US Government Policies Focus on Chip Competition for AI and Beyond

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Government policymakers have been increasingly focused on protecting and promoting competition relating to semiconductors, the computer chips that enable modern technologies ranging from AI to mobile devices to the cloud. The Biden administration's attention to semiconductor competition has included at least two different, yet interrelated, dimensions: antitrust and economic development policy, the latter arising primarily from the CHIPS and Science Act of 2022 (CHIPS Act). This article surveys several recent developments, along both policy dimensions, that are relevant to competition in the semiconductor industry. These include recent activities of the FTC relating to AI chips as well as recent announcements pursuant to the CHIPS Act about semiconductor R&D initiatives, funding for specific chip fabrication facilities, and support for wireless communications innovation projects.

Recent FTC Developments

On January 25, 2024, the Federal Trade Commission (FTC) announced that it launched an inquiry under Section 6(b) of the FTC Act into investments and partnerships involving generative AI companies and cloud service providers.[1] Among other topics detailed in the FTC's 6(b) Order, the Commission specifically requested certain materials concerning chip competition in seeking documents regarding "competitive conditions for any cloud computing or generative AI products or services (including, but not limited to, cloud computing infrastructure, microchips, training data, models, and products or services that incorporate generative AI)."[2]

This FTC initiative appears to align with the Biden administration's overall emphasis on promoting innovation and competition in AI and its reference to semiconductor competition, in particular, in its October 30, 2023 Executive Order on AI. In that Executive Order, on the "Safe, Secure and Trustworthy Development and Use of Artificial Intelligence," President Biden stated that the "Federal Government will promote a fair, open, and competitive ecosystem and marketplace for AI and related technologies so that small developers and entrepreneurs can continue to drive innovation," and asserted that doing so would require "addressing risks from

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[1] Press Release, FTC, "FTC Launches Inquiry Into Generative AI Investments and Partnerships," (Jan. 25, 2024), https://www.ftc.gov/news-events/news/press-releases/2024/01/ftc-launches-inquiry-generative-ai-investments-partnerships.

[2] FTC Matter No. P246201, Order to File a Special Report, Specification 4, https://www.ftc.gov/system/files/ftc_gov/pdf/P246201_AI_Investments_6%28b%29_Order_and_Resolution.pdf.

dominant firms' use of key assets such as semiconductors, computing power, cloud storage, and data to disadvantage competitors…."[3]

On the same day that the FTC's 6(b) study was announced, the FTC also held a virtual Tech Summit on AI competition and consumer protection issues featuring panel discussions with various speakers from outside the FTC. The first panel focused on "AI & Chips and Cloud," and included four outside speakers sharing their views about the competitive dynamics and possible competitive concerns in these industries.[4] At the conclusion of the summit, Henry Liu, the Director of the FTC's Bureau of Competition stated: "As we heard from several panelists this afternoon, when dominant firms control over key inputs like computing power, cloud storage, semiconductors, talent, and even data, it creates a risk of excessive prices and coercive terms. To promote more open markets, the bureau will continue litigating cases that address conduct and acquisitions, which, if left unchecked, might result in increased […] market concentration in various layers of the AI stack. . . . Protecting competition for inputs like computer chips and processing hardware will help propel AI development."[5] Thus, the FTC has signaled its intention to monitor and protect competitive conditions in this area of the economy.

Recent CHIPS and Science Act Developments

While the FTC pursues those efforts via its public forums and its enforcement program, policymakers in other parts of the government are pursuing economic development initiatives to encourage the growth of a secure and competitive AI supply chain and semiconductor ecosystem within the United States. On August 9, 2022, President Biden signed into law the CHIPS Act aimed at boosting domestic semiconductor manufacturing, strengthening supply chains, and increasing investments in research and developments in "the industries of tomorrow" such as "nanotechnology, clean energy, quantum computing, and artificial intelligence."[6]

Under the CHIPS Act, the Department of Commerce formed two offices for awarding $50 billion in funding to boost the U.S. semiconductor industry—the CHIPS Research and Development Office, which is responsible for $11 billion in investments for the chip R&D ecosystem, and the CHIPS Program Office, which is responsible for $39 billion "to provide incentives for investment in facilities and equipment in the United States."[7]

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[3] Executive Order on the Safe, Secure, and Trustworthy Development and Use of Artificial Intelligence, (Oct. 30, 2023), https://www.whitehouse.gov/briefing-room/presidential-actions/2023/10/30/executive-order-on-the-safe-secure-and-trustworthy-development-and-use-of-artificial-intelligence/.

[4] FTC Tech Summit, FTC, https://www.ftc.gov/news-events/events/2024/01/ftc-tech-summit.

[5] FTC Tech Summit Transcript at 50, (Jan. 25, 2024), https://www.ftc.gov/system/files/ftc_gov/pdf/transcript-ftc-tech-summit-1-25-24.pdf.

[6] FACT SHEET: CHIPS and Science Act Will Lower Costs, Create Jobs, Strengthen Supply Chains, and Counter China, (Aug. 9, 2022), https://www.whitehouse.gov/briefing-room/statements-releases/2022/08/09/fact-sheet-chips-and-science-act-will-lower-costs-create-jobs-strengthen-supply-chains-and-counter-china/.

[7] Chips for America, NIST, https://www.nist.gov/chips

In the first half of 2024, the CHIPS offices began making significant funding awards to a range of different companies and initiatives. For example:

- In February 2024, via the CHIPS R&D program, the Biden administration announced that it expects to invest over $5 billion in semiconductor-related research and development, including in the National Semiconductor Technology Center (NSTC), "a public-private consortium dedicated to semiconductor research and development in the United States."[8] NSTC is to be operated by a non-profit called the National Center for the Advancement of Semiconductor Technology or "Natcast." Deidre Hanford, a former executive at the electronic design automation firm Synopsys, was named CEO of Natcast in January 2024. In March 2024, Natcast issued a public request seeking detailed suggestions about what types of semiconductor R&D prototyping facilities it should support.
- In February 2024, via the CHIPS Program Office, the Department of Commerce awarded $1.5 billion in funding to GlobalFoundries, through a non-binding preliminary agreement, to support manufacturing projects at sites in New York and Vermont.[9]
- In March 2024, via the CHIPS Program Office, the Department of Commerce awarded $8.5 billion in funding to Intel, through a non-binding preliminary agreement, to support manufacturing projects at sites in Arizona, New Mexico, Ohio, and Oregon.[10]

The CHIPS Act also provided some funding specifically for telecom applications. To promote innovation and competition in 5G and next generation wireless technologies, it funded a Public Wireless Supply Chain Innovation Fund (Innovation Fund). The Innovation Fund's $1.5 billion grant program is intended in part to foster competition.[11] The fund's objective, as articulated by the National Telecommunications and Information Administration (NTIA), is to advance open, secure, and interoperable wireless equipment, which will "help drive competition, strengthen global supply chain resilience and lower costs for consumers and network operators."[12] To date,

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[8] FACT SHEET: Biden-Harris Administration Announces Over $5 Billion from the CHIPS and Science Act for Research, Development, and Workforce, Feb. 9, 2024, https://www.whitehouse.gov/briefing-room/statements-releases/2024/02/09/fact-sheet-biden-harris-administration-announces-over-5-billion-from-the-chips-and-science-act-for-research-development-and-workforce/; National Semiconductor Technology Center, NIST, https://www.nist.gov/chips/research-development-programs/national-semiconductor-technology-center.

[9] Funding Updates, Chips for America, NIST, https://www.nist.gov/chips/funding-updates.

[10] *Id.*

[11] Overview, Public Wireless Supply Chain Innovation Fund, NTIA, https://www.ntia.gov/page/innovation-fund.

[12] "Biden-Harris Administration Awards Nearly $80M For Wireless Innovation, NTIA (Jan. 10, 2024), https://www.ntia.gov/press-release/2024/biden-harris-administration-awards-nearly-80m-wireless-innovation.

the NTIA has awarded $140 million to projects aimed at driving wireless innovation, including those proposing to lower the barriers of entry for new and emerging entities.[13]

Conclusion

The implementation of the CHIPS Act so far seeks to support multiple, domestically located chip manufacturers and to support a broader semiconductor ecosystem in the United States. Both this policy and competition law enforcement seek to preserve or increase the number and quality of competitive industry participants at different levels of the semiconductor supply chain. It will be interesting to watch how competition policy and economic development policy continue to evolve in the U.S. semiconductor industry as AI and other cutting-edge technologies drive new demand for chips.

[13] Grant Programs, Public Wireless Supply Chain Innovation Fund, NTIA, https://www.ntia.gov/page/innovation-fund/grant-programs.