

Chip designers slow down processors to dodge US-China sanctions

Article

The news: Alibaba, Nvidia, and Biren Technology are some of the chipmakers reducing processing speeds of their chip designs to avoid US-imposed sanctions aimed at suppressing Chinese computing power, per [Ars Technica](#).

Recouping investments: Alibaba, Biren, and other Chinese design houses have spent years and millions of dollars creating the blueprints for advanced processors to power the country's

next generation of supercomputers, artificial intelligence algorithms, and data centers.

- **Alibaba and Biren were forced to halt production of their high-end chips and make costly design changes** to throttle their chips to comply with the sanctions.
- Nvidia, which revealed in July that it could [lose up to \\$400 million in sales](#) due to US government restrictions, is offering a repackaged chip that meets the export control rule, per [US News & World Report](#).
- "The Nvidia A800 GPU is another alternative product to the Nvidia A100 GPU for customers in China. The A800 meets the US government's clear test for reduced export control and cannot be programmed to exceed it," an Nvidia spokesperson told Reuters.
- American components are used for all semiconductor fabrication and **China's own domestic chip plants are possibly decades away from producing cutting-edge chips** such as those designed by Alibaba and Biren, per Ars Technica.
- The US' rules for calculating key metrics for chip performance are unclear. **Chinese engineers are having a hard time determining compliance** for the bidirectional transfer rate, or the speed with which they send data to each other.

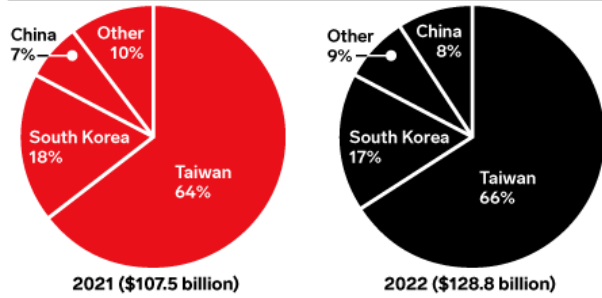
What's next? "Attempting to freeze a country in place for a technological level of hardware is a big deal," said **Paul Triolo**, head of tech policy at consulting group **ASG**. "That is what the US is trying to do by restricting sales and closing off the manufacturing road map to get to these advanced levels of hardware."

What's the catch? Larger chipmakers have the latitude to throttle their existing chip designs for lower performance output, but smaller manufacturers will have a harder time adhering to the US chip sanctions.

- Some chipmakers could throttle powerful processors to meet requirements but leave back doors open for end users to overclock or unlock performance in the future.
- **Dialing down the processing power of CPUs and GPUs could stifle innovation** and lead to a situation where government regulations dictate the cadence of technology.
- **This would slow down development in processor-intensive technology like AR/VR metaverse applications, AI and machine learning, and cloud computing.**

Semiconductor Foundry Revenue Share Worldwide, by Country, 2021 & 2022

% of total



Source: TrendForce as cited in press release, April 25, 2022

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