



Made in Germany, Co-opted by China

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Executive Summary

In 2015, China’s State Council announced “Made in China 2025” (MIC2025), a sweeping plan for China to become a “manufacturing great power,” seize the “commanding heights” of global manufacturing, and win the “new industrial revolution.”¹ MIC2025 is the first installment of a three-part, three-decade series. That series is itself an extension of decades of Chinese industrial plans, strategies, and projects that comprise Beijing’s larger “Go Out” strategy, a long-standing program to deploy Chinese companies and institutions internationally. MIC2025 aligns closely with its predecessor plans under Go Out, including the 2006 “Medium- and Long-Term Plan for Science and Technology Development” and the National Development and Reform Commission’s 2013 “Strategic Emerging Industries” initiative.²

All of these initiatives reflect parallel ambitions and use similar tools to accomplish them. Beijing aims to capture the modern networks, technical standards, and technology platforms that will form the foundation of the 21st-century global economy. Doing so demands advanced technological and industrial capacity. However, Beijing does not seek to out-innovate its competitors through direct competition on a level playing field. Rather, China exploits partnerships with foreign companies, governments, and institutions to siphon technology. Those technologies and international partnerships enable Beijing to export and

shape networks, standards, and platforms that lock in enduring advantages for China.³

Simply put, Beijing seeks to “leapfrog” the world’s developed countries. Its ability to do so hinges on Germany. MIC2025 targets Germany first as a source of technology, second as a partner through which to export standards favorable to China, and third as a competitor for the lead in the current industrial revolution. China focuses on fields in which Germany excels,⁴ including the automotive, machinery manufacturing, chemical, medicine, and electronics sectors as well as new energy and environmental technologies.⁵ China also targets areas where Germany has influence over global standards, such as banking, new energy vehicles, and energy. China also prioritizes emerging fields in which global leadership has yet to be established, such as 5G and financial technology.

China’s strategy rests not just on obtaining the technologies for, but also setting the standards shaping, the “Industrial Internet of Things,” which will be the architecture for Germany’s – and the world’s – manufacturing, transportation, and logistics. The goal is to collect and shape information, rules, and innovation to bring them under Chinese control.

To implement its agenda, Beijing relies on an arsenal of state-owned enterprises and ostensibly private companies whose incentives are shaped by China’s industrial strategy. Beijing describes its approach as

1. State Council of the People’s Republic of China, “中国制造2025 [Made in China 2025],” May 2015.

2. Emily de La Bruyère and Nathan Picarsic, “China Standards 2035: Beijing’s Platform Geopolitics and ‘Standardization Work in 2020,’” *Horizon Advisory*, April 11, 2020. (<https://www.horizonadvisory.org/china-standards-2035-first-report>)

3. Emily de La Bruyère and Nathan Picarsic, “Beijing’s Innovation Strategy: Threat-Informed Acquisition for an Era of Great Power Competition,” *Naval Postgraduate School Research Symposium*, May 2020. (https://event.nps.edu/conf/app/researchsymposium/unsecured/file/697/SYM-AM-20-091_Panel#7_de-La-Bruyere_Paper_04-28-2020.pdf)

4. Qi Bin, “创新对外投资方式推动全球经济协同增长 [Innovating Foreign Investment Methods to Promote Coordinated Growth of the Global Economy],” *Tsinghua Financial Review*, August 5, 2019. Qi Bin is the deputy general manager of China Investment Corporation.

5. Ministry of Commerce of the People’s Republic of China, “德国五大优势产业简介 [Introduction to Germany’s Five Dominant Industries],” March 3, 2015. This list is reiterated in the Ministry of Commerce’s regularly updated “Guide to Investment” in Germany, which urges Chinese companies to invest in the machine tool, automotive, information technology, and renewable energy industries. The mere fact of the list’s existence, not to mention its consistency and reception, underscores the mode of Beijing’s “state-led, enterprise-driven” development model; MIC2025 nests neatly among this model’s mechanisms.

“state-led, enterprise-driven.”⁶ Beijing uses subsidies and other forms of state support to guide Chinese companies to obtain technology from abroad, including through joint ventures and forced technology transfers within those partnerships. To proliferate favorable standards, Chinese companies build industrial zones, telecommunications infrastructure, and logistics information networks with little concern for immediate profit.

“Beijing’s maneuvering in Germany has only accelerated amid the COVID-19 pandemic and will likely continue to ramp up after the global health crisis has abated. The Chinese Communist Party (CCP) sees the pandemic as a window of opportunity.”

Beijing’s maneuvering in Germany has only accelerated amid the COVID-19 pandemic and will likely continue to ramp up after the global health crisis has abated. The Chinese Communist Party (CCP) sees the pandemic as a window of opportunity.⁷ Market share is up for grabs. Strategic assets have depreciated. Liquidity is in short supply. Economic woes may lead Beijing’s targets to downplay security concerns associated with Chinese investment. The CCP intends to seize this opportunity. Germany and the United States must find ways to respond.

In its bid to gain power and global influence, the Chinese Communist Party (CCP) seeks not only to acquire foreign technology, but also to secure industrial control. Cooperation with German industry lies at the heart of this strategy. Chinese primary sources and resource

allocations reveal that Beijing sees German industry simultaneously as a tool for harvesting advanced technology and know-how, as a critical partner that can help proliferate technical standards favorable to China, and also as a competitor – one that Beijing intends to overtake. Germany is, in fact, a template for the CCP strategy to dominate the 21st-century economy and set the rules for the modern world. Beijing’s abuse of Sino-German cooperation poses a significant threat to the interests of Germany, the United States, and their democratic allies.

This report will begin with an overview of the CCP’s “Made in China 2025” (MIC2025) plan as well as China’s broader industrial policy mechanisms. The report will then detail China’s interaction with Germany as a tool, partner, and competitor. Finally, it will conclude with policy recommendations designed to help the U.S. and German governments counter the rising CCP threat.

Introducing Made in China 2025

On May 19, 2015, China’s State Council formally announced Made in China 2025 (中国制造2025). MIC2025 is a sweeping agenda for China to become a “manufacturing great power,” seize the “commanding heights” of global manufacturing, and win the “fourth industrial revolution.” The fourth industrial revolution, or “Industry 4.0,” is how China refers to the “new industrial revolution” brought about by advances in information technology (IT), most notably in the form of the so-called “Internet of Everything.”⁸ For Beijing,

6. State Council of the People’s Republic of China, “中共中央国务院关于深化投融资体制改革的意见 [Opinions of the CPC Central Committee and the State Council on Deepening the Reform of the Investment and Financing System],” 2016.

7. Emily de La Bruyère and Nathan Picarsic, “Viral Moment: China’s Post-COVID Planning,” *Horizon Advisory*, March 15, 2020. (<https://www.horizonadvisory.org/news/coronavirus-series-report-launch-viral-moment-chinas-post-covid-planning>)

8. The phrase “Internet of Everything” might be understood as the overarching concept covering the commercial and industrial “Internet of Things” phenomena – as well as their social and strategic ramifications. The term “Internet of Things” refers to the interconnection of physical objects via the internet of computing devices embedded in them. Li Xiaotong, 订物互联 [*Internet of Everything*] (Beijing: People’s Posts and Telecommunications Press, 2017).

the revolution represents an opportunity to rewrite the current international hierarchy.⁹

Beijing aims to win this new industrial revolution by competing for networks of exchange, especially those enabled by IT; technical standards; and technological platforms.¹⁰ As Beijing sees it, a new world is emerging in which the physical and virtual worlds connect across IT backbones, such as telecommunications and Bluetooth systems. These backbones govern the global movement, exchange, and production of – and collect data on – goods and information. “Whoever controls the flow of resources, markets, and money,” wrote retired People’s Liberation Army (PLA) Commander Wang Xiangsui in 2017, “is hegemon of the world.”¹¹

MIC2025 emerged from three years of deliberation led by the Ministry of Industry and Information Technology in conjunction with more than 20 departments of the State Council,¹² 50 academicians of the Chinese Academy of Engineering, and 100 additional experts. Beijing envisions MIC2025 as the first of three 10-year industrial plans that

amount to a grand-strategic bid to win the new industrial revolution. MIC2025 focuses on honing manufacturing advantages and building dominance, as well as global dependence, in the industries projected to determine Industry 4.0.

Beijing describes MIC2025 according to a framework of “one, two, three, four, five, 10.”¹³ There is **one** goal: “Transform to a manufacturing great power.”¹⁴ China will achieve that goal through the “integration of **two** industries: informatization and industrialization,”¹⁵ or the merging of the real, production economy and the virtual, network one via the “Industrial Internet of Things” (IIoT).¹⁶ Beijing intends to accomplish this in **three** 10-year steps. MIC2025 presents the roadmap for the first decade. The next step, which may be unveiled as “China Standards 2035” or otherwise reflected in the CCP’s forthcoming 14th Five-Year Plan, will focus on technical standards and carry a target completion date of 2035.¹⁷ The third – the consolidation of manufacturing, economic, and information control – is to be achieved by 2049, the centenary of the People’s Republic of China.¹⁸

9. See, for example: “习近平主持召开经济社会领域专家座谈会强调 着眼长远把握大势开门问策集思广益 研究新情况作出新规划 [Xi Jinping Presided over a Symposium with Experts in the Economic and Social Fields, Emphasizing that We Should Focus on the Long-Term, Grasp the General Trend, Open the Door, Ask for Ideas, Study New Situations and Make New Plans],” *CCTV* (China), August 24, 2020.

10. This report surveys a range of credible primary-source inputs – ranging from official CCP policies to strategic discourse to People’s Republic of China-linked investments and resource allocations – to document Beijing’s strategic intent. The report’s analysis is limited in several areas by availability of sources, but aims to advance as complete a framing as possible of the ambitions motivating CCP engagement with Germany.

11. Wang Xiangsui, *未来世界的中国地位 [China’s Role in the Future World]* (Beijing: Changjiang New Century Culture Media Company, 2017), page 180.

12. These departments included the National Development and Reform Commission; the Ministry of Science and Technology; the Ministry of Finance; and the General Administration of Quality Supervision, Inspection, and Quarantine.

13. Xia Yanna and Zhao Sheng, *中国制造2025：产业互联网开启新工业革命 [Made in China 2025: Industrial Internet Starts New Industrial Revolution]* (Beijing: Machinery Industry Press, 2016).

14. State Council of the People’s Republic of China, “中国制造2025 [Made in China 2025],” May 2015.

15. *Ibid.*

16. The term “Industrial Internet of Things” refers to the Internet of Things as applied to industrial production.

17. Emily de La Bruyère and Nathan Picarsic, “China Standards 2035: Beijing’s Platform Geopolitics and ‘Standardization Work in 2020,’” *Horizon Advisory*, April 11, 2020. (<https://www.horizonadvisory.org/china-standards-2035-first-report>). These themes and priorities may also be reflected under other policy documents, such as the 14th Five-Year Plan.

18. “标准化将为中国制造2025发力 [Standardization will force Made in China 2025],” *China News* (China), June 17, 2015; “知道中国制造2025,了解中国标准2035吗?这个更重要! [Know Made in China 2025, Do You Understand China Standards 2035? This Is More Important!],” *Eastmoney* (China), November 4, 2018.

MIC2025 has **four** sets of paired principles. The project will be both market- and government-led; feature immediate action as well as long-term positioning; balance comprehensive, methodical advances with breakthroughs in key fields; and pair “independent development”¹⁹ with “win-win cooperation.”²⁰

“Beijing calls the process ‘introduction, digestion, absorption, and re-innovation.’ After obtaining technological resources from abroad, Beijing seeks to develop and scale them at home through five major projects: ‘manufacturing innovation centers, projects to strengthen the industrial base, intelligent manufacturing projects, green manufacturing, and high-end equipment development.’”

“Win-win cooperation” refers to the international cooperation on which MIC2025 rests, including Beijing’s acquisition of technological, information, and innovative resources through international

partnerships.²¹ Beijing calls this process “introduction, digestion, absorption, and re-innovation.”²² After obtaining technological resources from abroad, Beijing seeks to develop and scale them at home through **five** major projects: “manufacturing innovation centers, projects to strengthen the industrial base, intelligent manufacturing projects, green manufacturing, and high-end equipment development.”²³

Finally, China aims to achieve breakthroughs in **10** “key fields”: new generation IT,²⁴ high-end computer numerical controlled machine tools and robots, aerospace equipment,²⁵ marine engineering equipment and high-end ships, advanced rail transportation equipment, energy-saving and new energy vehicles, power equipment, agricultural machinery and equipment, new and advanced materials,²⁶ biomedicine, and high-performance medical devices.²⁷

Beijing frames its objectives across those fields in the same terms as the larger MIC2025 plan: the integration of industrialization and informatization. Whether in robots or aerospace equipment, the ambitions

19. Importantly, “development” does not translate to “innovation.” China relies primarily on international cooperation, including industrial-technology transfer and academic collaboration, to acquire innovative capabilities. Even the 2006 Medium- and Long-Term Plan for Science and Technology Development, the guiding document for Beijing’s advanced science and technology efforts, acknowledges that Beijing pursues innovation through “assimilation and absorption of imported technology.” State Council of the People’s Republic of China, “国家中长期科学和技术发展规划纲要 [National Medium and Long-term Science and Technology Development Planning Outline],” February 2006.

20. State Council of the People’s Republic of China, “中国制造2025 [Made in China 2025],” May 2015.

21. MIC2025 guides China to “make unified use of two resources and two markets, implement a more active opening strategy, better combine introduction of resources with ‘going global,’ expand new open areas and spaces, improve the scope and scale of international cooperation, and promote the internationalization of key industries, guiding enterprises to improve their international competitiveness.” State Council of the People’s Republic of China, “国务院关于印发《中国制造2025》的通知 [Notice of the State Council on Printing and Distributing ‘Made in China 2025’],” May 8, 2015.

22. Chao Wang, “美国对我国信息领域进行技术封锁的战略意图及应对之策 [The Strategic Intention and Countermeasures of the U.S. Technical Blockade on China’s Information Field],” *Cyberspace Security*, Vol. 9, No. 11, 2018.

23. State Council of the People’s Republic of China, “中国制造2025 [Made in China 2025],” May 2015; State Council of the People’s Republic of China, “国务院关于印发《中国制造2025》的通知 [Notice of the State Council on Distributing ‘Made in China 2025’],” May 8, 2015.

24. Beijing breaks this field down into integrated circuits, information and communication equipment, and operating systems and industrial software. State Council of the People’s Republic of China, “国务院关于印发《中国制造2025》的通知 [Notice of the State Council on Printing and Distributing ‘Made in China 2025’],” May 8, 2015.

25. See the discussion of “Two Machines” in Emily de La Bruyère and Nathan Picarsic, “China, Coronavirus, and the Threat of Integration,” *The Tribune-Review*, March 9, 2020. (<https://triblive.com/opinion/nathan-picarsic-emily-de-la-bruyere-china-coronavirus-threat-of-integration/>)

26. Examples include rare earths materials, high-temperature alloys, nanomaterials, graphene, solar cell materials, and superconducting materials.

27. State Council of the People’s Republic of China, “国务院关于印发《中国制造2025》的通知 [Notice of the State Council on Printing and Distributing ‘Made in China 2025’],” May 8, 2015.

of MIC2025 extend past producing the tools and equipment to dominate the next generation of smart manufacturing (“industrialization”). China aims to influence the technical standards for the information systems into which those tools and equipment connect (“informatization”). Technical standards are the rules by which technological processes and products function, are replicated, and interact with each other. China seeks to write those rules.

MIC2025’s significance in the Chinese system is evident in the resource allocations that support it, including state subsidies, new government guidance funds, and national-level prizes for science and technology. That said, MIC2025 represents just the first in a three-part, three-decade series. This series is itself a continuation of decades of other industrial plans, strategies, and projects. MIC2025 is consistent with Beijing’s larger “Go Out” strategy, a long-standing program to deploy Chinese companies and institutions internationally. Indeed, MIC2025 aligns closely with its predecessor plans under Go Out, including the 2006 “Medium- and Long-Term Plan for Science and Technology Development” and the 2013 “Strategic Emerging Industries” initiative. These plans target parallel industries and fields. Their evolution underlines a growing Chinese emphasis on “new infrastructures,” or virtual systems such as telecommunications networks, data centers, artificial intelligence, logistics, the IIoT, and the digitization of traditional infrastructure.²⁸ Those areas will define the modern information era and link the virtual and

real economies through 5G telecommunications, the Internet Protocol version 6, the social credit system, and platforms such as e-commerce sites, mobile wallets, and global logistics interfaces.

“Beijing does not pursue those objectives through direct competition on a level playing field. Rather, China uses partnerships with foreign companies, governments, and institutions to siphon technology.”

To do this, China needs advanced technology, industrial capacity, and global influence. But Beijing does not pursue those objectives through direct competition on a level playing field. Rather, China uses partnerships with foreign companies, governments, and institutions to siphon technology.²⁹ Beijing then uses those technologies – as well as its cooperative channels with foreign actors – to claim dominance in global supply chains (such as pharmaceuticals) and export its networks, standards, and platforms (such as 5G).³⁰

In pursuing this asymmetric approach, China has advantages in its size and top-down system of governance. As a result of network effects, whereby an increase in the number of people using a product or service increases its value, China maintains an inherent upper hand in defining emerging global networks and standards.³¹ China’s estimated population of 1.4 billion ensures this advantage, as does Beijing’s

28. “新基建、新故事 [New Infrastructure, New Stories],” *Economic Watch* (China), March 9, 2019.

29. China does so through both illicit means (such as individual researchers tasked with obtaining technology) and licit ones (such as joint ventures through which Chinese companies gain access to advanced technology). See, for example: “Chinese Researcher ‘Hiding’ in San Francisco Consulate is Arrested,” *Financial Times* (UK), July 25, 2020. (<https://www.ft.com/content/ceb20fea-c690-442b-b07d-5b59d2a56426>); Lingling Wei and Bob Davis, “How China Systematically Pries Technology from US Companies,” *The Wall Street Journal*, September 26, 2018. (<https://www.wsj.com/articles/how-china-systematically-pries-technology-from-u-s-companies-1537972066>)

30. Since the early 1980s, Chinese economic strategists have cited the idea of “two markets, two resources” (两个市场两种资源), which is reiterated in MIC2025: China is to tap into international openness while itself remaining relatively closed. The domestic market is to be relatively insulated while the international one is penetrated. Foreign resources are to be exploited while domestic ones are relatively protected at home. For additional discussion, see: Emily de La Bruyère and Nathan Picarsic, “Viral Moment: China’s Post-COVID Planning,” *Horizon Advisory*, March 15, 2020. (<https://www.horizonadvisory.org/news/coronavirus-series-report-launch-viral-moment-chinas-post-covid-planning>)

31. The term “network effects” refers to the additional value that a new user of a network provides for other users. The result is that big networks tend to deliver more value to their users. For an in-depth discussion, see: Feng Zhu and Marco Iansiti, “Why Some Platforms Thrive and Others Don’t,” *Harvard Business Review*, January 2019. (<https://hbr.org/2019/01/why-some-platforms-thrive-and-others-dont>)

ability to determine the systems that population uses. Beijing's centralization also allows it to encourage its state-owned and state-directed companies to operate globally according to China's industrial strategy rather than pursue short-term profit incentives.

Beijing calculates that control over the new industrial revolution's foundational systems will allow it to "leapfrog" the world's developed countries. According to Xia Yanna, the chairwoman of Shenzhen China Made Intelligent Manufacturing (深圳华制智能制造技术有限公司),³² and Zhao Sheng, of the People's Government of Jilin City, who wrote the 2016 book *Made in China 2025: Industrial Internet Opens a New Industrial Revolution*, "[i]n the future, there will be a new world of the Internet of Everything. China has the opportunity to 'overtake around the corner.'"³³

More broadly, Beijing identifies opportunity in moments of flux, whether they come in the form of a global pandemic or the ongoing technological revolution, which Beijing sees as opportunities to reshape the international hierarchy.³⁴ China is positioning itself to exploit this global dislocation by accelerating deployments of capital, industry, and information systems. This will likely reverberate in Germany. And it may accelerate the path along which Sino-German ties move from mutually beneficial to competitive and predatory.

MIC2025 in Germany: Tool, Partner, Competitor

Germany is critical to Beijing's weaponization of cooperation and its MIC2025 ambitions. As Beijing sees it, Germany is a source from which China can siphon advanced technology. Germany is also a strategic node in which to "dock" Chinese networks, standards, and platforms and through which to export those networks, standards, and platforms across Europe and throughout the world. Ultimately, Berlin is a competitor in the contest for the foundations of the new industrial revolution.

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With MIC2025, Beijing intends to use Germany's capabilities to encourage Germany's participation in projects that ultimately come at Berlin's strategic expense. China looks to accomplish this through two parallel efforts. First, China seeks to import expertise and technology *from* Germany. Second, China seeks to export networks, standards, and platforms *to* Germany.

32. China Made Intelligent Manufacturing is a Chinese company that specializes in platforms for the IIoT. As *China News Network* puts it, "[I]n the process of the integration of the three major standard systems of Made in China 2025, China Made Intelligent Manufacturing plays a key role as a 'global connector.'" "融合'中德DNA' 江苏江北新区打造智能制造核心竞争力 [Integrating 'Sino-German DNA' Jiangbei New District of Jiangsu to Create Core Competitiveness of Intelligent Manufacturing]," *China News Network* (China), December 7, 2016.

33. Xia Yanna and Zhao Sheng, *中国制造2025：产业互联网开启新工业革命* [*Made in China 2025: Industrial Internet Starts New Industrial Revolution*] (Beijing: Machinery Industry Press, 2016). Derived from the literal act of one car overtaking another around a tight corner, this phrase is used in Chinese strategic discourse to describe the country's use of moments of change (corners) to surpass incumbent powers. For additional discussion, see: Emily de La Bruyère, "Hearing on the Threats Posed by State-Owned and State-Supported Enterprises to Public Transportation," *Testimony before the U.S. Senate Committee on Banking, Housing, and Urban Affairs*, March 5, 2020. (<https://www.banking.senate.gov/imo/media/doc/de%20La%20Bruyere%20Testimony%203-5-201.pdf>)

34. Emily de La Bruyère and Nathan Picarsic, "Viral Moment: China's Post-COVID Planning," *Horizon Advisory*, March 15, 2020. (<https://www.horizonadvisory.org/news/coronavirus-series-report-launch-viral-moment-chinas-post-covid-planning>)

For decades, Beijing has weaponized technology transfer and industrial cooperation to catch up to Germany's manufacturing capabilities.³⁵ The practice began in 1984, with a partnership between Volkswagen and Shanghai Automotive (now SAIC), the first-ever foreign automotive joint venture approved by the CCP.³⁶ China's efforts to develop gas turbine technologies through cooperation with Siemens, including as part of the "Two Machines Special Project,"³⁷ offer a more recent example.³⁸ MIC2025 applies this playbook across the strategic emerging industries prioritized in CCP science and technology plans. And across these industries, the aims of MIC2025 extend beyond technology acquisition to a bid for consolidated industrial control that spans both horizontally across the industry as well as vertically from sources of supply to finished goods.

Germany as a Tool: Obtaining Advanced Technology

Beijing's industrial strategy hinges on leveraging cooperation and capital to acquire technology from developed countries, then scaling and applying that technology internationally to "leapfrog" the very countries from which the technology came.³⁹ Germany's advanced capability in hardware production and relative openness to Chinese partnerships make it a prime target.

China considers Germany to be on par with the United States in the first tier of global industrial players. In fact, argue Xia and Zhao, Germany is ahead in the fields most complementary to China's leapfrog approach: Berlin's Industry 4.0 strategy⁴⁰ focuses on "development of intelligent equipment and intelligent production processes based on an extremely well-developed equipment manufacturing and information technology foundations." By contrast, "the United States pays more attention to software, networks, and data... Germany's Industry 4.0 is more micro while the US industry interconnection is more macro."⁴¹

MIC2025 aligns with the German focus areas that Xia and Zhao identify: processes, advanced equipment, and other more tangible capabilities. After acquiring such capabilities from Germany, Beijing can then adjust its strategic positioning to compete for the more software-oriented areas the United States emphasizes. As Xia and Zhao put it, "[T]he gap between the US and China in virtualeconomicinnovationisrelativelybig. Butinthecore technologies of 'intelligent manufacturing' (digitization, networking, and intelligent manufacturing)," which Germany is developing, "China can develop a unique advantage. Cooperation with Germany's Industry 4.0 strategy will introduce more sophisticated technology to China, which will allow the level of manufacturing to leapfrog... This is why the Chinese government has chosen Germany."⁴²

35. See, for example: Stephen Evans, "German firms fear China technology theft," *BBC News* (UK), February 8, 2011. (<https://www.bbc.com/news/12382747>)

36. Zhang Yuxing, "合资大幕开启的1984 [The Beginning of the Joint Venture in 1984]," *China Economic Network* (China), August 18, 2014.

37. Emily de La Bruyère and Nathan Picarsic, "China, Coronavirus, and the Threat of Integration," *The Tribune-Review*, March 9, 2020. (<https://triblive.com/opinion/nathan-picarsic-emily-de-la-bruyere-china-coronavirus-threat-of-integration/>)

38. "我国重型燃机核心部件获重大突破 [Major Breakthroughs Have Been Made in the Core Components of My Country's Heavy-Duty Gas Turbines]," *Observer Network* (China), December 26, 2018.

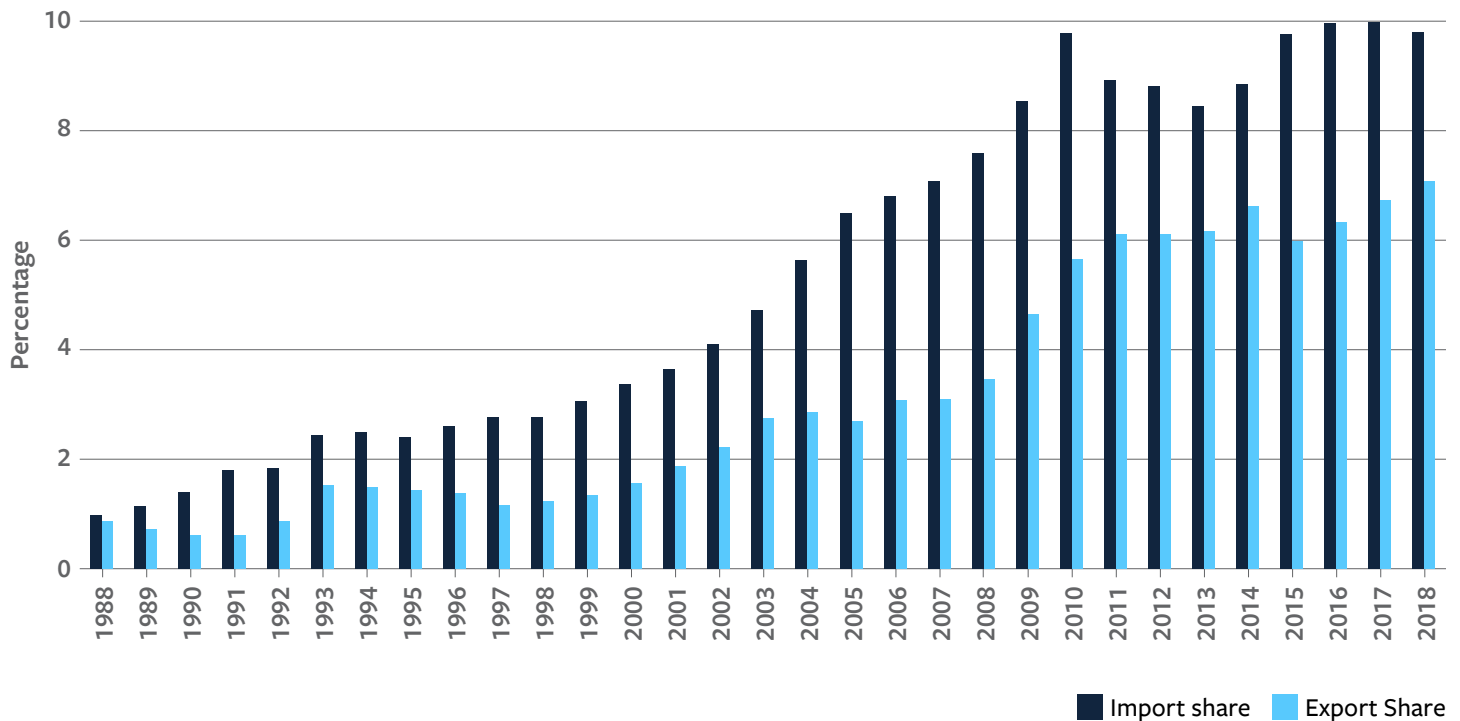
39. MIC2025 is not about building basic innovative capacity. Rather, it is about ensuring access to channels to the basic innovative capacity in which other countries invest. Emily de La Bruyère and Nathan Picarsic, "China, Coronavirus, and the Threat of Integration," *The Tribune-Review*, March 9, 2020. (<https://triblive.com/opinion/nathan-picarsic-emily-de-la-bruyere-china-coronavirus-threat-of-integration/>)

40. Demetrius Klitou, Johannes Conrads, Morten Rasmussen, Laurent Probst, and Bertrand Pedersen, "Germany's Industrie 4.0," *European Commission Digital Transformation Monitor*, January 2017. (https://ec.europa.eu/growth/tools-databases/dem/monitor/sites/default/files/DTM_Industrie%204.0.pdf)

41. Xia Yanna and Zhao Sheng. 中国制造2025：产业互联网开启新工业革命 [*Made in China 2025: Industrial Internet Starts New Industrial Revolution*] (Beijing: Machinery Industry Press, 2016).

42. Ibid.

Figure 1: China’s Share of German Exports and Imports, 1988–2018⁴³



Chinese sources describe Germany as a relatively easy target. Berlin is more open to cooperation with Beijing than is Washington.⁴⁴ From the Chinese perspective, Germany is also more amenable than other European countries. “The pragmatic attitude of the Germans has made their attitude toward China better than that of most other European countries,” writes the dean of Tsinghua University’s Institute of International Relations, Yan Xuetong.⁴⁵

China’s resource allocations reflect a focus on Germany. China’s trade with and direct investment in Germany have grown steadily over the past 15 years. This trade and investment spiked after the global financial crisis in 2008, which Beijing viewed as an opportunity to accelerate its industrial strategy.⁴⁶ China’s other economic relationships followed a similar pattern, but the focus on Germany, especially in the industrial sector, was particularly acute.⁴⁷ In 2017, Germany was the primary target of Chinese direct investment in Europe. In 2018, Germany was second only to Luxemburg.⁴⁸

43. United Nations, “UN Comtrade Database,” accessed August 26, 2020. (<https://comtrade.un.org/>)

44. Per a 2018 article on the website of China’s Ministry of Industry and Information Technology, “[t]he United States has used the ‘big stick’ of bullying trade to provoke Trade Wars one after another. At a time when the United States keeps ‘waving a big stick’ on its trading partners, China is actively consolidating more trading partnerships. Recently, China–Germany cooperation has been fruitful.” Ministry of Industry and Information Technology of the People’s Republic of China, “中德合作好戏在河南许昌频频上演 [Sino-German Cooperation is Frequently Staged in Xuchang, Henan],” August 3, 2018.

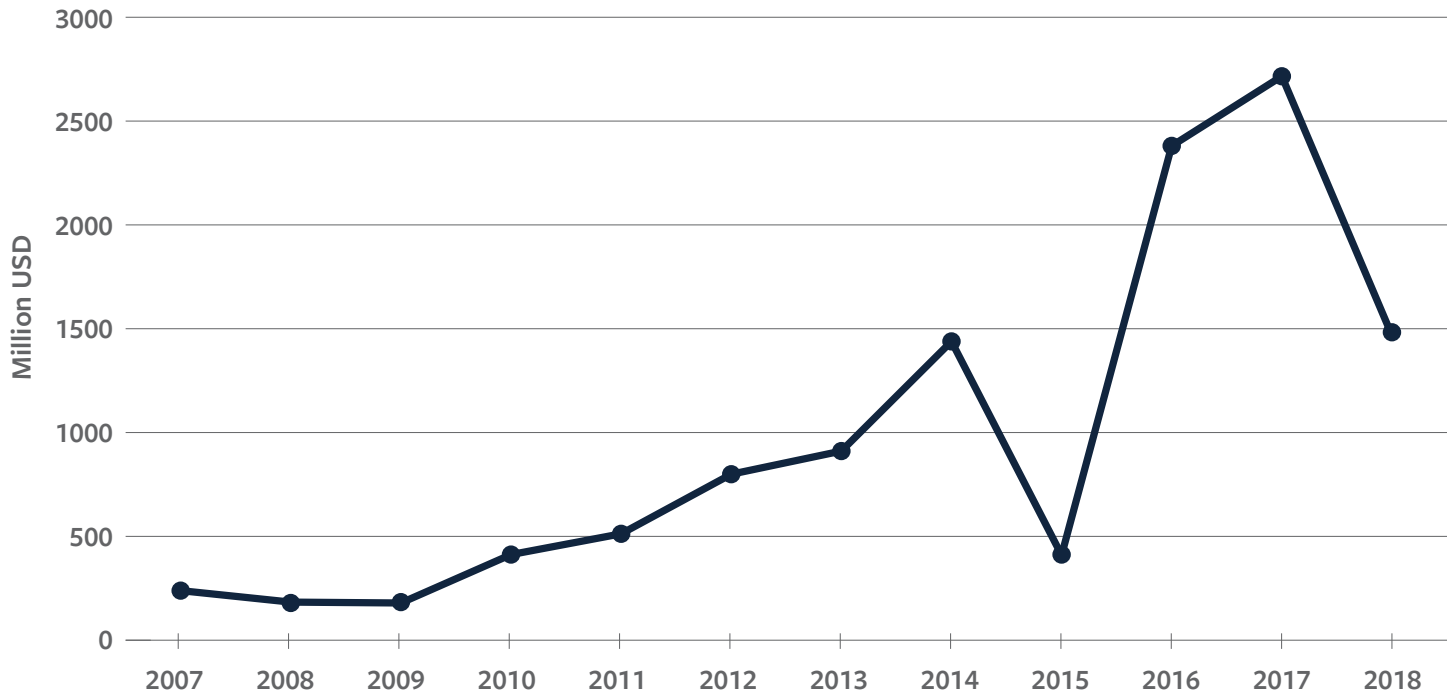
45. Yan Xuetong, *Inertia of History* (Beijing: CITIC Press Corporation, 2013), page 211.

46. For an in-depth discussion, see: Emily de La Bruyère and Nathan Picarsic, “When the Iron Is Hot: The Chinese Communist Party’s Subversion of US Recovery Investment,” *Horizon Advisory*, June 2020. (<https://www.horizonadvisory.org/ccpsubversionreport>)

47. Zhang Xinmin, *中国企业海外发展报告2018 [Annual Report of Overseas Development of Chinese Enterprises, 2018]* (Beijing: Social Sciences Press, 2019), page 37.

48. Data from the National Bureau of Statistics and the Ministry of Commerce of the People’s Republic of China, accessed August 7, 2020.

Figure 2: Chinese Overseas Direct Investment into Germany, 2007–2018⁴⁹



Of course, Germany has many trade and investment partners, and European investment into the country still trumps that from Beijing by a significant margin. The real story is what Beijing *does* with its investment. A sectoral breakdown of large Chinese corporate acquisitions reveals a focus on high-tech players in MIC2025 fields, with a particular emphasis on areas China identified as domains of advantageous cooperation with Germany:⁵⁰ “[a]utomotive, machinery manufacturing, chemical, medicine, and electronics” as well as “new energy and environmental technologies.”⁵¹

A 2018 analysis by the Germany-based think tank Bertelsmann Stiftung arrived at a similar conclusion. The study found that 64 percent of analyzed Chinese mergers and acquisitions in Germany between 2014 and 2017 aligned with MIC2025 key areas, especially energy-saving and new energy vehicles (20.5 percent), electrical equipment (18.8 percent), biomedicine and medical devices (16.1 percent), and high-end machinery and robotics (15.2 percent). That proportion of MIC2025-relevant investment increased markedly after the announcement of MIC2025 in 2015.⁵²

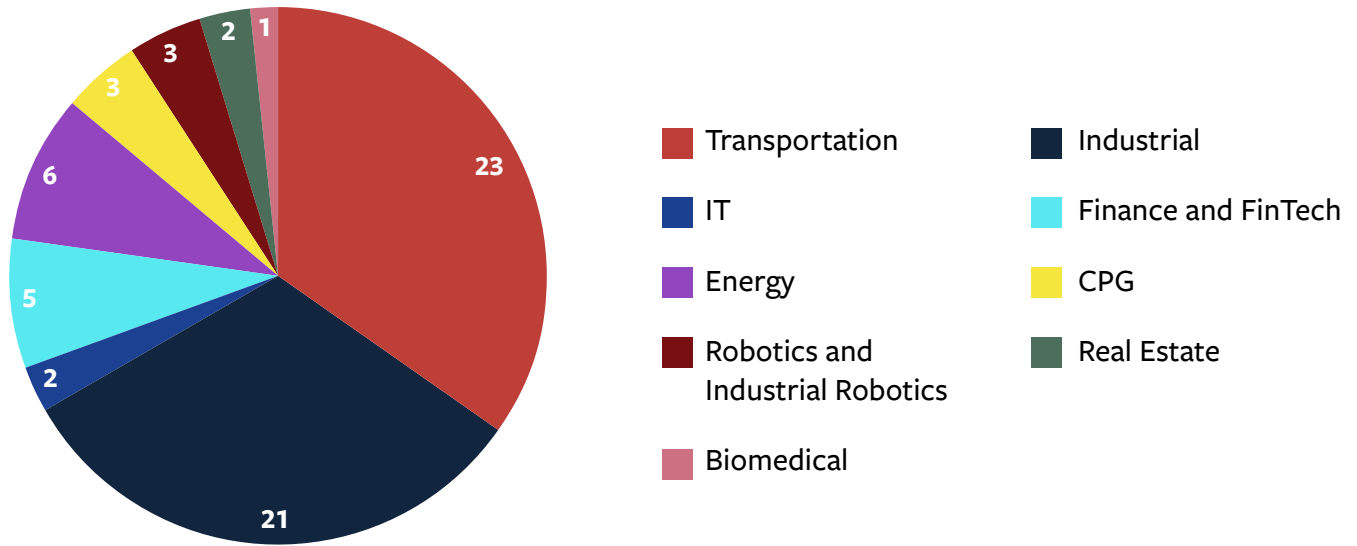
49. Ibid.

50. Qi Bin, “创新对外投资方式推动全球经济协同增长 [Innovating Foreign Investment Methods to Promote Coordinated Growth of the Global Economy],” *Tsinghua Financial Review*, August 5, 2019.

51. Ministry of Commerce of the People’s Republic of China, “德国五大优势产业简介 [Introduction to Germany’s five dominant industries],” March 3, 2015. This list is reiterated in the Ministry of Commerce’s regularly updated “Guide to Investment” in Germany, which urges Chinese companies to invest in the machine tool, automotive, IT, and renewable energy industries.

52. Cora Jongbluth, “Is China Systematically Buying Up Key Technologies? Chinese M&A Transactions in Germany in the Context of ‘Made in China 2025,’” *Bertelsmann Stiftung*, 2018. (https://www.bertelsmann-stiftung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/MT_Is_China_Systematically_Buying_Up_Key_Technologies.pdf)

Figure 3: Chinese Corporate Acquisitions in Germany by Sector, 2007–2019⁵³



China’s investments in Germany directly align with the technologies in which Beijing seeks global leadership.⁵⁴ Examples include: cooperation between Shanghai Electric and Siemens, Midea Group’s 2016 acquisition of the German robotics manufacturer KUKA,⁵⁵ Haowu’s 2017 stake in leading crankshaft manufacturer FEUER powertrain,⁵⁶ and Geely’s 2018 investment in Daimler AG.⁵⁷ They all demonstrate the brazenness of China’s strategy, the role of Beijing’s military-civil fusion apparatus in the process, the emphasis on hollowing out core German capabilities, and China’s clever evasion of national security investment reviews. Every Chinese acquirer is either directly state-owned or a beneficiary of China’s non-market industrial-support mechanisms.

Beijing is explicit about targeting partnerships with German companies to obtain advanced technologies. Beijing’s “military upgrade” demanded jet engines as well as gas turbines. Foreign expertise, and German expertise in particular, offered access to both technologies.

The gas turbine industry offers a prime example. In 2001, China’s National Development and Reform Commission issued the “Implementation Opinions on Gas Turbine Industry Development Technology Introduction,” outlining ambitions to obtain gas turbine technology from abroad in exchange for market access.⁵⁸ Under this guidance, specific Chinese champion companies cooperated with established foreign companies in the field, including Mitsubishi,

53. Author industry coding of 66 transactions identified in Chinese-language, German-language, and English-language press articles.
 54. See, for example: Cora Jongbluth, “Is China Systematically Buying Up Key Technologies? Chinese M&A Transactions in Germany in the Context of ‘Made in China 2025,’” *Bertelsmann Stiftung*, 2018. (https://www.bertelsmann-stiftung.de/fileadmin/files/BSt/Publikationen/GrauePublikationen/MT_Is_China_Systematically_Buying_Up_Key_Technologies.pdf)
 55. Wiboon Kittilaksanawong and Ines Sanso Codina, “Midea Group China: The Acquisition of German Robotics,” *Harvard Business Review*, July 19, 2019. (<https://store.hbr.org/product/midea-group-china-the-acquisition-of-german-robotics/W19353>)
 56. Alan Tran, “Feuer Powertrain and Chinese Haowu Group Agree to Strategic Partnership and Joint Venture in China,” *Automotive Industries Online*, July 2017. (<https://www.ai-online.com/2017/07/feuer-powertrain-and-chinese-haowu-group-agree-strategic-partnership-and-joint-venture-in-china/>)
 57. “China’s Geely Acquires 9.69% Stake in Daimler,” *Financial Times* (UK), February 23, 2018. (<https://www.ft.com/content/0531f54c-18c1-11e8-9376-4a6390addb44>)
 58. “中航重组或成立新发动机公司 两重大专项呼之欲出 [AVIC Reorganizes or Establishes a New Engine Company; Two Major Projects Are About to Emerge],” *Sina Military* (China), October 9, 2015.

General Electric, and Siemens.⁵⁹ A public document from the Shanghai government outlines one example: “In the gas turbine project public bidding hosted by the National Development and Reform Commission, Shanghai Electric and Siemens joined hands to win the 9 F-class heavy-duty gas turbine power stations, opening a new era for Shanghai Electric to enter the gas turbine market.”⁶⁰

“Beijing is explicit about targeting partnerships with German companies to obtain advanced technologies. Beijing’s ‘military upgrade’ demanded jet engines as well as gas turbines. Foreign expertise offered access to both technologies. Shanghai Electric’s cooperation with Siemens in the gas turbine industry offers a prime example.”

In 2016, Beijing listed gas turbine technology, alongside aero-engine technology, as a key focus area in the “13th Five-Year Plan for Science and Technology Innovation.”⁶¹ That year, China’s Ministry of Industry and Information Technology, one of MIC2025’s institutional underwriters, launched the CCP’s Two Machines Special Project (两机专项). Focused on aero-engines and gas turbines, the Two Machines project is designed to foster domestic capabilities and enterprises rather than simply gain access to foreign technology and companies. As Chinese media coverage of the project in 2015, shortly before its launch, put it, “[T]here

is almost no completely self-produced gas turbine in China... Despite this, the domestic manufacturing industry has never given up the dream of producing gas turbines with independent intellectual property rights.”⁶² In 2018, the Two Machines effort saw Siemens and the China State Power Investment Corporation sign an agreement in which Siemens promised to support the research and development of heavy-duty gas turbines and provide relevant training and consulting.⁶³ A Chinese press outlet focused on Two Machines reported that “Siemens stated that this cooperation will take advantage of Siemens’ leading position in gas turbine technology to support China’s goal of independent research and development and manufacturing of heavy-duty gas turbines.”⁶⁴

That press coverage credits two factors with driving China’s emerging advantages in the global gas turbine industry. First is Two Machines-related investment: “The country is increasing investment in heavy-duty gas turbine research and development through the aero-engine and gas turbine special project.”⁶⁵ Second is China’s increasing freedom of action as Chinese companies secure additional foreign assets and technology. In particular, the article notes that Shanghai Electric’s 2014 acquisition of a 40 percent stake in Ansaldo Energia, an Italian power engineering company, and corresponding access to Ansaldo’s technological capabilities, has enabled Shanghai Electric to break its dependence on joint ventures with other foreign companies, namely Siemens. “Shanghai Electric took a stake in Ansaldo and broke up with Siemens,” the article said. “It is Siemens that

59. Ibid.

60. Shanghai Municipal People’s Government, “上海电气携手西门子打造燃气轮机‘中国芯’ [Shanghai Electric Joins Hands With Siemens to Build ‘China Core’ for Gas Turbines],” November 24, 2004.

61. State Council of the People’s Republic of China, “国务院关于印发‘十三五’国家科技创新规划的通知 [Notice of the State Council on Issuing the ‘13th Five-Year’ National Science and Technology Innovation Plan],” August 8, 2016.

62. “中航重组或成立新发动机公司 两重大专项呼之欲出 [AVIC Reorganizes or Establishes a New Engine Company; Two Major Projects Are About to Emerge],” *Sina Military* (China), October 9, 2015.

63. “西门子宣布将协助中国电投进行国产燃气轮机研发 [Siemens Announced That It Will Assist China State Power Investment Corporation in the Research and Development of Domestic Gas Turbines],” *Two Machines Power and Control* (China), July 10, 2018.

64. Ibid.

65. Ibid.

suffered the most.”⁶⁶ The article concludes by asking whether the technological cooperation between China State Power Investment Corporation and Siemens will “do for China’s heavy-duty gas turbine manufacturing industry what cooperation in high-speed rail did in that field.”⁶⁷ As will be discussed later in this report, China sees itself as having captured an international lead in high-speed rail technology through “digestion, absorption, and re-innovation” of technology from Germany as well as Japan, including through partnerships with Siemens.⁶⁸

Fusing Military and Civilian

The Two Machines project is not unique or anomalous. MIC2025 is about military as well as civilian industrial upgrading. It is part and parcel of China’s larger, national-level “military-civil fusion” [军民融合] (MCF) strategy to integrate military and civilian resources and actors in pursuit of comprehensive national power.⁶⁹ In many cases, China’s MCF intentions are obfuscated, buried in a web of Chinese holding companies, limited partners, and subsidiaries.

In 2017, China’s Haowu Group and Germany’s FEUER powertrain agreed to a strategic partnership and joint

venture in China.⁷⁰ As part of the transaction, Haowu claimed a 50 percent stake in FEUER powertrain.⁷¹ Organized through Haowu’s subsidiary Neijiang Jinhong Crankshaft, the joint venture was labeled the “Neijing German Crankshaft Project.” In March 2019, two years later, the Sichuan Military-Civil Fusion Fund, a CCP fund dedicated to MCF,⁷² acquired the German Crankshaft Project. The acquisition aimed to “introduce internationally leading engine crankshaft production and manufacturing technologies” for enhancing MCF. The total investment was estimated at RMB 1.01 billion (about \$142 million).⁷³

Midea’s acquisition of KUKA in 2017 offers another MCF example. Already controversial, the deal may have caused even greater controversy had it been publicly known that China viewed the acquisition as an MCF investment. KUKA has since been integrated into Beijing’s MCF infrastructure: The firm’s engineering center in Sichuan’s China Science and Technology Center connects to the Youxian Military-Civil Fusion Industrial Park, which focuses on “intelligent manufacturing, new materials, explosives, nuclear technology and support industries for aviation.”⁷⁴ KUKA also operates in an MCF industrial park in the

66. Ibid.

67. Ibid.

68. 中国企业海外发展报告 [Report on Overseas Development of Chinese Enterprises] (Beijing: Social Sciences Literature Press, 2018).

69. Emily de La Bruyère and Nathan Picarsic, “Military-Civil Fusion: China’s Approach to R&D, Implications for Peacetime Competition, and Crafting a US Strategy,” 2019 USN/NPS Acquisition Research Symposium, May 2019; Emily de La Bruyère and Nathan Picarsic, “The Reach of China’s Military-Civil Fusion: Coronavirus and Supply Chain Crises,” *Real Clear Defense*, March 4, 2020. (https://www.realcleardefense.com/articles/2020/03/04/the_reach_of_chinas_military-civil_fusion_coronavirus_and_supply_chain_crises_115092.html)

70. Paolo Bossi, “Haowu-Group’s Acquisition of 50% Interest in FEUER powertrain GmbH & Co. KG,” *Global Legal Chronicle*, July 1, 2017. (<https://www.globallegalchronicle.com/haowu-groups-acquisition-of-50-interest-in-feuer-powertrain-gmbh-co-kg/#:~:text=KG-Haowu%2DGroup’s%20Acquisition%20of%2050%25%20Interest%20in%20FEUER%20powertrain%20GmbH,KG&text=As%20part%20of%20the%20transaction,forming%20a%20local%20joint%20venture>)

71. FEUER Powertrain, Press Release, “FEUER powertrain and Chinese Haowu-Group Agree Strategic Partnership and Joint Venture in China,” June 23, 2017. (<https://www.prnewswire.co.uk/news-releases/feuer-powertrain-and-chinese-haowu-group-agree-strategic-partnership-and-joint-venture-in-china-630317903.html>)

72. “四川省首个军民融合重大创新工程正式落地 [The First Major Innovation Project of Military-Civilian Integration in Sichuan Province Officially Landed],” *Sichuan News* (China), January 29, 2018.

73. “军民融合基金与天津浩物签订投资内江德国曲轴项目协议 共同打造发动机曲轴先进制造研 [Military-Civilian Fusion Fund and Tianjin Haowu Signed an Agreement to Invest in the German Crankshaft Project in Neijiang],” *Sina News* (China), March 18, 2019.

74. Yao Maojiang, “37家军民融合认证企业落户绵阳 [37 Military-Civilian Fusion Certification Companies Settled in Mianyang],” *Phoenix News Media* (China), September 9, 2017.

Chinese city of Foshan,⁷⁵ launched in 2018 to focus on intelligent equipment manufacturing, next-generation IT, and aerospace.

KUKA also has a joint venture, Chang'an Laisi (Chongqing) Robot Intelligent Equipment, with Chang'an Industry (Group) Co., Ltd., one of Beijing's largest and best-established MCF champions. Chang'an Industry is a subsidiary of the China Ordnance Equipment Group Corporation, a state-supported military enterprise that the U.S. Department of Defense classified in June 2020 as tied to the PLA.⁷⁶ The KUKA-Chang'an Industry joint venture focuses on industrial robotics system integration, engineering design and assembly, display, training, and services. According to China's *Xinhua News Agency*, the partnership "will allow [Chang'an Industry] to build a new paradigm for military-civil fusion."⁷⁷

Targeting the Targets' Core Competencies

China targets Germany's automotive industry.⁷⁸ This is hardly surprising, given the latter's excellence in automotive engineering. Beijing tailors foreign industrial partnerships based on a diagnosis of its target's "advantageous areas of cooperation."⁷⁹

In addition to its joint venture with KUKA, Chang'an Industry also has partnerships with other German automotive actors. Chang'an Industry's core car business boasts a research and development center in Germany and a joint venture with the automotive arm of the German firm Benteler.

With Geely's investment in Daimler AG, China demonstrated not only its appetite for cutting-edge German automotive technology, but also its ability to circumvent regulatory barriers to foreign investment. In February 2018, Geely acquired nearly 10 percent of Daimler, aiming to leverage this stake to force technology cooperation.⁸⁰ In January 2020, the two partners announced a new joint venture focused on building premium and intelligent electrified vehicles.⁸¹ Daimler AG's investment evaded Germany's investment-review mechanism, which is only triggered by ownership stakes of 10 percent or above.⁸²

Germany as a Partner: Proliferating Chinese Standards

MIC2025, as part of China's broader industrial strategy, is not only about obtaining and developing technology.

75. "再投2.9亿！佛山村田五矿在顺德增资扩产，二期明年建成 [Invest Another 290 million! Foshan Murata Minmetals Increased Capital and Expanded Production in Shunde, the Second Phase Will be Completed Next Year]," *Foshan News* (China), May 17, 2018.

76. Chang'an Automobile, Press Release, "关于控股股东国有股权无偿划转的提示性公告 [Indicative Announcement on the Gratuitous Transfer of State-owned Equity of Controlling Shareholders]," November 11, 2018; U.S. Department of Defense, "Qualifying Entities Prepared in Response to Section 1237 of the National Defense Authorization Act for Fiscal Year 1999 (PUBLIC LAW 105-261)," June 12, 2020. (https://media.defense.gov/2020/Aug/28/2002486659/-1/-1/1/LINK_2_1237_TRANCHE_1_QUALIFYING_ENTITIES.PDF)

77. "全球顶尖工业机器人制造商库卡联手长安工业 [KUKA, the world's top industrial robot manufacturer, joins hands with Chang'an Industry]," *Xinhua News Agency* (China), June 20, 2017.

78. Ministry of Commerce of the People's Republic of China, "德国五大优势产业简介 [Introduction to Germany's Five Dominant Industries]," March 3, 2015. This list is reiterated in the Ministry of Commerce's regularly updated "Guide to Investment" in Germany, which urges Chinese companies to invest in the machine tool, automotive, IT, and renewable energy industries.

79. Qi Bin, "创新对外投资方式推动全球经济协同增长 [Innovating Foreign Investment Methods to Promote Coordinated Growth of the Global Economy]," *Tsinghua Financial Review*, August 5, 2019.

80. Norihiko Shirouzu and Edward Taylor, "China's Geely Makes \$9 billion Daimler Bet against Tech 'Invaders,'" *Reuters*, February 23, 2018. (<https://www.reuters.com/article/us-daimler-geely-stake/chinas-geely-makes-9-billion-daimler-bet-against-tech-invaders-idUSKCN1G72B7>)

81. Daimler AG, Press Release, "Mercedes-Benz and Geely. Global joint venture formally established," January 8, 2020. (<https://www.daimler.com/company/news/joint-venture-with-geely.html>)

82. Tobias Heinrich and Tilman Kuhn, "Foreign Direct Investment Reviews 2019: A Global Perspective," *White & Case*, December 27, 2019. (<https://www.whitecase.com/publications/insight/foreign-direct-investment-reviews-2019-germany>)

China also seeks to proliferate its technical standards. Standards constitute technical rulebooks. They create a foundation that shapes how technological systems work, work together, and are replicated. Rule setting affords economic returns and the ability to shape how technology evolves. Beijing encourages German adoption of Chinese standards, seeking to place the German technological and industrial system within a framework of Chinese rules.

Beijing understands that the standards Germany adopts are poised to proliferate regionally and globally. As Beijing's *Blue Book on China's Foreign Trade Development from 2017–2018* puts it, "Germany is the core country of the European Union and has a leading role."⁸³ China thus sees Germany as "China's most important partner in Europe," explains the *People's Daily*.⁸⁴

More broadly, China sees Europe as a core influencer of global industrial norms. "Building a network between Europe and the [Chinese] Mainland will change the status quo for China," writes retired PLA Commander Wang Xiangsui.⁸⁵ He describes Europe as the tipping point in China's competition with the United States: "Europe and Asia together will pose a strategic danger to the United States, because such a composition will outweigh the United States economically and, finally, militarily."⁸⁶

To promote German adoption of Chinese standards, Beijing seeks to connect Germany's Industry 4.0 plan – and European industrial plans more broadly – to MIC2025. In practice, this means encouraging

German firms to develop technologies and industrial processes to operate according to Chinese standards and on Chinese infrastructure. Chinese sources describe this as the "docking" of Industry 4.0 into MIC2025. A 2016 article in the state-run magazine *Guidance on Property Rights* explains that this "docking can foster new momentum, promote the transformation and upgrading of China's manufacturing industry, and inject fresh impetus into China's economy."⁸⁷

From 2015 until 2017, the Ministry of Industry and Information Technology and China Made Intelligent Manufacturing jointly sponsored an annual conference on the docking of MIC2025 and Industry 4.0.⁸⁸ Beijing prioritizes this docking in emerging high-tech areas where global standards are still being contested, including smart manufacturing, biomedicine, new energy vehicles, finance, modern logistics, 5G, graphene, and electronic materials.⁸⁹

Venture Capital Transactions, a Leading Indicator

China's venture capital transactions in Germany illustrate Beijing's focus on proliferating favorable standards. China's corporate acquisitions in Germany tend to focus on traditional technological domains, such as transportation and industrial machinery. But China's venture capital investments in Germany overwhelmingly target emerging domains where standards are still being set, such as IT, the biomedical and fintech fields, and the newest segments of the transportation sector, such as new energy vehicles.

83. Liu Chunsheng, 中国对外贸易发展报告. 2017 - 2018 [*Annual Report on China's Foreign Trade Development 2017–2018*] (Beijing: Social Science Literature Press, 2018), page 263.

84. "德国(贵州)产业园有望落户贵州遵义市 [German (Guizhou) Industrial Park is Expected to Settle in Zunyi, Guizhou]," *People's Daily* (China), June 22, 2017.

85. Wang Xiangsui, 三居其一:未来世界的中国定位 [*Three in One: Positioning China for the Future World*] (Beijing: Changjiang Literature and Art Publishing House, 2017), page 102.

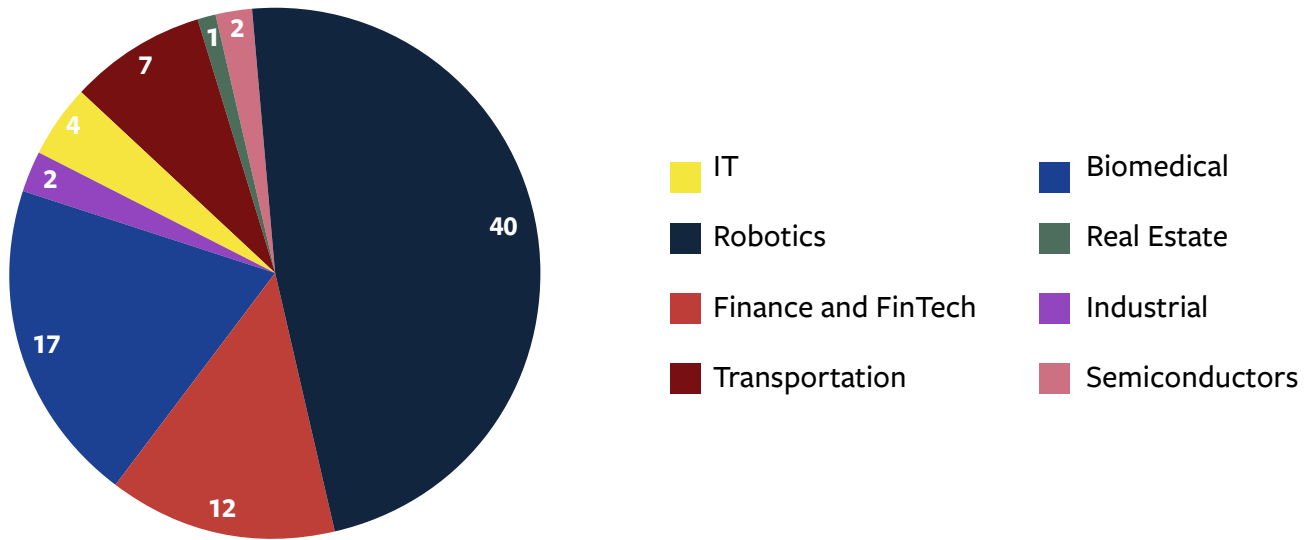
86. Ibid.

87. Cai Enze, "中国制造2025'与德国'工业4.0'的对接 [Docking of 'Made in China 2025' with German 'Industry 4.0']," *Guidance on Property Rights* (China), 2016, Issue 1.

88. "第三届工业4.0与中国制造2025全球年会举行 [The 3rd Industry 4.0 and Made in China 2025 Global Annual Conference Held]," *China Finance News* (China), December 27, 2017.

89. Ministry of Industry and Information Technology of the People's Republic of China, "中德合作好戏在河南许昌频频上演 [Sino-German Cooperation is Frequently Staged in Xuchang, Henan]," August 3, 2018.

Figure 4: Chinese Venture Capital Investments in Germany, 2008-2020⁹⁰



The difference between China’s approaches to venture capital and corporate acquisition makes sense. Venture capital investments allow Chinese investors to secure initial stakes in emerging areas of interest. Then, as the competitive and technological field matures, China can add to its investments with larger corporate transactions. This trend is already starting to play out in the energy sector. In 2016, Beijing Enterprise bought the German firm Energy from Waste,⁹¹ and China Three Gorges bought Meerwind.⁹² The next year, Hong Kong’s CK Infrastructure and Cheung Kong Property Holdings, both owned by Hong Kong’s richest man,

Li Kasheng, bought the Germany metering and energy management group Ista.⁹³

Just as Beijing’s strategic export of standards frequently goes overlooked, the venture capital ecosystem often evades regulatory safeguards against strategic foreign investment. Beijing strives to skirt investment-review protocols as it deploys Chinese companies to invest strategically abroad.⁹⁴ The fragmented, diverse operating and financial ecosystems in early-stage technology industries make this possible. Those areas face far less scrutiny than legacy corporate priorities and modes.⁹⁵

90. Author industry coding of 85 transactions identified in Chinese-language, German-language, and English-language press articles.

91. Arno Schuetze, “Beijing Enterprise Buys Germany’s Energy from Waste,” *Reuters*, February 4, 2016. (<https://www.reuters.com/article/us-energyfromwaste-m-a-beijing-ent/beijing-enterprise-buys-germanys-energy-from-waste-idUSKCN0VD1NM>)

92. “China Three Gorges to Buy German Wind Park Meerwind from Blackstone,” *Reuters*, June 13, 2016. (<https://www.reuters.com/article/us-blackstone-group-wind-farm-china-thre-idUSKCN0YZ1DC>)

93. Amanda Lee, “Cheung Kong Buys Energy Manager Ista for €4.5 billion, Adding Germany to Li’s Empire,” *South China Morning Post* (Hong Kong), July 27, 2017. (<https://www.scmp.com/business/commodities/article/2104407/cheung-kong-buys-energy-manager-ista-eu45-billion-adding>)

94. Emily de La Bruyère and Nathan Picarsic, “When the Iron is Hot: The Chinese Communist Party’s Subversion of US Recovery Investment,” *Horizon Advisory*, May 2020. (www.horizonadvisory.org/ccpsubversionreport)

95. Early-stage technology investments feature higher volumes of transactions and lower dollar values per transaction. They are not regulated by securities regulators or monitored with the same degree of scrutiny by independent press sources as are their legacy equivalents.

Infrastructure Construction:
Huawei and Telecommunications

China also proliferates its standards through infrastructure. Beijing has exported port, rail, and telecommunications standards and platforms to Germany. Chinese telecommunications firm Huawei's bid for Germany's 5G networks stands out. MIC2025 revolves around the IIoT and Beijing's larger strategy around the Internet of Everything. 5G may be a critical enabler of both.⁹⁶

In 2007, Huawei relocated its European headquarters from the United Kingdom to Dusseldorf, Germany. Huawei then set up a corresponding innovation center. In 2014, Huawei won the North Rhine-Westphalia's investment award, which honors "foreign companies that have made outstanding contributions to the state."⁹⁷ The next year, Huawei and Deutsche Telekom signed an agreement to launch the "Open Telecom Cloud" plan, which, according to Chinese reports, would allow the companies to "compete with Amazon in the United States."⁹⁸ Also in 2015, Huawei promised to invest more than €400 million in German research and development by 2018.⁹⁹

In April 2018, Germany approved Huawei's 5G base station.¹⁰⁰ In September 2019, the city of Duisburg announced Huawei as its partner in "establishing the first European smart city project." The two sides would "deepen cooperation in the fields of smart government affairs, smart port logistics, smart education, 5G, and broadband."¹⁰¹

Cooperative Industrial Parks:
Standards Footholds

While 5G has become a hot-button global issue, Beijing's cooperative industrial parks are less well-documented. China builds these parks at home and abroad to develop "interconnectivity" – encouraging global industrial and commercial players to adopt Chinese systems and standards and share their technology and data with China. There are more than 25 Sino-German cooperative industrial parks in China, with another four in the works – more than any other country. Sino-German industrial parks focus predominantly on advanced manufacturing and automobiles. For example, the China-Germany Shenyang Equipment Manufacturing Industrial Park, established in 2012, focuses on "German small and medium enterprises in intelligent manufacturing and advanced machinery manufacturing that transfer technological achievements."¹⁰²

China also has three industrial parks in Germany: the Sino-German Science and Technology Park in Heidelberg, the Bremen Port Logistics Park, and the Parchim Central European Airport Industrial Park. These cooperative projects focus on attracting logistics and e-commerce firms, the nodes through which China deploys its industrial systems.

"China's overseas cooperation parks are mainly dedicated to manufacturing industries," explains the General Manager of China-Europe Business Trade and Logistics Cooperation Park Company. But the Bremen Park "is a trade and logistics-based industrial park." He explains that the park serves as a platform through which "China's Go Out companies can extend

96. Mathieu Duchâtel and François Godement, "Europe and 5G: The Huawei Case," *Institut Montaigne*, 2019. (<https://www.institutmontaigne.org/en/publications/europe-and-5g-huawei-case-part-2>)

97. "German State Honors Huawei for Investments," *China Daily* (China), June 24, 2014.

98. "2015年中德关系大事记 [2015 Sino-German Relations Big Events]," *German Studies*, March 30, 2016.

99. "Huawei says to invest \$450 mln in Germany – Handelsblatt," *Reuters*, 2015. (<https://www.reuters.com/article/huawei-tech-germany-ceo/huawei-says-to-invest-450-mln-in-germany-handelsblatt-idUSL5N0Z13V420150615>)

100. Wu Yaping, "2018年中德关系大事记 [2018 Sino-German Relations Big Events]," *German Studies*, March 30, 2019, Issue 1.

101. *Ibid.*

102. "中德装备园:精雕细耕接轨国际 [Sino-German Equipment Park: Carved and Cultivated Internationally]," *Leadership Decision Information*, 2015, Issue 31.

throughout the European market” while also creating “a logistics network that will proliferate Chinese systems.” The park “expands new space for China’s economy” under the guise of localization.¹⁰³

The Parchim Park is part of a partnership with the Henan Xuchang Sino-German Industrial Park. The latter, located in China, “focuses on introducing technology, resources, and equipment from Germany in high-end manufacturing.” By contrast, the former, located in Germany, focuses on “exporting the cross-border development of China’s e-commerce and logistics industry,” two fields that feature prominently in Chinese discussion of standard-setting ambitions.¹⁰⁴

Germany as a Competitor: Racing for the Fourth Industrial Revolution

Should China’s standards play succeed, it would bend the global economy toward Beijing’s rules. Germany’s industry could find itself bound to Chinese technical standards and platforms. This could mean, for example, that BMW’s electric-vehicle batteries would be based on technical protocols and material inputs emanating from Beijing. Germany’s e-commerce might then process its transactions through a Chinese platform such as AliPay.

Beijing sees Berlin as a competitor in China’s ambition to seize the foundations of the new industrial revolution, the IIoT. Both MIC2025 and Germany’s Industry 4.0 strategy outline intentions to lead the world in intelligent manufacturing. For Beijing, this

is a zero-sum contest. Chinese sources make it very clear that Beijing’s strategic ambitions run contrary to Germany’s interests.

“Germany wants to maintain its leading position in manufacturing, and China wants to seize this leading position,” explains the state-run magazine *Guidance on Property Rights*.¹⁰⁵ According to Beijing’s *Blue Book on China’s Foreign Trade Development from 2017–2018*, “the [industrial] gap with Germany has been narrowing. Therefore, the competition between the two countries [China and Germany] has become increasingly fierce. The manufacturing competition between China and Germany is particularly prominent.”¹⁰⁶ Xia and Zhao elaborate:

In 2012, the United States proposed the “Industry Interconnection” plan. In 2013, Germany proposed the “Industry 4.0” strategy. The two leading manufacturing nations began a contest. China followed suit, launching Made in China 2025, in 2015. At its essence, this is a dispute over the standard for the new industrial revolution. It appears to be a dispute between the US and Germany – with China following the German path. But of course, China is not limited to this: China is taking the opportunity to ‘overtake’ around the corner.¹⁰⁷

Beijing calculates that it has fundamental advantages. China’s scale gives it an upper hand in competing for technical standards, networks of exchange, and technological platforms.¹⁰⁸ In addition, Beijing’s relative control over the country’s own supply chains

103. Dong Guangyao, “中欧商贸物流合作园区：打通外贸通道——专访中欧商贸物流合作园区责任有限公司总经理田红兵 [China-Europe Business Trade and Logistics Cooperation Park: Opening Foreign Trade Channels],” *China Investment*, 2015, Issue 7.

104. Ministry of Industry and Information Technology of the People’s Republic of China, “中德合作好戏在河南许昌频频上演 [Sino-German Cooperation is Frequently Staged in Xuchang, Henan],” August 3, 2018.

105. Cai Enze, “‘中国制造2025’与德国‘工业4.0’的对接 [Docking of ‘Made in China 2025’ with German ‘Industry 4.0’],” *Guidance on Property Rights* (China), 2016, Issue 1.

106. Liu Chunsheng, 中国对外贸易发展报告. 2017 - 2018 [Annual Report on China’s Foreign Trade Development 2017–2018] (Beijing: Social Science Literature Press, 2018), page 259.

107. Xia Yanna and Zhao Sheng, 中国制造2025：产业互联网开启新工业革命 [Made in China 2025: Industrial Internet Starts New Industrial Revolution] (Beijing: Machinery Industry Press, 2016).

108. Feng Zhu and Marco Iansiti, “Why Some Platforms Thrive and Others Don’t,” *Harvard Business Review*, January 2019. (<https://hbr.org/2019/01/why-some-platforms-thrive-and-others-dont>)

and industries allows it to deploy commercial actors for strategic ends and to maintain relative independence while fostering the dependence of foreign players.

China also seeks to manipulate competition between Germany and the United States – letting them race to develop flashy tools of next-generation industry, and partnering with them as they do so, while itself building the systems and framework into which those capacities will fit.

“Against the United States, we have a strong manufacturing capability,” write Xia Yanna and Zhao Sheng. “Against Germany, our informatization and interconnectedness are strong. It is like avoiding the horse race. As long as we use the right strategy, we can remain unbeaten.” They further explain: “Drawing on the development experience of intelligent manufacturing in Germany and the United States, China’s intelligent manufacturing system architecture should be a general-purpose model; its role is to provide a framework for the construction, development, integration, and operation of foreign intelligent manufacturing technology systems.”¹⁰⁹

In other words, Beijing intends to develop the foundational architecture according to which America’s Industry Interconnection and Germany’s Industry 4.0 will operate. If Beijing succeeds, it can ensure that both American and German expertise and innovation fuel China’s ambitions.

This mirrors China’s experience with high-speed rail. As described by China’s official blue book on the overseas development of its enterprises in 2018, Beijing acquired high-speed rail capabilities “through

digestion, absorption, and re-innovation” from Japan and Germany. China thus developed the technological capabilities that allowed its companies, supported by government funding, to “define today’s global high-speed rail technologies” and “standards.” That allowed China to “narrow the gap” with Germany and engage in “increasingly fierce competition.”¹¹⁰

A more recent example is China’s advancement in logistics information systems.¹¹¹ In 2013, China’s State Council announced the “Medium and Long-term Plan for the Development of the Logistics Industry (2014–2020).” The plan was designed to expand the National Transportation Logistics Public Information Platform (or, in international discussion, LOGINK). LOGINK is an information network controlled by China’s Ministry of Transport and National Development and Reform Commission, operated by the China Communications and Communication Information Center.¹¹² It links a web of transportation companies, logistics companies, and infrastructure hubs across roads, ports, waterways, industrial parks, airways, freight, and railways, in China and abroad. LOGINK collects and aggregates information on logistics regulations and standards; facility-specific operations and systems; credit information for vehicles, employees, companies, and other service providers; real-time status information, including location of vehicles and activity at logistics nodes; and customs information.

In short, LOGINK provides China comprehensive information on commercial exchange. LOGINK may allow Beijing to shape that information. For example, participants on LOGINK are tagged with credit ratings. Beijing can decide the standards for those credit ratings. It can also manipulate the information different users

109. Xia Yanna and Zhao Sheng, 中国制造2025：产业互联网开启新工业革命 [*Made in China 2025: Industrial Internet Starts New Industrial Revolution*] (Beijing: Machinery Industry Press, 2016).

110. Ibid.

111. Emily de La Bruyère and Nathan Picarsic, “China Standards 2035: Beijing’s Platform Geopolitics and ‘Standardization Work in 2020,’” *Horizon Advisory*, April 11, 2020. (<https://www.horizonadvisory.org/china-standards-2035-first-report>)

112. Emily de La Bruyère and Nathan Picarsic, “National Transportation Logistics: Beijing’s Platform Geopolitics at Sea,” *Horizon Advisory*, forthcoming September 2020. (<https://www.horizonadvisory.org/chinastandards>)

receive.¹¹³ Lian Zheng of China's Wenzhou Highway Administration explains that LOGINK affords opportunities “for the government to shape markets in the Internet era.”¹¹⁴

To accomplish this, LOGINK requires international partnerships. Beijing acquires some of these partnerships through its commercial state champions. For example, Alibaba's logistics subsidiary Cainiao promotes LOGINK in its partnerships with foreign companies. China also internationalizes LOGINK through partnerships with foreign ports, port operators, and relevant industrial alliances and multilateral bodies. More than 30 international ports feed into LOGINK. Most of those are in Asia, especially South Korea and Japan, via the decade-old Northeast Asia Logistics Information Service Network, or NEAL-NET.

More recently, Beijing has begun to incorporate Europe, with notable inroads in Germany. In 2017, China Communications Construction Company won a bid to build a new container terminal in Hamburg. Soon thereafter, LOGINK secured a cooperative agreement with the Port of Hamburg. The Port of Bremen has also initiated the process of

joining LOGINK.¹¹⁵ Once part of LOGINK, the Hamburg and Bremen ports will feed information to it, while relying on it for information, services, and communication channels. LOGINK is also working with the International Port Community Systems Association (IPCSA) – a strategic partner as of December, 2019¹¹⁶ – to develop international standards for “global intelligent logistics.”¹¹⁷ The outputs, as IPCSA puts it, will “inform ISO standards and become *de facto* industry standards.”¹¹⁸ The Port Authority of Hamburg, as well as those of Rotterdam and Antwerp, is participating.¹¹⁹

As LOGINK and parallel foundational systems for the IIoT extend globally, production, transportation, and exchange will depend increasingly on Chinese platforms. This positions Beijing to collect and shape the information and rules that govern modern industry. It positions Beijing to privilege Chinese companies with better access to information and prioritize their place on the platform. It also positions Beijing to shape the operating environments and incentives of foreign companies. The IPCSA sums it up neatly: “LOGINK's mission covers three broad areas: standard setting, information interchanging and data services.”¹²⁰ Or, per Zhu Hongru, head of

113. This gambit fits within Beijing's larger standards strategy: Its development has been guided by the Ministry of Transportation's “National Transportation Standardization Platform for Public Information Standardization Construction (2013–2015).” The National Standardization Committee's newly released “Main Points of National Standardization Work in 2020” calls for accelerated development of “logistics information services.” Ministry of Transport of the People's Republic of China, “[交通运输部物流公共信息平台标准化建设方案 \(2013-2015年\)](#) [National Transportation Standardization Platform for Public Information Standardization Construction (2013–2015)],” November 24, 2013; National Standardization Committee of the People's Republic of China, “[2020年全国标准化工作要点](#) [Main Points of National Standardization Work in 2020],” March 24, 2020.

114. Lian Zheng, “[打破信息孤岛 创新政府服务——国家物流信息平台成为政府创新服务的有力实践](#) [Breaking Information Silos and Innovating Government Services-National Logistics Information Platform Becomes a Powerful Practice for Government Innovation Services],” *Zhejiang Economy*, 2017, Issue 22.

115. “China's LOGINK inaugurated into IPCSA,” *Port Technology International*, December 10, 2019. (<https://porttechnology.org/news/chinas-logink-inaugurated-into-ipcsa/>)

116. Ibid.

117. “[推进跨境物流可视化 阿里、菜鸟联合LOGINK、IPCSA发布标准赋能报告](#) [Promote cross-border logistics visualization Ali, Cainiao, LOGINK and IPCSA release standard empowerment report],” *World Media* (China), October 17, 2019.

118. “Alibaba, LOGINK and IPCSA collaborate to build a global intelligent Logistics network – Logistics Visibility Task Force,” *International Port Community Systems Association*, October 22, 2018. (<https://ipcsa.international/news/2018-10-22-alibaba-logink-and-ipcsa-collaborate-to-build-a-global-intelligent-logistics-network-logistics-visibility-task-force>)

119. Ibid.

120. “From MOU to Membership: LOGINK Joins IPCSA,” *International Port Community Systems Association*, December 10, 2019. (<https://ipcsa.international/news/2019-12-10-from-mou-to-membership-logink-joins-the-international-port-community-systems-association>)

standardization at Alibaba, “This will inform ISO [International Organization for Standardization] standards and become industry de facto standards, which will be used in the construction of global smart supply chains.”¹²¹

Conclusion

MIC2025 is part of Beijing’s larger Go Out strategy – a long-standing bid to co-opt international resources to serve China’s positioning. MIC2025 itself focuses on establishing strategic footholds in global manufacturing and then using them to assert control over the international economy. These footholds require capabilities and positioning unique to Germany. Beijing therefore pursues partnerships with German actors, encouraging “complementary” cooperation and “docking” in advanced manufacturing, automobiles and transportation, aerospace, medicine, and energy.

Beijing’s intentions are not benign. China’s “complementary” cooperation is designed to use capabilities and leverage siphoned *from* Germany to export China’s control *to* Germany by proliferating standards, locking in critical dependencies, and ensuring information dominance. To that end, MIC2025 pursues beachheads everywhere from critical supply chains to telecommunications to logistics standards. Throughout, Beijing’s MCF apparatus will convert cutting-edge advances from German’s innovators, such as KUKA, into coercive tools for China’s armed forces.

Beijing’s grand strategic bid rests on setting global standards. MIC2025 is unequivocal about the ways ostensibly economic objectives and tools can fuse with Beijing’s security ambitions and apparatus to propel a larger competitive strategy.¹²²

China’s tack demands a deliberate response. Both Germany and the United States are positioned to craft and implement such a response, separately and together. Doing so will require communication, compromise, and multilateral engagement between the United States and Germany, both at the political level and among their respective business and scholarly communities. This engagement must focus not only on economic issues but also on narrative.

Implications for Germany

Germany is the market most critical to China’s strategic ambitions in Europe and beyond. Germany also represents a crucial beachhead for China’s next step: a globally proliferated set of standards established by and for China. While Germany may be less dependent on China than other European economies, it has much at risk. Beijing siphons Germany’s legacy industrial advantages to subvert Germany’s Industry 4.0 plan and proliferate not just Chinese-made industry but also Chinese-governed industrial architectures.

MIC2025 leverages Germany’s traditional strengths of innovation and free markets to propel China’s strategy rather than a competitive response. This asymmetry takes multiple forms. First, Beijing leverages its centralization against Germany’s (and the world’s) open and fragmented system. Go Out responds to China’s centralized government direction. Through subsidies, preferential lending, and direct state control, Beijing creates incentive structures whereby Chinese companies pursue government objectives and follow top-level design. In turn, these companies shape the profit mechanisms according to which foreign firms, individuals, governments, and other institutions operate. The interests of these disparate actors end up tied to Beijing’s own interests.

121. Gavin van Marle, “Task Force Drives Towards Global Standards for Supply Chain Visibility,” *The Loadstar*, October 25, 2019. (<https://theloadstar.com/task-force-drives-towards-global-standards-for-supply-chain-visibility/>)

122. Emily de La Bruyère and Nathan Picarsic, “How to Beat China’s Military-Civil Fusion,” *The American Interest*, June 22, 2020. (<https://www.the-american-interest.com/2020/06/22/how-to-beat-chinas-military-civil-fusion/>)

The time horizons according to which Chinese actors measure their results represent a second asymmetry. The West operates based on quarterly results and annual financial objectives. But China is all too willing to sustain short-term profit losses for the long-term gain of strategic market penetration.¹²³

A third asymmetry is the overlap between security and economic ambitions codified in Beijing's MCF strategy. MIC2025 is predatory not only on an economic level, but in terms of security as well. China leverages resources siphoned from its foreign partners for military as well as commercial gain. The Two Machines state project that targets gas turbine and aero-engine technology provides a telling example: Technology transferred through commercial partnerships benefits not just Chinese industrial partners but also the PLA.

This aligns with a final asymmetry: the role of illicit activity. China is the world's leading perpetrator of technology theft.¹²⁴ Beijing celebrates the acquisition of appropriated technology. Government funding mechanisms explicitly encourage and direct this activity. Many Westerners wrongly assume that a rules-based order provides a reliable basis for intellectual property protection and the rule of law. China's conception of economic competition contradicts these fundamental assumptions. The appropriation of foreign knowhow is, in fact, encoded in China's particular definition of innovation. Beijing allocates research and development resources to applied rather than basic work, based on the calculus that it can obtain otherwise expensive, risky innovation from abroad through its diverse illicit technology-transfer toolkit.

This poses a direct threat to Germany. China uses theft, centralization, and non-market incentives to establish partnerships through which Berlin's advanced capabilities

prop up Beijing's champions. China also deliberately encourages the dependence of German actors to cement such one-sided arrangements, even after malign behavior is revealed. There is no sign of this changing.

Frequently, flawed analysis suffering from mirror-imaging bias suggests Beijing's calls for "indigenous innovation" indicate that China will run a fair innovation race. Unfortunately, that is not the case. Instead, Beijing's "indigenous innovation" refers to the process of "introduction, digestion, absorption, and re-innovation,"¹²⁵ or the acquisition of innovative resources from abroad and then their application under Beijing's control.

Beijing seeks to reap the rewards of Germany's investments in basic, fundamental research and development. Washington faces a similar threat. In both cases, foundational norms and positions are at stake.

Implications for U.S.-German Relations

Ideally, common threats would compel cooperation between Washington and Berlin. Unfortunately, fragmentation, short-term thinking, and a naïve belief that China will adhere to the rule of law all too often cloud the judgement of both U.S. and German decisionmakers. Moreover, Berlin seems reluctant to join forces with the United States against China. The U.S. government has responded to China's subsidized technological theft by restricting the participation of U.S. firms in Chinese joint ventures. Washington, however, cannot restrict German firms from doing so.

Beijing continues to attract potential German partners through short-term rewards, such as access to the Chinese market, investment from Chinese companies and financial institutions, and opportunities to establish production facilities in

¹²³. Emily de La Bruyère and Nathan Picarsic, "Beijing's Innovation Strategy: Threat-informed Acquisition for an Era of Great Power Competition," *Naval Postgraduate School Acquisition Research Symposium*, April 28, 2020. (https://event.nps.edu/conf/app/researchsymposium/unsecured/file/697/SYM-AM-20-091_Panel#7_de-La-Bruyere_Paper_04-28-2020.pdf)

¹²⁴. See, for example, the reports of the Commission on the Theft of American Intellectual Property, available at: "The IP Commission," *The Commissioner on the Theft of American Intellectual Property*, accessed August 26, 2020. (<http://www.ipcommission.org/>)

¹²⁵. Chao Wang, "美国对我国信息领域进行技术封锁的战略意图及应对之策 [The strategic intention and countermeasures of the U.S. technical blockade on China's information field]," *Cyberspace Security*, 2018, Issue 11.

China. With U.S. competitors restricted, those rewards become even more attractive. The firms that stand to benefit are incentivized to lobby the German authorities for the sake of short-term self-interest. The reverse also holds: While the U.S. government has recently taken a more forward-leaning approach to China, American firms and the U.S. government likewise face enormous pressure to prioritize short-term gains over the long-term strategic threat from China. In this way, Beijing has pitted the United States and Germany against each other.

Similar coordination challenges stymied the Cold War-era Coordinating Committee for Multilateral Export Controls (COCOM) – a body which established and enforced restrictions on exports of strategic technologies to the Soviet Union.¹²⁶ But the nature of modern technology – and China’s shrewd approach to technology transfer and economic competition – has undermined already-poor U.S.-German cooperation. This creates an imperative for better U.S.-German coordination. No single bilateral axis is as important at this stage in China’s rise. And no partnership has as much potential to rival China’s networks and standards strategy. Together, the United States and Germany can lead a community of partners to challenge Beijing’s offensive.

The 5G debate offers a prime example of the challenges facing the United States and Germany. China has unilaterally protected its own telecommunications user base. Huawei therefore boasts a structural advantage in terms of unmatched market size. Joining China therefore becomes a cost-conscious decision for foreign consumers and supply chain participants. China deploys its 5G Go Out champions accordingly: Huawei seizes a series of lowest-price, technically acceptable bid opportunities in cash-strapped markets. And China’s “Belt and Road Initiative” provides diplomatic top-cover for Huawei’s entrees into these markets, Germany among them. The more the United States or any other foreign actor pushes back, the more the Chinese state supports Huawei to sweeten

the pot for other potential partners. As those partners join Beijing’s network, China increases its advantages of scale, injecting more technological capabilities into the system and subjugating more players to Beijing’s standards and information control.

This dynamic demands U.S.-German cooperation to promulgate policy, build economies of scale, and produce alternative, ally-friendly solutions. Beijing’s strategy targets the weakest point in any network, seeking to enter with the lowest risk of reaction. Given its structural advantage, Beijing needs only to prevent a comprehensive or coordinated reaction to its approach.

Ideally, the Berlin-Washington dynamic could serve as both a model for other bilateral engagements and a catalyst for multilateral U.S.-EU mechanisms. Germany has an opportunity to serve as a pivot point in the world’s response to China’s ambitions. EU partners will follow Germany’s lead. This offers Berlin leverage. It also confers a great deal of responsibility – to Germany’s people, its allies and partners, and its core national values.

Policy Recommendations

The values shared by the United States and Germany have ushered in an unprecedented era of global peace and prosperity. But these values are under siege. The United States and Germany must work together.

An alliance strategy for responding to China’s commercial offensive begins with narrative. **First, the United States and Germany must identify and combat disinformation, misinformation, and the malign leverage that Beijing claims by twisting narratives.** China obscures the intentions behind its investments and commercial activity. But they are coercive levers. The U.S.-German alliance should share information about these realities – not just bilaterally, but also among allies and partners throughout the European Union. Key to this effort will be documenting Beijing’s non-market investments (such as state subsidies and

126. Michael Mastanduno, “CoCom and American Export Control Policy: The Experience of the Reagan Administration,” *East-West Trade and the Atlantic Alliance*, Eds. David A. Baldwin and Helen V. Milner (London: Palgrave Macmillan, 1990).

forced technology transfers) and official sources that reflect the CCP's intent.

Second, the United States and Germany should jointly define a new toolkit of cooperative export restrictions and investment-review mechanisms tailored to China's subversive bid. During the Cold War, Germany served as a core member of COCOM. Berlin has remained a key signatory of COCOM's successor, the Wassenaar Arrangement. However, export restrictions address only a portion of Chinese technology theft. Beijing appropriates the world's cutting-edge technology not only through imports, but also by deploying capital. Export restrictions need to operate hand-in-hand with investment restrictions.¹²⁷ There must be comprehensive and common definitions applied across multilateral fora, reflecting China's centralized, long-term, direct and indirect efforts, spanning critical domains. These should be incorporated throughout EU and U.S.-EU agreements and should apply to technology, infrastructure, and data. They should also be incorporated into U.S. trade negotiations with the European Union. At a bilateral level, the United States and Germany should form an intelligence task force focused on Chinese investment in the European Union. The work of such a cooperative effort could help shape a National Intelligence Estimate assessing the risks associated with Chinese investment globally and across the European Union.

Third, the United States and Germany should utilize NATO's tremendous potential as a coordinating mechanism. The body is positioned to defend against MCF while defining a positive vision

of multilateral security cooperation that imposes costs on Beijing. First-order information sharing could include a list of Chinese military companies and MCF entities that operate within NATO members' territories and alongside members' firms. NATO might also consider targeted investments to protect critical technology, infrastructure, and data. Intelligence sharing via NATO should also help in the narrative fight against China's disinformation tactics. Member states should further be expected to collaborate on force-structure reviews and revisions that reflect the nature of great power competition in the information era. NATO members should also aim to coordinate resource allocations according to a long-term, peacetime competition mandate that responds to the tactics shared by Moscow and Beijing as they attack the existing global order.¹²⁸ Such efforts could pave the way for expanding joint operational capabilities that provide options for escalation in response to Beijing's asymmetric offensive.¹²⁹

China's designs on Germany require an urgent, cooperative Western response that spans the economic and security domains. Beijing seeks to weaponize cooperation with Germany to subvert traditional German strengths, exploiting them to propel Chinese technological advancement and dominate the 21st-century economy. If left unchecked, China's strategy will undermine, and produce a world hostile to, the prosperity, security, and values of Germany, the United States, and their liberal democratic allies. The malign intent and subversive tactics that define MIC2025 must be recognized broadly and countered locally. There is no time to waste.

¹²⁷. Germany's investment-review mechanisms have been updated beyond the standards of EU-wide recommendations. But close study of China's MIC2025 maneuvering in Germany reveals that these measures are insufficient. Beijing consistently applies evasive tactics to circumvent the intent of national security investment reviews across Europe, just as China does in the United States. For background on Germany's Foreign Trade and Payments Ordinance in comparison to the investment screening mechanisms of other EU member states, see: European Commission, "List of screening mechanisms notified by Member States," August 10, 2020, (https://trade.ec.europa.eu/doclib/docs/2019/june/tradoc_157946.pdf)

¹²⁸. Emily de La Bruyère and Nathan Picarsic, "Wanted: A Strategy for Long-term, Peacetime Competition with China," *Foundation for Defense of Democracies*, June 1, 2020. (<https://www.fdd.org/analysis/2020/06/01/strategy-for-peacetime-with-china/>)

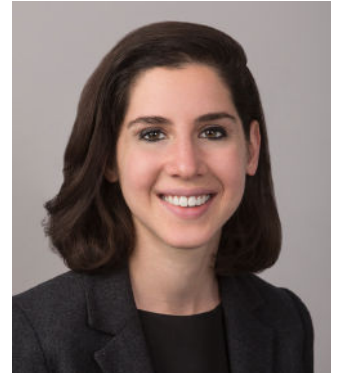
¹²⁹. For a theoretical discussion of horizontal escalation, see: Tim Sweijjs, Artur Usanov, and Rik Rutten, "Back to the Brink Escalation and Interstate Crisis," *HCSS StratMon*, 2016. (https://hcss.nl/sites/default/files/files/reports/HCSS_StratMon_Back_to_the_Brink.pdf)

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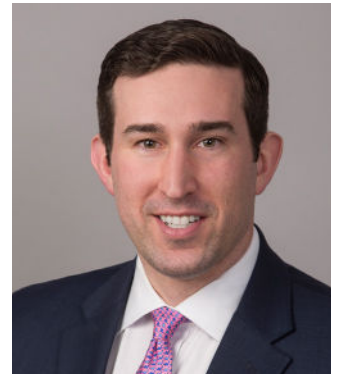
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