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Research Report

Semiconductor subsidies and WTO rules

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Semiconductor subsidies and WTO rules

by

Gary Clyde Hufbauer*

Industrial policy is back with a bang, led by semiconductors. The recent burst of chip subsidies is truly spectacular. But right from its inception in 1958, the semiconductor industry has been favored. The “Bix 6” leading economies—China, Japan, the Republic of Korea, Taiwan, the US, the EU—are all generous sponsors. Incentives include support for training and R&D; obligatory government and private procurement; preferential tax rates and credits; and grants and loans.

Several of these policies could be questioned under Article 5 of the [WTO Agreement on Subsidies and Countervailing Measures](#), which reads: “No Member should cause, through the use of any subsidy referred to in paragraphs 1 and 2 of Article 1, adverse effects to the interests of other Members...”. Questions could also be raised under the WTO Agreement on [Trade-Related Investment Measures](#), owing to the strong export orientation of some policies. As well, semiconductor imports are clearly susceptible to national countervailing duties under the Agreement on Subsidies and Countervailing Measures.

But, in fact, almost no complaints have been lodged by GATT or WTO members against subsidies, even as these have been granted for more than 50 years to private and state-owned chip firms. The most notable exception was an anti-dumping case brought by the United States against Japan in 1986, [settled](#) by an anti-competitive price-fixing agreement.

The absence of litigation is not for want of information about the extent of state support. In 2019, the OECD published a [comprehensive estimate](#) of subsidies granted in various forms to some 21 major chip firms over the five-year period 2014 to 2018 inclusive. The estimated total for the 21 firms amounted to US\$50 billion over that period. A rough estimate for the five-year period 2020-

2024 suggests US\$200 billion disbursed or appropriated by the Big 6 chip economies just for direct grants (not including tax credits and other subsidies).¹

Immunity from litigation is rooted in industry characteristics and government objectives. The overarching industry characteristic is rapid innovation. Not only have semiconductor capacities grown exponentially, but semiconductor varieties have proliferated. Accordingly, by the time a legal case has been adjudicated against semiconductor producer A, the firm may have shifted production to semiconductors B or C. For similar reasons, trade litigation is rare in the computers or pharmaceuticals industries.

Other chip industry characteristics also serve as disincentives for legal challenges. One is the practice of leading firms—such as Intel, Samsung, Taiwan Semiconductor Manufacturing Company—to locate different stages of production in several countries, receiving subsidies from each. These firms have no reason to litigate against the hands that feed them.

National security provides a recent but persuasive reason for avoiding legal combat. Foremost, for China and the US, is the military rationale for seeking semiconductor dominance. Chris Miller’s influential book, [Chip War](#), documents major semiconductor roles in the First Cold War, the two Iraq wars and the Second Cold War; foreseeably, they will play an even more critical role in future battles fought with robots and drones. [GATT Article XXI](#) states: “Nothing in this Agreement shall be construed ... (b) to prevent any contracting party from taking any action which it considers necessary for the protection of its essential security interests...”. Great powers view support for semiconductors as essential as support for military aircraft.

Promoting exports has been a major objective of subsidies disbursed by China, Japan, the Republic of Korea, and Taiwan for decades. These have not been challenged by major importers with countervailing duties, both because of rapid innovation and because no country wants to deny its defense industries the latest chips. In 2022, the US passed the [CHIPS and Science Act](#) to subsidize domestic chip production, whether made by US or foreign firms. As a response, other Big 6 chip economies have ramped up their own subsidy programs, rather than launch trade litigation.

Compared with these reasons for trade peace, the disfunction of the WTO Appellate Body has little consequence. Nor would the [Multi-party Interim Appeal Arbitration Arrangement](#), already joined by the European Union, China and Japan, meaningfully enforce WTO rules against semiconductor subsidies, even if the US signed on.

Given this history, efforts by trade ministers to craft new disciplines for national chip subsidies appear futile. The most that might be accomplished is a US-EU pact, joined by their geopolitical friends and allies, requiring timely and detailed disclosure by countries and companies of planned and disbursed subsidies. Sunshine might limit government extravagance.

If that proves too ambitious, semiconductor economies might tacitly agree that subsidies are exempt from normal trade and investment rules because the industry is essential to national security. Similar national security arguments can also be made for rare-earths, EV batteries and

key pharmaceuticals—all massively subsidized. Going down the exemption path means of course that large swaths of the modern economy will escape subsidy disciplines.

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¹ This ballpark figure is based on the author's current research to evaluate the CHIPS and Science Act of 2022.

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