“MADE IN CHINA 2025” ATTEMPTS TO RE-STIMULATE DOMESTIC INNOVATION

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In May 2015, China implemented a “Made in China 2025” initiative to upgrade its manufacturing sector into one that will be considerably more innovative and competitive. Much state direction and funding have been provided to help move the country from a “Made in China” to a “Created in China” economy. This briefing describes the goals of this new initiative (in light of similar past policies), its motivation, and its targeted sectors. It also outlines China’s implementation plans and identifies potential implications for U.S. firms.

What is “Made in China 2025”? Made in China 2025 (MiC-25) is the first of three decade-long Chinese industrial policies aimed at transforming the world’s largest manufacturing base into one that is markedly more innovative and globally-competitive. Instituted by China’s State Council, MiC-25 sets forth 9 broad goals (Figure 1) each associated with several specific targets. To reach the first goal of improving manufacturing innovation, for example, targets have been set to increase both R&D spending (by 77%) and the number of non-utility patents filed (by 150%) in 2015–2025. Similar targets were established to improve domestic value-added, productivity, broadband use, energy conservation, and carbon-dioxide emissions. Specific sectors have been also been targeted under this policy. Semiconductor firms, for example, have been encouraged to use globally competitive technology by 2020 and lead it by 2030.

Motivation. The MiC-25 was motivated by China’s (1) short-term desire to reverse its recent economic slowdown; (2) long-term interest in spurring domestic innovation; and (3) strategic interest in staying competitive in light of other countries’ innovation policies, such as Germany’s “Industrie 4.0” plan. Regarding the slowdown, China’s real GDP growth decelerated to 6.7-6.9% in recent quarters, the lowest it has been in 25 years. This slowdown was led by sluggish growth in manufacturing given decreased global demand and increased wage competition from countries such as Vietnam and Indonesia.

1 China’s State Council, “Made in China 2025 Plan Issued”, 5/19/2015.
3 R&D expenses measured as share of operating expenses. Filing intensity measured as non-utility patents per RMB billion in revenue.

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With respect to spurring domestic innovation, Chinese policy makers have been keen on increasing R&D expenditures (Figure 2) to help China move up the manufacturing value chain. In this respect, MiC-25 is the latest of such initiatives. Its predecessor, China’s 2006 “indigenous innovation” policies encouraged domestic innovation through “strategic emerging industries” that were similar to those in MiC-25 (Figure 3).\(^7\) Now, MiC-25 is part of a new series of interconnected policies aimed at boosting domestic innovation that include the 13\(^{th}\) Five Year Plan (2016–2020), a new Science & Technology Plan, and sub-national development plans.\(^8\) Many consider MiC-25 the most comprehensive Chinese innovation policy to date, given its greater reliance on the market to help allocate resources, focus on improving all stages of manufacturing (not just innovation stages), clearer targets, and enhanced IPR protection for small firms.\(^9\)

MiC-25’s focus also aims to stay competitive vis-à-vis Germany’s “Industrie 4.0” plan, which promotes manufacturing digitalization by leveraging and promoting firm, government, and academic partnerships.\(^10\)

**China’s Implementation Plans** The interrelated nature of Chinese innovation policies make it challenging to isolate the exact size of MiC-25 funding. However, media reports identified 800 government funds, valued at $325 billion, that have been supporting these goals.\(^11\) The funds are being used by a 26-member group under the State Council to (a) coordinate financial support for domestic firms to innovate, typically in the form of R&D loans and subsidies;\(^12\) (b) establish 40 innovation centers by 2025 to demonstrate IT integration into manufacturing; (c) build 1,000 green factories by 2020 to showcase better emissions practices; (d) encourage self-sufficiency by importing no more than 20% of inputs by 2025\(^13\); and (e) promote indigenous R&D in sectors, such as aircraft, new-energy vehicles, and medical equipment.\(^14\)

**Implications:** MiC-25 has been a source of both optimism and considerable concern for U.S. and other multinational firms. With respect to optimism, multinationals have seen short-term opportunities in the 10 key industries, a more favorable business climate in IT-enabled manufacturing, and a modernized infrastructure.\(^15\) With respect to concerns, multinationals have questioned their long-term viability in China, particularly after technology transfers are complete and competition from Chinese firms in key sectors intensifies. Other concerns include multinationals’ eligibility for tax preferences, investment restrictions in high value-added sectors, and anticipated scrutiny in national security investment reviews.\(^16\)

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7. China’s “Indigenous Innovation” policies were introduced under China’s “Medium & Long-Term Plan on the Development of Science & Technology Policies. USTR, National Trade Estimate Report – 2017, p. 84.


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