Is China's industrial policy working?

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China's industrial policy has been very successful in producing innovation. Chinese companies are already global market leaders in industries such as electric vehicles. However, the economic value created by these "new" industries is still limited. This is because the implementation of innovation policy is leading to overcapacity and ruinous price competition, also known as "involution".

At first glance, China's industrial policy appears to be successful

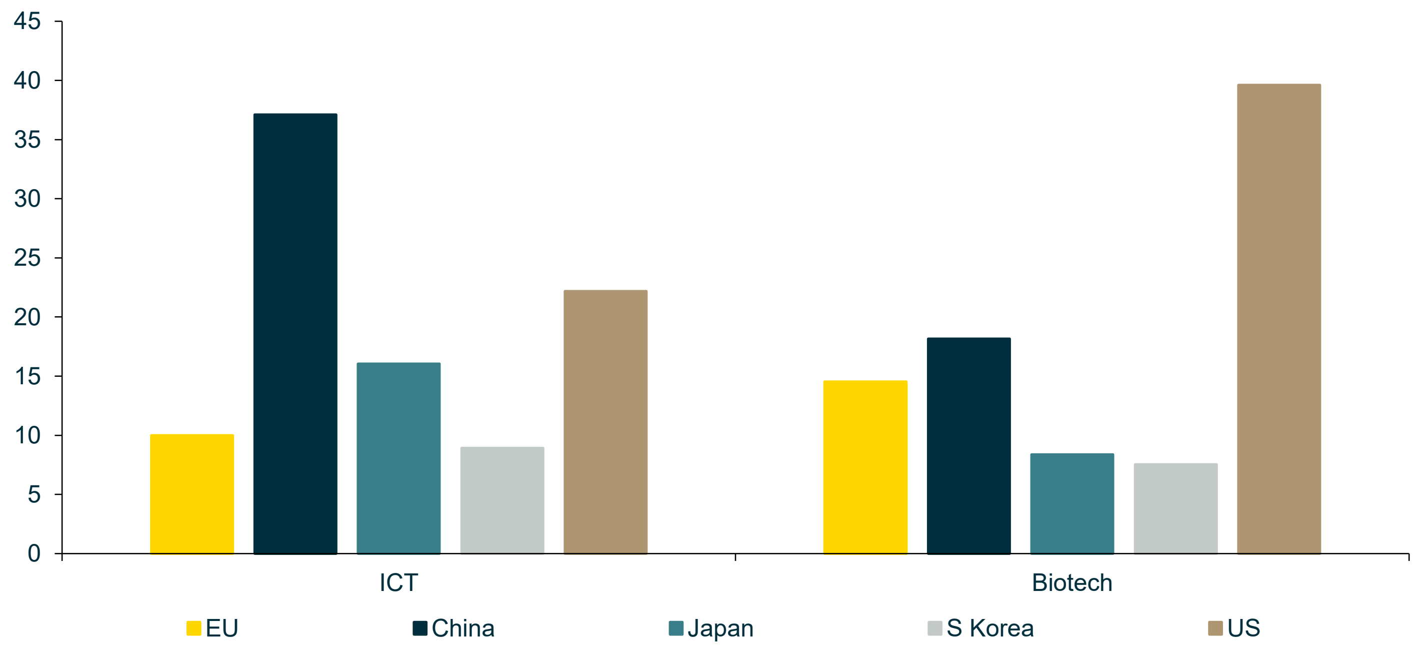
Thanks to China's industrial policies, notably the "Made in China 2025" plan launched in 2015, large amount of resources has been devoted to promote home-grown innovation and the self-reliance in technology in order to reduce China's dependence from the West. The plan covers ten key industries, including information technology (IT), robotics, new energy, and biotech.

To this end, China has significantly increased its spending on research and development (R&D). While this accounted for 2% of gross domestic product in 2015, it had already risen to 2.6% by 2023, approaching the OECD average of 2.7%. China already spent more on R&D than the EU (2.1%), but still less than the US (3.5%). In absolute terms, adjusted for purchasing power, China's R&D spending already accounted for 95% of that of the US. By contrast, the EU only reached 61% of the US level.

Looking at the number of patents filed worldwide, China is already ahead of the US, with a share of 27% in 2022 (see title chart). Also, China has caught up particularly strongly in patents on information and communication technology (ICT) and biotechnology (Chart 1).

According to a study by the Australian Strategic Policy Institute (ASPI), China is the leader in 37 of the 44 technologies evaluated; often publishing more than five times as much high-impact research as its closest competitors in areas such as advanced manufacturing and materials, artificial intelligence (AI) and computing, energy and environment, quantum computing, biotechnology, defense, space, and robotics (**link to ranking**). A separate study by the Information Technology & Innovation Foundation (ITIF) shows that China is the global leader in electric vehicles (EV) and is close to the world leaders in AI, robotics, and quantum computing (**link to report**).

Chart 1 - China leads in information and communication technology (ICT) patent filings
% of patents in ICT and biotechnology under Patent Cooperation Treaty in 2022



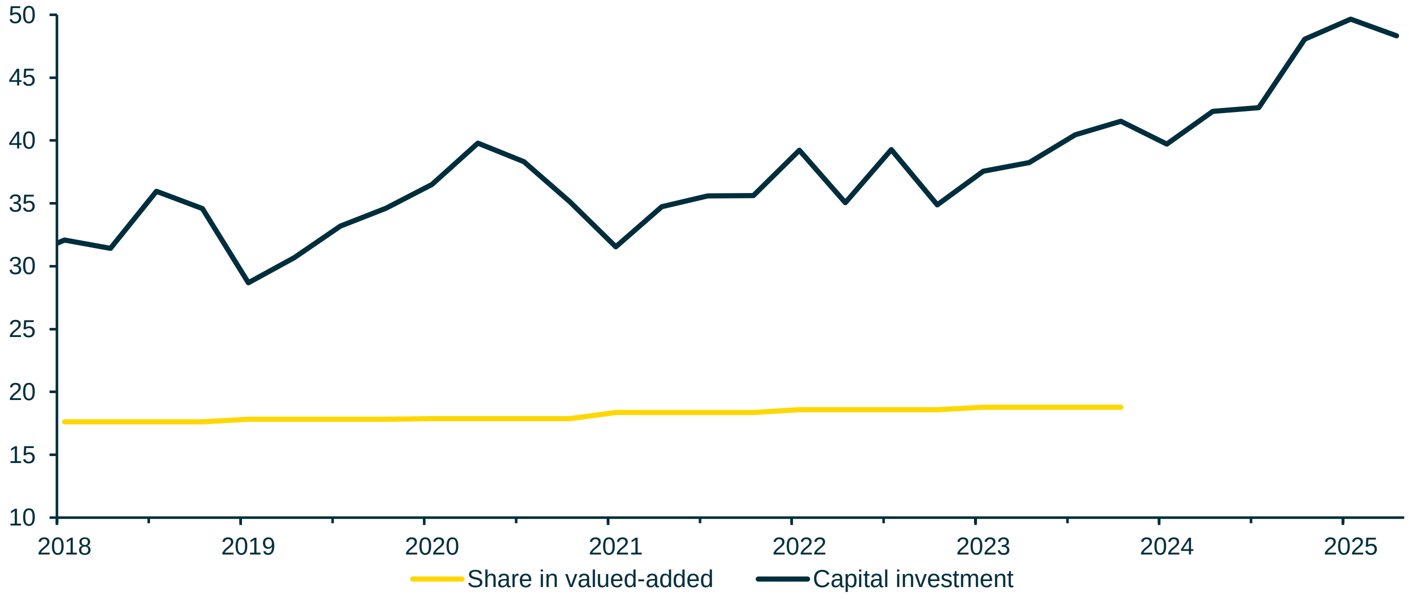
Source: OECD, Commerzbank Research

But the economic value created has been limited…

Given China's enormous investments in "new industries", in theory, these industries should outperform the rest of the Chinese economy. However, this is hardly the case. The share of these industries in total value-added has not risen significantly, even though their share of capital investment has increased considerably (Chart 2).

Chart 2 - New economy's share of capital investment rose but not its share of total value-added

Share of the 145 new industries in capital investment (Caixin definition) and share in valued-added (national statistics authority definition), in percent



Source: NBS, Caixin, Bloomberg, CEIC, Commerzbank Research

… because overcapacity pushes down sales prices, …

Value added, defined as the difference between a company's sales (sales prices multiplied by volumes) and the value of intermediate inputs, is likely to suffer most from falling sales prices due to overcapacity and the resulting ruinous competition. There are too many companies chasing too few demands. This has led to the problem of "involution", which has been vastly reported in both Western and Chinese media recently. This describes a self-defeating cycle of fierce and often unproductive hypercompetition. Producer prices in industry have been falling for almost three years, and 23% of Chinese industrial companies are now reporting losses.

… which is also due to the role of local governments

The fact that such overcapacity has arisen has a lot to do with the role of local governments. Since China is a vast country and each province has different resources and cultures, the central government in Beijing often delegates the implementation of economic policy to local governments. Local governments have to achieve their own GDP growth targets as well innovation targets, among other policy goals assigned by Beijing. To advance their careers, local officials must largely meet the targets. This is why they promote companies from the "new industries". Imagine that every local government strives to have its own manufacturer of electric vehicles, for example. This leads to overinvestment and overcapacity. In reality, this is not only happening in the EV industry but it is rather broad-based across the economy.

In addition, local governments must also ensure sufficient tax revenues. Since value-added tax (VAT) and corporate income tax account for over 60% of general tax revenues, they cannot afford to lose large taxpayers, so they continue to promote them even if the prospects for decent profits are slim.

China is likely to continue its industrial policy for the time being…

China is likely to continue its industrial policy in the medium term (five years). This is because the leadership considers home-grown innovation and self-reliance in technology as the top priority. Compared to this, economic efficiency is secondary. China is willing to pay a price for innovation in the form of overcapacity, market distortions, and ruinous price competition – especially since it is difficult for the government to control the production and prices of private companies and to closely manage local governments.

...but in the long term, the problems are growing

In the long term, beyond the next five years, however, it will become increasingly difficult for China to stick to its current industrial policy. The cost of innovation gets steeper for achieving further technological advances, especially since there are no “unlimited” resources available to subsidize the “new industries”. Government debt has already risen significantly (over 120% of GDP in 2024 based on our broad measure) and is likely to increase further due to the shrinking working population.

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