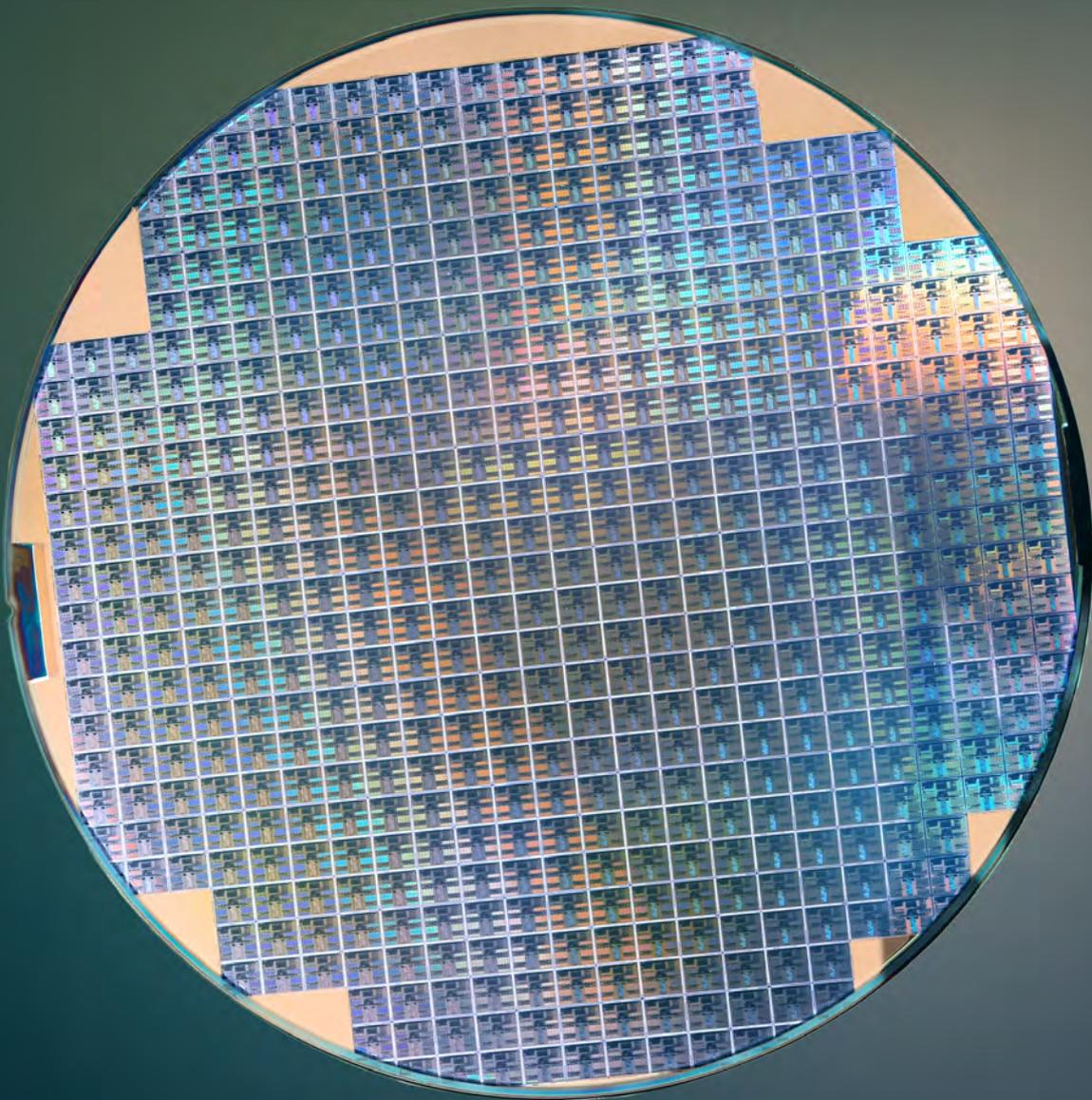




THE WORLD OF SEMICONDUCTORS

FUTURE MARKETS MAGAZINE by EBV Elektronik



**MICROCHIPS ARE THE NEW DRIVING FORCE
BEHIND THE GLOBAL ECONOMY**

HUGE INVESTMENTS PLANNED GLOBALLY

EU
145
billion euros
as part of the
recovery fund up
to 2027
Source: Deutsche Bank



USA
52
billion US dollars
between 2022 and 2026
Source: Deutsche Bank

SOUTH KOREA
450
billion US dollars
up to 2030
Source: Deutsche Bank

CHINA
17
billion US dollars
annually in subsidies
for its own chip
production
Source: gtaï/SIA

SAMSUNG
116
billion US dollars
over a period
of ten years
Source: Bloomberg



TSMC
100
billion US dollars
up to 2023
Source: Bloomberg

INTEL
37.1
billion US dollars
over a period of
several years
Source: Intel

MICRON TECHNOLOGY
150
billion US dollars
globally over the next
decade
Source: Micron

THE MAJOR ECONOMIC POWERS ARE PLANNING TO MAKE HUGE INVESTMENTS SO THEY CAN RELIABLY MEET THEIR DEMAND FOR SEMICONDUCTORS ON THEIR OWN IN THE FUTURE. THE AIM IS TO AVOID SUPPLY BOTTLENECKS IN THE FUTURE, PARTICULARLY WHEN IT COMES TO TRADE DISPUTES AND GEOPOLITICAL SHIFTS. THE SEMICONDUCTOR INDUSTRY ITSELF IS PLANNING MAJOR INVESTMENTS IN NEW FACTORIES.

SEMICONDUCTOR INDUSTRY IN THE THROES OF CHANGE

GREATER RESILIENCE, IMPROVED AUTONOMY, NEW TECHNOLOGIES

The last few months have shone a light on the role that semiconductors play in our economy. First came the US-China trade conflict and the 2019 economic downturn, then the COVID-19 outbreak – all of this threw supply chains around the world into disarray. What's more, many semiconductor factories in the Asia-Pacific region scaled back their operations. In other parts of the world, factories have been affected by natural disasters such as hurricanes or earthquakes. At the same time, demand for chips is constantly on the rise – according to current estimates by the German Electrical and Digital Manufacturers' Association (ZVEI),

growth in the market for power semiconductors alone will triple by 2030. At times, this level of growth results in considerable supply bottlenecks for semiconductors and chips. That being said, there are also internal reasons for the supply difficulties in the semiconductor industry: the group of companies that generates the lion's share of global semiconductor sales is a small one. In computer chip manufacturing, around 70 per cent of global turnover is generated by a mere two companies. On top of that, many semiconductor companies do not have their own factories, preferring instead to have manufacturing done in Asia. Almost every fourth chip is manufactured in China – but for the most part not on behalf of Chinese companies.

To stabilise supply chains and reduce dependencies, more and more countries are planning to move manufacturing operations back to their own countries. For example, the USA plans to invest around 52 billion US dollars over the next decade to bolster the domestic semiconductor industry. The EU is also planning to establish greater autonomy in the field of semiconductors with its own "European Chips Act".



For chip manufacturers, these investments, combined with consistently high demand and lower levels of supply, mean that the prospects are dazzling. According to the World Semiconductor Trade Statistics organisation, global semiconductor sales grew by 25.6 per cent in 2021 alone, to 553 billion US dollars. According to Fortune Business Insights, sales are expected to exceed 800 billion US dollars by 2028.

With the substantial investments from the industrial and political spheres, semiconductor technology will also continue to develop: new materials and chip architecture, the shift to

450-millimetre wafers, 5-nanometre components with 3 or 2 nanometres already in the pipeline – all of this shows that Moore's Law has plenty left in the tank. Innovations that seemed inconceivable just a few years ago are now a reality.

The multitude of different developments in the semiconductor industry and semiconductor technology present tremendous opportunities. EBV Elektronik would be more than happy to help you make the most of them. For now, I hope this makes for exciting reading. It's time to immerse yourself in the world of semiconductors!

A stylized, handwritten signature in white ink, consisting of a large, flowing 'T' followed by several loops and a long horizontal stroke.

Thomas Staudinger
President EBV Elektronik

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The next evolutionary stage

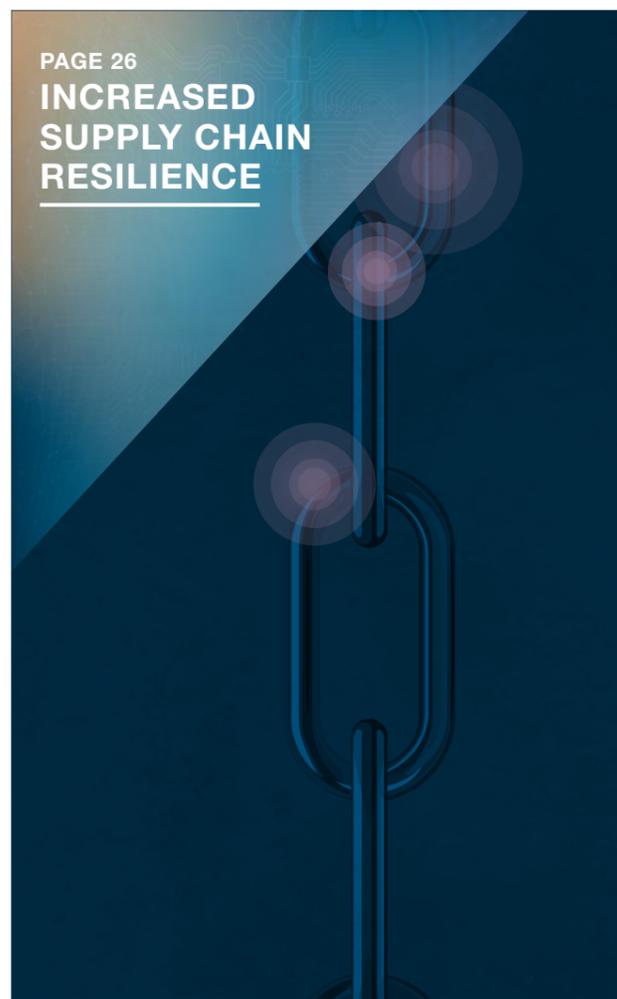
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New semiconductor solutions from start-ups

Moore's Law will continue to apply for at least another ten years.



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Environmental footprint of the semiconductor industry is to be reduced.