

The shifting scene in Global Chip manufacturing

This chart comes from McKinsey and is part of a wider array of research into the area of semiconductors. This chart simply shows the projected growth of semiconductors up to 2030, starting from 2021. McKinsey estimates that by 2030, the global semiconductor industry will be worth over \$1 trillion, with over a third of that in computing and data storage chips alone. They also estimate that for the next decade, 70 per cent of the growth in semiconductors will be driven by just three sectors, these being automotive, computation and data storage, and wireless. Computation and data storage will be used to further support AI systems, while wireless means more smartphones. Based on a range of macroeconomic assumptions from McKinsey suggests the industry's aggregate annual growth could average from 6 to 8 percent a year up to 2030.

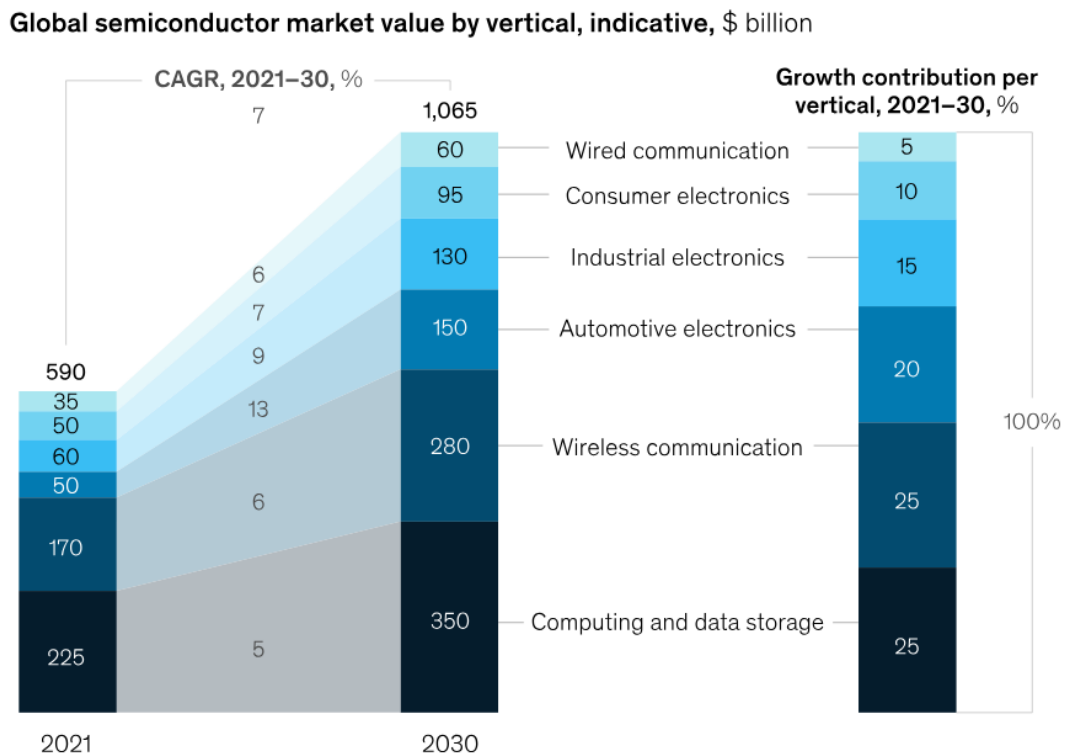


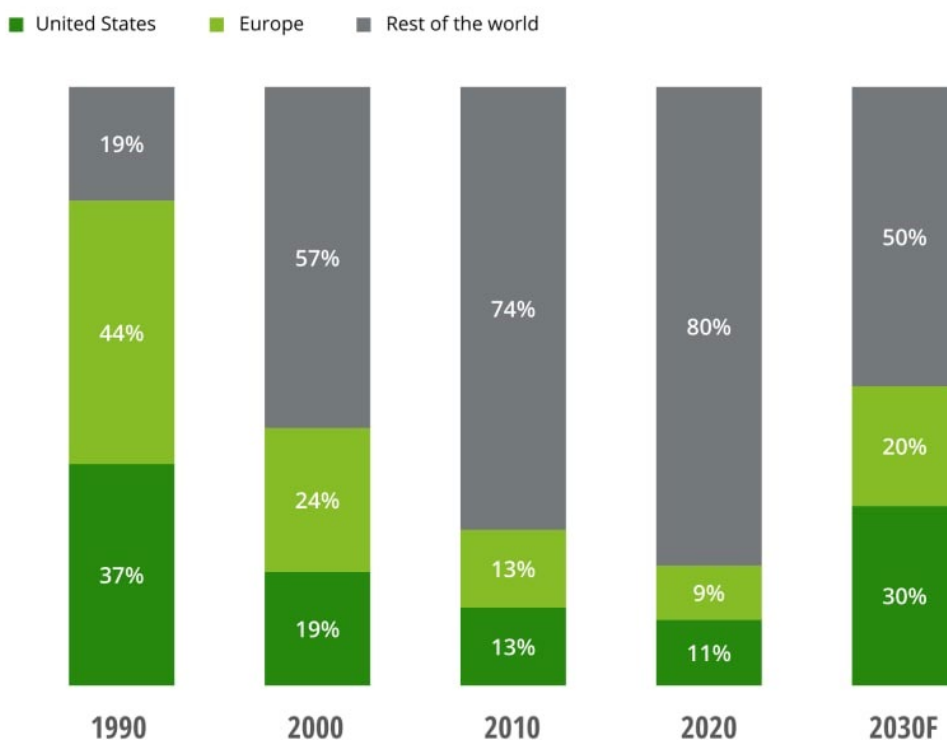
Figure 1 <https://www.mckinsey.com/industries/semiconductors/our-insights/the-semiconductor-decade-a-trillion-dollar-industry>

The following chart comes from Deloitte and pertains to the semiconductor manufacturing capacity of the US, Europe, and the Rest of the World, which is mainly made up of South Korea, China, Taiwan, and Japan. In the early 1990s, nearly half of the world's semiconductors came

from Europe. Due to the expansion of Asian economies and that many of the rare earth minerals used in the manufacturing of semiconductors are sourced from China, by 2020 that figure had halved. Meanwhile, the rest of the world produced up to 80 per cent of all semiconductors in 2020. It is now estimated that by 2030, the US and Europe will together account for half of the world production of semiconductors. This is based on the fact that since 2020, governments in the US and Europe have allocated over \$100bn in incentives for the manufacture of semiconductors.

Grabbing back their lost share: The shifting scene in global chip manufacturing

Global semiconductor manufacturing capacity (percentage share by region, 1990–2030)



Notes: 2030F data reflects US and Europe numbers based on aspirations of their respective Chips Acts; rest of the world mainly includes South Korea, China, Taiwan, and Japan.

Sources: Chris Richard et al., *Five fixes for the semiconductor chip shortage*, Deloitte Insights, December 6, 2021; analysis based on information gathered from publicly available third-party sources.

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Figure 2 <https://www2.deloitte.com/us/en/insights/industry/technology/semiconductor-manufacturing.html>