

German industry – Facing China: a model under pressure

After two decades of relative prosperity, Germany's strategy based on free trade and its integration into international value chains is facing growing geo-economic fragmentation, Sino-American rivalry, the race for low-carbon technologies and the energy transition in industry. **This new landscape has altered the factors determining Germany's industrial competitiveness in the face of an increasingly assertive China**, which is moving upmarket and threatening the comparative advantages of German industry.

During the first two decades of this century, economic relations between Germany and China were based on a logic of complementarity. German industry exported capital goods, machine tools, high-end vehicles and specialised chemicals, whilst China gradually integrated into German value chains and supplied low-cost manufactured goods. **These developments enabled Germany to strengthen its cost competitiveness, gain market share in global trade and consolidate its positions in several strategic industrial sectors.** Trade between Germany and China thus grew significantly, with Germany enjoying a trade surplus with China throughout the 2010s.

However, this relationship has changed. The upgrading of China's manufacturing sector has gradually eroded Germany's comparative advantages. China's competitiveness no longer relies solely on low costs, but also on technology and innovation, its industrial capabilities and economies of scale. Since the post-pandemic period, German exports to China have been falling, whilst imports from China continue to rise. **Germany now faces a twofold challenge: the loss of market share in China and intensified Chinese competition in third markets, including in Europe.**

This trend is weighing on German manufacturing output. Since 2018, output has stagnated and then declined, driven by the combined effects of slowing global demand, the energy crisis, higher capital costs and structural challenges such as a lack of investment in digitalisation, weak productivity gains and labour shortages. Competition from China is exacerbating these vulnerabilities. Certain sectors, notably electronics, optics and several automotive-related segments, are particularly exposed to the rise in Chinese imports.

Industrial employment has so far held up better in Germany than in other advanced economies, thanks to German specialisation, the quality of social dialogue and integration into European value chains. **However, several sectors are beginning to cut their workforces**, notably automotive components, photovoltaic cells, consumer electronics and metallurgy. By contrast, activities linked to automation, industrial software, medical equipment and specialised machinery continue to create skilled jobs.

From the Chinese perspective, this development is the result of a carefully thought-out long-term industrial strategy. Since the reforms launched in 1978, subsequently reinforced by successive five-year plans and the 'Made in China 2025' programme, Beijing has supported the up -end of its industry, technological innovation and the securing of its supply chains. This strategy, backed by massive investment, substantial subsidies and strong public coordination, explains the emergence of Chinese competitors in sectors formerly dominated by Germany.

For Germany, however, competition from China is not uniform. In electronics, electrical equipment, batteries, photovoltaics and electric vehicles, it is particularly intense and poses a direct threat to domestic production. The virtual disappearance of the German photovoltaic industry illustrates this risk. Chinese manufacturers are also gaining ground in electric vehicles thanks to their innovations and industrial capabilities. By contrast, Germany still holds strong positions in complex industrial equipment, specialised machinery, automation, high-end capital goods and certain sectors of the speciality chemicals industry.

Whilst Germany nevertheless retains many strengths in the most technologically sophisticated sectors, **Chinese competition is exerting increasing pressure** not only on standardised industrial sectors but also on higher-end specialised niches. The aim is to preserve and develop the high value-added segments in which German industry still holds competitive advantages. To achieve this, **Germany can still draw on considerable strengths:** a diversified industrial base, a strong capacity for innovation, a dense network of highly specialised companies and a solid international reputation. This also requires targeted and proactive policies to support this transformation, notably through support for semiconductors, batteries, hydrogen, decarbonisation technologies and digitalisation. The KTF fund¹ is one of the key instruments of this industrial transformation strategy, designed to adapt the productive apparatus to a more competitive and fragmented international environment.

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12, place des États-Unis – 92127 Montrouge Cedex – France

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¹ *Climate and Transformation Fund:* a special fund within the German federal budget intended to finance the energy transition and the modernisation of the economy.