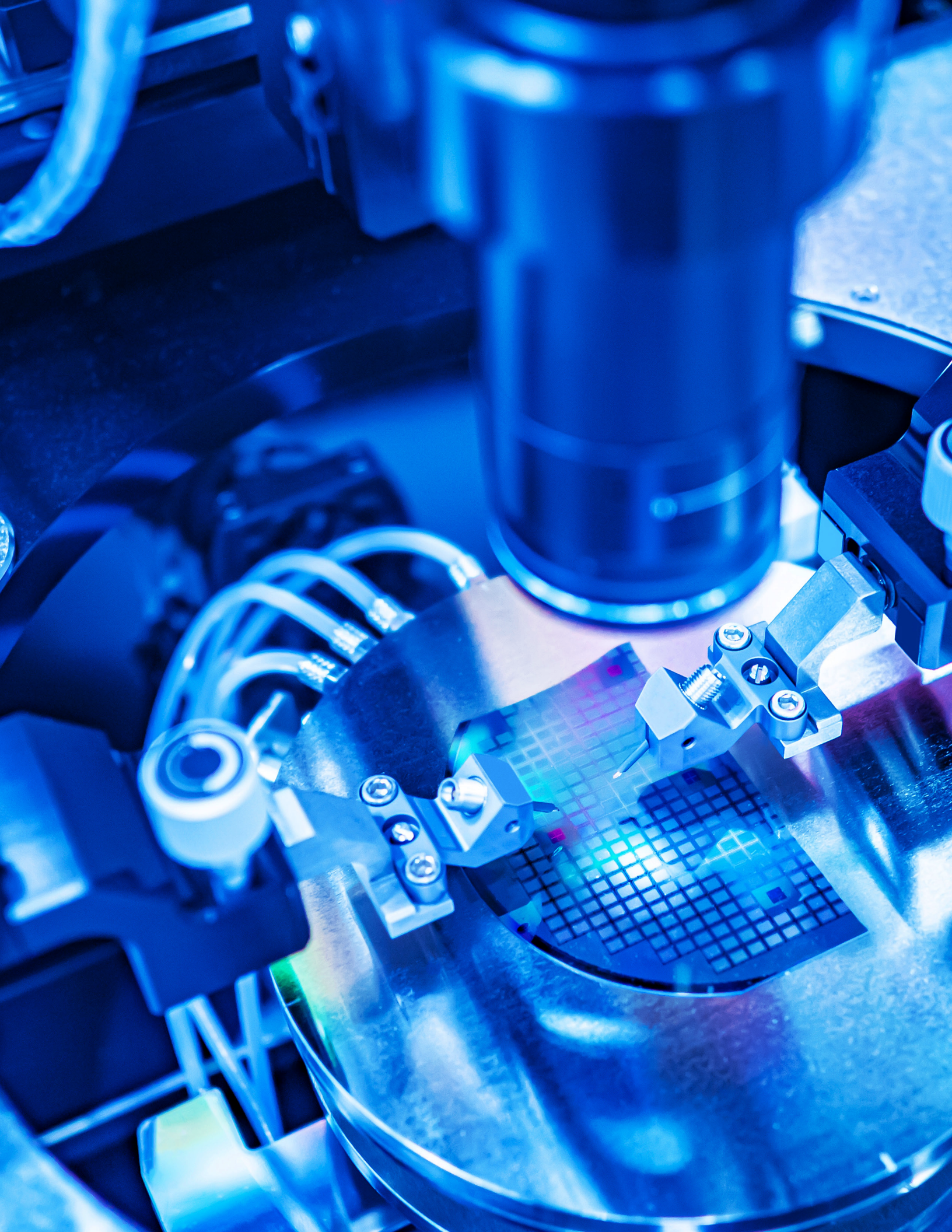
SIA SEMICONDUCTOR INDUSTRY ASSOCIATION

STATE OF THE U.S. SEMICONDUCTOR INDUSTRY

2026



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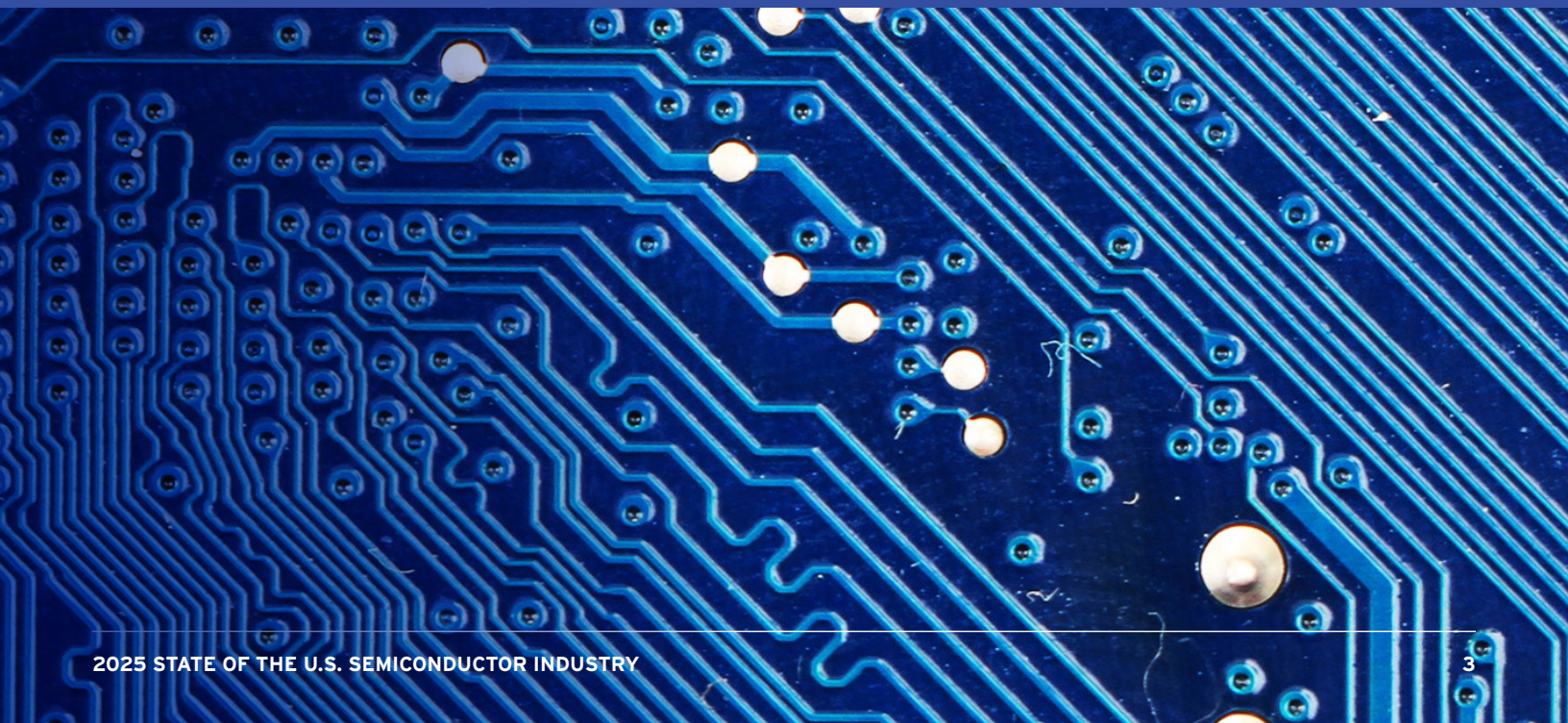


INTRODUCTION

Semiconductors are the nerve center of our digital world and the foundation of the AI revolution.

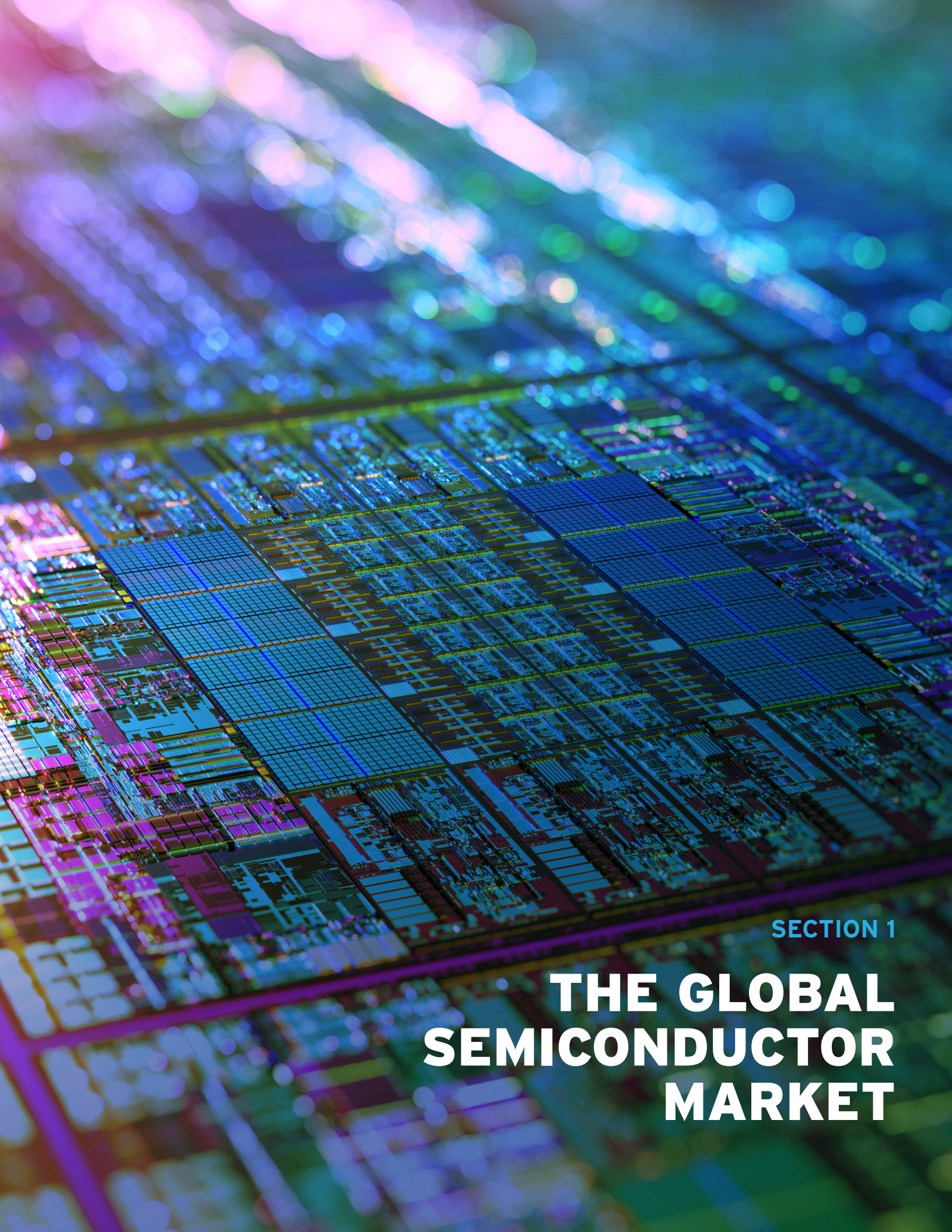
In 2026, chip technology is progressing at a breathtaking pace, propelled by cutting-edge semiconductor research, design, and manufacturing. The transistors embedded in modern semiconductors are so tiny that thousands would fit across the width of a single human hair. As technology continues to advance, semiconductors are delivering greater efficiency and performance across the economy and unleashing innovations that will define America's economic strength, national security, and global competitiveness in the decades ahead.

Demand for semiconductors has increased sharply over the last couple years, with global chip sales projected to exceed $1.5 trillion this year for the first time ever. Semiconductors are the enabling technology for artificial intelligence (AI), which is reshaping our economy and society, making entire industries more productive and innovative, and driving major scientific breakthroughs. The full range of semiconductor technologies enable AI — from advanced logic to memory to analog/foundational chips. A single AI server rack contains over 4,500 packaged chips, accounting for 95% of its value. A single hyperscale data center houses 5,000 or more servers, contributing to historic demand for semiconductor technologies.

Beyond AI, chips power a range of other end uses, including communications, transportation, consumer electronics, industrial applications, and others.

Given the growth of the semiconductor industry — and its strategic importance to both economic security and national security — policymakers should advance initiatives to cement American leadership in chip technology. Promoting smart tax, research, workforce, trade, and national security policies will be vital to strengthening U.S. semiconductor capabilities, reinforcing our supply chains, and enabling the next generation of technological breakthroughs.

This report provides a snapshot of the semiconductor industry landscape in 2026: the progress underway, the challenges that lie ahead, and the imperative of sustaining U.S. leadership in this foundational technology.



SECTION 1

THE GLOBAL SEMICONDUCTOR MARKET

GLOBAL SEMICONDUCTOR SALES

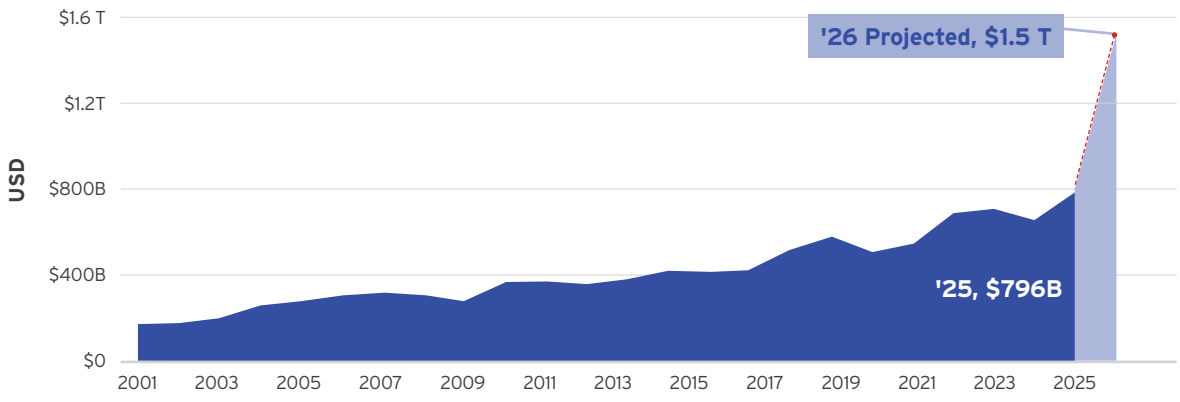
Global semiconductor sales reached $795.6 billion in 2025, far exceeding initial forecasts and setting a record for the industry. The World Semiconductor Trade Statistics (WSTS) organization projects worldwide semiconductor industry sales will increase dramatically to $1.5 trillion in 2026, marking the first time industry sales exceed $1 trillion and representing growth of 90% from 2025.

Chips enabling AI and other advanced applications were an overwhelming demand driver for semiconductor sales in 2025, a trend expected to continue in the coming years.

Sales of logic chips totaled $299.5 billion in 2025, increasing by 38.8% year-on-year, making it the largest semiconductor product category by sales. Memory products were second in sales at $230.0 billion in 2025, a 39.0% sales increase over 2024. Foundational chip sales remain constrained, with sales down 5.2% in 2025 compared to their highest revenue total in 2022. Foundational chip sales volume, however, increased modestly at 6.3% in 2025 compared to 2024.

Regionally, annual sales in 2025 were up in Asia Pacific/All Others (45.4%), the Americas (31.4%), China (17.9%), and Europe (6.7%), but were down in Japan (-4.3%).

GLOBAL SEMICONDUCTOR SALES, 2001-2025



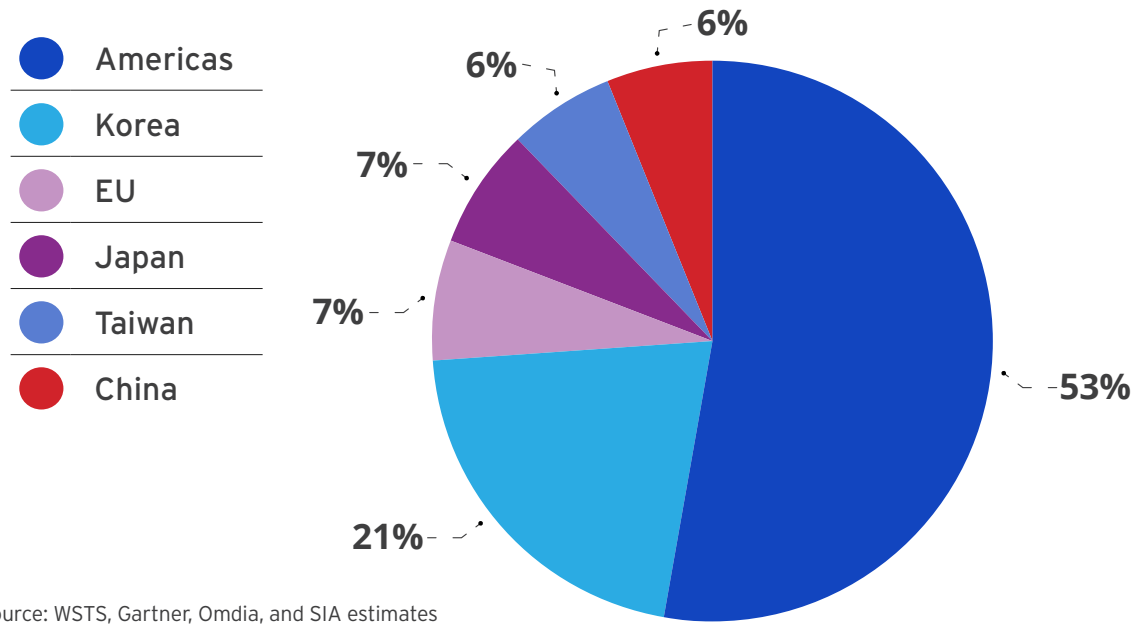
Source: WSTS, Bluebook

U.S. MARKET SHARE

Since the late 1990s, U.S.-headquartered companies have maintained the top position in global chip sales. The U.S. industry reached sales of $425 billion in 2025, representing 53.4% of total global sales and the highest U.S. market share since 1984.

U.S. companies continue to compete at the highest level across the full innovation stack, including R&D, chip design, and advanced manufacturing. This leadership drives a virtuous cycle of innovation: global sales success enables robust reinvestment in R&D, fueling next-generation technological breakthroughs, in turn driving continued U.S. semiconductor leadership.

GLOBAL MARKET SHARE BY COMPANY HQ, 2025



Source: WSTS, Gartner, Omdia, and SIA estimates

DEMAND DRIVERS

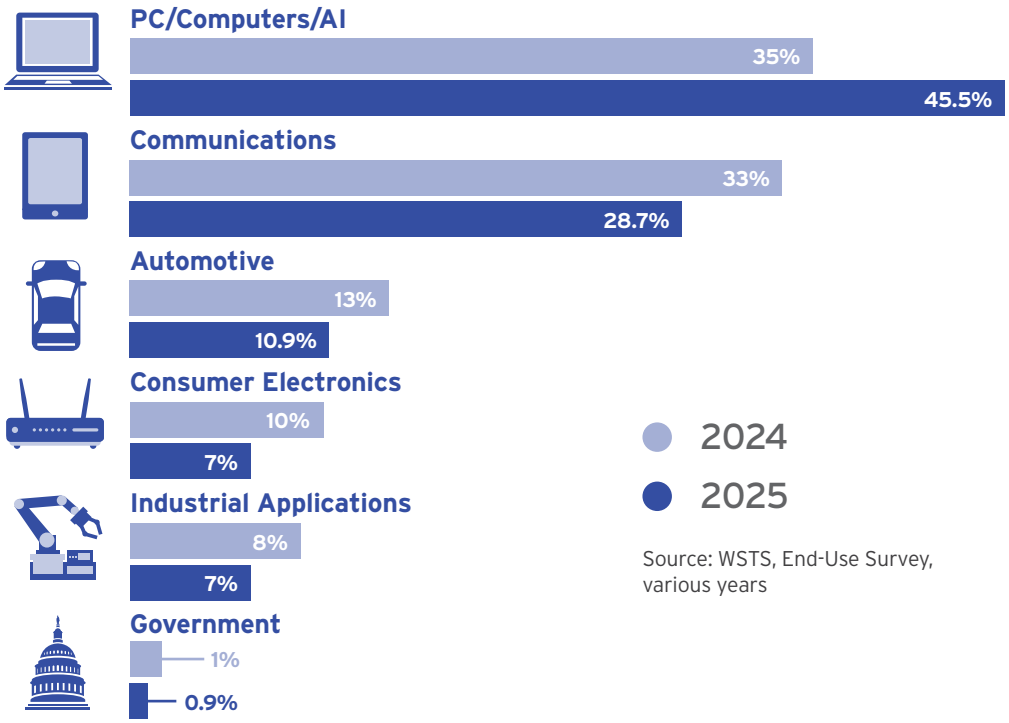
Innovation in the semiconductor industry enables the transformative technologies of the future. In turn, demand for innovative new technologies — AI, 5G/6G communications, quantum computing, industrial automation, robotics, healthcare devices, advanced defense systems, and many more — drives even greater demand for chip technologies.

Semiconductor sales boomed in 2025 due to AI infrastructure buildout and other compute end-uses, such as personal computers and workstations. End-use share by revenue grew by more than 10% for computers and AI applications, signaling strong growth for the future.

According to a recent SIA-Deloitte report, to meet global demand for new AI applications, government and industry will invest a cumulative total of over $4 trillion in new data center infrastructure through 2028, of which up to $2.8 trillion will be spent on semiconductors. In addition, annual revenue for semiconductors deployed in AI data centers could reach over $1.2 trillion in 2028, a nearly tenfold increase over four years.

Even as semiconductor sales for communications, auto, consumer electronics, industrial applications, and government end uses grew in value in 2025, each accounted for a smaller share of overall semiconductor sales due to the explosive growth in semiconductor demand from AI.

TOTAL GLOBAL DEMAND SHARE BY END USE, 2024-2025



Source: WSTS, End-Use Survey, various years

AI IS BUILT ON SEMICONDUCTORS

Without semiconductors, there would be no AI. Today's AI systems are built on decades of innovation across the entire semiconductor ecosystem. As chip technologies continue to advance, AI will become more capable, energy-efficient, and cost effective. Stronger AI, in turn, will help improve chip design, optimize manufacturing, and drive even more demand for the broad range of semiconductors that enable AI.

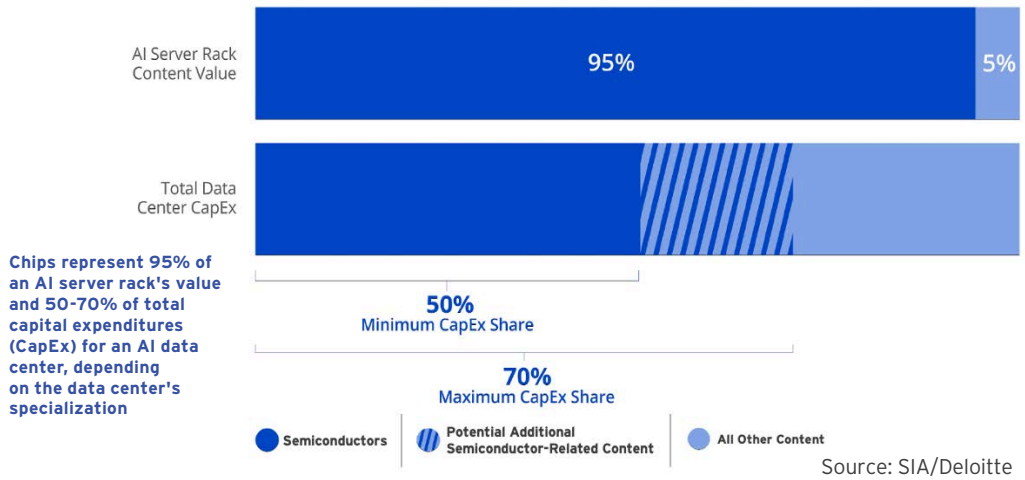
Chips provide the base hardware layer underpinning modern AI systems and comprise a significant portion of the overall value in a modern AI server. According to a recent SIA-Deloitte report, within a modern data center a single AI server rack contains over 4,500 packaged chips encompassing the full range of chip technologies, including:

- **Advanced logic chips,** such as AI accelerators, application-specific integrated circuits (ASICs), field-programmable gate arrays (FPGAs), central processing units (CPUs), data processing units (DPUs), and networking chips;
- **Memory,** such as high-bandwidth memory (HBM), dynamic and static random-access memory (DRAM and SRAM), and non-volatile flash memory (NAND); and
- **Analog/foundational chips,** such as power chips, transceivers, controllers, and sensors that enable efficient energy delivery and seamless interconnection within AI servers and across systems.

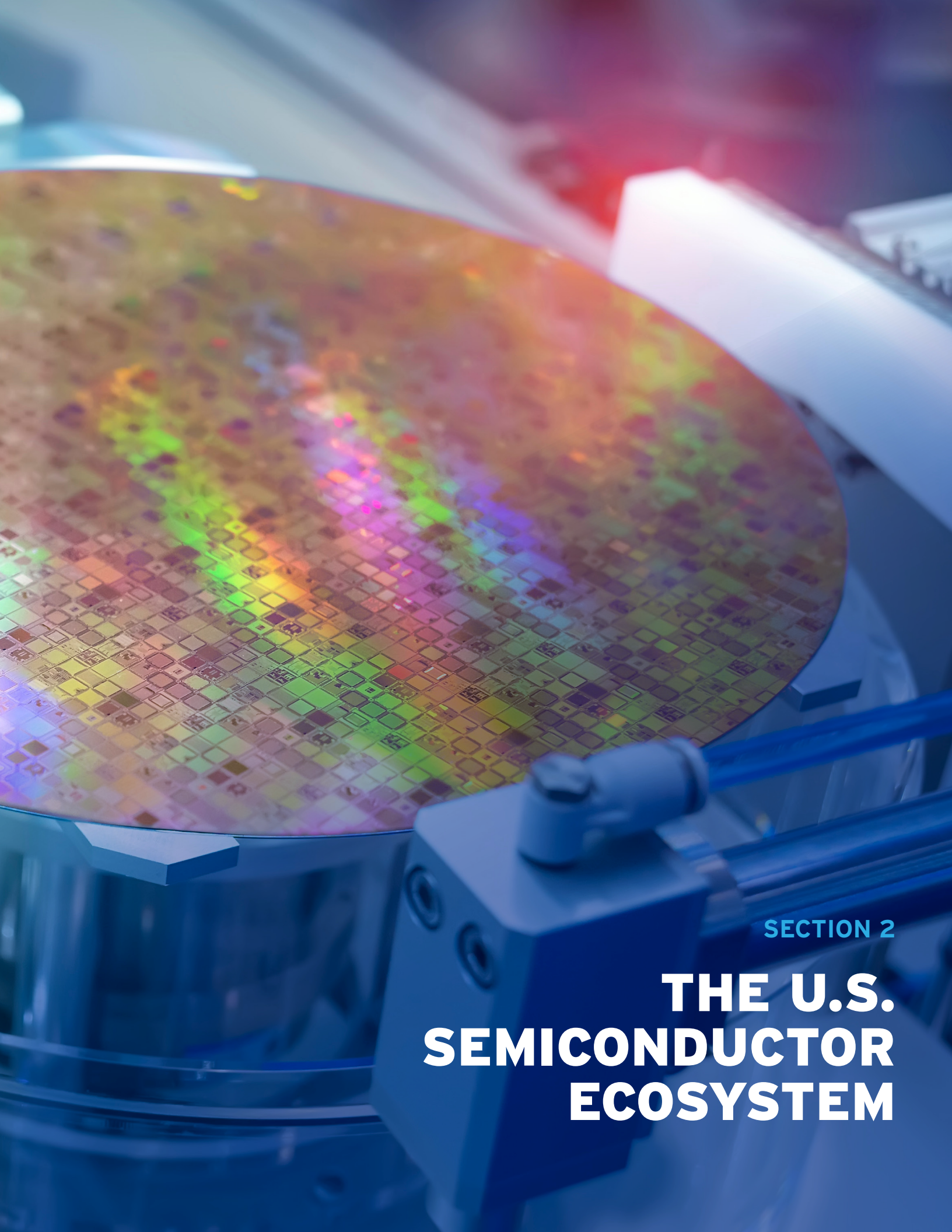
Semiconductors account for more than 95% of a leading AI server rack's content value and more than 50% of the total capital expenditures required for building and operating an AI data center. As AI continues to scale, the ability to secure, design, and integrate the semiconductor components that comprise AI infrastructure will be just as critical as the compute itself.

To promote continued American leadership in semiconductor and AI technologies, policymakers should adopt pro-investment, pro-innovation, and pro-trade policies to strengthen semiconductor research, design, and manufacturing.

SEMICONDUCTORS UNDERPIN AI



Source: SIA/Deloitte

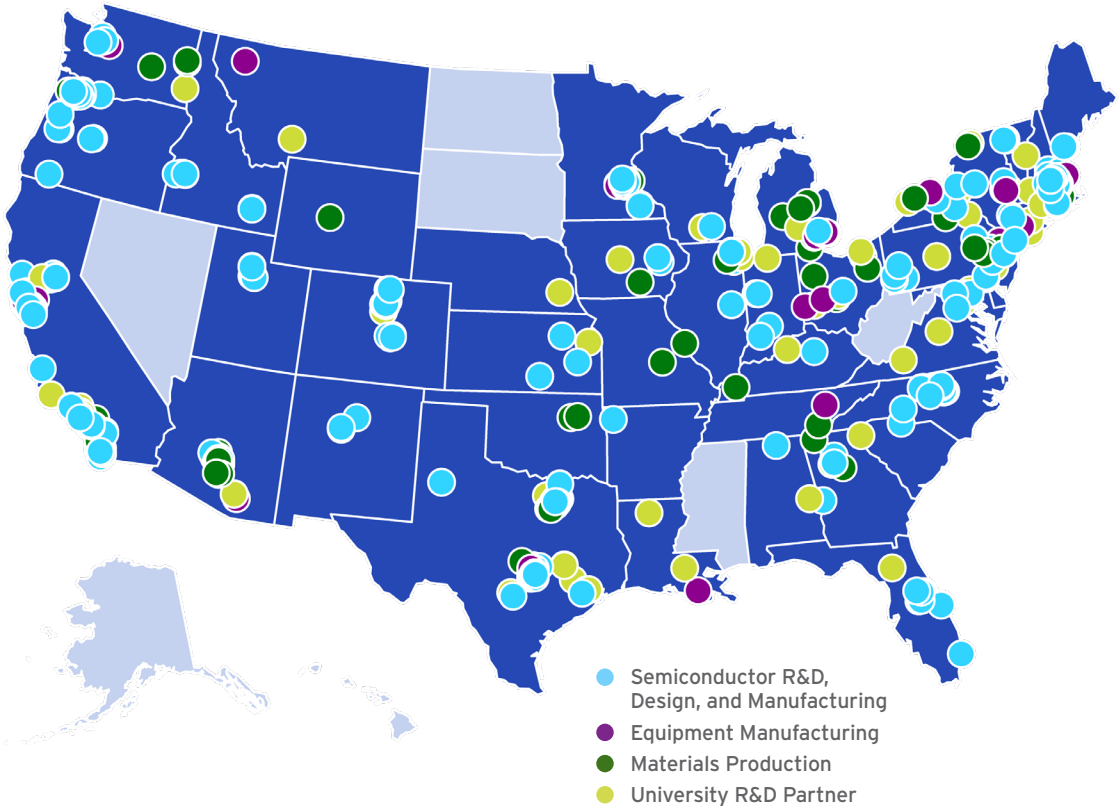


SECTION 2

THE U.S. SEMICONDUCTOR ECOSYSTEM

The U.S. semiconductor industry is one of the world's most advanced manufacturing and R&D sectors. The U.S. Semiconductor Ecosystem Map below demonstrates the breadth of the industry, showcasing current U.S. locations for semiconductor R&D, intellectual property and chip design software providers, chip design, semiconductor fabrication, and manufacturing by suppliers of semiconductor manufacturing equipment and materials.

U.S. SEMICONDUCTOR ECOSYSTEM MAP, 2025



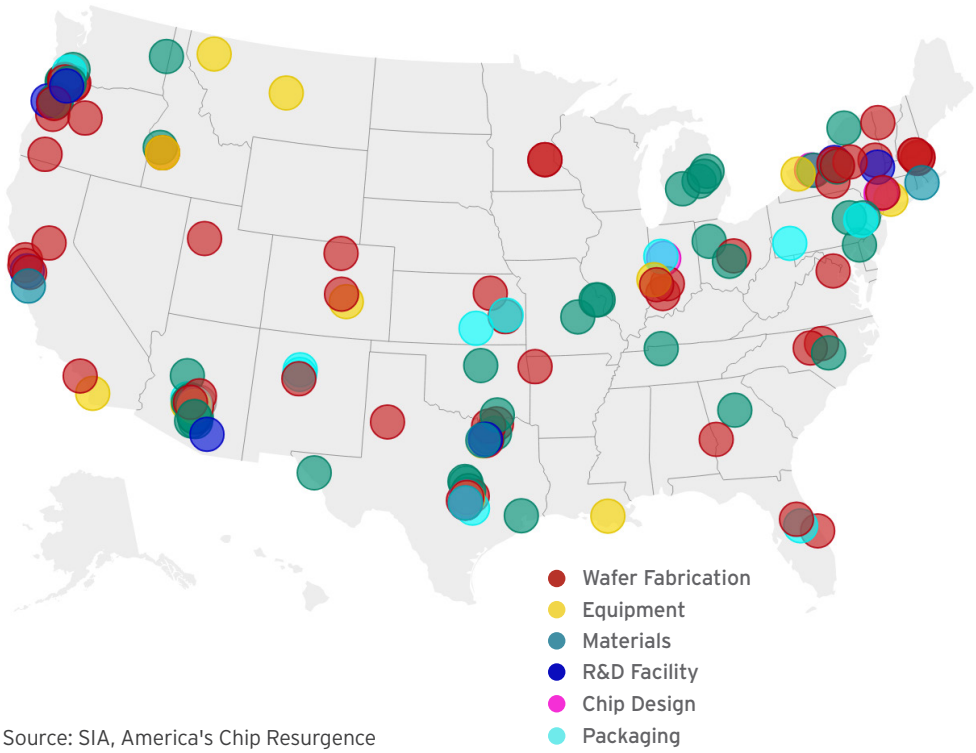
Source: SIA, U.S. Semiconductor Ecosystem Map

The semiconductor ecosystem is pervasive in America and can be found in the vast majority of U.S. states. From early-stage research and design to manufacturing, equipment, and materials, each part of the value chain plays a critical role in ensuring the U.S. can develop, produce, and deliver the semiconductors necessary to meet growing downstream customer demand.

Maintaining and growing this ecosystem in America — while also working to strengthen complementary supply chains in allied and partner countries — is essential to sustaining U.S. technology leadership, strengthening supply chain resilience, and supporting economic and national security.

NEW SEMICONDUCTOR INVESTMENTS IN AMERICA

SEMICONDUCTOR SUPPLY CHAIN INVESTMENT ANNOUNCEMENTS, 2020-2025



Source: SIA, America's Chip Resurgence

The Semiconductor Investment Map above shows the recent growth of the American semiconductor ecosystem, highlighting more than $770 billion in announced investments across 160 projects in 30 states since 2020.

As companies expand semiconductor production and related supply chain capacities in the United States, the growing volume of chips produced domestically strengthens America's economy, enhancing supply chain resilience and reinforcing national security. A stronger chips industry in the U.S. supports high-paying jobs, drives investment across the broader technology and manufacturing ecosystem, and helps ensure reliable access to the semiconductors that power everything from consumer electronics and automobiles to AI systems and critical infrastructure. A stronger domestic semiconductor base also mitigates vulnerabilities from supply chain disruptions and geopolitical uncertainty, while complementing the industry's globally interconnected supply chains.

Together, these company investments will help ensure the United States remains a global leader in semiconductor innovation and advanced manufacturing for decades to come.

AMERICAN SEMICONDUCTOR RESEARCH

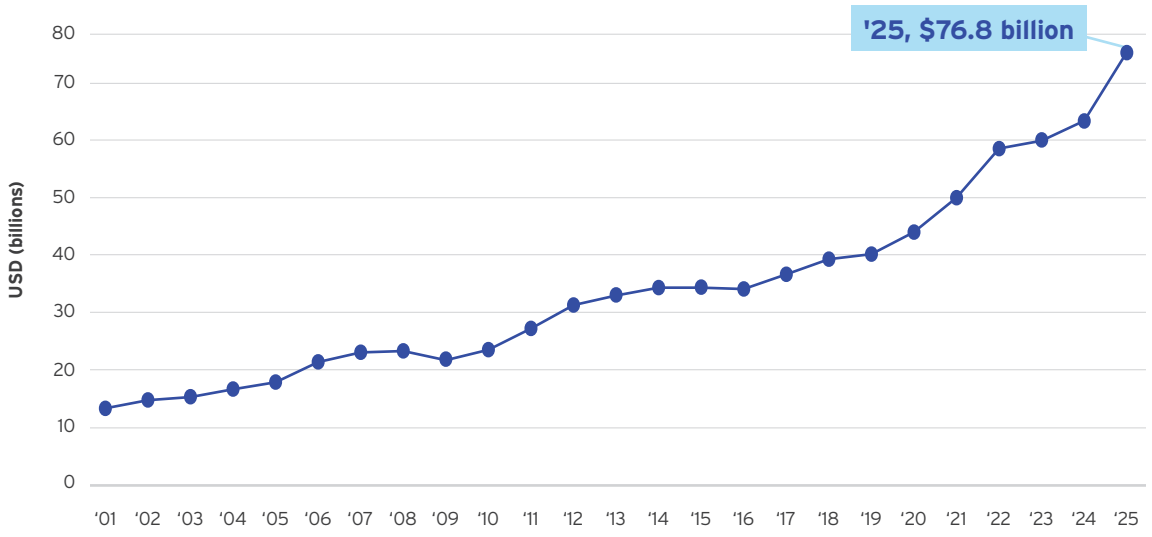
The semiconductor industry is one of the most research-intensive sectors in the world. American semiconductor companies spent $76.8 billion on R&D in 2025, up from $69.6 billion in 2024 and representing a 10.3% increase in R&D spend.

One of the industry's largest demand drivers – chips for AI data centers – requires greater performance for accelerators, more tightly integrated logic and memory chips through advanced packaging, and more robust energy efficiency solutions. "AI at the edge," which involves running machine learning and AI algorithms directly on local hardware devices, is also a rapidly growing industry segment. AI at the edge requires an assortment of low-power and communications chips to meet a seemingly endless variety of use cases, like fitness trackers, smart home systems, autonomous and driver assisted systems (ADAS), and more.

This year, the Commerce Department's CHIPS R&D Office issued a Broad Agency Announcement (BAA) that targets ambitious, large-scale commercial research projects to support development of world-leading compute capabilities across the industry for companies operating in the U.S. to enable companies to leap ahead of global competition and secure enduring market leadership for the U.S.

As demand for new and existing industry segments grows, R&D will be increasingly critical for companies to keep pace with innovation and maintain their competitiveness. In fact, the industry for decades had maintained a roughly two-year cadence for its product cycles, but companies are now delivering innovations faster than ever to meet customer demands.

R&D EXPENDITURES, U.S.-HEADQUARTERED COMPANIES, 2001-2025

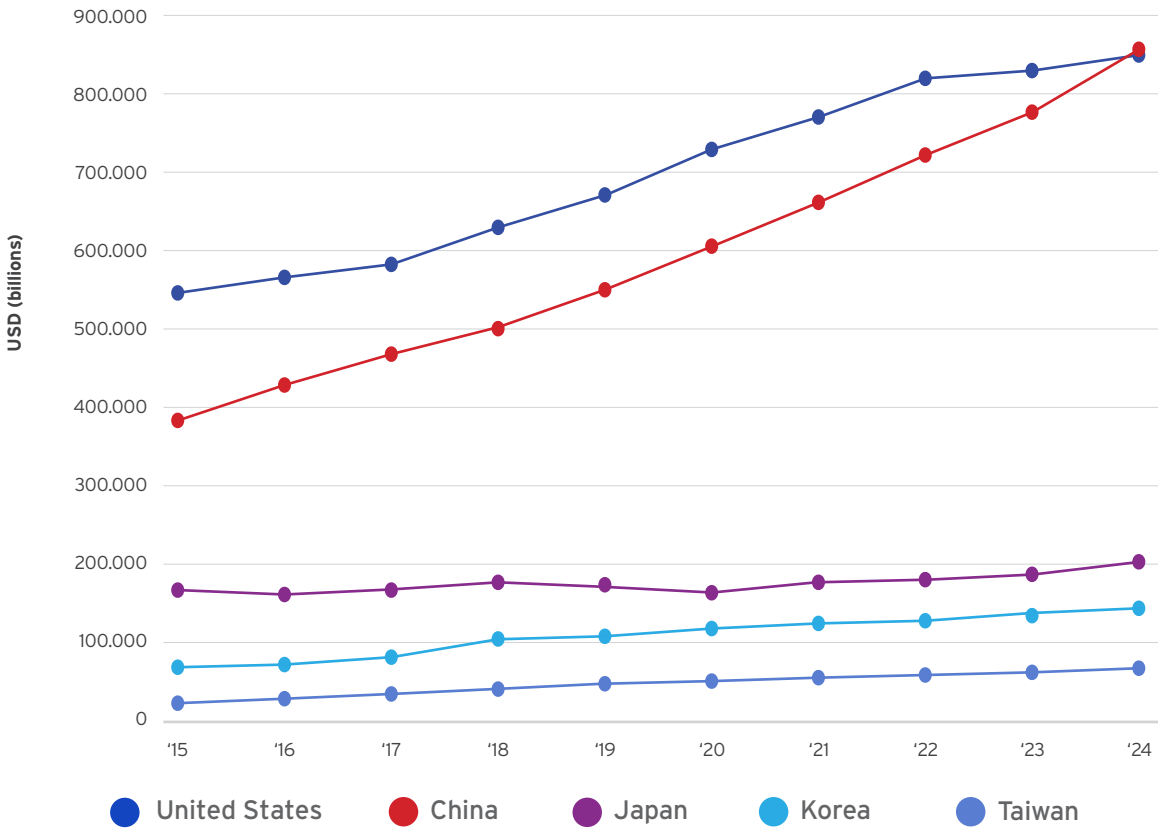


Source: SIA, 2026 Factbook

Although the U.S. was once an unchallenged hub of innovation in the global landscape, governments around the world are deploying an aggressive suite of policies to activate public and private resources.

For example, recent data from the Organisation for Economic Co-operation and Development (OECD) on gross domestic expenditure on R&D shows combined Chinese total industry and government spend on R&D now outpaces U.S. investments, particularly in later-stage development work. It is essential the U.S. redouble its efforts to re-assert its role as the leader in advanced technology development.

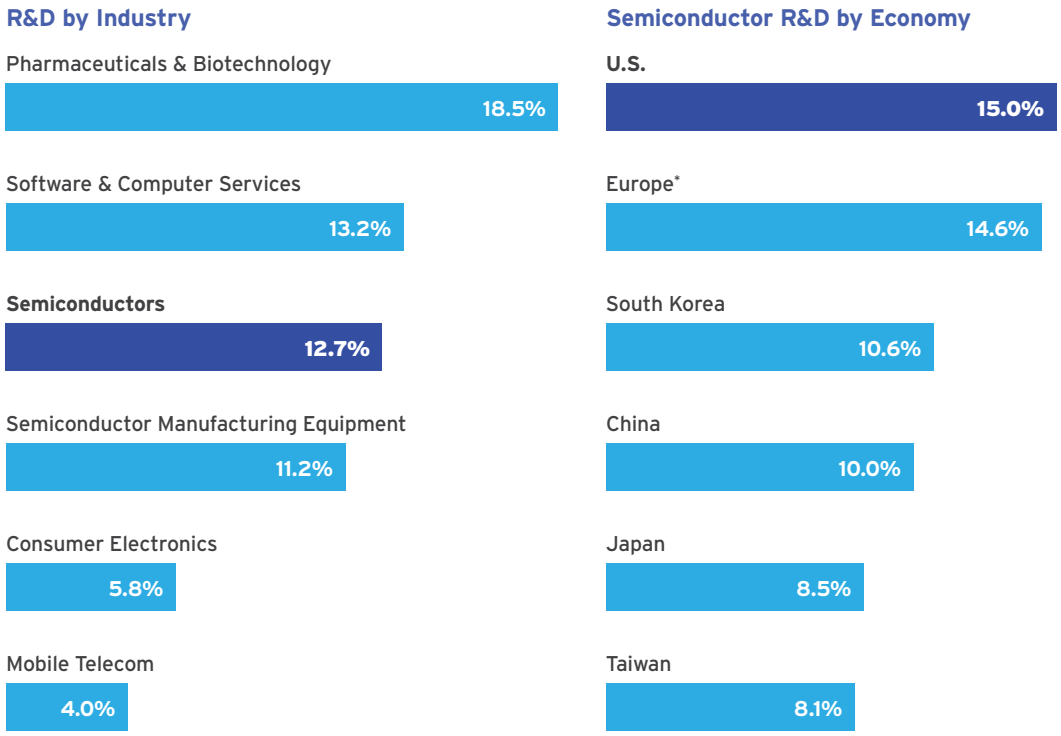
TOTAL R&D SPEND BY COUNTRY



Source: Organisation for Economic Co-operation and Development (OECD), OECD Data Explorer, July 10, 2026

As companies continue to drive cutting-edge innovations and build the technologies of the future, it is vital they have reliable access to top-tier talent, strong intellectual property protection, favorable tax structures to facilitate innovation, and a robust stream of basic science programs to expand the industry's innovation pipeline.

R&D EXPENDITURES AS A PERCENTAGE OF SALES



Source: EU Commission, EU Industrial R&D Investment Scoreboard 2025, December 22, 2025; SIA analysis

*The EU Scoreboard's definition of Europe excludes Switzerland & the UK

THE DOMESTIC SEMICONDUCTOR WORKFORCE

The U.S. semiconductor industry accounts for about 342,000 direct jobs and nearly 2 million additional indirect and induced U.S. jobs.

ONE

U.S. semiconductor job supports

5.7

jobs in other parts in the U.S. economy...

...THAT'S NEARLY

2,000,000

ADDITIONAL AMERICAN JOBS

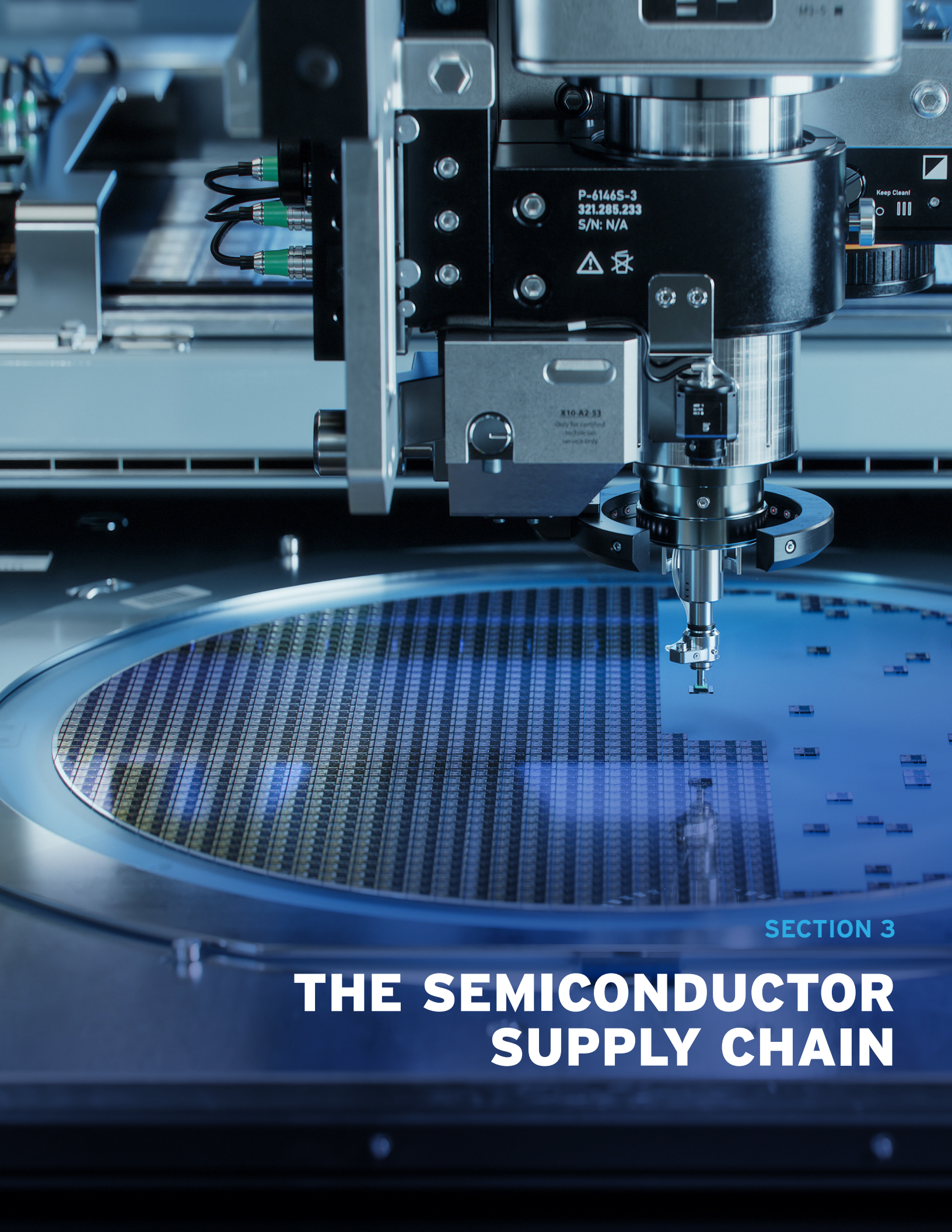
A skilled domestic workforce is vital to maintaining U.S. leadership in semiconductors.

Today, the chip industry directly employs around 342,000 people across chip design, electronic design automation (EDA), semiconductor fabrication, and equipment production. Beyond that, semiconductors power more than 300 downstream industries. According to analysis by the Commerce Department's Bureau of Industry and Security (BIS), average salaries in the semiconductor industry are over 30% higher than average salaries for similar jobs in other fields.

As America's semiconductor ecosystem continues to expand, an increasing number of qualified workers are needed to maintain America's global competitiveness. According to a 2024 SIA-Oxford Economics study, the United States faces a significant shortage of technicians, computer scientists, and engineers. The report finds a projected shortfall of 67,000 of these workers in the semiconductor industry by 2030 and a gap of 1.4 million such workers throughout the broader U.S. economy.

The availability of workers with the necessary skills is a precondition for the success of the domestic semiconductor industry, and action to expand the talent pipeline is necessary for the continued success of the domestic semiconductor industry. To address this talent challenge, government and industry should work together to build on our industry's longstanding workforce development efforts, accelerate and expand the pipeline of STEM graduates in America, and advance targeted immigration reforms that enable the semiconductor industry to attract and retain talent.

A competitive domestic workforce and resilient manufacturing capabilities are critical to U.S. semiconductors leadership.



SECTION 3

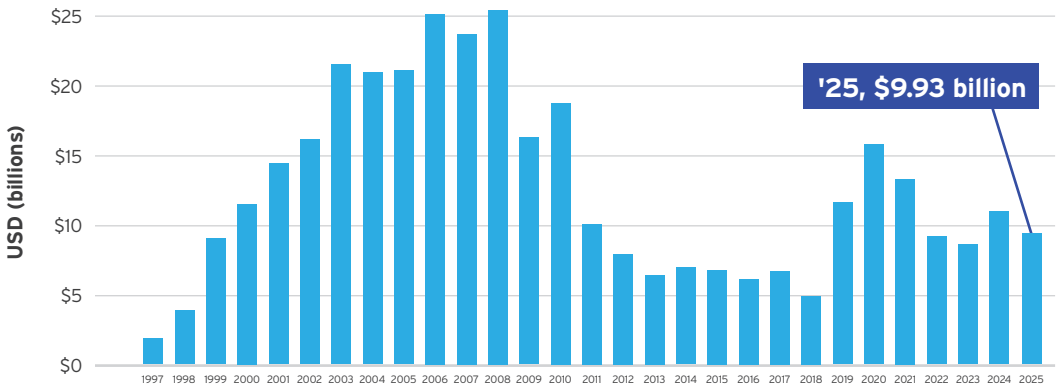
THE SEMICONDUCTOR SUPPLY CHAIN

THE U.S. SEMICONDUCTOR TRADE

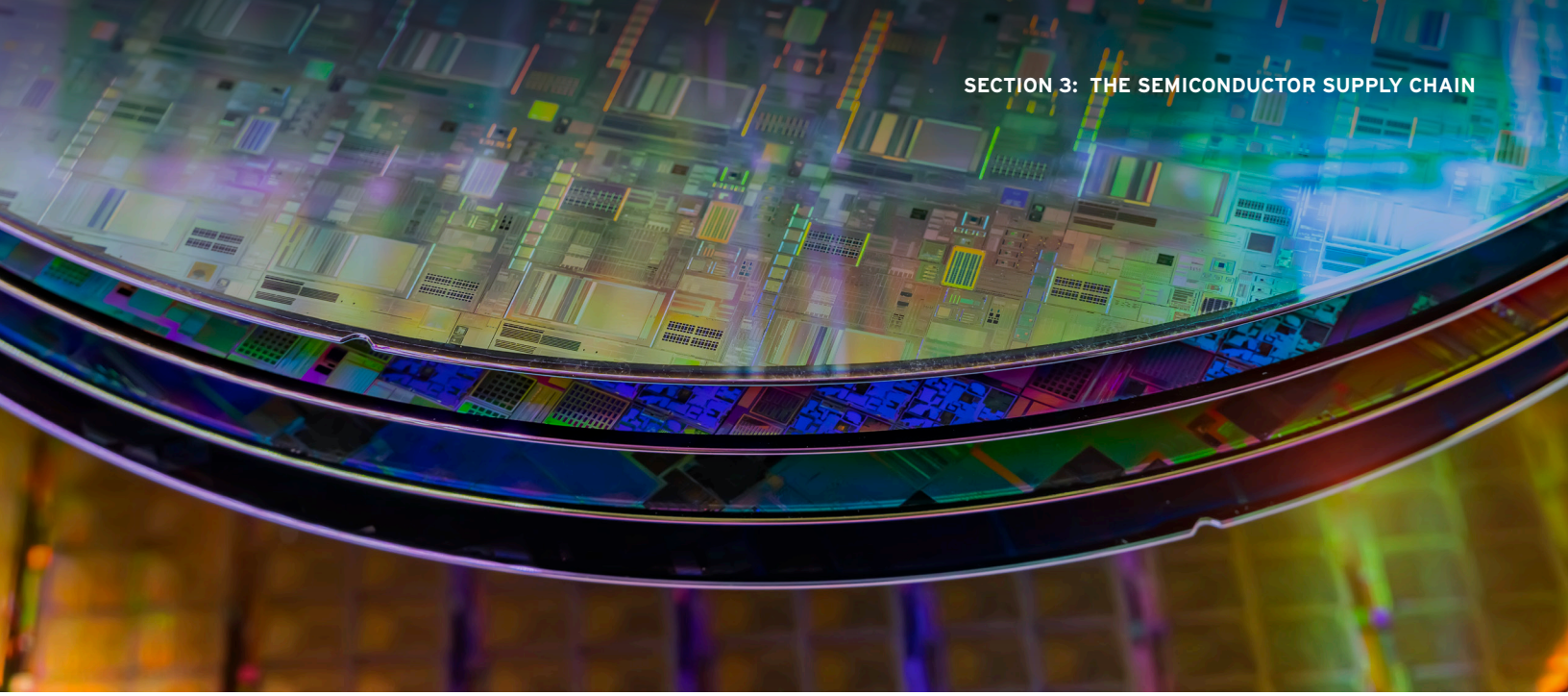
The U.S. semiconductor industry's success is reliant on international sales. In 2025, over 70% of U.S.-headquartered semiconductor companies' revenue came from international sales, while over 85% of all semiconductors sold were shipped outside the United States. As the domestic chip manufacturing buildout continues, it is critical to ensure semiconductor production in America is cost-effective so U.S. companies can compete and and win in global markets. The United States must pursue trade negotiations and other economic measures and initiatives that boost downstream demand and increase the market base for U.S. chips around the world.

U.S. TRADE SURPLUS IN SEMICONDUCTORS, 1997-2025

BASED ON HARMONIZED SCHEDULE HEADINGS 8541 (EXCLUDING SOLAR PRODUCTS) AND 8542



Source: USITC, DataWeb, accessed on March 4, 2025.



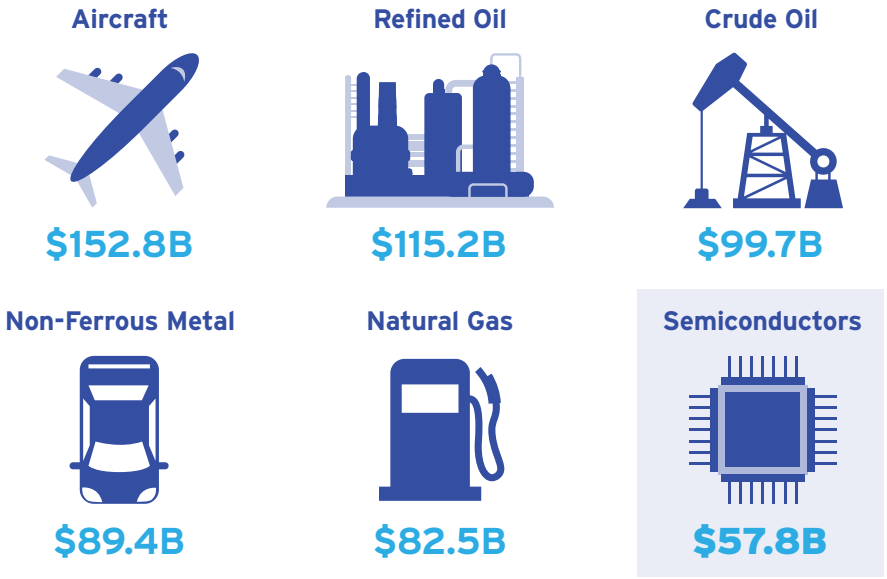
In 2025, U.S. semiconductor exports totaled $57.8 billion, ranking sixth among U.S. export categories behind aircraft, refined oil, crude oil, non-ferrous metals, and natural gas. The U.S. semiconductor industry maintains a a trade surplus with most of our trading partners, including China.

Looking ahead, U.S. semiconductor companies are positioned for strong growth, supported by expanding domestic capacity and significant domestic investment across the semiconductor ecosystem.

As chip firms continue to invest in the United States, government policies that facilitate sales to foreign markets will be critical.

U.S. SEMICONDUCTOR EXPORTS

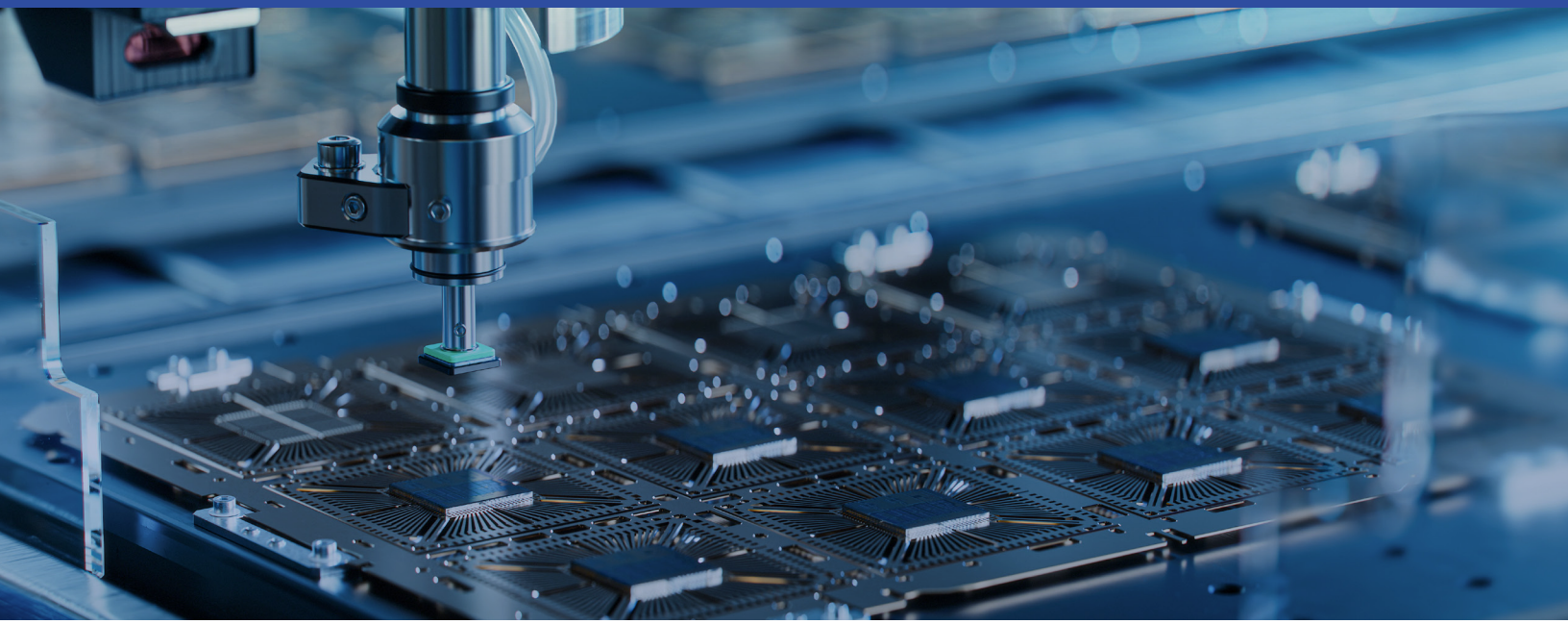
BASED ON TOTAL EXPORTS USING NAICS NATIONAL INDUSTRY CODES



Source: USITC, Imports by NAICS Commodity Code, Accesed Feb 26, 2026.

SUPPLY CHAIN CHALLENGES

Semiconductor supply chains are globally intertwined and complex. Recent disruptions to key upstream inputs have created challenges for the semiconductor industry in the U.S. and globally.



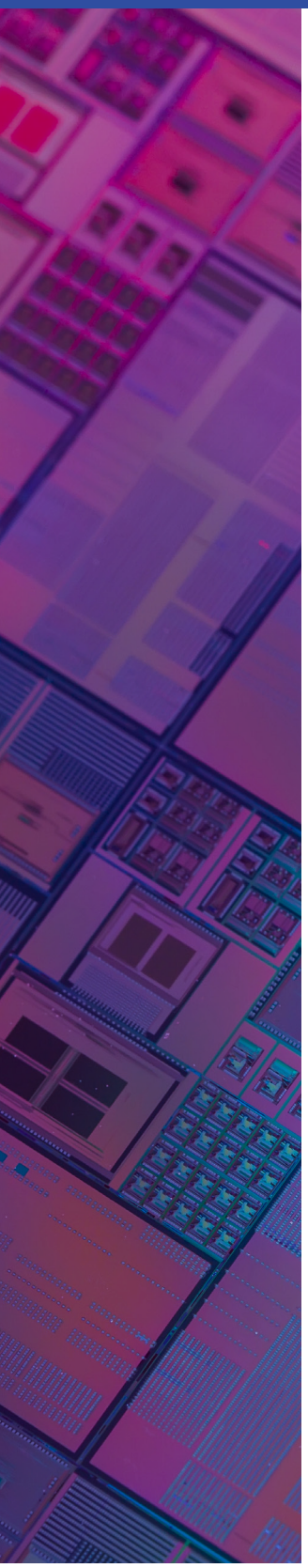
In recent years, the global supply chain supporting the semiconductor industry has faced a number of disruptions due to natural disasters, regional conflicts, supply and demand imbalances, as well as trade restrictions on critical materials and inputs. As U.S. companies invest in new domestic semiconductor manufacturing capacity, supply disruptions for critical upstream inputs may impede these efforts and delay project timelines.

For example, disruptions in the Strait of Hormuz are constraining supply for Naphtha, an important source for high-purity chemicals in semiconductor manufacturing, and helium, which is used in the lithography process.

Likewise, China's restrictions on the exports of critical minerals, such as gallium, germanium, indium phosphide, and a range of rare earth elements and magnets are impacting chip manufacturers around the world. In addition, accelerating demand forecasts have created supply/demand imbalances and led to unanticipated shortages in upstream inputs and manufacturing equipment. Similarly, foundational chip overcapacity in China is distorting the market and depressing prices.

To meet the challenges of today and tomorrow, it is crucial for the U.S. government and semiconductor industry to invest in supply chain resilience. A combination of strategies — such as investing in new sources of supply for critical inputs at home and in friendly countries, stockpiling, and increasing R&D funding for materials science and recycling technologies — are needed to secure and diversify the critical upstream inputs the U.S. semiconductor ecosystem depends on.

POLICY PRIORITIES



SEMICONDUCTOR MANUFACTURING INCENTIVES & R&D INVESTMENTS:
Advance incentives for U.S. chipmaking and investments in American innovation so the industry can remain globally competitive

TAX:
Ensure the U.S. remains a competitive tax destination to invest in semiconductor research, design, and manufacturing

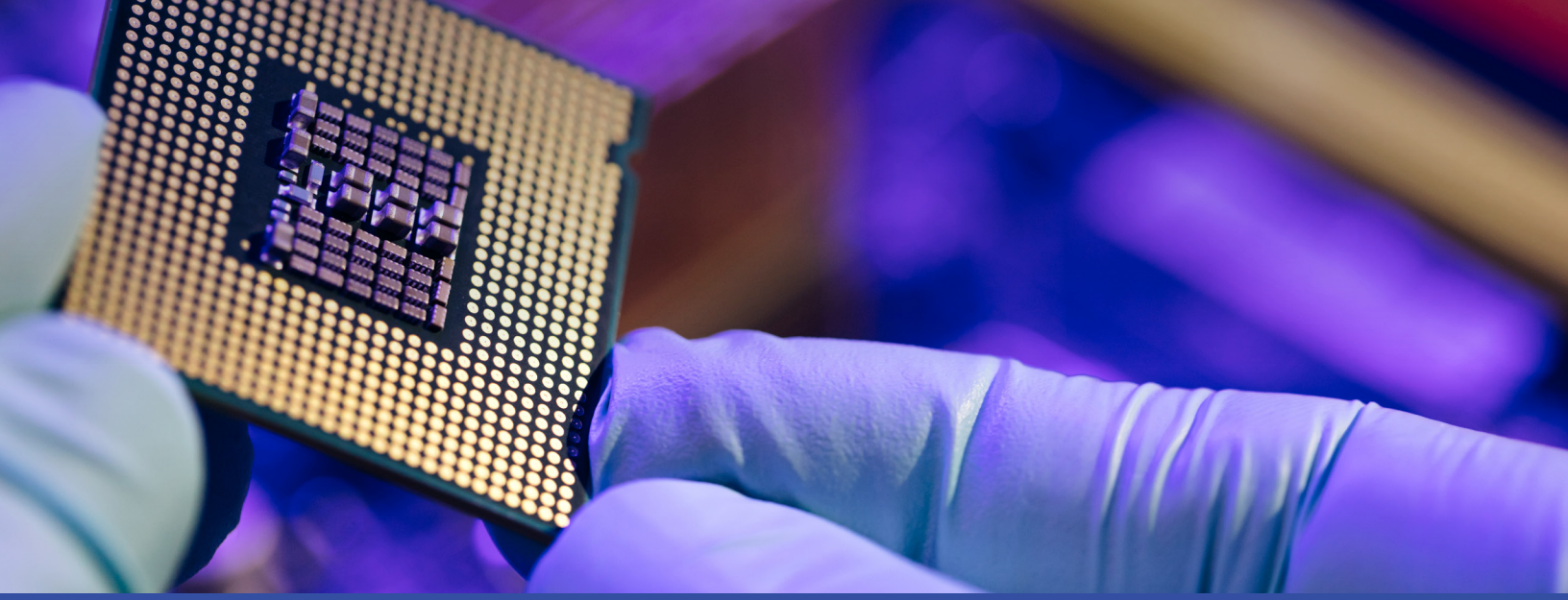
RESEARCH:
Support existing R&D initiatives and grow federal investment in semiconductor research and basic research across the physical sciences to enable U.S. technology leadership and win technologies of the future

WORKFORCE AND IMMIGRATION:
Grow the talent pipeline by developing, attracting, and retaining a high-skilled workforce

TRADE & SUPPLY CHAIN RESILIENCE:
Pursue coordinated trade policies with partner governments to create new demand for U.S. semiconductors, and advance measures to address non-market and market-distorting practices

EXPORT CONTROLS & TECHNOLOGY RESTRICTIONS: Ensure policies are carefully calibrated, targeted, coordinated with key supplier nations, and facilitative of trade among trusted allies

ENVIRONMENTAL & ENERGY REGULATION:
Streamline regulatory approvals to promote innovation and industry growth, protect workers and the environment, and support American energy strength domestically and around the world



METHODOLOGY

This report is based on data developed independently by the Semiconductor Industry Association and in conjunction with the Boston Consulting Group, Deloitte, and Oxford Economics. Figures pertaining to the industry's employment are based on data from the U.S. Census Bureau and the U.S. Department of Labor. Figures regarding the industry's international trade activity are based on an analysis of official U.S. government trade data from the U.S. international Trade Commission. Figures regarding industry manufacturing, capacity, and capital spending are based on data from TechInsights, New York University, McKinsey, The Economist, Tokyo Electron, J.P. Morgan, and IC Insights. Market data is based on World Semiconductor Trade Statistics data. Industry R&D data is based on company financial reports, as well as data from New York University. Lastly, data for the industry job multiplier, GDP contribution, and labor income are based on an Input-Output model developed by IMPLAN.

ABOUT SIA

The Semiconductor Industry Association (SIA) is the voice of the semiconductor industry, one of America's top export industries and a key driver of America's economic strength, national security, and global competitiveness. Semiconductors—the tiny chips that enable modern technologies—power incredible products and services that have transformed our lives and our economy. The U.S. semiconductor industry is a major economic force, employing over a third of a million workers and generating $425 billion in sales in 2025.

SIA represents 99% of the U.S. semiconductor industry by revenue and nearly two-thirds of non-U.S. chip firms. Through this coalition, SIA seeks to strengthen leadership of semiconductor manufacturing, design, and research by working with Congress, the Administration, and key industry stakeholders around the world to encourage policies that fuel innovation, propel business, and drive international competition. Learn more at semiconductors.org.

SIA SEMICONDUCTOR INDUSTRY ASSOCIATION