

U.S.-China Economic and Security Review Commission

Made in China 2025— Who Is Winning?

*Panel: The Next Decade of U.S.-China
Tech Competition*

EMILY DE LA BRUYÈRE

Co-Founder

Horizon Advisory

Senior Fellow

Foundation for Defense of Democracies

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Hearing co-chairs Schriver and Kuiken, distinguished commissioners and staff of the U.S.-China Economic and Security Review Commission, and fellow panelists, it is an honor to participate in today's hearing.

China uses its industrial capacity to project power. Beijing sees industrial strength not only as a means to bolster the nation's military capabilities, economic prowess, and social system. Industrial strength also secures the asymmetric dependence of foreign nations and companies. The Chinese Communist Party (CCP) leverages industrial power for strategic ends, to tie foreign incentives to China's own — and, ultimately, to shape global markets, politics, information, technology, in a self-reinforcing fashion, industry itself.

Beijing makes no secret of its ambitions. The first paragraph of the Made in China 2025 national plan explains that “building an internationally competitive manufacturing industry is the only way for China to enhance its comprehensive national strength, safeguard its national security, and build a world power.” The plan also calls, repeatedly, for promoting the People's Republic of China's (PRC's) “military-civil fusion” strategy. Military-civil fusion entails at a first level the exchange of civilian and military technology and resources. At a next level, it entails the conversion of commercial and industrial positioning into offensive power.

China's grand industrial project is, today, at a critical juncture. The Made in China 2025 plan issued in 2015 was a ten-year program that initiated China's “manufacturing great power strategy.” But Made in China 2025 constitutes only the first stage of that campaign. It is the first of three, sequential, ten-year programs intended to build China into the world's dominant industrial power by the country's centennial, in 2049.

That timing is important because of the auspicious nature of the year 2049 for the CCP. The timing is also important because of the stakes of the present. Beijing sees the current moment as a critical juncture for industrial, and therefore strategic, competition. The information technology revolution is upsetting the international industrial order. This creates a rare opportunity for a disruptor to compete for supremacy in and write a fresh set of rules for that order. Beijing is ready. It has built the requisite industrial base, international influence, and technological sophistication. But opposing forces demand decisive action: Developed countries, chief among them the United States, are working to re-industrialize and resist Beijing from the top down — even as developing countries challenge China's manufacturing prowess from the bottom up.

Beijing believes that if it can neutralize those opposing forces and marshal sufficient domestic industrial power, it will cement control over the information era. But if Beijing fails to do so, the U.S.-led system will prevail. There will be no second chance. Or, at least, there will be no second chance until the next industrial or global revolution. And who knows when that will happen, or how China will be positioned when it does. Hence Xi Jinping's frequent talk of “changes that come only once in a century.”

Beijing has articulated the challenge, and opportunity, at hand. But the stakes are highest for the United States. If the Chinese Communist Party realizes its industrial ambitions — those outlined in Made in China 2025 and that will define the subsequent stages of Beijing’s Manufacturing Great Power program — the U.S. industrial and defense industrial bases will find themselves entirely dependent on China. Should that happen, Beijing will control the prosperity and security that depend on those bases. Beijing will be able to decide which companies win or lose; which have access to critical technology, for example, or inputs and markets. This power will grant the CCP influence over U.S. politics and society, because those depend on and are shaped by markets. And in a modern technological environment, China’s control over American industry will also grant it control over American information.

Ten years ago, when Beijing issued Made in China 2025, to describe this future risk was to sketch the fantastic; to paint an abstract, in many ways unimaginable threat. Today, there is nothing abstract about it. Made in China 2025 established telecommunications equipment — including 5G technology, routing and switching technology, new generation base stations, and network security more generally — as a priority field within information technology.¹ Today, the PRC has infiltrated basically the entire U.S. telecommunications network.²

Made in China 2025 also established the new materials industry as a priority and included within it “strategic frontier materials” ranging from nanomaterials to graphite. Graphite is a critical material input for batteries. In 2015, China produced about 65 percent of the world’s graphite. Over the decade since, global demand for the material has skyrocketed. China’s production has increased even faster: The PRC produces about four times more graphite today than it did in 2015, accounting for some 80 percent of the world’s total. China’s graphite dominance allows Beijing to set international prices. It also affords Beijing leverage over the U.S. battery companies that depend on graphite supply — and over their downstream customers.³

This leverage and its consequences are playing out in real time. The nascent U.S. domestic graphite industry recently brought an anti-dumping and countervailing duty petition against subsidized Chinese manufacturers. Those opposing the petition? U.S.-based battery manufacturers, because they enjoy access to low-cost Chinese graphite. In taking this stance, U.S.-based battery manufacturers are effectively aligning with Chinese interests. This despite the fact that batteries, as well as their downstream applications like electric vehicles, are also on the Made in China 2025 agenda. And in both sectors — not to mention the ecosystem of intelligent systems like smart navigation and lidar connected to them — Beijing’s rising market share poses

¹ Rush Doshi, Emily de La Bruyere, Nathan Picarsic, and John Ferguson, “China as a ‘Cyber Great Power:’ Beijing’s Two Voices in Telecommunications,” The Brookings Institution, April 2021.

² Dustin Volz et al., “How Chinese Hackers Graduated from Clumsy Corporate Thieves to Military Weapons,” *The Wall Street Journal*, January 4, 2025.

³ “The China Hazard: How China Strategically Controls the Global Battery Supply Chain,” Horizon Advisory, October 2024.

a clear, long-term threat to non-Chinese industry. Reliance begets co-option, long-term interests be damned.

Made in China 2025 also prioritizes the semiconductor industry. Specific emphases therein include high-density packaging, also known as advanced packaging. Packaging is generally seen as a low value-add and therefore relatively unimportant node of the semiconductor value chain. But it is an indispensable one. And advanced packaging — technologies like 2.5D/3D stacking and wafer-level packaging — enables enhanced chip capabilities both at relatively low cost and without the advanced fabrication technologies on which the United States has imposed export controls.

China is the world's dominant player in semiconductor packaging, holding more than a quarter of global market share overall and more than one half in advanced packaging (and growing). This means that even non-Chinese companies — those with advanced technologies that the PRC cannot rival and that are considered to be crown jewels in the U.S.-China semiconductor competition — ship their products to the PRC for packaging. It also means that Beijing is developing and dominating in cost-efficient methods of improving semiconductor capability that evade U.S. and allied technology restrictions.

As those cases indicate, Beijing's industrial offensive has thus far thwarted U.S. efforts to fight back — even in those areas most directly targeted by U.S. policy. In telecommunications, the United States has attempted an unprecedented battery of company-level restrictions: Prohibitions on the purchase of equipment made by and sales of equipment to major Chinese companies like Huawei and ZTE; denials of licenses to the State-owned big three service providers, China Telecom, China Mobile, and China Unicom; and a litany of sanctions. None of those restrictions have stopped Beijing from penetrating U.S. telecommunications networks. Nor has it stopped U.S. companies from relying on, selling to, and lobbying on behalf of both known bad actors and an entire ecosystem of unknown ones, or hidden Huaweis.⁴

In graphite, and the battery sector more generally, the United States has tried support for domestic industry. But that support has been no match for China's dominance, and dominant control over the market. Washington originally banned batteries made with Chinese graphite from receiving Inflation Reduction Act tax credits. But Washington rolled back that ban because the PRC has wiped out alternative sources of supply. Loans and grants for domestic players do little when China has pricing power over their market and that of their customers.⁵

In semiconductors, the United States has invested in advanced downstream technology — and in denying it to China. The CHIPS and Science Act allocated tens of billions of dollars to research, development, and application at the cutting edge of the semiconductor value chain. Washington

⁴ Ana Swanson, "How U.S. Firms Battled a Government Crackdown to Keep Tech Sales to China," *The New York Times*, December 12, 2024.

⁵ Sybil Pan, "US Delays Ban on Chinese Graphite Batteries while ex-China Suppliers Scramble to Source Critical Minerals," *Fastmarkets*, May 8, 2024.

has imposed unprecedented restrictions on the PRC's access to U.S. and allied semiconductor technology. All the while, Beijing has continued to cement a stranglehold over the inputs, processes, and markets on which those downstream technologies depend; to develop non-technologically exquisite, but effective, processes that evade U.S. restrictions; and, of course, to use its global presence, its industrial influence, and loopholes in U.S. policy to maintain access to any actors or technologies on which it actually depends.

The problem is that the United States and China are playing different games. Beijing isn't competing to be a first mover to develop the best technology. Beijing has a different goal. It is competing to control markets and resources. The United States can pour billions into the newest chip design methods, but that's of little use if those chips can only be made with Chinese inputs or equipment or have to be sold into the Chinese market. The United States can try to impose targeted restrictions on Chinese goods and entities. But that's of little use if the industrial ecosystem is so dependent on China that it will do Beijing's bidding and provide entry points for the PRC.

The problem is also that Washington's tools are out of touch with the arsenal at Beijing's disposal. Often, U.S. discussions of Chinese industrial policy reduce it to targeted, direct forms of state support: tactical measures like subsidies, tax breaks, favorable loans, connections to government research, and investment from government funds. All are important. The Made in China 2025 plan lists each of them. It explains that they are to be used to support, in particular, major large-scale industrial champions; specialized companies with, or positioned to secure, outsized market share in key nodes of key value chains; and companies claiming or building foreign outposts and influence.

But Made in China 2025 also describes a larger, more systemic program to “shape incentives and constraint mechanisms” — to create the conditions for social capital to fund the companies Beijing wants to support; for upstream and downstream, companies and research entities to work together; for foreign players to bring research and development into China and not the other way around.

That is how Beijing's industrial policy really works. China is not a market economy. Market forces do not decide how Chinese companies invest or partner. Rather, Beijing builds a system of guardrails and inducements, or “incentives and constraints.” Within that system, a tamed set of market forces work to the benefit not of free trade or exchange, prosperity or reciprocity, but of China's strategic interests. This is the State-led, enterprise-driven model. And this is how Beijing deploys its industrial offensive.

In an attempt to respond, Washington has been reactive. Washington has both let Beijing determine the direction of the competition and has resorted to mirroring its adversary. In that mirroring, Washington has relied just on that first set of tactical measures, like subsidies, and a version of them that is far less effective than the PRC's. In doing so, America has pitted its weaknesses against China's strengths.

An effective U.S. policy starts from American strengths — market size and market forces. And an effective U.S. policy stops trying to outrun and starts tackling China. Beijing’s industrial policy crafts constraints and incentives and then lets neutered market forces operate within their confines. A U.S. policy for industry can succeed by building real, system-level barriers against the Chinese Communist Party and then letting undistorted market forces operate within those barriers — by, in other words, removing the distortive agent from a system that, without it, actually works.⁶

The first step in such a policy is action that systemically alters China’s role in the international trade system — as befits a distortive, non-market actor — to level the playing field. The United States should revoke China’s Permanent Normal Trade Relations (PNTR) status. Additional and supporting measures can also be effective: If sufficiently high and properly enforced, tariffs can do the trick, especially if they target not only goods made in China but also those made by Chinese entities that have “localized” abroad. Across the board, the United States needs to guarantee that allies and partners, companies, and investors comply. Washington can do so by making access to the U.S. market contingent on such compliance and signaling long-term resolve.

Second, the U.S. government will never succeed at picking winners and losers. But it can and should create the conditions for industry to thrive at home. After decades of neglect, the U.S. government should re-establish the infrastructure necessary for domestic industry — including through expanded production of domestic energy and upstream inputs, a permissive regulatory environment, and a skilled workforce.

The Made in China 2025 plan is just the first of three, ten-year campaigns through which Beijing intends to cement control over global production, and with it global security and prosperity. In the decade since Beijing issued the plan, the United States has made remarkable progress in recognizing the threat that China poses — and a remarkable lack of progress in responding effectively. This establishes the stakes for the next decade, the 2025 to 2035 period. Beijing has the momentum and control of the battlefield as well as the players on it. The Chinese Communist Party is on a path toward a clean sweep. The United States needs to start competing, strategically, with American strengths. America’s ability to do so will determine where the future is made.

Hearing co-chairs Schriver and Kuiken and distinguished commissioners, thank you for the opportunity to testify on this important topic.

⁶ Emily de La Bruyere and Nathan Picarsic, “How to Actually Compete with China,” *The Spectator*, February 8, 2024.