



May 7, 2025

Mr. Eric Longnecker
Deputy Assistant Secretary for Technology Security
Bureau of Industry and Security
U.S. Department of Commerce
1401 Constitution Avenue NW
Washington, D.C. 20230

RE: ***Notice of Request for Public Comments on Section 232 National Security Investigation of Imports of Semiconductors and Semiconductor Manufacturing Equipment***

Dear Deputy Assistant Secretary Longnecker:

Alliance for Automotive Innovation (“Auto Innovators”) submits these comments in response to the Request for Public Comments from the Bureau of Industry and Security (“BIS”) on its investigation to determine the effects on the national security of imports of semiconductors and semiconductor manufacturing equipment, and their derivative products. We appreciate the opportunity to provide the auto industry’s perspective on this investigation.

Auto Innovators represents the full auto industry, including the manufacturers producing most vehicles sold in the U.S., equipment suppliers, battery producers, semiconductor companies, technology companies, and autonomous vehicle developers. Our mission is to work with policymakers to realize a cleaner, safer, and smarter transportation future and to ensure a healthy and competitive auto industry that supports U.S. economic and national security. Representing approximately 5 percent of the country’s GDP, responsible for supporting nearly 10 million jobs, and driving \$1 trillion in annual economic activity, the automotive industry is the nation’s largest manufacturing sector.

Auto Innovators shares the Administration’s goal of ensuring that the U.S. leads the development and production of critical technologies, including semiconductors, and that import dependencies of these critical technologies does not threaten our national security. We are eager to work with the Administration on the development and implementation of policies that can promote and maintain a robust and resilient supply of semiconductors to support automotive production in the U.S.

However, we are concerned that the imposition of broad-based tariffs or other restrictions on imported semiconductors, semiconductor manufacturing equipment, and their relevant derivative products will have a negative impact on U.S.-based automotive manufacturing. Increasing the domestic supply of semiconductors will require additional time, significant capital, extensive workforce development, and close collaboration between industry and government. In the meantime, any cost increases or supply constraints will raise production costs for automotive manufacturers, could cause production delays or shutdowns, and may result in vehicle shortages and higher vehicle prices on American consumers at a time when new vehicle prices are already at

historic highs. Cost increases and supply constraints are also likely to reduce the competitiveness of U.S.-based manufacturing operations relative to foreign producers in markets around the world. Finally, if access to chips that are not widely manufactured domestically is constrained, automotive innovation cycles in the U.S. will almost certainly slow and new and, in many cases, lifesaving technologies may be stalled or abandoned altogether.

Modern Vehicles are Increasingly Reliant on Semiconductors

Semiconductors are an essential component in modern vehicles. Semiconductors enable or support a significant number of features and capabilities, including those related to vehicle control, safety, power management, and information displays. Importantly, the technologies that underpin the industry's global competitiveness and are facilitating the transformation to a cleaner, safer, and smarter future – including advanced driver assistance systems, automated driving systems, connected services and applications, software-defined capabilities, and new mobility models – are dependent on semiconductors.

The number of chips in the average vehicle has increased dramatically in recent years, more than doubling between 2017 and 2021.¹ The average car now contains over 1,700 chips.² The number of chips in a vehicle is only expected to increase in future years as more advanced technologies and features are integrated into vehicles. The Federal Reserve Bank of Chicago estimated that the total value of the global automotive semiconductor market will grow from \$38.7 billion in 2020 to \$116.6 billion by 2030.³

While leading edge and other advanced node semiconductors are becoming increasingly prevalent in some higher-level automotive functions, architectures, and technologies, the automotive industry is particularly dependent on legacy or mature node chips (i.e., 22nm or larger). This is because the chips used in vehicles must be “automotive grade” and capable of handling harsh conditions, including extreme temperature variations, moisture, dust, vibration, and electromagnetic interference. A recent Center for Strategic and International Studies report concluded that legacy chips account for 95% of the automobile industry's total semiconductor consumption.⁴ It is estimated that two-thirds of the chips required for new vehicle features and capabilities through 2030 will be legacy chips.⁵ As a result, there is a growing need for a robust and resilient supply of legacy chips to meet the needs of auto manufacturers.

Domestic Production of Legacy Semiconductors is Increasing, but Still Insufficient

The output of semiconductors for automotive applications has not kept pace with auto industry demand. In recent years, as auto sector demand for legacy chips increased dramatically and semiconductor production capacity as a whole increased by 10 percent per year on average, legacy

¹ <https://www.csis.org/analysis/strategic-importance-legacy-chips>

² <https://www.csis.org/analysis/strategic-importance-legacy-chips>

³ <https://www.chicagofed.org/publications/chicago-fed-letter/2022/473>

⁴ <https://www.csis.org/analysis/strategic-importance-legacy-chips>

⁵ <https://www.csis.org/analysis/strategic-importance-legacy-chips>

chip production capacity was only expanding at roughly 2 percent annually as recently as 2023.⁶ Currently, only about one-sixth of all semiconductor investment is directed toward legacy chip manufacturing.⁷

While we are encouraged by recent investments in legacy semiconductor manufacturing in the U.S. to help meet growing automotive demand, the U.S. is still lagging in legacy chip production compared to other parts of the world. Less than 10% of the world's chips are currently made in the U.S. and, according to the Center for Security and Emerging Technology, nearly 60% of U.S. logic chip capacity is in leading-edge logic chips.^{8,9} As a result, U.S. automotive manufacturers are largely dependent on other countries for chips.

At the same time, the Chinese Communist Party has made a strategic decision to invest heavily in semiconductor production. In 2022, China announced a \$143 billion investment in its chip industry and, in May, unveiled a \$47.5 billion fund to further grow its semiconductor industry.¹⁰ As a result, native Chinese semiconductor companies are projected to nearly double their installed wafer capacity over the next 10 years.¹¹ Partly in response to restrictive trade policies and advanced chip export controls implemented in the U.S. and elsewhere, China now appears to be targeting its investment to the production of legacy chips. In a recent report, the Information Technology and Innovation Foundation noted that share of global mature node production attributable to native Chinese companies is expected to grow from 31 percent in 2023 to 39 percent in 2027.¹² In addition, the Semiconductor Industry Association has concluded that China now has “increasingly robust offerings for legacy chips, and domestic Chinese equipment firms are on track to provide strong capabilities for mature node (40/28 nm) production over the next few years.”¹³

There are legitimate and significant concerns that China, which has a clear pattern and practice of ignoring intellectual property rights and using non-market activities to hollow out market-based competitors to gain dominance, will overproduce and eventually dominate legacy chip production globally. However, at present, there does not appear to be a strong overreliance on Chinese legacy chips in the U.S. The results of a recent legacy chip survey conducted by BIS found that while at least two-thirds of products likely contain chips manufactured by Chinese-based foundries, Chinese legacy chips only accounted for 2.8 percent of all legacy chips by count and 1.3 percent of legacy chips by value.¹⁴ In other words, even though Chinese legacy chips are present in most products, they make up a small portion of the total legacy chips in those products.

⁶ <https://www.csis.org/analysis/strategic-importance-legacy-chips>

⁷ <https://www.csis.org/analysis/strategic-importance-legacy-chips>

⁸ Anna Swanson and Madeleine Ngo, “World’s Five Leading Chipmakers Have Now Promised U.S. Investment,” *New York Times*, August 6, 2024

⁹ <https://www.cset.georgetown.edu/publication/sustaining-u-s-competitiveness-in-semiconductor-manufacturing/>

¹⁰ <https://www.csis.org/analysis/strategic-importance-legacy-chips>

¹¹ <https://www.csis.org/analysis/strategic-importance-legacy-chips>

¹² <https://itif.org/publications/2024/08/19/how-innovative-is-china-in-semiconductors/>

¹³ <https://www.semiconductors.org/taking-stock-of-chinas-semiconductor-industry/>

¹⁴ <https://www.bis.gov/media/documents/public-report-use-mature-node-semiconductors-december-2024.pdf>

This means that there is a unique opportunity for the U.S. government and like-minded nations to work together to ensure that there is a resilient and trusted supply of legacy chips to counter the economic and national security risks presented by China and its non-market efforts to lock down a significant position in the global legacy chip market. For now, the government should focus on implementing policies that promote semiconductor manufacturing in the U.S. Given how long it takes to construct semiconductor fabrication facilities, such policies should aim to support increased domestic manufacturing while avoiding short-term supply disruptions of both legacy and advanced semiconductors needed by the auto industry in the U.S.

Policymakers Should Avoid Suppressing Legacy Semiconductor Supply

While policymakers work with industry to increase the domestic supply of legacy semiconductors, we strongly discourage BIS from recommending any action that would suppress the availability of legacy chips to automakers or raise the cost of U.S.-based production. As we witnessed during the COVID-19 pandemic, shortages in legacy chip supply can have an out-sized negative impact on U.S.-based auto production.

During the legacy semiconductor shortage starting in 2021, North American auto manufacturers were forced to reduce vehicle production by 5.9 million vehicles.¹⁵ During this time, we witnessed the idling of automotive plants in the U.S. and the loss of U.S. auto manufacturing jobs.

The semiconductor crisis revealed that any kinks in the sprawling and complex supply chain for automotive semiconductors can trigger unforeseeable harm. It also exposed the long lead times required to bring new semiconductor production capacities online. Since currently there is not adequate U.S. capacity to serve existing market needs, BIS should avoid recommending broad-based tariff actions on semiconductors. However, if the decision is made to recommend tariffs, BIS should narrowly focus on national security measures that would limit secondary effects and help ensure that the supply of legacy chips to support U.S.-based auto manufacturing is not unnecessarily suppressed or that an increase in the price of such chips is avoided.

Policy Alignment Will Avoid Unintended Costs and Burdens for the Automotive Industry

To avoid over-burdening the auto industry, we urge close policy alignment – including clear goals and policy sequencing – on potential actions related to semiconductors in the context of and in relation to other policies and actions that have been imposed or under consideration throughout the federal government. This includes new restrictions imposed by BIS on Chinese hardware in vehicle connectivity systems and automated driving systems and existing or potential tariffs on automobiles and automotive parts and critical minerals. It also includes potential action related to legacy chips under the United States Trade Representative’s current Section 301 legacy chips investigation into China’s capacity expansion and market domination efforts.

¹⁵ John Irwin, “The Microchip Shortage is Fading, but the Changes it Wrought Remain,” *Automotive News Canada*, December 22, 2023.

At this crucial time in the auto industry's transformation amid strong global competition and uncertainty, we strongly encourage BIS and other agencies within the federal government to focus on policies that can reduce uncertainty, avoid adding unnecessary costs, and position the industry for near- and long-term success.

For these reasons, we discourage BIS from taking broad-based action against chip imports. At the very least, BIS should phase in any tariffs and consider excluding imported chips if those chips are used in U.S.-based automotive manufacturing.

Auto Innovators welcomes the opportunity to work with BIS on this and other matters critical to the auto industry.

Sincerely,

A handwritten signature in black ink, appearing to be "H. Cain", with a horizontal line extending to the right.

Hilary M. Cain
Senior Vice President of Policy