

Increased growth, but supply chain headaches

– The future of the semiconductor sector



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In the first in a series of articles taking an in-depth look at trade sectors, Ankita Masra, Risk Underwriter - Core Markets, examines the current computer chip market and how it is impacting global supply chains.

In today's world everything is interconnected and smart. The Internet of things (IOT) is in great demand and 5G is expected to be a game changer in wireless communication, providing faster speed and response and more bandwidth, and helping to connect greater numbers of devices.

But what happens when one fairly humble piece of tech starts to become scarce? How are supply chains affected and how is the electronics industry impacted?

Semiconductors – products usually made of silicon, which conduct electricity and are often referred to as chips – are getting smaller, faster and cheaper to meet global demands. They can be found in everything from computers and smartphones to medical equipment and everyday items such as cars and toasters.

Global shortages

But due to the Covid-19 pandemic, and limited manufacturing across the globe, the electronics sector is currently facing a shortage of

semiconductor chips.

Car manufacturers such as Jaguar, Toyota, Hyundai and Volkswagen – who slashed orders of semiconductors early in 2020 because of falling car sales and were then unable to access chips when the market bounced back – have been forced to reduce production and the [chip shortage is expected to cost the global automotive industry \\$210bn](#) in revenue in 2021, according to consulting firm AlixPartners.

There were issues with the supply of chips even before the pandemic, and stockpiling by Chinese firms to safeguard against US sanctions, and logistics bottlenecks, have also contributed to this shortage. Large-scale vaccination could also be affecting the supply chain, as the same silicon used to produce chips is also used in vaccine vials.

Shortages are expected into 2022, prompting governments, [including the USA and China](#), to make substantial investments to boost chip production capacity. These shortages are expected to bring increased costs and strong demand for chips and electronic devices.

[Tesla and SpaceX CEO, Elon Musk](#), however said in September that he expected new semiconductor plants

that are planned or under construction to make the global chip shortage a short-term problem.

Future growth

Driven by technologies such as IOT, 5G, AI and machine learning, the electronics sector – which includes telecommunications, networking, electronic components, industrial electronics and consumer electronics – is growing steadily, with global growth of around 6% expected between 2020 and 2021 – rising to 7% in Asian and American markets.

And despite shortages, according to [World Semiconductor Trade Statistics \(WSTS\)](#), the worldwide semiconductor market is also expected to grow to US\$ 551bn in 2021, a growth rate of 25.1%, increasing by a further 10.1 % to US\$ 606bn in 2020.

The pandemic of course impacted the electronics industry, with a rise in demand for wireless communication and technology as people moved to home working, and an increased need for medical devices such as ventilators and X-ray machines.

The demand for new and better gadgets is likely to continue, with increased interest in emerging technology such as autonomous cars already being addressed by companies like Tesla and BMW.

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This growing demand can only benefit the semiconductor industry and provide increasing market opportunities. However, a shortage of skilled labour and increasing labour costs and a monopolistic hold on manufacturing by key players such as Samsung, Intel, TSMC, Nvidia, Qualcomm, AMD and Broadcom, along with geopolitical tensions, could mean that chip supply shortages remain a recurrent risk.



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