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China's EV-olution

As the Chinese electric vehicle market advances, European carmakers face increasing pressure. Simply adding more trade barriers won't fix the issue

As of November 2024, the European Union is considering a new policy aimed at facilitating technology transfer from Chinese companies, particularly in the green technology sector. The idea follows the implementation of substantial tariffs on Chinese-made electric vehicles (EVs) to protect troubled European carmakers.

At the heart of this tension is overcapacity in the Chinese EV sector — a situation where unused production capacity drives companies to export aggressively. In many other industries, such as steel, overcapacity had negative effects on both the Chinese and foreign economies. How to react to this situation and how to prevent similar ones is therefore vitally important for the future of the European economy.

The matter is not simple though. It may appear like ending Chinese overcapacity in the EV sector will remove pressure on European automotive industries. In fact, however, overcapacity in the Chinese EV industry will soon resolve itself without putting an end to aggressive Chinese exports. To understand why, it is necessary to investigate what has caused Chinese overcapacity and how the Chinese EV industry will develop in the near future.

Industrial policy and overcapacity

China's overcapacity in the EV sector is largely a product of its industrial policies. For decades, foreign companies needed to enter joint ventures with Chinese partners, facilitating substantial technology transfer. Chinese companies greatly benefitted from public procurement, tax incentives, and Beijing's support for charging infrastructure and control over key supply chains. Companies also receive generous subsidies, which allow them to sell at lower prices. This excess of cheap supply, analysts argue, drives Chinese firms to aggressively export their cars to foreign markets.

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Subsidies and support alone would have created an inefficient and uncompetitive industry, so the government made sure to foster competition. By gradually removing subsidies, it pushed companies to succeed in the market and foreign competitors benefitted from subsidies as well. In 2019, the government permitted Tesla, the most advanced EV manufacturer at the time, to open a factory in Shanghai without entering a joint venture. This successfully increased pressure on Chinese companies: That year BYD, the company that now sells the most EVs worldwide, saw its earnings cut in half.

As is often the case, competition bred innovation. The Chinese EV industry, once lagging behind in 2014, is now producing high-quality cars. Chinese manufacturers have produced powerful batteries and are developing a new technological infrastructure for autonomous driving. They also come with add-ons like AI integration and flashy entertainment features.

This advance in quality is a crucial factor that allows Chinese carmakers to pose a serious competition to their European counterparts. It is also what gives Chinese carmakers a good reason to invest in new production capacity. After all, building factories takes years, and companies need to invest even in economic downturns if they want to prepare for future demand.

Lessons from other industries

Unfortunately, future demand for EVs, just like for other green technologies, is notoriously difficult to forecast. A recent report by the Rocky Mountain Institute shows that while market forecasts are usually based on linear extrapolations, the actual adoption rates of these technologies turn out to grow exponentially.

The solar industry is a good illustration of how hard predictions can be. In 2011, Chinese overcapacity in the solar industry and rapidly falling prices made many companies unprofitable. Some exited the market, but in 2014, demand rose significantly and the surviving manufacturers turned a profit. Predictions in the solar industry are inaccurate even a few years in advance: In 2020, even the most optimistic forecasts underestimated the solar capacity that was added in 2022.

The lithium-ion battery (LIB) industry has a similar history of incorrect

predictions. When Tesla announced its Nevada Gigafactory for automotive LIBs in 2014, analysts predicted it would face over 50 per cent overcapacity. By 2020, they claimed, Tesla would not be able to sell the 500 000 cars it planned for. But in 2022, Tesla planned to expand capacity at the Nevada site, since it had far exceeded the previous goal. By now Tesla's annual production capacity comes close to three million vehicles, outpacing earlier claims about overcapacity

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Global predictions for LIB demand are similarly off. In 2014, the global industry for automotive LIBs was in extensive overcapacity with aggregate utilisation rates as low as 22 per cent. Many forecasts at the time predicted maximum demand of 50 GWh by 2020. But by 2020, global demand for LIBs had risen to 166 GWh, far exceeding the underutilised capacity of 2014.

The Rocky Mountain Institute report shows that the same is true for EV sales: We are more likely to underestimate future demand than to get it right. In 2020, the International Energy Agency predicted EVs to reach 16 per cent of all vehicle sales by 2030, but reality surpassed this number already in 2023. These strong growth rates will continue in the future.

Even now, the Chinese EV market keeps growing, despite a general economic slowdown. One would expect the EV market to contract when Chinese consumers cut back on their spending, the property sector is faltering, and youth unemployment is high. In fact, however, EVs captured 45 per cent of total vehicle sales in October 2024. The market is strong enough so that the leading firms with strong sales domestically and abroad even avoid overcapacity in their factories and remained profitable. These firms are also looking to expand to previously untapped demand in China's countryside.

All of this renders it likely that Chinese EV overcapacity will only be a temporary phenomenon since the market is set to grow far beyond current production capacity in a few years' time.

The road ahead

Therefore, When Chinese overcapacity resolves, it will not put an end to aggressive exports by Chinese EV manufacturers. Instead, it will likely allow the Chinese government to finally fade out the remaining subsidies for a mature EV industry. Some Chinese industry experts already call for an end to subsidies in 2025. For carmakers in Europe this means that the challenge they face is not an industry with artificially low prices due to

government subsidies. Instead, they will soon face a market dominated by highly competitive companies meeting robust demand.

For the EU, keeping dependency on China in key technologies under control is a key priority, but this strategy cannot solely rely on trade protectionism. Instead, it is a good choice to engaging with China, support strategic cooperation of European and Chinese firms and create a policy tool that ensures technology transfer. With these measures, Europe is already adopting part of the Chinese strategy of creating trade barriers and forcing technology transfer. But Europe should consider going a step further, to more expansive industrial policy measures like the ones in China or the United States.

More importantly, however, Europe needs to chart a clear path forward on green development. The Chinese government has long signalled steadfast support for green development. This ensures a stable policy environment, allowing manufacturers to plan for rising demand in both domestic and global markets. In contrast, European national governments are currently pressuring the EU to waive upcoming fines for carmakers that do not meet the emission targets set out for 2025.

Unless the European policy environment signals a clear commitment to the development of new technologies, companies will have no incentive to make costly investments in their development. If those companies then fall behind on a global scale, trade barriers may temporarily alleviate the situation. A true solution, however, requires a deeper commitment.



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