

Semiconductor Crisis: China-Taiwan Standoff Might Increase Global Chip Shortage

After Nancy Pelosi's visit to Taiwan, Chinese aircraft are violating Taiwan's airspace. The escalation made TSMC's chairman go public and threaten the world with consequences. Can this move by China fuel a global chip shortage?

By <u>Lokesh Choudhary</u> Global Research, August 16, 2022 <u>Analytics India Magazine</u> 5 August 2022 Region: <u>Asia</u> Theme: <u>Intelligence</u>

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US House of Representatives Speaker **Nancy Pelosi** flew into Taiwan ruffling many a Chinese feathers. The Chinese state media called it an "open salvo of war", and the country has reportedly sent over two dozen fighter jets into Taiwan's air defence zone.

The situation is more than just a regular geopolitical escalation in some remote part of the world. For if it escalates, it is highly likely that the prices of all electronic appliances, including the much-sought after Apple products would go up.

TSMC, the world's largest chip manufacturer, has called it a "lose-lose situation" for all. In an interview with CNN, TSMC chairman Mark Liu said, "Nobody can control TSMC by force. If you take a military force or invasion, you will render the TSMC factory inoperable."

TSMC manufactures Apple's A- and M-series chips along with the chips of Qualcomm and several other companies. It accounts for over 50% of global semiconductor production.

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Since there is a possibility of China attacking Taiwan, it's natural to wonder how it will impact the world semiconductor industry and whether the prices of devices on which you're reading this article are going to rise.

According to a Goldman Sachs analysis, the world chip shortage has already affected 169 industries, and we're not talking about electronics anymore. Industries like steel and concrete production and even soap manufacturing are already affected.

Reports suggest that mobile phones are going to get costlier. In a conversation with The

Sun, Dan Ives, a tech analyst, has already warned that Apple might increase the price of the upcoming iPhone 14 by \$100! According to him, "Prices have been increasing across the whole supply chain, and Apple needs to pass these costs to the consumer on this release."

Not just Apple, a <u>report</u> by Counterpoint confirms that almost 90% smartphone brands were affected due to the global chip shortage. In 2021, only 70% of the requested components were made available to mobile phone manufacturers. Counterpoint suggested that companies like Samsung, Oppo and Xiaomi were more affected than Apple.

Previous problems with Taiwan

The meeting with Pelosi and China's escalation is only an addition to the chain of events Taiwan has faced these past couple of years. The Covid-19 outbreak and the work-fromhome culture saw an exponential increase in the demand for semiconductors which started the disruption in the industry.

However, Mark Liu believes otherwise.

In an interview with Time, Liu mentioned that more chips were exported to the factories than were coming out as products. He said, "There were people definitely accumulating chips who-knows-where in the supply chain."

Apart from that, Taiwan also witnessed the most severe drought in the last 50 years. In 2021, the country received no rainfall and since semiconductor manufacturing requires huge amounts of water, companies had to face difficulties. TSMC had to fetch water via tanks from the water-heavy side of the country to feed its manufacturing plants.

Team T5, a Taiwanese cyber security firm has also observed that apart from the threat of military attacks, China is actively executing cyber-attacks on the semiconductor industry of Taiwan. To tackle this, the Semiconductor Cybersecurity Committee, introduced by SEMI Taiwan, is working to develop a cybersecurity standard for the semiconductor industry of Taiwan.

What's Next?

The global mobile semiconductor industry alone is <u>expected</u> to reach more than \$80 billion by the end of 2027. On the other hand, the market share of the automotive semiconductor industry is expected to reach \$115 billion by 2030 from around \$43 billion in 2021.

According to <u>data</u> shared by Mckinsey & Company, industries like automotive, computation & data storage and wireless will be driving the 70% growth.

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Credit: Mckinsey & Company

However, if TSMC's threat comes true, we'll see computers, laptops, mobiles, and automobiles getting costlier and harder to get by. People still can't seem to get their hands on the PS5 – a product launched in November 2020! A shortage in chips due to Covid-19 resulted in Jaguar-Landrover producing around 1.70 lakh fewer cars than expected. While US-based car automobile company General Motors reported 16% of cars being unsold due to a global chip shortage.

It doesn't take much to predict what might happen if the country producing 63% of total semiconductors stops producing them. The situation will be grave and it will take us not years, but several decades to recover from it.

What other countries are doing

According to the Semiconductor Industry Association, the industry has already announced \$80 billion in <u>investment in the US</u>. This includes the upcoming \$17 billion Samsung factory and \$30 billion Texas Instrument's investment in Texas.

Recently, the USA introduced the CHIPS Act, which is poised to bring semiconductor manufacturing back to America. The \$52-billion package under this act aims to attract companies to manufacture semiconductors in the US. Out of \$52 billion, \$39 billion are to be directed towards giving financial assistance to companies looking to build a manufacturing plant. Also, \$11 billion are supposed to be allocated toward research and development.

Maryam Rofougaran, CEO of 5G startup Movandi said making chips in the US will help companies get them consistently and will create well-paying jobs, which will be good for the economy (as <u>reported</u> by CNN).

The US, India, Australia and Japan already have a QUAD alliance to counter China in the Indo-pacific region. Recently, at an annual meet, the countries signed a pact to work together to make the semiconductor supply chain more diverse. Since Japan has previous experience in semiconductor manufacturing, Australia is enriched with minerals required for the production and India has a skilled workforce required for the semiconductor industry, they all can come together with the USA, which has capital and research facilities to make this alliance a success.

According to <u>ISAS</u>, "Each QUAD member enjoys a comparative advantage in a specific subdomain of the semiconductor supply chain" and hence "should make semiconductors a focus area".

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