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Semiconductor Shortage: A Perfect Storm

In the span of less than a year, there have been multiple supply chain disruptions and natural events that have lead to the semiconductor shortage we're experiencing today.

Automotive Sector Demand

The pandemic caused a drop in vehicle sales in spring 2020, which led automakers to cut their orders of all parts including electronics. In the third quarter, demand rebounded at an unexpected higher rate, but component supply was already committed to consumer electronics and IT equipment.

Geopolitical Factors

The former administration tightened regulations on sales of semiconductors to Chinese companies, resulting in those companies stockpiling chips. At the same time, American firms were cut off from chips when the federal government blacklisted a large Chinese manufacturer.

Japanese Factory Fires

In July 2020, a fire at a Japanese factory cut off supplies of special fiberglass used in PCBs. Then in October 2020, another fire at a Japanese plant took advanced sensing devices used in automotive and other industries out of circulation.

Global Transportation Constraints

In Q1 2021, nearly 7% of ocean freight remains in China ports in due to a shortage of shipping containers. Airfreight is in high demand to ship the vaccine, yet capacity has been reduced by 25% since there are fewer passenger planes available to carry freight. Recent grounding of Boeing 777 fleet with Pratt & Whitney engines has further exacerbated contraints.

Texas Power Outage

Exceptional cold weather and winter storm impacted much of southern part of the US causing a widespread power outages specifically in Texas. Austin Energy power grid asked its largest consumers, such as Samsung Foundry and other makers of semiconductors, to temporarily shut down their fabs. While it is possible to briefly turn off chip production, it is very difficult to restart. In fact, they have yet to resume normal operations as of early March.

"The pandemic and the chip shortage have made one thing abundantly clear: a flexible, agile supply chain is crucial to navigating the changes and staying resilient."

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Sources
Harvard Business Review | Why We're in the Midst of a Global Semiconductor Shortage | https://hbr-org.cdn.ampproject.org/c/s/hbr.org/amp/2021/02/why-were-in-the-midst-of-a-global-semiconductor-shortage
Tom's Hardware | Samsung Has Troubles Restarting Taxes Fab: Chip Shortages to Get Worse | https://www.tomshardware.com/news/samsung-s2-fab-still-offline

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