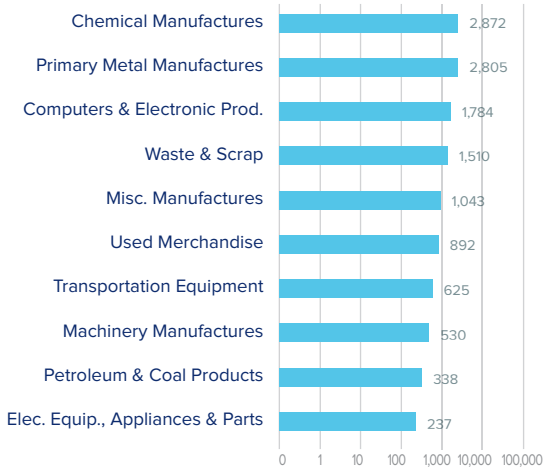
Top European Export Markets, 2022

Country	Exports ($ millions)
United Kingdom	2,817
Italy	2,301
Germany	2,132
Netherlands	1,428
Belgium	896

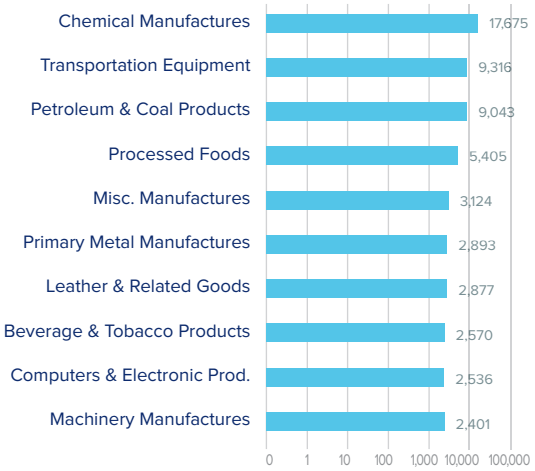
Top European Import Markets, 2022

Country	Imports ($ millions)
Italy	10,919
United Kingdom	8,746
Switzerland	7,298
Germany	7,042
France	5,958

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

New Mexico and Europe

Jobs

11,200

Since 2012: -1,200
(-9.7%)

European companies account for
60%
of foreign affiliate jobs

Employment within New Mexico, 2021

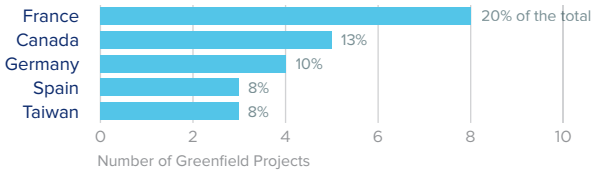
Country	Employment
Germany	3,400
Canada	3,400
United Kingdom	3,000
Japan	2,100
France	1,400

On a country basis, German companies operating in New Mexico represented 18% of total foreign affiliate employment in New Mexico, with German multinationals supporting approximately 1,600 fewer jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



40
Greenfield Projects
(July 2013 - June 2023)

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Trade

New Mexico Goods Exports to Europe, 2022

$593.0 m

Exports are relatively small, with transportation equipment, computers & electronic products, and electrical equipment making up the largest export categories for New Mexico.

New Mexico Goods Imports from Europe, 2022

$411.2 m

Computers & electronic products were the largest imported good category from Europe, followed by machinery.

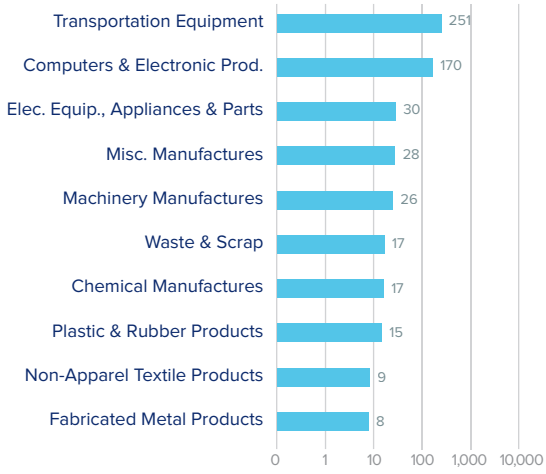
Top European Export Markets, 2022

Country	Exports ($ millions)
United Kingdom	95
Germany	70
Romania	59
Sweden	56
Netherlands	43

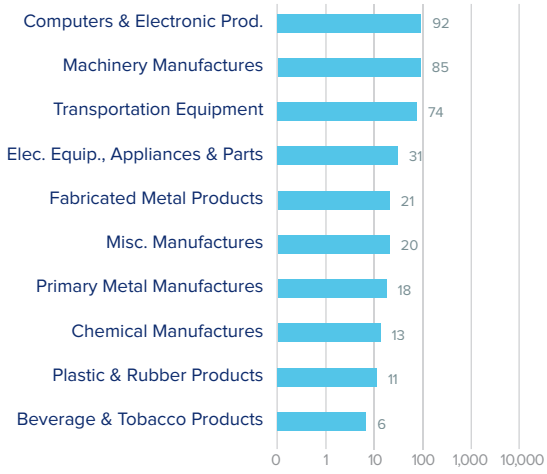
Top European Import Markets, 2022

Country	Imports ($ millions)
United Kingdom	87
Germany	82
France	40
Italy	29
Switzerland	27

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

New York and Europe

Jobs

360,300

Since 2012: +59,900 (+19.9%)

European companies account for **71%** of foreign affiliate jobs

Employment within New York, 2021

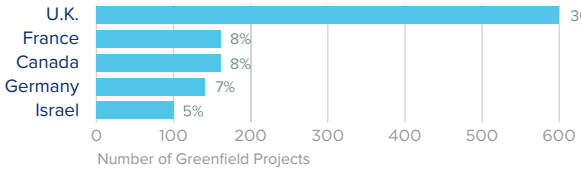
Country	Employment
United Kingdom	107,600
France	53,500
Germany	51,200
Canada	47,500
Japan	43,900

On a country basis, U.K. companies operating in New York represented 21% of total foreign affiliate employment in New York, with U.K. multinationals supporting approximately 18,700 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



2,015

Greenfield Projects (July 2013 - June 2023)

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Trade

New York Goods Exports to Europe, 2022

$44.8 bn

Primary metal manufactures and miscellaneous merchandise were the top goods exports to Europe, making up 64% of exports combined.

New York Goods Imports from Europe, 2022

$61.7 bn

New York's imports from Europe are relatively diverse, led by primary metal manufactures. Miscellaneous manufactures and chemicals were also among the state's top imports from Europe in 2022.

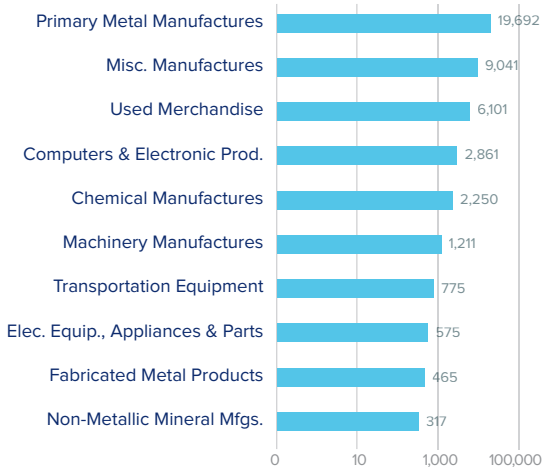
Top European Export Markets, 2022

Country	Exports ($ millions)
Switzerland	23,566
United Kingdom	4,844
Germany	4,077
Belgium	3,067
France	2,734

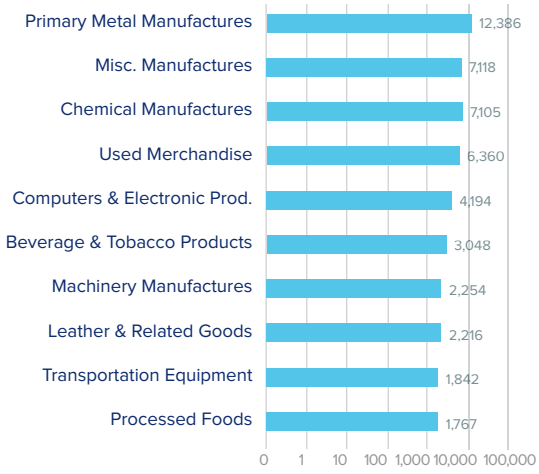
Top European Import Markets, 2022

Country	Imports ($ millions)
Switzerland	16,217
France	9,475
Italy	8,100
United Kingdom	5,220
Germany	4,734

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

North Carolina and Europe

Jobs

207,500

Since 2012: +50,000 (+31.7%)

European companies account for

68%

of foreign affiliate jobs

Employment within North Carolina, 2021

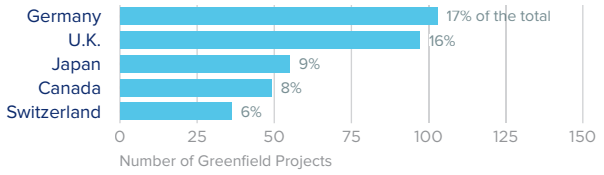
Country	Employment
Germany	43,700
United Kingdom	43,200
Netherlands	37,500
Japan	30,500
Canada	22,700

On a country basis, German companies operating in North Carolina represented 14% of total foreign affiliate employment in North Carolina, with German multinationals supporting approximately 15,400 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



607

Greenfield Projects (July 2013 - June 2023)

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Trade

North Carolina Goods Exports to Europe, 2022

$9.7 bn

Chemical manufactures account for over 40% of total exports to Europe.

North Carolina Goods Imports from Europe, 2022

$23.2 bn

Imports from Europe mainly consist of chemicals, machinery and transportation equipment.

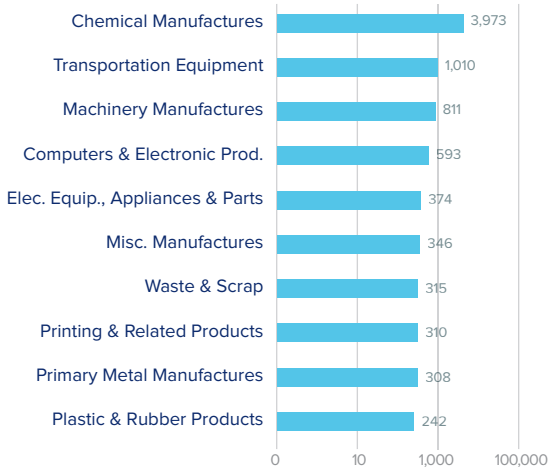
Top European Export Markets, 2022

Country	Exports ($ millions)
France	1,749
Netherlands	1,103
United Kingdom	977
Germany	893
Belgium	797

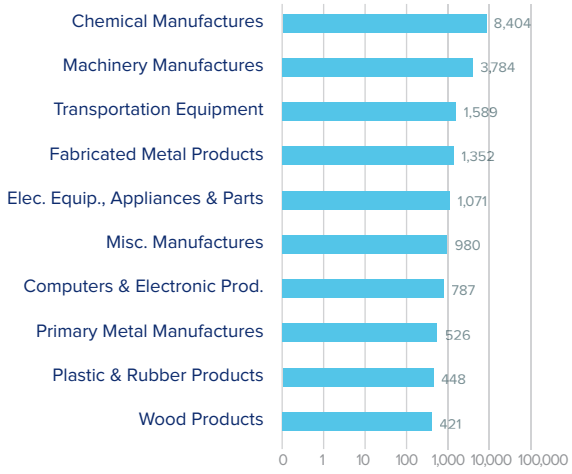
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	4,434
Netherlands	2,843
Ireland	2,653
Italy	2,281
France	1,976

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

North Dakota and Europe

Jobs

5,000

Since 2012: -2,200 (-30.6%)

European companies account for

30%

of foreign affiliate jobs

Employment within North Dakota, 2021

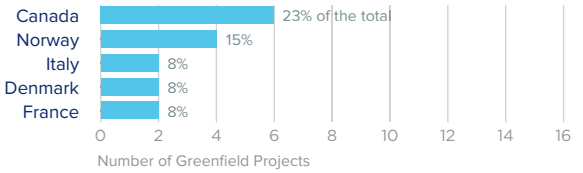
Country	Employment
Canada	4,000
United Kingdom	1,600
Japan	1,100
Netherlands	900
Germany	800

On a country basis, U.K. companies operating in North Dakota represented 10% of total foreign affiliate employment in North Dakota, with U.K. multinationals supporting approximately 100 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



26

Greenfield Projects (July 2013 - June 2023)

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Trade

North Dakota Goods Exports to Europe, 2022

$336.0 m

45% of the state's exports to Europe consisted of machinery manufactures in 2022.

North Dakota Goods Imports from Europe, 2022

$390.6 m

Machinery is North Dakota's primary product import from Europe, representing 41% of total imports.

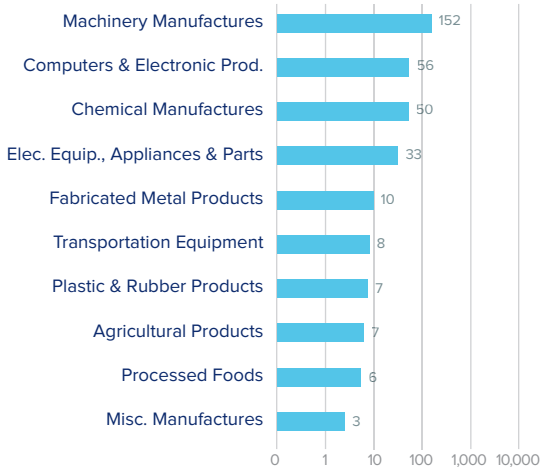
Top European Export Markets, 2022

Country	Exports ($ millions)
Czech Republic	77
Germany	74
Belgium	39
Switzerland	22
United Kingdom	21

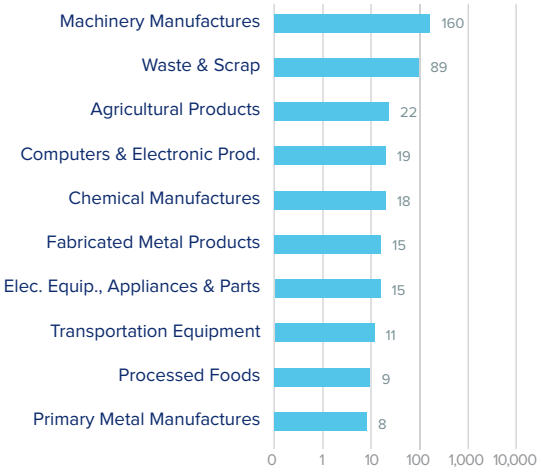
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	98
France	60
Netherlands	54
United Kingdom	31
Italy	29

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Ohio and Europe

Jobs

163,300

Since 2012: +27,600 (+20.3%)

European companies account for **54%** of foreign affiliate jobs

Employment within Ohio, 2021

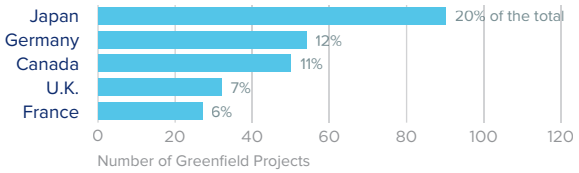
Country	Employment
Japan	68,900
United Kingdom	37,300
Germany	37,100
Canada	27,900
France	23,600

On a country basis, U.K. companies operating in Ohio represented 12% of total foreign affiliate employment in Ohio, with U.K. multinationals supporting approximately 1,100 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



452

Greenfield Projects (July 2013 - June 2023)

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Trade

Ohio Goods Exports to Europe, 2022

$9.4 bn

Chemicals, transportation equipment, and machinery were the state's top exports to Europe in 2022.

Ohio Goods Imports from Europe, 2022

$19.3 bn

Chemical manufactures make up 33% of Ohio's imports from Europe.

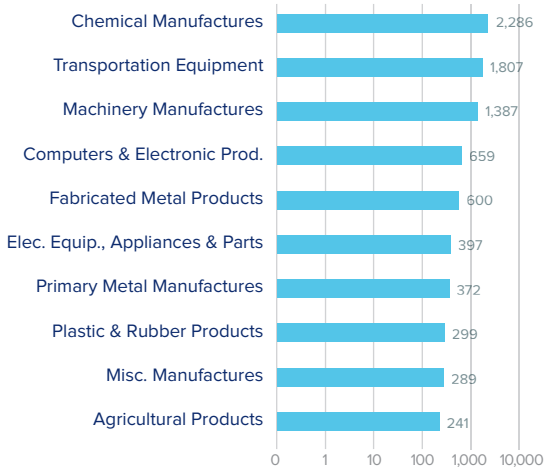
Top European Export Markets, 2022

Country	Exports ($ millions)
United Kingdom	1,593
Germany	1,546
Netherlands	1,481
France	1,199
Belgium	718

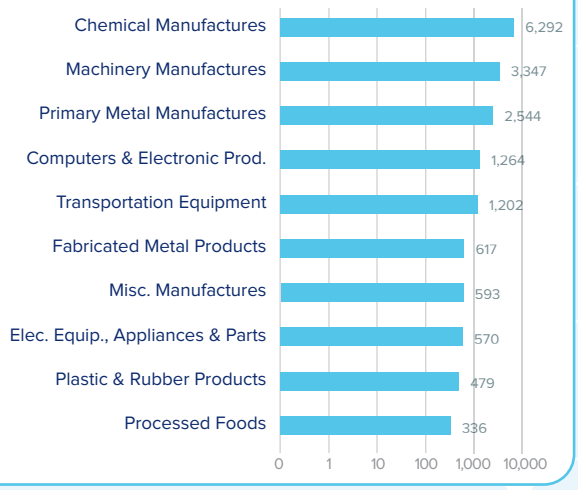
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	5,205
Ireland	2,179
Italy	1,934
United Kingdom	1,649
France	1,176

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Oklahoma and Europe

Jobs

39,600

Since 2012: +10,100 (+34.2%)

European companies account for

62%

of foreign affiliate jobs

Employment within Oklahoma, 2021

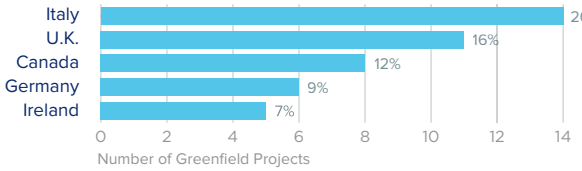
Country	Employment
United Kingdom	9,700
France	8,400
Canada	6,900
Japan	6,200
Germany	4,800

On a country basis, U.K. companies operating in Oklahoma represented 15% of total foreign affiliate employment in Oklahoma, with U.K. multinationals supporting approximately 1,500 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



69

Greenfield Projects (July 2013 - June 2023)

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Trade

Oklahoma Goods Exports to Europe, 2022

$1.3 bn

The top exports to Europe from Oklahoma include transportation equipment, computer & electronic products, and machinery.

Oklahoma Goods Imports from Europe, 2022

$2.3 bn

Metal and machinery manufactures are the top products imported from Europe.

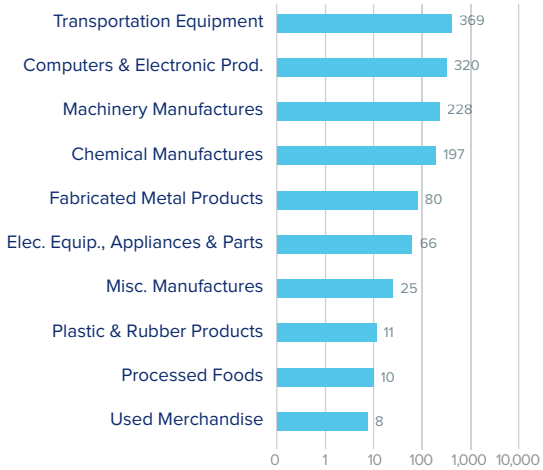
Top European Export Markets, 2022

Country	Exports ($ millions)
Germany	577
Netherlands	303
United Kingdom	148
France	61
Norway	60

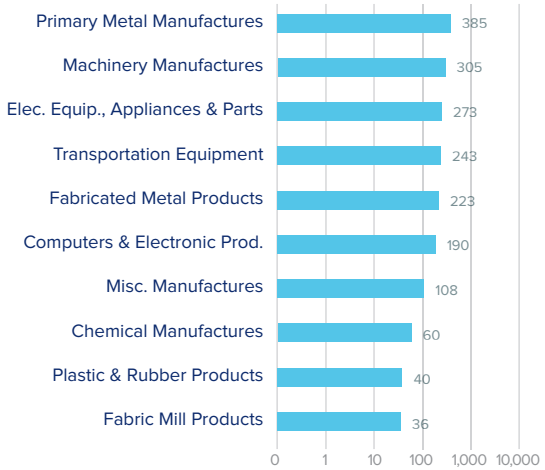
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	432
France	249
United Kingdom	215
Belgium	196
Switzerland	182

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; Foreign Trade Division, U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Oregon and Europe

Jobs

46,400

Since 2012: +13,100 (+39.3%)

European companies account for

66%

of foreign affiliate jobs

Employment within Oregon, 2021

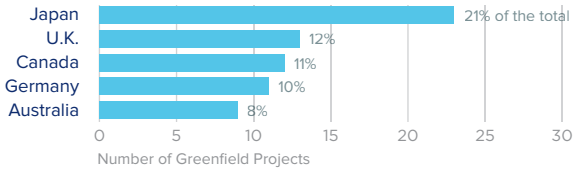
Country	Employment
United Kingdom	15,300
Germany	11,400
Japan	9,900
Canada	6,500
Switzerland	5,400

On a country basis, U.K. companies operating in Oregon represented 22% of total foreign affiliate employment in Oregon, with U.K. multinationals supporting approximately 7,700 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



108

Greenfield Projects (July 2013 - June 2023)

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Trade

Oregon Goods Exports to Europe, 2022

$4.8 bn

34% of Oregon's exports to Europe consisted of machinery in 2022.

Oregon Goods Imports from Europe, 2022

$4.6 bn

Computers & electronic products represented 45% of Oregon's total European imports.

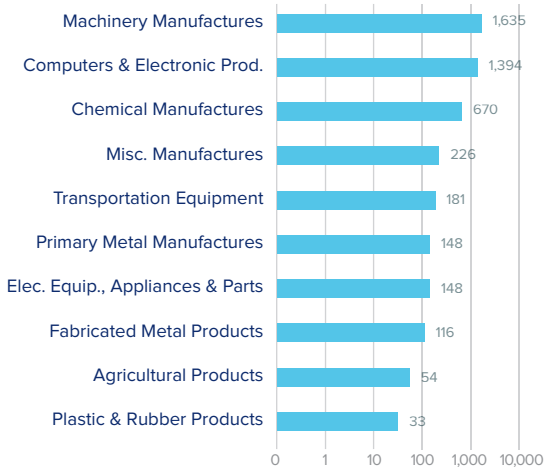
Top European Export Markets, 2022

Country	Exports ($ millions)
Ireland	2,135
Switzerland	466
Germany	418
Netherlands	336
Belgium	212

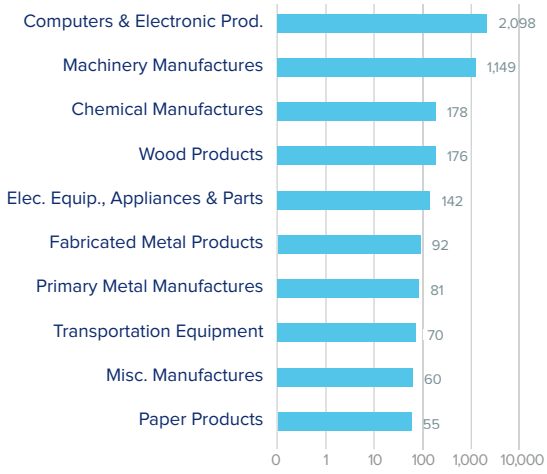
Top European Import Markets, 2022

Country	Imports ($ millions)
Ireland	1,515
Netherlands	849
Germany	734
Italy	258
Sweden	188

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Pennsylvania and Europe

Jobs

244,000

Since 2012: +33,100 (+15.7%)

European companies account for **73%** of foreign affiliate jobs

Employment within Pennsylvania, 2021

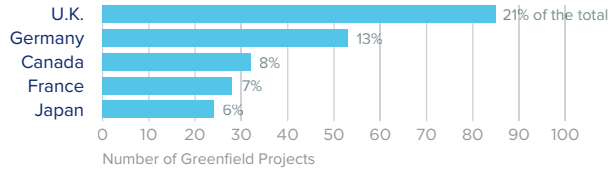
Country	Employment
United Kingdom	55,000
Netherlands	51,400
Germany	43,200
France	28,800
Japan	27,700

On a country basis, U.K. companies operating in Pennsylvania represented 16% of total foreign affiliate employment in Pennsylvania, with U.K. multinationals supporting approximately 3,200 fewer jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



405

Greenfield Projects (July 2013 - June 2023)

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Trade

Pennsylvania Goods Exports to Europe, 2022

$15.2 bn

Chemicals and oil & gas were the state's largest exports to Europe.

Pennsylvania Goods Imports from Europe, 2022

$36.1 bn

Imports are heavily concentrated, with chemicals making up over half of the state's total imports from Europe.

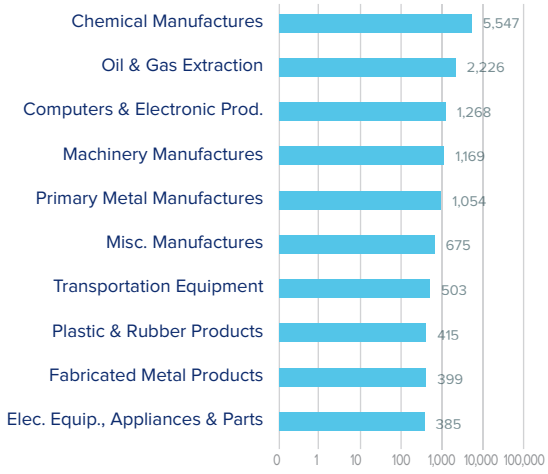
Top European Export Markets, 2022

Country	Exports ($ millions)
Netherlands	3,257
Germany	2,343
United Kingdom	1,862
Belgium	1,356
France	1,075

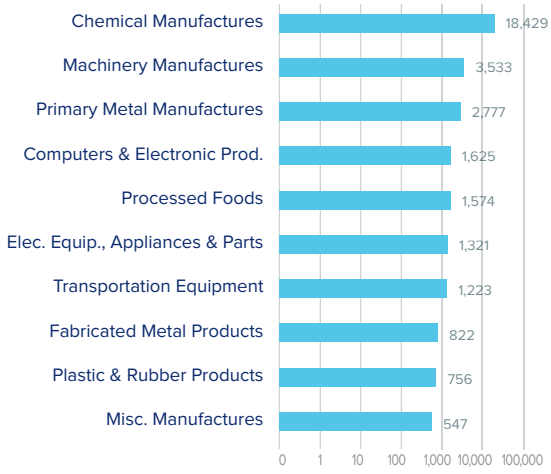
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	6,832
Belgium	3,704
Italy	3,411
United Kingdom	3,026
Switzerland	2,800

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Rhode Island and Europe

Jobs

24,900

Since 2012: +100 (0.4%)

European companies account for

79%

of foreign affiliate jobs

Employment within Rhode Island, 2021

Country	Employment
United Kingdom	5,200
France	4,400
Netherlands	3,750
Canada	3,000
Japan	2,100

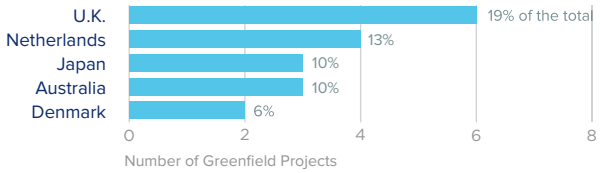
On a country basis, U.K. companies operating in Rhode Island represented 17% of total foreign affiliate employment in Rhode Island, with U.K. multinationals supporting approximately 4,800 fewer jobs in 2021 than in 2012.

*Netherlands employment data suppressed to avoid disclosure of individual company data. Range of 2,500 - 4,999 employees given.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



31

Greenfield Projects (July 2013 - June 2023)

Number of projects does not directly translate to value of projects or jobs added. Greenfield FDI is investment in new assets. Greenfield projects listed on the right hand side are Greenfield projects in the state from all countries.

Trade

Rhode Island Goods Exports to Europe, 2022

$1.1 bn

Waste & scrap account for over 50% of exports to Europe.

Rhode Island Goods Imports from Europe, 2022

$4.7 bn

The top imported product from Europe is transportation equipment, which represented 45% of the state's total European imports in 2022.

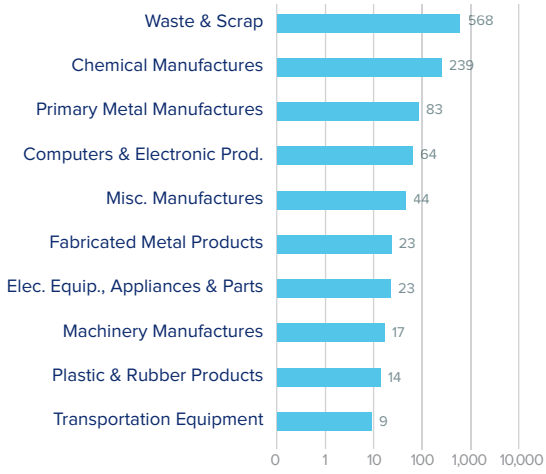
Top European Export Markets, 2022

Country	Exports ($ millions)
Italy	406
Germany	158
Türkiye	142
Ireland	134
United Kingdom	63

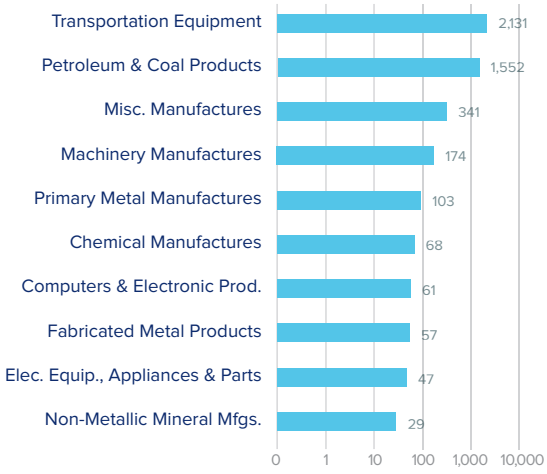
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	1,430
Netherlands	843
Slovakia	596
Belgium	317
Ireland	268

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

South Carolina and Europe

Jobs

115,300

Since 2012: +30,500 (+36.0%)

European companies account for

67%

of foreign affiliate jobs

Employment within South Carolina, 2021

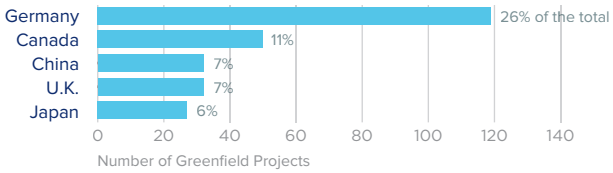
Country	Employment
Germany	38,500
France	23,000
Canada	19,400
Japan	17,900
United Kingdom	15,000

On a country basis, German companies operating in South Carolina represented 23% of total foreign affiliate employment in South Carolina, with German multinationals supporting approximately 16,300 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



456

Greenfield Projects (July 2013 - June 2023)

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Trade

South Carolina Goods Exports to Europe, 2022

$10.4 bn

64% of the state's exports consists of transportation equipment, reflecting the state's deep linkages with European auto manufacturers.

South Carolina Goods Imports from Europe, 2022

$20.6 bn

Transportation equipment was also the top imported product from Europe, making up 22% of the state's total European imports.

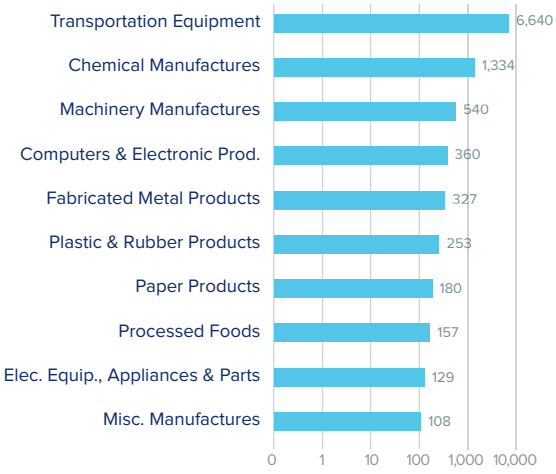
Top European Export Markets, 2022

Country	Exports ($ millions)
Germany	4,417
Belgium	1,636
United Kingdom	1,530
Netherlands	686
France	371

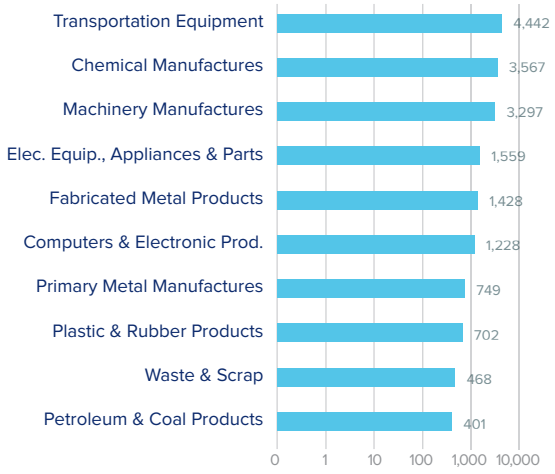
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	7,766
United Kingdom	1,654
Austria	1,324
France	1,118
Italy	1,012

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

South Dakota and Europe

Jobs

5,800
Since 2012: -300
(-4.9%)

European companies account for
40%
of foreign affiliate jobs

Employment within South Dakota, 2021

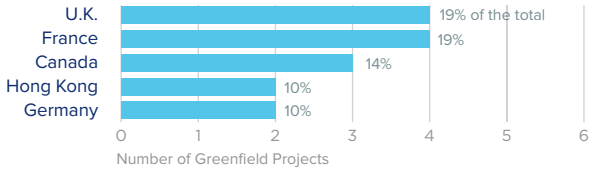
Country	Employment
Canada	3,200
France	1,900
United Kingdom	1,400
Germany	1,300
Japan	400

On a country basis, French companies operating in South Dakota represented 13% of total foreign affiliate employment in South Dakota, with French multinationals supporting approximately 900 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



21
Greenfield Projects
(July 2013 - June 2023)

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Trade

South Dakota Goods Exports to Europe, 2022

$200.3 m

Machinery manufactures are the state's top export to Europe.

South Dakota Goods Imports from Europe, 2022

$249.2 m

Imports are heavily concentrated, with machinery making up 42% of the state's total imports from Europe. The next largest import category was transportation equipment.

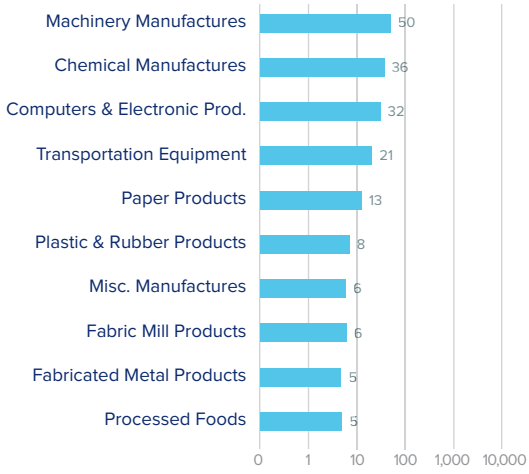
Top European Export Markets, 2022

Country	Exports ($ millions)
Belgium	39
Germany	39
Netherlands	21
Norway	18
United Kingdom	15

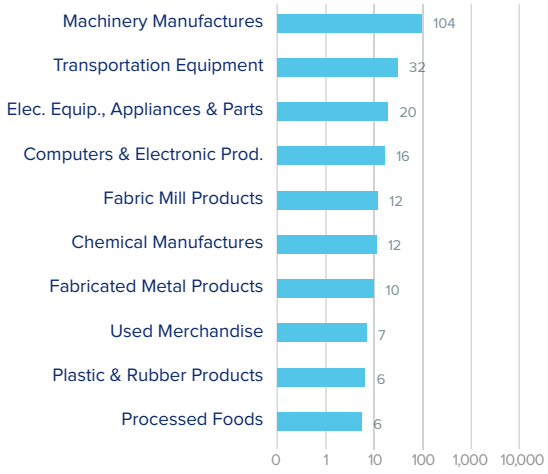
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	62
Italy	41
France	35
United Kingdom	17
Spain	13

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Tennessee and Europe

Jobs

114,200

Since 2012: +41,900 (+58.0%)

European companies account for

56%

of foreign affiliate jobs

Employment within Tennessee, 2021

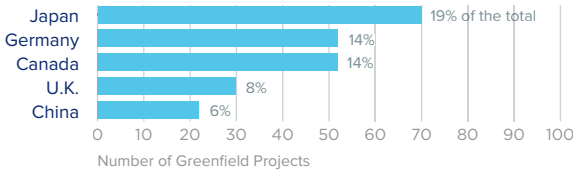
Country	Employment
Japan	47,400
United Kingdom	25,900
France	23,000
Germany	19,900
Canada	14,300

On a country basis, U.K. companies operating in Tennessee represented 13% of total foreign affiliate employment in Tennessee, with U.K. multinationals supporting approximately 8,600 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



371

Greenfield Projects (July 2013 - June 2023)

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Trade

Tennessee Goods Exports to Europe, 2022

$9.1 bn

Waste and scrap and miscellaneous manufactured goods were the largest export categories to Europe in 2022.

Tennessee Goods Imports from Europe, 2022

$28.0 bn

Chemicals are the top imported good, comprising 62% of the state's total imports from Europe.

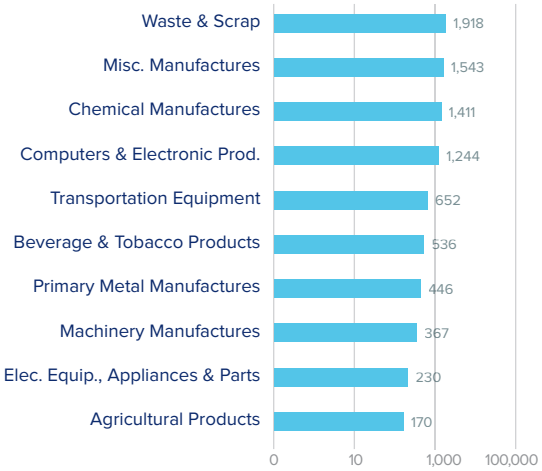
Top European Export Markets, 2022

Country	Exports ($ millions)
Germany	2,983
Netherlands	1,533
Belgium	1,273
United Kingdom	818
Italy	472

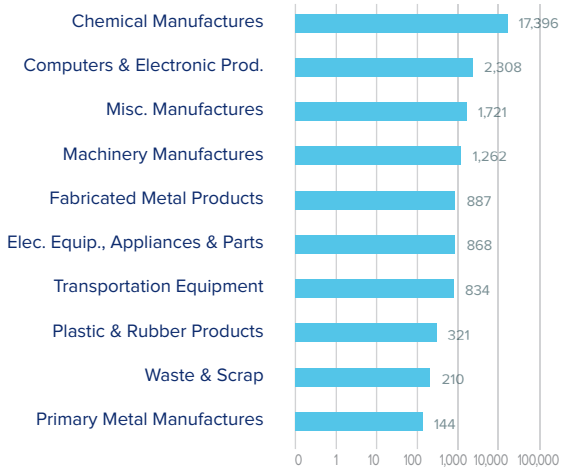
Top European Import Markets, 2022

Country	Imports ($ millions)
Ireland	9,609
Germany	5,454
United Kingdom	3,057
Italy	1,665
Switzerland	1,369

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Texas and Europe

Jobs

392,900

Since 2012: +88,800 (+29.2%)

European companies account for **59%** of foreign affiliate jobs

Employment within Texas, 2021

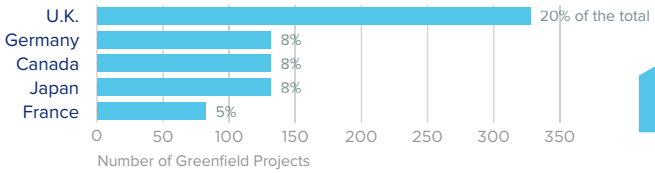
Country	Employment
United Kingdom	115,000
Japan	75,900
Germany	66,000
France	63,800
Canada	52,500

On a country basis, U.K. companies operating in Texas represented 17% of total foreign affiliate employment in Texas, with U.K. multinationals supporting approximately 19,200 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



1,638

Greenfield Projects (July 2013 - June 2023)

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Trade

Texas Goods Exports to Europe, 2022

$99.2 bn

Oil and gas exports to Europe have soared in recent years, due to the shale revolution in the Permian Basin and the opening up of U.S. export markets.

Texas Goods Imports from Europe, 2022

$48.0 bn

Transportation equipment and chemicals are the top product imports, though total imports are relatively diverse with machinery and petroleum & coal products also being key imports.

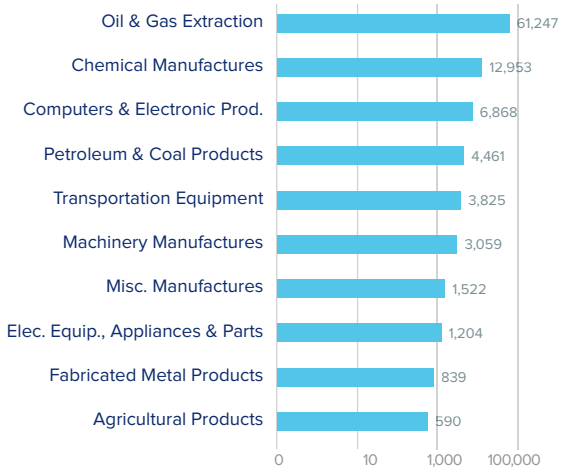
Top European Export Markets, 2022

Country	Exports ($ millions)
Netherlands	19,639
United Kingdom	15,769
France	11,470
Spain	8,996
Germany	8,252

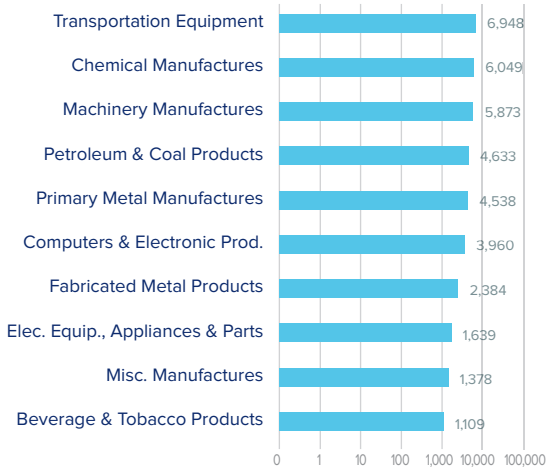
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	9,096
United Kingdom	5,405
Italy	4,870
France	4,099
Ireland	3,224

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Utah and Europe

Jobs

42,300

Since 2012: +17,300 (+69.2%)

European companies account for

67%

of foreign affiliate jobs

Employment within Utah, 2021

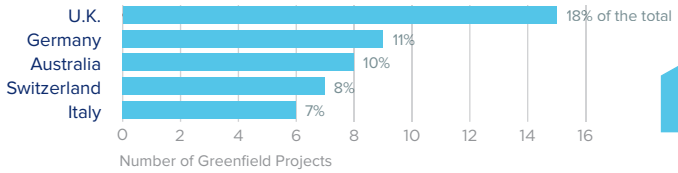
Country	Employment
France	11,500
United Kingdom	9,100
Germany	7,300
Canada	5,000
Switzerland	3,900

On a country basis, French companies operating in Utah represented 18% of total foreign affiliate employment in Utah, with French multinationals supporting approximately 7,400 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



83

Greenfield Projects (July 2013 - June 2023)

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Trade

Utah Goods Exports to Europe, 2022

$9.3 bn

Primary metals dominate the state's exports to Europe, representing almost 74% of Utah's total exports.

Utah Goods Imports from Europe, 2022

$2.1 bn

Imports are much more diversified than exports. Machinery, computers & electronic products and chemicals are the state's top imports from Europe.

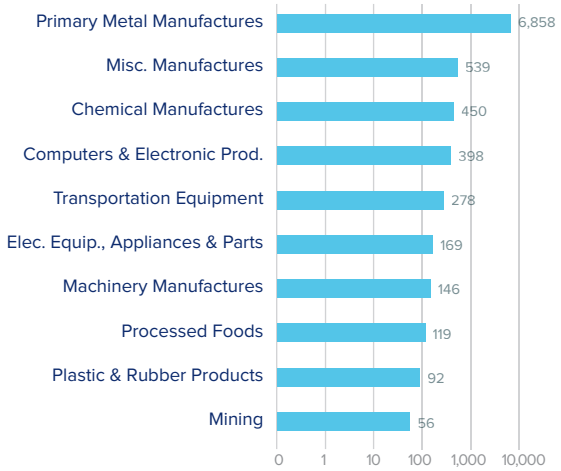
Top European Export Markets, 2022

Country	Exports ($ millions)
United Kingdom	7,079
Netherlands	553
Germany	392
France	285
Italy	165

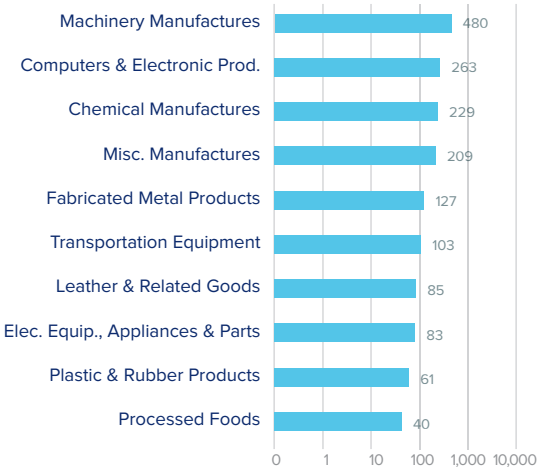
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	337
United Kingdom	271
Italy	187
France	174
Austria	165

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Vermont and Europe

Jobs

9,300

Since 2012: +1,100 (+13.4%)

European companies account for

65%

of foreign affiliate jobs

Employment within Vermont, 2021

Country	Employment
Netherlands	3,750
Canada	1,700
France	1,700
Germany	800
United Kingdom	750

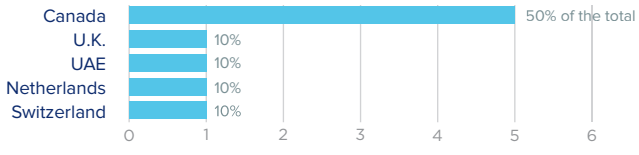
On a country basis, Dutch companies operating in Vermont represented 26% of total foreign affiliate employment in Vermont, with Dutch multinationals supporting approximately 2,950 more jobs in 2021 than in 2012.

*Netherlands and U.K. employment data suppressed to avoid disclosure of individual company data. Range of 2,500 - 4,999 employees given for the Netherlands; 500-999 employees for the U.K.)

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



10

Greenfield Projects (July 2013 - June 2023)

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Trade

Vermont Goods Exports to Europe, 2022

$409.4 m

Nearly a third of exports consists of miscellaneous manufactures.

Vermont Goods Imports from Europe, 2022

$497.6 m

Fabricated metal products are the state's top import from Europe, representing roughly 20% of the total goods imported.

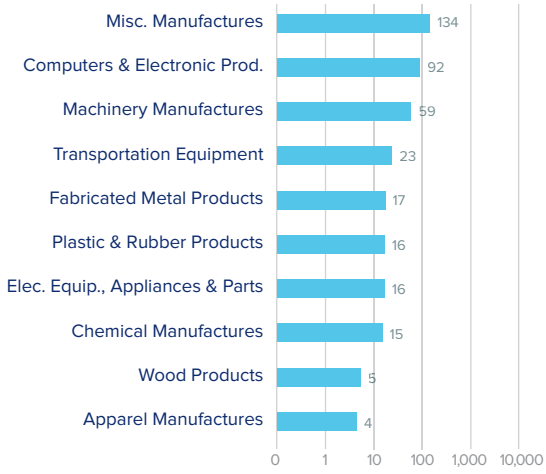
Top European Export Markets, 2022

Country	Exports ($ millions)
Germany	106
Netherlands	73
United Kingdom	70
France	34
Ireland	33

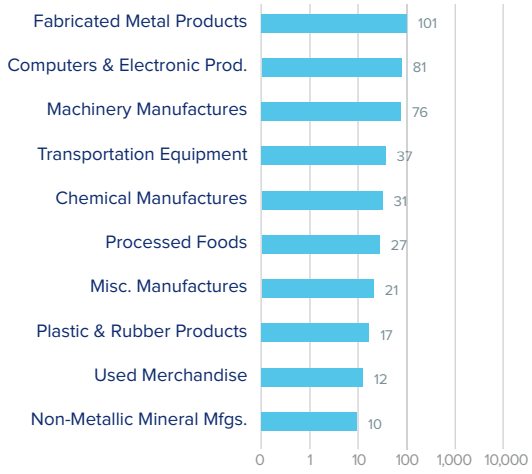
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	78
France	78
Türkiye	71
United Kingdom	52
Italy	45

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Virginia and Europe

Jobs

154,900

Since 2012: +35,500 (+29.7%)

European companies account for

77%

of foreign affiliate jobs

Employment within Virginia, 2021

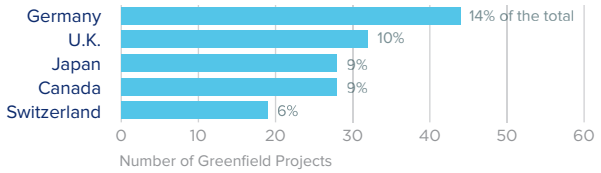
Country	Employment
United Kingdom	37,300
Netherlands	36,900
Germany	26,500
France	18,500
Canada	14,600

On a country basis, U.K. companies operating in Virginia represented 19% of total foreign affiliate employment in Virginia, with U.K. multinationals supporting approximately 13,200 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



316

Greenfield Projects (July 2013 - June 2023)

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Trade

Virginia Goods Exports to Europe, 2022

$7.1 bn

Top exports include mining, chemicals, and computers & electronic products. Mining dominated in 2022, making up 41% of exports.

Virginia Goods Imports from Europe, 2022

$11.2 bn

Transportation equipment is the largest import from Europe, followed by machinery, chemicals, and fabricated metal products.

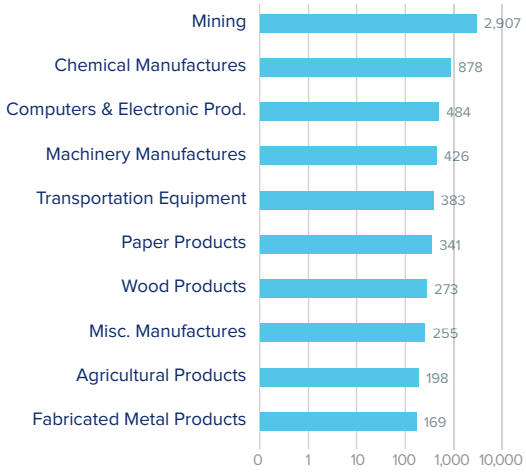
Top European Export Markets, 2022

Country	Exports ($ millions)
Netherlands	1,479
Germany	996
United Kingdom	687
Belgium	574
Poland	492

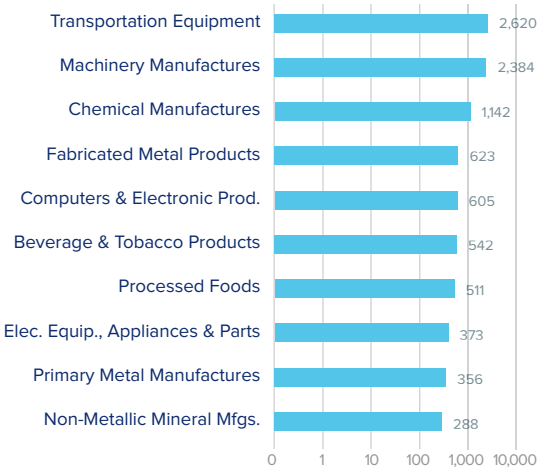
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	2,737
United Kingdom	1,256
Italy	1,215
France	1,006
Austria	879

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Washington and Europe

Jobs

80,500

Since 2012: +22,200 (+38.1%)

European companies account for

56%

of foreign affiliate jobs

Employment within Washington, 2021

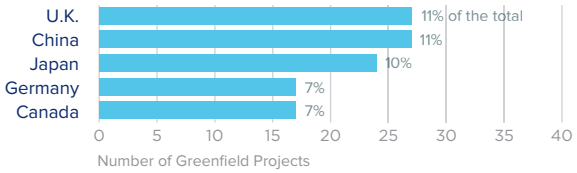
Country	Employment
Canada	29,400
Germany	21,000
UK	21,000
Japan	14,700
France	10,500

On a country basis, German companies operating in Washington represented 15% of total foreign affiliate employment in Washington, with German multinationals supporting approximately 6,200 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



241

Greenfield Projects (July 2013 - June 2023)

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Trade

Washington Goods Exports to Europe, 2022

$8.8 bn

Transportation equipment dominates Washington's exports to Europe, making up 58% of total exports.

Washington Goods Imports from Europe, 2022

$6.0 bn

Imports from Europe are less concentrated than exports. The state's top import, chemicals, makes up 15% of total goods imports from Europe.

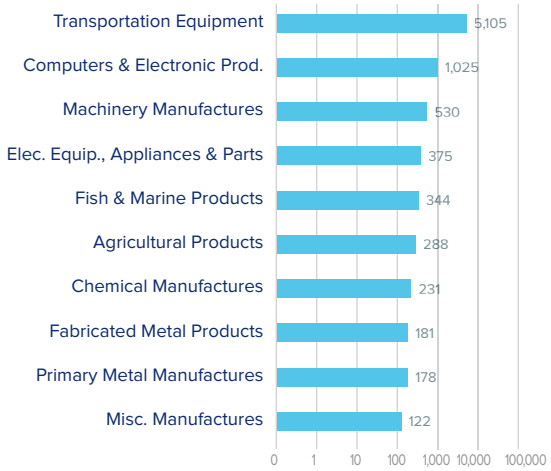
Top European Export Markets, 2022

Country	Exports ($ millions)
Ireland	1,592
United Kingdom	1,570
Türkiye	938
France	910
Germany	907

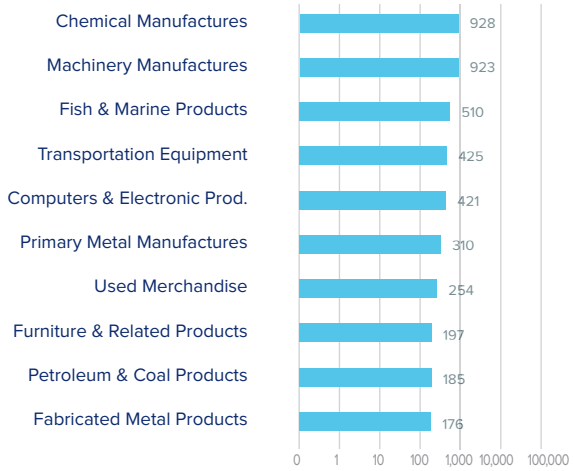
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	1,181
Russia	889
United Kingdom	629
France	600
Italy	546

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

West Virginia and Europe

Jobs

13,700

Since 2012: -3,500 (-20.3%)

European companies account for

48%

of foreign affiliate jobs

Employment within West Virginia, 2021

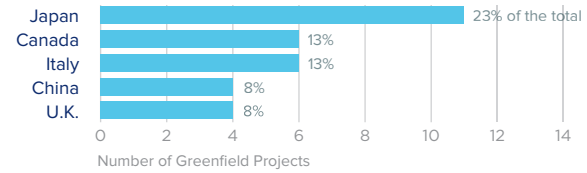
Country	Employment
Japan	4,800
Canada	4,700
Netherlands	3,750
France	3,700
Germany	2,100

On a country basis, Dutch companies operating in West Virginia represented 13% of total foreign affiliate employment in West Virginia, with Dutch multinationals supporting approximately 2,350 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



48

Greenfield Projects (July 2013 - June 2023)

Number of projects does not directly translate to value of projects or jobs added. Greenfield FDI is investment in new assets. Greenfield projects listed on the right hand side are Greenfield projects in the state from all countries.

Trade

West Virginia Goods Exports to Europe, 2022

$2.5 bn

Mining products such as minerals and ores accounted for 67% of exports to Europe in 2022.

West Virginia Goods Imports from Europe, 2022

$0.6 bn

Chemicals, machinery and transportation equipment were West Virginia's top imports from Europe in 2022.

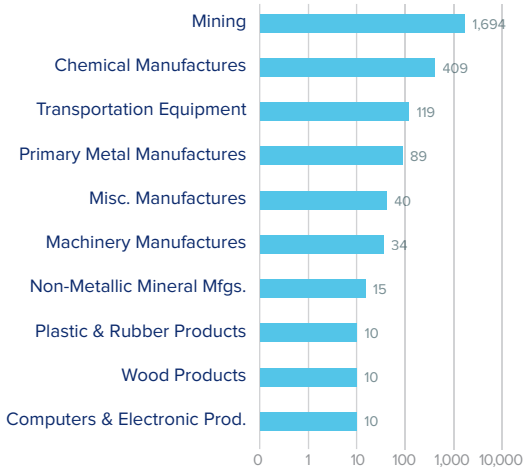
Top European Export Markets, 2022

Country	Exports ($ millions)
Netherlands	823
United Kingdom	272
Belgium	266
Italy	254
Germany	159

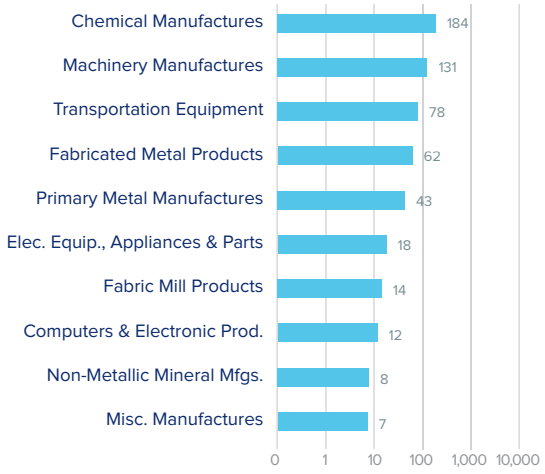
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	182
Poland	69
France	67
Italy	63
United Kingdom	54

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Wisconsin and Europe

Jobs

83,600

Since 2012: +32,100 (+62.3%)

European companies account for

64%

of foreign affiliate jobs

Employment within Wisconsin, 2021

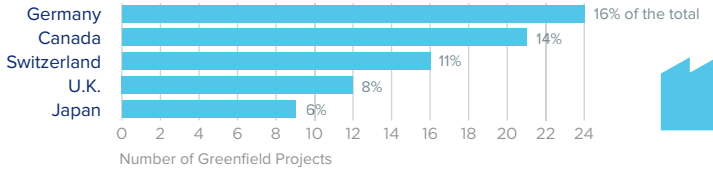
Country	Employment
United Kingdom	22,100
Canada	17,600
Germany	14,900
France	10,600
Japan	8,900

On a country basis, U.K. companies operating in Wisconsin represented 17% of total foreign affiliate employment in Wisconsin, with U.K. multinationals supporting approximately 10,400 more jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



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Greenfield Projects (July 2013 - June 2023)

Number of projects does not directly translate to value of projects or jobs added. Greenfield FDI is investment in new assets. Greenfield projects listed on the right hand side are Greenfield projects in the state from all countries.

Trade

Wisconsin Goods Exports to Europe, 2022

$5.6 bn

Machinery and chemicals are the state's top exports to Europe, making up a combined 42% of total exports.

Wisconsin Goods Imports from Europe, 2022

$13.0 bn

Chemicals and machinery accounted for 42% and 27% of total imports from Europe, respectively.

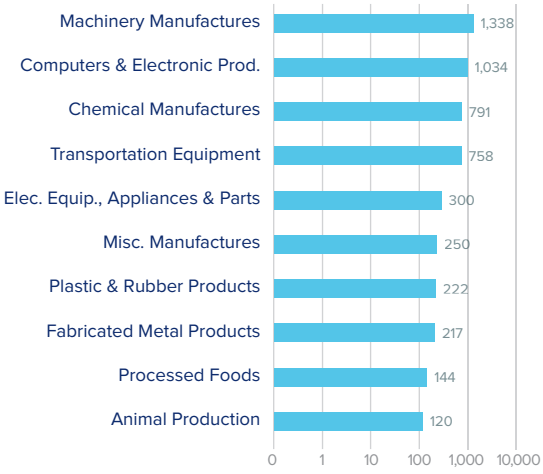
Top European Export Markets, 2022

Country	Exports ($ millions)
Germany	1,044
United Kingdom	881
Belgium	668
Netherlands	563
France	492

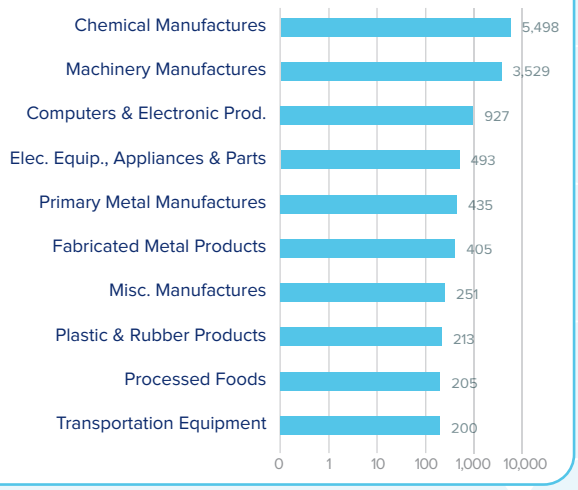
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	2,650
Ireland	2,519
Belgium	2,060
Italy	1,348
United Kingdom	715

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Wyoming and Europe

Jobs

5,100
Since 2012: -100
(-1.9%)

European companies account for
63%
of foreign affiliate jobs

Employment within Wyoming, 2021

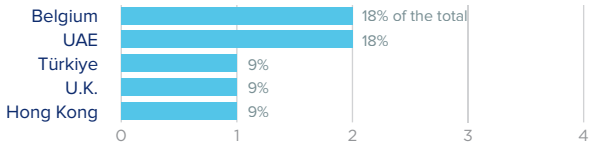
Country	Employment
United Kingdom	2,200
Canada	1,000
France	750
Japan	400
Switzerland	200

On a country basis, U.K. companies operating in Wyoming represented 27% of total foreign affiliate employment in Wyoming, with U.K. multinationals supporting approximately 100 fewer jobs in 2021 than in 2012.

Jobs directly supported by European investment. Total European-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

Sources of Greenfield Foreign Direct Investment (FDI)



11
Greenfield Projects
(July 2013 - June 2023)

Number of projects does not directly translate to value of projects or jobs added. Greenfield FDI is investment in new assets. Greenfield projects listed on the right hand side are Greenfield projects in the state from all countries.

Trade

Wyoming Goods Exports to Europe, 2022

$35.1 m

Chemicals accounted for 31% of Wyoming's exports to Europe in 2022.

Wyoming Goods Imports from Europe, 2022

$144.3 m

Fabricated metal products, machinery, and computers & electronic products were Wyoming's top imports from Europe in 2022.

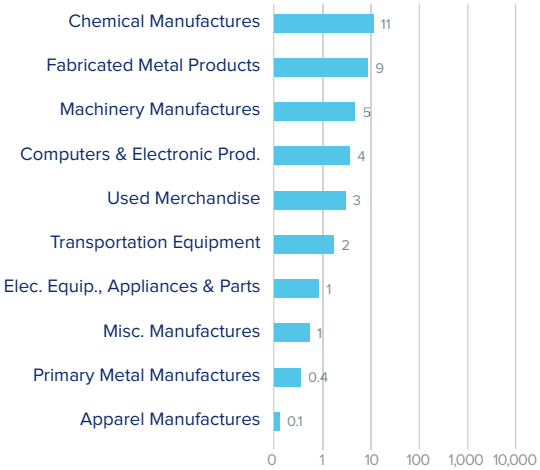
Top European Export Markets, 2022

Country	Exports ($ millions)
Germany	7
United Kingdom	5
Belgium	4
Sweden	3
France	3

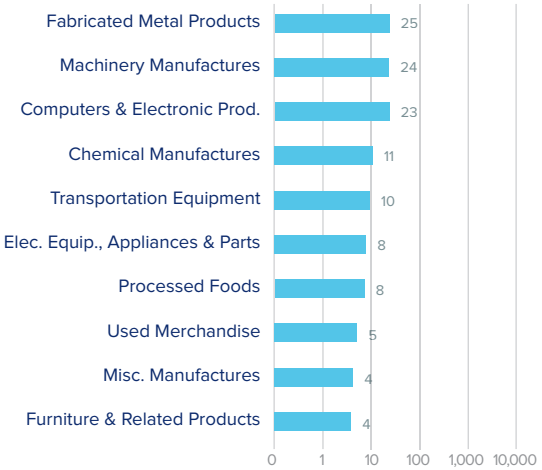
Top European Import Markets, 2022

Country	Imports ($ millions)
Germany	23
Italy	22
Türkiye	19
France	16
Netherlands	12

Top Ten Exports to Europe, 2022 ($ millions)



Top Ten Imports from Europe, 2022 ($ millions)



Sources: Bureau of Economic Analysis; U.S. Census Bureau; U.S. Department of Commerce; SelectUSA.

Appendix B

U.S. Commerce and Europe: A Country-by-Country Comparison

Europe & the United States

Jobs

United States in Europe	Europe in the United States
4,634,284	4,992,798

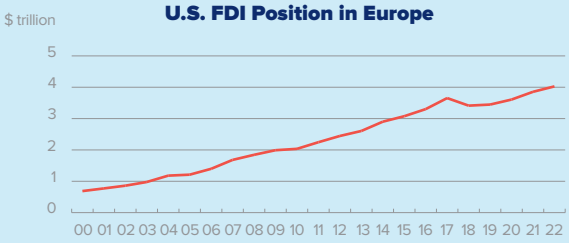
Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

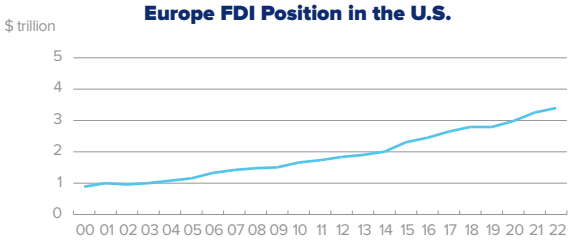
$4.0 tn	$3.4 tn
Foreign Direct Investment (FDI), 2022	**Foreign Direct Investment (FDI), 2022**

In terms of the U.S.-Europe investment balance, the U.S. had a larger net cross-border impact in 2022. U.S. foreign direct investment in Europe increased in 2022 to $4 trillion. Europe's foreign direct investment in the U.S. rose to $3.4 trillion. According to estimates for 2022, U.S. affiliates employed over 4.6 million workers in Europe while European affiliates employed nearly 5 million Americans. U.S. affiliates added more than $800 million in value in 2022, with European affiliates generating an estimated $737 million. Total sales of U.S. foreign affiliates in Europe were an estimated $3.6 trillion in 2022.

U.S. FDI Position in Europe



Europe FDI Position in the U.S.



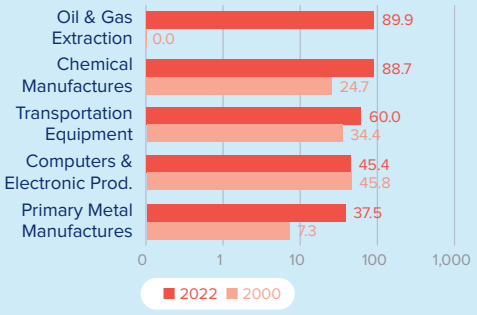
Foreign direct investment position, historic-cost basis, 2000-2021.

Trade in Goods

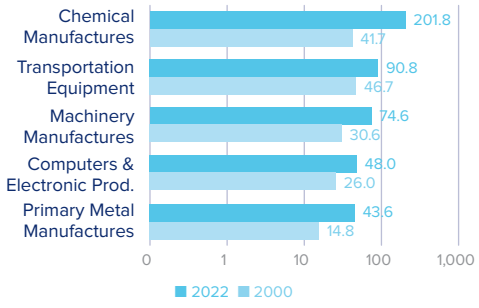
$491.6 bn	$724.7 bn
U.S. Goods Exports to Europe, 2022	**U.S. Goods Imports from Europe, 2022**

5.8%	U.S. supplied 5.8% of the Europe's total imports...	17.4%	...but the U.S. share increases to 17.4% when intra-Europe trade is excluded from the total.
7.7%	The U.S. received 7.7% of the total goods Europe exported to the world...	26.7%	...but the U.S. share increases to 26.7% when intra-Europe trade is excluded from the total.

Top Five U.S. Goods Exports to Europe ($billions)



Top Five U.S. Goods Imports from Europe ($billions)



Top State Exporters of Goods to Europe ($billions)

1	2	3	4	5
99.2	44.8	37.6	34.9	15.2
Texas	New York	Louisiana	California	Pennsylvania

Top State Importers of Goods from Europe ($billions)

1	2	3	4	5
66.9	61.7	49.2	48.0	42.4
New Jersey	New York	California	Texas	Indiana

Trade in Services

$401.9 bn	$293.5 bn
U.S. Services Exports to Europe, 2022	**U.S. Services Imports from Europe, 2022**

"Europe" refers to all 27 members of the European Union in 2020 plus Albania, Andorra, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Georgia, Gibraltar, Greenland, Iceland, Kazakhstan, Kosovo, Kyrgyzstan, North Macedonia, Malta, Moldova, Monaco, Montenegro, Norway, Russia, Serbia, San Marino, Switzerland, Türkiye, Tajikistan, Turkmenistan, Ukraine, United Kingdom, Uzbekistan, Vatican.
Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

The EU+UK & the United States

Jobs

United States in the EU+UK	The EU+UK in the United States
4,164,331	4,577,556

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$3.6 tn

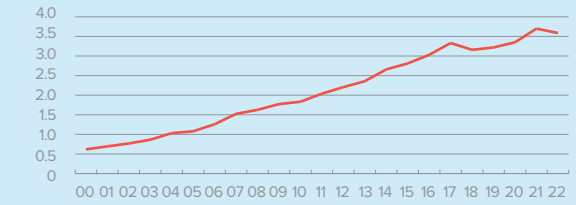
Foreign Direct Investment (FDI), 2022

$3.0 tn

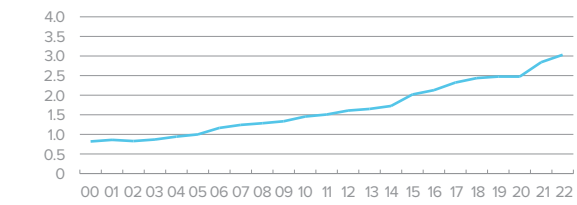
Foreign Direct Investment (FDI), 2022

In terms of the investment balance, the U.S. had a larger net cross-border impact in 2022. U.S. foreign direct investment in the EU+UK reached $3.6 trillion in 2022, and the EU+UK's foreign direct investment in the U.S. topped $3.0 trillion. According to estimates for 2022, U.S. affiliates employed over 4.1 million workers in the EU+UK while EU+UK affiliates employed almost 4.5 million Americans. U.S. affiliates in the EU+UK generated almost $700 billion in value according to 2022 estimates. Total sales of EU+UK affiliates in the U.S. were an estimated $2.7 trillion in 2022 compared to $3.0 trillion from U.S. affiliates in the EU+UK.

U.S. FDI Position in the EU+UK



The EU+UK FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.
*The EU FDI trend charts show an increasing number of member countries over time. The U.K. is included in all years 2000-2019. Prior to 2013 the EU excludes Croatia. Prior to 2007, it also excludes Bulgaria and Romania. Prior to 2004, it also excludes Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia.

Trade in Goods

$427.0 bn

U.S. Goods Exports to the EU+UK, 2022

5.7% The U.S. supplied 5.7% of the EU+UK's total imports...

13.9% ...but the U.S. share increases to 13.9% when intra-EU+UK trade is excluded from the total.

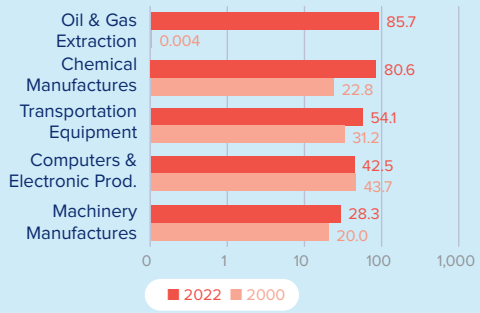
$617.2 bn

U.S. Goods Imports from the EU+UK, 2022

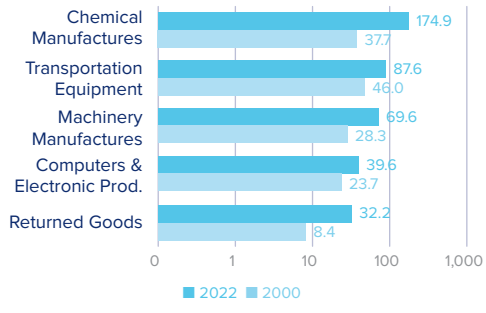
7.9% The U.S. received 7.9% of the total goods the EU+UK exported to the world...

23.0% ...but the U.S. share increases to 23.0% when intra-EU+UK trade trade is excluded from the total.

Top Five U.S. Goods Exports to the EU+UK ($billions)



Top Five U.S. Goods Imports from the EU+UK ($billions)



Top State Exporters of Goods to the EU+UK ($billions)

1	2	3	4	5
92.0	35.0	31.6	19.7	13.4
Texas	Louisiana	California	New York	Pennsylvania

Top State Importers of Goods from the EU+UK ($billions)

1	2	3	4	5
54.2	42.1	41.3	40.8	38.6
New Jersey	California	New York	Texas	Illinois

Trade in Services

$269.5 bn

U.S. Services Exports to the EU+UK, 2022

$191.4 bn

U.S. Services Imports from the EU+UK, 2022

"EU" refers to all 28 members of the European Union as of 2019 (including the UK). Prior to 2013 it excludes Croatia. Prior to 2007, it also excludes Bulgaria and Romania. Prior to 2004, it also excludes Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia.
Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

The EU 27 & the United States

Jobs

United States in the EU	The EU in the United States
2,823,051	3,330,300

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$2.6 tn

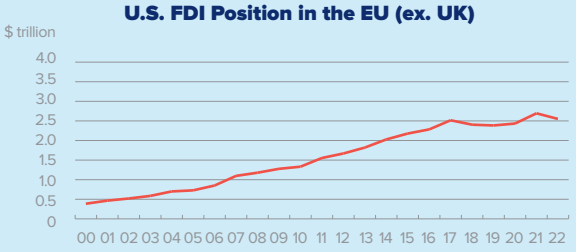
Foreign Direct Investment (FDI), 2022

$2.4 tn

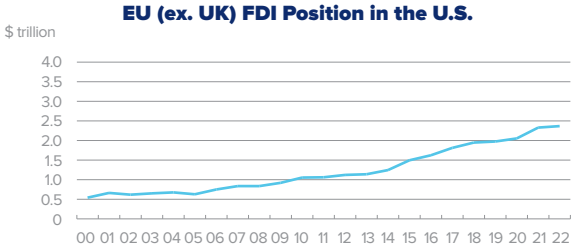
Foreign Direct Investment (FDI), 2022

When the UK is excluded from the EU data, U.S. outward investment is about 29% lower than the EU+UK figure. U.S. outward FDI to the EU27 in 2022 was $2.6 trillion, supporting 2.8 million jobs. Inward FDI from the 27 EU member states to the U.S. was a bit lower, $2.4 trillion, while the EU27 supported more jobs (3.3 million), according to estimates. Total sales of U.S. foreign affiliates in the EU27 were an estimated $2.2 trillion in 2022 compared to $2.0 trillion generated by affiliates of the EU27 in the U.S. Value added by U.S. affiliates in the EU27 approached $500 billion, according to 2022 estimates.

U.S. FDI Position in the EU (ex. UK)



EU (ex. UK) FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.
*The EU (ex. UK) FDI trend excludes the UK from EU data from 2000-2022. Prior to 2013 it also excludes Croatia. Prior to 2007, it also excludes Bulgaria and Romania. Prior to 2004, it also excludes Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia.

Trade in Goods

$350.8 bn

U.S. Goods Exports to the EU, 2022

5.1% The U.S. supplied 5.1% of the EU's total imports...

12.0% ...but the U.S. share increases to 12.0% when intra-EU trade is excluded from the total.

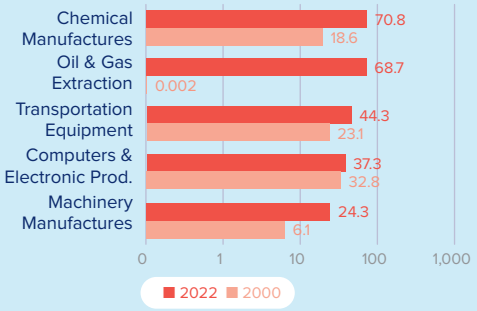
$553.3 bn

U.S. Goods Imports from the EU, 2022

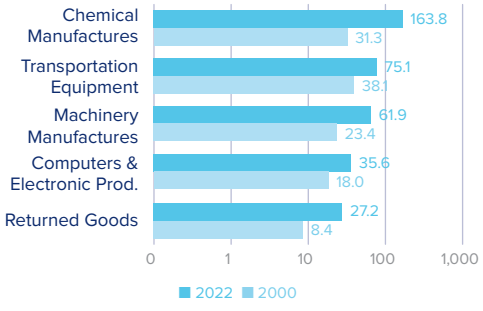
7.6% The U.S. received 7.6% of the total goods the EU exported to the world...

20.2% ...but the U.S. share increases to 20.2% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to the EU ($billions)



Top Five U.S. Goods Imports from the EU ($billions)



Top State Exporters of Goods to the EU ($billions)

1	2	3	4	5
76.2	28.3	26.9	14.9	11.5
Texas	Louisiana	California	New York	Pennsylvania

Top State Importers of Goods from the EU ($billions)

1	2	3	4	5
45.4	38.0	36.1	35.5	35.4
New Jersey	California	New York	Illinois	Texas

Trade in Services

$201.7 bn

U.S. Services Exports to the EU, 2022

$130.3 bn

U.S. Services Imports from the EU, 2022

"The EU 27" refers to the 27 members of the European Union as of January 31, 2020 (without the United Kingdom).
Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Austria and the United States

Jobs

United States in Austria	Austria in the United States
29,593	39,168

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$4.1 bn

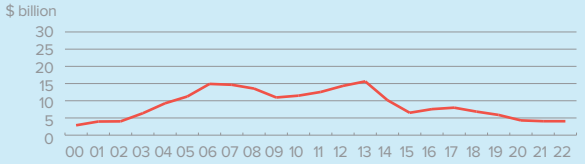
Foreign Direct Investment (FDI), 2022

$17.6 bn

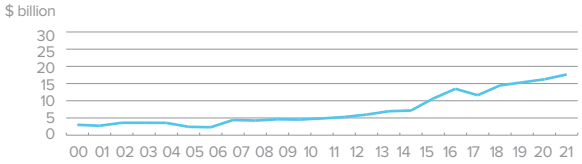
Foreign Direct Investment (FDI), 2022

America's direct investment position in Austria has declined since hitting a peak in 2013. Austria's investment stake in the U.S. now exceeds America's investment in Austria. And, in 2022, Austrian firms employed more workers in the U.S. than American affiliates employed in Austria. Value added by U.S. affiliates in Austria was $5.3 billion according to 2022 estimates, compared to $6.1 billion added by Austrian affiliates in the U.S. Total sales by Austrian affiliates in the U.S. more than doubled that generated by U.S. affiliates in Austria at $54 billion versus $25 billion, respectively.

U.S. FDI Position in Austria



Austria FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.

Trade in Goods

$4.8 bn

U.S. Goods Exports to Austria, 2022

2.1% The U.S. supplied 2.1% of Austria's total imports...

8.3% ...but the U.S. share increases to 8.3% when intra-EU trade is excluded from the total.

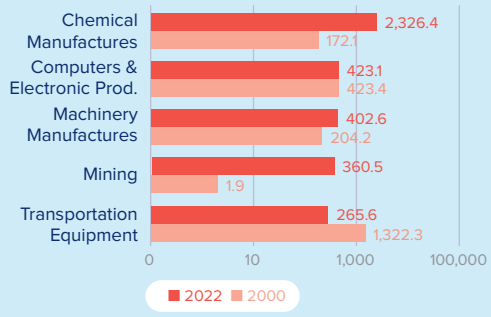
$17.8 bn

U.S. Goods Imports from Austria, 2022

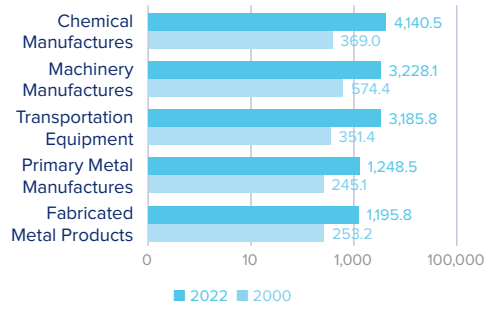
6.4% The U.S. received 6.4% of the total goods Austria exported to the world...

21.2% ...but the U.S. share increases to 21.2% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Austria ($millions)



Top Five U.S. Goods Imports from Austria ($millions)



Top State Exporters of Goods to Austria ($millions)

1	2	3	4	5
1,031.0 Kentucky	479.6 North Carolina	382.2 California	363.6 Alabama	192.6 Texas

Top State Importers of Goods from Austria ($millions)

1	2	3	4	5
2,184.4 Pennsylvania	1,457.1 New Jersey	1,350.9 California	1,324.5 South Carolina	1,314.5 Georgia

Trade in Services

$1.6 bn

U.S. Services Exports to Austria, 2022

$1.4 bn

U.S. Services Imports from Austria, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Belgium and the United States

Jobs

United States in Belgium	Belgium in the United States
118,978	77,418

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$61.5 bn

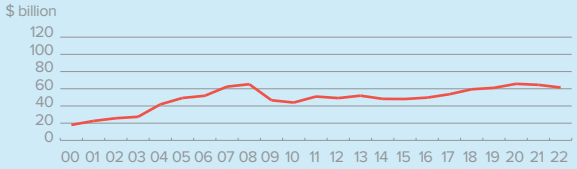
Foreign Direct Investment (FDI), 2022

$71.3 bn

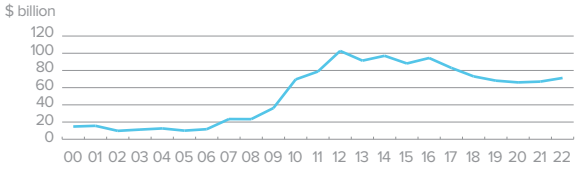
Foreign Direct Investment (FDI), 2022

U.S. direct investments in Belgium are heavily concentrated in the manufacturing sector, which makes up 47% of U.S. FDI in Belgium. Meanwhile, the manufacturing sector accounts for 86% of Belgium's FDI stock in the U.S. Foreign affiliate employment by U.S. companies in Belgium exceeded Belgian companies' employment in the U.S. in 2022. Value added by U.S. affiliates in Belgium was an estimated $32 billion in 2022 compared to $4 billion in value added by Belgian affiliates in the U.S. Total sales of U.S. foreign affiliates in Belgium reached an estimated $234 billion in 2022 compared to $47 billion generated by Belgian affiliates in the U.S.

U.S. FDI Position in Belgium



Belgium FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.

Trade in Goods

$35.8 bn

U.S. Goods Exports to Belgium, 2022

6.0% The U.S. supplied 6.0% of Belgium's total imports...

14.4% ...but the U.S. share increases to 14.4% when intra-EU trade is excluded from the total.

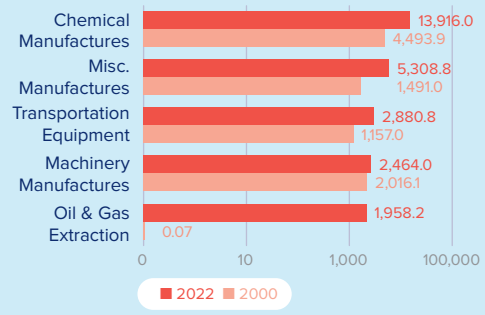
$26.6 bn

U.S. Goods Imports from Belgium, 2022

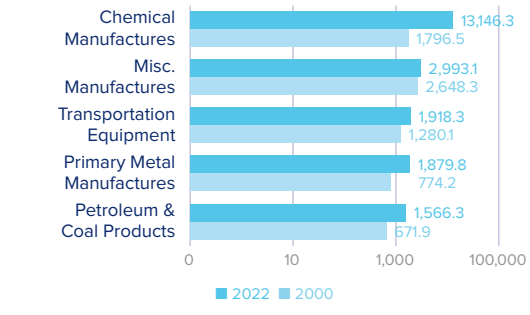
5.9% The U.S. received 5.9% of the total goods Belgium exported to the world...

18.7% ...but the U.S. share increases to 18.7% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Belgium ($millions)



Top Five U.S. Goods Imports from Belgium ($millions)



Top State Exporters of Goods to Belgium ($millions)

1	2	3	4	5
7,165.1 Texas	3,066.6 New York	2,739.2 California	2,543.1 Louisiana	1,635.9 South Carolina

Top State Importers of Goods from Belgium ($millions)

1	2	3	4	5
4,397.9 New York	3,703.7 Pennsylvania	3,143.3 Georgia	2,060.4 Wisconsin	1,913.4 New Jersey

Trade in Services

$5.3 bn

U.S. Services Exports to Belgium, 2022

$5.5 bn

U.S. Services Imports from Belgium, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Bulgaria and the United States

Jobs

United States in Bulgaria	Bulgaria in the United States
10,908	306

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

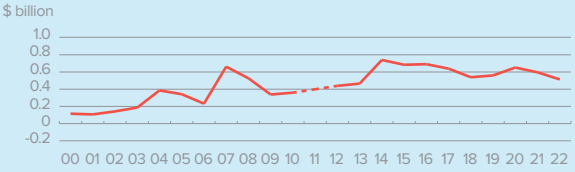
Investment

$514 m
Foreign Direct Investment (FDI), 2022

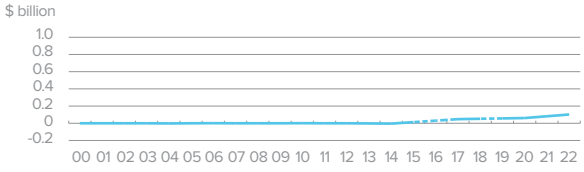
$102 m
Foreign Direct Investment (FDI), 2022

America's investment base in Bulgaria is relatively small, and estimates suggest that foreign affiliate sales totaled just $2.9 billion in 2022. U.S. affiliates in Bulgaria employed nearly 11,000 workers in 2022, significantly more than Bulgarian firms employed in the U.S. U.S. affiliates in Bulgaria added $1.3 billion in value according to 2022 estimates. U.S. direct investment in Bulgaria has declined since 2020 but stood above $500 million in 2022.

U.S. FDI Position in Bulgaria



Bulgaria FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.
Note: Dotted line indicates that data has been suppressed for a particular year to avoid disclosure of individual company data.

Trade in Goods

$531 m
U.S. Goods Exports to Bulgaria, 2022

1.4% The U.S. supplied 1.4% of Bulgaria's total imports...

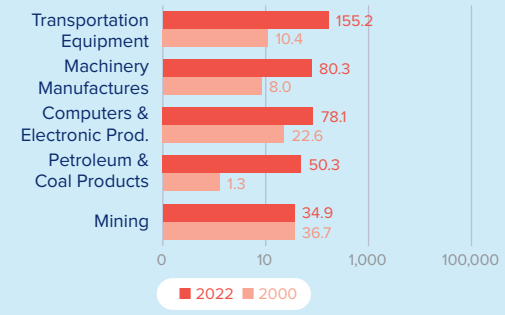
3.2% ...but the U.S. share increases to 3.2% when intra-EU trade is excluded from the total.

$1.5 bn
U.S. Goods Imports from Bulgaria, 2022

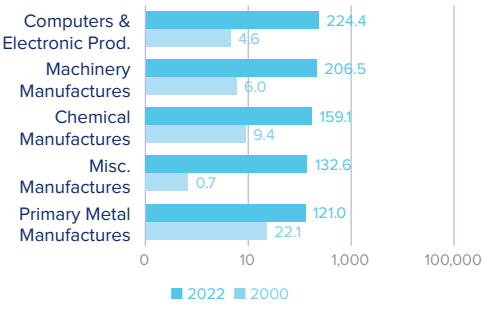
2.3% The U.S. received 2.3% of the total goods Bulgaria exported to the world...

6.6% ...but the U.S. share increases to 6.6% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Bulgaria ($millions)



Top Five U.S. Goods Imports from Bulgaria ($millions)



Top State Exporters of Goods to Bulgaria ($millions)

1	2	3	4	5
120.3	70.4	63.6	31.4	24.6
Texas	California	Georgia	Iowa	Illinois

Top State Importers of Goods from Bulgaria ($millions)

1	2	3	4	5
159.3	124.8	101.7	101.0	88.8
California	New Jersey	Massachu-setts	Missouri	New York

Trade in Services

$381 m
U.S. Services Exports to Bulgaria, 2022

$496 m
U.S. Services Imports from Bulgaria, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Croatia and the United States

Jobs

United States in Croatia	Croatia in the United States
2,626	<500

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$234 m

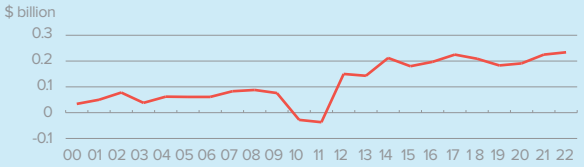
Foreign Direct Investment (FDI), 2022

$18 m

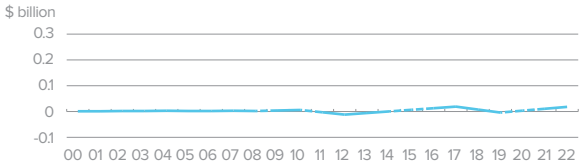
Foreign Direct Investment (FDI), 2022

U.S. direct investment in Croatia has fluctuated in recent years around $225 million, while Croatia's direct investment position in the U.S. remains small. U.S. foreign affiliates in Croatia employed over 2,600 workers in 2022, while Croatian foreign direct investment in the U.S. directly supported fewer than 500 jobs. U.S. affiliates in Croatia contributed approximately $680 million in value in 2022. Foreign affiliate sales favored Croatia, with U.S. affiliates producing an estimated $1.2 billion in 2022.

U.S. FDI Position in Croatia



Croatia FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.
Note: Dotted line indicates that data has been suppressed for a particular year to avoid disclosure of individual company data. Negative FDI positions can occur when the loans from the affiliate to the parent company exceed the equity and debt investments from the parent to the affiliate, or if a foreign affiliate incurs sufficiently large losses.

Trade in Goods

$1.6 bn

U.S. Goods Exports to Croatia, 2022

7.5% The U.S. supplied 7.5% of Croatia's total imports...

24.9% ...but the U.S. share increases to 24.9% when intra-EU trade is excluded from the total.

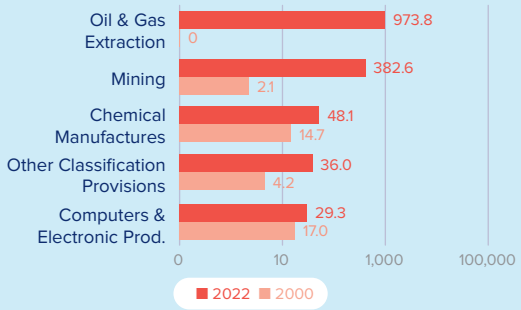
$860 m

U.S. Goods Imports from Croatia, 2022

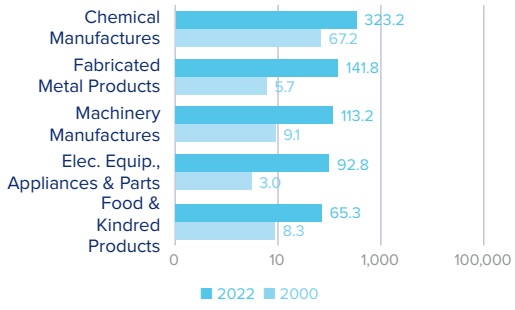
2.3% The U.S. received 2.3% of the total goods Croatia exported to the world...

7.3% ...but the U.S. share increases to 7.3% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Croatia ($millions)



Top Five U.S. Goods Imports from Croatia ($millions)



Top State Exporters of Goods to Croatia ($millions)

1	2	3	4	5
667.9	326.7	296.3	33.9	30.6
Louisiana	Virginia	Texas	California	Alabama

Top State Importers of Goods from Croatia ($millions)

1	2	3	4	5
180.8	137.3	78.8	62.9	56.9
Pennsylvania	Illinois	Kentucky	North Carolina	New York

Trade in Services

$315 m

U.S. Services Exports to Croatia, 2022

$487 m

U.S. Services Imports from Croatia, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis; United Nations.

Cyprus and the United States

Jobs

United States in Cyprus	Cyprus in the United States
1,919	3,060

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

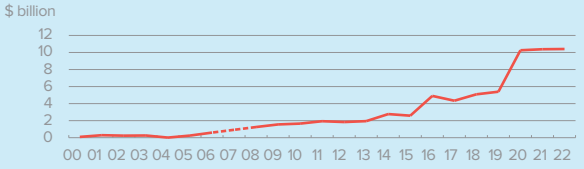
Investment

$10.4 bn
Foreign Direct Investment (FDI), 2022

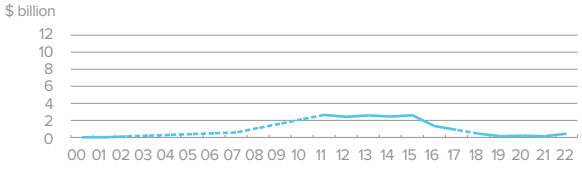
$433 m
Foreign Direct Investment (FDI), 2022

U.S. investment in Cyprus has risen over the past few years, in part due to the country's relatively low corporate tax rate. In 2022, FDI stood at over $10 billion. Cyprus's FDI in the U.S., meanwhile, has fallen to low levels last seen approximately two decades ago. However, Cyprus-based companies continued to support more jobs in the U.S. than American corporations supported in Cyprus. Affiliates from Cyprus in the U.S. added an estimated $145 million in value in 2022. Foreign sales of U.S. affiliates reached $2.9 billion according to 2022 estimates.

U.S. FDI Position in Cyprus



Cyprus FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.
Note: Dotted line indicates that data has been suppressed for a particular year to avoid disclosure of individual company data. Negative FDI positions can occur when the loans from the affiliate to the parent company exceed the equity and debt investments from the parent to the affiliate, or if a foreign affiliate incurs sufficiently large losses.

Trade in Goods

$123 m
U.S. Goods Exports to Cyprus, 2022

0.8% The U.S. supplied 0.8% of Cyprus's total imports...

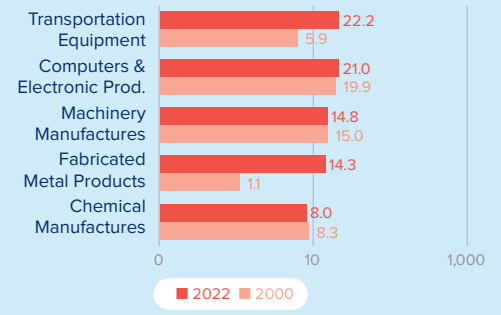
2.1% ...but the U.S. share increases to 2.1% when intra-EU trade is excluded from the total.

$73 m
U.S. Goods Imports from Cyprus, 2022

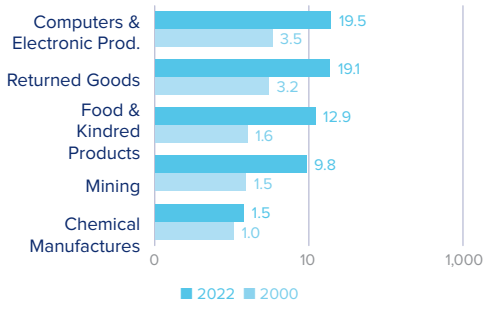
2.7% The U.S. received 2.7% of the total goods Cyprus exported to the world...

3.6% ...but the U.S. share increases to 3.6% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Cyprus ($millions)



Top Five U.S. Goods Imports from Cyprus ($millions)



Top State Exporters of Goods to Cyprus ($millions)

1	2	3	4	5
19.5	17.8	11.1	10.7	10.5
Texas	California	Alabama	Arizona	New York

Top State Importers of Goods from Cyprus ($millions)

1	2	3	4	5
15.9	12.6	9.7	7.5	5.2
Idaho	New York	Texas	New Jersey	California

Trade in Services

$1.1 bn
U.S. Services Exports to Cyprus, 2022

$2.1 bn
U.S. Services Imports from Cyprus, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Czech Republic and the United States

Jobs

United States in the Czech Republic	Czech Republic in the United States
74,235	102

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$5.4 bn

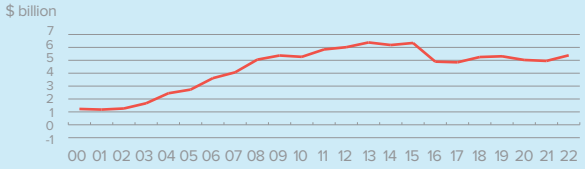
Foreign Direct Investment (FDI), 2022

$777 m

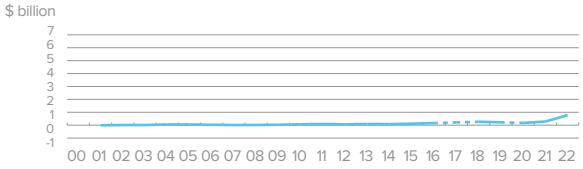
Foreign Direct Investment (FDI), 2022

America's investment base in the Czech Republic has rebounded in recent years from a relative trough of $4.8 billion in 2017 to $5.4 billion in 2022. Czech Republic FDI in the U.S. rose in 2022 but remains comparatively low at almost $800 million. Similarly, affiliate employment by U.S. multinationals in the Czech Republic was much larger than that of Czech firms in the U.S. Total sales of U.S. foreign affiliates in the Czech Republic were an estimated $17.4 billion in 2022. U.S. affiliates in the Czech Republic added an estimated $5.6 billion in value in 2022.

U.S. FDI Position in the Czech Republic



Czech Republic FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.

Trade in Goods

$3.8 bn

U.S. Goods Exports to the Czech Republic, 2022

1.6% The U.S. supplied 1.6% of the Czech Republic's total imports...

5.8% ...but the U.S. share increases to 5.8% when intra-EU trade is excluded from the total.

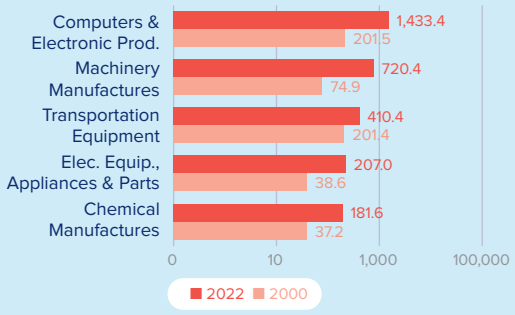
$7.5 bn

U.S. Goods Imports from the Czech Republic, 2022

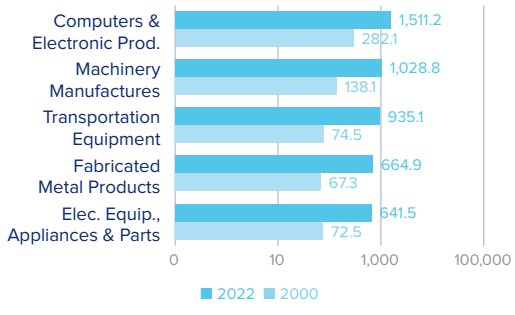
2.5% The U.S. received 2.5% of the total goods the Czech Republic exported to the world...

13.7% ...but the U.S. share increases to 13.7% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to the Czech Republic ($millions)



Top Five U.S. Goods Imports from the Czech Republic ($millions)



Top State Exporters of Goods to the Czech Republic ($millions)

1	2	3	4	5
963.7 Texas	423.8 California	173.5 Wisconsin	164.6 New York	149.5 Florida

Top State Importers of Goods from the Czech Republic ($millions)

1	2	3	4	5
945.0 Texas	541.2 Pennsylvania	533.1 South Carolina	464.7 Ohio	409.1 California

Trade in Services

$1.3 bn

U.S. Services Exports to the Czech Republic, 2022

$1.4 bn

U.S. Services Imports from the Czech Republic, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Denmark and the United States

Jobs

United States in Denmark	Denmark in the United States
38,582	49,266

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$14.0 bn

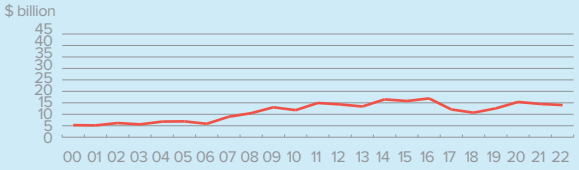
Foreign Direct Investment (FDI), 2022

$39.4 bn

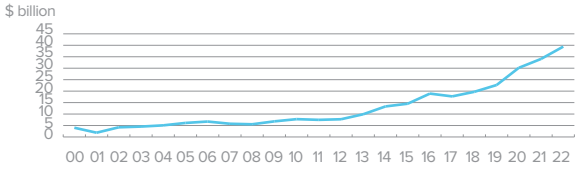
Foreign Direct Investment (FDI), 2022

Bilateral investment between the U.S. and Denmark remains skewed towards the latter, with Denmark's investment position in the U.S. nearly triple the U.S. position in Denmark. The investment gap widened again in 2022. Danish firms' affiliate sales in the U.S. market were an estimated $42 billion while U.S. foreign affiliate sales in Denmark were $22 billion. The affiliate employment balance favors Denmark slightly, with U.S. affiliates in Denmark employing nearly 10,000 more people than Danish affiliates employ in the U.S., according to 2022 estimates. Value added by Danish affiliates in the U.S. was an estimated $8.4 billion in 2022 compared to $5.7 billion in value added by U.S. affiliates in Denmark.

U.S. FDI Position in Denmark



Denmark FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.

Trade in Goods

$4.6 bn

U.S. Goods Exports to Denmark, 2022

4.1% The U.S. supplied 4.1% of Denmark's total imports...

12.2% ...but the U.S. share increases to 12.2% when intra-EU trade is excluded from the total.

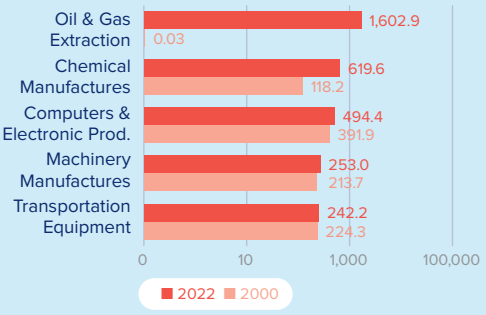
$13.0 bn

U.S. Goods Imports from Denmark, 2022

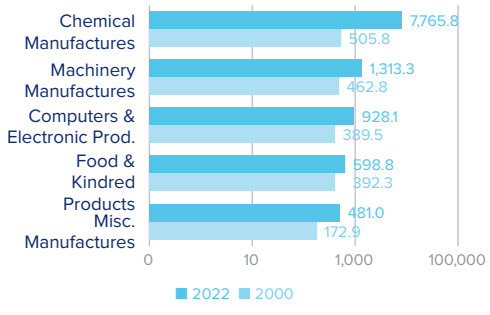
9.7% The U.S. received 9.7% of the total goods Denmark exported to the world...

21.9% ...but the U.S. share increases to 21.9% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Denmark ($millions)



Top Five U.S. Goods Imports from Denmark ($millions)



Top State Exporters of Goods to Denmark ($millions)

1	2	3	4	5
1,772.2 Texas	480.2 California	268.0 North Carolina	181.9 Louisiana	108.2 New York

Top State Importers of Goods from Denmark ($millions)

1	2	3	4	5
5,742.9 Indiana	882.1 New Jersey	722.8 North Carolina	554.0 Illinois	499.9 California

Trade in Services

$9.4 bn

U.S. Services Exports to Denmark, 2022

$11.8 bn

U.S. Services Imports from Denmark, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Estonia and the United States

Jobs

United States in Estonia	Estonia in the United States
3,434	<500

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

-$84 m

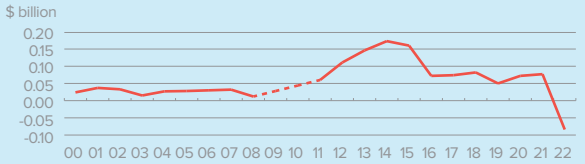
Foreign Direct Investment (FDI), 2022

-$9 m

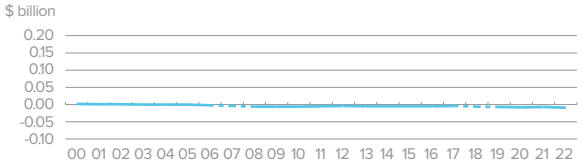
Foreign Direct Investment (FDI), 2022

America's direct investment base in Estonia is one of the smallest in the European Union, dipping into negative territory in 2022, as did Estonian FDI in the U.S. U.S. affiliates employed around 3,400 people in Estonia in 2022, while Estonian firms' provided less than 500 jobs in the U.S., according to estimates. U.S. affiliates in Estonia generated an estimated $775 million in sales in 2022. Value added by U.S. affiliates in Estonia exceeded that of Estonian affiliates in the U.S., totaling to $261 million according to 2022 estimates.

U.S. FDI Position in Estonia



Estonia FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.
Note: Dotted line indicates that data has been suppressed for a particular year to avoid disclosure of individual company data.
Negative FDI positions can occur when the loans from the affiliate to the parent company exceed the equity and debt investments from the parent to the affiliate, or if a foreign affiliate incurs sufficiently large losses.

Trade in Goods

$405 m

U.S. Goods Exports to Estonia, 2022

1.1% The U.S. supplied 1.1% of Estonia's total imports...

4.9% ...but the U.S. share increases to 4.9% when intra-EU trade is excluded from the total.

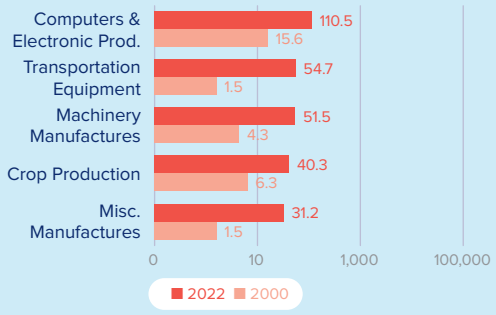
$1.4 bn

U.S. Goods Imports from Estonia, 2022

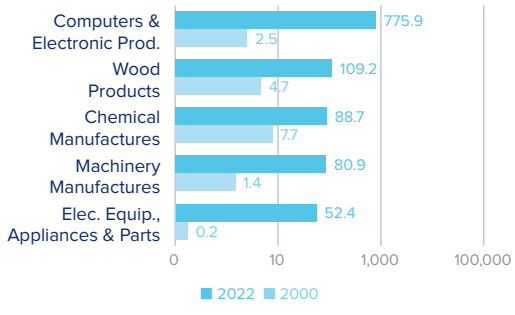
5.6% The U.S. received 5.6% of the total goods Estonia exported to the world...

19.5% ...but the U.S. share increases to 19.5% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Estonia ($millions)



Top Five U.S. Goods Imports from Estonia ($millions)



Top State Exporters of Goods to Estonia ($millions)

1	2	3	4	5
90.4 California	37.9 Texas	26.8 Missouri	24.6 New York	21.6 Nevada

Top State Importers of Goods from Estonia ($millions)

1	2	3	4	5
666.2 Texas	68.0 Kentucky	63.8 Massachu-setts	60.0 South Carolina	50.7 Ohio

Trade in Services

$156 m

U.S. Services Exports to Estonia, 2022

$145 m

U.S. Services Imports from Estonia, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Finland and the United States

Jobs

United States in Finland	Finland in the United States
22,018	34,884

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$4.4 bn

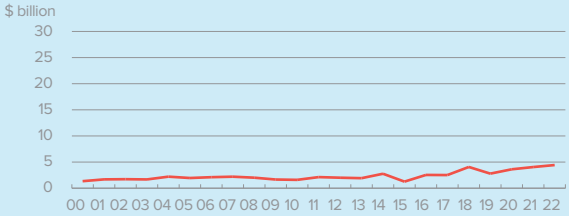
Foreign Direct Investment (FDI), 2022

$9.9 bn

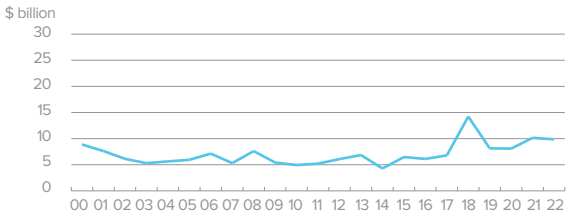
Foreign Direct Investment (FDI), 2022

The direct investment balance favors the United States, with Finnish investment in the U.S. remaining at around $10 billion. Total employment by Finnish companies in the U.S. have also risen substantially over the past few years from 23,000 in 2015 to over 34,000 in 2022. Finnish direct investment in the U.S. is heavily concentrated in the wholesale trade and manufacturing industries, representing 21% and 61% of total FDI, respectively. Finnish affiliates in the U.S. added an estimated $6.1 billion in value in 2022, while U.S. affiliates in Finland added about $3.8 billion in value. Total sales of Finnish affiliates in the U.S. nearly doubled that of U.S. affiliates in Finland.

U.S. FDI Position in Finland



Finland FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.

Trade in Goods

$2.6 bn

U.S. Goods Exports to Finland, 2022

3.2% The U.S. supplied 3.2% of Finland's total imports...

9.3% ...but the U.S. share increases to 9.3% when intra-EU trade is excluded from the total.

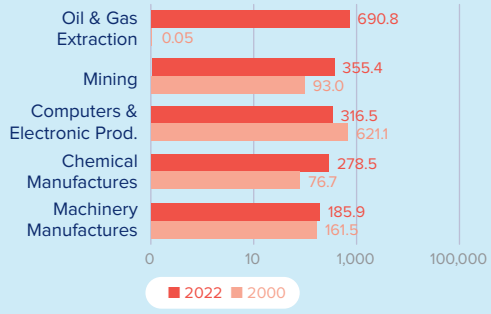
$8.7 bn

U.S. Goods Imports from Finland, 2022

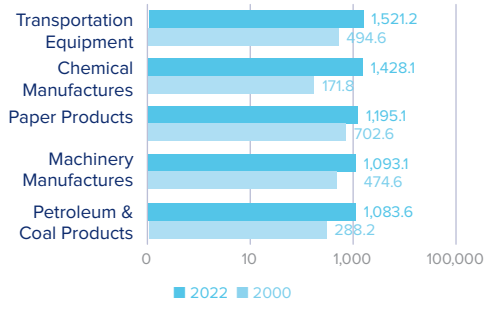
9.5% The U.S. received 9.5% of the total goods Finland exported to the world...

21.7% ...but the U.S. share increases to 21.7% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Finland ($millions)



Top Five U.S. Goods Imports from Finland ($millions)



Top State Exporters of Goods to Finland ($millions)

1	2	3	4	5
831.4	126.2	120.9	115.3	113.2
Texas	California	Pennsylvania	Wisconsin	Georgia

Top State Importers of Goods from Finland ($millions)

1	2	3	4	5
1,201.2	898.0	782.1	781.4	663.4
Pennsylvania	Maryland	New Jersey	Illinois	Georgia

Trade in Services

$1.7 bn

U.S. Services Exports to Finland, 2022

$1.7 bn

U.S. Services Imports from Finland, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

France and the United States

Jobs

United States in France	France in the United States
490,557	756,024

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$112.0 bn

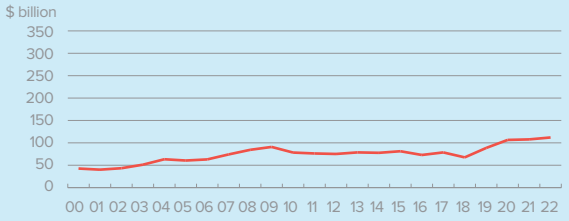
Foreign Direct Investment (FDI), 2022

$297.6 bn

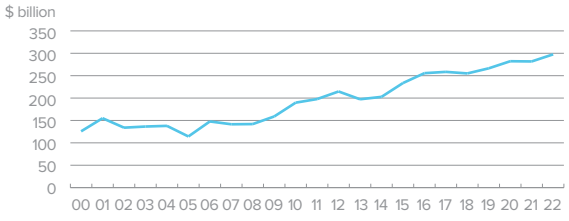
Foreign Direct Investment (FDI), 2022

U.S. investment in France was just over a third of the total value of French investment in the U.S. in 2022. The U.S. is a significant market for French firms, with U.S. affiliates of French firms recording an estimated $344 billion in sales during 2022. The manufacturing sector makes up about 52% of French FDI in the U.S. followed by financial institutions & wholesale trade. In terms of jobs, U.S. and French affiliates combined employed an estimated 1.2 million workers in 2022. French affiliates in the U.S. added an estimated $96 billion in value in 2022, compared to $58 billion in value added by U.S. affiliates in France.

U.S. FDI Position in France



France FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.

Trade in Goods

$46.0 bn

U.S. Goods Exports to France, 2022

6.9% The U.S. supplied 6.9% of France's total imports...

18.0% ...but the U.S. share increases to 18.0% when intra-EU trade is excluded from the total.

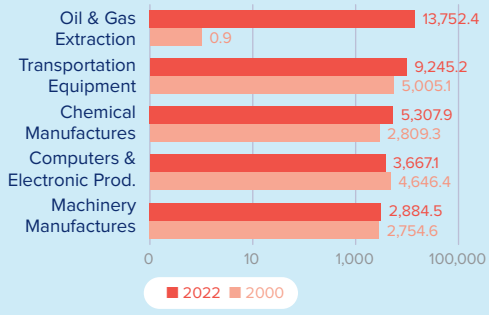
$57.3 bn

U.S. Goods Imports from France, 2022

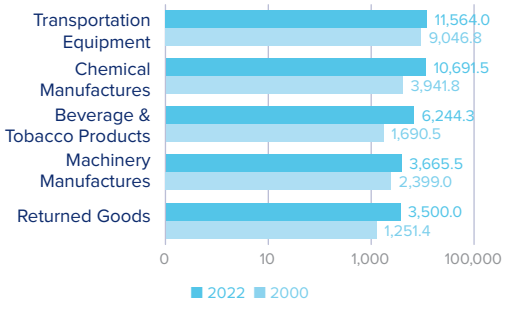
8.1% The U.S. received 8.1% of the total goods France exported to the world...

18.6% ...but the U.S. share increases to 18.6% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to France ($millions)



Top Five U.S. Goods Imports from France ($millions)



Top State Exporters of Goods to France ($millions)

1	2	3	4	5
11,469.7	5,156.0	2,733.5	2,526.7	2,389.0
Texas	Louisiana	New York	California	Kentucky

Top State Importers of Goods from France ($millions)

1	2	3	4	5
9,475.2	5,957.7	4,530.0	4,370.1	4,098.5
New York	New Jersey	Florida	California	Texas

Trade in Services

$22.4 bn

U.S. Services Exports to France, 2022

$26.7 bn

U.S. Services Imports from France, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Germany and the United States

Jobs

United States in Germany	Germany in the United States
651,046	942,072

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$190.2 bn

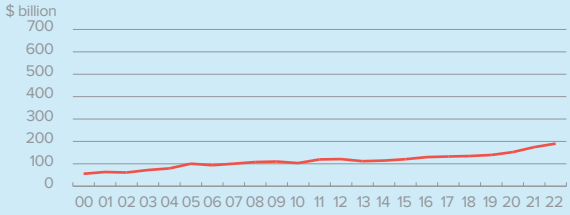
Foreign Direct Investment (FDI), 2022

$431.4 bn

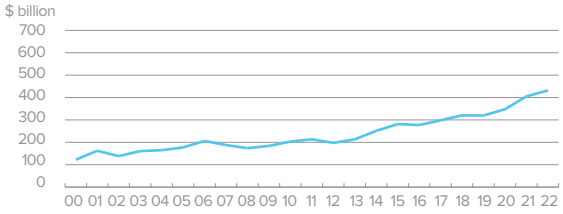
Foreign Direct Investment (FDI), 2022

Germany's investment in the U.S. is more than 2.2 times the size of U.S. investment in Germany. Wholesale trade, finance and insurance, and transportation equipment manufacturing are the largest industries when it comes to German stock of FDI in the U.S. The value added by German affiliates in the United States ($141 billion) was higher than that of U.S. affiliates operating in Germany ($92 billion), according to 2022 estimates. German affiliates in the U.S. also employed more workers than U.S. firms in Germany. Total sales of German affiliates in the U.S. exceeded that of U.S. affiliates in Germany at $665 billion versus $405 billion, respectively.

U.S. FDI Position in Germany



Germany FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.

Trade in Goods

$72.6 bn

U.S. Goods Exports to Germany, 2022

4.7% The U.S. supplied 4.7% of Germany's total imports...

11.9% ...but the U.S. share increases to 11.9% when intra-EU trade is excluded from the total.

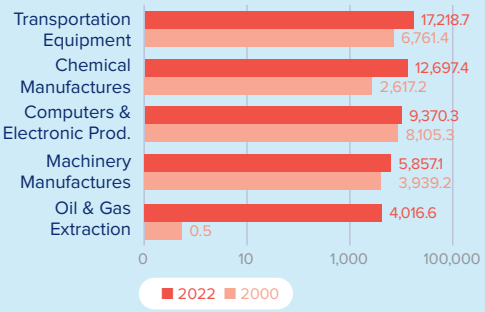
$146.6 bn

U.S. Goods Imports from Germany, 2022

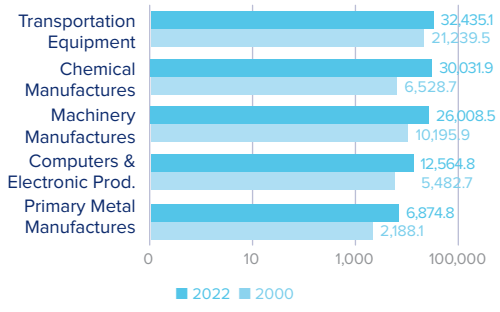
9.9% The U.S. received 9.9% of the total goods Germany exported to the world...

22.0% ...but the U.S. share increases to 22.0% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Germany ($millions)



Top Five U.S. Goods Imports from Germany ($millions)



Top State Exporters of Goods to Germany ($millions)

1	2	3	4	5
8,251.6 Texas	6,250.8 California	4,417.4 South Carolina	4,342.0 Alabama	4,282.9 Illinois

Top State Importers of Goods from Germany ($millions)

1	2	3	4	5
14,207.5 California	12,634.0 Illinois	11,179.0 Georgia	9,095.9 Texas	7,766.2 South Carolina

Trade in Services

$40.9 bn

U.S. Services Exports to Germany, 2022

$43.0 bn

U.S. Services Imports from Germany, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Greece and the United States

Jobs

United States in Greece	Greece in the United States
18,786	3,774

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

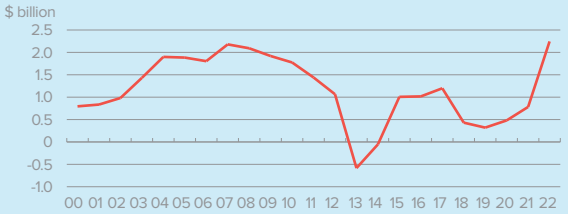
Investment

$2.2 bn

Foreign Direct Investment (FDI), 2022

Greece's investment ties with the U.S. have recently rebounded, with America's foreign direct investment position in Greece reaching $2.2 billion in 2022 from just over $300 million in 2019. Meanwhile, Greece's FDI position in the U.S. has remained relatively flat over the past few years. Estimated U.S. affiliate sales in Greece of $7.2 billion were more than three times greater than sales of Greek affiliates in the U.S. ($2.1 billion) Similarly, U.S. affiliates in Greece added an estimated $2.7 billion in value in 2022, compared to $594 million in value added by Greek affiliates in the U.S.

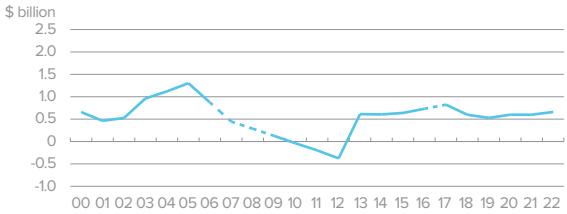
U.S. FDI Position in Greece



$660 m

Foreign Direct Investment (FDI), 2022

Greece FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.
Note: Dotted line indicates that data has been suppressed for a particular year to avoid disclosure of individual company data.
Negative FDI positions can occur when the loans from the affiliate to the parent company exceed the equity and debt investments from the parent to the affiliate, or if a foreign affiliate incurs sufficiently large losses.

Trade in Goods

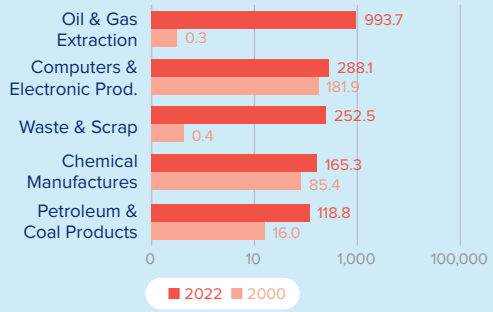
$2.4 bn

U.S. Goods Exports to Greece, 2022

3.7% The U.S. supplied 3.7% of Greece's total imports...

6.5% ...but the U.S. share increases to 6.5% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Greece ($millions)



Top State Exporters of Goods to Greece ($millions)

1	2	3	4	5
730.3 Louisiana	458.6 Texas	168.8 Pennsylvania	112.4 California	94.7 Maryland

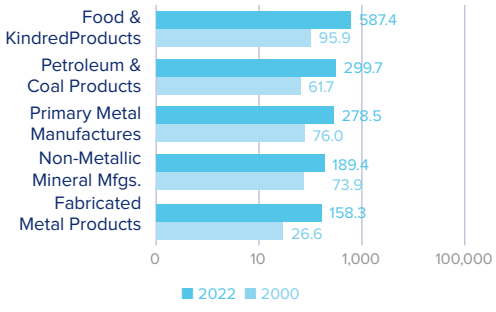
$2.3 bn

U.S. Goods Imports from Greece, 2022

4.1% The U.S. received 4.1% of the total goods Greece exported to the world...

9.1% ...but the U.S. share increases to 9.1% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Imports from Greece ($millions)



Top State Importers of Goods from Greece ($millions)

1	2	3	4	5
309.5 New Jersey	257.6 Texas	234.0 New York	202.3 California	130.2 North Carolina

Trade in Services

$1.6 bn

U.S. Services Exports to Greece, 2022

$5.2 bn

U.S. Services Imports from Greece, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Hungary and the United States

Jobs

United States in Hungary	Hungary in the United States
58,782	204

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$14.4 bn

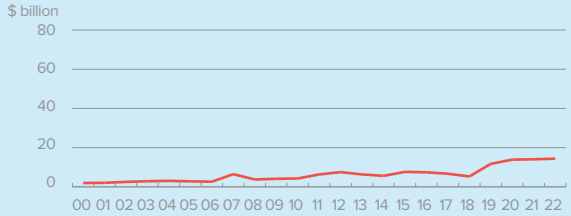
Foreign Direct Investment (FDI), 2022

$48.6 bn

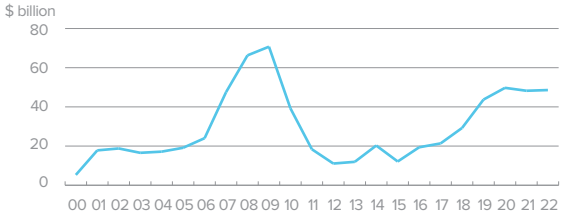
Foreign Direct Investment (FDI), 2022

America's investment base in Hungary has risen slightly over the past couple of years. Value added by U.S.-owned affiliates reached $4.0 billion in 2022, according to estimates. Meanwhile, Hungarian investment in the U.S. remained around $49 billion in 2022, though total investment remains below its peak of $70.7 billion in 2009. U.S. affiliates in Hungary generated an approximate $17 billion sales in 2022.

U.S. FDI Position in Hungary



Hungary FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.

Trade in Goods

$2.9 bn

U.S. Goods Exports to Hungary, 2022

1.2% The U.S. supplied 1.2% of Hungary's total imports...

3.9% ...but the U.S. share increases to 3.9% when intra-EU trade is excluded from the total.

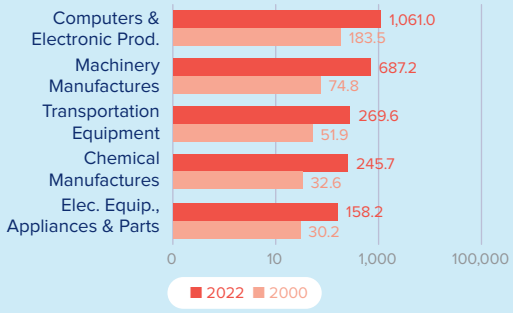
$7.7 bn

U.S. Goods Imports from Hungary, 2022

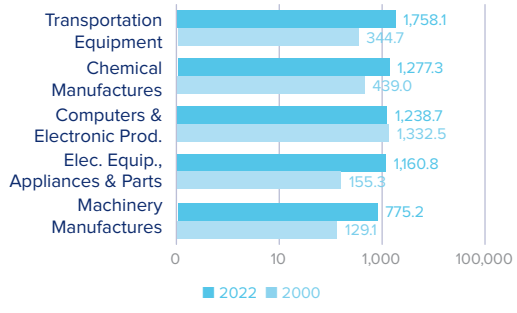
2.9% The U.S. received 2.9% of the total goods Hungary exported to the world...

13.5% ...but the U.S. share increases to 13.5% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Hungary ($millions)



Top Five U.S. Goods Imports from Hungary ($millions)



Top State Exporters of Goods to Hungary ($millions)

1	2	3	4	5
729.2 Texas	206.5 Nevada	183.7 Indiana	178.7 California	158.8 Ohio

Top State Importers of Goods from Hungary ($millions)

1	2	3	4	5
1,013.7 Illinois	724.7 Michigan	663.4 California	602.8 Texas	476.3 South Carolina

Trade in Services

$1.0 bn

U.S. Services Exports to Hungary, 2022

$0.7 bn

U.S. Services Imports from Hungary, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Ireland and the United States

Jobs

United States in Ireland	Ireland in the United States
161,398	360,570

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$574.3 bn

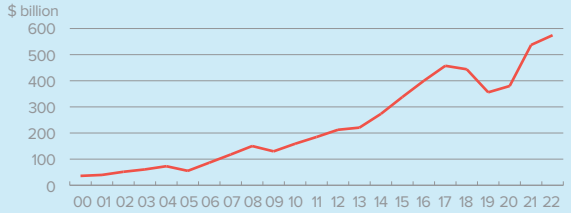
Foreign Direct Investment (FDI), 2022

$295.0 bn

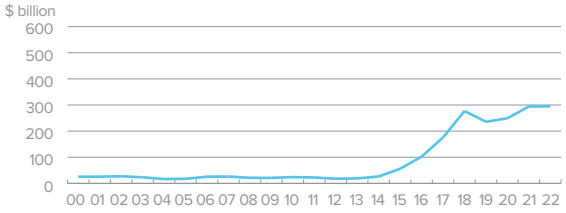
Foreign Direct Investment (FDI), 2022

U.S. investment in Ireland totaled some $574 billion in 2022 versus $295 billion of Irish investment in the U.S. Total U.S. FDI in Ireland rose again in 2022. Value added by U.S. affiliates in Ireland totaled an estimated $135 billion in 2022, which is more than double the value added of Irish affiliates operating in the U.S. By contrast, affiliate employment favored the United States, with Ireland's affiliates employing over 190,000 more workers than U.S. affiliates employed in Ireland. Total sales of U.S. foreign affiliates in Ireland were an estimated $529 billion in 2022, far exceeding $169 billion in total sales of Irish affiliates in the U.S.

U.S. FDI Position in Ireland



Ireland FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2020.

Trade in Goods

$16.0 bn

U.S. Goods Exports to Ireland, 2022

14.9% The U.S. supplied 14.9% of Ireland's total imports...

22.7% ...but the U.S. share increases to 22.7% when intra-EU trade is excluded from the total.

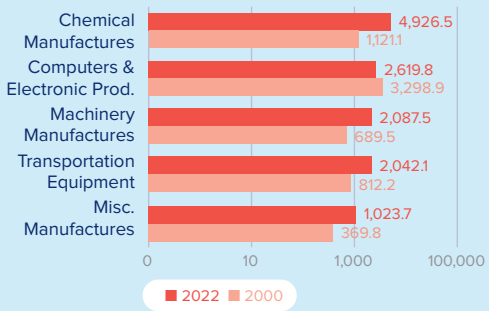
$82.6 bn

U.S. Goods Imports from Ireland, 2022

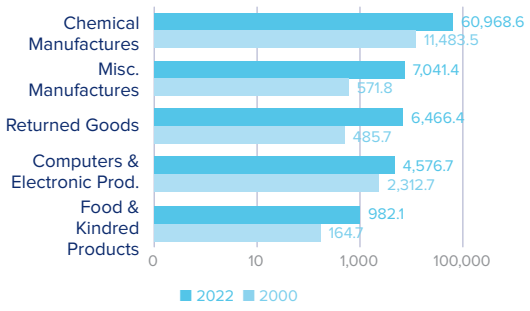
29.5% The U.S. received 29.5% of the total goods Ireland exported to the world...

48.6% ...but the U.S. share increases to 48.6% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Ireland ($millions)



Top Five U.S. Goods Imports from Ireland ($millions)



Top State Exporters of Goods to Ireland ($millions)

1	2	3	4	5
2,134.8	1,707.3	1,591.5	1,417.3	1,030.3
Oregon	California	Washington	Texas	Illinois

Top State Importers of Goods from Ireland ($millions)

1	2	3	4	5
18,099.8	9,609.3	5,550.9	4,869.5	3,224.4
Indiana	Tennessee	Florida	Kentucky	Texas

Trade in Services

$84.3 bn

U.S. Services Exports to Ireland, 2022

$22.4 bn

U.S. Services Imports from Ireland, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis

Italy and the United States

Jobs

United States in Italy	Italy in the United States
238,663	101,796

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$26.1 bn

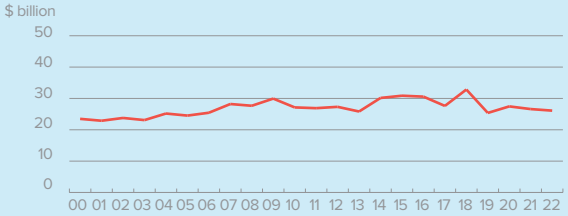
Foreign Direct Investment (FDI), 2022

$39.8 bn

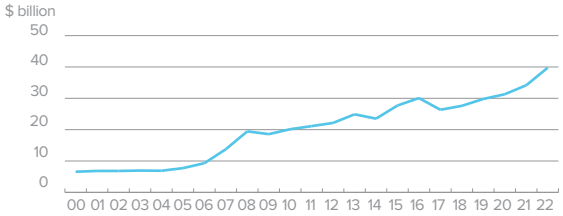
Foreign Direct Investment (FDI), 2022

America's FDI position has been relatively flat over the past 20 years, while Italian investment in the U.S. has risen steadily, over six times its level in 2000. In 2022, Italy benefited more with regards to affiliate sales, value added and employment. For example, value added by U.S. affiliates in Italy was nearly three times the value added of Italian companies in the U.S. Also, affiliates of U.S.-owned companies supported almost 140,000 more jobs in Italy than Italian multinationals supported in the U.S., according to 2022 estimates. Total sales also favored Italy, with U.S. affiliates in Itay at an estimated $128 billion in 2022.

U.S. FDI Position in Italy



Italy FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.

Trade in Goods

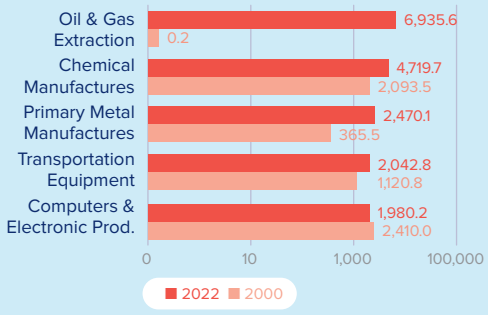
$27.7 bn

U.S. Goods Exports to Italy, 2022

3.8% The U.S. supplied 3.8% of Italy's total imports...

7.8% ...but the U.S. share increases to 7.8% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Italy ($millions)



Top State Exporters of Goods to Italy ($millions)

1	2	3	4	5
7,793.9	2,300.6	1,596.5	1,427.4	1,119.8
Texas	New Jersey	California	Louisiana	New York

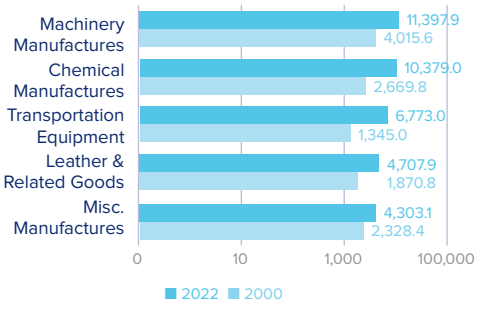
$69.1 bn

U.S. Goods Imports from Italy, 2022

10.6% The U.S. received 10.6% of the total goods Italy exported to the world...

22.6% ...but the U.S. share increases to 22.6% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Imports from Italy ($millions)



Top State Importers of Goods from Italy ($millions)

1	2	3	4	5
10,918.6	8,099.8	4,943.2	4,870.3	3,540.8
New Jersey	New York	California	Texas	Illinois

Trade in Services

$9.3 bn

U.S. Services Exports to Italy, 2022

$10.8 bn

U.S. Services Imports from Italy, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Latvia and the United States

Jobs

United States in Latvia	Latvia in the United States
1,818	< 50

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$107 m

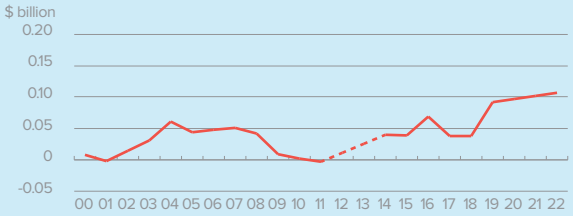
Foreign Direct Investment (FDI), 2022

$0 m

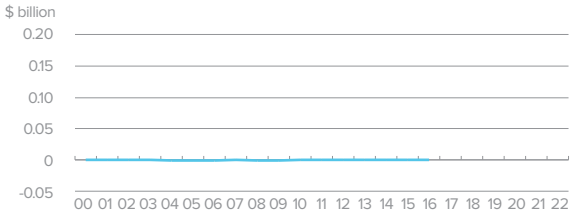
Foreign Direct Investment (FDI), 2016*

The small country of less than two million people has yet to attract significant foreign direct investment from the United States. U.S. FDI in Latvia has risen slightly since 2016, along with U.S. affiliate employment, which is the second lowest in the EU, ahead of Malta. Foreign sales by U.S. firms in Latvia were an estimated $473 million in 2022. By contrast, sales by Latvian firms in the U.S. were just $4 million. U.S. affiliates in Latvia added an estimated $200 million in value in 2022.

U.S. FDI Position in Latvia



Latvia FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.
Note: Dotted line indicates that data has been suppressed for a particular year to avoid disclosure of individual company data.
*Latest year of available data. Negative FDI positions can occur when the loans from the affiliate to the parent company exceed the equity and debt investments from the parent to the affiliate, or if a foreign affiliate incurs sufficiently large losses.

Trade in Goods

$418 m

U.S. Goods Exports to Latvia, 2022

0.9% The U.S. supplied 0.9% of Latvia's total imports...

4.2% ...but the U.S. share increases to 4.2% when intra-EU trade is excluded from the total.

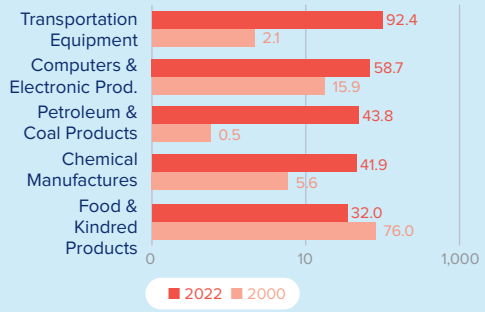
$748 m

U.S. Goods Imports from Latvia, 2022

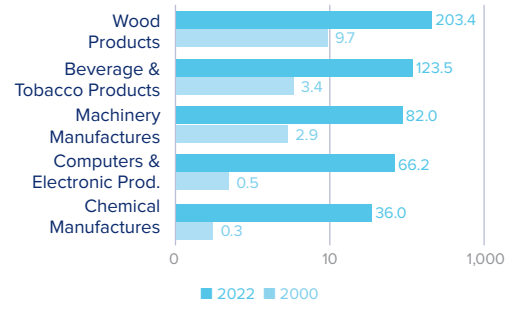
2.7% The U.S. received 2.7% of the total goods Latvia exported to the world...

7.9% ...but the U.S. share increases to 7.9% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Latvia ($millions)



Top Five U.S. Goods Imports from Latvia ($millions)



Top State Exporters of Goods to Latvia ($millions)

1	2	3	4	5
63.2	51.9	46.9	44.8	24.5
Louisiana	Texas	California	New York	Tennessee

Top State Importers of Goods from Latvia ($millions)

1	2	3	4	5
89.5	68.2	62.7	62.6	56.0
Alabama	Texas	Florida	Maryland	California

Trade in Services

$161 m

U.S. Services Exports to Latvia, 2022

$98 m

U.S. Services Imports from Latvia, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Lithuania and the United States

Jobs

United States in Lithuania	Lithuania in the United States
4,848	0

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$242 m

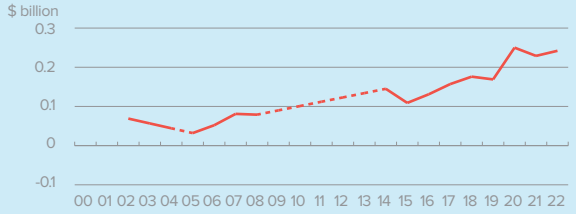
Foreign Direct Investment (FDI), 2022

$15 m

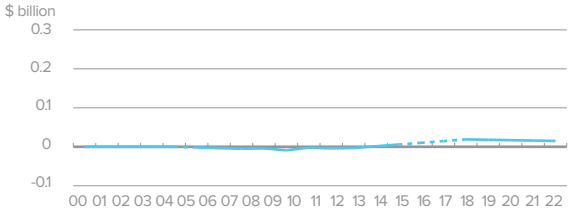
Foreign Direct Investment (FDI), 2021*

The U.S. FDI position in Lithuania remains small, but has more than doubled since the start of the century. U.S. affiliate employment in Lithuania has also been rising, with jobs increasing from 2,200 in 2016 to an estimated 4,800 in 2022. U.S. foreign affiliate sales in Lithuania amounted to $750 million in 2022, with real value added by U.S. affiliates coming in at around $450 million, according to estimates. *Latest year of available data.

U.S. FDI Position in Lithuania



Lithuania FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.
Note: Dotted line indicates that data has been suppressed for a particular year to avoid disclosure of individual company data.
*Latest year of available data. Negative FDI positions can occur when the loans from the affiliate to the parent company exceed the equity and debt investments from the parent to the affiliate, or if a foreign affiliate incurs sufficiently large losses.

Trade in Goods

$2.6 bn

U.S. Goods Exports to Lithuania, 2022

7.5% The U.S. supplied 7.5% of Lithuania's total imports...

20.4% ...but the U.S. share increases to 20.4% when intra-EU trade is excluded from the total.

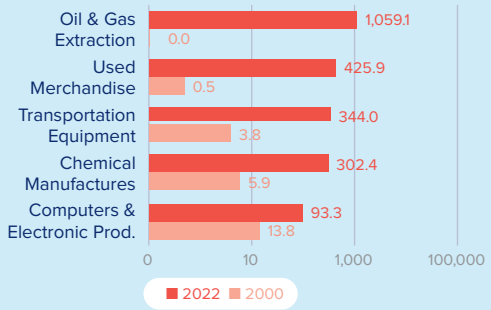
$2.6 bn

U.S. Goods Imports from Lithuania, 2022

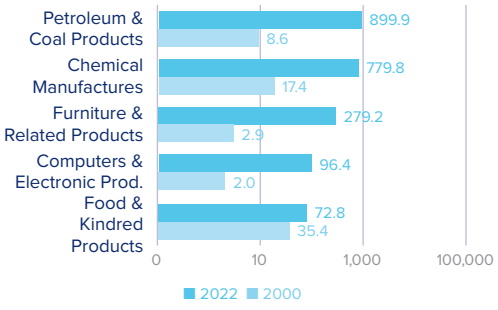
5.3% The U.S. received 5.3% of the total goods Lithuania exported to the world...

14.2% ...but the U.S. share increases to 14.2% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Lithuania ($millions)



Top Five U.S. Goods Imports from Lithuania ($millions)



Top State Exporters of Goods to Lithuania ($millions)

1	2	3	4	5
569.2 Texas	527.8 Louisiana	220.6 California	166.9 New Jersey	154.4 Georgia

Top State Importers of Goods from Lithuania ($millions)

1	2	3	4	5
293.8 Maryland	238.0 New Jersey	236.2 California	222.4 Texas	169.1 Massachu-setts

Trade in Services

$269 m

U.S. Services Exports to Lithuania, 2022

$184 m

U.S. Services Imports from Lithuania, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis; United Nations.

Luxembourg and the United States

Jobs

United States in Luxembourg	Luxembourg in the United States
28,987	45,288

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$605.3 bn

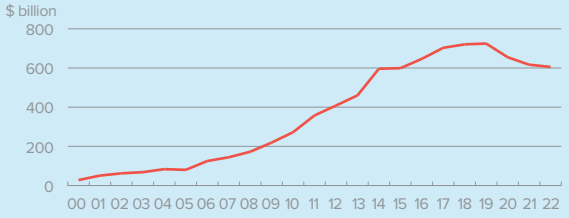
Foreign Direct Investment (FDI), 2022

$323.7 bn

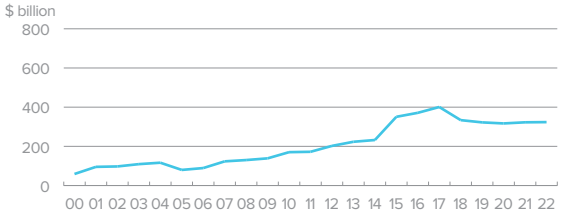
Foreign Direct Investment (FDI), 2022

Investment between the U.S. and Luxembourg is skewed in favor of Luxembourg. Estimated U.S. foreign affiliate sales in Luxembourg were about five times greater than sales of Luxembourg affiliates in the U.S. Foreign direct investment and employment by Luxembourg firms in the U.S. have somewhat fluctuated over the past decade. In 2010, employment reached a peak of 38,300 workers, then fell to as low as 5,200 workers in 2016, and has since recovered to an estimated 44,400 workers in 2022. U.S. affiliates in Luxembourg generated around $6.6 billion in value in 2022 compared to $4.5 billion in value added by affiliates from Luxembourg in the U.S.

U.S. FDI Position in Luxembourg



Luxembourg FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2021.

Trade in Goods

$1.7 bn

U.S. Goods Exports to Luxembourg, 2022

2.6% The U.S. supplied 2.6% of Luxembourg's total imports...

25.8% ...but the U.S. share increases to 25.8% when intra-EU trade is excluded from the total.

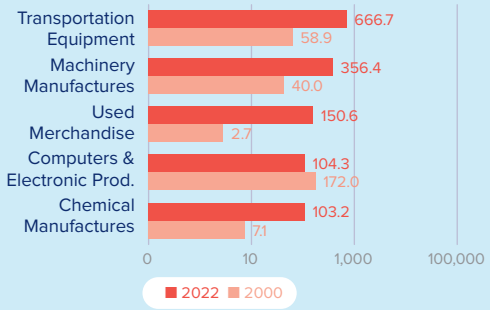
$0.7 bn

U.S. Goods Imports from Luxembourg, 2022

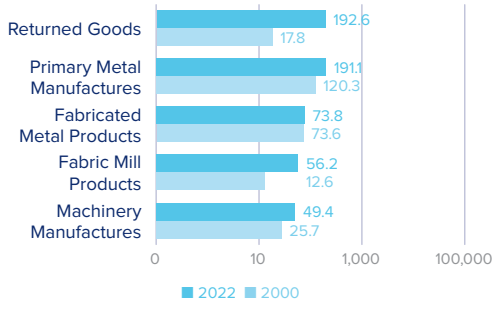
3.1% The U.S. received 3.1% of the total goods Luxembourg exported to the world...

16.0% ...but the U.S. share increases to 16.0% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Luxembourg ($millions)



Top Five U.S. Goods Imports from Luxembourg ($millions)



Top State Exporters of Goods to Luxembourg ($millions)

1	2	3	4	5
429.9 California	189.0 Georgia	152.8 Texas	138.8 Virginia	111.0 New York

Top State Importers of Goods from Luxembourg ($millions)

1	2	3	4	5
167.8 Texas	76.0 Virginia	65.1 South Carolina	57.1 New York	48.7 New Jersey

Trade in Services

$9.8 bn

U.S. Services Exports to Luxembourg, 2022

$2.5 bn

U.S. Services Imports from Luxembourg, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Malta and the United States

Jobs

United States in Malta	Malta in the United States
1,717	1,632

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$5.9 bn

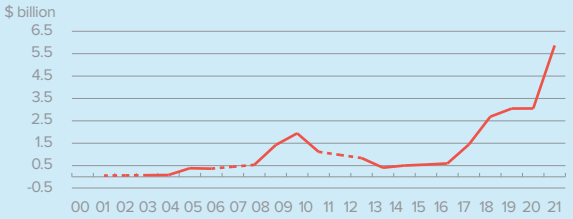
Foreign Direct Investment (FDI), 2022

$2.9 bn

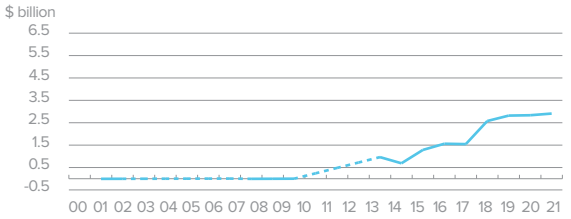
Foreign Direct Investment (FDI), 2022

Despite the country's tiny population, hovering around 525,000 people, Malta has attracted a relatively large amount of foreign direct investment from the U.S. The investment position of the U.S. in Malta amounted to $5.9 billion in 2022. In addition, American investment directly supported jobs for roughly 1,700 workers in Malta, according to 2022 estimates. Meanwhile, Malta's direct investment position in the U.S. neared $3 billion in 2022. U.S. affiliates in Malta added approximately $113 million in value and generated an estimated $1.1 billion sales in 2022.

U.S. FDI Position in Malta



Malta FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.
Note: Dotted line indicates that data has been suppressed for a particular year to avoid disclosure of individual company data.

Trade in Goods

$268 m

U.S. Goods Exports to Malta, 2022

2.5% The U.S. supplied 2.5% of Malta's total imports...

5.9% ...but the U.S. share increases to 5.9% when intra-EU trade is excluded from the total.

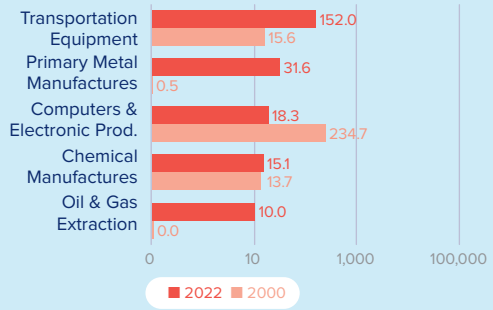
$259 m

U.S. Goods Imports from Malta, 2022

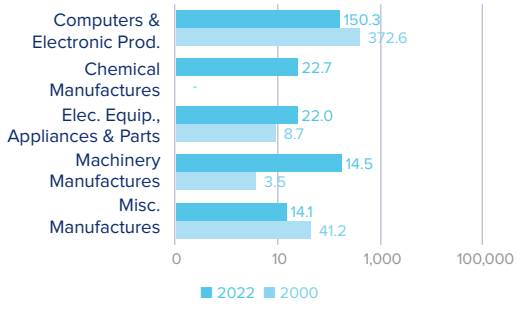
4.6% The U.S. received 4.6% of the total goods Malta exported to the world...

8.5% ...but the U.S. share increases to 8.5% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Malta ($millions)



Top Five U.S. Goods Imports from Malta ($millions)



Top State Exporters of Goods to Malta ($millions)

1	2	3	4	5
70.0	47.4	38.7	36.7	11.8
Florida	Ohio	California	Louisiana	Georgia

Top State Importers of Goods from Malta ($millions)

1	2	3	4	5
88.4	39.9	29.8	9.8	9.0
Illinois	California	Michigan	Texas	Arizona

Trade in Services

$0.5 bn

U.S. Services Exports to Malta, 2022

$0.8 bn

U.S. Services Imports from Malta, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Netherlands and the United States

Jobs

United States in Netherlands	Netherlands in the United States
234,623	615,162

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$944.6 bn

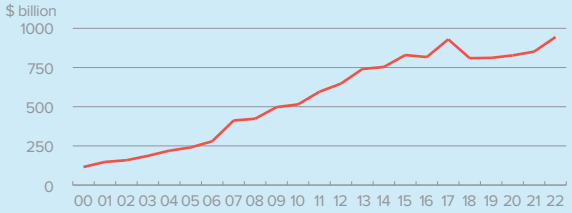
Foreign Direct Investment (FDI), 2022

$617.1 bn

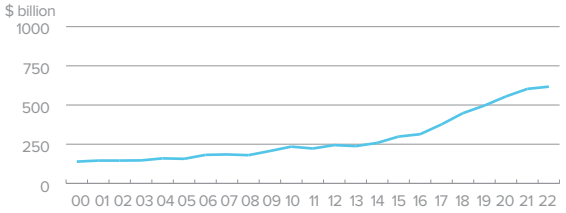
Foreign Direct Investment (FDI), 2022

America's investment stake in the Netherlands is more than 50% higher than the amount of Dutch investment in the U.S. Still, the U.S. is a prime foreign destination for Dutch firms, which recorded an estimated $444 billion in affiliate sales in the U.S. during 2022, according to estimates. The employment balance clearly favors the U.S. with over 600,000 jobs supported by Dutch firms in the U.S. Also favoring the U.S. was $78.5 billion in value added by Dutch affiliates in the U.S. versus $55.3 billion added by U.S. affiliates in the Netherlands.

U.S. FDI Position in Netherlands



Netherlands FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.

Trade in Goods

$73.2 bn

U.S. Goods Exports to Netherlands, 2022

8.0% The U.S. supplied 8.0% of Netherlands's total imports...

13.1% ...but the U.S. share increases to 13.1% when intra-EU trade is excluded from the total.

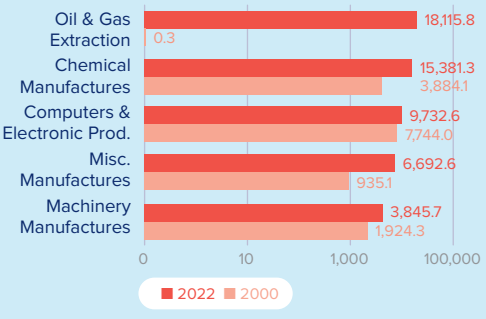
$34.5 bn

U.S. Goods Imports from Netherlands, 2022

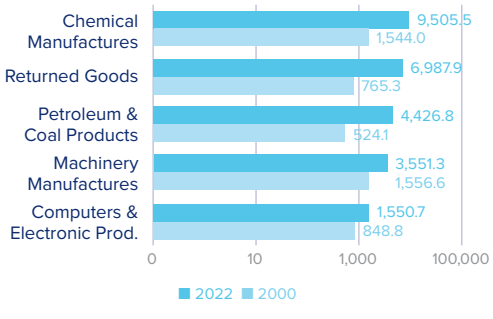
4.2% The U.S. received 4.2% of the total goods Netherlands exported to the world...

14.6% ...but the U.S. share increases to 14.6% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Netherlands ($millions)



Top Five U.S. Goods Imports from Netherlands ($millions)



Top State Exporters of Goods to Netherlands ($millions)

1	2	3	4	5
19,639.0	7,327.9	6,518.1	3,256.9	2,063.9
Texas	Louisiana	California	Pennsylvania	Illinois

Top State Importers of Goods from Netherlands ($millions)

1	2	3	4	5
6,379.1	2,843.4	2,769.7	2,648.9	2,423.8
Illinois	North Carolina	Kentucky	New Jersey	Texas

Trade in Services

$27.8 bn

U.S. Services Exports to Netherlands, 2022

$14.6 bn

U.S. Services Imports from Netherlands, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Norway and the United States

Jobs

United States in Norway	Norway in the United States
37,774	7,344

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$13.5 bn

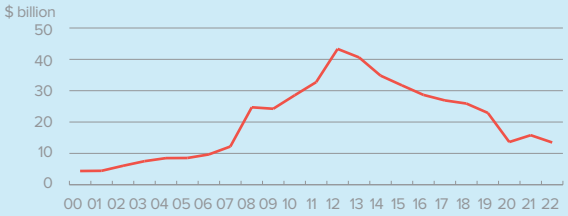
Foreign Direct Investment (FDI), 2022

$36.9 bn

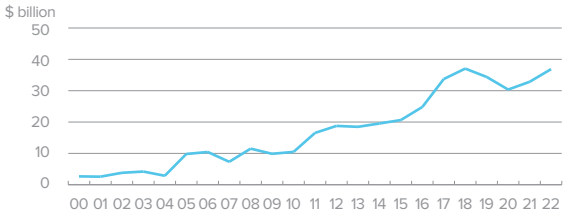
Foreign Direct Investment (FDI), 2022

Norway's FDI position in the U.S. was nearly three times the U.S. investment position in Norway in 2022. The employment balance, however, is heavily skewed in favor of Norway, with U.S. foreign affiliates employing roughly 38,000 Norwegian workers, according to 2022 estimates. Norwegian companies employed just over 7,000 workers in the U.S. Foreign U.S. affiliates in Norway added an estimated $12.8 in value in 2022, compared to $4.9 billion in value added by Norwegian affiliates in the U.S. Foreign sales of U.S. affiliates in Norway were an estimated $32.1 billion in 2022 versus $25.3 billion in sales by Norwegian affiliates in the U.S.

U.S. FDI Position in Norway



Norway FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.

Trade in Goods

$4.7 bn

U.S. Goods Exports to Norway, 2022

6.3% The U.S. supplied 6.3% of Norway's total imports...

14.1% ...but the U.S. share increases to 14.1% when trade with the EU and U.K. is excluded from the total.

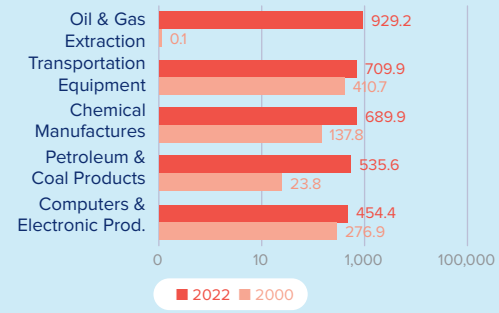
$6.7 bn

U.S. Goods Imports from Norway, 2022

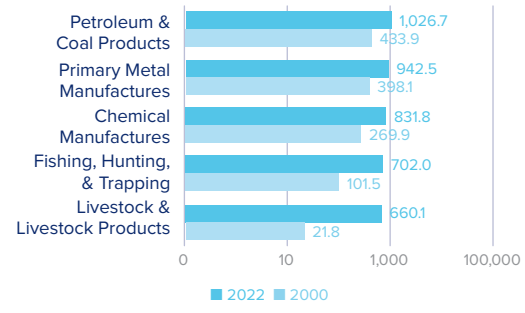
1.9% The U.S. received 1.9% of the total goods Norway exported to the world...

5.8% ...but the U.S. share increases to 5.8% when trade with the EU and U.K. is excluded from the total.

Top Five U.S. Goods Exports to Norway ($millions)



Top Five U.S. Goods Imports from Norway ($millions)



Top State Exporters of Goods to Norway ($millions)

1	2	3	4	5
1,732.4	511.1	280.6	260.9	232.5
Texas	Louisiana	Washington	Pennsylvania	Connecticut

Top State Importers of Goods from Norway ($millions)

1	2	3	4	5
1,154.1	589.6	586.6	551.7	398.6
New Jersey	California	Maryland	Massachu-setts	Florida

Trade in Services

$2.5 bn

U.S. Services Exports to Norway, 2022

$4.1 bn

U.S. Services Imports from Norway, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Poland and the United States

Jobs

United States in Poland	Poland in the United States
221,796	1,224

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$12.0 bn

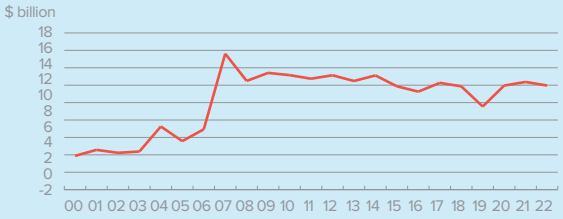
Foreign Direct Investment (FDI), 2022

$456 m

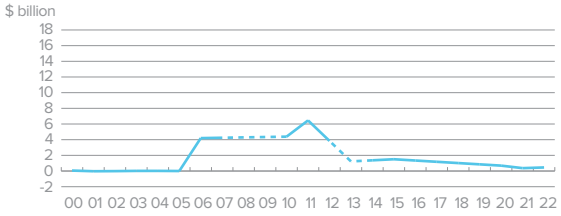
Foreign Direct Investment (FDI), 2022

As one of the largest markets in central Europe, Poland has attracted significant sums of U.S. foreign direct investment. The estimated U.S. affiliate workforce of roughly 220,000 workers in Poland ranks number one among EU13 countries by a wide margin. Meanwhile, Polish companies have yet to make significant investments in the U.S., with 1,200 jobs supported by Polish firms in the U.S., and just over $450 billion in investment in 2022. U.S. affiliates added an estimated $50.4 billion in foreign sales and $13.3 billion in value added in 2022.

U.S. FDI Position in Poland



Poland FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022..
Note: Dotted line indicates that data has been suppressed for a particular year to avoid disclosure of individual company data.
*Latest year of available data.

Trade in Goods

$11.4 bn

U.S. Goods Exports to Poland, 2022

3.2% The U.S. supplied 3.2% of Poland's total imports...

9.0% ...but the U.S. share increases to 9.0% when intra-EU trade is excluded from the total.

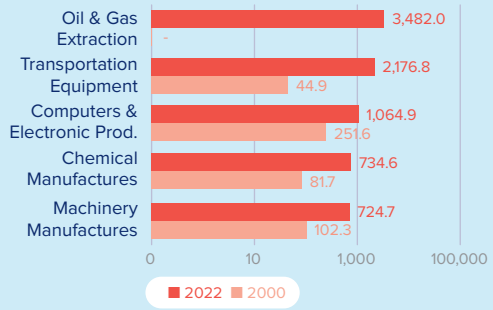
$6.7 bn

U.S. Goods Imports from Poland, 2022

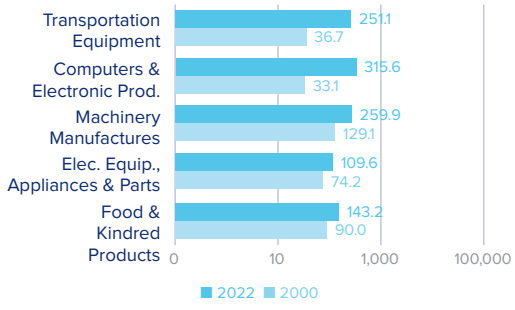
3.0% The U.S. received 3.0% of the total goods Poland exported to the world...

12.5% ...but the U.S. share increases to 12.5% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Poland ($millions)



Top Five U.S. Goods Imports from Poland ($millions)



Top State Exporters of Goods to Poland ($millions)

1	2	3	4	5
2,291.9 Louisiana	2,182.0 Texas	858.6 Georgia	492.1 Virginia	406.9 California

Top State Importers of Goods from Poland ($millions)

1	2	3	4	5
1,291.4 New Jersey	913.9 Illinois	720.3 Texas	716.0 New Hampshire	685.3 South Carolina

Trade in Services

$2.8 bn

U.S. Services Exports to Poland, 2022

$3.2 bn

U.S. Services Imports from Poland, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Portugal and the United States

Jobs

United States in Portugal	Portugal in the United States
34,340	918

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$3.8 bn

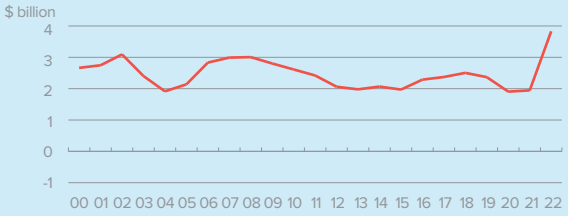
Foreign Direct Investment (FDI), 2022

$899 m

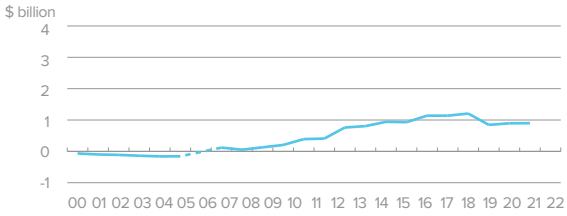
Foreign Direct Investment (FDI), 2022

U.S. direct investment in Portugal was more than four times Portugal's FDI in the U.S. in 2022. U.S. affiliates employed an estimated 34,000 Portuguese workers in 2022 compared to Portuguese affiliate employment of 900 Americans. U.S. foreign affiliates in Portugal contributed $10.8 billion in sales according to 2022 estimates. Value added by U.S. affilaites in Portugal was an estimated $4.2 billion compared to roughly $640 million added by Portugese affiliates in the U.S.

U.S. FDI Position in Portugal



Portugal FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.
Note: Dotted line indicates that data has been suppressed for a particular year to avoid disclosure of individual company data.

Trade in Goods

$2.9 bn

U.S. Goods Exports to Portugal, 2022

3.2% The U.S. supplied 3.2% of Portugal's total imports...

10.6% ...but the U.S. share increases to 10.6% when intra-EU trade is excluded from the total.

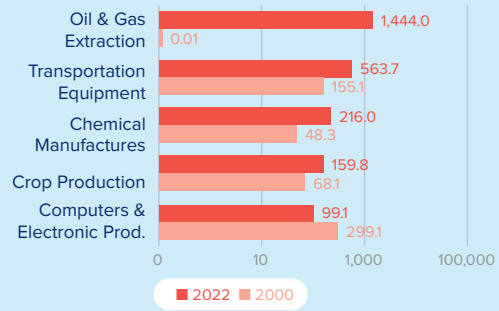
$6.2 bn

U.S. Goods Imports from Portugal, 2022

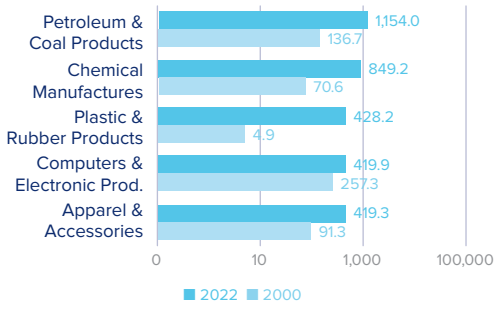
6.6% The U.S. received 6.6% of the total goods Portugal exported to the world...

23.4% ...but the U.S. share increases to 23.4% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Portugal ($millions)



Top Five U.S. Goods Imports from Portugal ($millions)



Top State Exporters of Goods to Portugal ($millions)

1	2	3	4	5
1,144.1	344.0	254.3	161.9	123.1
Texas	Louisiana	Pennsylvania	California	Indiana

Top State Importers of Goods from Portugal ($millions)

1	2	3	4	5
1,456.6	485.3	430.6	397.3	388.7
New Jersey	California	South Carolina	Texas	New York

Trade in Services

$1.4 bn

U.S. Services Exports to Portugal, 2022

$2.0 bn

U.S. Services Imports from Portugal, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Romania and the United States

Jobs

United States in Romania	Romania in the United States
79,689	< 50

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$2.9 bn

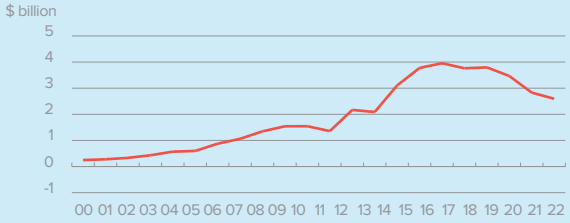
Foreign Direct Investment (FDI), 2022

$72 m

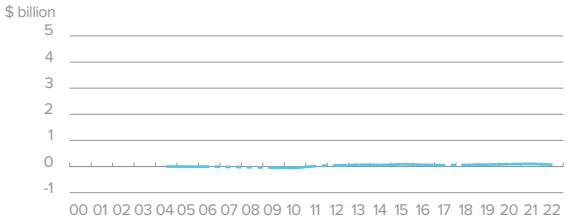
Foreign Direct Investment (FDI), 2022

While America's investment in Romania is small relative to other EU members, U.S. investment ties with Romania have deepened over the decade. U.S. affiliates have added roughly 40,000 Romanian workers to their payrolls since 2009. Meanwhile, Romania's investment in the U.S. remains relatively small. Romanian multinationals employed fewer than 50 employees in the U.S. in 2022. Value added by U.S. affiliates in Romania was an estimated $3.4 billion in 2022, and sales of U.S. foreign affilaites in the country hit $16.7 billion according to 2022 estimates.

U.S. FDI Position in Romania



Romania FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.
Note: Dotted line indicates that data has been suppressed for a particular year to avoid disclosure of individual company data.
*Latest year of available data.

Trade in Goods

$1.3 bn

U.S. Goods Exports to Romania, 2022

0.9% The U.S. supplied 1.1% of Romania's total imports...

3.6% ...but the U.S. share increases to 3.6% when intra-EU trade is excluded from the total.

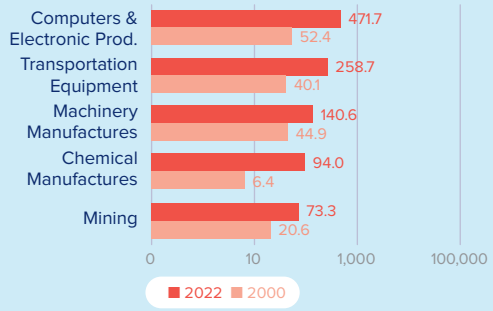
$3.8 bn

U.S. Goods Imports from Romania, 2022

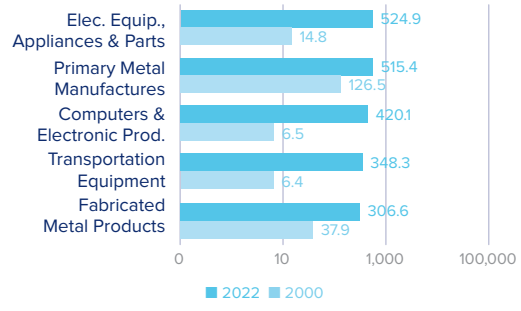
2.5% The U.S. received 2.5% of the total goods Romania exported to the world...

8.9% ...but the U.S. share increases to 8.9% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Romania ($millions)



Top Five U.S. Goods Imports from Romania ($millions)



Top State Exporters of Goods to Romania ($millions)

1	2	3	4	5
171.1 New Hampshire	114.1 Massachu-setts	101.4 Texas	101.1 New York	91.2 California

Top State Importers of Goods from Romania ($millions)

1	2	3	4	5
672.2 Texas	423.2 South Carolina	225.4 Pennsylvania	224.4 Georgia	195.9 New Jersey

Trade in Services

$849 m

U.S. Services Exports to Romania, 2022

$724 m

U.S. Services Imports from Romania, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Slovakia and the United States

Jobs

United States in Slovakia	Slovakia in the United States
42,420	< 50

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$661 m

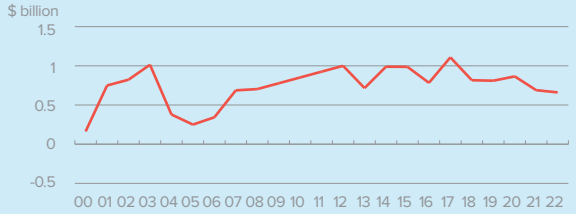
Foreign Direct Investment (FDI), 2022

$-11.0 m

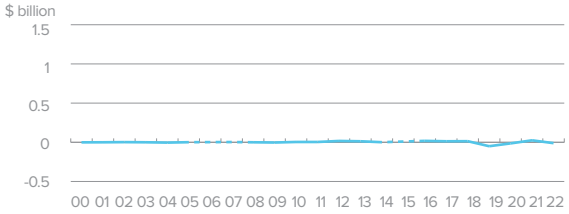
Foreign Direct Investment (FDI), 2022

America's investment stock in Slovakia is relatively small, but foreign affiliate sales were $10.2 billion in 2022, according to estimates. U.S. foreign affiliates in Slovakia employed an estimated 42,000 workers. Meanwhile, Slovakia's direct investment position in the U.S. was negative in 2022, and affiliate employment amounted to fewer than 50 workers. U.S. affiliates in Slovakia added an estimated $3.2 billion in value in 2022.

U.S. FDI Position in Slovakia



Slovakia FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.
Note: Dotted line indicates that data has been suppressed for a particular year to avoid disclosure of individual company data.
*Latest year of available data. Negative FDI positions can occur when the loans from the affiliate to the parent company exceed the equity and debt investments from the parent to the affiliate, or if a foreign affiliate incurs sufficiently large losses.

Trade in Goods

$0.4 bn

U.S. Goods Exports to Slovakia, 2022

0.6% The U.S. supplied 0.6% of Slovakia's total imports...

2.6% ...but the U.S. share increases to 2.6% when intra-EU trade is excluded from the total.

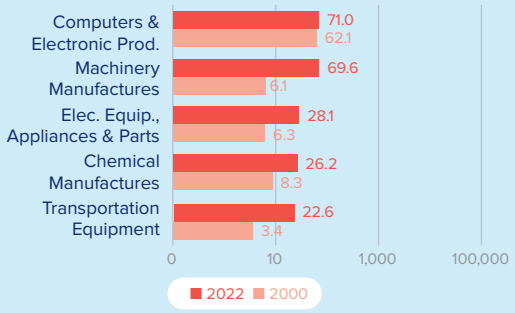
$6.5 bn

U.S. Goods Imports from Slovakia, 2022

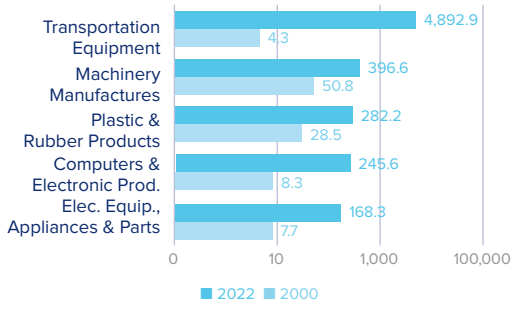
3.4% The U.S. received 3.4% of the total goods Slovakia exported to the world...

17.3% ...but the U.S. share increases to 17.3% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Slovakia ($millions)



Top Five U.S. Goods Imports from Slovakia ($millions)



Top State Exporters of Goods to Slovakia ($millions)

1	2	3	4	5
40.9	38.2	33.3	29.5	24.7
Illinois	California	Pennsylvania	Michigan	Texas

Top State Importers of Goods from Slovakia ($millions)

1	2	3	4	5
1,223.2	906.8	804.7	672.2	596.2
New Jersey	California	Texas	Florida	Rhode Island

Trade in Services

$356 m

U.S. Services Exports to Slovakia, 2022

$230 m

U.S. Services Imports from Slovakia, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Slovenia and the United States

Jobs

United States in Slovenia	Slovenia in the United States
5,050	< 500

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$231 m

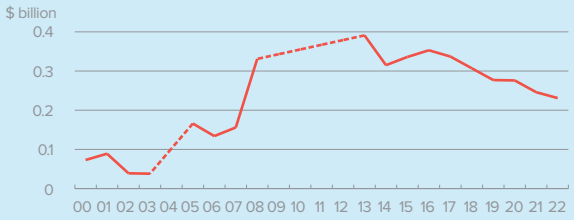
Foreign Direct Investment (FDI), 2022

$4.0 m

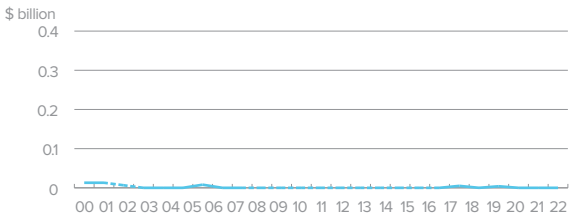
Foreign Direct Investment (FDI), 2020*

U.S. foreign direct investment in Slovenia continued to decline in 2022, and remains relatively low compared to other EU countries. Meanwhile, Slovenia's outward FDI stock in the U.S. was flat, with affiliates supporting fewer than 500 jobs. U.S. direct investment in Slovenia supported about 5,000 jobs in 2022, but has been relatively flat since 2004. Estimated U.S. foreign affiliate sales in Slovenia were nearly $900 million in 2022, compared with near-zero foreign affiliate sales earned by Slovenian firms in the U.S. Value added by U.S. affiliates in Slovenia was an estimated $335 million in 2022.
*Latest year of available data.

U.S. FDI Position in Slovenia



Slovenia FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.
*Latest year of available data. Note: Dotted line indicates that data has been suppressed for a particular year to avoid disclosure of individual company data.

Trade in Goods

$0.4 bn

U.S. Goods Exports to Slovenia, 2022

0.6% The U.S. supplied 0.6% of Slovenia's total imports...

1.2% ...but the U.S. share increases to 1.2% when intra-EU trade is excluded from the total.

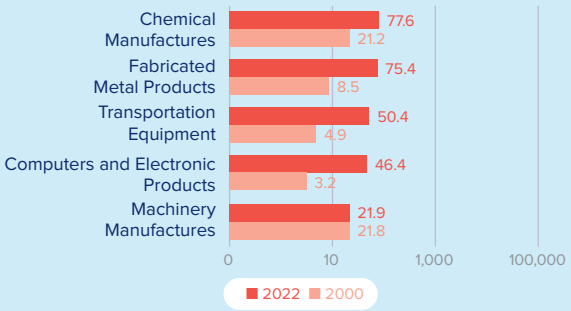
$3.0 bn

U.S. Goods Imports from Slovenia, 2022

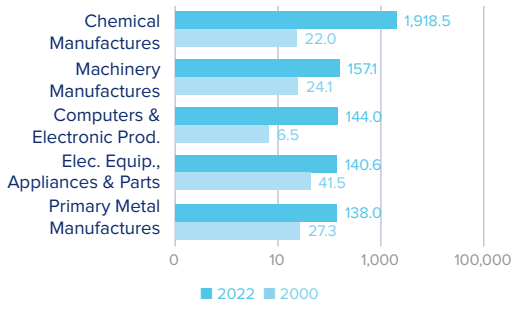
1.4% The U.S. received 1.4% of the total goods Slovenia exported to the world...

3.7% ...but the U.S. share increases to 3.7% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Slovenia ($millions)



Top Five U.S. Goods Imports from Slovenia ($millions)



Top State Exporters of Goods to Slovenia ($millions)

1	2	3	4	5
62.7 South Carolina	33.8 Virginia	31.0 Indiana	21.2 Alabama	20.8 California

Top State Importers of Goods from Slovenia ($millions)

1	2	3	4	5
1,309.4 Pennsylvania	673.5 New Jersey	95.8 Georgia	74.4 Illinois	65.0 New York

Trade in Services

$158 m

U.S. Services Exports to Slovenia, 2022

$78 m

U.S. Services Imports from Slovenia, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis; United Nations.

Spain and the United States

Jobs

United States in Spain	Spain in the United States
182,709	84,558

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$35.6 bn

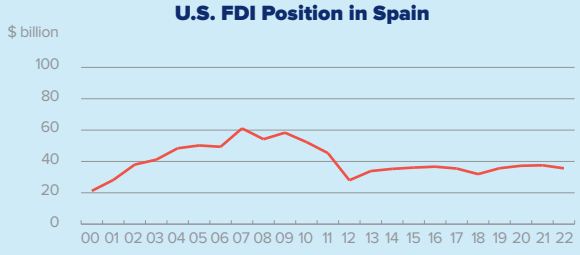
Foreign Direct Investment (FDI), 2022

$75.7 bn

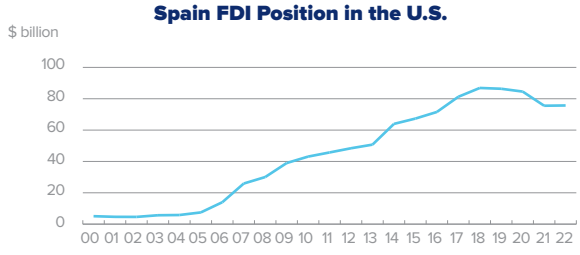
Foreign Direct Investment (FDI), 2022

Since 2011, the investment balance has shifted in favor of the U.S., as Spain's economy was squeezed by a severe recession and resulting austerity measures. Since then, U.S. direct investment in Spain has slightly recovered, totaling $36 billion in 2022. Meanwhile, the U.S. has seen its inward FDI stock from Spain nearly double since 2009. Prior to the 2020 COVID-19 recession, Spanish investment in the U.S. had increased broadly since 2002. U.S. affiliates based in Spain employ more than twice as many workers as Spanish affiliates employ in the U.S., according to 2022 estimates. Value added by Spanish affiliates in the U.S. was an estimated $14.4 billion in 2022, compared to $18.0 billion added by U.S. affiliates in Spain. Sales of U.S. foreign affiliates in Spain were an estimated $95.3 billion in 2022.

U.S. FDI Position in Spain



Spain FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.

Trade in Goods

$26.7 bn

U.S. Goods Exports to Spain, 2022

6.5% The U.S. supplied 6.5% of Spain's total imports...

13.1% ...but the U.S. share increases to 13.1% when intra-EU trade is excluded from the total.

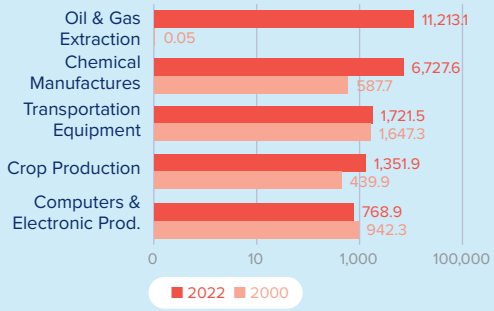
$23.0 bn

U.S. Goods Imports from Spain, 2022

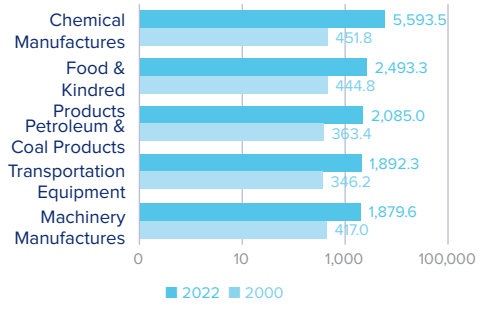
4.9% The U.S. received 4.9% of the total goods Spain exported to the world...

13.6% ...but the U.S. share increases to 13.6% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Spain ($millions)



Top Five U.S. Goods Imports from Spain ($millions)



Top State Exporters of Goods to Spain ($millions)

1	2	3	4	5
8,996.0	4,119.5	1,525.1	705.0	663.8
Texas	Louisiana	California	Michigan	Massachu-setts

Top State Importers of Goods from Spain ($millions)

1	2	3	4	5
3,579.9	1,941.5	1,878.4	1,470.6	1,391.5
New Jersey	Texas	Florida	New York	Illinois

Trade in Services

$8.5 bn

U.S. Services Exports to Spain, 2022

$7.9 bn

U.S. Services Imports from Spain, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Sweden and the United States

Jobs

United States in Sweden	Sweden in the United States
63,529	212,874

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$60.3 bn

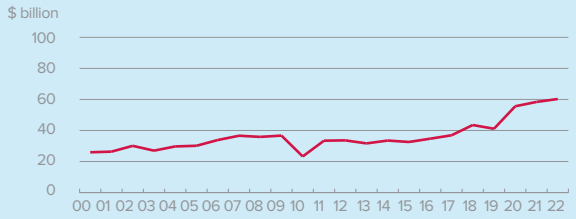
Foreign Direct Investment (FDI), 2022

$94.1 bn

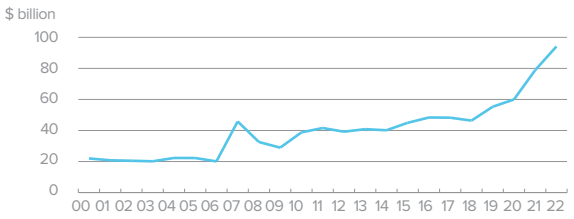
Foreign Direct Investment (FDI), 2022

U.S. FDI in Sweden was relatively flat in 2022. Meanwhile, Sweden's investment stock in the U.S. continued its rise. The value added of Swedish affiliates in the U.S. ($22 billion) exceeded that of U.S. foreign affiliates in Sweden ($11 billion). The employment balance is heavily skewed in favor of the United States, with Swedish firms estimated to employ over triple the amount of workers that U.S. firms employ in Sweden. Total sales of Swedish affiliates in the U.S. were more than double that of U.S. affiliates in Sweden, totaling an estimated $85.6 billion compared to $42.7 billion, respectively.

U.S. FDI Position in Sweden



Sweden FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.

Trade in Goods

$7.7 bn

U.S. Goods Exports to Sweden, 2022

3.8% The U.S. supplied 3.8% of Sweden's total imports...

10.3% ...but the U.S. share increases to 10.3% when intra-EU trade is excluded from the total.

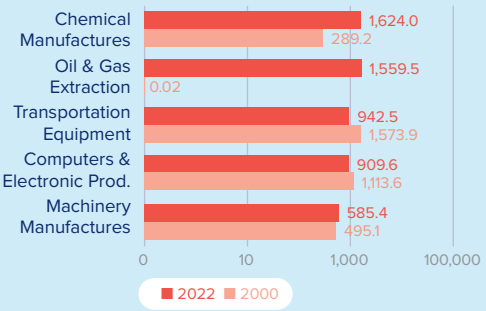
$17.1 bn

U.S. Goods Imports from Sweden, 2022

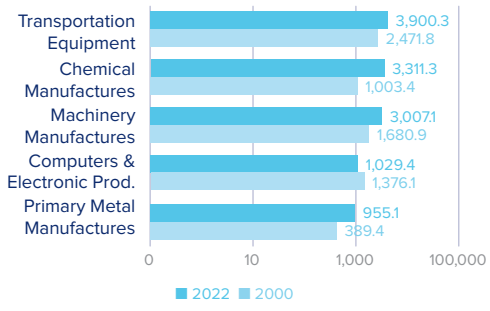
9.3% The U.S. received 9.3% of the total goods Sweden exported to the world...

20.3% ...but the U.S. share increases to 20.3% when intra-EU trade is excluded from the total.

Top Five U.S. Goods Exports to Sweden ($millions)



Top Five U.S. Goods Imports from Sweden ($millions)



Top State Exporters of Goods to Sweden ($millions)

1	2	3	4	5
1,813.1 Texas	685.1 California	619.4 North Carolina	361.8 Pennsylvania	267.2 Michigan

Top State Importers of Goods from Sweden ($millions)

1	2	3	4	5
2,219.7 New Jersey	1,288.4 Pennsylvania	1,050.1 California	1,014.8 Maryland	982.4 Georgia

Trade in Services

$7.2 bn

U.S. Services Exports to Sweden, 2022

$3.8 bn

U.S. Services Imports from Sweden, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Switzerland and the United States

Jobs

United States in Switzerland	Switzerland in the United States
96,960	387,906

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$212.2 bn

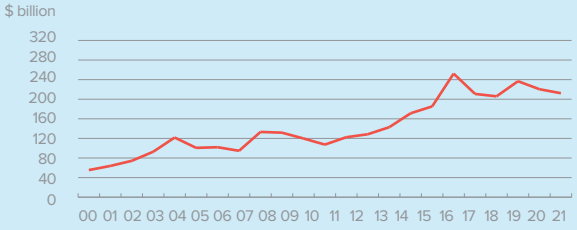
Foreign Direct Investment (FDI), 2022

$307.2 bn

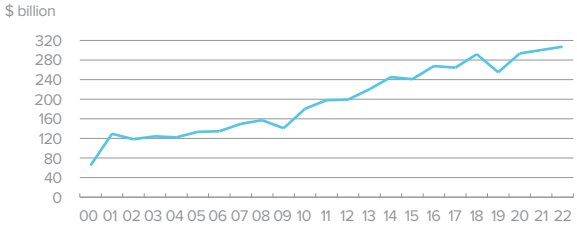
Foreign Direct Investment (FDI), 2022

Swiss direct investment in the U.S. has been rising significantly since the start of the century. In 2022, direct investment from Switzerland exceeded U.S. investment in Switzerland by nearly $100 billion. Estimates show the employment balance significantly favors the United States. Swiss affiliates in the U.S. added an estimated $87 billion in value to the U.S. compared to $55.2 billion in value added by U.S. affiliates in Switzerland. Total sales of U.S. foreign affiliates in Switzerland and of Swiss affiliates in the U.S. were both an estimated $1.2 trillion.

U.S. FDI Position in Switzerland



Switzerland FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.

Trade in Goods

$36.7 bn

U.S. Goods Exports to Switzerland, 2022

10.6% The U.S. supplied 10.6% of Switzerland's total imports...

21.3% ...but the U.S. share increases to 21.3% when trade with the EU and U.K. is excluded from the total.

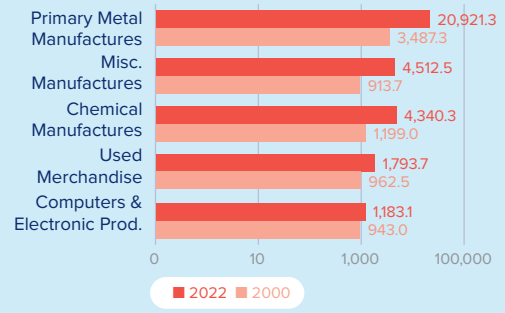
$59.4 bn

U.S. Goods Imports from Switzerland, 2022

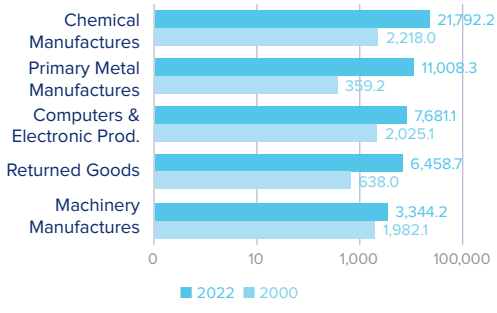
16.3% The U.S. received 16.3% of the total goods Switzerland exported to the world...

27.7% ...but the U.S. share increases to 27.7% when trade with the EU and U.K. is excluded from the total.

Top Five U.S. Goods Exports to Switzerland ($millions)



Top Five U.S. Goods Imports from Switzerland ($millions)



Top State Exporters of Goods to Switzerland ($millions)

1	2	3	4	5
23,566.4 New York	1,549.2 California	1,484.8 Nevada	981.7 Texas	944.5 Massachu-setts

Top State Importers of Goods from Switzerland ($millions)

1	2	3	4	5
16,217.2 New York	7,297.9 New Jersey	5,980.9 Indiana	3,892.6 Kentucky	3,481.3 California

Trade in Services

$55.6 bn

U.S. Services Exports to Switzerland, 2022

$34.1 bn

U.S. Services Imports from Switzerland, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Türkiye and the United States

Jobs

United States in Türkiye	Türkiye in the United States
58,479	4,386

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$5.8 bn

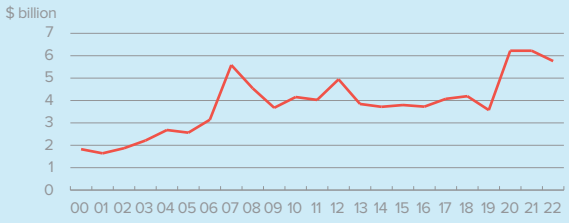
Foreign Direct Investment (FDI), 2022

$2.6 bn

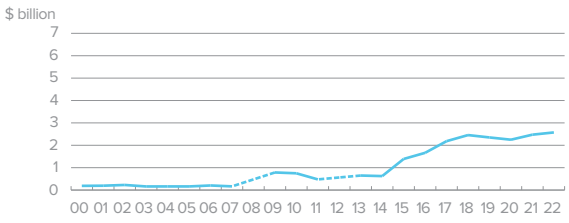
Foreign Direct Investment (FDI), 2022

U.S. foreign direct investment in Türkiye totaled $5.8 billion in 2022, compared with Türkiye's $2.6 billion of investment in the U.S. According to 2022 estimates, affiliates of U.S. multinationals had sales of $31 billion in Türkiye compared to Türkiye's affiliate sales in the U.S. of $0.9 billion. U.S. affiliate employment in Türkiye remains near all-time highs. Value added by U.S. affiliates in Türkiye was an estimated $10.1 billion in 2022.

U.S. FDI Position in Türkiye



Türkiye FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.
Note: Dotted line indicates that data has been suppressed for a particular year to avoid disclosure of individual company data.

Trade in Goods

$15.2 bn

U.S. Goods Exports to Türkiye, 2022

4.2% The U.S. supplied 4.2% of Türkiye's total imports...

5.6% ...but the U.S. share increases to 5.6% when trade with the EU and U.K. is excluded from the total.

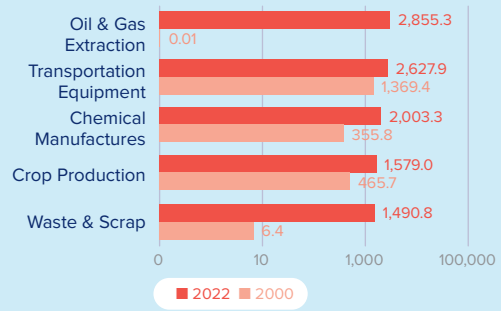
$18.8 bn

U.S. Goods Imports from Türkiye, 2022

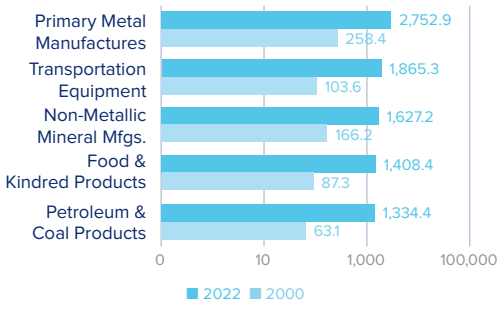
6.6% The U.S. received 6.6% of the total goods Türkiye exported to the world...

11.2% ...but the U.S. share increases to 11.2% when trade with the EU and U.K. is excluded from the total.

Top Five U.S. Goods Exports to Türkiye ($millions)



Top Five U.S. Goods Imports from Türkiye ($millions)



Top State Exporters of Goods to Türkiye ($millions)

1	2	3	4	5
3,589.5	1,787.3	984.2	937.7	834.3
Texas	Louisiana	New York	Washington	California

Top State Importers of Goods from Türkiye ($millions)

1	2	3	4	5
2,681.1	2,180.3	2,013.2	1,464.2	1,379.9
Texas	New Jersey	New York	California	Florida

Trade in Services

$4.3 bn

U.S. Services Exports to Türkiye, 2022

$3.7 bn

U.S. Services Imports from Türkiye, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Ukraine & the United States

Jobs

United States in Ukraine	Ukraine in the United States
36,966	306

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

-$131 m

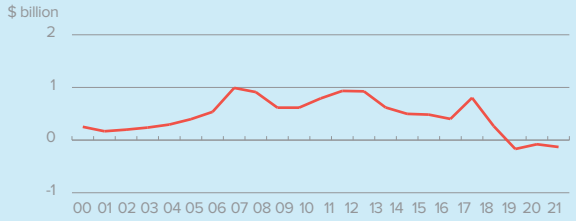
Foreign Direct Investment (FDI), 2022

-$1.0 m

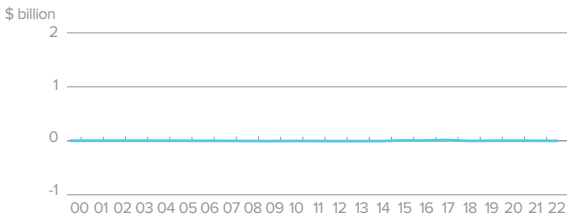
Foreign Direct Investment (FDI), 2022

The investment balance between the U.S. and Ukraine has favored the U.S. in recent years. While foreign direct investment from the U.S. to Ukraine approached $1 billion at points between 2006 and 2018, investment has been negative since 2020 and hit -$131 million in 2022. Ukraine's foreign direct investment position in the U.S. is also small. Value added by U.S. affiliates in Ukraine was an estimated $2.5 billion in 2022 compared to $54 million added by Ukrainian affiliates in the U.S. Total sales of U.S. foreign affiliates in Ukraine were an estimated $10.5 billion in 2022.

U.S. FDI Position in Ukraine



Ukraine FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.

Trade in Goods

$1.4 bn

U.S. Goods Exports to Ukraine, 2022

3.9% The U.S. supplied 3.9% of Ukraine's total imports...

7.7% ...but the U.S. share increases to 7.7% when trade with the EU is excluded from the total.

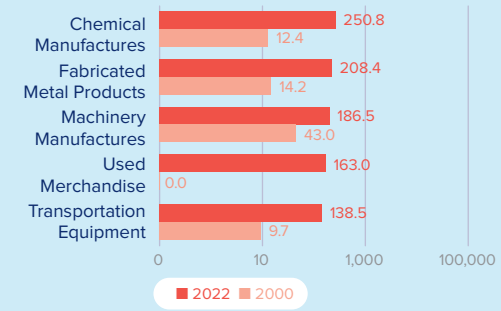
$1.5 bn

U.S. Goods Imports from Ukraine, 2022

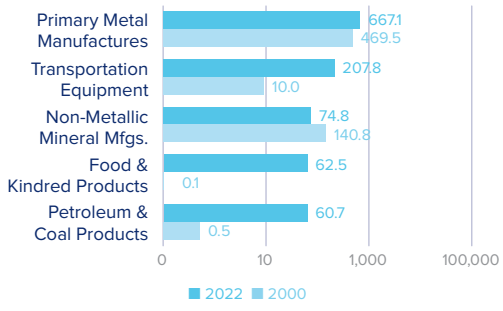
2.0% The U.S. received 2.0% of the total goods Ukraine exported to the world...

5.4% ...but the U.S. share increases to 5.4% when trade with the EU is excluded from the total.

Top Five U.S. Goods Exports to Ukraine ($millions)



Top Five U.S. Goods Imports from Ukraine ($millions)



Top State Exporters of Goods to Ukraine ($millions)

1	2	3	4	5
188.8	150.4	116.5	116.4	107.6
Indiana	Pennsylvania	West Virginia	New Jersey	California

Top State Importers of Goods from Ukraine ($millions)

1	2	3	4	5
293.5	293.3	160.0	114.2	91.6
Illinois	Texas	Mississippi	New Jersey	New York

Trade in Services

N/A

U.S. Services Exports to Ukraine, 2022

N/A

U.S. Services Imports from Ukraine, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis; State Statistics Service of Ukraine.

United Kingdom and the United States

Jobs

United States in the United Kingdom	United Kingdom in the United States
1,341,280	1,247,256

Jobs directly supported by majority-owned affiliates. Estimates for 2022. Total U.S.-related jobs are likely to be higher, because these figures do not include jobs created by trade flows, indirect employment effects through distributors or suppliers, or via non-equity arrangements such as strategic alliances, joint ventures, or other deals.

Investment

$1.1 tn

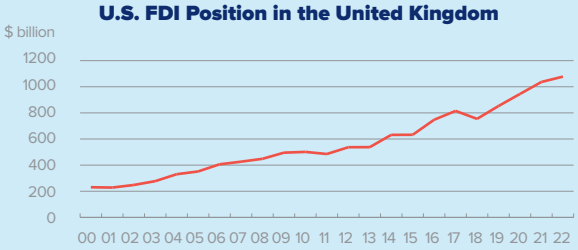
Foreign Direct Investment (FDI), 2022

$663.4 bn

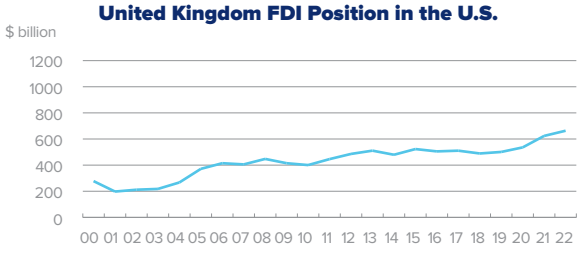
Foreign Direct Investment (FDI), 2022

In terms of the U.S.-U.K. investment balance, the U.S. had a larger cross-border impact in 2022. U.S. foreign direct investment in the United Kingdom totaled a record $1.1 trillion in 2022, and the U.K.'s foreign direct investment in the U.S. rose to over $660 billion. Estimated sales of American and U.K. affiliates in each other's markets were a combined $1.4 trillion in 2022. According to estimates for 2022, U.S. affiliates employed over 1.3 million workers in the U.K. while U.K. affiliates employed more than 1.2 million Americans. Value added by U.S. affiliates in the U.K. and by U.K. affiliates in the U.S. was similarly on par, adding $201 billion and $180 billion in value, respectively.

U.S. FDI Position in the United Kingdom



United Kingdom FDI Position in the U.S.



Foreign direct investment position, historic-cost basis, 2000-2022.

Trade in Goods

$76.2 bn

U.S. Goods Exports to the United Kingdom, 2022

12.0% The U.S. supplied 12.0% of the United Kingdom's total imports...

19.4% ... but the U.S. share increases to 19.4% when trade with the EU is excluded from the total.

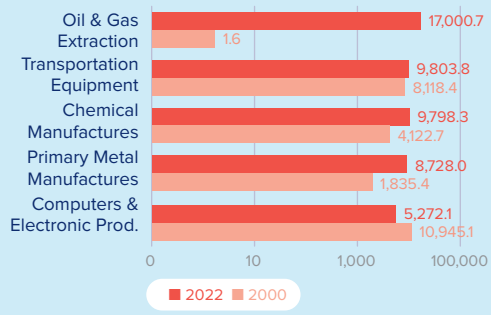
$64.0 bn

U.S. Goods Imports from the United Kingdom, 2022

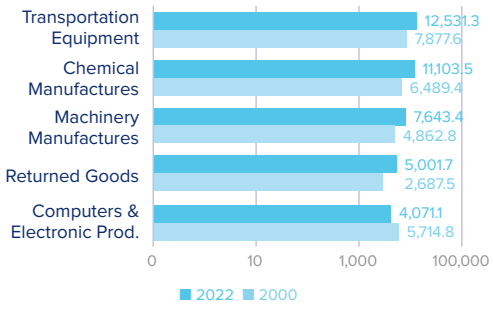
12.1% The U.S. received 12.1% of the total goods the United Kingdom exported to the world...

21.4% ... but the U.S. share increases to 21.4% when trade with the EU is excluded from the total.

Top Five U.S. Goods Exports to the United Kingdom ($millions)



Top Five U.S. Goods Imports from the United Kingdom ($millions)



Top State Exporters of Goods to the United Kingdom ($millions)

1	2	3	4	5
15,768.8	7,079.0	6,746.1	4,844.2	4,692.6
Texas	Utah	Louisiana	New York	California

Top State Importers of Goods from the United Kingdom ($millions)

1	2	3	4	5
8,745.9	5,404.8	5,219.7	4,120.4	3,890.6
New Jersey	Texas	New York	California	Georgia

Trade in Services

$82.0 bn

U.S. Services Exports to the United Kingdom, 2022

$73.5 bn

U.S. Services Imports from the United Kingdom, 2022

Sources: Bureau of Economic Analysis; U.S. Commerce Department; International Monetary Fund; Office of Trade and Economic Analysis.

Notes on Terms, Data and Sources

Employment, Investment and Trade Linkages for the 50 U.S. States and Europe

Jobs data are from the U.S. Commerce Department's Bureau of Economic Analysis (BEA). BEA employment by state is only available for Canada, France, Germany, Japan, the Netherlands, Switzerland, and the United Kingdom; for this reason, other countries may not be listed in this jobs section. Data on investment is from SelectUSA, a program led by the U.S. Department of Commerce, using data from fDi Markets. The data show number of Greenfield FDI projects announced over the span of ten years; this does not directly translate to the value of projects or jobs added. Trade data comes from the U.S. Census Bureau's USA Trade Online database as well as the International Trade Administration at the U.S. Commerce Department. Europe includes Albania, Andorra, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia-Herzegovina, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Faroe Islands, Finland, France, Georgia, Germany, Gibraltar, Greece, Hungary, Iceland, Ireland, Italy, Kazakhstan, Kosovo, Kyrgyzstan, Latvia, Liechtenstein, Lithuania, Luxembourg, North Macedonia, Malta, Moldova, Monaco, Montenegro, Netherlands, Norway, Poland, Portugal, Romania, Russia, San Marino, Serbia, Slovakia, Slovenia, Spain, Svalbard, Sweden, Switzerland, Tajikistan, Türkiye, Turkmenistan, Ukraine, United Kingdom, Uzbekistan, Vatican City. The top ten exports and imports bar charts employ a logarithmic scale to facilitate cross-state comparisons.

Investment and Trade for the EU27, UK, Norway, Switzerland, Türkiye, Ukraine and the U.S.

Investment and jobs data are from the Bureau of Economic Analysis, with employment figures representing author estimates for 2022. Dotted lines on the FDI trend for certain countries indicate that data was unavailable for that time period. Data on exports and imports of goods and services are from the U.S. Commerce Department and the Office of the U.S. Trade Representative. The bar charts employ logarithmic scales to facilitate cross-country comparisons. Data on trade exports and imports by state were extracted from the U.S. Census Bureau's USA Trade Online database. The data representing the United States' share of imports and exports were constructed using data from the International Monetary Fund's Direction of Trade Statistics database.

Foreign direct investment (FDI) measures the direct investment position between foreign affiliates and their parent companies. These statistics specifically measure the U.S. or European parent's share, or interest, in its foreign affiliate rather than overall size or level of operations of the foreign affiliate. The U.S. direct investment position abroad is equal to the value of U.S. parents' equity in, and net outstanding loans to, their foreign affiliates at historical cost.

Total assets, employment, sales, research & development, and value-added statistics are sourced from the BEA's Survey of Activities of Multinational Enterprises. These statistics on the activities of majority-owned foreign affiliates are not adjusted for the ownership share of the parent company. Thus, for example, the employment statistics include all the employees of each affiliate, including affiliates in which the U.S. parent's ownership share is less than 100%. Total assets on a majority-owned foreign affiliate's balance sheet measures the affiliate's total assets, including the share of assets not owned by the U.S. parent.

Majority-owned foreign affiliates are affiliates that are more than 50% owned by their U.S. parent. Majority-owned U.S. affiliates are affiliates that are more than 50% owned by the European parent company.

Digital Services

Information and communications technology (ICT) services, or *digital services*, are services used to facilitate information processing and communication. The U.S. Bureau of Economic Analysis (BEA) defines digital services as including three categories of international trade in services: telecommunications services, computer services, and charges for the use of intellectual property associated with computer software. *Digitally enabled services, or potentially ICT-enabled services*, are services that can be, but not necessarily are, delivered remotely over ICT networks. These include insurance services; financial services; charges for the use of intellectual property; telecommunications, computer, and information services; research and development services; professional and management consulting services; architectural, engineering, scientific, and other technical services; trade-related services; and certain other services included in personal, cultural, and recreational services (audiovisual services and other personal, cultural, and recreational services). Potentially ICT-enabled services include ICT services.

E-Commerce

Most estimates of e-commerce do not distinguish whether such commerce is domestic or international. In addition, many metrics do not make it clear whether they cover all modes of e-commerce or only the leading indicators of business-to-business (B2B) and business-to-consumer (B2C) e-commerce. Finally, there are no official data on the value of cross-border e-commerce sales broken down by mode; official statistics on e-commerce are sparse and usually based on surveys rather than on real data. The OECD, WTO and UNCTAD define e-commerce as transactions in which goods or services are ordered over a computer network (usually over the Internet).

Terms

Throughout this report, the terms "EU," "EU27" or "EU (excluding UK)" refers to all 27 member states of the European Union, excluding the United Kingdom. The terms "EU28" or "EU (including UK)" or "EU+UK" include all 27 member states of the European Union plus the United Kingdom. The term EU15 refers to older EU member states: United Kingdom, Ireland, Belgium, Luxembourg, the Netherlands, Austria, Spain, Italy, Greece, France, Germany, Portugal, Sweden, Finland, and Denmark. The term EU13 refers to newer EU member states: Estonia, Latvia, Lithuania, Poland, the Czech Republic, Slovakia, Hungary, Slovenia, Malta, Cyprus, Romania and Bulgaria, and Croatia. The "euro area" includes those EU member states that have adopted the euro as their currency: Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Portugal, Slovakia, Slovenia, and Spain. The euro area data does not yet include Croatia, which joined the eurozone in 2023.

In addition to the above, the term "Europe" in this report refers to the following: all 27 members of the European Union plus Albania, Andorra, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Georgia, Gibraltar, Greenland, Iceland, Kazakhstan, Kosovo, Kyrgyzstan, Macedonia, Malta, Moldova, Monaco, Montenegro, Norway, Russia, Serbia, San Marino, Switzerland, Türkiye, Tajikistan, Turkmenistan, Ukraine, the United Kingdom, Uzbekistan, and Vatican City.

About the Authors

Daniel S. Hamilton and **Joseph P. Quinlan** have been producing *The Transatlantic Economy annual survey since 2004*. They have authored and edited a series of award-winning books and articles on the modern transatlantic economy, including *Atlantic Rising: Changing Commercial Dynamics in the Atlantic Basin; Germany and Globalization; France and Globalization; Globalization and Europe: Prospering in a New Whirled Order; Sleeping Giant: Awakening the Transatlantic Services Economy; Protecting Our Prosperity: Ensuring Both National Security and the Benefits of Foreign Investment in the United States; Deep Integration: How Transatlantic Markets are Leading Globalization; and Partners in Prosperity: The Changing Geography of the Transatlantic Economy.* Together they were recipients of the 2007 Transatlantic Leadership Award by the European-American Business Council and the 2006 Transatlantic Business Award by the American Chamber of Commerce to the European Union.

Daniel S. Hamilton is Senior non-resident Fellow at the Brookings Institution and Senior Fellow at the Foreign Policy Institute of Johns Hopkins University's Paul H. Nitze School of Advanced International Studies, where he has served as Austrian Marshall Plan Foundation Fellow and Professor Richard von Weizsäcker Professor. During the 2020-2021 academic year he directed the Global Europe Program at the Woodrow Wilson Center. He was the Founding Director of the SAIS Center for Transatlantic Relations and for 15 years served as Executive Director of the American Consortium on EU Studies. He is President of the Transatlantic Leadership Network, and has been a consultant for Microsoft and Breakthrough Energy, and an advisor to the U.S. Business Roundtable, the Transatlantic Business Dialogue, and the European-American Business Council. He has served as U.S. Deputy Assistant Secretary of State and Associate Director of the Policy Planning Staff for two U.S. Secretaries of State. Recent books include *The Transatlantic Community and China in the Age of Disruption*, edited with Joe Renouard; *Paradigm Lost? The European Union and the Challenges of a New World*, edited with Gregor Kirchhof and Andreas Rödder; *The Arctic and World Order; Exiting the Cold War, Entering a New World;* and *Open Door: NATO and Euro-Atlantic Security After the Cold War,* the latter three edited with Kristina Spohr; *Europe Whole and Free: Vision and Reality; Turkey in the North Atlantic Marketplace: Creating a North Atlantic Marketplace: Three Paths, One Detour, A U-Turn and the Road to Nowhere; The Transatlantic Digital Economy 2017; Rule-Makers or Rule-Takers? Exploring the Transatlantic Trade and Investment Partnership*, edited with Jacques Pelkmans; and *The Geopolitics of TTIP*.

Joseph P. Quinlan is Senior Fellow at the Transatlantic Leadership Network, with extensive experience in the U.S. corporate sector. He is a leading expert on the transatlantic economy and well-known global economist/strategist on Wall Street. He specializes in global capital flows, international trade and multinational strategies. He lectures at Fordham University, and his publications have appeared in such venues as *Foreign Affairs, the Financial Times* and the *Wall Street Journal*. He is the author of *The Last Economic Superpower: The Retreat of Globalization, the End of American Dominance, and What We Can Do About It* (New York: McGraw Hill, 2010).

THE TRANSATLANTIC ECONOMY 2024

Annual Survey of Jobs, Trade and Investment between the United States and Europe

Daniel S. Hamilton and Joseph P. Quinlan

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