



## Sweeping U.S. Lists Seek to Restrict Trade and Investment that Support the Chinese Military

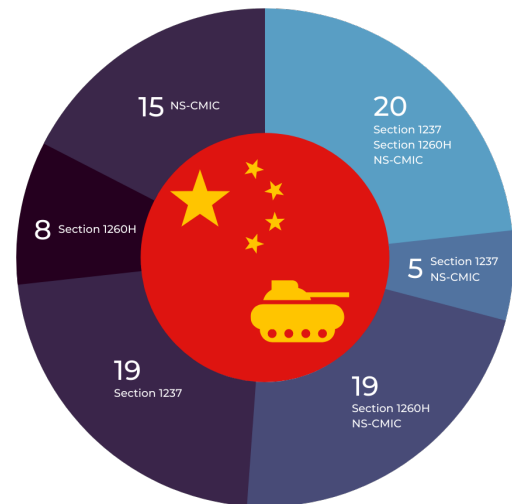
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In response to China's military modernization over the past few decades, the U.S. government has developed a range of sanctions and regulatory tools to target the Chinese defense industry and limit the ways U.S. resources, technology, and products contribute to the growth of the People's Liberation Army (PLA). These efforts accelerated during the Trump Administration with the expansion of military end user-based export controls to China, the creation of the Military End User List, and the advent of investment restrictions on Chinese military-related companies.

This report provides an overview of the policies and programs driving Chinese defense industry modernization, the key entities in China implementing these policies over time, and the strategic trade and investment restrictions that the U.S. government has developed in response. This response targets the Chinese military-industrial complex as a whole, as well as the specific entities that operate within it.

Over the past year, the U.S. government published several lists of "Chinese military companies" as part of its strategy to target the Chinese defense industry. These lists identify Chinese state-owned and private companies with links to the Chinese military and, in some cases, apply restrictions on trade with and investment in these companies. More broadly, these lists reflect an effort by the United States to limit support to any entity in China that supports the military.



The Appendix to this report contains a searchable table naming each entity that appears on the lists that exclusively target China's military, including its Chinese name (when available), background information, and the list(s) on which it appears. The table illustrates the diverse types of entities named on these lists, from aerospace, to telecommunications, to energy firms. While the listing criteria for these lists is similar, only 20 of the combined total of 86 entities appear on

every list. This divergence highlights the difficulty government and private actors face in determining a Chinese company's military ties in the era of Military-Civil Fusion.

## Overview of Chinese Defense Industry Policies and Programs

### *The Growth of the Chinese Defense Industry During the Reform Era*

U.S. strategic trade and investment regulations target a Chinese defense industrial base that has experienced forty years of growth and reform. During the Mao era, the Chinese defense industry consisted of numbered "machine-building industry" ministries (机械工业部), with each ministry responsible for a certain sector of defense production, such as aerospace, aviation, nuclear weapons, and shipbuilding.<sup>1</sup> While some of China's strategic weapons programs achieved success, such as the "Two Bombs, One Satellite" initiative, many fell behind schedule or failed due to technical limitations or competing political priorities.<sup>2</sup>

This dynamic began to change during the 1980s and 1990s. The Chinese government lost confidence in the country's defense industrial system after China's poor performance in the 1979 Sino-Vietnamese War and U.S. displays of military superiority in the 1991 Gulf War and the 1995-1996 Taiwan Strait Crisis.<sup>3</sup> After a series of ineffective organizational changes between 1982 and 1993, the government converted its defense industry ministries into five state-owned enterprises (SOEs), each responsible for a sector of the defense industry. The aim was to enhance innovation across the defense industry and decrease its reliance on Chinese government support.<sup>4</sup> In 1999, in a further effort to modernize the industry, the government split these five SOEs into ten group

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<sup>1</sup> Evan S. Meideros, Roger Cliff, Keith Crane, and James C. Mulvenon, "A New Direction for China's Defense Industry," RAND Corporation, 2005, p. 14, available at <https://www.rand.org/pubs/monographs/MG334.html>.

<sup>2</sup> For an example of poor defense industry production in the Mao era, see: Peter Wood and Robert Stewart, "China's Aviation Industry: Lumbering Forward," China Aerospace Studies Institute, Air University, August 5, 2019, p. 23, available at [https://www.airuniversity.af.edu/Portals/10/CASI/Books/Lumbering\\_Forward\\_Aviation\\_Industry\\_Web\\_2019-08-02.pdf](https://www.airuniversity.af.edu/Portals/10/CASI/Books/Lumbering_Forward_Aviation_Industry_Web_2019-08-02.pdf).

<sup>3</sup> Peter Wood and Robert Stewart, "China's Aviation Industry: Lumbering Forward," China Aerospace Studies Institute, Air University, August 5, 2019, pp. 24-26, available at [https://www.airuniversity.af.edu/Portals/10/CASI/Books/Lumbering\\_Forward\\_Aviation\\_Industry\\_Web\\_2019-08-02.pdf](https://www.airuniversity.af.edu/Portals/10/CASI/Books/Lumbering_Forward_Aviation_Industry_Web_2019-08-02.pdf).

<sup>4</sup> Evan S. Meideros, Roger Cliff, Keith Crane, and James C. Mulvenon, "A New Direction for China's Defense Industry," RAND Corporation, 2005, pp. 15-16, available at <https://www.rand.org/pubs/monographs/MG334.html>.

companies (集团公司), with each company overseeing a network of subsidiaries and research institutes.<sup>5</sup>

Around the same time, the Chinese government reformed the defense acquisition process to increase efficiency and introduce stronger quality control oversight.<sup>6</sup> Specifically, the government separated the management of defense industry SOEs from the defense acquisition process. A re-organized Committee on Science, Technology, and Industry for National Defense (COSTIND), under the civilian State Council, oversaw and regulated the defense industry. The General Armaments Department (GAD), under the Central Military Commission,<sup>7</sup> managed PLA procurement. Many SOE production subsidiaries not involved in defense-related work were sold off or released into the private sector, leaving the SOEs and their remaining subsidiaries to focus on research, development, and production with defense applications.<sup>8</sup> Defense SOEs were also allowed to sell securities on Chinese stock exchanges, enabling them to raise outside capital.<sup>9</sup>

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<sup>5</sup> Evan S. Meideros, Roger Cliff, Keith Crane, and James C. Mulvenon, "A New Direction for China's Defense Industry," RAND Corporation 2005, p. 40, available at <https://www.rand.org/pubs/monographs/MG334.html>.

<sup>6</sup> Evan S. Meideros, Roger Cliff, Keith Crane, and James C. Mulvenon, "A New Direction for China's Defense Industry," RAND Corporation, 2005, pp. xvii-xix, available at <https://www.rand.org/pubs/monographs/MG334.html>.

<sup>7</sup> Evan S. Meideros, Roger Cliff, Keith Crane, and James C. Mulvenon, "A New Direction for China's Defense Industry," RAND Corporation, 2005, pp. xvii-xix, available at <https://www.rand.org/pubs/monographs/MG334.html>.

<sup>8</sup> Peter Wood and Robert Stewart, "China's Aviation Industry: Lumbering Forward," China Aerospace Studies Institute, Air University, August 5, 2019, p. 26, available at [https://www.airuniversity.af.edu/Portals/10/CASI/Books/Lumbering\\_Forward\\_Aviation\\_Industry\\_Web\\_2019-08-02.pdf](https://www.airuniversity.af.edu/Portals/10/CASI/Books/Lumbering_Forward_Aviation_Industry_Web_2019-08-02.pdf). For example, North Navigation Control Technology Co., Ltd. reported splitting its civilian businesses off into a separate entity in 2000. North Navigation Control Technology is on the NS-CMIC list and is a subsidiary of China North Industries Group Corporation, which is one of the major 10 defense conglomerates created in the wake of the 1999 reforms. See: "Company Profile," North Navigation Control Technology Co., Ltd. World Wide Web site, available at <http://bfdh.norincogroup.com.cn/col/col1027/index.html> (in Chinese).

<sup>9</sup> Evan S. Meideros, Roger Cliff, Keith Crane, and James C. Mulvenon, "A New Direction for China's Defense Industry," RAND Corporation, 2005, p. 42, available at <https://www.rand.org/pubs/monographs/MG334.html>; Peter Wood and Robert Stewart, "China's Aviation Industry: Lumbering Forward," China Aerospace Studies Institute, Air University, August 5, 2019, p. 26, available at [https://www.airuniversity.af.edu/Portals/10/CASI/Books/Lumbering\\_Forward\\_Aviation\\_Industry\\_Web\\_2019-08-02.pdf](https://www.airuniversity.af.edu/Portals/10/CASI/Books/Lumbering_Forward_Aviation_Industry_Web_2019-08-02.pdf).

These reforms gradually introduced profit and efficiency into China's defense industry, with group companies and their subsidiaries given more operational autonomy. Beginning in the early 2000s, the defense industry focused on "spin-on" (民转军) technologies, which are technologies developed for civilian applications that are then converted for military uses. This allowed Chinese companies to obtain foreign technology and know-how for civilian activities that could ultimately benefit their defense-related business.<sup>10</sup>

At the same time, Chinese defense supply opportunities began opening to some private firms. While traditional defense-heavy sectors like shipbuilding and armaments remained dominated by SOEs, private companies in commercially-driven sectors like information and communication technology (ICT) began selling to the PLA. This gave rise to a new generation of private ICT firms – some of which had ties to the government – that supplied the PLA, such as Huawei Technologies.<sup>11</sup>

Chinese firms also benefited from government-funded advancements in national science and technology research capabilities. In the late 1980s, the Chinese government increased its funding of strategic technology and defense-related programs at universities and research institutions.<sup>12</sup> For example, the 863 Program funded high-tech research projects at universities in fields such as aerospace, automation, and information technology.<sup>13</sup> COSTIND similarly funded defense disciplines and research laboratories at major Chinese universities through "joint construction"

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<sup>10</sup> Evan S. Meideros, Roger Cliff, Keith Crane, and James C. Mulvenon, "A New Direction for China's Defense Industry," RAND Corporation, 2005, pp. xvii, 131, 141-142, 170, available at <https://www.rand.org/pubs/monographs/MG334.html>; Peter Wood and Robert Stewart, "China's Aviation Industry: Lumbering Forward," China Aerospace Studies Institute, Air University, August 5, 2019, p. 26, available at [https://www.airuniversity.af.edu/Portals/10/CASI/Books/Lumbering\\_Forward\\_Aviation\\_Industry\\_Web\\_2019-08-02.pdf](https://www.airuniversity.af.edu/Portals/10/CASI/Books/Lumbering_Forward_Aviation_Industry_Web_2019-08-02.pdf).

<sup>11</sup> Evan S. Meideros, Roger Cliff, Keith Crane, and James C. Mulvenon, "A New Direction for China's Defense Industry," RAND Corporation, 2005, pp. 213-215, available at <https://www.rand.org/pubs/monographs/MG334.html>.

<sup>12</sup> Evan S. Meideros, Roger Cliff, Keith Crane, and James C. Mulvenon, "A New Direction for China's Defense Industry," RAND Corporation, 2005, pp. 231-233, available at <https://www.rand.org/pubs/monographs/MG334.html>.

<sup>13</sup> Evan S. Meideros, Roger Cliff, Keith Crane, and James C. Mulvenon, "A New Direction for China's Defense Industry," RAND Corporation, 2005, pp 231-235, available at <https://www.rand.org/pubs/monographs/MG334.html>.

agreements.<sup>14</sup> The Chinese government also used scholarship and grant programs to recruit scientists from overseas and to train a new generation of national technical experts.<sup>15</sup> Combined, these efforts provided Chinese defense firms with a stronger science and technology base from which to draw for the development of advanced military capabilities.

### *The Defense Industry and Defense Industrial Policy in the Xi-era*

As a result of these reforms and as China's defense budget increased throughout the 2000s and 2010s, Chinese companies were better able to meet PLA procurement needs. These companies also became commercially successful, with annual revenue for China's big 10 defense industrial SOEs reportedly skyrocketing from 15 billion RMB (\$2.3 billion) in 2004 to 120 billion RMB (\$18.6 billion) in 2015.<sup>16</sup> To build on these successes, the Xi Jinping administration has implemented industrial policies aimed at supporting strategic and emerging high-tech industries, such as Military-Civil Fusion (MCF), Made in China 2025, the Strategic Emerging Industries Plan, and the Innovation-Driven Development Strategy.

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<sup>14</sup> "National Defense Science and Technology Key Laboratory Management Methods," Harbin Institute of Technology Architecture School World Wide Web site, April 1, 2017, available at <https://web.archive.org/web/20190522041912/http://jzxy.hit.edu.cn/2018/0518/c10586a208951/page.htm> (in Chinese); Alex Joske, "The China Defence Universities Tracker," Australian Strategic Policy Institute, November 25, 2019, available at <https://www.aspi.org.au/report/china-defence-universities-tracker>; "Notice of the State Administration of Science, Technology and Industry for National Defense on Issuing the Detailed Rules for the Implementation of Special Incentive Subsidies for the Promotion of Military Technology (Trial)," State Administration of Science, Technology, and Industry for National Defense World Wide Web site, November 7, 2017, available at <http://www.sastind.gov.cn/n4235/c6797870/content.html> (in Chinese).

<sup>15</sup> "Threats to the U.S. Research Enterprise: China's Talent Recruitment Plans," Staff Report, U.S. Senate Committee on Homeland Security and Governmental Affairs, Permanent Subcommittee on Investigations, November 18, 2019, p. 1, available at <https://www.hsgac.senate.gov/imo/media/doc/2019-11-18%20PSI%20Staff%20Report%20-%20China's%20Talent%20Recruitment%20Plans.pdf>; "National Defense Science and Technology Scholarship," China Talent Tracker, Georgetown Center for Security and Emerging Technology World Wide Web site, available at <https://chinatalenttracker.cset.tech/>.

<sup>16</sup> Tai Ming Cheung, "Keeping Up with the Jundui: Reforming the Chinese Defense, Acquisition, Technology, and Industrial System," in "Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms," National Defense University Press, 2019, p. 586, available at <https://ndupress.ndu.edu/Portals/68/Documents/Books/Chairman-Xi/Chairman-Xi.pdf>.

MCF is the policy most directly tied to harnessing the power of civilian development and innovation to the service of China's defense industrial base.<sup>17</sup> In 2015, Xi announced MCF as a national-level priority, and in 2017 he established the Commission for Integrated Civilian-Military Development, an inter-agency body chaired by Xi to oversee government implementation of MCF plans.<sup>18</sup> A primary aim of China's MCF strategy is to provide the Chinese military with an arsenal of domestic suppliers of high-tech and dual-use equipment. These firms also act as research partners for the Chinese military and defense industry SOEs.

Chinese defense SOEs are still expected to develop commercially marketable goods and technology themselves, which provides them with a steady revenue stream. According to a report by the National Defense University, about half of the Chinese defense industry's revenue comes from civilian business, and in certain sectors, such as the ordnance and nuclear sectors, it may be as high as 80 or 90 percent.<sup>19</sup>

China has also continued to reform and reorganize the government agencies that manage the defense industry. In 2008, the government formed the Ministry of Industry and Information Technology (MIIT), which is responsible for managing industrial planning and policy and promotes the development of communication technology and information security.<sup>20</sup> MIIT oversees the State Administration for Science, Technology, and Industry for National Defense (SASTIND), which was created at the same time from the reorganization of COSTIND.<sup>21</sup>

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<sup>17</sup> MCF is a Xi-era policy that grew out of longstanding Chinese policies focused on the overlap of civilian and defense technologies since the reform era, including the Hu-era focus on "civil military integration" (CMI).

<sup>18</sup> Tai Ming Cheung, "Keeping Up with the *Jundui*: Reforming the Chinese Defense, Acquisition, Technology, and Industrial System," in "Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms," National Defense University Press, 2019, p. 600, available at <https://ndupress.ndu.edu/Portals/68/Documents/Books/Chairman-Xi/Chairman-Xi.pdf>.

<sup>19</sup> Tai Ming Cheung, "Keeping Up with the *Jundui*: Reforming the Chinese Defense, Acquisition, Technology, and Industrial System," in "Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms," National Defense University Press, 2019, p. 586, available at <https://ndupress.ndu.edu/Portals/68/Documents/Books/Chairman-Xi/Chairman-Xi.pdf>.

<sup>20</sup> "Ministry of Industry and Information Technology," State Council of the People's Republic of China World Wide Web site, August 20, 2014, available at [http://english.www.gov.cn/state\\_council/2014/08/23/content\\_281474983035940.htm](http://english.www.gov.cn/state_council/2014/08/23/content_281474983035940.htm).

<sup>21</sup> "State Administration for Science, Technology and Industry for National Defense," State Council of the People's Republic of China World Wide Web site, October 6, 2014, available at [http://english.www.gov.cn/state\\_council/2014/10/06/content\\_281474992893468.htm](http://english.www.gov.cn/state_council/2014/10/06/content_281474992893468.htm).

SASTIND issues and implements policies, regulations, and standards for China's defense industry on behalf of MIIT.<sup>22</sup> As part of this responsibility, SASTIND oversees MCF and coordinates MCF efforts among government agencies, SOEs, private companies, universities, and local governments.<sup>23</sup> It also coordinates military production projects that involve cooperation between SOEs and funds the development of military technology education and research programs at Chinese universities.<sup>24</sup> Under Xi, SASTIND directors often are promoted to be provincial party secretaries and governors, a sign both of the importance of the agency and a factor enhancing local government participation in MCF and related programs.<sup>25</sup>

Xi also reformed the military defense industrial system as part of the government's 2015 PLA reforms. The Equipment Development Department (EDD) was created to replace GAD in managing military acquisition, procurement, and R&D responsibilities on behalf of the Central

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<sup>22</sup> "State Administration for Science, Technology and Industry for National Defense," State Council of the People's Republic of China World Wide Web site, October 6, 2014, available at [http://english.www.gov.cn/state\\_council/2014/10/06/content\\_281474992893468.htm](http://english.www.gov.cn/state_council/2014/10/06/content_281474992893468.htm).

<sup>23</sup> "Findings of the Investigation Into China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation Under Section 301 of the Trade Act of 1974," Office of the U.S. Trade Representative, March 22, 2018, p. 96, available at <https://ustr.gov/sites/default/files/Section%20301%20FINAL.PDF>.

<sup>24</sup> "State Administration for Science, Technology and Industry for National Defense," State Council of the People's Republic of China World Wide Web site, October 6, 2014, available at [http://english.www.gov.cn/state\\_council/2014/10/06/content\\_281474992893468.htm](http://english.www.gov.cn/state_council/2014/10/06/content_281474992893468.htm); Mark Stokes, Gabriel Alvarado, Emily Weinstein, and Ian Easton, "China's Space and Counterspace Capabilities and Activities," Project 2049 Institute and Pointe Bello, Report Prepared for the U.S.-China Economic and Security Review Commission, March 30, 2020, p. 45, available at [https://www.uscc.gov/sites/default/files/2020-05/China\\_Space\\_and\\_Counterspace\\_Activities.pdf](https://www.uscc.gov/sites/default/files/2020-05/China_Space_and_Counterspace_Activities.pdf); "Jilin University was Included in the 13th Five Year Plan of SASTIND and the Ministry of Education," Jilin University World Wide Web site, July 6, 2016, available at <https://web.archive.org/web/20191011004621/https://news.jlu.edu.cn/info/1021/42984.htm> (in Chinese); "National Defense Science and Technology Key Laboratory Management Methods," Harbin Institute of Technology Architecture School World Wide Web site, April 1, 2017, available at <https://web.archive.org/web/20190522041912/http://jzxy.hit.edu.cn/2018/0518/c10586a208951/page.htm> (in Chinese).

<sup>25</sup> Most notably, Zhang Qingwei is the Party Secretary of Heilongjiang Province, Xu Dazhe is the Party Secretary of Hunan Province, Ma Xingrui is the Governor of Guangdong Province, and Chen Qiufa is the Party Secretary of Liaoning Province. Zhang served as COSTIND director and the other three served as SASTIND directors. See: "Zhang Kejian was Promoted to Director of SASTIND, All Four of His Predecessors are Provincial Leaders," Sina News, May 22, 2018, available at <http://news.sina.com.cn/c/2018-05-22/doc-ihawmaua7162737.shtml> (in Chinese).

Military Commission (CMC). EDD carries out these responsibilities in conjunction with service-level equipment departments<sup>26</sup> and is subject to more stringent oversight than its predecessor.<sup>27</sup> This reform appears aimed at improving oversight of defense procurement and reducing inefficient defense acquisitions.<sup>28</sup>

The 2015 PLA reforms also elevated the CMC's Science and Technology Commission (STC) from its previous position under GAD to a department-level role, on equal footing with EDD.<sup>29</sup> The STC reportedly guides weapons and equipment development, and it consists of sub-committees

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<sup>26</sup> Joel Wuthnow and Philip Saudners, "Chinese Military Reforms in the Age of Xi Jinping: Drivers, Challenges, and Implications," National Defense University, Institute for National Strategic Studies, Center for the Study of Chinese Military Affairs, March 2017, p. 36, available at <https://ndupress.ndu.edu/Portals/68/Documents/stratperspective/china/ChinaPerspectives-10.pdf>; "Military and Security Developments Involving the People's Republic of China," Office of the Secretary of Defense, 2020, p. 142, available at <https://media.defense.gov/2020/Sep/01/2002488689/-1/-1/1/2020-DOD-CHINA-MILITARY-POWER-REPORT-FINAL.PDF>; Joel Wuthnow and Phillip C. Saunders, "Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms," National Defense University Press, 2019, p. 34, available at <https://ndupress.ndu.edu/Portals/68/Documents/Books/Chairman-Xi/Chairman-Xi.pdf>; Dennis J. Blasko, "The Biggest Loser in Chinese Military Reforms: The PLA Army," in "Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms," National Defense University Press, 2019, pp. 373-374, available at <https://ndupress.ndu.edu/Portals/68/Documents/Books/Chairman-Xi/Chairman-Xi.pdf>.

<sup>27</sup> Joel Wuthnow and Philip Saudners, "Chinese Military Reforms in the Age of Xi Jinping: Drivers, Challenges, and Implications," National Defense University, Institute for National Strategic Studies, Center for the Study of Chinese Military Affairs, March 2017, p. 36, available at <https://ndupress.ndu.edu/Portals/68/Documents/stratperspective/china/ChinaPerspectives-10.pdf>; Joel Wuthnow and Phillip C. Saunders, "Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms," National Defense University Press, 2019, pp. 5-7, available at <https://ndupress.ndu.edu/Portals/68/Documents/Books/Chairman-Xi/Chairman-Xi.pdf>; "Military and Security Developments Involving the People's Republic of China," Office of the Secretary of Defense, 2020, p. 142, available at <https://media.defense.gov/2020/Sep/01/2002488689/-1/-1/1/2020-DOD-CHINA-MILITARY-POWER-REPORT-FINAL.PDF>.

<sup>28</sup> Joel Wuthnow and Philip Saudners, "Chinese Military Reforms in the Age of Xi Jinping: Drivers, Challenges, and Implications," National Defense University, Institute for National Strategic Studies, Center for the Study of Chinese Military Affairs, March 2017, p. 36, available at <https://ndupress.ndu.edu/Portals/68/Documents/stratperspective/china/ChinaPerspectives-10.pdf>.

<sup>29</sup> Joel Wuthnow and Philip Saudners, "Chinese Military Reforms in the Age of Xi Jinping: Drivers, Challenges, and Implications," National Defense University, Institute for National Strategic Studies, Center for the Study of Chinese Military Affairs, March 2017, p. 26, available at <https://ndupress.ndu.edu/Portals/68/Documents/stratperspective/china/ChinaPerspectives-10.pdf>



composed of civilian experts that advise the CMC on technological progress.<sup>30</sup> It reportedly hosts a defense innovation division modeled on the U.S. Defense Department's Defense Advanced Research Projects Agency (DARPA), and it also plays a role in facilitating MCF.<sup>31</sup>

Despite these advances, China's defense industry continues to rely on foreign technology. According to a recent RAND Corporation report, China's domestic firms lag in several key military capabilities, including semiconductor production equipment, aircraft engine construction, and submarine technology.<sup>32</sup> As the Chinese government increases funding for domestic production of these technologies, it persistently relies on foreign acquisition and joint ventures. Recent U.S. strategic trade and investment controls aim to limit such acquisition in an effort to slow the qualitative rise of China's military.

## U.S. Policies, Regulations, and Sanctions Targeting the Chinese Defense Industry

### *Restrictions on Dual-Use Exports to China*

The U.S. Export Administration Regulations (EAR) and the International Traffic in Arms Regulations (ITAR) restrict the export of military-related and dual-use items, including to China. Items subject to the EAR or that appear on the U.S. Munitions List under ITAR likely require a license for export to China and, as of July 2020, to Hong Kong as well.<sup>33</sup>

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<sup>30</sup> Joel Wuthnow and Philip Saudners, "Chinese Military Reforms in the Age of Xi Jinping: Drivers, Challenges, and Implications," National Defense University, Institute for National Strategic Studies, Center for the Study of Chinese Military Affairs, March 2017, p. 36, available at <https://ndupress.ndu.edu/Portals/68/Documents/stratperspective/china/ChinaPerspectives-10.pdf>.

<sup>31</sup> Joel Wuthnow and Philip Saudners, "Chinese Military Reforms in the Age of Xi Jinping: Drivers, Challenges, and Implications," National Defense University, Institute for National Strategic Studies, Center for the Study of Chinese Military Affairs, March 2017, p. 36, available at <https://ndupress.ndu.edu/Portals/68/Documents/stratperspective/china/ChinaPerspectives-10.pdf>.

<sup>32</sup> Mark Ashby, Caolionn O'Connell, Edward Geist, Jair Aguirre, Christian Curriden, and Jon Fujiwara, "Defense Acquisition in Russia and China," RAND Corporation, 2021, p. vii, available at [https://www.rand.org/pubs/research\\_reports/RRA113-1.html](https://www.rand.org/pubs/research_reports/RRA113-1.html).

<sup>33</sup> "Hong Kong Executive Order: Licensing Policy Change for Hong Kong," U.S. Department of State, Directorate of Defense Trade Controls, July 15, 2020, available at [https://www.pmdotc.state.gov/ddtc\\_public?id=ddtc\\_search&q=Hong%20Kong](https://www.pmdotc.state.gov/ddtc_public?id=ddtc_search&q=Hong%20Kong); "Revision to the Export Administration Regulations: Suspension of License Exceptions for Hong Kong," U.S. Department of Commerce, Bureau of Industry and Security, Federal Register, Vol. 85, No. 148, July 31, 2020, pp. 45998-46000, available at <https://www.govinfo.gov/content/pkg/FR-2020-07-31/pdf/2020-16278.pdf>.

In addition, since 1997, the Commerce Department's Bureau of Industry and Security (BIS) has maintained the Entity List, which identifies entities subject to heightened license requirements for the export of items controlled by the EAR. The Entity List targets companies, organizations, and individuals involved in weapons of mass destruction-related proliferation or that are determined to be acting contrary to the national security or foreign policy interests of the United States.<sup>34</sup> The Chinese Academy of Engineering Physics (CAEP), which is responsible for the research, development, and testing of China's nuclear weapons, was among the first entities added to this list.<sup>35</sup> Today, dozens of Chinese SOEs, research institutions, universities, and companies appear on the Entity List for supporting the PLA and its modernization.<sup>36</sup>

In 2007, BIS amended the EAR to require licenses for exports of certain dual-use items to China, if the items were intended for military end use, which BIS defined as the "incorporation into . . . or for the use, development, or production of military items" described on the U.S. Munitions List, the Wassenaar Arrangement's Munitions List, or certain military-related items subject to the

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<sup>34</sup> "Authorization To Impose License Requirements for Exports or Reexports to Entities Acting Contrary to the National Security or Foreign Policy Interests of the United States," U.S. Department of Commerce, Bureau of Industry and Security, Federal Register, Vol. 73, No. 163, August 21, 2008, p. 49311, available at <https://www.govinfo.gov/content/pkg/FR-2008-08-21/pdf/E8-19102.pdf>.

<sup>35</sup> "Revisions to the Export Administration Regulations: Additions to the Entity List," U.S. Department of Commerce, Bureau of Export Administration, Federal Register, Vol. 62, No. 125, June 30, 1997, p. 35334, available at <https://www.govinfo.gov/content/pkg/FR-1997-06-30/pdf/97-17146.pdf>; "Missions and Goals," China Academy of Engineering Physics World Wide Web site, available at <https://www.caep.ac.cn/yq/smymb/index.shtml> (in Chinese); "Historical Footprint," China Academy of Engineering Physics World Wide Web site, available at <https://www.caep.ac.cn/yq/lszj/index.shtml> (in Chinese).

<sup>36</sup> "Addition of Certain Entities to the Entity List, Revision of Entries on the Entity List, and Removal of Entities From the Entity List," U.S. Department of Commerce, Bureau of Industry and Security, Federal Register, Vol. 84, No. 157, August 14, 2019, p. 40237, available at <https://www.govinfo.gov/content/pkg/FR-2019-08-14/pdf/2019-17409.pdf>; "Addition of Entities to the Entity List, Revision of Certain Entries on the Entity List," U.S. Department of Commerce, Bureau of Industry and Security, Federal Register, Vol. 85, No. 109, June 5, 2020, pp. 34495-34496, available at <https://www.govinfo.gov/content/pkg/FR-2020-06-05/pdf/2020-10869.pdf>; "Addition of Entities to the Entity List, Revision of Entry on the Entity List, and Removal of Entities From the Entity List," U.S. Department of Commerce, Bureau of Industry and Security, Federal Register, Vol. 85, No. 246, December 22, 2020, pp. 83416-83417, available at <https://www.govinfo.gov/content/pkg/FR-2020-12-22/pdf/2020-28031.pdf>.

EAR. These items would otherwise not require licenses.<sup>37</sup> In April 2020, BIS broadened the definition of military end use to include any activity that "supports or contributes to the operation, installation, maintenance, repair, overhaul, refurbishing, development, or production of military items" described on the U.S. Munitions List or for certain military-related items subject to the EAR.<sup>38</sup> BIS also began restricting the export of certain items to military end users in China, which it had previously restricted for Russia and Venezuela in 2014.<sup>39</sup>

The reform and reorganization of China's defense sector described above has complicated efforts to identify military end users in China. In an effort to help U.S. exporters do so, particularly in the face of increasing trade restrictions on that sector, BIS created the Military End User List (MEU List) in December 2020. This list names entities based in China (and Russia) that BIS considers to be military end users, as described above.<sup>40</sup> Importantly, the MEU List is not exhaustive; entities not listed may still be subject to military end use and military end user restrictions.<sup>41</sup> Seventy-

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<sup>37</sup> "Revisions and Clarification of Export and Reexport Controls for the People's Republic of China (PRC); New Authorization Validated End-User; Revision of Import Certificate and PRC End-User Statement Requirements," U.S. Department of Commerce, Bureau of Industry and Security, Federal Register, Vol. 72, No. 117, June 19, 2007, pp. 33646-33647, available at <https://www.govinfo.gov/content/pkg/FR-2007-06-19/pdf/E7-11588.pdf>.

<sup>38</sup> "Frequently Asked Questions: Expansion of Export, Reexport, and Transfer (in-Country) Controls for Military End Use or Military End Users in the People's Republic of China, Russia, or Venezuela," U.S. Department of Commerce, Bureau of Industry and Security, January 19, 2021, available at <https://www.bis.doc.gov/index.php/documents/pdfs/2566-2020-meu-faq/file>; "Expansion of Export, Reexport, and Transfer (in-Country) Controls for Military End Use or Military End Users in the People's Republic of China, Russia, or Venezuela," U.S. Department of Commerce, Bureau of Industry and Security, Federal Register, Vol. 85, No. 82, April 28, 2020, pp. 23459, 23464, available at <https://www.govinfo.gov/content/pkg/FR-2020-04-28/pdf/2020-07241.pdf>.

<sup>39</sup> "Frequently Asked Questions: Expansion of Export, Reexport, and Transfer (in-Country) Controls for Military End Use or Military End Users in the People's Republic of China, Russia, or Venezuela," U.S. Department of Commerce, Bureau of Industry and Security, January 19, 2021, available at <https://www.bis.doc.gov/index.php/documents/pdfs/2566-2020-meu-faq/file>; "Expansion of Export, Reexport, and Transfer (in-Country) Controls for Military End Use or Military End Users in the People's Republic of China, Russia, or Venezuela," U.S. Department of Commerce, Bureau of Industry and Security, Federal Register, Vol. 85, No. 82, April 28, 2020, pp. 23459-23460, 23464, available at <https://www.govinfo.gov/content/pkg/FR-2020-04-28/pdf/2020-07241.pdf>.

<sup>40</sup> BIS may also add entities in Burma and Venezuela to the MEU List but, as of September 2021, it has not.

<sup>41</sup> "Addition of 'Military End User' (MEU) List to the Export Administration Regulations and Addition of Entities to the MEU List," U.S. Department of Commerce, Bureau of Industry and Security, Federal Register, Vol. 86, No. 10, March 10, 2021, pp. 28459-28460, 28460, available at <https://www.govinfo.gov/content/pkg/FR-2021-03-10/pdf/2021-03-10.pdf>.  
(footnote continued)

one of the 115 entities currently on the MEU List are based in China.<sup>42</sup> These entities are predominantly focused in China's aerospace and aviation sectors and include subsidiaries of large SOEs.<sup>43</sup>

### *Restrictions on Investment by U.S. Persons*

In late 2020, the United States created new restrictions on U.S. investment in entities tied to China's defense industry in order to limit the ways U.S. capital finances the growth of these entities. On November 12, 2020, President Trump issued Executive Order 13959, which prohibited U.S. persons from engaging in transactions in publicly traded securities of entities determined by the Defense Department to be "Communist Chinese military companies" operating in the United States under Section 1237 of the U.S. National Defense Authorization Act (NDAA) for Fiscal Year 1999.<sup>44</sup> The Defense Department had released an initial list of Chinese companies that were determined to meet the criteria established in Section 1237 on June 12, 2020 and added additional companies on August 28 and December 3, 2020, and January 14, 2021.<sup>45</sup>

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Register, Vol. 85, No. 247, December 23, 2020, p. 83793, available at <https://www.govinfo.gov/content/pkg/FR-2020-12-23/pdf/2020-28052.pdf>.

<sup>42</sup> "Supplement No. 7 to Part 744 – 'Military End-User' (MEU) List," U.S. Department of Commerce, Bureau of Industry and Security, July 12, 2021, available at <https://www.bis.doc.gov/index.php/documents/regulations-docs/2714-supplement-no-7-to-part-744-military-end-user-meu-list/file>.

<sup>43</sup> "Commerce Department Will Publish the First Military End User List Naming More Than 100 Chinese and Russian Companies," Press Release, U.S. Department of Commerce, December 21, 2020, available at <https://2017-2021.commerce.gov/news/press-releases/2020/12/commerce-department-will-publish-first-military-end-user-list-naming.html>.

<sup>44</sup> "Executive Order 13959 of November 12, 2020 - Addressing the Threat From Securities Investments That Finance Communist Chinese Military Companies," the White House, Federal Register, Vol. 85, No. 222, November 17, 2020, pp. 73185-73189, available at <https://www.govinfo.gov/content/pkg/FR-2020-11-17/pdf/2020-25459.pdf>.

<sup>45</sup> "DOD Releases List of Additional Companies, in Accordance with Section 1237 of FY99 NDAA," Press Release, U.S. Department of Defense, August 28, 2020, available at <https://www.defense.gov/Newsroom/Releases/Release/Article/2328894/dod-releases-list-of-additional-companies-in-accordance-with-section-1237-of-fy/>; "DOD Releases List of Additional Companies, In Accordance With Section 1237 of FY99 NDAA," Press Release, U.S. Department of Defense, December 3, 2020, available at <https://www.defense.gov/Newsroom/Releases/Release/Article/2434513/dod-releases-list-of->  
(footnote continued)

An entity qualifies as a "Communist Chinese military company" under Section 1237 if it operates in the United States and is:

- Owned or controlled by, or affiliated with, the PLA, which includes the land, naval, and air military services, the police, and China's intelligence services, or a Chinese government ministry; *or*
- Owned or controlled by an entity affiliated with the defense industrial base of China; *and*
- Engaged in providing commercial services, manufacturing, producing, or exporting.<sup>46</sup>

On June 3, 2021, the Biden Administration reissued these investment restrictions through Executive Order 14032, which amended Executive Order 13959 and expanded the listing criteria to include Chinese entities operating in the surveillance technology sector.<sup>47</sup> To implement this order, the Treasury Department created the Non-SDN Chinese Military-Industrial Complex Companies List (NS-CMIC List). Restrictions on these entities entered into force on August 2, 2021. U.S. persons are prohibited from engaging in transactions in publicly traded securities of any company that appears on the NS-CMIC List, following a one-year wind-down period.<sup>48</sup>

An entity qualifies for inclusion on the NS-CMIC List if it:

- Operates or has operated in the defense and related materiel sector or the surveillance technology sector in China; *or*

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[additional-companies-in-accordance-with-section-1237-of-fy/](#); "DOD Releases List of Additional Companies, In Accordance with Section 1237 of FY99 NDAA," Press Release, U.S. Department of Defense, January 14, 2021, available at

<https://www.defense.gov/Newsroom/Releases/Release/Article/2472464/dod-releases-list-of-additional-companies-in-accordance-with-section-1237-of-fy/>.

<sup>46</sup> 50 U.S.C. Section 1701, available at <https://www.govinfo.gov/content/pkg/USCODE-2011-title50/html/USCODE-2011-title50-chap35-sec1701.htm>.

<sup>47</sup> "Executive Order 14032 of June 3, 2021 - Addressing the Threat From Securities Investments That Finance Certain Companies of the People's Republic of China," the White House, Federal Register, Vol. 86, No. 107, June 7, 2021, pp. 30145-30149, available at <https://www.govinfo.gov/content/pkg/FR-2021-06-07/pdf/2021-12019.pdf>.

<sup>48</sup> Transactions made solely to divest such securities are permitted until June 3, 2022. See: "Frequently Asked Questions: Chinese Military Company Sanctions," U.S. Department of the Treasury, Office of Foreign Assets Control, available at <https://home.treasury.gov/policy-issues/financial-sanctions/faqs/topic/5671>.

- Owns or controls, or is owned or controlled by, directly or indirectly, a person who operates in the sectors mentioned above.<sup>49</sup>

Separately, the NDAA for Fiscal Year 2021 established an additional tool for identifying Chinese military companies operating in the United States. Section 1260H requires the Defense Department to publish a list of "Chinese military companies" operating in the United States. In June 2021, the Defense Department published a list of companies identified under Section 1260H<sup>50</sup> and vacated the Section 1237 list.<sup>51</sup> Unlike the NS-CMIC List, there are no restrictions on entities identified under Section 1260H.<sup>52</sup>

An entity qualifies as a "Chinese military company" under Section 1260H if it operates in the United States and is:

- Directly or indirectly owned, controlled, or beneficially owned by the PLA or any other organization subordinate to China's Central Military Commission; *or*
- Engaged, officially or unofficially, as an agent of the PLA or any other organization subordinate to China's Central Military Commission; *or*
- Identified as a Military-Civil Fusion contributor; *and*
- Engaged in providing commercial services, manufacturing, producing, or exporting.<sup>53</sup>

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<sup>49</sup> "Executive Order 14032 of June 3, 2021 - Addressing the Threat From Securities Investments That Finance Certain Companies of the People's Republic of China," the White House, Federal Register, Vol. 86, No. 107, June 7, 2021, pp. 30145-30149, available at <https://www.govinfo.gov/content/pkg/FR-2021-06-07/pdf/2021-12019.pdf>.

<sup>50</sup> "DOD Releases List of Chinese Military Companies in Accordance With Section 1260H of the National Defense Authorization Act for Fiscal Year 2021," Press Release, U.S. Department of Defense, June 3, 2021, available at <https://www.defense.gov/Newsroom/Releases/Release/Article/2645126/dod-releases-list-of-chinese-military-companies-in-accordance-with-section-1260/>.

<sup>51</sup> "Notice of the Removal of the Designation as Communist Chinese Military Companies Under the Strom Thurmond NDAA for FY99," U.S. Department of Defense, Office of the Under Secretary of Defense (Acquisition and Sustainment), Federal Register, Vol. 86, No. 121, June 28, 2021, p. 33994, available at <https://www.govinfo.gov/content/pkg/FR-2021-06-28/pdf/2021-13755.pdf>.

<sup>52</sup> "William M. Thornberry National Defense Authorization Act for Fiscal Year 2021," H.R. 6395, U.S. Congress, pp. 578-579, available at <https://www.govinfo.gov/content/pkg/BILLS-116hr6395enr/pdf/BILLS-116hr6395enr.pdf>.

<sup>53</sup> "William M. Thornberry National Defense Authorization Act for Fiscal Year 2021," H.R. 6395, U.S. Congress, pp. 578-579, available at <https://www.govinfo.gov/content/pkg/BILLS-116hr6395enr/pdf/BILLS-116hr6395enr.pdf>.

Section 1260H of the 2021 NDAA defines Military-Civil Fusion (MCF) contributors as:

- Entities receiving assistance from the Chinese government through science and technology efforts initiated under the Chinese military industrial planning apparatus;
- Entities affiliated with MIIT, including through research partnerships and projects;
- Entities receiving assistance, operational direction, or policy guidance from SASTIND;
- Entities or subsidiaries defined as "defense enterprises" by China's State Council;
- Entities residing in or affiliated with an MCF enterprise zone or receiving assistance from the Chinese government through such an enterprise zone;
- Entities awarded military production licenses; *or*
- Entities that advertise on national, provincial, and non-governmental military equipment procurement platforms in China.<sup>54</sup>

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<sup>54</sup> "William M. Thornberry National Defense Authorization Act for Fiscal Year 2021," H.R. 6395, U.S. Congress, pp. 578-579, available at <https://www.govinfo.gov/content/pkg/BILLS-116hr6395enr/pdf/BILLS-116hr6395enr.pdf>.

## Appendix: Chinese Military Companies Identified by the United States

The following table provides information on Chinese military companies operating in the United States that have been identified on the Section 1260H or NS-CMIC lists, as well as the Section 1237 list, which was vacated following the publication of the other lists. The table notes when an entity is also included on the MEU List but does not list all Chinese entities that appear on that list because it is not China-specific. The MEU List also includes military end users in Russia and the authority to designate such end users in Burma and Venezuela.

The information in this table is based on open sources, including company websites, annual financial reports, state-owned media articles, and government documents. Of the 86 companies identified:

- 20 appear on the Section 1237, Section 1260H, and NS-CMIC lists
- 5 only appear on the Section 1237 and NS-CMIC lists
- 19 only appear on the Section 1260H and NS-CMIC lists
- 19 only appear on the Section 1237 list
- 8 only appear on the Section 1260H list
- 15 only appear on the Section NS-CMIC list



Name	Description	List(s)
<p><b>Advanced Micro-Fabrication Equipment Inc. (AMEC)</b></p> <p>中微半导体设备(上海)股份有限公司</p>	<ul style="list-style-type: none"> <li>• A micro-fabrication equipment company established in 2004</li> <li>• Produces plasma etching and related equipment for semiconductor fabrication</li> <li>• Shareholders include state-owned investment funds</li> <li>• Participates in national science and technology research projects</li> <li>• Equity Ticker: 688012 SS</li> </ul>	<p>Section 1237</p>
<p><b>Aero Engine Corporation of China (AECC)</b></p> <p>中国航空发动机集团有限公司</p>	<ul style="list-style-type: none"> <li>• SOE established in 2016 through a merger of AVIC subsidiaries</li> <li>• Develops and produces aircraft engines, gas turbines, aircraft power units, and helicopter drive systems for military and civilian uses</li> <li>• Shareholders include AVIC and COMAC</li> <li>• Subsidiaries appear on the MEU List</li> <li>• Equity Ticker: 1546063D CN</li> </ul>	<p>Section 1237</p> <p>NS-CMIC</p>
<p><b>Aerospace CH UAV Co., Ltd.</b></p> <p>航天彩虹无人机股份有限公司</p>	<ul style="list-style-type: none"> <li>• CASC subordinate established in 2001</li> <li>• Manufactures military and civilian UAVs, capacitor films, solar cell backing films, lithium-ion battery films, and optical films</li> <li>• Formerly known as Zhejiang Nanyang Technology Company Limited</li> <li>• Equity Ticker: 002389 CN</li> <li>• ISIN: CNE100000N20</li> </ul>	<p>Section 1260H</p> <p>NS-CMIC</p>

Name	Description	List(s)
<p style="text-align: center;"><b>Aerospace Communications Holdings Group Company Limited (Aerocom)</b></p> <p style="text-align: center;">航天通信控股集团股份有限公司</p>	<ul style="list-style-type: none"> <li>● Acquired by CASIC in 2000</li> <li>● Researches, develops, and manufactures military and civilian communication technology products, including tactical integrated command and communication systems, radio-frequency chips (including for 5G systems), and network systems for provincial and municipal governments</li> <li>● Equity Ticker: 600677 CN</li> <li>● ISIN: CNE000000BS6</li> </ul>	NS-CMIC
<p style="text-align: center;"><b>Aerosun Corporation</b></p> <p style="text-align: center;">航天晨光股份有限公司</p>	<ul style="list-style-type: none"> <li>● CASIC subordinate established in 1999 from the assets of the Jinlin Machinery Manufacturing Bureau</li> <li>● Manufactures equipment and components for the aviation, chemical, energy, nuclear, and public security sectors; products include special purpose vehicles for military and civilian uses</li> <li>● Equity Ticker: 600501 CN</li> <li>● ISIN: CNE000001857</li> </ul>	Section 1260H NS-CMIC
<p style="text-align: center;"><b>Anhui Greatwall Military Industry Company Limited</b></p> <p style="text-align: center;">安徽长城军工股份有限公司</p>	<ul style="list-style-type: none"> <li>● A military equipment manufacturer established in 2000</li> <li>● Manufactures mortar shells, shoulder-launched rockets, bullets, and fuses for explosives; also manufactures vehicle and railway parts</li> <li>● Majority shareholder is state-owned Anhui Military Industry Group Holding Co., Ltd.</li> <li>● Equity Ticker: 601606 CN</li> <li>● ISIN: CNE1000036L1</li> </ul>	NS-CMIC

Name	Description	List(s)
<p style="text-align: center;"><b>Aviation Industry Corporation of China, Ltd. (AVIC)</b></p> <p>中国航空工业集团有限公司</p>	<ul style="list-style-type: none"> <li>● SOE established in 2008 through the merger of China Aviation Industry Corporation I (AVIC I) and China Aviation Industry Corporation II (AVIC II)</li> <li>● China's leading military aviation company; products include missiles, UAVs, bombers, fighter jets, helicopters, and civil aircraft</li> <li>● Subsidiaries appear on the Entity List and MEU List</li> <li>● Equity Ticker: CAICPZ CN</li> <li>● ISIN: CND10001WSL0; CND10002HNP1; CND10002DPC3</li> </ul>	<p style="text-align: center;">Section 1237</p> <p style="text-align: center;">Section 1260H</p> <p style="text-align: center;">NS-CMIC</p>
<p style="text-align: center;"><b>AVIC Aviation High-Technology Company Limited</b></p> <p>中航航空高科技股份有限公司</p>	<ul style="list-style-type: none"> <li>● Originally established in 1956 as the Nantong Machine Tool Plant and later re-organized as an AVIC subordinate</li> <li>● Researches, develops, and produces aviation-related composite and new materials and intelligent equipment, including computer numerically-controlled (CNC) machine tools and aviation manufacturing equipment</li> <li>● Formerly known as Tontec Technology Investment Group Company</li> <li>● Equity Ticker: 600862 CN</li> <li>● ISIN: CNE000000GZ0</li> </ul>	<p style="text-align: center;">Section 1260H</p> <p style="text-align: center;">NS-CMIC</p>

Name	Description	List(s)
<p><b>AVIC Heavy Machinery Company Limited</b></p> <p>中航重机股份有限公司</p>	<ul style="list-style-type: none"> <li>● AVIC subordinate established in 1996</li> <li>● Products include forgings, castings, and hydraulic systems for use in missile engines, aircraft, and other military and civilian applications</li> <li>● Formerly known as Guizhou Liyuan Hydraulic Components Co., Ltd.</li> <li>● Equity Ticker: 600765 CN</li> <li>● ISIN: CNE000000N22</li> </ul>	<p>Section 1260H</p> <p>NS-CMIC</p>
<p><b>AVIC Jonhon Optronic Technology Co., Ltd.</b></p> <p>中航光电科技股份有限公司</p>	<ul style="list-style-type: none"> <li>● AVIC subordinate established in 1970</li> <li>● Researches and develops optical and electronic components for the aviation, aerospace, defense, energy, shipbuilding, and manufacturing sectors</li> <li>● Equity Ticker: 002179 CN</li> <li>● ISIN: CND10003VVT5; CNE1000007T5</li> </ul>	<p>Section 1260H</p> <p>NS-CMIC</p>
<p><b>AVIC Shenyang Aircraft Company Limited</b></p> <p>中航沈飞股份有限公司</p>	<ul style="list-style-type: none"> <li>● AVIC subordinate established in 1951</li> <li>● A leading manufacturer of military and civil aircraft, including fighter jets and related components</li> <li>● Supplies COMAC</li> <li>● Appears on the MEU List</li> <li>● Formerly known as Dongan Heibao Co., Ltd.</li> <li>● Equity Ticker: 600760 CN</li> <li>● ISIN: CNE000000MH6</li> </ul>	<p>Section 1260H</p> <p>NS-CMIC</p>

Name	Description	List(s)
<p><b>AVIC Xi'an Aircraft Industry Group Company Ltd.</b></p> <p>中航西安飞机工业集团股份有限公司</p>	<ul style="list-style-type: none"> <li>● AVIC subordinate</li> <li>● Develops and manufactures military and civil aircraft, including the H-6 bomber and Y-20 transport aircraft</li> <li>● Supplies COMAC</li> <li>● Appears on the MEU List</li> <li>● Equity Ticker: 000768 CN</li> <li>● ISIN: CNE000000RF9</li> </ul>	<p>Section 1260H</p> <p>NS-CMIC</p>
<p><b>Beijing Zhongguancun Development Investment Center</b></p> <p>中关村发展集团股份有限公司</p>	<ul style="list-style-type: none"> <li>● Partially state-owned venture capital fund established in 2010</li> <li>● Invests in the electronics, information technology, and intelligent manufacturing sectors</li> <li>● Developed and manages Zhongguancun National Defense Science and Technology Park and other industrial parks focused on dual-use technology</li> <li>● Involved in the MCF program</li> <li>● Investment partners include CASIC</li> </ul>	<p>Section 1237</p>
<p><b>Changsha Jingjia Microelectronics Company Limited</b></p> <p>长沙景嘉微电子股份有限公司</p>	<ul style="list-style-type: none"> <li>● A microelectronics manufacturer established in 2006</li> <li>● Military-related products include UAV image transmission systems, anti-UAV defense systems, missile data transmission links, communication jammers, armored vehicle active protection systems, and small radar systems; products also include graphics processing units and consumer-grade chips for the aviation, aerospace, and automotive sectors</li> <li>● Has hosted visits from provincial MCF coordination officials and CASC representatives</li> <li>● Equity Ticker: 300474 CN</li> <li>● ISIN: CNE100002664</li> </ul>	<p>NS-CMIC</p>

Name	Description	List(s)
<p><b>China Academy of Launch Vehicle Technology (CALT)</b></p> <p>中国运载火箭技术研究院</p>	<ul style="list-style-type: none"> <li>● CASC subordinate established in 1957</li> <li>● China's largest and oldest organization for space launch vehicle and missile research, development, testing, and production</li> <li>● Researches, develops, and produces ICBMs, space launch vehicles, and hypersonic missile technology, including the DF-series ballistic missiles and the Long March family of launch vehicles</li> <li>● Subsidiaries appear on the Entity List</li> <li>● Equity Ticker: 1268213D CN</li> </ul>	<p>Section 1237</p> <p>NS-CMIC</p>
<p><b>China Aerospace Science and Industry Corporation Limited (CASIC)</b></p> <p>中国航天科工集团有限公司</p>	<ul style="list-style-type: none"> <li>● SOE established in 1999 from the division of China Aerospace Corporation into CASIC and CASC</li> <li>● China's largest missile producer; products include air-defense, cruise, and ballistic missiles as well as space launch vehicles, anti-satellite interceptors, and micro-satellites</li> <li>● Subsidiaries appear on the Entity List</li> <li>● Equity Ticker: CASZ CN</li> <li>● ISIN: CND1000142N4</li> </ul>	<p>Section 1237</p> <p>Section 1260H</p> <p>NS-CMIC</p>
<p><b>China Aerospace Science and Technology Corporation (CASC)</b></p> <p>中国航天科技集团有限公司</p>	<ul style="list-style-type: none"> <li>● SOE established in 1999 from the division of China Aerospace Corporation into CASIC and CASC</li> <li>● Products include ballistic missiles, space launch vehicles, solid rocket motors, liquid-fueled engines, satellites, spaceflight vehicles, and related sub-components</li> <li>● Subsidiaries appear on the Entity List and MEU List</li> <li>● Equity Ticker: CASTCZ CN</li> <li>● ISIN: CND1000090Q8; CND100006HP7</li> </ul>	<p>Section 1237</p> <p>NS-CMIC</p>

Name	Description	List(s)
<p><b>China Aerospace Times Electronics Co., Ltd. (CATEC)</b> 航天时代电子技术股份有限公司</p>	<ul style="list-style-type: none"> <li>● CASC subordinate established in 1990</li> <li>● Researches, develops, and manufactures aerospace electronics for military and civilian uses</li> <li>● Formerly known as Long March Launch Vehicle Technology Company Limited</li> <li>● Equity Ticker: 600879 CN</li> <li>● ISIN: CNE000000J93; CND10003B821; CND100034J27; CND100037514; CND100032457; CND10002R795; CND10003D843; CND100035G37; CND100037S23; CND10002B3Q3; CND10002T6Q6; CND100044B23</li> </ul>	NS-CMIC
<p><b>China Avionics Systems Company Limited</b> 中航航空电子系统股份有限公司</p>	<ul style="list-style-type: none"> <li>● AVIC subordinate established in 1999</li> <li>● China's largest supplier of avionics systems for PLA aircraft</li> <li>● Products include flight control systems, inertial navigation systems, flight instruments, aircraft radar systems, and related components</li> <li>● Also known as AVIC Avionics; formerly known as China AVIC Electronics Company Limited</li> <li>● Equity Ticker: 600372 CN</li> <li>● ISIN: CNE0000018C0; CND100018CL2</li> </ul>	NS-CMIC
<p><b>China Communications Construction Company Limited (CCCC)</b> 中国交通建设股份有限公司</p>	<ul style="list-style-type: none"> <li>● China Communications Construction Group (Limited) subordinate established in 2006</li> <li>● Builds ports, roads, railways, tunnels, and bridges; also involved in container crane and heavy marine machinery manufacturing</li> <li>● Involved in reclaiming and militarizing islands in the South China Sea</li> <li>● Appears on Entity List along with a number of subsidiaries</li> <li>● Equity Ticker: 601800 CN; 01800 HK; CYY DE</li> </ul>	<p>Section 1237 Section 1260H NS-CMIC</p>

Name	Description	List(s)
	<ul style="list-style-type: none"> <li>ISIN: CND10000GBD8; CND10001TD67; CND10002GB63; CND10001TD75; US1689261030; CND10002G6P3; CND10003TZ93; CND100017CS9; CND10001TD59; CND10002K094; CND10002H1Z2; CND10003R421; CND10002KKV9; CND10002DZZ3; CND10003KT58; CND100043Z00; CNE1000002F5; CND10002G601; CND10002GB71; CNE100001FN5</li> </ul>	
<p><b>China Communications Construction Group (Limited)</b> 中国交通建设集团有限公司</p>	<ul style="list-style-type: none"> <li>SOE established in 2005</li> <li>Parent company of CCCC</li> <li>ISIN: CND100041XX5; CND1000455C3; CND100041XW7; CND1000455B5; CND10003RDS3</li> </ul>	<p>Section 1260H NS-CMIC</p>
<p><b>China Construction Technology Co. Ltd. (CCTC)</b> 中国建设科技有限公司</p>	<ul style="list-style-type: none"> <li>SOE established in 2000</li> <li>Provides planning and engineering services; undertakes projects for the Chinese government, including the construction of PLA hospitals</li> <li>Equity Ticker: AABZDZ CN</li> </ul>	<p>Section 1237</p>



Name	Description	List(s)
<p><b>China Electronics Corporation (CEC)</b> 中国电子信息产业集团有限公司</p>	<ul style="list-style-type: none"> <li>● SOE established in 1989</li> <li>● Manufactures military electronics, including tracking stations and radar technology</li> <li>● Products also include network security and information technology hardware and software, and integrated circuits</li> <li>● Subsidiaries and affiliates appear on the Specially Designated Nationals (SDN) List and Entity List</li> <li>● Equity Ticker: CHELEZ CN</li> <li>● ISIN: CND10002F8S4; CND10000KG49</li> </ul>	<p>Section 1237 Section 1260H NS-CMIC</p>
<p><b>China Electronics Technology Group Corporation (CETC)</b> 中国电子科技集团有限公司</p>	<ul style="list-style-type: none"> <li>● SOE established in 2002</li> <li>● Develops and manufactures military electronics; products include early warning systems, radars, communication and navigation systems, electronic warfare devices, UAV electronics, and integrated identification systems</li> <li>● Subsidiaries appear on the Entity List</li> <li>● Equity Ticker: CETCGZ CN</li> </ul>	<p>Section 1237 Section 1260H NS-CMIC</p>
<p><b>China General Nuclear Power Corporation (CGN)</b> 中国广核集团有限公司</p>	<ul style="list-style-type: none"> <li>● SOE established in 1994</li> <li>● China's largest nuclear power company; products and services include nuclear power plant operation and construction, electricity transmission, nuclear fuel production, and uranium mining</li> <li>● In 2017, an employee pleaded guilty to illegally procuring technical assistance from U.S.-based experts to develop CGN's Small Modular Reactor Program, Advanced Fuel Assembly Program, Fixed In-Core Detector System, and nuclear reactor-related computer codes</li> </ul>	<p>Section 1237 Section 1260H NS-CMIC</p>

Name	Description	List(s)
	<ul style="list-style-type: none"> <li>● Appears on the Entity List</li> <li>● Equity Ticker: CGNPCZ CN</li> <li>● ISIN: CND10003XXN0; CND1000248C2; CND10003GZY7; CND1000363K2</li> </ul>	
<p style="text-align: center;"><b>China International Engineering Consulting Corp. (CIECC)</b></p> <p>中国国际工程咨询有限公司</p>	<ul style="list-style-type: none"> <li>● SOE established in 1982</li> <li>● Provides engineering consulting services for government and commercial construction projects</li> <li>● Through subsidiaries, government customers have included PLA hospitals, Ministry of Public Security, Ministry of Commerce, National People's Congress, State Council's Affairs Management Bureau, Ministry of Industry and Information Technology, AVIC, CASIC, and the National Defense University</li> <li>● Equity Ticker: ENGINZ CN</li> </ul>	Section 1237

Name	Description	List(s)
<p><b>China Marine Information Electronics Company Limited</b></p> <p>中国船舶重工集团海洋防务与信息对抗股份有限公司</p>	<ul style="list-style-type: none"> <li>● CSIC subordinate established in 1993</li> <li>● Products include underwater communication and transmission equipment and special equipment for underwater weapon systems</li> <li>● Conducts marine engineering research as part of China's 863 Program</li> <li>● Formerly known as China Shipbuilding Industry Group Marine Defense and Information Confrontation Co., Ltd. and CEC Corecast Corporation Limited</li> <li>● Equity Ticker: 600764 CN</li> <li>● ISIN: CNE000000N30</li> </ul>	<p>Section 1260H</p> <p>NS-CMIC</p>
<p><b>China Mobile Communications Group Co., Ltd.</b></p> <p>中国移动通信集团有限公司</p>	<ul style="list-style-type: none"> <li>● SOE established in 2000</li> <li>● Parent company of China Mobile Limited</li> <li>● Equity Ticker: CHMOBZ CH</li> </ul>	<p>Section 1237</p> <p>Section 1260H</p> <p>NS-CMIC</p>
<p><b>China Mobile Limited</b></p> <p>中国移动有限公司</p>	<ul style="list-style-type: none"> <li>● China Mobile Communications Group Co., Ltd. subordinate established in 1997</li> <li>● China's largest telecommunications provider</li> <li>● Incorporated in Hong Kong</li> <li>● Equity Ticker: CHL US; 941 HK; CHL RU; CTMA DE; K3PD SG; CTM DE; CHL AR; C1HL34 BR</li> <li>● ISIN: ARDEUT111812; US16941M1099: HK0941009539; BRC1HLBDR003</li> </ul>	<p>Section 1260H</p> <p>NS-CMIC</p>
<p><b>China National Aviation Holding Co. Ltd. (CNAH)</b></p> <p>中国航空集团有限公司</p>	<ul style="list-style-type: none"> <li>● State-owned holding company established in 2002 that oversees Air China</li> <li>● Equity Ticker: CNAVHZ CH</li> </ul>	<p>Section 1237</p>

Name	Description	List(s)
<p><b>China National Chemical Corporation (ChemChina)</b></p> <p>中国化工集团有限公司</p>	<ul style="list-style-type: none"> <li>● SOE established in 2004 from companies affiliated with the former Ministry of Chemical Industry</li> <li>● Researches, develops, and manufactures chemical materials, agrochemicals, petroleum products, rubber products, and related chemical equipment</li> <li>● Equity Ticker: CHNCCZ CN</li> </ul>	Section 1237
<p><b>China National Chemical Engineering Group Co., Ltd. (CNCEC)</b></p> <p>中国化学工程集团有限公司</p>	<ul style="list-style-type: none"> <li>● SOE established in 1984</li> <li>● Involved in construction for the chemical, petrochemical, pharmaceutical, power, and coal sectors</li> <li>● Established subsidiary China National Chemical Engineering Co., Ltd. with state-owned Sinochem Group Co. Ltd. and Shen Hua Group Corporation Limited</li> <li>● Equity Ticker: ZHJTTZ CN</li> </ul>	Section 1237
<p><b>China National Nuclear Corporation (CNNC)</b></p> <p>中国核工业集团有限公司</p>	<ul style="list-style-type: none"> <li>● SOE established in 1999</li> <li>● Involved in nuclear power generation, nuclear fuel production, uranium mining, applied nuclear technology, nuclear engineering projects, and nuclear-related environmental protection projects</li> <li>● Has been involved in China's nuclear weapon program</li> <li>● Has signed strategic cooperation agreements with the PLA Navy and the PLA Rocket Force Engineering University</li> <li>● Involved in the MCF program</li> <li>● Subsidiary appears on the Entity List</li> <li>● Equity Ticker: CNNZ CN</li> <li>● ISIN: CND10000KRQ8; CND100005B38; CND10002J9T6; CND100027TJ1; CND10002DLF5; CND10003RXC5; CND10002J9V2; CND100005B20;</li> </ul>	<p>Section 1237</p> <p>Section 1260H</p> <p>NS-CMIC</p>

Name	Description	List(s)
	CND100025BB0; CND10003VCD9; CND10003RXB7; CND10001ZPR6	
<p><b>China National Offshore Oil Corporation (CNOOC)</b> 中国海洋石油集团有限公司</p>	<ul style="list-style-type: none"> <li>● SOE established in 1982</li> <li>● China's largest producer of offshore oil and gas; also engages in offshore wind energy development</li> <li>● Involved in China's maritime claims in the South China Sea and its efforts to control South China Sea offshore resource development</li> <li>● Appears on the Entity List</li> <li>● Equity Ticker: CNOZ CN</li> </ul>	<p>Section 1237 Section 1260H NS-CMIC</p>
<p><b>China North Industries Group Corporation Limited (Norinco Group)</b> 中国兵器工业集团有限公司</p>	<ul style="list-style-type: none"> <li>● SOE established in 1999 through the restructuring of China Ordnance Industry Corporation into Norinco Group and CSGC</li> <li>● One of China's largest defense conglomerates; products include artillery, tear gas, air defense and anti-missile systems, anti-tank missiles, precision-guided munitions, and armored vehicles</li> <li>● Supplies the PLA Army, Navy, Air Force, and Rocket Force</li> <li>● Involved in the MCF program</li> <li>● Equity Ticker: CNIZ CN</li> <li>● ISIN: CND10001PXG4; CND10000KPW0; CND10000KSK9; CND1000133M5</li> </ul>	<p>Section 1237 Section 1260H NS-CMIC</p>

Name	Description	List(s)
<p><b>China Nuclear Engineering Corporation Limited (CNEC)</b> 中国核工业建设股份有限公司</p>	<ul style="list-style-type: none"> <li>● SOE established in 1999</li> <li>● Involved in military engineering projects and the design and construction of nuclear power plants</li> <li>● Merged with CNNC in 2018</li> <li>● Also known as China Nuclear Engineering &amp; Construction Corp. Ltd. and China National Engineering &amp; Construction Corporation Limited (CNECC)</li> <li>● Equity Ticker: 601611 CN</li> <li>● ISIN: CNE100002896; CND10003XJ14</li> </ul>	<p>Section 1237 NS-CMIC</p>
<p><b>China Railway Construction Corporation Limited (CRCC)</b> 中国铁建股份有限公司</p>	<ul style="list-style-type: none"> <li>● Subordinate to state-owned China Railway Construction Group Co. Ltd.; established in 2007</li> <li>● Engages in infrastructure and railway construction projects</li> <li>● Equity Ticker: 601186 CN; 1186 HK</li> <li>● ISIN: CNE1000009T1</li> </ul>	<p>Section 1237 Section 1260H NS-CMIC</p>
<p><b>China Satellite Communications Co., Ltd.</b> 中国卫通集团股份有限公司</p>	<ul style="list-style-type: none"> <li>● CASC subordinate established in 2001</li> <li>● A satellite communication and broadcasting company; services include satellite tracking, telemetry, and control</li> <li>● Has provided communication services for the Chinese military</li> <li>● Also known as China Satcom</li> <li>● Equity Ticker: 601698 CN</li> <li>● ISIN: CNE100003PX9</li> </ul>	<p>NS-CMIC</p>

Name	Description	List(s)
<p><b>China Shipbuilding Industry Company Limited (CSICL)</b></p> <p>中国船舶重工股份有限公司</p>	<ul style="list-style-type: none"> <li>● CSIC subordinate established in 2008</li> <li>● Develops and manufactures aircraft carriers, submarines, combat surface ships, and amphibious assault ships; also manufactures civilian vessels and marine equipment</li> <li>● Equity Ticker: 601989 CN</li> <li>● ISIN: CNE100000J75</li> </ul>	NS-CMIC
<p><b>China Shipbuilding Industry Corporation (CSIC)</b></p> <p>中国船舶重工集团有限公司</p>	<ul style="list-style-type: none"> <li>● Merged with China State Shipbuilding Corporation in 2019 to form China State Shipbuilding Corporation Limited (CSSC)</li> <li>● Originally established in 1999 through the division of the former China State Shipbuilding Corporation into CSIC and the new China State Shipbuilding Corporation</li> <li>● Developed and manufactured conventional and nuclear submarines, warships, torpedoes, and the Liaoning aircraft carrier; also manufactured civilian vessels and marine equipment</li> <li>● Equity Ticker: CSIZ CN</li> </ul>	Section 1237
<p><b>China Shipbuilding Industry Group Power Company Limited (CSICP)</b></p> <p>中国船舶重工集团动力股份有限公司</p>	<ul style="list-style-type: none"> <li>● CSIC subordinate established in 2000</li> <li>● Develops and manufactures marine power equipment, including diesel, gas, and steam engines, batteries, and nuclear power systems for use in naval and civilian vessels and underwater weapons</li> <li>● Involved in the MCF program</li> <li>● Also known as CSIC Power; formerly known as Fengfan Co., Ltd.</li> <li>● Equity Tracker: 600482 CN</li> </ul>	NS-CMIC

Name	Description	List(s)
	<ul style="list-style-type: none"> <li>● ISIN: CNE000001KB1</li> </ul>	
<p><b>China South Industries Group Corporation (CSGC)</b> 中国兵器装备集团有限公司</p>	<ul style="list-style-type: none"> <li>● SOE established in 1999 through the restructuring of China Ordnance Industry Corporation into Norinco Group and CSGC</li> <li>● A major defense conglomerate; products include advanced munitions, mobile assault vehicles, light armaments, information opto-electronics, and civilian vehicles</li> <li>● Equity Ticker: CSIGCZ CN</li> <li>● ISIN: CND10000KTG5; CND10000K5V9; CND10000KTF7; CND10000GGC9; CND10000KOB2; CND10000GGD7; CND10000KTD2; CND10000K5W7; CND10001TRP9; CND10001TRQ7</li> </ul>	<p>Section 1237 Section 1260H NS-CMIC</p>
<p><b>China Spacesat Co., Ltd.</b> 中国东方红卫星股份有限公司</p>	<ul style="list-style-type: none"> <li>● CASC subordinate established in 1997</li> <li>● Specializes in small and micro satellite production; researches and manufactures remote sensing, communication, and navigation satellites, satellite control terminals, and other satellite-related equipment</li> <li>● Equity Ticker: 600118 CN</li> <li>● ISIN: CNE000000SM3</li> </ul>	<p>Section 1237 Section 1260H NS-CMIC</p>



Name	Description	List(s)
<p><b>China State Construction Group Co., Ltd.</b></p> <p>中国建筑集团有限公司</p>	<ul style="list-style-type: none"> <li>● SOE established in 1982</li> <li>● Provides development, construction, and engineering services for infrastructure projects, including satellite launch bases, tunnels, nuclear power plants, skyscrapers, airports, and residential buildings</li> <li>● Equity Ticker: CSECCZ CN</li> </ul>	<p>Section 1237</p>
<p><b>China State Shipbuilding Corporation Limited (CSSC)</b></p> <p>中国船舶工业集团有限公司</p>	<ul style="list-style-type: none"> <li>● SOE established in 2019 through the merger of CSIC and China State Shipbuilding Corporation</li> <li>● Develops and manufactures conventional and nuclear submarines, warships, torpedoes, and aircraft carriers; also manufactures civilian vessels and marine equipment</li> <li>● Subsidiaries appear on the Entity List and MEU List</li> <li>● Equity Ticker: 0763828D CN</li> <li>● ISIN: CND100005C60; CND10000KTB6; CND10000KT93; CND100005MX3; CND100005MX3; CND10000LD58; CND10000LLH8</li> </ul>	<p>Section 1237</p> <p>Section 1260H</p> <p>NS-CMIC</p>
<p><b>China Telecom Corporation Limited</b></p> <p>中国电信股份有限公司</p>	<ul style="list-style-type: none"> <li>● China Telecommunications Corporation subordinate established in 2002</li> <li>● Provides wired and mobile telecommunication services</li> <li>● Equity Ticker: CHA US; CHA RU; ZCHA DE; CHA AR; K3ED SG; 0728 HK; ZCH DE</li> <li>● ISIN: US1694261033; CNE1000002V2; CND100020NC4; CND1000248G3; CND10003ND87</li> </ul>	<p>Section 1260H</p> <p>NS-CMIC</p>

Name	Description	List(s)
<p><b>China Telecommunications Corporation</b></p> <p>中国电信集团有限公司</p>	<ul style="list-style-type: none"> <li>● SOE established in 1995</li> <li>● Provides telecommunication services</li> <li>● Parent company of China Telecom Corporation Limited</li> <li>● Equity Ticker: CNTELZ CN</li> </ul>	<p>Section 1237</p> <p>Section 1260H</p> <p>NS-CMIC</p>
<p><b>China Three Gorges Corporation Limited</b></p> <p>中国长江三峡集团有限公司</p>	<ul style="list-style-type: none"> <li>● SOE established in 1993</li> <li>● Researches, develops, and operates hydropower plants; also involved in research and development of other renewable energy sources, including solar and wind power</li> <li>● Constructed the Three Gorges Dam along China's Yangtze River</li> <li>● Equity Ticker: CJSXGZ CN</li> </ul>	<p>Section 1237</p>
<p><b>China Unicom (Hong Kong) Limited</b></p> <p>中国联合网络通信（香港）股份有限公司</p>	<ul style="list-style-type: none"> <li>● China United Network Communications Group Co., Ltd. subordinate incorporated in Hong Kong in 2000</li> <li>● Provides telecommunication and cloud computing services</li> <li>● Equity Ticker: CHU US; 762 HK; XCIA DE; K3ID SG; XCI DE</li> <li>● ISIN: HK0000049939; US16945R1041</li> </ul>	<p>Section 1260H</p> <p>NS-CMIC</p>
<p><b>China United Network Communications Group Co., Ltd.</b></p> <p>中国联合网络通信集团有限公司</p>	<ul style="list-style-type: none"> <li>● SOE established in 1994</li> <li>● Provides telecommunication services, including for government and military systems</li> <li>● Parent company of China Unicom (Hong Kong) Limited</li> <li>● Also known as China Unicom; formerly known as China United Telecommunications Corporation</li> <li>● Equity Ticker: 600050 CN</li> </ul>	<p>Section 1237</p> <p>Section 1260H</p> <p>NS-CMIC</p>

Name	Description	List(s)
<p><b>CNOOC Limited</b> 中国海洋石油有限公司</p>	<ul style="list-style-type: none"> <li>● CNOOC subordinate incorporated in Hong Kong in 1999</li> <li>● Produces offshore oil and gas</li> <li>● Equity Ticker: 00883 HK; CNU CA; NC2B DE; CEO US</li> <li>● ISIN: BRC1EODR004; HK0883013259; US1261321095; HK2998013240; HK0883013259</li> </ul>	<p>Section 1260H NS-CMIC</p>
<p><b>Commercial Aircraft Corporation of China, Ltd. (COMAC)</b> 中国商用飞机有限责任公司</p>	<ul style="list-style-type: none"> <li>● Partially state-owned enterprise established in 2008</li> <li>● Manufactures civil aircraft</li> <li>● Shareholders include AVIC, CETC, and Sinochem Group Co Ltd</li> <li>● A shareholder of AECC</li> <li>● Equity Ticker: CACOFZ CH</li> </ul>	<p>Section 1237</p>
<p><b>Costar Group Co., Ltd.</b> 中光学集团股份有限公司</p>	<ul style="list-style-type: none"> <li>● Optoelectronics company established in 1995</li> <li>● Products include optoelectronic technology for military and civilian uses, including night vision sights, tank and artillery sights, and reconnaissance equipment; products also include optical lenses and films and photoconductive resistances</li> <li>● Shareholders include CSGC</li> <li>● Formerly known as Lida Optical &amp; Electronic Co., Ltd.</li> <li>● Equity Ticker: 002189 CN</li> <li>● ISIN: CNE100000882</li> </ul>	<p>Section 1260H NS-CMIC</p>

Name	Description	List(s)
<p><b>CRRRC Corp.</b> 中国中车股份有限公司</p>	<ul style="list-style-type: none"> <li>● Subordinate to state-owned CRRRC Group; established in 2015 through the merger of two state-owned railway enterprises</li> <li>● Supplies rail transit equipment</li> <li>● Equity Ticker: 601766 CN; 1766 HK</li> </ul>	Section 1237
<p><b>CSSC Offshore &amp; Marine Engineering (Group) Company Limited (COMEC)</b> 中船海洋与防务装备股份有限公司</p>	<ul style="list-style-type: none"> <li>● CSSC subordinate established in 1993</li> <li>● Products include military ships, oil tankers, container ships, offshore platforms, and marine engineering equipment</li> <li>● Formerly known as Guangzhou Shipyard International Company Limited</li> <li>● Equity Ticker: 00317 HK; 600685 CN</li> <li>● ISIN: CNE100000395</li> </ul>	NS-CMIC
<p><b>Dawning Information Industry Co. (Sugon)</b> 曙光信息产业股份有限公司</p>	<ul style="list-style-type: none"> <li>● Established in 1996 with backing from the Chinese Academy of Sciences (CAS)</li> <li>● Products include supercomputers with military uses, servers, storage devices, and cloud computing services</li> <li>● Appears on the Entity List</li> <li>● Equity Ticker: 603019 CN</li> </ul>	Section 1237

Name	Description	List(s)
<p><b>Fujian Torch Electron Technology Co., Ltd.</b></p> <p>福建火炬电子科技股份有限公司</p>	<ul style="list-style-type: none"> <li>Established in 1989</li> <li>Products include ceramic, tantalum and super capacitors, resistors, and attenuators with applications in the military electronics, aerospace, aviation, communications, and ship sectors</li> <li>Customers include CRRC Corp. and Hikvision</li> <li>Equity Ticker: 603678 CN</li> <li>ISIN: CNE100001TY3</li> </ul>	<p>Section 1260H</p> <p>NS-CMIC</p>
<p><b>Global Tone Communication Technology Co. Ltd. (GTCOM)</b></p> <p>中译语通科技股份有限公司</p>	<ul style="list-style-type: none"> <li>Established in 2013</li> <li>Provides data analysis, language processing, translation, and artificial intelligence services for the government, financial, manufacturing, and technology sectors</li> <li>Clients include the PLA School of Foreign Languages</li> <li>Subsidiaries partner with companies located in MCF industrial parks</li> </ul>	<p>Section 1237</p>
<p><b>GOWIN Semiconductor Corp</b></p> <p>广东高云半导体科技股份有限公司</p>	<ul style="list-style-type: none"> <li>Established in 2014</li> <li>Manufactures field programmable gate arrays (FPGAs)</li> </ul>	<p>Section 1237</p>

Name	Description	List(s)
<p><b>Grand China Air Co. Ltd. (GCAC)</b> 大新华航空有限公司</p>	<ul style="list-style-type: none"> <li>Established in 2007</li> <li>Commercial airline operating domestic and international flights</li> </ul>	Section 1237
<p><b>Guizhou Space Appliance Co., Ltd. (SACO)</b> 贵州航天电器股份有限公司</p>	<ul style="list-style-type: none"> <li>Established in 2001</li> <li>Affiliated with the 10th Research Institute of CASIC</li> <li>Researches and develops electronic components; products include connectors and cables, motors, optoelectronic devices, and relays for the aerospace, aviation, electronics, and communications sectors</li> <li>Equity Ticker: 002025 CN</li> <li>ISIN: CNE000001KGO; CN000A0B7NS3</li> </ul>	NS-CMIC
<p><b>Hangzhou Hikvision Digital Technology Co., Ltd (Hikvision)</b> 杭州海康威视数字技术股份有限公司</p>	<ul style="list-style-type: none"> <li>Surveillance technology company established in 2001</li> <li>Products include cameras and related technology, small UAVs, and counter-UAV systems</li> <li>Largest shareholder is CETC</li> <li>Reportedly involved in human rights violations in Xinjiang Province</li> <li>Appears on the Entity List</li> <li>Equity Ticker: 002415 CN</li> <li>ISIN: CNE100000PM8</li> </ul>	<p>Section 1237</p> <p>Section 1260H</p> <p>NS-CMIC</p>

Name	Description	List(s)
<p><b>Huawei Investment &amp; Holding Co., Ltd.</b></p> <p>华为投资控股有限公司</p>	<ul style="list-style-type: none"> <li>● Holding company of Huawei Technologies Co., Ltd.</li> <li>● ISIN: CND10003D0F9; CND10002J7T0; CND1000336F8; CND1000439R5; CND100035KT2; CND10002K3Y6</li> </ul>	<p>Section 1260H</p> <p>NS-CMIC</p>
<p><b>Huawei Technologies Co., Ltd.</b></p> <p>华为技术有限公司</p>	<ul style="list-style-type: none"> <li>● A telecommunications and information technology company established in 1987</li> <li>● Products include telecommunication network equipment, enterprise IT systems, and consumer electronics</li> <li>● Allegedly violated U.S. sanctions on Iran</li> <li>● Reportedly involved in the construction of North Korea's 3G wireless network</li> <li>● Holding company is Huawei Investment &amp; Holding Co., Ltd.</li> <li>● Appears on the Entity List along with its subsidiaries</li> </ul>	<p>Section 1237</p> <p>Section 1260H</p> <p>NS-CMIC</p>
<p><b>Inner Mongolia First Machinery Group Co., Ltd.</b></p> <p>内蒙古第一机械集团股份有限公司</p>	<ul style="list-style-type: none"> <li>● Norinco Group subordinate established in 2000</li> <li>● Supplies the PLA; products include combat vehicles, artillery, battle tanks, railway vehicles, trucks, and petroleum and construction machinery</li> <li>● Also known as FIRMACO; formerly known as Baotou Beifang Chuangye Company Limited</li> <li>● Equity Ticker: 600967 CN</li> <li>● ISIN: CNE000001HP7</li> </ul>	<p>Section 1260H</p> <p>NS-CMIC</p>

Name	Description	List(s)
<p><b>Inspur Group Co., Ltd.</b> 浪潮集团有限公司</p>	<ul style="list-style-type: none"> <li>● Information technology company established in 1945</li> <li>● Products and services include cloud computing, network servers, artificial intelligence-powered servers, and data storage</li> <li>● Reportedly involved in the development of the Tianhe-2 supercomputer, which is believed to be used in nuclear explosives activities</li> <li>● Reportedly supplies the PLA, China Air-to-Air Missile Research Academy, and the China Academy of Engineering Physics (CAEP)</li> <li>● Largest shareholder is Shandong State-Owned Assets Investment Holdings, Co., Ltd., a government-run investment company</li> <li>● Equity Ticker: LANZ CN</li> </ul>	<p>Section 1237 Section 1260H NS-CMIC</p>
<p><b>Jiangxi Hongdu Aviation Industry Co., Ltd. (HDAA)</b> 江西洪都航空工业股份有限公司</p>	<ul style="list-style-type: none"> <li>● AVIC subordinate established in 1999</li> <li>● Produces trainer aircraft for the Chinese air force and for export</li> <li>● Equity Ticker: 600316 CN</li> <li>● ISIN: CND10001KJ52; CND10001KHB9; CNE0000015N3</li> </ul>	<p>Section 1260H NS-CMIC</p>



Name	Description	List(s)
<p><b>Luokung Technology Corporation (LKCO)</b></p> <p>箩筐技术公司</p>	<ul style="list-style-type: none"> <li>● Software and technology company that has developed mobile enterprise solutions for government and private sector clients</li> <li>● In May 2021, the U.S. District Court for the District of Columbia issued a preliminary injunction, halting the implementation of prohibitions against the company</li> <li>● Has collaborated with China Telecommunications Corporation, China Mobile Communications Group Co., Ltd., and China United Network Communications Group Co., Ltd.</li> <li>● Formerly known as Kingtone Wirelessinfo Solution Holding Ltd.</li> <li>● Equity Ticker: LKCO US</li> </ul>	<p>Section 1237</p>
<p><b>Nanjing Panda Electronics Company Limited</b></p> <p>南京熊猫电子股份有限公司</p>	<ul style="list-style-type: none"> <li>● Panda Electronics Group Co., Ltd. subordinate established in 1992</li> <li>● Develops technology and equipment related to intelligent manufacturing and smart cities, including smart transportation systems and surveillance equipment; also develops communication technology for military and civilian uses</li> <li>● Equity Ticker: 600775 CN; 00553 HK; NNJ DE</li> <li>● ISIN: CNE1000003T4; CNE000000NB7; CN0005815195; CN0009003921</li> </ul>	<p>NS-CMIC</p>
<p><b>North Navigation Control Technology Co., Ltd.</b></p> <p>北方导航控制技术股份有限公司</p>	<ul style="list-style-type: none"> <li>● Norinco Group subordinate established in 2000</li> <li>● Researches and develops guidance, navigation, environmental, and stability control systems, radio and satellite communication technology, and electrical connectors</li> <li>● Formerly known as Beijing North Phenix Intelligence Technology Co., Ltd. and China North Optical-Electrical Technology Co., Ltd.</li> </ul>	<p>NS-CMIC</p>

Name	Description	List(s)
	<ul style="list-style-type: none"> <li>● Equity Ticker: 600435 CN</li> <li>● ISIN: CNE000001F88</li> </ul>	
<p><b>Panda Electronics Group Company, Ltd.</b></p> <p>熊猫电子集团有限公司</p>	<ul style="list-style-type: none"> <li>● CEC subordinate established in 1936</li> <li>● Develops communication technology and electronics for military and civilian uses</li> <li>● Subsidiary appears on the Entity List</li> </ul>	<p>Section 1237</p> <p>NS-CMIC</p>
<p><b>Proven Glory Capital Limited</b></p>	<ul style="list-style-type: none"> <li>● British Virgin Islands-based bond issuer for Huawei Investment &amp; Holding Co., Ltd.</li> <li>● Appears on the Entity List</li> <li>● ISIN: XS1808982398; XS1808982471; XS1567423766; XS1809220913; XS1809220830; XS1567423501</li> </ul>	<p>NS-CMIC</p>

Name	Description	List(s)
<p><b>Proven Honour Capital Limited</b></p>	<ul style="list-style-type: none"> <li>British Virgin Islands-based bond issuer for Huawei Investment &amp; Holding Co., Ltd.</li> <li>Appears on the Entity List</li> <li>ISIN: HK0000216777; XS1401816761; HK0000111952; XS1233275194</li> </ul>	<p>NS-CMIC</p>
<p><b>Semiconductor Manufacturing International (Beijing) Corporation</b> 中芯国际集成电路制造(北京)有限公司</p>	<ul style="list-style-type: none"> <li>SMIC subsidiary</li> <li>Appears on the Entity List</li> </ul>	<p>Section 1260H</p>
<p><b>Semiconductor Manufacturing International (Shenzhen) Corporation</b> 中芯国际集成电路制造(深圳)有限公司</p>	<ul style="list-style-type: none"> <li>SMIC subsidiary</li> <li>Appears on the Entity List</li> </ul>	<p>Section 1260H</p>

Name	Description	List(s)
<p style="text-align: center;"><b>Semiconductor Manufacturing International (Tianjin) Corporation</b></p> <p style="text-align: center;">中芯国际集成电路制造(天津)有限公司</p>	<ul style="list-style-type: none"> <li>● SMIC subsidiary</li> <li>● Appears on the Entity List</li> </ul>	<p style="text-align: center;">Section 1260H</p>
<p style="text-align: center;"><b>Semiconductor Manufacturing International Corporation (SMIC)</b></p> <p style="text-align: center;">中芯国际集成电路制造有限公司</p>	<ul style="list-style-type: none"> <li>● China's largest semiconductor foundry; established in 2000</li> <li>● Provides wafer and integrated circuit manufacturing and technology services</li> <li>● Major shareholders include state-owned China Information and Communication Technology Group Co., Ltd. (CICT) and Datang Telecom Technology &amp; Industry Holdings Co., Ltd</li> <li>● Appears on the Entity List along with subsidiaries</li> <li>● Equity Ticker: 688981 CN; MKN1 DE; MKN2 DE; 00981 HK</li> <li>● ISIN: CND100022N41; KYG8020E1199; XS1432320429; US81663N2062; XS2101828452; KYG8020E1017; XS1730881247; KYG802041031; CNE1000041W8</li> </ul>	<p style="text-align: center;">Section 1237</p> <p style="text-align: center;">Section 1260H</p> <p style="text-align: center;">NS-CMIC</p>

Name	Description	List(s)
<p><b>Semiconductor Manufacturing South China Corporation</b></p> <p>中芯南方集成电路制造有限公司</p>	<ul style="list-style-type: none"> <li>● SMIC affiliate</li> <li>● Appears on the Entity List</li> </ul>	Section 1260H
<p><b>Shaanxi Zhongtian Rocket Technology Company Limited</b></p> <p>陕西中天火箭技术股份有限公司</p>	<ul style="list-style-type: none"> <li>● Subordinate to CASC's Academy of Aerospace Solid Propulsion Technology; established in 2002</li> <li>● Researches and develops small solid rockets for military and civilian uses, guided missiles for UAVs, and composite materials</li> <li>● Equity Ticker: 003009 CN</li> <li>● ISIN: CNE1000046W7</li> </ul>	NS-CMIC
<p><b>Sinochem Group Co., Ltd.</b></p> <p>中国中化集团有限公司</p>	<ul style="list-style-type: none"> <li>● SOE established in 1950</li> <li>● Involved in oil exploration, petroleum refining, petrochemical production, petroleum product trading, and the production of chemicals and fertilizer</li> <li>● Equity Ticker: 1001Z CN</li> </ul>	Section 1237
<p><b>SMIC Holdings Limited</b></p> <p>中芯国际控股有限公司</p>	<ul style="list-style-type: none"> <li>● SMIC subsidiary</li> <li>● Appears on the Entity List</li> </ul>	Section 1260H

Name	Description	List(s)
<p><b>SMIC Hong Kong International Company Limited</b></p> <p>中芯國際香港(國際)有限公司</p>	<ul style="list-style-type: none"> <li>● Former SMIC subsidiary; sold to Wuxi Xichanweixin Semiconductor Co., Ltd. in July 2019</li> <li>● Appears on the Entity List</li> </ul>	Section 1260H
<p><b>SMIC Northern Integrated Circuit Manufacturing (Beijing) Co., Ltd.</b></p> <p>中芯北方集成电路制造(北京)有限公司</p>	<ul style="list-style-type: none"> <li>● SMIC subsidiary</li> <li>● Appears on the Entity List</li> </ul>	Section 1260H
<p><b>SMIC Semiconductor Manufacturing (Shanghai) Co., Ltd.</b></p> <p>中芯国际集成电路制造(上海)有限公司</p>	<ul style="list-style-type: none"> <li>● SMIC subsidiary</li> <li>● Appears on the Entity List</li> </ul>	Section 1260H
<p><b>Xiaomi Corporation</b></p> <p>小米集團</p>	<ul style="list-style-type: none"> <li>● Established in 2010</li> <li>● Produces smartphones, smart devices, and other Internet of Things-connected hardware</li> <li>● In May 2021, the U.S. District Court for the District of Columbia vacated its listing pursuant to Section 1237</li> <li>● Equity Ticker: 1810 HK</li> </ul>	Section 1237
<p><b>Zhonghang Electronic Measuring Instruments Company Limited (AVIC ZEMIC)</b></p> <p>中航电测仪器股份有限公司</p>	<ul style="list-style-type: none"> <li>● AVIC subordinate established in 1965</li> <li>● Produces electronic measuring equipment for military and civilian uses</li> <li>● Equity Ticker: 300114 CN</li> <li>● ISIN: CNE100000T08</li> </ul>	Section 1260H NS-CMIC

## Authors

Trevor R. Jones is a research assistant at the Wisconsin Project. He contributes research to the Risk Report database with a focus on entities tied to China's military and missile programs. Treston Chandler is a senior research associate at the Wisconsin Project. He is responsible for content research related to China and North Korea in the Risk Report database and oversees a project on North Korea sanctions.

## About the Wisconsin Project

The Wisconsin Project on Nuclear Arms Control is a non-profit, non-partisan organization based in Washington, D.C. that conducts research, advocacy, and public education designed to inhibit the spread of nuclear, chemical, and biological weapons and the missiles to deliver them. The organization was founded in 1986, in cooperation with the University of Wisconsin.

The Wisconsin Project's mission is to reduce the risk that exports will accelerate the proliferation of weapons of mass destruction. The Project helps governments comply with the export restrictions in international agreements, and helps them ensure that their national controls on strategic goods are enforced. The Project also publicizes clandestine transactions in these goods, and draws attention to weaknesses in trade agreements and national laws. Through its research, the Project has influenced the export policies of major supplier countries.