

**Testimony before the U.S.-China Economic and Security Review
Commission on “U.S. Investment in China’s Capital Markets and
Military-Industrial Complex”**

March 19, 2021

Emily S. Weinstein

**Center for Security and Emerging Technology, Georgetown
University**

The author would like to thank Margarita Konaev, Remco Zwetsloot, Igor Mikolic-Torreira, Anna Puglisi, Ryan Fedasiuk, Dahlia Peterson, Lynne Weil, and Danny Hague for their assistance in preparing this testimony. The author is solely responsible for all errors.

Chairman Borochoff, Chairman Fiedler and members of the commission, thank you for the opportunity to testify today on the subject of China's military-civil fusion (MCF; 军民融合) and its implications for the United States. In plainest terms, China's MCF development strategy is a holistic approach to national development that ensures that new advancements and innovations simultaneously advance the country's economic and military development.¹ As President Biden's administration and the 117th Congress continue to develop and shape China policy, I believe that understanding the goals and ambitions under China's MCF strategy is crucial to making informed decisions about the future of U.S.-China relations.

Since the founding of the People's Republic of China (PRC) in 1949, Chinese leaders have sought to compel or mobilize the commercial sector in support of the People's Liberation Army (PLA). However, since Xi Jinping's ascension to power in 2012, he has prioritized MCF and the role of the military as key aspects of China's overall national development strategy. Xi has also worked to develop tools designed to bridge the gap between the civilian and defense spaces. Although the concept of leveraging civilian and military resources itself is not new, Xi's MCF strategy takes a new approach, albeit one based on past industrial policies. Moreover, Peter Wood and Alex Stone argue that Xi's MCF strategy supersedes those of his predecessors.² This presents a number of challenges and implications for U.S. policy, both domestically as well as in exchanges and interactions with Chinese entities.

MCF is a process, and remains far from completion. Estimates from within the Chinese government acknowledge that they are still in the nascent stages of implementing MCF.³ However, even if implementation is incomplete, Beijing's vision is clear. Moreover, outside attempts to cripple or incentivize change within China's system have thus far proven unsuccessful. In order to counter the growing challenge posed by China's MCF efforts, the United States should focus on improving and growing our own system and capabilities. The United States can no longer afford to waste time and effort trying to incentivize or coerce change within China. Instead, understanding that the U.S. and Chinese systems are inherently different, the United States should work to develop a strategy that can mitigate threats and

¹ "Military-Civil Fusion and the People's Republic of China," U.S. Department of State, May 2020, <https://www.state.gov/wp-content/uploads/2020/05/What-is-MCF-One-Page.pdf>

² Alex Stone and Peter Wood, "China's Military-Civil Fusion Strategy: A View From Chinese Strategists," China Aerospace Studies Institute, 2020, <https://static1.squarespace.com/static/5e356cfae72e4563b10cd310/t/5ee37fc2fcb96f58706a52e1/1591967685829/CASI+China%27s+Military+Civil+Fusion+Strategy-+Full+final.pdf>

³ "Suggestions on the development of the military-civil fusion innovation system" [对我国军民融合创新体系发展的建议], Academy of Ocean of China [中国海洋发展研究中心], January 11, 2019, <https://perma.cc/D72F-5FLA>

challenges while supporting ongoing collaboration with China where it falls within U.S. interests.

Policy Recommendations:

- Establish an interagency working group within the U.S. government to increase awareness of China's MCF efforts and ensure that various departments and agencies are equipped to make effective policy within their individual jurisdictions.
- Create a repository of open-source due diligence materials and guidelines that can be used by academic institutions and industry to allow them to make more informed decisions about collaborations and interactions with Chinese counterparts.
- Provide the Securities and Exchange Commission (SEC) and its Public Company Accounting Oversight Board (PCAOB) with Chinese language and area studies resources to assist in auditing and assessing Chinese firms listed on U.S. stock exchanges.
- Improve the U.S. government's ability to audit supply chains and establish industry reporting guidelines to identify significant chokepoints and ensure compliance with requirements, as articulated by the China Strategy Group.⁴

1. MCF Under Xi

MCF under Xi seeks to complement and fuse China's economic and security interests domestically and abroad, and to promote the simultaneous, integrated development of national defense construction and economic construction.⁵ The strategy was elevated to a national-level strategy by Xi in 2014-15 "in response to complex security threats and as a means of gaining

⁴ "Asymmetric Competition: A Strategy for China & Technology," China Strategy Group, Fall 2020,

<https://assets.documentcloud.org/documents/20463382/final-memo-china-strategy-group-axios-1.pdf>

⁵ Translation of "The 13th Five-Year Special Plan for S&T Military-Civil Fusion Development" [“十三五”科技军民融合发展专项规划], Center for Security and Emerging Technology, June 24, 2020,

<https://cset.georgetown.edu/research/the-13th-five-year-special-plan-for-st-military-civil-fusion-development/>

strategic advantages,” demonstrating its significance within the broader scheme of Chinese development policies.⁶

The main objective of China’s MCF strategy is to bolster the seamless flow of materials, technology, knowledge, talent, and financial resources between the military and commercial industrial complexes, according to Former Assistant Secretary of State for International Security and Nonproliferation Christopher Ford.⁷ When (and if) finalized, a successful MCF strategy will ultimately manifest in an integrated national strategic system that connects the PLA, universities and research institutions, state-owned defense firms, commercial firms, the manufacturing base, and government agencies.⁸ Wood and Stone refer to this ideal “ultimate goal” as China’s “unified military-civil system of strategies and strategic capabilities.”⁹ At the end of the day, a successful MCF strategy is one that weaves and embeds all other national strategic priorities, including those in innovation, education, poverty alleviation, as well as defense.

The remainder of this testimony proceeds in three parts. First, it provides an assessment of how China “spins on” technology from the civilian sector to the military and vice-a-versa via “spin off.” Second, it discusses tools that the Chinese government uses to implement its MCF strategy, including university investment mechanisms, industry alliances, venture capital firms, and talent recruitment efforts. The third section concludes with several policy recommendations to inform and guide U.S. policy toward addressing Chinese MCF efforts.

1.1 “Spinning-on” and “Spinning-off”

Key to MCF implementation is the two-way transformation of military and civilian S&T achievements. These “spin-on” and “spin-off” aspects of MCF, referred to as *mincanjun* (民参

⁶ Alex Stone, “China’s Military-Civil Fusion Strategy: A View from Chinese Strategists: Executive Summary,” China Aerospace Studies Institute and BluePath Labs, 2020, https://www.bluepathlabs.com/uploads/1/1/9/0/119002711/china%E2%80%99s_military-civil_fusion_strategy_executive_summary.pdf

⁷ Christopher A. Ford, “Technology and Power in China’s Geopolitical Ambitions,” Testimony to the U.S.-China Economic and Security Review Commission, June 20, 2019, https://www.uscc.gov/sites/default/files/Ford_USCC%20Testimony_Final.pdf

⁸ Greg Levesque and Mark Stokes, “Blurred Lines: Military-Civil Fusion and the ‘Going Out’ of China’s Defense Industry,” Pointe Bello, December 2016, https://static1.squarespace.com/static/569925bfe0327c837e2e9a94/t/593dad0320099e64e1ca92a5/1497214574912/062017_Pointe+Bello_Military+Civil+Fusion+Report.pdf

⁹ Stone and Wood, “China’s Military-Civil Fusion Strategy: A View From Chinese Strategists.”

军) and *junzhuanmin* (军转民) respectively, reflect PRC's emphasis on dual-use technologies with simultaneous applications in both the military and civilian sectors. As part of these efforts, China aims to promote the construction of "mutual transformation systems for military and civilian S&T achievements" through the establishment of public service platforms, increased exchanges and information-sharing, according to the "13th Five-Year Special Plan for S&T Military-Civil Fusion Development."¹⁰

As noted in the U.S. Department of Defense's (DoD) 2020 China Military Power Report, Beijing seeks to leverage the commercial sector in its efforts to realize the PLA's modernization goals.¹¹ The aforementioned concept of *mincanjun*, often referred to as "private sector participation in the military sector," represents the PRC's interest in facilitating "spin on" technology from civilian enterprises and research institutions to military applications. According to Article 16 of the "13th Five-Year Special Plan for S&T Military-Civil Fusion Development" (hereinafter referred to as the 13th Five-Year Plan for MCF; "十三五"科技军民融合发展专项规划), encouraging innovative civilian entities to participate in MCF S&T development is crucial to overall MCF success, which in turn requires an adjustment and optimization of policies related to market access.¹²

Moreover, the "13th Five-Year Plan for MCF" encourages the promotion of two-way open sharing of resources between the military and civilian sectors by gradually incorporating national defense S&T research, equipment, and facilities into a unified national scientific research system and faculty network.¹³ This will ultimately lead to more "spinning off from the military to the commercial space," or *junzhuanmin*, by breaking down barriers that have prevented defense research and technologies from entering the civilian industry. According to military experts in China, the *junzhuanmin* aspect of MCF is crucial to the long-term viability and growth of military defense enterprises in China, many of which are large, long-standing state-owned enterprises in need of an upgrade.¹⁴

¹⁰ Translation of "The 13th Five-Year Special Plan for S&T Military-Civil Fusion Development" ["十三五"科技军民融合发展专项规划], Center for Security and Emerging Technology.

¹¹ "Military and Security Developments Involving the People's Republic of China," U.S. Department of Defense, September 2020, <https://media.defense.gov/2020/Sep/01/2002488689/-1/-1/1/2020-DOD-CHINA-MILITARY-POWER-REPORT-FINAL.PDF>

¹² Translation of "The 13th Five-Year Special Plan for S&T Military-Civil Fusion Development" ["十三五"科技军民融合发展专项规划], Center for Security and Emerging Technology.

¹³ "Opinions on the In-Depth Development of Military-Civil Fusion" [军民融合深度发展的意见], General Office of the State Council on Promoting the National Defense Technology Industry [国务院办公厅关于推动国防科技工业], December 2017, <https://perma.cc/4M58-X4C2>

¹⁴ "'Military-to-civilian' and 'civilian-to-military' pace accelerates, the development of MCF continues to release new momentum" ["军转民""民参军"步伐加快军民融合发展持续释放新动能], China Financial News Network [中国金融新闻网], August 1, 2018, <https://perma.cc/B4FH-H2SK>

Chinese experts acknowledge that progress in the *mincanjun* arena has been notably slow and insufficient.¹⁵ For instance, some argue that because private companies and institutions are required to maintain the necessary secrecy qualifications for weapons and defense equipment R&D for three years before they can apply for licensing and certifications, the majority of new and innovative companies have a difficult time breaking into the military/defense space.¹⁶ Furthermore, the slow pace of military and defense procurement may dampen the enthusiasm of private firms to participate in MCF work.¹⁷

In 2019, a report from China's state-owned CCID Think Tank highlighted data from the PLA Equipment Development Department claiming that the number of private enterprises that had obtained qualifications for defense contracting units increased from over 500 to more than 2,300 since 2013.¹⁸ Analysis from China's state-owned Xinhua News the same year claimed that about 3,000 private enterprises had obtained the necessary procurement qualifications for military products.¹⁹ However, only a small subset of private firms are required to obtain specific licenses for military procurement, so this number is underinclusive, and there are likely more private firms that have found additional ways to contribute to MCF.²⁰ This is to say, despite recognized barriers, *mincanjun* has and will likely continue moving forward, as more and more private Chinese firms join the efforts.

1.1.2 *Mincanjun* in Action: China's UAV Industry

¹⁵ "Opportunities and Challenges of 'Civilian Participation in the Military'" ["民参军"的机遇与挑战], People's Liberation Army News [解放军报], March 2, 2019, <https://perma.cc/Q5TK-MQJ6>

¹⁶ Prior to 2017, civilian firms were required to obtain up to four licenses to participate in the defense supply chain. In October 2017, the Central Military Commission's Equipment Development Department announced that two of these licenses had been merged, thus reducing the number of required licenses to three as well as the time by roughly six months. For more information on the various licensing and certification requirements, see: Stone and Wood, "China's Military-Civil Fusion Strategy: A View From Chinese Strategists."

¹⁷ "Prospects for the development of China's military-civil fusion in 2019" [2019年中国军民融合发展形势展望], CCID Think Tank [赛迪智库], 2019, <https://perma.cc/H998-64G8>

¹⁸ "Prospects for the development of China's military-civil fusion in 2019" [2019年中国军民融合发展形势展望], CCID Think Tank.

¹⁹ "About 3,000 private enterprises in China have entered the front line of military procurement" [我国大约3000家民企已进入军工采购一线], Science and Technology Daily [科技日报] rehosted by Xinhua News [新华网], March 14, 2018, <https://perma.cc/FK6T-MKKS>

²⁰ Elsa Kania and Lorand Laskai, "Myths and Realities of China's Military-Civil Fusion Strategy," Center for a New American Security, January 2021, https://s3.us-east-1.amazonaws.com/files.cnas.org/documents/Myths-and-Realities-of-China%E2%80%99s-Military-Civil-Fusion-Strategy_FINAL-min.pdf?mtime=20210127133521&focal=none

As China has sought to become a leader in key emerging technologies with military potential, the country's UAV industry presents an interesting case study of *mincanjun* in action, considering that many key players operating outside the realm of traditional state-owned enterprises have made significant advancements over the past five years. For instance, private firm Ziyan (紫燕) UAV in 2019 exhibited armed swarming drones that it claimed used AI for autonomous guidance, target acquisition, and attack execution.²¹

In a 2019 article from *China Economic Weekly*, UAV company Lingkong Technologies' (羚控科技) CEO Duan Xiaojun argues that Beijing's MCF policy has greatly promoted the development of China's UAV industry. Moreover, he argues that *mincanjun* has increased the diversity of, and demand for, military UAVs in China. According to Duan, his company has been actively approached by military industry companies interested in cooperating.²²

Junzhuamin appears to similarly be in its nascent stages. However, several successful examples of "spinning off" have been publicized by the PRC government. In December 2018, the Ministry of Industry and Information Technology (MIIT) published the "Catalog for the Promotion of Military Technology to Civilian Use," highlighting 150 solicited *junzhuamin* success cases. For instance, one project entitled "Chemical accident safety inspection and rescue vehicle" (化工事故安全检测救援车) claims to be a "military-to-civilian (*junzhuamin*) high-tech product that can fill the gap in the field of domestic chemical accident rescue vehicles."²³ This product was developed by the Shanghai Lingyao Ship Engineering Co., a subsidiary of the 701 Research Institute of China Shipbuilding Industry Corporation, a leading defense state-owned enterprise (SOE).²⁴

Furthermore, the "2016 Opinion on the Integrated Development of Economic Construction and National Defense Construction" (关于经济建设和国防建设融合发展的意见) highlighted that PLA

²¹ "Military and Security Developments Involving the People's Republic of China," U.S. Department of Defense.

²² Cao Xu, "Duan Xiaojun, Chairman of Lingkong Technology: The password of UAV's 'Civilian participation in the military,'" [羚控科技董事长段晓军：无人机的“民参军”密码], *China Economic Weekly* [中国经济周刊], January 2019.

²³ "Notice of the two departments on the issuance of the 'Catalog for the Promotion of Military Technology Transfer to Civilian Use (2018)'" [两部门关于印发《军用技术转民用推广目录（2018年度）》的通知], Ministry of Industry and Information Security [工业和信息化部] and the State Administration for Science, Technology and Industry for National Defense [国家国防科技工业局], December 5, 2018, <https://perma.cc/3QJH-KZMQ>

²⁴ "Company Profile" [公司介绍], Shanghai Lingyao Ship Engineering Co. [上海凌耀船舶工程有限公司], <https://perma.cc/K4FZ-Y5ZH>

should work to declassify patents and make various military technologies available to the broader commercial sector. In response in 2017, the *PLA Daily* announced that the National Defense Intellectual Property Office released 2,346 declassified defense patents to promote the “transformation of defense patents into the civilian field.”²⁵ However, gaps still remain. MCF scholar Jiang Luming has claimed that many Chinese defense patents have unrealized commercial potential, often referring to them as “sleeping beauties” (睡美人).²⁶

Indeed, as a 2019 analysis from the Academy of Ocean of China points out, the transformation rate of defense science-derived technologies into the commercial space is between 50 and 60 percent in developed countries, but only 15 percent in China.²⁷ As a whole, progress may appear slow but has nonetheless moved in the desired direction based on MCF strategy goals. Given how massive an undertaking this strategy is, signs of progress are more useful indicators to watch than completion.

2. Beijing’s MCF Tools

The Chinese government maintains a number of tools at its disposal to further its MCF development strategy. These tools are primarily aimed at finding various ways to bridge the gap between the civilian and defense spaces, which Chinese military experts argue remains a prominent challenge to MCF’s realization. This section will cover four specific tools that the PRC uses to advance MCF, including university investment firms, industry alliances, and venture capital firms.

2.1 University Investment Firms

In 2017, the CCP Party Secretary of Beijing Institute of Technology Zhao Zhanguo argued that universities should be at the forefront of MCF efforts, and they have indeed carved out an

²⁵ “More than 3,000 national defense patents have been decrypted from over 30 years” [3000全件国防专利30多年来集中解密], *PLA Daily* [中国军网], April 3, 2017, <https://perma.cc/2FE6-YQLY>

²⁶ Stone and Wood, “China’s Military-Civil Fusion Strategy: A View From Chinese Strategists;” “Experts suggest deepening MCF--Wake up the military ‘Sleeping Beauty’ to activate the ‘new force’ of private enterprises” [专家建言军民深度融合——唤醒军工“睡美人”激活民企“生力军”], People’s Government of Sichuan Province, October 31, 2016, <https://perma.cc/C7QS-ANC8>; “More than 3,000 national defense patents have been decrypted from over 30 years” [3000全件国防专利30多年来集中解密], *PLA Daily* [中国军网].

²⁷ “Suggestions on the development of the military-civil fusion innovation system” [对我国军民融合创新体系发展的建议], Academy of Ocean of China [中国海洋发展研究中心].

important role.²⁸ More specifically, Chinese universities appear to have more extensive commercial responsibilities and roles than their counterparts in the United States. For instance, many top Chinese universities maintain holding companies that are heavily involved in defense R&D and production. These holding companies, such as Tsinghua Holdings, PKU Resources, and others, are wholly-owned by their respective universities and operate at their behest. The examples below illustrate these relationships. Although U.S. institutions like MIT and others are similarly involved in investment activities, mirror-imaging in this context is problematic, as Chinese universities are much more beholden to Beijing and the Chinese Communist Party (CCP) than their counterparts in the U.S. are to the U.S. government.²⁹

2.1.1 Northwestern Polytechnical University

Northwestern Polytechnical University (NWPU; 西北工业大学), one of China's "Seven Sons of National Defense" currently oversees 10 wholly-owned subsidiaries through its holdings company, Xi'an Northwestern Polytechnical University Asset Management Co. (西安西北工业大学资产经营管理有限公司).³⁰ One of them, Xi'an Overland Science and Technology Co. (西安沃兰科技有限责任公司), who specializes in everything from computer software and hardware to chemical and biological products according to NWPU, was added to the Entity List in August 2020 for acquiring and attempting to acquire U.S.-origin items "for a person on the Entity List and in support of programs for the People's Liberation Army."³¹

Another subsidiary, the Shenzhen Northwest Industrial Technology Research Institute Co. (深圳市西北工业技术研究院有限公司) is jointly overseen by NWPU and the Northwest Industrial Technology Research Institute (NITRI; 西北工业技术研究院). NITRI was established by the

²⁸ Zhao Zhanglu, "People's daily New Theory: Universities should be on the front line of MCF" [人民日报新论: 大学应战在军民融合的前线], People's Daily [人民日报], March 14, 2017, <https://perma.cc/RC2P-6YGF>

²⁹ For instance, in the National Medium to Long-Term Plan for Science and Technology Development (2006-2020), Chinese leadership argues that, to enhance its capacity for indigenous/independent innovation, China must "make full use of the favorable conditions of opening up to the outside world and expand various forms of international and regional S&T cooperation and exchanges." This includes encouraging universities and research institutes to seek out collaborations to establish international joint labs and R&D centers. For more information, see: "Outline of the National Medium to Long-Term Plan for Science and Technology Development (2006-2020)" [国家中长期科学和技术发展规划纲要], 2006, <https://perma.cc/46ZW-FMP9>

³⁰ The Seven Sons of National Defense are a group of universities administered directly by the Ministry of Industry and Information Technology. For more information, see: Ryan Fedasiuk and Emily Weinstein, "Universities and the Chinese Defense Technology Workforce," Center for Security and Emerging Technology, December 2020, <https://cset.georgetown.edu/research/universities-and-the-chinese-defense-technology-workforce/>

³¹ "Xi'an Overland Technology Co., Ltd." [西安沃兰科技有限责任公司], July 29, 2011, <https://perma.cc/RYX4-VSFD>; "Addition of Entities to the Entity List, and Revisions of Entries on the Entity List," Bureau of Industry and Security, U.S. Department of Commerce via Federal Register, August 27, 2020, <https://www.federalregister.gov/documents/2020/08/27/2020-18909/addition-of-entities-to-the-entity-list-and-revision-of-entries-on-the-entity-list>

Shaanxi Provincial Government, the Xi'an Municipal Government, NWPU, the former Commission for Science, Technology, and Industry for National Defense (COSTIND, now SASTIND), and various military industry companies, according to NITRI's website.³² The Shenzhen Northwest Industrial Technology Research Institute was formerly co-owned by NWPU and FIYTA Precision Technology Co., a subsidiary of Aviation Industry Corporation of China (AVIC), a leading defense SOE. In 2011, FIYTA transferred its 45 percent shares to NWPU, making the university the sole owner.³³ These linkages illustrate that some Chinese universities are merely a few degrees of separation from Chinese military enterprises and share funding sources and financial interests with key players in China's military-industrial complex.

2.1.2 Tsinghua Holdings

Tsinghua University's Tsinghua Holdings (清华控股) claims on its website that it "actively promotes the transformation and industrialization of Tsinghua University's scientific and technological achievements." Established in September 2003, Tsinghua Holdings is wholly-owned by Tsinghua University and operates on a registered capital of 2.5 billion RMB.³⁴ The company oversees four primary subsidiaries: Tsinghua Tongfang (清华同方), Tsinghua Unigroup (紫光集团), TusHoldings (also known as TusPark; 启迪控股), and Chengzhi Co. (诚志股份有限公司). The investments made by these subsidiaries arguably help to further MCF by connecting university research to the innovative commercial side of S&T, and by extension, the Chinese defense apparatus.

Tsinghua Tongfang and its subsidiaries act as the intermediary between Tsinghua University research and the defense technology industry. For instance, the company's 2019 annual report states that Tongfang invested in the establishment of Tongfang Huachuang to promote Tsinghua University research in Micro-Electro-Mechanical Systems (MEMS) technology, which it argues will follow the "national strategic needs" and "seize the strategic opportunity of maritime power and further advance the development of the marine defense industry."³⁵

The annual report also tracks the activities of Tongfang subsidiary, Tongfang Industry Co. (同方工业有限公司), which reportedly is "mainly engaged in the technological transformation of

³² "Introduction to the Northwest Industrial Technology Research Institute" [西北工业技术研究院简介], Northwest Industrial Technology Research Institute website,

<https://web.archive.org/web/20170610062218/http://www.nitri.cn/about/index.jsp>

³³ "2012 Annual Report" [2012年度报告], FIYTA Group Co., Ltd. [飞亚达(集团)股份有限公司], 2012,

<https://perma.cc/3ASL-657Z>

³⁴ "Group Introduction" [集团简介], Tsinghua Holdings [清华控股], <https://perma.cc/6GHU-X76L>

³⁵ "Tongfang Co., Ltd. 2019 Annual Report" [同方股份有限公司2019年年度报告] Tsinghua Tongfang Co., 2019, <https://perma.cc/Q5BT-5DZP>

Tsinghua University's S&T industry-related projects," and whose products range from high-end communication equipment, marine equipment, ships, nuclear energy applications, command-and-control equipment, high-precision satellite navigation systems, and chemical defense equipment.³⁶ Moreover, according to Tongfang's 2020 Semi-Annual Report, Tongfang Industry Co.'s sales of designated military products are exempt from value-added tax,³⁷ pursuant to the "Notice of the Ministry of Finance and the State Administration of Taxation on Military Products Value-Added Tax" (财政部国家税务总局关于军品增值税政策的通知) and the "Notice of the National Defense Science and Industry Administration on Printing and Distributing the Implementation Measures for Military Products Exemption from Value-Added Tax" (国防科工局关于印发《军品免征增值税实施办法》的通知).³⁸ While it is difficult to measure their success at this stage, these mechanisms are designed with the intent to facilitate the more efficient and rapid transfer of technology to the defense sector as well as provide an incentive to commercial actors to contribute to defense R&D.

2.2 MCF Industry Alliances

Alongside university investment firms, China utilizes industry alliances to promote cooperation and dialogue across academia, industry, and the Chinese government. Often focused around a specific sector or technology --for instance, the China Robot Industry Alliance (中国机器人产业联盟), the 5G Commercial Industry Alliance (5G商用产业联盟), and the Artificial Intelligence Industry Alliance (中国人工智能产业发展联盟)--these alliances act as vehicles to bridge the gap between the defense and commercial spaces. Alliances are primarily led by a Chinese government ministry, office, or military entity, and members usually include a variety of SOEs, commercial firms, universities, and Chinese Academy of Sciences (CAS) affiliates. The following examples provide insight into the role that industry alliances play in China's MCF strategy.

2.2.1 Nuclear Industry (Shaanxi) MCF Technology Innovation Industry Alliance

Established in October 2018 in Shaanxi Province, the Nuclear Industry MCF Technology Innovation Industry Alliance (核工业（陕西）军民融合技术创新产业联盟) was designed to accelerate "cooperation and achievement transformation of production, talent, S&T research,

³⁶ "Tongfang Co., Ltd. 2019 Annual Report" [同方股份有限公司2019年年度报告].

³⁷ "2020 Semi-Annual Report" [2020年半年度报告], Tongfang Co., Ltd. [同方股份有限公司], 2020, <https://perma.cc/Q3Z7-VXMS>

³⁸ "The deepening of MCF will reshape the procurement of weapons and equipment in the long term" [军民融合深度推进, 长期将重塑武器装备采购], Hua Chuang Securities [华创证券], December 24, 2018, <https://perma.cc/QB2X-RHF4>

and practical applications” between China’s nuclear industry enterprises and research institutions. Members of this alliance include prominent civilian universities like Xi’an Jiaotong University, large state-owned firms like China Power Group, in addition to state-owned funding entities like the China National Nuclear Investment Fund and the China Development Bank.³⁹

2.2.2 Shaanxi University MCF Technology Innovation Alliance

The Shaanxi University MCF Technology Alliance (陕西高校军民融合科技创新联盟), established in July 2017, aims to bring together universities within Shaanxi Province to coordinate MCF work. The alliance includes top civilian universities like Xi’an Technological University, NWPU, Xi’an Polytechnical University, Xidian University, local vocational schools like the Shaanxi National Defense Vocational and Technical College, as well as leading military research institutions like the PLA Rocket Force Engineering University and the Air Force Engineering University.⁴⁰ Official announcements state that the opening ceremony for the alliance was held at the Xi’an Weapons Base, a key MCF center jointly formed by Shaanxi Province and defense SOE China North Industries Group Corporation (NORINCO).⁴¹

2.2.3 Sichuan MCF High-Tech Industry Alliance

Led by state-owned Sichuan Jiuzhou Group,⁴² the Sichuan MCF High-Tech Industry Alliance (四川军民融合高技术产业联盟) was stood up in April 2016 with the goal of sharing scientific research resources and promoting the application of dual-use technologies across both military and civilian sectors.⁴³ Official statements also claim that the alliance aims to implement major national projects in Sichuan and ensure the “smooth completion of scientific research and production of major weapons and equipment.”⁴⁴ The alliance also houses the “Transfer and

³⁹ “Introduction to the Nuclear Industry (Shaanxi) MCF Technology Innovation Industry Alliance” [核工业（陕西）军民融合技术创新产业联盟情况介绍], Nuclear Industry (Shaanxi) MCF Technology Innovation Industry Alliance official website, <https://perma.cc/63FY-WXD9>

⁴⁰ “Shaanxi University MCF Technology Innovation Alliance was established” [陕西高校军民融合科技创新联盟成立], Private Education Information Network [民办教育信息网], July 24, 2017, <https://perma.cc/3DX4-RXLE>; “Shaanxi University MCF Technology Innovation Alliance was established” [陕西高校军民融合科技创新联盟成立], China Daily, July 22, 2017, <https://perma.cc/DAH6-LC6J>

⁴¹ “Alibaba and Ant Group: Involvement in China’s Military-Civil Fusion Initiative,” RWR Advisory Group LLC, October 2, 2020, <https://www.rwradvisory.com/wp-content/uploads/2020/10/RWR-Report-Ant-MilCiv-Fusion-10-2020.pdf>

⁴² Sichuan Jiuzhou Electric Group Co. is wholly-owned by parent company, Sichuan Jiuzhou Investment Holding Group, which in turn is wholly-owned by the State-owned Assets Supervision and Administration Commission of Mianyang City. For more information, see: <https://perma.cc/U2NX-W535> and <https://perma.cc/2TZU-X38L>

⁴³ “Sichuan established the MCF high-tech industry alliance” [四川成立军民融合高技术产业联盟], People’s Government of Sichuan Province, April 27, 2016, <https://perma.cc/WCX6-2SGD>

⁴⁴ “Sichuan MCF High-Tech Industry Alliance Transfer and Transformation Office was established” [四川军民融合高技术产业联盟成果转化办公室成立], Xinhua News [新华网], November 25, 2018, <https://perma.cc/CYZ8-WPZH>;

Transformation Office” (转移转化办公室), co-sponsored by the University of Electronic Science and Technology’s MCF Collaborative Innovation Center (电子科技大学军民融合协同创新中心), that aims to further strengthen technological cooperation and exchange between research entities in Sichuan and the local military-industrial complex.⁴⁵

It is important to note that the alliance’s leader, Sichuan Jiuzhou Group, is headquartered in Mianyang, Sichuan.⁴⁶ Mianyang is sometimes described as a “Highland of MCF Innovation” and is considered a node of defense innovation.⁴⁷ The city is also home to the China Academy of Engineering Physics, the country’s leading nuclear weapons research facility,⁴⁸ as well as the Mianyang High-Tech City (四川绵阳科技城), a MCF demonstration base.⁴⁹ MCF demonstration bases are the result of Chinese government efforts to cluster relevant high-tech parties in specific locations to foster development and spur technical innovation by creating sustainable linkages between research institutions and universities, SOEs, commercial enterprises, and funding resources. The Chinese government has set up MCF demonstration bases, like the Mianyang High-Tech City, to foster development and spur technological innovation by bringing together research institutions and universities, SOEs, commercial enterprises, and funding resources in a single location.⁵⁰

2.3 MCF Venture Capital

In addition to industry alliances and university investment firms, Beijing is actively working to develop more funding mechanisms for MCF development. The 13th Five-Year MCF Plan calls

“Chengdu Full Search: Sichuan MCF High-Tech Industry Alliance Transfer and Transformation Office was established in Chengdu” [成都全搜索：四川军民融合高技术产业联盟成果转移转化办公室在蓉成立], University of Electronic Science and Technology [电子科技大学], November 25, 2018, <https://perma.cc/Z8EG-QTRG>

⁴⁵ “Sichuan MCF High-Tech Industry Alliance Transfer and Transformation Office was established” [四川军民融合高技术产业联盟成果转移转化办公室成立], Xinhua News [新华网]; “Chengdu Full Search: Sichuan MCF High-Tech Industry Alliance Transfer and Transformation Office was established in Chengdu” [成都全搜索：四川军民融合高技术产业联盟成果转移转化办公室在蓉成立], University of Electronic Science and Technology [电子科技大学].

⁴⁶ “Company profile” [公司概况], Sichuan Jiuzhou Electronics Group [四川九州电子科技股份有限公司], <https://perma.cc/N7ZU-MWZX>

⁴⁷ Alex Stone and Peter W. Singer, “China’s Military-Civil Fusion Strategy: What to Expect in the Next Five Years,” DefenseOne, February 18, 2021, <https://www.defenseone.com/ideas/2021/02/china-military-civil-fusion-strategy-next-five-years/172143/>

⁴⁸ Lorand Laskai, “In Drive for Tech Independence, Xi Doubles Down on Civil-Military Fusion,” Jamestown Foundation China Brief, May 9, 2018, <https://jamestown.org/program/in-drive-for-tech-independence-xi-doubles-down-on-civil-military-fusion/>

⁴⁹ Laskai, “In Drive for Tech Independence, Xi Doubles Down on Civil-Military Fusion;” Levesque and Stokes, “Blurred Lines: Military-Civil Fusion and the ‘Going Out’ of China’s Defense Industry.”

⁵⁰ Levesque and Stokes, “Blurred Lines: Military-Civil Fusion and the ‘Going Out’ of China’s Defense Industry.”

for central and local governments to increase investment in MCF S&T efforts, and encourages financial funds and private capital to enter into the MCF investment field.⁵¹ Moreover, the 2017 “Opinions on the In-Depth Development of MCF” (hereinafter referred to as “2017 Opinions;” 军民融合深度发展的意见) argues for the expansion of investment and financing channels for MCF, including the establishment of a national defense technology MCF investment fund, which was eventually stood up in 2018.⁵²

2.3.1 National MCF Industry Investment Fund

The National MCF Industry Innovation Fund (国家军民融合产业投资基金) was initiated in 2018 by the Ministry of Finance and the State Administration for Science, Technology, and Industry for National Defense (SASTIND) in 2018 with the intent of providing funding to support the overall development of China’s domestic MCF development efforts. The fund is currently operating on a total scale of 150 billion RMB with an initial phase of 56 billion RMB as of September 2020.⁵³ In addition to the Ministry of Finance, the fund’s shareholders include several major Chinese defense SOEs, including AVIC, China Electronics Technology Corporation (CETC), China Shipbuilding Industry Corporation, China National Nuclear Corporation, NORINCO, China Aerospace Science and Technology Corporation (CASC), China Aerospace Science and Industry Corporation (CASIC), Aero Engine Corporation of China, as well as the China Academy of Engineering Physics.⁵⁴

2.4 Talent

Beyond the aforementioned three MCF tools, talent plays an important role in how Beijing views MCF development. The “2017 Opinions” calls for the construction of a “national defense S&T talent team” that utilizes “superior whole-of-society educational resources” from military units, industry, and related colleges and universities.⁵⁵ CSET research from December 2020 highlights the important role that universities, especially the “Seven Sons of National Defense,” play in enhancing China’s defense talent base. Using 2019 graduate employment data from

⁵¹ Translation of “The 13th Five-Year Special Plan for S&T Military-Civil Fusion Development” [“十三五”科技军民融合发展专项规划], Center for Security and Emerging Technology.

⁵² “Opinions on the In-Depth Development of Military-Civil Fusion” [军民融合深度发展的意见], General Office of the State Council on Promoting the National Defense Technology Industry [国务院办公厅关于推动国防科技工业].

⁵³ “AVIC Innovation Capital made a business visit to the National MCF Fund” [中航创新资本赴国家军民融合基金进行业务拜访], AVIC Innovation Capital [中航创新资], September 15, 2020, <https://perma.cc/R2Q9-H643>

⁵⁴ <https://perma.cc/FN2B-YKZ9>

⁵⁵ <https://perma.cc/U69Y-CX4G>

elite Chinese universities, we found that Chinese defense SOEs directly hired 6,000 graduates from 29 leading Chinese universities, and three quarters of these graduates were recruited from “Seven Sons” universities, thus demonstrating *mincanjun* in action.⁵⁶ In other words, talent recruitment is a top priority for Beijing, and there are several mechanisms by which Chinese leadership goes about recruiting and training talent to contribute to MCF efforts, including the following two examples.

2.4.1 The National Defense S&T Scholarship

China’s National Defense S&T Scholarship (国家科技奖学金), established in 2005, aims to support Chinese students studying in national defense S&T disciplines within Chinese domestic universities. The program is overseen by the Ministry of Industry and Information Technology and provides 2,000 awards annually--1,200 to undergraduates, 700 to Masters students, and 100 to PhD students. Students received 10,000 RMB per academic year. Moreover, following graduation, students are required to work in China’s defense S&T industry for a minimum of five years.⁵⁷

As part of this scholarship, different universities across China are given different “demand plans” that outline the number of positions open for various positions at defense industry partners. For instance, in 2020, Beijing Institute of Technology had 152 openings, including an opening in mechanical engineering for AVIC’s Shenyang Aircraft Industry Group, an opening in computer science for China Shipbuilding Industry Corporation’s 716 Research Institute, openings in mechanical and electrical engineering for at the China Academy of Engineering Physics’ Institute of Nuclear Physics and Chemistry, among others.⁵⁸ Beyond BIT, in 2019, Lanzhou University had 14 open positions primarily aimed at serving China’s nuclear industry players, including China National Nuclear Corporation (CNNC) subsidiaries Lanzhou Uranium Enrichment Co. and Hainan Nuclear Power.⁵⁹

As similar as this program may sound to U.S. programs like the Boren or Pickering Fellowships, there are certain aspects of this scholarship program that differentiate it from U.S. equivalents. For instance, the National Defense S&T Scholarship guidelines state that those “who are not firm in their political stance, have anti-Party or anti-socialist remarks or behaviors, or those who participate in illegal organizations” will be regarded as having breached their contract. In

⁵⁶ <https://cset.georgetown.edu/research/universities-and-the-chinese-defense-technology-workforce/>

⁵⁷ <https://chinatalenttracker.cset.tech/>; <https://perma.cc/KE5F-H5CG>

⁵⁸ From author’s dataset.

⁵⁹ From author’s dataset.

addition, one of the requirements to apply includes “loving the motherland, supporting the leadership of the Chinese Communist Party.”⁶⁰ Similar U.S. programs have no such allegiance requirements.

2.4.2 MCF Vocational Training

Beyond China’s “double first-class”⁶¹ universities, the Chinese government has been working to improve MCF capabilities at the vocational education level to increase the number of technically-skilled personnel. A 2019 report from the Ministry of Education writes that vocational schools are becoming a “backbone force” in the implementation of the MCF development strategy, building on previous efforts to encourage more recent high school graduates, veterans, and migrant workers to apply for vocational training programs.⁶²

Hebei Province’s Xingtai Polytechnic College (XPC; 邢台职业技术学院) is often touted as an example of MCF success in the vocational education space. The Ministry of Education states that XPC has made educational advances in the fields of military equipment maintenance and repair, special vehicle modification, military outdoor equipment, and smart sensors.⁶³ While XPC was formerly a technical college under the PLA’s former General Logistics Department from 1979-1991, it is currently largely a civilian institution, illustrating the growing overlap between civilian and defense institutions.⁶⁴

3. Policy Recommendations

It is clear that Beijing is dedicated to its pursuit of MCF. Moving forward, MCF will remain a key piece of China’s development strategy and will continue to shape how it interacts with the United States and the rest of the world. MCF has yet to achieve its desired endpoint in China,

⁶⁰ “Measures for the Administration of National Defense Science and Technology Scholarships” [国防科技奖学金管理办法], Harbin Institute of Technology, December 2020, <https://perma.cc/KE5F-H5CG>

⁶¹ The “double first-class universities” (双一流大学) are a group of 42 universities that the Chinese government deems “world-class.” This list represents the culmination of the National 211 (211工程) and 985 Projects (985工程), both of which aimed to improve the international standing of Chinese universities. The list of “double first-class” universities can be found here: “List of ‘Double First Class’ Construction Universities” [“双一流”建设高校名录], Ministry of Education, December 6, 2017, <https://perma.cc/4BEX-PLLD>

⁶² “Create standards and paradigms for higher vocational MCF education” [打造高职军民融合教育标准与范式], Ministry of Education, October 22, 2019, <https://perma.cc/GW8W-JXGJ>

⁶³ “Create standards and paradigms for higher vocational MCF education” [打造高职军民融合教育标准与范式], Ministry of Education.

⁶⁴ “School introduction” [学院简介], Xingtai Polytechnic College [邢台职业技术学院], <http://www.xpc.edu.cn/xxgk/xyjj.htm>

and it will continue to experience internal growing pains and bureaucratic struggles over the next few decades as China works to adjust in response to broader changes and events in the global system, like the COVID-19 pandemic. However, even without operating at full capacity, MCF poses a unique and significant challenge to the United States and our allies.

As President Biden's administration develops its policy towards China, it will be critical for policymakers to articulate their goals from the start. Policies designed with the desired endstate of crippling or changing Chinese behavior will look very different from policies aimed at enhancing and promoting U.S. assets and competitiveness. Thus, in order to enact effective policy, the Biden administration must have a clear understanding of its desired trajectory for U.S.-China relations.

Many aspects of the Chinese system are inherently different from that of the United States. Anna Puglisi in 2020 wrote that the U.S. and China are not playing the same game, and that the assumptions made by U.S. entities in agreeing to collaborate with China--i.e. Rule of law, market-driven competition, and accepted international scientific norms--are often challenged or ignored based on different norms of behavior and desired outcomes in China.⁶⁵ Recognizing these differences will allow U.S. academia and industry to more effectively navigate collaborations with Chinese counterparts.

Instead of trying to incentivize changes within China, the Biden administration should work to bolster our own ability to mitigate the challenges posed by China while promoting collaboration where necessary and beneficial. The United States should avoid policies aimed at crippling or changing Chinese government strategies and commercial behavior. Although carrots and sticks may seem like viable options, China has demonstrated time and time again that they are willing to make surface-level changes to appease an international audience while continuing to pursue their own agenda.

In addition to the policy recommendations below, the U.S. government should continue working with allies to handle MCF-related issues multilaterally. Ongoing efforts like the Quad Critical and Emerging Technology Working Group will be crucial to tackling China's efforts at supply chain disruption, as well as Beijing's push to establish its own technology standards globally.⁶⁶ Moreover, attempts like the Biden administration's recent "Steps to Bolster Registered

⁶⁵ Anna B. Puglisi, "The Myth of the Stateless Global Society," *Beyond Espionage: China's Quest for Foreign Technology*, September 2020.

⁶⁶ "Fact Sheet: Quad Summit," White House, March 12, 2021, <https://www.whitehouse.gov/briefing-room/statements-releases/2021/03/12/fact-sheet-quad-summit/>

Apprenticeships” and Congress’ “Global Leadership in Advanced Manufacturing Act,” among others, could go a long way in bolstering the U.S.’ domestic technology and talent capabilities, putting us in a position to outcompete China solely based on our own prowess.⁶⁷

To conclude my analysis, I propose the following recommendations for U.S. policy:

3.1 Establish an interagency working group within the U.S. government to increase awareness of China’s MCF efforts and ensure that various departments and agencies are equipped to make effective policy within their individual jurisdictions.

MCF is a moving target, and relevant parties inside the U.S. government will need to find ways to keep themselves up to date on developments associated with MCF. An interagency working group on MCF and related issues would allow various parts of the U.S. government to come together to ensure that there is not only a common understanding of the challenges and risks that the U.S. government faces, but also collaboration in devising the most viable tools to mitigate those risks.⁶⁸

This interagency working group would be required to meet on a regular basis to discuss new MCF developments and trends, larger trends in Chinese domestic politics, and updates on how various U.S. government offices and departments have been handling MCF-related issues as of late. In addition, requiring this interagency working group to create deliverables for U.S. government employees would go a long way in promoting understanding of China’s MCF strategy beyond the scope of those directly involved. These should likely come on a quarterly basis to ensure that findings are kept up to date, and the release of each quarterly deliverable could come with an unclassified executive summary to be published for public consumption.

Furthermore, given the wide-ranging nature of China’s MCF strategy, the U.S. government must be equipped to understand and tackle MCF from different angles. Although some have

⁶⁷ “Fact Sheet: Biden Administration to Take Steps to Bolster Registered Apprenticeships,” White House, February 17, 2021, <https://www.whitehouse.gov/briefing-room/statements-releases/2021/02/17/fact-sheet-biden-administration-to-take-steps-to-bolster-registered-apprenticeships/>; “S.1427 - Global Leadership in Advanced Manufacturing Act of 2019,” U.S. Senate, <https://www.congress.gov/bill/116th-congress/senate-bill/1427>

⁶⁸ An attempt at standing up a similar working group took place in the previous administration; however, its mission went beyond technology transfer and MCF issues, and it is unclear if the group will continue under the Biden administration. For more information, see: “Acting Secretary Wolf Establishes China Working Group to Address Intensifying Threat,” Department of Homeland Security, July 24, 2020, <https://www.dhs.gov/news/2020/07/24/acting-secretary-wolf-establishes-china-working-group-address-intensifying-threat>

called for creating a unified definition of MCF across the U.S. government, I believe that this would cripple government departments' ability to deal with MCF within their own jurisdictions. Additionally, considering again the vast nature of MCF, it would be nearly impossible to come up with a concise yet actionable definition for all of the U.S. government to use. A working group like the one I've proposed would facilitate interagency discussion and cooperation and assist in ensuring that U.S. government agencies are working in concert.

3.2 Create a repository of open-source due diligence materials that can be used by academia and industry to allow them to make more informed decisions about collaborations and interactions with Chinese counterparts.

Last year, CSET research identified several prominent U.S. tech firms that were potentially inadvertently aiding China's military modernization efforts through their subsidiaries' relationships with defense-affiliated universities in China. For instance, U.S. chip design firm Synopsys apparently hosted an advanced semiconductor design training session at the PLA's National University of Defense Technology, according to China's Ministry of Education.⁶⁹ U.S. industry and academia may therefore be in need of more resources to conduct due diligence operations, particularly as they relate to interactions with Chinese entities. However, some instances may reveal that a dearth of information is not necessarily the problem at hand.

It is important to note that problematic interactions between U.S. entities and Chinese entities linked to the government and more specifically, the PLA, reflect both a resource problem and a financial problem. In many instances, U.S. universities and companies lack the time or Chinese language resources to conduct proper due diligence before entering into cooperation agreements. For instance, additional CSET research demonstrates that Chinese entities are more likely to omit or obfuscate information in English language sources than they are in Chinese.⁷⁰ This justifies the need for a catalogue or repository that can provide the Chinese language and area studies background necessary for U.S. firms and universities to make informed judgements. The need for these resources have similarly been articulated by CSET's William Hannas and Huey-Meei Chang, as well as the China Strategy Group.⁷¹

⁶⁹ Fedasiuk and Weinstein, "Universities and the Chinese Defense Technology Workforce."

⁷⁰ Ryan Fedasiuk and Emily Weinstein, "Overseas Professionals and Technology Transfer to China," Center for Security and Emerging Technology, July 21, 2020, <https://cset.georgetown.edu/research/overseas-professionals-and-technology-transfer-to-china/>; Dewey Murdick, Daniel Chou, Ryan Fedasiuk, and Emily Weinstein, "The Public AI Research Portfolio of China's Security Forces," (forthcoming).

⁷¹ William Hannas and Huey-Meei Chang, "China's STI Operations: Monitoring Foreign Science and Technology Through Open Sources," Center for Security and Emerging Technology, January 2021,

On the other hand, in other instances like the alleged Synopsys case, the problematic aspects of the collaboration appear more obvious, even to untrained eyes, suggesting that some U.S. institutions are willing to overlook potentially controversial elements of Chinese collaborations in favor of financial gains or market advantages. In this instance, no amount of due diligence materials are likely to sway opinions on collaboration. However, the existence of due diligence materials can help to weed out instances of “I didn’t know any better” and separate those who truly were unaware of the issues and those who chose to ignore them.

3.3 Provide the Securities and Exchange Commission (SEC) with Chinese language and area studies resources to assist in auditing and assessing Chinese firms listed on U.S. stock exchanges.

In order to assist the SEC in handling U.S.-listed Chinese firms, the SEC should stop putting the onus on the Chinese government to provide the necessary information and materials for audits and investigations. Instead, the SEC should have its own in-house Chinese language and area studies capabilities to conduct investigations and assess the accuracy of information provided by China. This expertise will also allow the SEC to make more nuanced assessments of connections to the Chinese military-industrial complex in audits and investigations.

The previous administration sought to tackle some of the issues associated with Chinese firms operating in the United States, as well as U.S. investment in Chinese firms with close ties to the Chinese military-industrial complex. Although moves like the January 2021 Executive Order 13974 and the “Holding Foreign Companies Accountable Act” are promising first steps, both come with side effects that could potentially harm U.S. competitiveness.⁷²

First, attempting to designate Chinese companies as “Chinese Communist Military Companies” (CCMCs) or “Chinese Military Companies” (CMCs), as designated in the NDAA’s Section 1237,

<https://cset.georgetown.edu/research/chinas-sti-operations/>; “Asymmetric Competition: A Strategy for China & Technology,” China Strategy Group.

⁷² Executive Order 13974, entitled “Amending Executive Order 13959 Addressing the Threat From Securities Investments That Finance Communist Chinese Military Companies” is an updated version of Executive Order 13959 from November 2020. For more information, see: “Amending Executive Order 13959 Addressing the Threat From Securities Investments That Finance Communist Chinese Military Companies,” Executive Office of the President via Federal Register, January 19, 2021, <https://www.federalregister.gov/documents/2021/01/19/2021-01228/amending-executive-order-13959-addressing-the-threat-from-securities-investments-that-finance>; “S.945 - Holding Foreign Companies Accountable Act,” U.S. Senate, <https://www.congress.gov/bill/116th-congress/senate-bill/945>

is a difficult undertaking, particularly as MCF continues to further blur the lines between the defense and civilian sectors.⁷³ For instance, the U.S. District Court for the District of Columbia recently ruled that DoD's designation of Chinese tech firm Xiaomi as a CCMC was "inadequate" and "lacked substantial evidence."⁷⁴ The U.S. government needs more guidance and assistance beyond DoD to assess the risks associated with certain Chinese companies operating in the U.S., and providing the SEC with the in-house Chinese expertise could help to lessen the burden placed on DoD.

Secondly, although attempts to force certain CMCCs to de-list from U.S. stock exchanges may provide some amount of protection to U.S. investors and consumers, it also puts the U.S. in a position to lose valuable insight into Chinese corporate records and activities. These records and filings are important pieces of open source information that the U.S. government would likely be unable to access. Currently, it is difficult to obtain stock information and filings from those firms listed in Mainland Chinese stock exchanges, and recent developments in Hong Kong have put future access to Hong Kong Stock Exchange filings at risk. Although there are indeed costs and benefits associated with allowing certain Chinese firms to remain listed in the United States, equipping the SEC with its own Chinese experts would put the U.S. in a better position to mitigate these risks.

3.4 Improve the U.S. government's ability to audit supply chains and establish industry reporting guidelines to identify significant chokepoints, ensure compliance with requirements, and support allies and partners, as articulated by the China Strategy Group.⁷⁵

In its fall 2020 memo, the China Strategy Group recommended establishing a U.S. government office to handle the aforementioned issues regarding supply chain auditing and industry reporting. Such an entity would indeed strengthen the U.S. government's ability to handle the challenges posed by China. Moreover, this office should have its own in-house Chinese language and areas studies capabilities to investigate compliance issues associated with Chinese firms both in the United States and globally. It should also be tasked with foresight analysis on Chinese strategy and policy to assist the U.S. government in making accurate

⁷³ "H.R.6395 - National Defense Authorization Act for Fiscal Year 2021," U.S. House Representatives, <https://www.congress.gov/bill/116th-congress/house-bill/6395/text>

⁷⁴ "Granting Plaintiffs' Motion for Preliminary Injunction; Granting Plaintiffs' Motion for Leave to File Supplemental Declaration," *Xiaomi Corporation vs. Department of Defense*, United States District Court for the District of Columbia, March 12, 2021,

https://www.courtlistener.com/recap/gov.uscourts.dcd.226816/gov.uscourts.dcd.226816.21.0_1.pdf

⁷⁵ "Asymmetric Competition: A Strategy for China & Technology," China Strategy Group.

predictions about Beijing's intentions, especially as they relate to supply chain chokepoints and key strategic industries.

Taken together, U.S. government policies aimed at improving our understanding of China's domestic system and capabilities have the potential to place the United States in a stronger position to mitigate the threats associated with China's MCF strategy while supporting and enhancing U.S. competitiveness. Moreover, we will not succeed if we attempt to mitigate these threats in isolation of our allies. Working in tandem with like-minded partners, President Biden, Congress, and future U.S. presidential administrations have the ability to navigate the U.S.-China relationship and protect U.S. interests without severing all ties with China.