



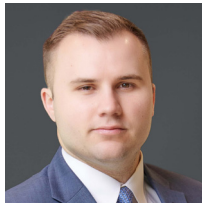
Semiconductor Subsidies Signal Shift in U.S. Industrial Policy



Focus on shoring up key supply chains likely has legs.

September 2022

With the passage of the CHIPS and Science Act of 2022, the U.S. followed Japan, Canada, and the European Union in enacting policies to support domestic semiconductor manufacturing. This legislation and the recently passed Inflation Reduction Act reflect a broader shift in U.S. policy toward reshoring critical industries.



Michael Pinkerton

Washington Associate Analyst
U.S. Equity Division

Industrial policy in the U.S. is not new. We can trace its philosophical roots to Alexander Hamilton's 1791 "Report on Manufacturers." Still, this approach marks an abrupt departure from the multi-decade process of globalization that built a complex web of supply chains optimized for cost and efficiency. Adjusting these networks of suppliers and manufacturers to address concerns about security and economic competitiveness will take time and is likely to be inflationary.

It is not a fluke that U.S. industrial policy has focused on semiconductors. And these interventions will have potential implications for the economy and the industry.

An Area of Strategic Importance

The U.S. has strong capabilities in semiconductor design, the software used in that process, and the highly

technical tools and equipment used in chip fabrication.

However, over the past three decades, America's share of global semiconductor manufacturing has declined steadily. This trend reflects the push by chipmakers to outsource the highly complex manufacturing process to contract foundries that produce semiconductors designed by other companies.

Today, the bulk of the production nodes for the most advanced chips resides in Asia. Rising geopolitical tensions in the area have highlighted this concentration as a potential economic and security vulnerability.

Consider one of the lessons from the coronavirus pandemic. The Department of Commerce estimates that semiconductor shortages stemming from supply chain disruptions resulted

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in a USD 240 billion hit to U.S. gross domestic product last year.¹

And the most advanced versions of these tiny chips are essential to fueling big innovations, including artificial intelligence and the automation of complex, real-world processes. These cutting-edge technologies have wide applications across industries. That's why the U.S. and other governments view access to these chips as crucial to a country's economic competitiveness and national security.

Subsidies and Restrictions

In our view, the CHIPS and Science Act of 2022 signals that the U.S. government is committed to advancing domestic semiconductor manufacturing.

Key line items include a 25% investment tax credit for U.S. semiconductor plants and specialized equipment used in chipmaking. Tax credits of this nature are often extended before they're slated to expire, so this could be a long-term investment tool for the chip industry.

The law also allocates USD 39 billion in subsidies to expand U.S. capacity to fabricate advanced chips. The funds will be doled out through 2026, with a limit of USD 3 billion per project. The Department of Commerce has the leeway to determine which companies will receive funding and how much.

But building additional chipmaking capacity is only part of the solution. Know-how is also critical. The act includes USD 11 billion in funding for research and development and workforce training related to the manufacture of advanced chips.

Federal money comes with some strings attached. The act bars subsidy recipients from “material expansions” in

“countries of concern,” including China. In these markets, chipmakers would only be allowed to increase capacity at existing facilities that operate older, 28-nanometer processes.

Takeaways for Investors

Between federal subsidies and the tax credit, we see the potential for the cost of building incremental chipmaking capacity in the U.S. to decline by 30% to 50%. This level of support could go a long way toward making U.S. semiconductor plants cost-competitive with most regions. However, these projects will take many years to complete.

Key beneficiaries from the law include domestic and international chipmakers expanding their manufacturing capacity in the U.S. and companies that provide the equipment used to fabricate semiconductors. But subsidies alone do not guarantee operational or financial success. Semiconductor companies must execute well and allocate capital effectively. Investors must also monitor developments on the regulatory front that could restrict companies from selling certain chips and process technologies to some countries.

And building more semiconductor plants in the U.S. addresses only part of the supply chain—it is truly dizzying how many inputs go into this complex production process. We could see further government efforts to secure other links in the supply chain by working with allies and nearby nations. But this security may come at a cost: These efforts are likely to be inflationary.

These kinds of government initiatives also do not happen in a vacuum. We are paying close attention to how other nations might respond through their own industrial policies.

¹ U.S. Department of Commerce. “Analysis for CHIPS Act and BIA Briefing.” Published April 6, 2022.

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