Statement before the

Senate Small Business and Entrepreneurship Committee

“Made in China 2025 and the Future of American Industry”

A Testimony by:

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Thank you, Chairman Rubio, Ranking Member Cardin, and members of the committee for inviting me to testify today on the important topic “Made in China 2025 and the Future of American Industry.”

The Made in China 2025 Plan (MIC 2025) is a ten-year, comprehensive industrial policy designed to transform China into an advanced global manufacturing leader. Like the concurrent 13th Five-Year Plan (2016-2020) and related state-led programs, MIC 2025 seeks to leverage the power of the Chinese state to promote indigenous innovation, advance technological self-sufficiency, and create comparative advantage in key strategic sectors on a global scale.¹

The Chinese State Council document launching MIC 2025 issued in May 2015 clearly revealed Beijing’s aim of comprehensively upgrading Chinese industry. The plan set the target of raising domestic content of core components and materials to 40 percent by 2020 and 70 percent by 2025. A substantial role for the state was highlighted, including through the utilization of financial and fiscal tools, support for the creation of manufacturing innovation centers (15 by 2020 and 40 by 2025), as well as assistance to Chinese firms to participate in international standards setting.

Although the goal of MIC 2025 is to upgrade industry writ large, the plan targets ten strategic industries in which China intends to foster the development of not only national champions but global champions. These ten priority sectors are: 1) advanced information technology; 2) automated machine tools and robotics; 3) aircraft and aeronautical equipment; 4) maritime vessels and marine engineering equipment; 5) advanced rail equipment; 6) new energy vehicles; 7) electrical generation and transmission equipment; 8) agricultural machinery and equipment; 9) new materials; and 10) pharmaceuticals and advanced medical devices.

**China’s Strategic Goals**

MIC 2025 is part of Chinese President Xi Jinping’s ambitious plan to achieve the “great rejuvenation of the Chinese nation” and restore China to what Xi believes is the country’s rightful place as a great power by 2049 — the centennial of the PRC’s founding. At the 19th Party Congress in October 2017, Xi laid out a multi-stage plan with specific goals for 2020, 2035, and 2050. By 2035, he said China would be a top ranked innovative nation and by the middle of the century would be transformed into a leading global power.

Xi called for mobilizing the Communist Party to lead the development of high-tech industries and make China a “country of innovators.” He set out goals to strengthen basic research in applied sciences, accelerate implementation of major national science and technology projects,

and prioritize innovation in key technologies, while promoting cooperation among universities, government research institutes, state companies and small enterprises.\textsuperscript{2}

In subsequent speeches, Xi Jinping has underscored the urgency to develop strategic emerging industries and make China into a leading high-end manufacturing superpower as well as a center for science and innovation. For example, in an address to top Chinese engineers and academics in May 2018, Xi called for the “fundamental transformation of business models of the manufacturing sector” and the “integration of the internet, big data and artificial intelligence with the real economy” so as to “move China’s industries up to the middle and high-end in the global value chain.”\textsuperscript{3}

China’s Ministry of Industry and Information Technology (MIIT) has laid out a three-step strategy for China to become a world leader in advanced manufacturing. The first step, which is to be achieved by 2025, requires China to “approach the level of manufacturing powers Germany and Japan during the period when they realized industrialization.” The second step envisions China “entering the front ranks of second tier manufacturing powers” by 2035. In the third step, China will have become a member of the “first tier of global manufacturing powers” by 2045, and will have acquired “innovation-driving capabilities,” “clear competitive advantages,” and “world-leading technology systems and industrial systems.”\textsuperscript{4}

It is undeniable that Chinese leaders view economic policy as a means to achieve the goal of national rejuvenation, which is deemed essential to keep the Chinese Communist Party in power. Recognizing that the development strategy of reliance on low-cost labor to produce low-end manufactured exports for the world has run its course, MIC 2025 is part of Beijing’s strategy to preserve its position as a manufacturing and export superpower, even in the face of rising wages and a declining workforce due to demographic challenges. To succeed, China must effectively compete with advanced industrialized economies.

**What’s the Problem with MIC 2025?**

As the U.S. Chamber of Commerce noted in a report on MIC 2025 published in 2017, “As the Chinese economy matures . . . it is natural for China to pursue a more innovative economy

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\textsuperscript{2} Xi Jinping, “Secure a Decisive Victory in Building a Moderately Prosperous Society in All Respects and Strive for the Great Success of Socialism with Chinese Characteristics for a New Era,” delivered at the 19\textsuperscript{th} National Congress of the Communist Party of China, October 18, 2017, \url{http://www.xinhuanet.com/english/special/2017-11/03/c_136725942.htm}.

\textsuperscript{3} Speech by Xi Jinping to the opening of the 19\textsuperscript{th} meeting of the Academicians of the Chinese Academy of Sciences and the 14\textsuperscript{th} meeting of the Academicians of the Chinese Academy of Engineering, May 28, 2018. Hu Yongqi, “Xi calls for breakthrough in technology,” \textit{China Daily}, May 29, 2018, \url{http://www.chinadaily.com.cn/a/201805/29/WS5b0c5ddca31001b82571cbfe.html}.


through significant investments in research and development as well as policies aimed at improving innovation capacity and economic efficiency.”

Moreover, the pursuit of an industrial plan by another country does not necessarily pose a threat to American industry. Germany’s “Industry 4.0” plan, from which MIC 2025 drew inspiration, similarly aims to establish Germany as a lead market and provider of advanced manufacturing solutions. The differences between MIC 2025 and Industry 4.0 are substantial, however. A few notable differences are that China’s state subsidies are much larger and are used for many purposes, not just basic research as in Germany’s plan. China also has specific targets for replacing imports with indigenous production, which is not a feature of Industry 4.0. In addition, Germany’s economy is far more open to foreign participation and competition than China’s economy. Finally, in contrast to Germany’s plan, the amount of support that the Chinese state will provide for MIC 2025 industries through state funding, low interest loans, tax breaks and other subsidies is not public. Some estimates put the likely number in the hundreds of billions of dollars.

There are numerous reasons that MIC 2025 has rightly raised concerns in the United States and other countries with advanced economies. Below are a few of the most widely cited concerns:

1. MIC 2025 will advance China’s goal of integrating its defense and commercial economies, which is aimed at strengthening the country’s innovation capability for dual-use technologies in key strategic industries, including aviation, robotics, and information technology. Military-civil fusion was established as a national strategy by Xi Jinping in 2014 and is a pillar of China’s military modernization drive that is aimed at making the People’s Liberation Army a 21st century fighting force. The Pentagon warned in 2017 that state-led Chinese investment in U.S. firms working on facial-recognition software, 3-D printing, virtual reality systems, and autonomous vehicles is a threat because such products have “blurred the lines” between civilian and military technologies.

2. China’s ambition to control entire supply chains, some of which have potential application to military manufacturing, poses a risk that entire industries could come under Chinese control. For example, only four companies today are comprehensive providers of

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6 Industry 4.0, [https://www.gta.de/GTAI/Navigation/EN/Invest/Industries/Industrie-4-0/Industrie-4-0/industrie-4-0-what-is-it.html](https://www.gta.de/GTAI/Navigation/EN/Invest/Industries/Industrie-4-0/Industrie-4-0/industrie-4-0-what-is-it.html).


telecommunications equipment infrastructure: Huawei, ZTE, Ericsson, and Nokia. Two of those four are Chinese companies. Many other U.S. and European companies that were producing telecom equipment folded in the last few decades, including the American company Motorola. As the report *Made in China 2025 and the Future of American Industry* by this committee states: “If MIC2025 is successful . . . what the ‘China shock’ did to domestic U.S. production of electronics, furniture, plastics, metals, and vehicle parts could threaten to repeat itself in capital goods like machinery, automobiles, high-end computers, rail, and aerospace products.”

3. Chinese government subsidies distort markets, undercut U.S. and other foreign manufacturers, and result in overcapacity and the dumping of cheap products in the global market. Other Chinese state-led technology related plans have produced these negative outcomes. One example is the case of solar panels, where government support in the form of fiscal subsidies and tax incentives to the production of Chinese solar cells and panels combined with government-backed theft of intellectual property drove nearly 30 U.S. manufacturing firms out of the business.

4. The plan suggests that China’s intention is not just limited to joining the ranks of high-tech economies, but rather envisages displacing them. The plan foresees the targeted industries developing in three phases. First, localize and indigenize R&D and control segments of global supply chains. Second, after dependence on foreign technology has been reduced, proceed with substitution. Third, after Chinese technology and brands are developed, capture global market share. This three-step process could enable China to capture both domestic and international market share in many, if not all, MIC 2025 industries and technologies.

5. Establishing quotas violates WTO rules against technology substitution. In addition to the targets set by MIC 2025 for achieving 70 percent self-sufficiency in core components and critical materials by 2025 in a wide range of strategic industries, semi-official documents suggest that there are more specific local content quotas for Chinese enterprises, but these are not being highlighted publicly to avoid charges of violations of WTO rules.

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6. MIC 2025 puts a premium on the acquisition of advanced technology. Since China still lags behind in critical high-tech sectors, it is likely that there will be a strong push for foreign acquisitions through various means, including buy-outs of foreign companies as well as forced technology transfer agreements and use of cyber espionage to procure cutting-edge technologies.

7. Together with the Plan to Enhance Standardization and Quality of Equipment Manufacturing, MIC 2025 will help China to spread Chinese standards abroad and undermine Western standards. Among the targets will be countries linked to the “One Belt, One Road” project which seeks to tie Eurasian economies more closely to China through infrastructure, trade, and investment.

MIC 2025 Under Review?

After the United States imposed tariffs on China, which are in part aimed at punishing China’s unfair practices and neutralizing the advantages enjoyed by Chinese companies, Beijing dropped references to MIC 2025 in official documents and authoritative media. Chinese officials have apparently said they are drafting a replacement for MIC 2025 that would play down the goal of making China the dominant global manufacturer and attempt to assuage U.S. concerns by opening up the Chinese plan to participation by foreign companies. Last December, media reports suggested that the new policy would be rolled out in early 2019, but so far, no new policy has been announced.14

Given the close linkages between MIC 2025 and Xi Jinping’s staged plan for national rejuvenation, it is unlikely that substantial changes will be made, however. Rather, explicit parts of MIC 2025, such as the numerical targets for market share by Chinese companies, are likely to be removed from the public version of the program. Chinese advocates of upgrading the manufacturing sector through competition with world-class foreign companies are unlikely to prevail.

Recommendations

1. Protect Intellectual Property: China steals more intellectual property than any other country. According to the Department of Justice, China was involved in 90 percent of all economic espionage cases the Department handled from 2011 to 2018.15 In addition,

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more than two-thirds of the Department’s theft of trade secrets cases have been linked to China. A report by the Foundation for Defense of Democracies found that Chinese cyberespionage costs U.S. companies an estimated $300 billion annually and poses the “single greatest threat to U.S. technology.” Increased focus on enforcement actions in cases of suspected Chinese economic espionage is essential. The U.S. government should also seek to sanction Chinese companies that benefit from cyber espionage. In addition, counter-intelligence outreach should be expanded to U.S. startups and small companies in artificial intelligence, semiconductors, telecommunications, quantum, and other sectors central to Chinese technology strategies.

Legislation recently introduced by U.S. Senator Kamala Harris (D-CA) to combat economic espionage would increase damages available for companies that are victims of trade theft, extend the statute of limitations for such crimes, and expand the scope of the Economic Espionage Act to cover cybercrime and hacking taking place outside the United States so that civil suits could be brought against perpetrators working abroad. Measures such as these will help American companies that are victims of Chinese espionage to fight back. By increasing the reputational costs to China and the real costs to Chinese companies, such actions may deter some Chinese hacking.

2. **Use the World Trade Organization:** U.S.-China trade negotiations are ongoing, but so far U.S. tariffs on more than $250 billion of imports from China in response to its trade policy abuses have not compelled the Chinese to alter their policies and practices related to technology transfer, intellectual property and innovation. In the meantime, U.S. tariffs have imposed high costs on American families and businesses. I am skeptical that tariffs will force China to fundamentally change aspects of its economic structure that are tied to Xi Jinping’s plan to make the country into first-tier technological power by 2035.

The United States should consider using the WTO’s dispute settlement mechanism to hold China accountable for its trade practices, including its persistent theft of intellectual property, cyber-enabled economic espionage, and widespread use of subsidies. A recommendation made by the United States-China Economic and Security Review Commission is worth noting in this regard. In its 2018 report, the USCC proposed that the USTR investigate whether to bring a “non-violation nullification or impairment” case against China at the WTO under Article 23(b) of the General Agreement on Tariffs and Trade. A non-violation claim allows WTO members to challenge measures that “nullify or impair” expected benefits, even if they do not explicitly violate WTO agreements. There are also WTO provisions that have not yet been explored that could provide the basis upon which to challenge China’s trade policy practices. The United States has won

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more WTO cases than any other country and such cases provide a means to protect the interests of American workers and intellectual property owners. Since joining the WTO, China has complied partly or fully in all but one of the 22 completed WTO cases that have been brought against it.

Working with allies and partners should be at the core of a U.S. strategy to effectively compete with a rising China. Where possible, the U.S. should collaborate with international partners to bring trade cases against China at the WTO. One potential WTO case could target China’s continuing practice of forcing foreign firms to transfer technology and intellectual property. When China joined the WTO in 2001, it agreed that foreign companies could not be pressured by government entities to transfer critical technology to a Chinese partner as the price for approvals of joint venture licenses or other permits to do business in China. Despite Chinese government claims to the contrary, the disclosure of technology and IP as a condition of market access undeniably continues with Chinese government knowledge, if not encouragement.

3. **Consider Rejoining the Trans-Pacific Partnership (TPP):** The TPP (now the Comprehensive and Progressive Agreement for Trans-Pacific Partnership or CPTPP) provides one of the best options for the United States to counter China’s MIC 2025 plan and to compete more effectively with China. Membership in CPTPP, which is a high-standard trade and investment regime, will provide U.S. and other foreign companies with incentives to diversify their supply chains away from China, thereby reducing their reliance on and vulnerability to China. Joining such a multilateral trade agreement with eleven other partners would also be an important step in restoring confidence in the United States and countering Beijing’s narrative that the U.S. is an unreliable partner.

Staying outside the CPTPP will prove harmful to American businesses. Beyond lowering trade barriers between the member countries, the deal includes greater protection of intellectual property rights and provisions to increase minimum labor standards for workers. The Peterson International Institute for Economics estimates that the U.S. income would have increased by $131 billion dollars annually, or 0.5 percent of GDP, if it had joined and is now set to lose about $2 billion dollars in income because U.S. exports will be less competitive in CPTPP nations.¹⁸ Strengthening commercial ties with countries in Asia, Europe and the Americas can further pressure China to give up its unfair trade practices.

4. **Consider Adopting a U.S. Industrial Policy:** I agree with the findings of this Committee’s report that the U.S. “cannot escape or avoid decisions about industrial policy.”¹⁹ As the U.S. strategizes about how to compete more effectively with China, we should consider the pros and cons of industrial policy making. The state has long been an

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important engine of innovation, providing early-stage federal funding to companies such as Apple and Tesla, and investment in technology and research that helped U.S. companies pioneer the shale gas revolution. Rather than imposing tariffs that effectively tax the U.S. companies they are supposed to defend, the U.S. should support innovation at home by providing more funding for basic research and development, higher investment in talent development, trade assistance, and federal support for a series of “moonshot” programs in areas like biodefense systems, threat detection networks, and a distributed electric grid.20

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