

Semiconductor Shortage - Supply Chain Risks Reshape the Industry Towards Costly Self-Reliance

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Abstracts

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SUMMARY

The structure of the global semiconductor supply chain, the way it was shaped over the last three decades has enabled the industry to bring down costs and achieve technological breakthroughs that drove the explosion in modern digital technologies enjoyed today. Over the last few years, though, new parameters have exposed supply chain risks and forced protectionism policies that could undermine the industry's potential which seems to be already in jeopardy as the rate of innovation has slowed down compared to the Moore law's projections.

KEY HIGHLIGHTS

The semiconductors' fundamental importance as the workhorse of modern technology has been recently highlighted amid shortages that have impacted sectors of the economy and the availability of cars, mobile phones and personal computers which are reliant on those silicon-based microchips.

The effects of that overreliance have already become evident through the chokepoints faced by the industry since the start of the pandemic. The geopolitical risk parameter though has become more obvious only recently, with the invasion of Ukraine by Russia, which is set to impact the bottom end of the supply chain. This event also points at the greater risk of the semiconductor industry's overreliance on production accumulated in Taiwan and TSMC, which

are also vulnerable to geopolitics that could turn the silicon shield to shifting sand.

Politics have also come into play as a response to the global semiconductor shortage. Governments of advanced economies have become alarmed by those shortages and have recently rolled out plans to mitigate tight supply conditions by stimulating local production in order to achieve self-reliance in the mid-term. However, such responses have come too late and it is economically inefficient.

SCOPE

See why semiconductors are in short supply

Learn why they are so important

Understand what is being done to solve the crisis

REASONS TO BUY

What is a semiconductor?

Why are they important?

What are they used for?

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