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TSMC's Arizona plant could accelerate production of high-end chips

Article

The news: **TSMC** plans to ramp up production of high-end 3-nanometer chips at its Arizona factory in a decision that backs the US in the tech cold war with China, per TechCrunch.

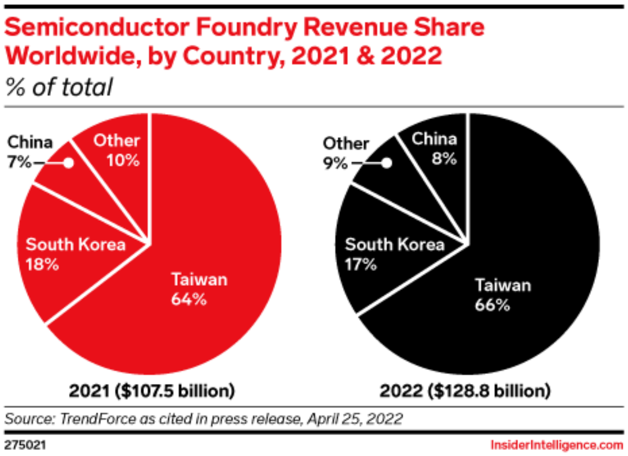
Why this matters: **TSMC is the world's largest chipmaker by volume** and is responsible for fabricating 92% of chips designed by US semiconductor companies, per Stimson.

- TSMC's 3nm tech, called N3, will be a full node stride from its 5nm technology and offer up to 70% logic density gain, up to 15% speed improvement at the same power, and up to 30% power reduction at the same speed when compared to its predecessor.
- Founder **Morris Chang** said that the company will fab 5nm chips and later transition to 3nm processors.
- TSMC's first advanced chip plant in the US was slated to be completed in September, but the open date has been pushed back to March 2023 due to a labor shortage.
- The company plans to initiate production in 2024, but **development for TSMC's 3nm chips are slated to start this year**.
- The race to 3nm is well underway. **Samsung** announced mass production of its first-generation 3nm chips in July, with plans to start production in 2023.

The opportunity: We're starting to see momentum stemming from President Biden signing the Chips Act into law at a time when the US and various chipmakers' relationships with China remain volatile.

- The uncertainty brought about by the tech cold war between countries is still going strong despite recent diplomatic attempts from its leaders.
- Chipmakers like TSMC can leverage existing US incentives and establish partnerships with American companies.
- Companies like **Apple**, one of TSMC's biggest customers, can accelerate plans to move production out of China and **bring component production closer to home.**
- **TSMC's commitment to its American fabs could be the inflection point for competitors on the fence** about choosing future plant locations.

What's the catch? Chipmakers could be running out of time to take advantage of the $52 billion in subsidies from the Chips Act, but the current economic downturn could make it difficult to commit to future US fabs.



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