

Image: VCG/VCG via Getty Images

- The fate of the global economy may rest on the shoulders of one company: TSMC in Taiwan, the world's biggest chipmaker its chips power everything from cars to iPhones.
- But US-China tensions, and China's standoff with Taiwan, could cost the global economy trillions.

On a tiny island off the coast of China, one company manufactures a product used across the globe for countless household products as varied as PCs and washing machines.

And as that island — Taiwan — worries about the threat of a standoff between the US and China, the world's economy holds its breath. That's because there could be <u>trillions of dollars' worth</u> of economic activity tied to that one company: Taiwan Semiconductor Manufacturing Company, the world's biggest chipmaker.

Industry watchers say an escalating dispute between the US and China over Taiwan could drag down the global economy, given the fact that no other company makes such advanced chips at such a high volume. If TSMC goes offline, they say, the production of everything from cars to iPhones could screech to a halt.

"If China would invade Taiwan, that would be the biggest impact we've seen to the global economy possibly ever," Glenn O'Donnell, the vice president and research director at Forrester, told Insider.

"This could be bigger than the worldwide crash of 1929 that began the Great Depression."

While TSMC may not be a household name, you almost certainly own something that's powered by its chips.

TSMC is in the foundry business, meaning it doesn't design its own chips but instead produces them at fabrication plants for other companies. The company accounts for over half of the global semiconductor market, and when it comes to advanced processors that number is, by some estimates, <u>as high as 90%</u>. In fact, even the best chip from China's top semiconductor manufacturer, SMIC, <u>has been said to be about five years behind TSMC's</u>.



Technician holding a TSMC computer Central Processing Unit (CPU) chip, typical of the CPU's that are the "brain" in all our devices from phones to cars to computers to spacecraft to refrigerators and even doorbells.

Most of the world's roughly 1.4 billion smartphone processors are produced by TSMC, as are about 60% of the chips used by automakers, <u>according to The Wall</u> <u>Street Journal</u>.

TSMC semiconductors are also used in highperformance computing: They can quickly process reams of data and guide missiles, making the company highly valuable in the eyes of government entities.

"When you have a very complex, very sophisticated, and very expensive technology where barriers to entry are very high — I mean, building a fab plant is in the billions — you can't just decide tomorrow, 'Well, I'm going to go into that business," he said. "It's not like making tea."

How did we become so reliant on chips made in Taiwan?

The semiconductor industry has its roots in the US, as much of the research and development is done on US soil. Companies in other countries license the US-made technology.

Over the past 30 years or so, manufacturers in developed countries concluded it was in their best interest to outsource the manufacturing of the chips, according to Reinsch.

"You build a big factory and you crank these things out by the thousands, and you do it in a **low-wage, nonunion country that probably doesn't have environmental requirements**," he said. "You keep all the design and IP at home and you do all your sales, marketing, and service at home, and that's where you make the money."

It's this approach that has directly led to the growth of chip foundries like TSMC and reduced production on American soil, Reinsch said.

According to <u>a 2021 report</u> from the Semiconductor Industry Association, in 1990 the US produced 37% of the world's chip supply. **These days, the US is responsible for only 12% of global chip production.**

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