

**OFFICE *of the* UNITED STATES TRADE REPRESENTATIVE  
EXECUTIVE OFFICE OF THE PRESIDENT**

**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**



**March 22, 2018**

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## I. Overview

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### A. Core Elements of Section 301

This investigation has been brought under Section 301 of the Trade Act of 1974, as amended (the Trade Act).<sup>1</sup> Section 301 is a key enforcement tool that may be used to address a wide variety of unfair acts, policies, and practices of U.S. trading partners. Section 301 sets out three categories of acts, policies, or practices of a foreign country that are potentially actionable: (i) trade agreement violations; (ii) acts, policies or practices that are unjustifiable (defined as those that are inconsistent with U.S. international legal rights) and that burden or restrict U.S. Commerce; and (iii) acts, policies or practices that are unreasonable or discriminatory and that burden or restrict U.S. Commerce.<sup>2</sup> The third category of conduct is most relevant to this investigation.

Section 301 defines “discriminatory” to “include, when appropriate, any act, policy, and practice which denies national or most-favored nation treatment to United States goods, service, or investment.”<sup>3</sup> An “unreasonable” act, policy, or practice is one that “while not necessarily in violation of, or inconsistent with, the international legal rights of the United States is otherwise unfair and inequitable.”<sup>4</sup> The statute further provides that in determining if a foreign country’s practices are unreasonable, reciprocal opportunities to those denied U.S. firms “shall be taken into account, to the extent appropriate.”<sup>5</sup>

If the USTR determines that the Section 301 investigation “involves a trade agreement,” and if that trade agreement includes formal dispute settlement procedures, USTR may pursue the investigation through consultations and dispute settlement under the trade agreement. Otherwise, USTR will conduct the investigation without recourse to formal dispute settlement.

Moreover, if the USTR determines that the act, policy, or practice falls within any of the three categories of actionable conduct under Section 301, the USTR must also determine what action, if any, to take.<sup>6</sup> For example, if the USTR determines that an act, policy or practice is unreasonable or discriminatory and that it burdens or restricts U.S. commerce,

The Trade Representative shall take all appropriate and feasible action authorized under [Section 301(c)], subject to the specific direction, if any, of the President regarding any such action, and all other appropriate and feasible action within the power of the President that the President may

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<sup>1</sup> Unless otherwise specified, “Section 301” refers generally to Chapter 1 of Title III of the Trade Act of 1974 (codified as amended in 19 U.S.C. §§ 2411-2417).

<sup>2</sup> Trade Act of 1974, 19 U.S.C. § 2411(a)-(b).

<sup>3</sup> 19 U.S.C. § 2411(d)(5). Section III describes discriminatory acts, practices, and policies of the Chinese government.

<sup>4</sup> 19 U.S.C. § 2411(d)(3)(A).

<sup>5</sup> 19 U.S.C. § 2411(d)(3)(D).

<sup>6</sup> For example, in 2014, USTR determined that action against Ukraine was not appropriate due to the political situation. *See Notice of Determination in Section 301 Investigation of Ukraine*, 79 Fed. Reg. 14,326-27 (Mar. 13, 2014).

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direct the Trade Representative to take under this subsection, to obtain the elimination of that act, policy, or practice.<sup>7</sup>

Actions specifically authorized under Section 301(c) include: (i) suspending, withdrawing or preventing the application of benefits of trade agreement concessions; (ii) imposing duties, fees, or other import restrictions on the goods or services of the foreign country for such time as deemed appropriate; (iii) withdrawing or suspending preferential duty treatment under a preference program; (iv) entering into binding agreements that commit the foreign country to eliminate or phase out the offending conduct or to provide compensatory trade benefits; or (v) restricting or denying the issuance of service sector authorizations, which are federal permits or other authorizations needed to supply services in some sectors in the United States.<sup>8</sup> In addition to these specifically enumerated actions, the USTR may take any actions that are “within the President’s power with respect to trade in goods or services, or with respect to any other area of pertinent relations with the foreign country.”<sup>9</sup>

## B. Background to the Investigation

On August 14, 2017, the President issued a Memorandum to the Trade Representative stating *inter alia* that:

China has implemented laws, policies, and practices and has taken actions related to intellectual property, innovation, and technology that may encourage or require the transfer of American technology and intellectual property to enterprises in China or that may otherwise negatively affect American economic interests. These laws, policies, practices, and actions may inhibit United States exports, deprive United States citizens of fair remuneration for their innovations, divert American jobs to workers in China, contribute to our trade deficit with China, and otherwise undermine American manufacturing, services, and innovation.<sup>10</sup>

The President instructed USTR to determine under Section 301 whether to investigate China’s law, policies, practices, or actions that may be unreasonable or discriminatory and that may be harming American intellectual property rights, innovation, or technology development.<sup>11</sup>

Concerns about a wide range of unfair practices of the Chinese government (and the Chinese Community Party (CCP)) related to technology transfer, intellectual property, and innovation are longstanding. USTR has pursued these issues multilaterally, for example, through the WTO dispute settlement process and in WTO committees, and bilaterally through the annual Special 301 review. These issues also have been raised in bilateral dialogues with China, including the U.S.-China Joint Commission on Commerce and Trade (JCCT) and U.S.-China Strategic & Economic Dialogue (S&ED), to attempt to address some of the U.S. concerns.

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<sup>7</sup> 19 U.S.C. § 2411(b).

<sup>8</sup> In cases in which USTR determines that import restrictions are the appropriate action, preference must be given to the imposition of duties over other forms of action. 19 U.S.C. §§ 2411(c).

<sup>9</sup> 19 U.S.C. § 2411(b)(2).

<sup>10</sup> See *Addressing China's Laws, Policies, Practices, and Actions Related to Intellectual Property, Innovation, and Technology*, 82 Fed. Reg. 39,007 (Aug. 17, 2017).

<sup>11</sup> *Id.*

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### 1. Initiation of the Investigation

USTR initiated this investigation on August 18, 2017 after consultation with the interagency Section 301 committee and private sector advisory committees.<sup>12</sup> On that same date, USTR also requested consultations with the Government of China.<sup>13</sup> China's Minister of Commerce responded to this letter on August 28, opposing the initiation of a Section 301 investigation.<sup>14</sup>

The *Federal Register Notice* described the focus of the investigation as follows:

**First**, the Chinese government reportedly uses a variety of tools, including opaque and discretionary administrative approval processes, joint venture requirements, foreign equity limitations, procurements, and other mechanisms to regulate or intervene in U.S. companies' operations in China, in order to require or pressure the transfer of technologies and intellectual property to Chinese companies. Moreover, many U.S. companies report facing vague and unwritten rules, as well as local rules that diverge from national ones, which are applied in a selective and non-transparent manner by Chinese government officials to pressure technology transfer.

**Second**, the Chinese government's acts, policies and practices reportedly deprive U.S. companies of the ability to set market-based terms in licensing and other technology-related negotiations with Chinese companies and undermine U.S. companies' control over their technology in China. For example, the *Regulations on Technology Import and Export Administration* mandate particular terms for indemnities and ownership of technology improvements for imported technology, and other measures also impose non-market terms in licensing and technology contracts.

**Third**, the Chinese government reportedly directs and/or unfairly facilitates the systematic investment in, and/or acquisition of, U.S. companies and assets by Chinese companies to obtain cutting-edge technologies and intellectual property and generate large-scale technology transfer in industries deemed important by Chinese government industrial plans.

**Fourth**, the investigation will consider whether the Chinese government is conducting or supporting unauthorized intrusions into U.S. commercial computer networks or cyber-enabled theft of intellectual property, trade secrets, or confidential business information, and whether this conduct harms U.S. companies or provides competitive advantages to Chinese companies or commercial sectors.

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<sup>12</sup> See *Initiation of Section 301 Investigation; Hearing; and Request for Public Comments: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation*, 82 Fed. Reg. 40,213-14 (Aug. 24, 2017) (Appendix A).

<sup>13</sup> See Appendix A.

<sup>14</sup> See Letter from Minister of Commerce Zhong Shan to Ambassador Robert Lighthizer (Aug. 28, 2017) (on file with author).

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In addition to these four types of conduct, interested parties could submit for consideration information on other acts, policies and practices of China relating to technology transfer, intellectual property, and innovation for potential inclusion in this investigation or to be addressed through other applicable mechanisms.<sup>15</sup>

The terms “technology” and “technology transfer” are key concepts in this investigation. They are defined in Box I.1.

### **Box I.1: Technology and Technology Transfer Defined**

Technology is defined broadly in this investigation to include knowledge and information needed to produce and deliver goods and services, as well as other methods and processes used to solve practical, technical or scientific problems. In addition to information protected by patents, copyrights, trademarks, trade secrets, and other types of intellectual property (IP) protections, the term also includes “know-how”, such as production processes, management techniques, expertise, and the knowledge of personnel.

Technology and innovation are critical factors in maintaining U.S. competitiveness in the global economy. Among all major economies, the United States has the highest concentration of knowledge- and technology-intensive industries as a share of total economic activity. And in high-tech manufacturing, the United States leads the world with a global share of production of 29 percent, followed by China at 27 percent.

Technology transfers made on voluntary and mutually-agreed terms, and without government interference or distortion, are critical to the U.S. economy. In fact, U.S. companies are global leaders in the transfer of technology through legal mechanisms such as trade in high-tech goods and services; the licensing of technology to companies and persons abroad; and foreign direct investment (FDI).

*Sources:* OECD, *Glossary of Statistical Terms*; Keith E. Maskus, UNCTAD-ICTSD, *Encouraging International Technology Transfer* 9 (2004); U.S. Dept. of Commerce, *Intellectual Property and the U.S. Economy* 1 (2012); National Science Board, *Science & Engineering Indicators* 4, 4-17 (2016); OECD, *Main Science and Technology Indicators: Technology Balance of Payments: Receipts (Current Prices)*, 2016; UNCTAD, *World Investment Report*, 2017, 14.

## 2. China’s Bilateral Commitments to End its Technology Transfer Regime and to Refrain from State-Sponsored Cyber Intrusions and Theft

In the bilateral relationship, China repeatedly has committed to eliminate aspects of its technology transfer regime. On at least eight occasions since 2010, the Chinese government has committed not to use technology transfer as a condition for market access and to permit technology transfer decisions to be negotiated independently by businesses. China has further committed not to pressure the disclosure of trade secrets in regulatory or administrative

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<sup>15</sup> See Appendix A.

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proceedings. The evidence adduced in this investigation establishes that China's technology transfer regime continues, notwithstanding repeated bilateral commitments and government statements, as summarized in Table I.1, below, and discussed in the remainder of this report.



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**Table I.1 China’s Bilateral Commitments Relating to Technology Transfer, 2010 - 2016**

Year	Mechanism	Commitment
2010	S&ED	China reaffirmed that the terms and conditions of technology transfer, production processes, and other proprietary information will be determined by individual enterprises.
2011	JCCT	China confirmed that it does not and will not maintain measures that mandate the transfer of technology in the New Energy Vehicles Sector. China further clarified that “mastery of core technology” does not require technology transfer for NEVs.
2012	S&ED	China reaffirmed its commitment that technology transfer is to be decided by firms independently and not to be used by the Chinese government as a pre-condition for market access.
2012	Xi Visit Commitment	China reiterated that technology transfer and technological cooperation shall be decided by businesses independently and will not be used by the Chinese government as a pre-condition for market access.
2012	JCCT	China reaffirmed that technology transfer and technology cooperation are the autonomous decisions of enterprises. China committed that it would not make technology transfer a precondition for market access.
2014	JCCT	China committed that enterprises are free to base technology transfer decisions on business and market considerations, and are free to independently negotiate and decide whether and under what circumstances to assign or license intellectual property rights to affiliated or unaffiliated enterprises.
2014	JCCT	China confirmed that trade secrets submitted to the government in administrative or regulatory proceedings are to be protected from improper disclosure to the public and only disclosed to government officials in connection with their official duties in accordance with law.
2015	Xi Visit Commitment	China committed not to advance generally applicable policies or practices that require the transfer of intellectual property rights or technology as a condition of doing business in the Chinese market.
2015	Xi Visit Commitment	China committed to refrain from conducting or knowingly supporting cyber-enabled theft of intellectual property, including trade secrets or other confidential business information, with the intent of providing competitive advantages to companies or commercial sectors.
2016	Xi Visit Commitment	China committed not to require the transfer of intellectual property rights or technology as a condition of doing business.

*Source:* USTR, CATALOGUE OF JCCT AND S&ED COMMITMENTS (2016); 2016 USTR REP. TO CONG. ON CHINA’S WTO COMPLIANCE 7.

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### 3. Input from the Public

USTR provided the public and interested persons with opportunities to present their views and perspectives on the issues highlighted in the *Federal Register Notice*, including through a public hearing on October 10, 2017.<sup>16</sup> Witnesses with varied interests and perspectives testified and responded to questions from the interagency Section 301 committee including representatives of U.S. companies and workers, trade and professional associations, and think tanks, as well as law firms and representatives of trade and professional associations headquartered in China.<sup>17</sup> Interested persons also filed approximately 70 written submissions in the public docket for this investigation.<sup>18</sup>

As U.S. companies have stated for more than a decade,<sup>19</sup> they fear that they will face retaliation or the loss of business opportunities if they come forward to complain about China's unfair trade practices. Concerns about Chinese retaliation arose in this investigation as well. Multiple submissions noted the great reluctance of U.S. companies to share information on China's technology transfer regime, given the importance of the China market to their businesses and the fact that Chinese government officials are "not shy about retaliating against critics."<sup>20</sup>

For example, a representative of the Commission on the Theft of American Intellectual Property testified at the hearing: "American companies are intimidated and reticent over the issue, especially in China. There they risk punishment by a powerful and opaque Chinese regulatory system."<sup>21</sup> In addition, according to the U.S. China Business Council, their member companies do not presently have "reliable channel[s] to report abuses and to appeal adverse decisions...without fear of retaliation."<sup>22</sup> Similarly, a representative of SolarWorld stated that "many other companies face the same issues of cyberhacking and technology theft that [it] has faced, but are unwilling to come forward publicly due to fear of lost sales or retaliation by China."<sup>23</sup>

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<sup>16</sup> The transcript of the hearing is available on the Federal eRulemaking Portal, <https://www.regulations.gov> and on USTR's website, <https://ustr.gov>.

<sup>17</sup> The following individuals participated in the public hearing: Richard Ellings, Commission on the Theft of American Intellectual Property; Stephen Ezell, Information Technology and Innovation Foundation; Erin Ennis, US-China Business Council; Owen Herrstadt, International Association of Machinists and Aerospace Workers; Juergen Stein, SolarWorld; Daniel Patrick McGahn, American Superconductor Corporation; William Mansfield, ABRO Industries; Scott Partridge, American Bar Association Intellectual Property Law Section; Scott Kennedy, Center for Strategic and International Studies; Jin Haijun, China Intellectual Property Law Society; Chen Zhou and Liu Chao, China Chamber of International Commerce; XU Chen, China General Chamber of Commerce; John Tang, DHH Washington Law Office; Wang Guiqing, China Chamber of Commerce for Import and Export of Machinery and Export Products. See Appendix B.

<sup>18</sup> See Appendix C for a summary of the public submissions. The submissions can be viewed on the Federal eRulemaking Portal, <https://www.regulations.gov>.

<sup>19</sup> U.S. CHINA BUSINESS COUNCIL [*hereinafter* "USCBC"], *Submission, Section 301 Hearing 4* (Sept. 28, 2017); see also SOLARWORLD, *Submission, Section 301 Hearing 2* (Oct. 20, 2017).

<sup>20</sup> James Lewis, CENTER FOR STRATEGIC & INT'L. STUDIES [*hereinafter* "CSIS"], *Submission, Section 301 Hearing 6* (Sept. 27, 2017); see also Lee Branstetter, *Submission, Section 301 Hearing 4* (Sept. 28, 2017); Stephen Zirschky, *Submission, Section 301 Hearing 2* (Sept. 28, 2017).

<sup>21</sup> USTR, *Hearing Transcript, Section 301 Hearing 13* (Oct. 10, 2017); see also COMM'N. ON THE THEFT OF AM. IP [*hereinafter* "IP Commission"], *Submission, Section 301 Hearing 8* (Sept. 28, 2017).

<sup>22</sup> USCBC, *Submission, Section 301 Hearing 4* (Sept. 28, 2017).

<sup>23</sup> SOLARWORLD, *Submission, Section 301 Hearing 2* (Oct. 20, 2017).

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Because USTR self-initiated this action, no particular company or group of companies was required to step forward and file a Section 301 petition to initiate this investigation. Moreover, in making this determination, USTR and the interagency Section 301 committee took into account not just investigation submissions and testimony but also public reports, scholarly articles, and other reliable information. In addition, business confidential information has been provided and considered as part of the record in this investigation, so that companies could share sensitive information without the threat of business loss or retaliation.

### C. China's Technology Drive

Official publications of the Chinese government and the CCP set out China's ambitious technology-related industrial policies. These policies are driven in large part by China's goals of dominating its domestic market and becoming a global leader in a wide range of technologies, especially advanced technologies. The industrial policies reflect a top-down, state-directed approach to technology development and are founded on concepts such as "indigenous innovation" and "re-innovation" of foreign technologies, among others. The Chinese government regards technology development as integral to its economic development and seeks to attain domestic dominance and global leadership in a wide range of technologies for economic and national security reasons.<sup>24</sup> China accordingly seeks to reduce its dependence on technologies from other countries and move up the value chain, advancing from low-cost manufacturing to become a "global innovation power in science and technology."<sup>25</sup> In pursuit of this overarching objective, China has issued a large number of industrial policies, including more than 100 five-year plans, science and technology development plans, and sectoral plans over the last decade.<sup>26</sup> Some of the most prominent industrial policies include the *National Medium- and Long-Term Science and Technology Development Plan Outline (2006-2020) (MLP)*,<sup>27</sup> the *State Council Decision on Accelerating and Cultivating the Development of Strategic Emerging Industries (SEI Decision)*<sup>28</sup>, and, more recently, the *Notice on Issuing "Made in China 2025" (Made in China 2025 Notice)*.<sup>29</sup>

The *MLP*, issued in 2005 and covering the period 2006 to 2020, is the seminal document articulating China's long-term technology development strategy. The *MLP* recognizes the country's "relatively weak indigenous innovation capacity," its "weak core competitiveness of enterprises," and the fact that the country's high-technology industries "lag" those of more developed nations."<sup>30</sup>

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<sup>24</sup> See James Lewis, *Submission, Section 301 Hearing 1* (Sept. 2017).

<sup>25</sup> *CCP State Council Releases the "National Innovation-Driven Development Strategy Guidelines* §2(3) [Chinese], XINHUA NEWS, May 19, 2016, [http://news.xinhuanet.com/politics/2016-05/19/c\\_1118898033.htm](http://news.xinhuanet.com/politics/2016-05/19/c_1118898033.htm).; see also TAI MING CHEUNG ET AL., U.S.-CHINA ECON. & SEC. REV. COMM'N, PLANNING FOR INNOVATION: UNDERSTANDING CHINA'S PLANS FOR TECHNOLOGICAL, ENERGY, INDUSTRIAL AND DEFENSE DEVELOPMENT [*hereinafter* "IGCC REPORT"] xiii (2016).

<sup>26</sup> IGCC REPORT at 30.

<sup>27</sup> *Notice on Issuing the National Medium- and Long-Term Science and Technology Development Plan Outline (2006-2020)* [*hereinafter* "MLP"] (State Council, Guo Fa [2005] No. 44, issued Dec. 26, 2005).

<sup>28</sup> *Decision on Accelerating the Cultivation and Development of Strategic Emerging Industries* (State Council, Guo Fa [2010] No. 32, issued Oct. 10, 2010).

<sup>29</sup> *Notice on Issuing "Made in China 2025"* (State Council, Guo Fa [2015] No. 28, issued May 8, 2015).

<sup>30</sup> *MLP* §1.

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As its focus, the *MLP* identifies 11 key sectors, and 68 priority areas within these sectors, for technology development.<sup>31</sup> It also designates eight fields of “frontier technology,”<sup>32</sup> within which 27 “breakthrough technologies” will be pursued, and highlights four major scientific research programs.<sup>33</sup> The *MLP* also establishes the cross-cutting goal of reducing the rate of dependence on foreign technologies in the identified sectors to below 30% by the year 2020.<sup>34</sup>

The *MLP* strategy for securing sought-after technology development includes several key elements, which continue to have a negative impact on U.S. and other foreign companies:

- A top-down national strategy, in which implementation requires the mobilization and participation of all sectors of society<sup>35</sup> and the integration of civil and military resources;<sup>36</sup>
- Prioritization of certain industries and technologies for development,<sup>37</sup> particularly those that can advance “sustainable development,” “core competitiveness,” “public service,” and “national security” objectives.<sup>38</sup>
- Leveraging state resources and regulatory systems;<sup>39</sup>
- Import substitution to be achieved through “indigenous innovation”<sup>40</sup> and re-innovation based on assimilation and absorption of foreign technologies;<sup>41</sup> and
- Promoting Chinese enterprises to become dominant in the domestic market<sup>42</sup> and internationally competitive enterprises<sup>43</sup> in key industries.

The *MLP* set in motion a web of policies and practices intended to drive innovation and re-innovation. For example, Section 8(2) of the *MLP* calls for “enhancing the absorption, digestion,

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<sup>31</sup> The sectors include energy, water and mineral resources, environment, agriculture, manufacturing, transportation, information and services, population and health, urbanization, public security and national defense.

<sup>32</sup> The areas include biotech, information technology, advanced materials, advanced manufacturing, advanced energy technology, marine technology, laser technology and aerospace technology.

<sup>33</sup> The fields include protein science, nanotechnology, quantum physics and developmental and reproductive science.

<sup>34</sup> *MLP* § 2(2) ¶ 3, *Guiding Directives, Development Targets, and Comprehensive Arrangements*.

<sup>35</sup> *MLP* § 2(1). (“In sum, we must make enhancing indigenous innovation capacity our national strategy, and implement it in all aspects of modernization construction and in every industry, sector and region.”). §8(5) also guides “all types of financial institutions and private funds to participate in science and technology development.”

<sup>36</sup> *MLP* § 8(7).

<sup>37</sup> *MLP* § 3 sets out the “Key Sectors and their Priority Issues.”

<sup>38</sup> *MLP* § 3, *Preamble*.

<sup>39</sup> *MLP* § 9.

<sup>40</sup> *MLP* § 2(1).

<sup>41</sup> *MLP* §§ 2(1), 8(2). The term “introduce” used throughout *MLP* refers to introduction of technology through foreign investment. This is made more explicit in the measures defining and discussing IDAR below.

<sup>42</sup> *MLP* § 2(2) states dependence on foreign technology should be reduced to only 30% by 2020.

<sup>43</sup> See IGCC REPORT at 157. See also *MLP* § 2.

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and re-innovation of introduced technology.”<sup>44</sup> Following the issuance of the *MLP*, China detailed these policies in the *Several Supporting Policies for Implementing the “National Medium- and Long-Term Science and Technology Development Plan Outline (2006-2020)” (MLP Supporting Policies)*<sup>45</sup> and the *Opinions on Encouraging Technology Introduction and Innovation and Promoting the Transformation of the Growth Mode in Foreign Trade (IDAR Opinions)*,<sup>46</sup> which articulate the concept of **I**nroducing,<sup>47</sup> **D**igesting,<sup>48</sup> **A**bsorbing,<sup>49</sup> and **R**e-innovating<sup>50</sup> foreign intellectual property and technology (IDAR). The IDAR approach involves four steps, each of which hinges on close collaboration between the Chinese government and Chinese industry to take full advantage of foreign technologies:

- **Introduce:** Chinese companies should target and acquire foreign technology. Methods of “introducing” foreign technology that are specifically referenced include: technology transfer agreements, inbound investment, technology imports, establishing foreign R&D centers, outbound investment, and the collection of market intelligence by state entities for the benefit of Chinese companies.<sup>51</sup> Technology to be “introduced” from overseas includes “major equipment that cannot yet be supplied domestically”, as well as “advanced design and manufacturing technology”;<sup>52</sup> conversely, the government discourages imports of technologies for which China is already deemed to “possess domestic R&D capabilities.”<sup>53</sup>
- **Digest:** Following the acquisition of foreign technology, the Chinese government should collaborate with China’s domestic industry to collect, analyze, and disseminate the information and technology that has been acquired.<sup>54</sup>
- **Absorb:** The Chinese government and China’s domestic industry should collaborate to develop products using the technology that has been acquired. The Chinese government should provide financial assistance to develop products using technology obtained through IDAR, including foreign trade development funds, government procurement, and fiscal incentives.<sup>55</sup> To absorb foreign technologies, authorities have established engineering research centers, enterprise-based technology centers, state laboratories, national technology transfer centers, and high-technology service centers.<sup>56</sup>

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<sup>44</sup> *MLP* §§ 2(1), 8(2).

<sup>45</sup> *Several Supporting Policies for Implementing the “National Medium- and Long-Term Science and Technology Development Plan Outline (2006-2020)”* (State Council, Guo Fa [2006] No. 6, issued Feb. 7, 2006).

<sup>46</sup> *Several Opinions on Encouraging Technology Introduction and Innovation and Promoting the Transformation of the Growth Mode in Foreign Trade* (MOFCOM, NDRC, MOST, MOF, GAC, SAT, SIPO, SAFE, Shang Fu Mao Fa [2006] No. 13, issued July 14, 2006).

<sup>47</sup> English translation of Chinese term *yinjin*.

<sup>48</sup> English translation of Chinese term *xiaohua*.

<sup>49</sup> English translation of Chinese term *xishou*.

<sup>50</sup> English translation of Chinese term *zai chuangxin*.

<sup>51</sup> *IDAR Opinions* § 7-9, 11-12. See also IGCC REPORT at 118-119.

<sup>52</sup> *MLP Supporting Policies* § 28, 29.

<sup>53</sup> *MLP Supporting Policies* § 29.

<sup>54</sup> *IDAR Opinions* § 7; *MLP Supporting Policies* § 31.

<sup>55</sup> *IDAR Opinions* § 15, 18; *MLP Supporting Policies* § 30, 32.

<sup>56</sup> IGCC REPORT at 118.

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- Re-innovate: At this stage, Chinese companies should “re-innovate” and improve upon the foreign technology. The ultimate objective is to develop new, home-grown products that are competitive internationally, so as to “allow enterprises to possess more indigenous intellectual property for core products and core technologies.”<sup>57</sup>

The IDAR approach embraces a strong role for the Chinese government in guiding and assisting Chinese industry in technology development and has had profound implications, in particular, for the way in which China has sought to introduce foreign technologies into China over the last decade. It has spurred Chinese government ministries and government officials to pursue an array of aggressive implementing acts, policies, and practices, including those that are the subject of this investigation.

China has continued to emphasize the IDAR approach since it was first articulated in 2006 in broad-ranging five-year plans and technology development plans issued by China’s State Council, central government ministries and provincial and municipal governments, and the CCP. The IDAR approach also has been incorporated into numerous economic development plans for specific sectors, such as integrated circuits.<sup>58</sup>

In 2010, the Chinese government announced another seminal technology development strategy, which calls for the accelerated development of seven so-called “strategic emerging industries” (SEIs): (1) energy efficient and environmental technologies, (2) next generation information technology, (3) biotechnology, (4) high-end equipment manufacturing, (5) new energy, (6) new materials, and (7) new energy vehicles.<sup>59</sup> The *12th Five-year National Strategic Emerging Industries Development Plan (12th Five-year SEI Plan)*<sup>60</sup> subsequently recommended specific fiscal and taxation policy support and set a target for SEIs to account for 8% of China’s economy by 2015 and 15% by 2020. The *12th Five-year SEI Plan* also aims to foster a group of Chinese enterprises – including state-owned enterprises – into “backbone enterprises” that can become

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<sup>57</sup> *IDAR Opinions* § 5.

<sup>58</sup> *E.g., 12th Five-year Development Plan for the Integrated Circuit Industry* (Ministry of Industry and Information Technology, published Feb. 24, 2012) § 3(1), ¶ 3: “Maintain innovation drivers. Combine implementation of national science and technology major special projects and megaprojects, using innovation in technologies, modes, mechanisms, and systems as the impetus to make breakthroughs in a group of shared core technologies. Strengthen *introduce, digest, absorb, and re-innovate*, to stride down the path of open-type innovation and internationalized development.” (emphasis added).

<sup>59</sup> *State Council Decision on Accelerating the Development of Strategic Emerging Industries* (State Council, Guo Fa [2010], No. 32, issued Oct. 10, 2010).

<sup>60</sup> *Notice on Issuing the 12th Five-year National Strategic Emerging Industries Development Plan* (State Council, Guo Fa [2012] No. 28, issued July 9, 2012).

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market leaders domestically and compete globally.<sup>61</sup> The Chinese government later reaffirmed and refined this strategy in its *13th Five-year Strategic Emerging Industries Development Plan*.<sup>62</sup>

Notably, support for the IDAR strategy was reiterated in the CCP's 2013 *Third Plenum Decision*<sup>63</sup> (*Third Plenum Decision*) released in connection with the Third Plenary Session of the 18th National Congress of the CCP. IDAR's inclusion in the *Third Plenum Decision* is significant because the document was widely seen as setting forth the priorities of President Xi Jinping's new administration with respect to China's future economic development path.<sup>64</sup> By reaffirming that China should "establish and perfect a mechanism to encourage original innovation, integrated innovation, and introduce, absorb, digest, and re-innovate,"<sup>65</sup> the *Third Plenum Decision* signaled the CCP's continued high-level support for the IDAR approach to technology innovation.

In 2015, the State Council released the *Made in China 2025 Notice*,<sup>66</sup> which is China's ten-year plan for targeting ten strategic advanced technology manufacturing industries for promotion and development: (1) advanced information technology; (2) robotics and automated machine tools; (3) aircraft and aircraft components; (4) maritime vessels and marine engineering equipment; (5) advanced rail equipment; (6) new energy vehicles; (7) electrical generation and transmission equipment; (8) agricultural machinery and equipment; (9) new materials; and (10) pharmaceuticals and advanced medical devices.<sup>67</sup>

While the *Made in China 2025 Notice* references market-oriented principles, it closely resembles China's other state-led, technology-related plans, such as the *MLP*, issued a decade earlier, in that it:

- Reaffirms the Chinese government's central role in economic planning;<sup>68</sup>

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<sup>61</sup> For example, the *12th Five-year National Economic and Social Development Plan Outline* (adopted by the NPC on Mar. 14, 2011) calls for the cultivation of a group of backbone enterprises within strategic emerging industries. Ch. 10, § 2 "Fostering the Development of Strategic Emerging Industries". The *12th Five-year SEI Plan* further specifies that backbone enterprises are to have "relatively strong indigenous innovation capacity and a technological leadership effects." § 2(3), "Guiding Thoughts, Fundamental Principles, and Development Targets". At the sectoral level, the *Guidelines for the Development and Promotion of the Integrated Circuit Industry* (State Council, issued June 24, 2014) laud the fact that China has established "a group of backbone enterprises with significant international competitiveness." § 1, ¶ 1. The *Guiding Opinion on Promoting International Industrial Capacity and Equipment Manufacturing Cooperation* (State Council, Guo Fa [2015] No. 30, issued May 13, 2015) provides that a "main target" of the policy is to "establish a group of backbone enterprises that possess international competitiveness and the ability to open up markets." § 2(6).

<sup>62</sup> *Notice on Issuing the 13th Five-year National Strategic Emerging Industries Development Plan* (State Council, Guo Fa [2016] No. 67, issued Nov. 29, 2016).

<sup>63</sup> *CCP Central Committee Decision on Several Major Issues for Comprehensively Deepening Reform* (CCP Central Committee, issued Nov. 12, 2013) [*hereinafter* "*Third Plenum Decision*"].

<sup>64</sup> Third Plenums have historically been used to announce major economic reforms, such as the adoption of reform and opening during the Third Plenary Session of the 11th National Congress of the CCP in 1978, and the endorsement of the socialist market economy following the 14th National Congress of the CCP in 1993.

<sup>65</sup> *Third Plenum Decision* § 13.

<sup>66</sup> *Decision on Issuing "China Manufacturing 2025"* (State Council, Guo Fa [2015] No. 28, issued May 8, 2015).

<sup>67</sup> *Made in China 2025 Notice* § 3(6).

<sup>68</sup> *Made in China 2025 Notice* § 2(2).

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- Calls on all facets of society to mobilize behind the plan;<sup>69</sup>
- Seeks technological breakthroughs in key areas for economic and security purposes;
- Promotes further civil-military integration and the two-way transfer and conversion of military and civilian technologies;<sup>70</sup>
- Leverages state resources,<sup>71</sup> policy support,<sup>72</sup> and regulatory systems;<sup>73</sup>
- Continues to promote import substitution and rely on indigenous products to meet growing demand in China;<sup>74</sup>
- Reaffirms the leading role of backbone enterprises in technology development;<sup>75</sup> and
- Promotes Chinese enterprises to become dominant in the domestic market and internationally competitive in key industries.<sup>76</sup>

The *Made in China 2025 Notice* expressly calls for China to achieve 40% “self-sufficiency” by 2020, and 70% “self-sufficiency” by 2025, in core components and critical materials in a wide range of industries, including aerospace equipment and telecommunications equipment.<sup>77</sup> The “*Made in China 2025*” *Key Area Technology Roadmap (Made in China Roadmap)* sets explicit market share targets that are to be filled by Chinese producers both domestically and globally in dozens of high-tech industries.<sup>78</sup>

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<sup>69</sup> *Made in China 2025 Notice* § 1(3).

<sup>70</sup> *Made in China 2025 Notice* § 3(1).

<sup>71</sup> *Made in China 2025 Notice* § 4.

<sup>72</sup> *Made in China 2025 Notice* § 1(3).

<sup>73</sup> See generally *Made in China 2025 Notice*. This is particularly the case in quality standard regulations as described in §§ 2(1) and 3(4).

<sup>74</sup> *Made in China 2025 Notice* § 1(2) describes the growing demand for new equipment, consumption, and safety, while § 1(3) calls for China to “rely more on Chinese equipment and Chinese brands.”

<sup>75</sup> *Made in China 2025 Notice* § 3(1).

<sup>76</sup> *Made in China 2025 Notice* § 1(3).

<sup>77</sup> *Made in China 2025 Notice*, Box 3.

<sup>78</sup> *Made in China 2025 Key Area Technology Roadmap*, (National Strategic Advisory Committee on Building a Powerful Manufacturing Nation, issued Oct. 10, 2015); see also U.S. CHAMBER, *MADE IN CHINA 2025: GLOBAL AMBITIONS BUILT ON LOCAL PROTECTIONS* 8 (2017). The *Made in China Roadmap* was released by the National Strategic Advisory Committee on Building a Powerful Manufacturing Nation (also known as the “National Manufacturing Strategy Advisory Committee”) which was established pursuant to the *Made in China 2025 Notice* with responsibility to provide advice and assessments on China’s major manufacturing policies. In August 2015, Vice Premier Ma Kai, who leads the Strong Manufacturing Country Leading Small Group, spoke at the Committee’s first meeting and lauded its establishment as a way to “strongly promote Made in China 2025.” National Strategic Advisory Committee on Building a Powerful Manufacturing Nation Established; Chaired by Ma Kai [Chinese], XINHUA (Aug. 26, 2015), available at [http://www.xinhuanet.com/info/2015-08/26/c\\_134556815.htm](http://www.xinhuanet.com/info/2015-08/26/c_134556815.htm) (last visited Mar. 16, 2018). See also *Notice on the Establishment of the Strong Manufacturing Country Leading Small Group*, (General Office of the State Council, Guo Ban Fa [2015] No. 48, published June 24, 2015) (last visited March 16, 2018); and *National Strategic Advisory Committee on Building a Powerful Manufacturing Nation Established*, STATE INTELLECTUAL PROPERTY OFFICE OF THE P.R.C. (Aug. 26, 2015), available at [http://www.sipo.gov.cn/yw/2015/201508/t20150826\\_1165829.html](http://www.sipo.gov.cn/yw/2015/201508/t20150826_1165829.html) (last visited Dec. 21, 2017).



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For example, indigenous new energy vehicles are to achieve an 80% domestic market share<sup>79</sup> with foreign sales accounting for 10% of total sales by 2025.<sup>80</sup> Similarly, domestically produced energy equipment is to achieve 90% domestic market share, with exports accounting for 30% of production, by 2020,<sup>81</sup> and renewable energy equipment with indigenous IP is to achieve 80% domestic market share by 2025.<sup>82</sup> In comparison to previous plans, *Made in China 2025* expands its focus to capturing global market share, not just dominance in the China market, and is part of a “broader strategy to use state resources to alter and create comparative advantage in these sectors on a global scale.”<sup>83</sup>

The *Made in China 2025 Notice* sets forth clear principles, tasks, and tools to implement this strategy, including government intervention and substantial government, financial and other support to the targeted Chinese industries.<sup>84</sup> Domestic dominance and global competitiveness are to be achieved by upgrading the entire research, development, and production chain, with emphasis on localizing the output of components and finished products.<sup>85</sup> Foreign technology acquisition through various means remains a prime focus under *Made in China 2025* because China is still catching up in many of the areas prioritized for development, and as U.S. companies are front-runners in many of these areas.<sup>86</sup>

China’s Ministry of Industry and Information Technology (MIIT) has explained that *Made in China 2025* is part of a three-step strategy for China to become a world leader in advanced manufacturing. Under the first step, by 2025, China should “approach the level of manufacturing powers Germany and Japan during the period when they realized industrialization.” In the second step, China should “enter the front ranks of second tier manufacturing powers” by 2035. In the final step, China should “enter the first tier of global manufacturing powers” by 2045, at which point China will have “innovation-driving capabilities,” “clear competitive advantages,” and “world-leading technology systems and industrial systems.”<sup>87</sup>

In recent years, China also issued policies specific to advanced technologies in which U.S. firms are market leaders. Information and communications technologies have been a focal point, with more and more strategies emanating from the *National Informatization Development Strategy* (2006-2020), such as the *National Integrated Circuit Industry Development Outline*, the *Internet*

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<sup>79</sup> *Made in China 2025 Key Area Technology Roadmap* § 6.2.2.

<sup>80</sup> *Made in China 2025 Key Area Technology Roadmap* § 6.2.2.

<sup>81</sup> *Made in China 2025 Key Area Technology Roadmap* § 7.1.2.

<sup>82</sup> *Made in China 2025 Key Area Technology Roadmap* § 7.1.2.

<sup>83</sup> U.S. CHAMBER, *MADE IN CHINA 2025: GLOBAL AMBITIONS BUILT ON LOCAL PROTECTIONS* 6 (2017).

<sup>84</sup> See AM. CHAMBER OF COMMERCE IN SHANGHAI, *Submission, Section 301 Hearing 2* (Sept. 28, 2017); NAT’L. ASS’N OF MANUFACTURERS [*hereinafter* “NAM”], *Submission, Section 301 Hearing 3* (Sept. 28, 2017); WILEY REIN LLP, *Submission, Section 301 Hearing 3-4* (Sept. 28, 2017); BJÖRN CONRAD, ET AL., MERCATOR INST. FOR CHINA STUDIES [*hereinafter* “MERICCS”], *MADE IN CHINA 2025* 7, 11 (2016); and U.S. CHAMBER OF COMMERCE, *MADE IN CHINA 2025: GLOBAL AMBITIONS BUILT ON LOCAL PROTECTIONS* 7, 15, 18 (2017).

<sup>85</sup> IGCC REPORT at 121.

<sup>86</sup> IGCC REPORT at 121.

<sup>87</sup> *Made in China 2025 Explanation 6: The Manufacturing Power ‘Three-Step’ Strategy*, MINISTRY OF INDUSTRY AND INFORMATION TECHNOLOGY (May 19, 2015), <http://www.miit.gov.cn/n1146295/n1146562/n1146655/c3780688/content.html>; see also IGCC REPORT at 47-48.

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*Plus Plan*, the “Broadband China” strategy and corresponding implementation plan, and the designation of next-generation information technology as a “strategic emerging industry.”<sup>88</sup>

In addition, China recently announced that it will pursue an “innovation-driven” development strategy<sup>89</sup> and that it has made breakthroughs in higher-end innovation a top priority.<sup>90</sup> At the 19<sup>th</sup> National Congress of the CCP, held in October 2017, President Xi Jinping’s remarks specifically referenced the goal of building China into a “powerful nation [*or* power] in science and technology, quality, aerospace, the Internet, and transportation” and called for “accelerating the construction of [China as] a manufacturing power” by “accelerating the development of advanced manufacturing industry” and “promoting the deep integration of the Internet, big data, and artificial intelligence with the real economy.”<sup>91</sup>

Like the *MLP* a decade ago, newer plans such as the *Made in China 2025 Notice* and the various plans focused on information and communications technologies call for a wide array of Chinese government intervention and financial and other support designed to transform China into a world leader in technology. While these policies and practices are not necessarily new, their actual and potential effects on foreign companies and their technologies have become much more serious. As James Lewis of CSIS explained in his submission to USTR:

What is new is that unfair trade, security and industrial policies, tolerable in a smaller developing economy, are now combined with China’s immense, government-directed investment and regulatory policies to put foreign firms at a disadvantage... China now has the wealth, commercial sophistication and technical expertise to make its pursuit of technological leadership work. The fundamental issue for the U.S. and other western nations, and the IT sector is how to respond to a managed economy with a well-financed strategy to create a domestic industry intended to displace foreign suppliers.<sup>92</sup>

As detailed in Sections II through VI of this report, a key part of China’s technology drive involves the acquisition of foreign technologies through acts, policies, and practices by the Chinese government that are unreasonable or discriminatory and burden or restrict U.S. commerce. These acts, policies, and practices work collectively as part of a multi-faceted strategy to advance China’s industrial policy objectives. They are applied across a broad range of sectors, overlap in their use of policy tools (*e.g.*, the issuance of planning documents and guidance catalogues), and are implemented through a diverse set of state and state-backed actors, including state-owned enterprises.

- Section II describes the Chinese government’s use of foreign ownership restrictions, such as joint venture (JV) requirements and foreign equity limitations, other foreign

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<sup>88</sup> IGCC REPORT at 44.

<sup>89</sup> IGCC REPORT at 41 (“This innovation-driven development strategy (IDDS) was officially promulgated by the Chinese authorities in May 2016 and provides a ‘top-level design and systemic plan’ for China’s innovation over next 30 years.”).

<sup>90</sup> IGCC REPORT at xiii-xiv.

<sup>91</sup> Xi Jinping, Speech at the 19th CPC National Congress: Secure a Decisive Victory in Building a Moderately Prosperous Society in All Respects and Strive for the Great Success of Socialism with Chinese Characteristics for a New Era (Oct. 18, 2017), available in Chinese at <http://www.gatj.gov.cn/html/6/wjjh/17/10/3257-6.html>.

<sup>92</sup> James Lewis, CSIS, *Submission, Section 301 Hearing 1* (Sept. 27, 2017).

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investment restrictions, and the administrative licensing and approvals process to require or pressure the transfer of technology from U.S. companies to Chinese entities.

- Section III describes how U.S. companies seeking to license technologies to Chinese entities must do so on non-market-based terms that favor Chinese recipients.
- Section IV describes how the Chinese government directs and unfairly facilitates the systematic investment in, and acquisition of, U.S. companies and assets by Chinese entities, to obtain cutting-edge technologies and intellectual property and generate large-scale technology transfer in industries deemed important by state industrial plans.
- Section V describes how the Chinese government has conducted or supported cyber intrusions into U.S. commercial networks targeting confidential business information held by U.S. firms. Through these cyber intrusions, China's government has gained unauthorized access to a wide range of confidential business information, including trade secrets, technical data, negotiating positions, and sensitive and proprietary internal communications.
- Section VI describes other acts, policies, and practices of by the Chinese government to acquire foreign technologies, including measures purportedly related to national security or cybersecurity, inadequate intellectual property protection, the *Antimonopoly Law of the People's Republic of China*, the *Standardization Law of the People's Republic of China*, and talent acquisition.

## II. China’s Unfair Technology Transfer Regime for U.S. Companies in China

## II. China’s Unfair Technology Transfer Regime for U.S. Companies in China

### A. Introduction

The previous section of this report detailed China’s technology drive and how it seeks to support prioritized industries and foster “national champions” by pursuing technology advancement through the acquisition and “re-innovation” of foreign technology.<sup>93</sup> One method China uses to achieve this goal is through restrictions on foreign investment, which it uses to selectively grant market access to foreign investors in exchange for commitments to transfer technology. This section will detail how China uses inbound foreign ownership restrictions, such as joint venture (JV) requirements and foreign equity limitations, and the administrative licensing and approvals process to require or pressure the transfer of technology.

#### 1. Key Elements of China’s Technology Transfer Regime

The evidence collected in this investigation from hearing witnesses, written submissions, public reports, journal articles, and other reliable sources indicates there are two key aspects of China’s technology transfer regime for inbound foreign investment.

First, the Chinese government uses foreign ownership restrictions, such as formal and informal JV requirements, and other foreign investment restrictions to require or pressure technology transfer from U.S. companies to Chinese entities. These requirements prohibit foreign investors from operating in certain industries unless they partner with a Chinese company, and in some cases, unless the Chinese partner is the controlling shareholder. Second, the Chinese government uses its administrative licensing and approvals process to force technology transfer in exchange for the numerous administrative approvals needed to establish and operate a business in China.

These two aspects of China’s technology transfer regime are furthered by the non-transparent and discretionary nature of China’s foreign investment approvals system. Prior to 2001, China often explicitly mandated technology transfer, requiring the transfer of technology as a *quid pro quo* for market access.<sup>94</sup> In 2001, China joined the WTO and committed not to condition the approval of investment or importation on technology transfer.<sup>95</sup> Since then, according to numerous sources, China’s technology transfer policies and practices have become more implicit, often carried out through oral instructions and “behind closed doors.”<sup>96</sup>

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<sup>93</sup> See Section I.C.

<sup>94</sup> See, e.g., OFFICE OF TECH. ASSESSMENT, 100TH CONG., OTA-ISC-3401, REP. ON TECHNOLOGY TRANSFER TO CHINA (1987); OFFICE OF STRATEGIC INDUS. & ECON. SEC. BUREAU OF EXPORT ADMIN. & DFI INT’L., U.S. DEPT. OF COMMERCE, U.S. COMMERCIAL TECHNOLOGY TRANSFER TO THE PEOPLE’S REPUBLIC OF CHINA (Jan. 1999); THOMAS J. HOLMES ET AL., FED. RES. BANK OF MINNEAPOLIS, RES. DEP’T STAFF REP. 486, QUID PRO QUO: TECHNOLOGY CAPITAL TRANSFERS FOR MARKET ACCESS IN CHINA 3 (2015).

<sup>95</sup> China’s accession agreements include the Protocol on the Accession of the People’s Republic of China, WTO Doc. WT/L/432 (Nov. 23, 2001) [*hereinafter* “Accession Protocol”], and the Report of the Working Party on the Accession of China, WTO Doc. WT/ACC/CHN/49 (Oct. 1, 2001) [*hereinafter* “Working Party Report”]. China’s technology transfer commitments are contained in Accession Protocol, General Provisions ¶ 7.3 and Working Party Report ¶ 203 (incorporated into the Accession Protocol through ¶ 1.2).

<sup>96</sup> See, e.g., THOMAS J. HOLMES ET AL., FED. RES. BANK OF MINNEAPOLIS, RES. DEP’T STAFF REP. 486, QUID PRO QUO: TECHNOLOGY CAPITAL TRANSFERS FOR MARKET ACCESS IN CHINA 3 (2015); TAI MING CHEUNG ET AL., U.S.-CHINA ECON. & SEC. REV. COMM’N, PLANNING FOR INNOVATION: UNDERSTANDING CHINA’S PLANS FOR

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As the Information Technology and Innovation Foundation (ITIF) stated in its written submission in this investigation:

Chinese officials are careful not to put such requirements in writing, often resorting to oral communications and informal 'administrative guidance' to pressure foreign firms to transfer technology.<sup>97</sup>

According to another expert, Chinese measures and practices “no longer spell out the most controversial requirements in black and white. Verbal instructions and requests to ‘volunteer’ one’s technology are today’s rules of the road.”<sup>98</sup> Similarly, a 2014 study of China’s foreign investment policies conducted for the European Union found that China has relied more heavily on opaque administrative processes to promote its technology transfer goals as international trade rules have limited its ability to *formally* codify foreign investment restraints.<sup>99</sup>

Another particular challenge is the complex relationship between China’s private sector and the government, which provides both direct and indirect mechanisms by which the government may pressure foreign companies. In some cases, the Chinese government may directly pressure the foreign company to transfer technology, but in other cases the demand may come from a Chinese partner.<sup>100</sup> As discussed in more detail below, when confronted with this latter scenario, foreign companies often reasonably understand that the demand originated from the government,<sup>101</sup> as “business decisions [in China] are very much influenced by the public policy objectives pursued by the State and the CCP.”<sup>102</sup> Moreover, because the Chinese partner serves as the applicant in the approval process on behalf of the JV, the Chinese partner is able, in many cases, to control the communication channels between the foreign investor and the Chinese government authorities.<sup>103</sup> Section IV of this report further details how the Chinese government and Chinese Communist Party (CCP) utilize a wide array of actors, regulations, and informal guidance to achieve China’s industrial policy objectives.<sup>104</sup>

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TECHNOLOGICAL, ENERGY, INDUSTRIAL AND DEFENSE DEVELOPMENT 163 (2016) (citing US-CHINA BUSINESS COUNCIL [*hereinafter* “USCBC”], CHINA’S STRATEGIC EMERGING INDUSTRIES: POLICY, IMPLEMENTATION, CHALLENGES, AND RECOMMENDATIONS (Mar. 2013)); 2016 USTR REPORT TO CONGRESS ON CHINA’S WTO COMPLIANCE 104 (2017).

<sup>97</sup> ITIF, *Submission, Section 301 Hearing* 5-6 (Oct. 25, 2017).

<sup>98</sup> See Covington & Burling LLP, *Measures and Practices Restraining Foreign Investment in China*, prepared for the European Commission Directorate-General for Trade 63-4 (Aug. 2014) (citing to JAMES MCGREGOR, NO ANCIENT WISDOM, NO FOLLOWERS: THE CHALLENGES OF CHINESE AUTHORITARIAN CAPITALISM 38 (2012)).

<sup>99</sup> Covington & Burling LLP, *Measures and Practices Restraining Foreign Investment in China*, prepared for the European Commission Directorate-General for Trade 11 (Aug. 2014).

<sup>100</sup> USCBC, 2017 MEMBER SURVEY 9 (2017).

<sup>101</sup> USCBC, 2017 MEMBER SURVEY 9 (2017).

<sup>102</sup> EUROPEAN COMM’N, COMMISSION STAFF WORKING DOCUMENT ON SIGNIFICANT DISTORTIONS IN THE ECONOMY OF THE PEOPLE’S REPUBLIC OF CHINA FOR THE PURPOSES OF TRADE DEFENCE INVESTIGATIONS 426 (SWD(2017)483 FINAL/2, 39 (Dec. 20, 2012).

<sup>103</sup> U.S. CHAMBER OF COMMERCE, CHINA’S APPROVAL PROCESS FOR INBOUND FOREIGN INVESTMENT: IMPACT ON MARKET ACCESS, NATIONAL TREATMENT AND TRANSPARENCY 38-9 (Nov. 2012).

<sup>104</sup> See e.g., Mark Wu, *The ‘China, Inc.’ Challenge to Global Trade Governance*, 57 HARV. INT’L L. J. 284 (May 2016) (“China’s economic structure involves a complex web of overlapping networks and relationships—some formal and others informal—between the state, Party, SOEs, private enterprises, financial institutions, investment vehicles, trade associations, and so on.”). See also EUROPEAN COMM’N, COMMISSION STAFF WORKING DOCUMENT ON

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The fact that China systematically implements its technology transfer regime in informal and indirect ways makes it “just as effective [as written requirements], but almost impossible to prosecute.”<sup>105</sup> This difficulty is further exacerbated by the reality that foreign companies have no effective recourse in China and have been hesitant to report these informal pressures for fear of Chinese government retaliation and the potential loss of business opportunities.<sup>106</sup> Nevertheless, as shown below, confidential industry surveys, where companies may report their experiences anonymously, make clear that they are receiving such pressure. The lack of transparency in the regulatory environment, the complex relationship between the State and the private sector, and concerns about retaliation have enabled China's technology transfer regime to persist for more than a decade.<sup>107</sup>

In the course of this investigation, certain Chinese trade associations and law firms representing Chinese interests defended China's technology transfer regime, arguing that technology transfer decisions are products of “voluntary agreement” without “government intervention.”<sup>108</sup> They also asserted that JV and technology transfer arrangements are distinct from broader national industrial policies, and that domestic and foreign companies can choose when and whether to establish business partnerships.<sup>109</sup> Further, they stated that no Chinese laws or regulations explicitly force foreign investors to transfer technology, and that the central government has instructed local governments not to require technology transfer.<sup>110</sup>

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SIGNIFICANT DISTORTIONS IN THE ECONOMY OF THE PEOPLE'S REPUBLIC OF CHINA FOR THE PURPOSES OF TRADE DEFENCE INVESTIGATIONS 426 SWD(2017)483 FINAL/2, 13 (Dec. 20, 2012) (“Therefore, even though today the Chinese economy is to some extent made up of non-state actors...the decisive role of the State in the economy remains intact, with tight interconnections between government and enterprises (going far beyond the boundaries of SOEs) in place.”).

<sup>105</sup> ITIF, STOPPING CHINA'S MERCANTILISM: A DOCTRINE OF CONSTRUCTIVE, ALLIANCE-BACKED CONFRONTATION 18 (Mar. 2017).

<sup>106</sup> See U.S. CHAMBER OF COMMERCE, CHINA'S APPROVAL PROCESS FOR INBOUND FOREIGN INVESTMENT: IMPACT ON MARKET ACCESS, NATIONAL TREATMENT AND TRANSPARENCY 2, 40 (Nov. 2012). ITIF's submission in this investigation also illustrates how the threat of Chinese government retaliation leads U.S. companies to avoid seeking redress. For example, the ITIF submission provides that, “[a] top executive at a large U.S. plant biotechnology firm told ITIF recently of its experience in China. China was dumping the chemicals for a particular herbicide the U.S. company sold on global markets. The company confronted the Chinese agricultural minister with fact and said that it was planning to bring a complaint before the WTO. The Chinese minister simply responded that if the case were brought, the company would lose access to the Chinese market. Needless to say, the U.S. firm did not bring the case, even as it continued to lose global market share and jobs in the U.S.” ITIF, *Submission, Section 301 Hearing 6* (Oct. 25, 2017).

<sup>107</sup> See, e.g., U.S. CHAMBER OF COMMERCE, CHINA'S APPROVAL PROCESS FOR INBOUND FOREIGN INVESTMENT: IMPACT ON MARKET ACCESS, NATIONAL TREATMENT AND TRANSPARENCY 38-9 (Nov. 2012); EUROPEAN CHAMBER OF COMMERCE, CHINA MANUFACTURING 2025 15-16 (2017) (“For example, a longstanding feature of China's industrial policy is that foreign companies are often pushed to transfer technology as the price of market entry...Forced technology transfer is nothing new to FIEs. However, it is now an increasing requirement for more advanced technologies to be shared.”).

<sup>108</sup> See generally, CHINA CHAMBER OF COMMERCE FOR IMPORT & EXPORT OF MACHINERY & ELECTRONIC PRODUCTS [*hereinafter* “CCCME”], *Submission, Section 301 Hearing 6* (Oct. 20, 2017); CHINA CHAMBER OF INT'L. COMMERCE [*hereinafter* “CCOIC”], *Submission, Section 301 Hearing 12* (Sept. 28, 2017).

<sup>109</sup> CCCME *Submission, Section 301 Hearing 8-9* (Sept. 27, 2017).

<sup>110</sup> CCOIC, *Submission, Section 301 Hearing 124* (Sept. 28, 2017).

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USTR has carefully considered these arguments and finds them unsupported by the evidence and unconvincing. As set forth in detail below, the weight of the evidence shows that China uses foreign ownership restrictions, including joint venture requirements and equity limitations, and other investment restrictions to require or pressure technology transfer from U.S. companies to Chinese entities. The evidence further establishes that China uses discretionary and non-transparent administrative reviews and licensing processes to pressure technology transfer or force the unnecessary disclosure of sensitive technical information.

### 2. A Persistent Problem for U.S. Business

Due to the fact that much of China's technology transfer regime occurs "behind closed doors," confidential surveys provide an important source of information on how the regime works in practice. These surveys make clear that China's technology transfer regime is a persistent problem for U.S. companies in China, particularly in high-tech sectors targeted by the Chinese government.

According to the US-China Business Council's (USCBC) most recent member survey, 19 percent of responding companies stated that in the last year they had been directly asked to transfer technology to China.<sup>111</sup> Of these, 33 percent said that the request came from a central government entity and 25 percent that it came from the local government.<sup>112</sup>

Annual surveys conducted by the American Chamber of Commerce in China (AmCham China) reflect a similar problem. For example, in a 2013 survey of 325 U.S. companies in various sectors, more than one-third of respondents (35 percent) reported that they were concerned about "de facto technology transfer requirements as a condition for market access."<sup>113</sup> In a 2017 survey, 36 percent of respondents cited "reducing the need for us to engage in technology transfer" as one factor that would cause them to increase their investment levels in China.<sup>114</sup>

Other evidence indicates that this problem may be even more widespread than these surveys suggest. For example, one participant testified in the hearing for this investigation that while he was aware of these survey results, his own research indicated through "many, many private interviews with companies...we did not find a single instance in which companies had not felt pressure and in many cases caved into the pressure to share technology."<sup>115</sup>

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<sup>111</sup> USCBC, 2017 MEMBER SURVEY 9 (2017).

<sup>112</sup> USCBC, 2017 MEMBER SURVEY 9 (2017) (67 percent said the request was made directly by a Chinese company during the negotiations. The survey states, "[t]he request most frequently comes from a Chinese partner, rather than a government entity. While some of these requests may be a normal part of commercial negotiations, in many cases the hand of the Chinese government is behind these requests.").

<sup>113</sup> THOMAS J. HOLMES ET AL. FED. RES. BANK OF MINNEAPOLIS, RES. DEP'T STAFF REP. 486, QUID PRO QUO: TECHNOLOGY CAPITAL TRANSFERS FOR MARKET ACCESS IN CHINA 8 (2015) (citing AM. CHAMBER OF COMMERCE IN CHINA, CHINA BUSINESS CLIMATE SURVEY REPORT (2013)).

<sup>114</sup> AMCHAM CHINA, 2018 CHINA BUSINESS CLIMATE SURVEY REPORT 44 (2017). Of these, 22 percent stated that this reduction would be somewhat significant to their investment decision, 9 percent as very significant and 5 percent as extremely significant.

<sup>115</sup> Richard Ellings, COMMISSION ON THE THEFT OF INTELLECTUAL PROPERTY [*hereinafter* "IP Commission"], *Testimony, Section 301 Hearing*, 37 (Oct. 10, 2017) (emphasis added).

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Moreover, in sectors that are the focus of the Chinese government's industrial policy initiatives, the pressure on U.S. companies to form JVs and transfer technology is particularly intense. For example, according to AmCham China's 2013 survey, 42 percent of respondents in advanced technology sectors (including aerospace, automotive, chemical, and information technology) were concerned about "de facto technology transfer requirements as a condition for market access."<sup>116</sup> Only 3 percent of surveyed companies reported that these technology transfer requirements were decreasing, while 37 percent reported they were increasing and 26 percent that they were staying the same.<sup>117</sup>

A 2017 survey of the U.S. integrated circuit design and manufacturing industry conducted by the Department of Commerce's Bureau of Industry and Security yielded similar results: 25 U.S. integrated circuit companies responded that they will have to form JVs with Chinese entities and transfer intellectual property to obtain or maintain access to the China market.<sup>118</sup> In 2017, these 25 integrated circuited companies accounted for more than \$25 billion in total sales and over a quarter (26 percent) of all integrated circuits made and sold in the United States.<sup>119</sup>

U.S. companies are not alone in their concerns about China's technology transfer regime. According to a 2011 public consultation process conducted by the EU, the top barriers to investment in China included technology transfer requirements; JV requirements; foreign ownership limitations; prohibitions or limitations on the scope of business investments; licensing requirements/procedures; and regulatory approval procedures.<sup>120</sup>

### B. Foreign Ownership Restrictions as Used in China's Technology Transfer Regime

Foreign ownership restrictions such as JV requirements<sup>121</sup> and foreign equity limitations are a cornerstone of China's technology transfer regime. China's *Catalogue of Industries for Guiding Foreign Investment (Foreign Investment Catalogue)*, and other rules and regulations, require U.S. companies seeking to invest in certain industry sectors to enter into cooperative

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<sup>116</sup> AMCHAM CHINA, 2013 CHINA BUSINESS CLIMATE SURVEY REPORT 10 (2013).

<sup>117</sup> *Id.* ("N/A or don't know" responses omitted).

<sup>118</sup> U.S. DEP'T OF COMMERCE, BUREAU OF INDUS. & SECURITY, ASSESSMENT OF THE U.S. INTEGRATED CIRCUIT DESIGN AND MANUFACTURING INDUSTRY (forthcoming).

<sup>119</sup> U.S. DEP'T OF COMMERCE, BUREAU OF INDUS. & SECURITY, ASSESSMENT OF THE U.S. INTEGRATED CIRCUIT DESIGN AND MANUFACTURING INDUSTRY (forthcoming).

<sup>120</sup> EUROPEAN COMM'N, IMPACT ASSESSMENT REPORT ON THE EU-CHINA INVESTMENT RELATIONS, SWD (2013) 185final 12 90, 95 (May 23, 2013).

<sup>121</sup> The three most common corporate forms for foreign-invested entities (FIEs) in China are contractual joint ventures, equity joint ventures, and wholly foreign-owned enterprises. Each of these forms has different requirements and restrictions under Chinese law. See generally *Law of the People's Republic of China on Chinese-Foreign Contractual Joint Ventures* (adopted at the First Session of the Seventh NPC on Apr. 13, 1988, amended by the 18th Session of the Standing Committee of the Ninth NPC on Oct. 31, 2000, further amended Sep. 3, 2016, in Executive Order No. 51, and Nov. 7, 2016, in Executive Order No. 57, and Nov. 4, 2017, in Executive Order No. 81); *Law of the People's Republic of China on Chinese-Foreign Equity Joint Ventures* (adopted at the Second Session of the Fifth NPC on July 1, 1979, amended Apr. 4, 1990, in Executive Order No. 27, further amended Mar. 15, 2001, in Executive Order No. 48, and Sept. 3, 2016, in Executive Order No. 51); *Law of the People's Republic of China on Wholly Foreign-Owned Enterprises* (adopted by NPC on Apr. 12, 1986, amended Oct. 31, 2000, further amended Sept. 3, 2016).



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arrangements with Chinese partners.<sup>122</sup> According to submissions and testimony in this investigation, China's imposition of these requirements precludes U.S. companies from entering the market on their own terms and lays the foundation for the Chinese government to require or pressure technology transfer. For example, the U.S. Chamber of Commerce states in its written submission that:

As companies negotiate the terms of the joint venture, the foreign side may be asked—or required—to transfer its technology in order to finalize the partnership. Especially in instances where the Chinese partner is a state-owned or state-directed company, foreign companies have limited leverage in the negotiation if they wish to access the market. Although this type of technology transfer may not be explicitly mandated in a Chinese law or regulation, it is often an unwritten rule for market access.<sup>123</sup>

The USCBC similarly states that JV and other investment restrictions necessarily create an “unbalanced negotiation” with respect to technology transfer:

Chinese companies are in an inherently stronger position since their participation is required to form a joint venture or to provide the remaining equity in restricted sectors. As a consequence, a request for technology transfer made by a Chinese party in a business negotiation can reasonably be interpreted by foreign parties as a requirement for the deal to be concluded.<sup>124</sup>

The National Association of Manufacturers (NAM) stressed the negative effects of China's technology transfer regime on U.S. companies' global competitiveness:

This tilting of the playing field leaves manufacturers with untenable choices: they must either transfer their technology to the new China-based joint venture, or they must cede the world's fastest-growing market to foreign competitors, thus harming both their short-term growth and their long-term competitiveness.<sup>125</sup>

### 1. The Foreign Investment Catalogue and Technology Transfer

China maintains a detailed system for administering inbound foreign investment. The *Foreign Investment Catalogue* is a starting point for analyzing the restrictions on foreign investment in a particular industry, and is an important element of China's technology transfer regime.<sup>126</sup> First

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<sup>122</sup> *Catalogue of Industries for Guiding Foreign Investment (2017 Amendment)* (NDRC, MOFCOM, Order No. 4, issued June 28, 2017).

<sup>123</sup> U.S. CHAMBER OF COMMERCE, *Submission, Section 301 Hearing* 15 (Oct. 3, 2017).

<sup>124</sup> USCBC, *Submission, Section 301 Hearing* 6-7 (Sept. 28, 2017).

<sup>125</sup> NAT'L. ASS'N OF MANUFACTURERS [hereinafter “NAM”], *Submission, Section 301 Hearing* 3 (Sept. 28, 2017). See also Lee Branstetter, *Submission, Section 301 Hearing* 2, 3 (Sept. 28, 2017) (U.S. companies are forced to choose between protecting their valuable technologies or losing access to a critical market. If they choose to forego the Chinese market to protect their valuable intellectual property, their foreign competitors exploit the market opportunity, thereby inhibiting U.S. companies' global competitiveness in the long-run).

<sup>126</sup> In addition to the *Foreign Investment Catalogue*, there are thousands of other regulations, rules, and regulatory documents related to foreign investment that are issued by central government authorities, as well as a countless local government regulations and restrictions that must be consulted to fully understand the restrictions foreign investors face in any particular sector. See Covington & Burling LLP, *Measures and Practices Restraining Foreign*

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issued in 1995, and most recently revised in 2017, the *Foreign Investment Catalogue* has historically divided industries into three basic categories: (1) “encouraged,” (2) “restricted,” and (3) “prohibited.”<sup>127</sup> Industries not listed in one of these categories generally are considered to be “permitted.”

Different categories of investment generally lead to different degrees of approval scrutiny or application requirements. For example, foreign investments in “restricted” industries are subject to stricter government review and a case-by-case administrative approval process.<sup>128</sup> “Encouraged” industries benefit from special preferences and from a file-for-the record system of approvals, but can still be subject to investment restrictions.<sup>129</sup> Moreover, even for “encouraged” sectors, stakeholders have expressed concerns, based on past experiences, that once China’s economy has achieved self-sufficiency in a particular industry and closed the technology gap, it will impose additional requirements or restrictions in these industries.<sup>130</sup>

Since its inception, the *Foreign Investment Catalogue* has required that investments in certain sectors take the form of a JV, that the proportion of foreign equity investment in the JV be capped at a particular level, that the Chinese party hold a controlling interest, and imposed other restrictions.<sup>131</sup> These arrangements may take different forms including: (i) a requirement that the U.S. company enter into an equity joint venture (EJV) or contractual joint venture (CJV) with a Chinese party; (ii) a requirement that Chinese parties must be controlling shareholders or hold

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*Investment in China*, prepared for the European Commission Directorate-General for Trade 5 (Aug. 10, 2014) (reviewing 39 central government agencies that promulgated 137,328 measures affecting foreign investment that were in effect at the time of the survey).

<sup>127</sup> In 2017, a “negative list” approach was adopted under which the catalogue was divided between a list of “encouraged” sectors and a “Foreign Investment Access Negative List” (Negative List), which consisted of three types of industries: (a) “restricted” (b) “prohibited” and (c) certain “encouraged” industries subject to limitations on shareholder structure or other limitations. This approach is fundamentally similar to previous catalogues and merely re-categorizes the restricted and prohibited industries under the rubric of a Negative List. Further, the Negative List is not a comprehensive identification of all foreign investment restrictions as it is based on earlier catalogues, which as described above, do not comprehensively list all investments restrictions that may apply to foreign investors in China. *Foreign Investment Catalogue*.

<sup>128</sup> See WTO Secretariat, *Trade Policy Review: China*, ¶2.45-¶2.76, WT/TPR/S/300 (May 27, 2014).

<sup>129</sup> Projects in the “encouraged” category may be eligible for certain preferential policies, such as customs duty preferences on the importation of certain capital goods. See e.g., *General Administration of Customs Announcement On Implementing Issues Regarding Foreign Investment Industry Guiding Catalogue (amended 2017)* §1 (GAC, 2017 Announcement No. 30, issued July 17, 2017). Encouraged industries subject to foreign equity restrictions are listed twice, once under the encouraged category and then again under the restricted category. *Foreign Investment Catalogue*.

<sup>130</sup> U.S. CHAMBER, *MADE IN CHINA 2025: GLOBAL AMBITIONS BUILT ON LOCAL PROTECTIONS* 27 (2017); EUROPEAN CHAMBER OF COMMERCE, *CHINA MANUFACTURING 2025* 15 (2017). See also TAI MING CHEUNG ET AL., U.S.-CHINA ECON. & SEC. REV. COMM’N, *PLANNING FOR INNOVATION: UNDERSTANDING CHINA’S PLANS FOR TECHNOLOGICAL, ENERGY, INDUSTRIAL AND DEFENSE DEVELOPMENT* 166 (2016) (“In cases where China has no bargaining power but wants the technology, it will allow 100 percent foreign ownership since that is the only choice. An example of an ‘encouraged’ investment with no JV or equity requirements is ‘IC design, manufacturing of 28 nm and below large-scale digital IC, manufacturing of 0.11-micron and below analog and mixed signal IC, manufacturing of MEMS and compound semiconductor IC, and BGA, PGA, CSP, MCM, and other advanced packaging and testing.’ This category does not specify any joint venture or Chinese controlled entity requirement.”).

<sup>131</sup> See TAI MING CHEUNG ET AL., U.S.-CHINA ECON. & SEC. REV. COMM’N, *PLANNING FOR INNOVATION: UNDERSTANDING CHINA’S PLANS FOR TECHNOLOGICAL, ENERGY, INDUSTRIAL AND DEFENSE DEVELOPMENT* 166 (2016); *Foreign Investment Catalogue*.

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the majority of shares in the venture; and (iii) other types of restrictions on foreign ownership or control.<sup>132</sup>

Although reforms to China’s foreign investment regime have enabled other forms of investments, including wholly-owned foreign enterprises (WFOEs) in certain sectors, ownership restrictions continue to operate in many key sectors important to foreign investors, including in the services, agriculture, extractive industries, and manufacturing sectors.

Currently, 35 sectors remain in the “restricted” category of the *Foreign Investment Catalogue*.<sup>133</sup> The category includes, *inter alia*, the following sectors, which are subject to equity limits and/or local partner requirements (see Table II.1).

**Table II.1: Examples of Equity Restrictions and Local Partner Requirements in China’s 2017 *Foreign Investment Catalogue***

Sector	Summary of Requirements
Selection and cultivation of new varieties of crops and production of seeds	Chinese party must be the controlling shareholder.
Exploration and development of oil and natural gas	Limited to CJV or EJV
Manufacturing whole automobiles	Chinese party’s investment cannot be lower than 50 percent, and the same foreign investor may establish no more than two JVs in China for the same kind of automobiles, subject to certain exceptions.
Manufacturing commercial aircraft	Chinese party must be the controlling shareholder.
Construction and operation of nuclear power plants	Chinese party must be the controlling shareholder.
Value-added Telecommunications Services	Foreign investment cannot exceed 50 percent, excluding e-commerce, and is limited to WTO commitments. Note that China classifies a broad range of internet and technology-related services under this sector.
Basic telecommunications services	Chinese party must be the controlling shareholder and foreign investment is limited to WTO commitments.
Banks	Foreign financial institution investment cannot exceed 20 percent or 25 percent depending on how the investment is structured.
Medical institutions	Limited to CJV or EJV.
Surveying and mapping companies	Chinese party must be the controlling shareholder.

Source: *Foreign Investment Catalogue (2017 Amendment)*.

By promoting foreign investment in certain industries while limiting or altogether prohibiting investment in others, the Chinese government uses its foreign investment regime to channel

<sup>132</sup> *Foreign Investment Catalogue*.

<sup>133</sup> Sectors in the “restricted” category are described in Appendix D to this Report.

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foreign investment into industries of its choosing to support policy objectives.<sup>134</sup> For example, the U.S. Chamber of Commerce in a March 2017 report on the *Made in China 2025* initiative, notes that foreign investment restrictions impact companies in the plan's targeted industries:

These restrictions either block opportunities for foreign companies to operate in the market, or, in some cases, create a de facto technology transfer requirement to the Chinese partner as a precondition for market access.<sup>135</sup>

These technology transfer pressures occur not only in the high-tech sectors targeted by *Made in China 2025* but also in more traditional sectors in which China has sought to obtain advanced technologies through the imposition of JV requirements. The shale gas industry provides one example of how the *Foreign Investment Catalogue* is used to channel investment to support industrial policy objectives. In this industry, China seeks to acquire foreign technologies in order to unlock the potential of its shale reserves located in geologically complex areas, and has explicitly stated in its industrial policies that “cooperation” with foreign companies should be used as one way to introduce this technology to China. For example, China's *Shale Gas Development Plan (2011-2015)* encourages international cooperation to “absorb and emulate mature advanced technologies from abroad and create core technologies for exploration and development that possess ‘Chinese characteristics.’”<sup>136</sup> In addition, China's *Shale Gas Industrial Policy* reiterates that China will encourage domestic enterprises to engage with foreign enterprises “that possess advanced shale gas technology” in technical cooperation in order to “introduce”<sup>137</sup> shale gas technology and operational experience.<sup>138</sup> Accordingly, oil and natural gas exploration and development continue to be subject to a JV requirement in the *Foreign Investment Catalogue*.<sup>139</sup> As discussed in more detail in Section V.B of this report, China has also used cyber intrusions to obtain technology and sensitive commercial information from U.S. companies operating in the oil and gas sectors, underscoring how the Chinese government uses a range of tools at its disposal to achieve its industrial policy objectives and to effect the transfer of technology from U.S. companies.

Foreign companies typically prefer to invest in China through a WFOE, rather than a JV, if the option is available. This preference often stems from concerns about the loss of control over their valuable technologies.<sup>140</sup> In a survey of 1,000 companies conducted on behalf of the EU, only 12 percent of respondents reported they would have chosen their current JV structure in the

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<sup>134</sup> USTR, 2016 USTR REPORT TO CONGRESS ON CHINA'S WTO COMPLIANCE 103-4 (2017); *see also* U.S. CHAMBER, *MADE IN CHINA 2025: GLOBAL AMBITIONS BUILT ON LOCAL PROTECTIONS* 26 (2017); EUROPEAN CHAMBER OF COMMERCE, *CHINA MANUFACTURING 2025* 15 (2017).

<sup>135</sup> U.S. CHAMBER, *MADE IN CHINA 2025: GLOBAL AMBITIONS BUILT ON LOCAL PROTECTIONS* 26 (2017).

<sup>136</sup> *Notice on Issuing the Shale Gas Development Plan (2011-2015)*, Sec. 5(1)2 (NDRC, MoF, MLR, NEA, Fa Gai Neng Yuan [2012] No. 612, issued Mar. 13, 2012).

<sup>137</sup> *See* Section I.C for an explanation of China's IDAR strategy and the concept of “introducing” technology from abroad.

<sup>138</sup> *Shale Gas Industry Policy*, art. 9 (NEA, 2013 Order No. 5, issued Oct. 22, 2013). The policy at art. 10 also encourages enterprises to participate in shale gas exploration and development through joint ventures.

<sup>139</sup> *Foreign Investment Catalogue*.

<sup>140</sup> INTERCHINA CONSULTING, *ESTABLISHMENT OF A JOINT VENTURE IN CHINA* 5 (June, 2011) (“Many foreign investors have discovered through hard found experience that one of the greatest exposures to IPR infringement is by having a Chinese partner.”); EUROPEAN COMM'N, *IMPACT ASSESSMENT REPORT ON THE EU-CHINA INVESTMENT RELATIONS*, SWD (2013) 185final 12 95-6 (May 23, 2013).

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absence of JV requirements. Most (52 percent) would have preferred a fully-owned business and 32 percent wanted a greater ownership stake in the JV than permitted.<sup>141</sup>

The risk of technology loss is exacerbated when the Chinese partner in the JV operation maintains other factories and workers that compete with the JV operation.<sup>142</sup> The employees of the JV often are recruited from, or have ties to, the Chinese partner's existing operations.<sup>143</sup> Under these conditions, there is a considerable likelihood that the JV's technology and know-how will leak, either through "unintentional osmosis or through intentional diversion."<sup>144</sup> In contrast, a WFOE has more control over its operations and can sometimes minimize operational decisions that create technology risks.<sup>145</sup> Nevertheless, WFOEs also face various technology-related pressures from the Chinese government, as part of China's numerous administrative review and licensing processes, as described in more detail below.<sup>146</sup>

In this investigation, the Intellectual Property Law Section of the American Bar Association noted that many U.S. companies—including American Superconductor Corporation (AMSC), Corning, DuPont, Eli Lilly, and General Motors—have sued for the misappropriation of trade secrets by JV partners, employees and others in Chinese courts.<sup>147</sup> The U.S. International Trade Commission also has been a frequent forum for U.S. companies asserting trade secret misappropriation claims based on conduct by JV partners and others in China, including SI Group, Fellowes, and Manitowoc Company.<sup>148</sup>

In response to these concerns, defenders of China's technology transfer regime argue that China has opened its economy to foreign investment in several respects, such as the introduction of the "Negative List" system, in which foreign investment in all sectors is permitted unless it is expressly included on a negative list.<sup>149</sup> Despite these changes, substantial restrictions on foreign

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<sup>141</sup> EUROPEAN COMM'N, IMPACT ASSESSMENT REPORT ON THE EU-CHINA INVESTMENT RELATIONS, SWD (2013) 185final 12 13 (May 23, 2013).

<sup>142</sup> OWEN D. NEE, JR., SHAREHOLDER AGREEMENTS AND JOINT VENTURES IN CHINA 583 (Thomson Reuters ed, 2016); *see also* INTERCHINA CONSULTING ESTABLISHMENT OF A JOINT VENTURE IN CHINA 5 (June, 2011); ITIF *Submission, Section 301 Hearing 10* (Oct. 25, 2017) (stating that, "[a]nother way China acquires technology and intellectual property is to steal it.").

<sup>143</sup> OWEN D. NEE, JR., SHAREHOLDER AGREEMENTS AND JOINT VENTURES IN CHINA 583 (Thomson Reuters ed, 2016).

<sup>144</sup> OWEN D. NEE, JR., SHAREHOLDER AGREEMENTS AND JOINT VENTURES IN CHINA 583 (Thomson Reuters ed, 2016).

<sup>145</sup> OWEN D. NEE, JR., SHAREHOLDER AGREEMENTS AND JOINT VENTURES IN CHINA 583 (Thomson Reuters ed, 2016).

<sup>146</sup> *See infra* Section II(C).

<sup>147</sup> AM. BAR ASS'N SECTION OF IP LAW [*hereinafter* "ABA Section"], *Submission, Section 301 Hearing 3* (Sept. 27, 2017). *See also* Daniel C.K. Chow, *Navigating the Minefield of Trade Secrets Protection in China*, 47 VAND. J. TRANSNAT'L L., 1007, 1009 (2014); Paul Ranjard, Benoit Misonne, *Study 12: Exploring China's IP Environment, in Study on the Future Opportunities and Challenges of EU-China Trade and Investment Relations 15* (2007). (describing a "common scenario" of IP violations by Chinese JV partners with competing JV businesses that use technology obtained from the foreign JV partner).

<sup>148</sup> ABA IP LAW SECTION, *Submission, Section 301 Hearing 3* (Sept. 27, 2017).

<sup>149</sup> *Opinions on the Implementation of the Market Access Negative List System* § 1(1), (State Council, Guo Fa [2015] No. 55, issued Oct. 2, 2015, effective from Dec. 1, 2015 to Dec. 31, 2017); CCOIC, *Submission, Section 301 Hearing 33* (Sept. 26, 2017); CHINA INTELLECTUAL PROPERTY LAW [*hereinafter* "CIPL"], *Submission, Section 301 Hearing 40* (Sept. 27, 2017).

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investment remain. First, China continues to use an approach that is fundamentally similar to previous versions of the *Foreign Investment Catalogue*, in which many “restricted” and “prohibited” investments are included under the “Negative List”.<sup>150</sup> During the period of this investigation, key sectors remain subject to JV and other investment restrictions.<sup>151</sup> Moreover, even if China dropped its JV and other foreign ownership requirements, foreign investors would still continue to face pressures to transfer technology or disclose technical information through China’s licensing and administrative approvals regime (detailed in Section II.C, below).

### 2. Illustrative Examples of China’s Use of Investment Restrictions to Pressure Technology Transfer

While companies from the United States and other advanced economies have long faced JV requirements and other limits on control over their technologies in China, the most intensive technology transfer pressures often arise in sectors that align with the Chinese government’s industrial policy objectives. For example, studies commissioned by the European Commission have found that in key sectors, including machinery and environmental technologies, European companies have to enter into partnerships with Chinese state-owned enterprises (SOEs) and acquiesce to technology transfer demands to access the market or bid on government projects.<sup>152</sup> Highlighted below for purposes of illustration are examples of technology transfer requirements or pressures imposed by the Chinese government in the automotive and aviation sectors.

#### a) Auto Manufacturing and New Energy Vehicles

When China initially opened the auto manufacturing sector to foreign investment, its goal was to use the transfer of technology from U.S. and other foreign auto makers to modernize SOEs in the sector.<sup>153</sup> To accomplish this goal, China has long required U.S. and other foreign car makers to enter into JVs where non-Chinese ownership is capped at 50 percent.<sup>154</sup>

China’s strategy of leveraging the technology of foreign automakers through JV requirements to grow its indigenous innovation capability has been called the “Changan Model” by Chinese

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<sup>150</sup> U.S. CHAMBER OF COMMERCE, *Submission, Section 301 Hearing 14* (Oct. 3, 2017) (China’s latest changes to its investment regime have provided, “...little in the way of comprehensive and meaningful openings to foreign investors.”).

<sup>151</sup> See Appendix D.

<sup>152</sup> Joachim Ihrcke, Krystina Becker, *Study 1: Machinery*, in Study on the Future Opportunities and Challenges of EU-China Trade and Investment Relations 33 (2007); Celine Louche, Angus Lambkin Pdraig Oliver, *Study 11: Sustainable Technologies and Services*, in Study on the Future Opportunities and Challenges of EU-China Trade and Investment Relations 66 (2007).

<sup>153</sup> 2015 U.S.-CHINA ECON. & SEC. REV. COMM’N ANN. REP. 84-5 (2015); KATHERINE KOLESKI, U.S.-CHINA ECON. & SEC. REV. COMM’N, CHINA’S 13<sup>TH</sup> FIVE-YEAR PLAN 153 (Feb. 14, 2017); see also USITC, INV. NO. 332-519, CHINA: EFFECTS OF INTELLECTUAL PROPERTY INFRINGEMENT AND INDIGENOUS INNOVATION POLICIES ON THE U.S. ECONOMY 5-33 (2011).

<sup>154</sup> 2015 U.S.-CHINA ECON. & SEC. REV. COMM’N ANN. REP. 84 (2015); KATHERINE KOLESKI, U.S.-CHINA ECON. & SEC. REV. COMM’N, CHINA’S 13<sup>TH</sup> FIVE-YEAR PLAN 153 (Feb. 14, 2017); see also USITC, INV. NO. 332-519, CHINA: EFFECTS OF INTELLECTUAL PROPERTY INFRINGEMENT AND INDIGENOUS INNOVATION POLICIES ON THE U.S. ECONOMY 5-33 (2011).

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government entities.<sup>155</sup> This model refers to the 50/50 JV entered into by a U.S. auto manufacturer and Chongqing Changan Automobile (Changan), a state-owned company ultimately controlled by the State-owned Assets Supervision and Administration Commission of the State Council (SASAC) through China South Industries Group.<sup>156</sup> A research division under the State Council lauded the “Changan Model” as an example of China’s Introduce, Digest, Absorb, Re-innovate (IDAR) approach<sup>157</sup> to technology development through the “introduction of technology and the digestion and re-innovation of technology.”<sup>158</sup> According to an article on the SASAC website, the model’s advantages include Changan’s control of the JV’s core production technology, the development of domestic innovation capabilities through control of that core technology, and the gradual upgrading of the domestic brand.<sup>159</sup>

As China gained advanced auto manufacturing technology through JVs and sought to promote its own domestic brands, foreign automakers have found their industry placed in increasingly restrictive sections of the *Foreign Investment Catalogue*. Thus, the *Foreign Investment Catalogue* “encouraged” the “manufacturing of complete automobiles” until 2010, “permitted” it from 2011-2014, and “restricted” it in 2015, as China’s domestic capability grew.<sup>160</sup>

Technology transfer pressures have intensified as China has sought to develop expertise in the manufacture of new energy vehicles (NEVs), which includes plug-in hybrids, electric batteries and fuel cell vehicles. The NEV sector was specifically targeted by the Chinese government in 2010 following the release by the State Council of the *Decision on Accelerating the Development of Strategic Emerging Industries*, which designated NEVs as one of the seven “strategic emerging industries” selected for accelerated development. In 2012, the State Council released the *Energy-Saving and New-Energy Automotive Industry Development Plan (2012-2020) (NEV Plan)*,<sup>161</sup> which set forth an industrial development blueprint for NEVs calling for the

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<sup>155</sup> “Changan Model” Radiates at the China Auto Industry Indigenous Innovation Summit [Chinese], SASAC, Nov. 7, 2006. <http://www.sasac.gov.cn/n2588025/n2588124/c3877435/content.html> (last visited Nov. 29, 2017).

<sup>156</sup> CHONGQING CHANGAN AUTOMOBILE CO., LTD. 2016 ANNUAL REPORT 42 [Chinese] (2016), available at <http://www.chinasouth.com.cn/1144.html> (last visited Dec. 2, 2017). China Southern Industries Group is a major Chinese arms manufacturer. SASAC is a part of the Chinese government, directly under the State Council, tasked with overseeing China’s SOEs.

<sup>157</sup> See Section I.C for an explanation of China’s IDAR strategy.

<sup>158</sup> *Development Research Center of the State Council: Changan Innovation Model Evokes Interest* [Chinese], CHINA ENTERPRISE CONFEDERATION / CHINA ENTERPRISE DIRECTORS ASSOCIATION, Nov. 14, 2006, available at [http://info.cec-ceda.org.cn/jx/pages/20061114\\_32467\\_6\\_2.html](http://info.cec-ceda.org.cn/jx/pages/20061114_32467_6_2.html) (last visited Nov. 29, 2017).

<sup>159</sup> “Changan Model” Radiates at the China Auto Industry Indigenous Innovation Summit [Chinese], SASAC, Nov. 7, 2006, available at <http://www.sasac.gov.cn/n2588025/n2588124/c3877435/content.html> (last visited Nov. 29, 2017).

<sup>160</sup> See 2015 U.S.-CHINA ECON. & SEC. REV. COMM’N ANN. REP. 85 (2015). See also *Catalogue of Industries for Guiding Foreign Investment* (National Planning Commission, National Economic and Trade Commission, Ministry of Foreign Economics and Trade, Order No. 21, issued Mar. 4, 2002); *Catalogue of Industries for Guiding Foreign Investment* (amended 2004) (NDRC, MOFCOM Order No. 24, issued Nov. 30, 2004); *Catalogue of Industries for Guiding Foreign Investment* (amended 2007) (NDRC, MOFCOM Order No. 57, issued Oct. 31, 2007); *Catalogue of Industries for Guiding Foreign Investment* (amended 2011) (NDRC, MOFCOM Order No. 12, issued Dec. 24, 2011); *Catalogue of Industries for Guiding Foreign Investment* (amended 2015) (NDRC, MOFCOM Order No. 22, issued Mar. 10, 2015); *Catalogue of Industries for Guiding Foreign Investment* (amended 2017) (NDRC, MOFCOM, Order No. 4, issued June 28, 2017).

<sup>161</sup> *Energy-Saving and New-Energy Automotive Industry Development Plan (2012-2020)* § 6(2)(2) (State Council, Guo Fa [2012] No. 22, issued June 28, 2012) [hereinafter “NEV Plan”].

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establishment of numerous regulations and subsidy programs to support domestic R&D, manufacturing, and utilization of NEVs. The *NEV Plan* sets a target of achieving cumulative production and sales volume of 5 million NEV units by 2020.<sup>162</sup> A “basic principle” of the *NEV Plan* is to “expedite the formation of technology, standards, and brands using indigenous intellectual property.”<sup>163</sup> China’s focus on developing its domestic capacity to produce NEVs was recently reconfirmed with the sector’s inclusion in the *Made in China 2025 Key Area Technology Roadmap (Made in China 2025 Roadmap)*, which calls for, *inter alia*, indigenous NEVs to comprise 70 percent of domestic NEV sales by 2020 and 80 percent by 2025.<sup>164</sup>

Foreign NEV producers seeking to sell their products in China face pressure to produce their automobiles in China with a JV partner rather than exporting them to China, due to a range of Chinese policies, including steep import tariffs<sup>165</sup> and subsidies available for domestically-produced NEVs,<sup>166</sup> as well as a new NEV credit system.<sup>167</sup> These pressures to produce NEVs locally work in tandem with China’s JV requirements to elicit the transfer of technology from foreign automakers to domestic Chinese automakers.

Specifically, market access rules issued in 2009 by the Ministry of Industry and Information Technology (MIIT), which applied to all enterprises that manufactured NEVs in China for use in China<sup>168</sup> and were a condition to be eligible for certain NEV preference programs,<sup>169</sup> required that NEV JVs hold intellectual property rights in one of three key NEV technologies: batteries, drive systems, or control systems.<sup>170</sup> In effect, this requirement forced foreign NEV

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<sup>162</sup> *NEV Plan* § 3(2.1).

<sup>163</sup> *NEV Plan* § 2(2).

<sup>164</sup> *Made in China 2025 Key Area Technology Roadmap* (National Strategic Advisory Committee on Building a Powerful Manufacturing Nation, issued Oct. 2015).

<sup>165</sup> Imported passenger vehicles are generally subject to a 25 percent tariff rate. *See Customs Import and Export Tariff of the People’s Republic of China* (2017).

<sup>166</sup> The Chinese government provides subsidies to NEV manufacturers in connection with their sales of NEVs to consumers in China. In the current phase of the program, the central government subsidy amount is based primarily upon vehicle range and is capped at CNY 44,000 (\$6,500) per vehicle. In addition, local governments are allowed to offer a subsidy of up to 50 percent of the value of the central government subsidy. *Notice on Adjusting Fiscal Subsidy Policies for Promoting the Expanded Use of NEVs* (MOF, MOST, MIIT, NDRC, Cai Jian [2016] No. 958, Dec. 30, 2016). Eligibility requirements for these subsidies are described below in more detail.

<sup>167</sup> The NEV credit system requires all automakers selling vehicles in China to generate, by 2018, a certain portion of their production and imports from NEVs in order to generate “NEV credits” or be subject to penalties. *See Provisional Measures for Administration of the NEV Fuel Use and Credit System*, art 36 (MIIT, MOF, MOFCOM, General Administration of Customs, and General Administration of Quality Supervision, Inspection and Quarantine, 2017 Order No. 44, issued Sept. 27, 2017, effective Apr. 1, 2018); *see also* ITIF, *Submission, Section 301 Hearing 6* (Oct. 25, 2017).

<sup>168</sup> *Provisions on the Administration of Access for New Energy Vehicle Manufacturers and Products*, art. 2 (MIIT, [2009] Order No. 44, effective July 1, 2009).

<sup>169</sup> NEV models that satisfy the market access rules were published in a catalogue. *See Provisions on the Administration of Access for New Energy Vehicle Manufacturers and Products*, art. 8 (MIIT, [2009] Order No. 44, effective July 1, 2009). Only NEV models listed in the catalogue were eligible for certain subsidies. *See Notice on Developing Energy Efficient and New Energy Vehicle Demo Promotion Pilot Work* § 3, art. 7(1) (MOST, MOF, Cai Jian [2009] No. 6, issued Jan. 23, 2009). *See also Notice on New Energy Vehicle Expanded Use Fiscal Support Policies for 2016-2020* § 1(2) (MOF, MOST, MIIT, NDRC, Cai Jian [2015] No. 134, issued Apr. 22, 2015).

<sup>170</sup> *Provisions on the Administration of Access for New Energy Vehicle Manufacturers and Products* (MIIT, [2009] Order No. 44, effective July 1, 2009), Appendix 2, Requirement 5 required the NEV manufacturer “possess intellectual property (at least rights to make design changes or usage rights) for the mastered core technology.” *See*



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manufacturers to transfer their valuable technologies to the NEV JV, which they do not control, in order to gain market access.<sup>171</sup>

The pressure on NEV manufacturers to transfer core NEV technology to their JVs in China has intensified over the last year. New market access rules issued by MIIT in 2017, which also apply to all enterprises that manufacture NEVs in China for use in China<sup>172</sup> and are a condition to be eligible for certain NEV preference programs,<sup>173</sup> impose an even more onerous standard. These rules require that NEV manufacturers “master” the development and manufacturing technology for a complete NEV, rather than just one of the three key technologies listed in the 2009 market access rules, and possess key R&D capacities.<sup>174</sup> As foreign automaker investment in China must be through a JV in which the foreign company holds no more than 50 percent equity, the foreign automaker effectively must transfer a high degree of key technologies and components to the JV in order for the JV to acquire mastery of the manufacturing process, including electronic and electrical control systems, on-board energy systems, powertrains, and dynamic coupling equipment.<sup>175</sup>

Several submissions from U.S. trade associations pointed to China's NEV rules as evidence of China's unfair technology transfer regime, with one trade association stating in hearing testimony that China's NEV rules present “a clear case in the electric vehicle sector that you're simply not going to be able to sell that product in China unless that local partner has mastered the ability to leverage the technology and take it to produce it going forth.”<sup>176</sup>

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*also* TAI MING CHEUNG ET AL., U.S.-CHINA ECON. & SEC. REV. COMM'N, PLANNING FOR INNOVATION: UNDERSTANDING CHINA'S PLANS FOR TECHNOLOGICAL, ENERGY, INDUSTRIAL AND DEFENSE DEVELOPMENT 235-6 (2016); U.S. CHAMBER, *Submission, Section 301 Hearing* 16 (Oct. 3, 2017). *See also* Keith Bradsher, *Hybrid in a trade squeeze*, NEW YORK TIMES, Sept. 6, 2011 (reporting that the Chinese government was refusing to let GM's electric vehicle, the Chevrolet Volt, qualify for certain subsidies unless GM agreed to transfer the technology for “one of the Volt's three main technologies” (electric motors, electronic controls, or power storage) to a JV in China. These subsidies were reportedly “crucial” for allowing electric vehicles to sell in meaningful quantities.); Ben Klayman, *GM, SAIC to develop electric vehicles in China*, REUTERS, Sept. 20, 2011 (reporting that GM and its Chinese partner SAIC Motor Corp signed an agreement that they would build electric vehicles that would qualify for subsidies, noting that as the Volt was not built in China, it did not qualify for them).

<sup>171</sup> TAI MING CHEUNG ET AL., U.S.-CHINA ECON. & SEC. REV. COMM'N, PLANNING FOR INNOVATION: UNDERSTANDING CHINA'S PLANS FOR TECHNOLOGICAL, ENERGY, INDUSTRIAL AND DEFENSE DEVELOPMENT 236 (2016) (citing Sabrina Howell, Henry Lee, & Adam Heal, HARVARD KENNEDY SCHOOL BELFER CENTER, LEAPFROGGING OR STALLING OUT? ELECTRIC VEHICLES IN CHINA (May 2014)).

<sup>172</sup> *Provisions on the Administration of Access for New Energy Vehicle Manufacturers and Products*, art. 2 (MIIT [2017] Order No. 39, effective July 1, 2017).

<sup>173</sup> As with the 2009 rules, NEV models that satisfy the market access rules are published in a catalogue and only those NEV models listed in the catalogue are eligible for certain subsidies. *Provisions on the Administration of Access for New Energy Vehicle Manufacturers and Products*, art. 14 (MIIT, [2017] Order No. 39, effective July 1, 2017); *Notice on New Energy Vehicle Expanded Use Fiscal Support Policies for 2016-2020* § 1(2) (MOF, MOST, MIIT, NDRC, Cai Jian [2015] No. 134, issued Apr. 22, 2015).

<sup>174</sup> *Provisions on the Administration of Access for New Energy Vehicle Manufacturers and Products*, art. 5(3), app. 1 (MIIT, [2017] Order No. 39, effective July 1, 2017); *see also* U.S. CHAMBER, *Submission, Section 301 Hearing* 16 (Oct. 3, 2017).

<sup>175</sup> *Provisions on the Administration of Access for New Energy Vehicle Manufacturers and Products*, art. 5(3), app. 1 (MIIT, [2017] Order No. 39, effective July 1, 2017).

<sup>176</sup> Stephen Ezell, ITIF, *Testimony, Section 301 Hearing* 38-39 (Oct. 10, 2017); *see also* U.S. CHAMBER, *Submission* 16 (Oct. 3, 2017); U.S. CHAMBER, *MADE IN CHINA 2025: GLOBAL AMBITIONS BUILT ON LOCAL PROTECTIONS* 27 (2017).

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### b) Aviation

The state is the dominant force on the demand-side in many industries in China, both through direct purchases made by the central and local governments and through purchases made by SOEs, which account for a large share of purchasing decisions.<sup>177</sup> According to one hearing participant, “often an implicit part of the deal of whether or not a company has its product or good chosen and purchased is [whether] there’s going to be a transfer of technology concomitant with that sale.”<sup>178</sup> Similarly, AmCham China’s 2013 White Paper on Civil Aviation states “many US companies possess intellectual property (IP) that serves as their source of competitiveness and profitability, yet they are sometimes required (implicitly or explicitly) to transfer such IP to their JV partners”.<sup>179</sup> In the aviation industry, China uses its purchasing power to require JVs and technology transfer in exchange for two types of business opportunities—the sale of commercial aircraft to China’s state-owned airlines and the sale of aircraft components to Chinese-made aircraft.

The fact that China’s three largest airlines – AirChina, China Eastern, and China Southern – are all state-owned and account for the vast majority of aircraft purchases provides the Chinese government with a significant degree of leverage over foreign aircraft makers.<sup>180</sup> Purchases of commercial aircraft by China’s state-owned airlines require approval by the Chinese government.<sup>181</sup> According to industry experts and participants, China uses its leverage to maintain a balance between purchases of foreign aircraft<sup>182</sup> and to pressure them to form JVs with Chinese companies and localize production.<sup>183</sup> China is effectively able to exert this pressure over aircraft manufacturers because of the size of China’s commercial aircraft

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<sup>177</sup> The European Chamber of Commerce in China in 2011 estimated that China’s government procurement market including SOEs ranges from 12 percent to 20percent of China’s GDP. EU CHAMBER OF COMMERCE IN CHINA, PUBLIC PROCUREMENT IN CHINA: EUROPEAN BUSINESS EXPERIENCES COMPETING FOR PUBLIC CONTRACTS IN CHINA 16 (Apr. 2011).

<sup>178</sup> Stephen Ezell, ITIF, *Testimony, Section 301 Hearing* 38 (Oct. 10, 2017).

<sup>179</sup> AMCHAM CHINA 2013 WHITE PAPER 188 (2012).

<sup>180</sup> See KEITH CRANE, ET AL., RAND, THE EFFECTIVENESS OF CHINA’S INDUSTRIAL POLICIES IN COMMERCIAL AVIATION MANUFACTURING 27 (2014).

<sup>181</sup> See e.g., CAAC Notice Regarding the Report on Civil Aviation System Management System Reform, (State Council Guo Fa [1985] No. 3, Issued Dec. 3, 1984). See also Yan Yan, *Secrets of “Elderly” Aircraft*, PEOPLE’S DAILY, Apr. 6, 2015, [http://paper.people.com.cn/gjrb/html/2015-04/06/content\\_1550497.htm](http://paper.people.com.cn/gjrb/html/2015-04/06/content_1550497.htm) (last visited Dec. 8, 2017) for a description of the government approval process for purchasing and leasing aircraft in China.

<sup>182</sup> This problem has been widely discussed in industry and government fora, including in two reports commissioned by the U.S.-China Economic and Security Review Commission which explain how the Chinese government leverages purchases of aircraft in exchange for agreements that it hopes will lead to technology transfers into China’s aviation industry. See, e.g., KEITH CRANE, ET AL., RAND, THE EFFECTIVENESS OF CHINA’S INDUSTRIAL POLICIES IN COMMERCIAL AVIATION MANUFACTURING (2014); ROGER CLIFF, CHAD J. R. OHLANDT, DAVID YANG, RAND, READY FOR TAKEOFF: CHINA’S ADVANCING AEROSPACE INDUSTRY 38 (Mar. 2011).

<sup>183</sup> Owen Herrstadt, INT’L ASS’N OF MACHINISTS & AEROSPACE WORKERS (*hereinafter* “IAM”), *Testimony, Section 301 Hearing* 28-9 (Oct. 10, 2017); KEITH CRANE, ET AL., RAND, THE EFFECTIVENESS OF CHINA’S INDUSTRIAL POLICIES IN COMMERCIAL AVIATION MANUFACTURING 29 (2014); *The Impact of International Technology Transfer on American Research and Development: Hearing Before the House Committee on Science, Space, and Technology, Subcommittee on Investigations and Oversight*, 112th Cong. 8 (2012) (Statement of Robert D. Atkinson).

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market,<sup>184</sup> coupled with required government approvals of aircraft purchases by state-owned airlines, and fierce competition for a limited number of government-approved sales.

China similarly uses its purchasing power to foster the development of a domestic supply chain for Chinese-made aircraft, particularly the C919, which will be China's first "homegrown" large commercial aircraft.<sup>185</sup> Industry observers have described the purchase order process for the C919 as "state directed," "coerced," and "choreographed" by the central government.<sup>186</sup> Within this process, JVs are used as a key mechanism for obtaining the technology needed to support the development of a domestic supply chain for Chinese-made aircraft:

Chinese government officials have clearly communicated to foreign firms in the commercial aviation manufacturing industry that their business in China would be much more likely to enjoy success if they are seen as a "friend of China." Companies can demonstrate this by setting up local production facilities, bringing in technologies, or participating in the C919 project...<sup>187</sup>

Specifically, the Commercial Aircraft Corporation of China (COMAC), a centrally-controlled SOE,<sup>188</sup> has made clear that foreign suppliers to the C919 program must enter into JVs with Chinese suppliers to participate in tenders for key components and systems.<sup>189</sup> This pressure is particularly prevalent in tenders for high-tech functions where Chinese capabilities are lagging,

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<sup>184</sup> The International Air Transport Association estimates that China's aviation market will reach 1.3 billion passengers by 2035, compared to only 1.1 billion in the U.S. market. Based on these projections, some estimates predict that Chinese airlines will need to purchase 6,810 aircraft worth more than \$1 trillion by 2035. Press Release, International Air Transport Association, IATA Forecasts Passenger Demand to Double Over 20 Years (Oct. 18, 2016); *Boeing lifts long-term outlook for China plane demand to \$1 trillion*, REUTERS (Sept. 13, 2016).

<sup>185</sup> This problem has been widely discussed in industry and government fora, including in two reports commissioned by the U.S.-China Economic and Security Review Commission which explain how the Chinese government leverages purchases of aircraft in exchange for agreements that it hopes will lead to technology transfers into China's aviation industry. See, e.g., KEITH CRANE, ET AL., RAND, THE EFFECTIVENESS OF CHINA'S INDUSTRIAL POLICIES IN COMMERCIAL AVIATION MANUFACTURING (2014); ROGER CLIFF, CHAD J. R. OHLANDT, DAVID YANG, RAND, READY FOR TAKEOFF: CHINA'S ADVANCING AEROSPACE INDUSTRY 38 (Mar. 2011).

<sup>186</sup> Steve Wilhelm, *Mighty 737 Has Rivals on its Tail—and not Just Airbus*, PUGET SOUND BUSINESS JOURNAL, Aug. 17, 2012; *The Enduring Jetliner Duopoly*, AEROSPACE AMERICA, Oct. 2012; *C919 May Suffer Order Bottleneck over Next 4 Yrs*, SINOCAS, Sept. 20, 2012; *National Priority: COMAC Is Behind Schedule on C919 Supplier Selection, but Has State Directed Orders in the Bag*, AVIATION WEEK & SPACE TECHNOLOGY, June 28, 2010; Alexey Komarov, Michael A. Taverna, *Growing Pains*, AVIATION WEEK & SPACE TECHNOLOGY, Nov. 22, 2010.

<sup>187</sup> KEITH CRANE, ET AL., RAND, THE EFFECTIVENESS OF CHINA'S INDUSTRIAL POLICIES IN COMMERCIAL AVIATION MANUFACTURING 31 (2014).

<sup>188</sup> See *List of Central Enterprises* [Chinese], ASSET SUPERVISION AND ADMINISTRATION COMMISSION OF THE CHINESE STATE COUNCIL, available at <http://www.sasac.gov.cn/n2588035/n2641579/n2641645/index.html> (last visited Jan. 7, 2018).

<sup>189</sup> *Why the "Main Manufacturer – Supplier" Model* [Chinese], COMMERCIAL AIRCRAFT CORPORATION OF CHINA (COMAC) (June 24, 2013), [http://www.comac.cc/xw/mtjj/201306/24/t20130624\\_941203.shtml](http://www.comac.cc/xw/mtjj/201306/24/t20130624_941203.shtml) (last visited Dec. 11, 2017) ("As a result [of the drive to develop domestic industry], during the supplier bidding process, COMAC has explicitly put forward that for five systems including avionics, it seeks technological advancements, and at the same time, requires the establishment of joint ventures with domestic suppliers, build-out of R&D, integration, production and assembly, and testing capabilities for system-level products, as well as the formation of a complete set of batch-production and customer service capabilities. Concurrently, [COMAC] has supported the participation of domestic suppliers in system-level and equipment-level R&D cooperation, and encouraged domestic enterprises and institutions to cooperate with foreign suppliers in the form of subcontracted production, to participate in research and procurement projects for other large aircraft systems and equipment.").

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such as advanced materials and flight control systems.<sup>190</sup> A 2015 press statement issued by COMAC explains that it selected sixteen leading international suppliers and it pushed for these suppliers to partner with domestic enterprises to develop key technologies for the C919. As a result, these sixteen JVs have “improved the overall level of China’s aerospace R&D and manufacturing through technology transfer, diffusion, and spillover.”<sup>191</sup>

AmCham China’s 2012 White Paper on Civil Aviation makes clear how China’s technology transfer regime puts pressure on U.S. aviation companies:

Indigenous innovation industrial policy in the aerospace sector is forcing US companies to form joint ventures (JV) or localize manufacturing in order to participate in domestic aircraft programs such as the C919. Rather than being market-driven, these JVs are often with the Aviation Industry Corporation of China (AVIC) or COMAC designated partners... Additionally, many US companies possess intellectual property that serves as the source of their competitiveness and profitability, yet they are being forced to transfer their intellectual property in order to participate in this sector. It is challenging enough for companies to manage a successful JV when they choose their own JV partner. When JV partners are designated by an outside party, the difficulty of running a successful JV increases further.<sup>192</sup>

In this investigation, the International Association of Machinists and Aerospace Workers (IAM) criticized U.S. aviation companies for responding to this pressure by transferring certain technologies and production to China.<sup>193</sup> Other submissions stated, however, that aviation companies face few realistic alternatives; even if U.S. companies did not accede, those from other countries would do so to and gain a critical competitive advantage.<sup>194</sup> Another submission put the matter more starkly:

[A] ‘voluntary’ technology transfer takes place, but one that is only voluntary in the sense that the business transactions engaged in by the fictional gangster of the *Godfather* series, Vito Corleone, were voluntary. China is effectively making an offer multinationals cannot refuse. Once Chinese producers are able to produce commercial aircraft, the state-owned airlines can be induced to buy them, even if they lag multinational products in terms of reliability or performance. Shut out of the world’s largest market for their product, multinational players are forced to shrink, export opportunities are lost, and the leading firms have fewer resources to invest in the next generation of products.”<sup>195</sup>

### C. Administrative Review and Licensing Processes as Used in China’s Technology Transfer Regime

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<sup>190</sup> KEITH CRANE, ET AL, RAND, THE EFFECTIVENESS OF CHINA’S INDUSTRIAL POLICIES IN COMMERCIAL AVIATION MANUFACTURING at 31 (2014).

<sup>191</sup> *The C919 First Large Passenger Plane Comes Off General Assembly Line, Xi Jinping Issues Important Directive, Premier Li Keqiang Issues Comments, Ma Kai and Han Zheng Attend the Ceremony* [Chinese] COMAC (Nov. 2, 2015), [http://www.comac.cc/xwzx/gsxw/201511/02/t20151102\\_3031037.shtml](http://www.comac.cc/xwzx/gsxw/201511/02/t20151102_3031037.shtml) (last visited Dec. 11, 2017).

<sup>192</sup> AMCHAM CHINA 2012 WHITE PAPER 190 (2012).

<sup>193</sup> IAM, *Submission, Section 301 Hearing 1* (Sept. 29, 2017).

<sup>194</sup> Lewis, *Submission, Section 301 Hearing 3* (Sept. 27, 2017).

<sup>195</sup> Lee Branstetter, *Submission, Section 301 Hearing 2* (Sept. 28, 2017).

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China also uses its administrative review and licensing processes to force the disclosure of sensitive technical information and to achieve its technology transfer objectives. China maintains numerous administrative review and licensing processes that companies must comply with before establishing or expanding operations, or offering products or services in the China market.<sup>196</sup> These review and licensing processes, which occur in agencies at the central, provincial, and municipal levels, often are used as an opportunity to require technology transfer.<sup>197</sup> Vaguely worded provisions and uncertainty about the applicable rules provide Chinese authorities with wide discretion to use administrative processes to pressure technology transfer, restrict investments to protect domestic competitors, or otherwise act in furtherance of industrial policy objectives.<sup>198</sup>

### 1. Technology Transfer Pressure in Administrative Approvals and Licensing

Foreign investment in China requires obtaining numerous government approvals depending on the terms of the investment and the industry and location in which the investment occurs. For instance, a foreign investment may be required to obtain (1) investment approval from the Ministry of Commerce (MOFCOM) or its local counterpart, (2) project approval from the National Development and Reform Commission (NDRC), its local counterpart, or the State Council, (3) national security and (4) anti-monopoly approval by MOFCOM, and (5) local approvals for site-related requirements.<sup>199</sup>

At each stage of the approval process, vaguely worded provisions provide government officials with significant discretion to impose technology transfer requirements. For example, China's regulations governing JVs expressly state that equity joint ventures should raise China's level of science and technology.<sup>200</sup> Moreover, China's JV regulations stipulate that MOFCOM in conducting its approval review of an EJV or CJV must consider *inter alia* whether the

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<sup>196</sup> USCBC, UPDATE: LICENSING CHALLENGES AND BEST PRACTICES IN CHINA 2 (Jan. 2014).

<sup>197</sup> USCBC, *Submission, Section 301 Hearing 4* (Sept. 28, 2017); U.S. CHAMBER, *Submission, Section 301 Hearing 17* (Oct. 3, 2017) (misuse of administrative license procedures provides the opportunity for a company's trade secrets to be put at risk of unnecessary disclosure); U.S. DEP'T OF STATE, INVESTMENT CLIMATE STATEMENT 6 (2017); Covington & Burling LLP, *Measures and Practices Restraining Foreign Investment in China*, prepared for the European Commission Directorate-General for Trade 65 (Aug. 2014).

<sup>198</sup> USCBC, *Submission, Section 301 Hearing 4* (Sept. 28, 2017); U.S. CHAMBER, *Submission, Section 301 Hearing 17* (Oct. 3, 2017) (misuse of administrative license procedures provides the opportunity for a company's trade secrets to be put at risk of unnecessary disclosure); U.S. DEP'T OF STATE, INVESTMENT CLIMATE STATEMENT 6 (2017); Covington & Burling LLP, *Measures and Practices Restraining Foreign Investment in China*, prepared for the European Commission Directorate-General for Trade 65 (Aug. 2014); U.S. CHAMBER, MADE IN CHINA 2025: GLOBAL AMBITIONS BUILT ON LOCAL PROTECTIONS 27-29, 33 (2017).

<sup>199</sup> See generally U.S. CHAMBER OF COMMERCE, CHINA'S APPROVAL PROCESS FOR INBOUND FOREIGN INVESTMENT: IMPACT ON MARKET ACCESS, NATIONAL TREATMENT AND TRANSPARENCY (Nov. 2012); see also JAMES M. ZIMMERMAN, CHINA LAW DESKBOOK (4th ed. 2014). In 2016, some MOFCOM approvals were replaced with a record filing requirement, but MOFCOM approval is still required for those industries listed on the Negative List, and all FIEs are still subject to national security or anti-monopoly reviews where applicable.

<sup>200</sup> *Regulations for the Implementation of the Law of the People's Republic of China on Chinese-Foreign Equity Joint Ventures*, art. 3 (Order of the State Council No. 148, issued Sep. 20, 1983 and last amended on Feb. 19, 2014, in Order of the State Council No. 648).

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investment is consistent with China's national economic development needs or industrial policy goals, respectively.<sup>201</sup>

In addition, China imposes administrative licensing<sup>202</sup> requirements on more than 100 different business activities, such as food and drug production, mining, or telecommunications services, for all enterprises in China.<sup>203</sup> Even if a foreign investment in a particular industry is technically permitted, a foreign invested enterprise (FIE) must still obtain an industry-specific license in order to conduct these activities.<sup>204</sup> The specific requirements and approval timelines vary widely depending on the industry at issue. For heavily regulated industries, the industry regulator review process can take more than a year.<sup>205</sup>

The US Chamber of Commerce has highlighted how the Chinese government uses its discretion in the review process to apply vague and unwritten rules in a selective and non-transparent manner:

The relatively opaque nature of the inbound FDI approval processes enables China's investment approval authorities to favor domestic competitors over foreign investors, should they so desire, without leaving a paper trail of discriminatory written regulations that could clearly offend WTO obligations. Foreign investors have reported this favoritism occurring in two ways: (i) through the application of vaguely worded or unpublished rules or requirements in ways that discriminate against foreign investors; and (ii) through the imposition of deal-specific conditions that go beyond any written legal requirements.<sup>206</sup>

In one investigation submission, a former in-house counsel reported similar practices from his time doing business in China:

[T]here is a very clear discretionary administrative approval processes and other restrictions adopted by the Government of China that pressure the transfer of intellectual property to Chinese companies and/or to Chinese State Owned Enterprises in order to 'do business' in China and receive required licensing approvals. Often the language in Chinese licensing and business registration forms may not be clear as to its required and mandatory expectation for technology transfer by U.S. companies to Chinese firms or state agencies, but licensing officials within regional Chinese centers clarify in person, what is expected, without providing written documents that could be subsequently shared

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<sup>201</sup> *Regulations for the Implementation of the Law of the People's Republic of China on Chinese-Foreign Equity Joint Ventures*, art. 4; *Rules for the Implementation of the Law of the People's Republic of China on Chinese-Foreign Contractual Joint Ventures*, art. 9 (Order of the State Council, issued September 4, 1995, last amended March 1, 2017); see also JAMES M. ZIMMERMAN, CHINA LAW DESKBOOK 147 (4th ed. 2014).

<sup>202</sup> The Chinese term *xuke zheng* is often translated as "license" or "permit".

<sup>203</sup> U.S. CHAMBER OF COMMERCE, CHINA'S APPROVAL PROCESS FOR INBOUND FOREIGN INVESTMENT: IMPACT ON MARKET ACCESS, NATIONAL TREATMENT AND TRANSPARENCY 17 (Nov. 2012).

<sup>204</sup> U.S. CHAMBER OF COMMERCE, CHINA'S APPROVAL PROCESS FOR INBOUND FOREIGN INVESTMENT: IMPACT ON MARKET ACCESS, NATIONAL TREATMENT AND TRANSPARENCY 18 (Nov. 2012).

<sup>205</sup> U.S. CHAMBER OF COMMERCE, CHINA'S APPROVAL PROCESS FOR INBOUND FOREIGN INVESTMENT: IMPACT ON MARKET ACCESS, NATIONAL TREATMENT AND TRANSPARENCY 18 (Nov. 2012).

<sup>206</sup> U.S. CHAMBER OF COMMERCE, CHINA'S APPROVAL PROCESS FOR INBOUND FOREIGN INVESTMENT: IMPACT ON MARKET ACCESS, NATIONAL TREATMENT AND TRANSPARENCY 35-36 (Nov. 2012).

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with global trade organizations. So a carefully crafted and structured process has been developed to avoid obvious demands for U.S. technology.<sup>207</sup>

The administrative licensing and approvals process can also work in tandem with the JV requirements described above to require or pressure technology transfer. A study conducted by the U.S. Chamber of Commerce concluded:

The [JV requirement] creates numerous circumstances where investment approval authorities are able to work in a nontransparent way with the local partner to ensure that valuable intellectual property, market channels, and other assets of the foreign investor are made available to the joint venture — often on extremely favorable commercial terms for the local partner. This problem is exacerbated by the fact that in Sino-foreign joint ventures, the local partner serves as the investment approval process applicant on behalf of the prospective joint venture. As a result, Chinese joint venture partners are able, in many cases, to control the communication channels between the foreign investor and the government approval authorities, making the process even more opaque for the foreign investor and enabling the local partner to shape the approval requirement imposed by the authorities to its advantage.<sup>208</sup>

Problems with administrative licensing processes are consistently identified as top concerns in annual surveys of U.S. companies in China.<sup>209</sup> According to the most recent USCBC member survey, for example, companies specifically ranked “obtaining licenses and approvals” and “investment barriers” as the second and third greatest challenges, respectively.<sup>210</sup> Moreover, 65 percent of respondent companies experienced problems obtaining necessary licenses and approvals in China. According to the survey, these licensing problems occurred overwhelmingly at the central government level (80 percent) and almost three-fourths of respondents report that China’s licensing reforms have had no impact to date.<sup>211</sup> Similarly, in each of AmCham China’s 2017 and 2018 annual surveys, U.S. companies ranked China’s inconsistent regulatory interpretations as a top challenge.<sup>212</sup> Companies also repeatedly identified “difficulty in obtaining required licenses” as a top challenge.<sup>213</sup>

As one legal treatise on foreign investment in China explains:

Even under the existing laws, where approvals are required for foreign investment, it is not unusual to experience a situation where the Catalogue on Guiding Foreign Investment may provide that a certain activity may be conducted by a WFOE, [while] the Chinese

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<sup>207</sup> Stephen Zirschky, *Submission, Section 301 Hearing* (Sept. 28, 2017).

<sup>208</sup> U.S. CHAMBER OF COMMERCE, CHINA’S APPROVAL PROCESS FOR INBOUND FOREIGN INVESTMENT: IMPACT ON MARKET ACCESS, NATIONAL TREATMENT AND TRANSPARENCY 38-39 (Nov. 2012).

<sup>209</sup> AMCHAM CHINA, 2016 AMCHAM CHINA WHITE PAPER: AMERICAN BUSINESS IN CHINA 8 (2016); USCBC, UPDATE: LICENSING CHALLENGES AND BEST PRACTICES IN CHINA 1 (Apr. 2016).

<sup>210</sup> USCBC, 2017 MEMBER SURVEY 2 (2017).

<sup>211</sup> USCBC, 2017 MEMBER SURVEY 12 (2017).

<sup>212</sup> AMCHAM CHINA, 2017 CHINA BUSINESS CLIMATE SURVEY REPORT 28 (2017); AMCHAM CHINA, 2018 CHINA BUSINESS CLIMATE SURVEY REPORT 40 (2018).

<sup>213</sup> AMCHAM CHINA, 2017 CHINA BUSINESS CLIMATE SURVEY REPORT 28 (2017); AMCHAM CHINA, 2018 CHINA BUSINESS CLIMATE SURVEY REPORT 40 (2018).

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authorities openly state that a WFOE will never be approved—only a joint venture, and only if all material technology is transferred to the joint venture.<sup>214</sup>

ITIF's submission in this investigation provides further example of how China's administrative authorities pressure foreign investors' decisions on technology and R&D localization:

The CEO of a large multinational telecommunications equipment company recently shared with ITIF that he opened up a large R&D facility in Beijing that employs over 500 scientists and engineers. When asked if he did this to access Chinese engineering talent, he responded bluntly: "Unless I promised the Chinese Government that I would open up an advanced technology lab there, I was told that I would not be able to sell to the Chinese telecommunications providers," (most of which are de facto controlled by the Chinese government).<sup>215</sup>

As described above, discretion in China's administrative licensing process can be used to require technology transfer or impose deal-specific conditions in exchange for the licenses necessary for a foreign investor to operate in China. Similarly, ambiguity in the administrative licensing and approvals process may also result in technology transfer where existing laws and regulations are unclear as to the relevant requirements for foreign investors—this problem is particularly acute in new and emerging industries.

As one submission noted:

"[U]ncertainty surrounding administrative licensing regulations can also serve as a *de facto* limit for companies hoping to move into certain sectors. Businesses are often particularly cautious about advancing into new and under-regulated business sectors such as telemedicine, fearing that they might find themselves in violation of new regulations after investing."<sup>216</sup>

These violations may lead to technology transfer in circumstances where foreign-invested enterprises must quickly comply with new regulations (or new interpretations of existing regulations) that threaten to shut down their existing business in China. According to numerous submissions in this investigation, an important example of how ambiguity in China's administrative licensing process is used to pressure technology transfer arises in the field of cloud computing.<sup>217</sup>

### *Cloud Computing*

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<sup>214</sup> OWEN D. NEE, JR., SHAREHOLDER AGREEMENTS AND JOINT VENTURES IN CHINA 57 (Thomson Reuters ed, 2016). The authors further conclude that even if China does adopt a Negative List approach, "it is doubtful that a [negative list] will effectively abolish such internal regulations or "neibu wenjian."

<sup>215</sup> ITIF, *Submission, Section 301 Hearing* 6 (Oct. 25, 2017).

<sup>216</sup> USCBC, *Follow-Up Submission, Section 301 Hearing* 4-5 (Oct. 30, 2017).

<sup>217</sup> CONSUMER TECHNOLOGY ASS'N [*hereinafter* "CTA"], *Submission, Section 301 Hearing* 10 (Sept. 28, 2017); COMPTIA, *Submission, Section 301 Hearing* 4 (Sept. 28, 2017); INFORMATION TECHNOLOGY INDUSTRY COUNCIL [*hereinafter* "ITI"], *Submission, Section 301 Hearing* 3-4 (Sept. 28, 2017); COALITION OF SERVICES INDUSTRIES, *Submission Section 301 Hearing* 2 (Sept. 28, 2017); *see generally* TELECOMMUNICATIONS INDUSTRY ASS'N, *Submission, Section 301 Hearing* (Sept. 28, 2017).



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China has prioritized the development of its cloud computing sector and seeks to raise its indigenous cloud computing capability and achieve “systematic breakthroughs” in “indigenously innovated core technology” by 2020.<sup>218</sup> Submissions in this investigation raised concerns with China’s restrictions on foreign investment, and related licensing practices and policies in this field.<sup>219</sup> These submissions indicate that the Chinese government has used regulatory ambiguity to benefit Chinese cloud computing businesses and pressure technology transfer. China first tacitly permitted foreign investors to partner with licensed Chinese cloud service providers in order to gain market access, and then, once key technology and know-how had been injected into these partnerships, China resolved the regulatory ambiguities that had necessitated these arrangements in favor of the Chinese partner, resulting in the transfer of technology to the Chinese partner.

China precludes U.S. cloud service providers (CSPs) from directly participating in the three most common forms of cloud computing: computing infrastructure as a service (IaaS); computer platform as a service (PaaS); and computer software as a service (SaaS).<sup>220</sup> CSPs must obtain certain value-added telecommunication licenses, such as an internet data center (IDC) license, from China’s MIIT or its local counterpart to operate their businesses.<sup>221</sup> According to numerous submissions in this investigation, in practice, China does not grant such licenses to U.S. investors and thus does not permit U.S. CSPs to provide cloud computing services directly to customers in China.<sup>222</sup>

However, the global nature of cloud computing means that forgoing the China market is simply not a commercially viable option for U.S. CSPs, whose customers demand globally available services.<sup>223</sup> This is particularly the case for technology companies that have invested in and built up a market share in China in areas that are rapidly transitioning to cloud-based delivery. Thus, a business built on managing a customer’s computing resources, or supplying and maintaining software applications has little option but to offer those services on a cloud basis, given the economic, technical and security superiority of the cloud model, the transition to which customers now demand.

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<sup>218</sup> *Notice on Issuing 13th Five-year Plan for National Informatization*, Sec. 2(3) (State Council, Guo Fa [2016] No. 73, issued Dec. 15, 2016). In addition, the plan states that by 2020, China should have “basically established a secure and controllable IT industry ecosystem”, and asserts that “digitization comprehensively underpins the development of Party and national government initiatives.”

<sup>219</sup> CTA, *Submission, Section 301 Hearing 10* (Sept. 28, 2017); COMPTIA, *Submission, Section 301 Hearing 4* (Sept. 28, 2017); ITI, *Submission, Section 301 Hearing 3-4* (Sept. 28, 2017); U.S. CHAMBER OF COMMERCE, *Submission, Section 301 Hearing 18-19* (Oct. 3, 2017); see generally TELECOMMUNICATIONS INDUSTRY ASS’N [*hereinafter* “TIA”], *Submission, Section 301 Hearing* (Sept. 28, 2017).

<sup>220</sup> U.S. companies are global leaders in these sectors. USITC, *GLOBAL DIGITAL TRADE 1: MARKET OPPORTUNITIES AND KEY FOREIGN TRADE RESTRICTIONS 19-20* (Aug. 2017).

<sup>221</sup> See *Telecommunications Regulations of the People’s Republic of China*, art. 7 and the *Telecommunications Services Catalogue*, attached as the Annex (State Council Order No. 291, issued Sept. 25, 2000 and amended on July 29, 2014 and Feb. 6, 2016), which lists IDC under the VATS operator license.

<sup>222</sup> IDC licenses have only been granted to Chinese companies and joint ventures with Hong Kong or Macau investors and have not been granted to joint ventures with investors from the U.S. and other jurisdictions. See Samuel Yang, *Regulation of Cloud Computing in China*, PRACTICAL LAW (Apr. 26, 2017).

<sup>223</sup> BSA THE SOFTWARE ALLIANCE [*hereinafter* “BSA”], *Submission, Section 301 Hearing 3* (Sept. 28, 2017).

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In view of this commercial reality, the only way U.S. suppliers are able to participate in the market is through contractual arrangements with Chinese entities eligible to obtain the required licenses.<sup>224</sup> Under these arrangements, U.S. suppliers will train the employees of the Chinese license holder how to operate complex technology, and are effectively forced to provide their proprietary cloud computing technology, brands, and know-how to their Chinese partners, in exchange for a fee or a share of revenue.<sup>225</sup> This reality disadvantages U.S. companies in China as these contractual arrangements provide even less rights and protections with respect to their investment and technology than would be available through an equity investment.

Until 2016, China permitted such contractual arrangements by granting the requisite license to the Chinese partner. However, recent draft regulations prohibit these arrangements, which have long been relied upon by foreign CSPs for market access. In March 2016, China released the *Notice on Regulating Business Operations in Cloud Service Market (Draft for Public Comment)* and the *Circular on Cleaning Up and Regulating the Internet Access Service Market*, which exacerbated the challenges facing U.S. CSPs operating in the Chinese market.<sup>226</sup> According to the written submissions in this investigation, these measures effectively prohibit, *inter alia*, (1) the Chinese license holder from providing any facilities or other resources to the foreign CSP; (2) the foreign CSP from entering into contracts with customers directly; and (3) the provision of cloud services under the trademark of the foreign CSP.<sup>227</sup>

U.S. and other foreign CSPs operating in China through contractual arrangements inconsistent with this draft notice are now faced with the prospect of needing to restructure their existing arrangements and relinquish ownership and operations of their cloud business to a Chinese company in order to comply with the new rules.<sup>228</sup> Indeed, although the draft notice has yet to be finalized, some U.S. suppliers have already done just that.<sup>229</sup>

### 2. Forced Disclosure of Sensitive Technical Information

A second technology transfer mechanism used by Chinese administrative agencies is the forced disclosure of sensitive technical information. In a wide variety of industry sectors, the Chinese

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<sup>224</sup> See e.g., Jason Verge, *Microsoft Launches Azure in China Via 21Vianet Group*, DATACENTER KNOWLEDGE, (May 22, 2013) (“In November 2012, Microsoft, 21Vianet and the Shanghai Municipal Government announced a strategic partnership agreement in which Microsoft licensed the technology know-how and rights to operate and provide Office 365 and Windows Azure services in China to 21Vianet. ‘21Vianet will act as an operation entity for Azure, hosting the service in its data centers and handling the customer relationship,’ said Vianet’s CFO, Shang Hsiao.”).

<sup>225</sup> NAT’L FOREIGN TRADE COUNCIL [hereinafter “NFTC”], *Submission, Section 301 Hearing 3* (Sept. 28, 2017).

<sup>226</sup> See *Notice on Regulating Business Operations in Cloud Service Market (Draft for Public Comment)* § 4(1)-4(5) (released by MIIT Mar. 2016); *Circular on Cleaning up and Regulating the Internet Access Service Market* (MIIT, Gong Xin Bu Xin Guan Han [2017] No. 32, issued Jan. 17, 2017).

<sup>227</sup> ITI, *Submission, Section 301 Hearing 4* (Oct. 4, 2017); U.S. CHAMBER, *Submission, Section 301 Hearing 19* (Oct. 3, 2017); NFTC, *Submission, Section 301 Hearing 3-4* (Sept. 28, 2017); CompTIA, *Submission, Section 301 Hearing 7-8* (Sept. 28, 2017).

<sup>228</sup> See e.g., Stratford, et al., *How China’s Draft Regulations Will Control Cloud Services*, LAW360 (Dec.15, 2016); McGinty et al., HOGAN LOVELLS, DRAFT LEGISLATION TO AFFECT CHINA CLOUD SERVICES MARKET ACCESS (Jan. 2017).

<sup>229</sup> Cate Cadell, *Amazon Sells off China Cloud Assets as Tough New Rules Bite*, REUTERS, Nov. 13, 2017 (“In November 2017, for example, Amazon.com Inc. sold off its public cloud business in China to its local partner for \$301.2 million. According to Amazon, this was done ‘to comply with Chinese law.’”).

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government requires the disclosure of unreasonable amounts of sensitive technical information in exchange for necessary administrative approvals. As noted by European researchers:

A particular concern amongst various industries including but not limited to ICT, pharmaceuticals, chemicals, agro-food (in particular GMOs), machinery and financial services, centers on the depth of information which needs to be provided to the authorities for obtaining the authorization to build a factory, to market a product, etc. In some cases, this information was provided to the local industry who used this data to develop similar activities.<sup>230</sup>

U.S. stakeholders are particularly concerned because the forced disclosures put technology and intellectual property at risk.<sup>231</sup> Forced disclosures of information are especially problematic in cases in which the disclosure must be made not just to government officials but also to outsiders. This occurs when China requires reviews by “expert panels” that may include representatives from Chinese government, industry, academia, or others who may have a competitive interest in the information.<sup>232</sup>

Information disclosure and expert panel review requirements can arise at any stage of a company's operations in China and in a wide variety of industries. For example, in the pre-establishment phase, a company may be subject to expert review panels to assess the safety, environmental impact, and energy conservation of the proposed investment.<sup>233</sup> Panels typically require companies to respond to “detailed information [requests] about project costs and revenue, capacity and equipment information, raw material and energy requirements, and other sensitive details about the operations.”<sup>234</sup>

The information required to be disclosed may include trade secrets. For example:

One company that submitted its safety assessment to an approval agency was required to provide specific temperature and pressure range information for its process equipment... that would make it easier for a competitor to learn about a production process the company considered to be a trade secret.<sup>235</sup>

As noted by the American Chamber of Commerce in Shanghai:

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<sup>230</sup> Paul Ranjard, Benoit Misonne, *Study 12: Exploring China's IP Environment*, in *Study on the Future Opportunities and Challenges of EU-China Trade and Investment Relations* 24 (2007).

<sup>231</sup> USCBC, *Submission, Section 301 Hearing* 4-5 (Sept. 28, 2017); U.S. CHAMBER, *Submission, Section 301 Hearing* 17 (Oct. 3, 2017).

<sup>232</sup> USCBC, *UPDATE: LICENSING CHALLENGES AND BEST PRACTICES IN CHINA* 8 (Jan. 2014); USCBC, *IMPROVING CHINA'S LICENSING SYSTEM: RECOMMENDATIONS FOR KEY SECTORS* 2 (Mar. 2014); Paul Ranjard, Benoit Misonne, *Study 12: Exploring China's IP Environment*, in *Study on the Future Opportunities and Challenges of EU-China Trade and Investment Relations* 15 (2007).

<sup>233</sup> USCBC, *Submission, Section 301 Hearing* 5 (Sept. 28, 2017). See e.g., *China Energy Conservation Product Certification Management Measures* (National Economic and Trade Commission, issued Feb. 11, 1999), art. 3 states that evidence a product meets “standards or technological needs” is one of the criteria for receiving the *Energy Conservation Certificate*.

<sup>234</sup> USCBC, *IMPROVING CHINA'S LICENSING SYSTEM: RECOMMENDATIONS FOR KEY SECTORS* 4 (Mar. 2014).

<sup>235</sup> USCBC, *IMPROVING CHINA'S LICENSING SYSTEM: RECOMMENDATIONS FOR KEY SECTORS* 3 (Mar. 2014).

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Companies have also expressed concerns about some of China's product approval requirements. In particular, for companies to gain approval from regulatory agencies they must disclose proprietary formula or designs. Despite assurances by regulators, companies are still not confident that the information will be protected. Some companies report that they have been able to push back but others have not been as successful and must face the difficult choice of seeking product approval, which could put proprietary information at risk, or not pursuing market opportunities in China in order to protect their IP.<sup>236</sup>

Similarly, environmental impact and energy conservation assessments require expert panel reviews,<sup>237</sup> and sometimes involve a "pre-review" by a separate panel prior to application.<sup>238</sup> Environmental impact panels "frequently include competitors or scholars affiliated with competitors."<sup>239</sup> In general, the panels introduce significant liability for companies seeking to safeguard their trade secrets, particularly since there are few safeguards in place to ensure that information is not misused.<sup>240</sup>

Expert review panels do not just apply before a company is established in China. For example, in the post-establishment phase, expert review panels may be required for security reviews in a range of industries under China's *Cybersecurity Law of the People's Republic of China* (*Cybersecurity Law*).<sup>241</sup> Although many implementing regulations of the cyber-review regime are in draft form only, stakeholders report concerns that current ambiguities in the law will be used to pressure unnecessary disclosure of companies' most critical technologies.<sup>242</sup> For example, companies may be forced to disclose critical technologies, including source code, complete design databases, behavior models, logic models, and even floor plans and physical layouts of central processing units.<sup>243</sup>

### D. China's Acts, Policies, and Practices Are Unreasonable

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<sup>236</sup> AM. CHAMBER OF COMMERCE SHANGHAI, *Submission, Section 301 Hearing 2* (Sept. 28, 2017);

<sup>237</sup> See *Environmental Impact Assessment Law of the People's Republic of China* (PRC Environmental Impact Assessment Law), art. 11, 13. (adopted at the 30th Meeting of the Standing Committee of the Ninth NPC, Order No. 77, on Oct. 28, 2002, effective Sept. 1, 2003, amended July 2, 2016). Art. 13 stipulates that the "expert working groups" shall be comprised of government representatives and other experts from the list of experts within the expert database created by the relevant government authority.

<sup>238</sup> USCBC, *Submission, Section 301 Hearing 1* (Oct. 20, 2017). See *PRC Environmental Impact Assessment Law*, art. 11.

<sup>239</sup> USCBC, *Submission, Section 301 Hearing 1* (Oct. 20, 2017).

<sup>240</sup> USCBC, UPDATE: LICENSING CHALLENGES AND BEST PRACTICES IN CHINA 8-9 (Jan. 2014). See e.g., *Administrative License Law of the People's Republic of China* (PRC Administrative License Law) (adopted by the Fourth Session of the Standing Committee of the Tenth NPC, Order No. 7, on Aug. 27, 2003, effective July 1, 2004), art. 31 (regarding scope of required information), art. 54-55 (regarding the types of technical material which need to be submitted for certain licenses), and art. 76 (regarding compensation in the event of violation).

<sup>241</sup> *Cybersecurity Law of the People's Republic of China* (adopted by the Twenty-fourth Session of the Twelfth NPC, on Nov. 7, 2016, effective June 1, 2017). Submissions received in this investigation are summarized in Section VI.

<sup>242</sup> See CTA, *Submission, Section 301 Hearing 6* (Sept. 28, 2017); U.S. CHAMBER, *Submission* at 31; TIA, *Submission, Section 301 Hearing 2* (Sept. 28, 2017).

<sup>243</sup> SEMICONDUCTOR INDUSTRY ASS'N [hereinafter "SIA"], *Submission, Section 301 Hearing 10*, fn 42 (Sept. 28, 2017).

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Conduct that is “unreasonable” is actionable under Section 301, provided that it also burdens or restricts U.S. commerce. The statute defines an “unreasonable” act, practice, or policy as one that “while not necessarily in violation of, or inconsistent with, the international legal rights of the United States is otherwise unfair and inequitable.”<sup>244</sup> The statute further provides that in determining unreasonableness, the USTR shall take into account, to the extent appropriate, whether foreign companies in the United States have access to reciprocal opportunities to those denied U.S. companies.<sup>245</sup> Based on the foregoing factors, China's technology transfer regime is unreasonable.

According to the Organization for Economic Co-operation and Development (OECD), very few countries employ foreign equity limitations or screen foreign investments on the basis of potential technology-related benefits.<sup>246</sup> China's foreign investment restrictions and administrative review and licensing systems not only exert great technology transfer pressures on U.S. companies, but also are substantially more restrictive than those of the United States and most other countries. Indeed, the OECD has consistently ranked China's foreign investment regulatory regime as one of the most restrictive in the world based on an evaluation of (i) equity restrictions on foreign ownership, (ii) screening and prior approval requirements, (iii) rules for key personnel, and (iv) restrictions on the operation of foreign enterprises.<sup>247</sup> For example, in 2016, China was ranked the fourth most restrictive economy out of 63 OECD and non-OECD member economies measured—only the Philippines, Saudi Arabia, and Myanmar were more restrictive. This low ranking is particularly striking given that China is the world's second largest economy and it has extensive global trading relationships as compared to the other economies at the bottom of the index. China's restrictiveness score was also 3.7 times higher than that of the United States.<sup>248</sup>

Moreover, the OECD's regulatory restrictiveness index does not even account for the full breadth of restrictive practices used by China to pressure technology transfer. The OECD index only captures those laws and policies pertaining to equity caps and pre-establishment administrative screening processes that have been formally adopted by the Chinese central government.<sup>249</sup> As discussed above, China's technology transfer requirements often do not take

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<sup>244</sup> 19 U.S.C. § 2411(d)(3)(A).

<sup>245</sup> 19 U.S.C. § 2411(d)(3)(D).

<sup>246</sup> PRZEMYSŁAW KOWALSKI, DANIEL RABAIOLI, SEBASTIAN VALLEJO, OECD, INTERNATIONAL TECHNOLOGY TRANSFER MEASURES IN AN INTERCONNECTED WORLD: LESSONS AND POLICY IMPLICATIONS, TAD/TC/WP(2017)1/FINAL, 2017 43-45 ¶ 130-1 (2017) (“In particular, making FDI in technology-related sectors conditional upon joint ventures...or requiring direct transfer of technology to the local partner... are not found in most of the countries [surveyed]. This may be a result of awareness that such laws deter investors and may be counterproductive. However, such measures are still present in two developing countries, namely China and Nigeria...Screening on the basis of potential technology-related benefits... is present in only five countries. For example, in China, for a project to be approved, it should meet the requirements of mid and long term planning for national economic development, de facto meaning that the government will screen investment on the basis of its technology-transfer potential.”).

<sup>247</sup> *FDI Regulatory Restrictiveness Index*, OECD, <http://www.oecd.org/investment/fdiindex.htm> (last visited Oct. 20, 2017).

<sup>248</sup> *FDI Regulatory Restrictiveness Index*, OECD, <http://www.oecd.org/investment/fdiindex.htm> (last visited Oct. 20, 2017).

<sup>249</sup> In its methodology, the OECD specifies that its regulatory restrictiveness measures do not account for measures imposed at the sub-national level, and do not account for variability in restrictiveness stemming from implementation of formally adopted laws or policies. In other words, the regulatory restrictiveness index does not

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the form of written laws or policies promulgated by China's central government and are often carried out orally and "behind closed doors."<sup>250</sup> Evidence collected in this investigation also has demonstrated that forced disclosure of technical information occurs throughout the life span of U.S. companies' operations in China through a variety of administrative reviews and licensing processes.<sup>251</sup> These practices are not captured by the OECD's index.

China's regime is ultimately unfair and inequitable because it greatly restricts the freedom of U.S. companies to deploy and fully protect their valuable and hard-won technologies to compete in China. Instead of fostering a level playing field, China's regime gives systematic and structural support for technology acquisition by Chinese companies from U.S. and other foreign competitors.<sup>252</sup> Faced with China's regime, U.S. companies must either cede substantial control over their valuable technologies or be closed out of one of the world's largest and fastest-growing economies.<sup>253</sup> This results in a highly asymmetric playing field where U.S. companies face immensely restrictive policies in China, while Chinese companies are not equally restricted in the United States.<sup>254</sup>

Accordingly, China's technology transfer regime—including foreign ownership restrictions and administrative approval and licensing process that are used to require or pressure the transfer of technology from U.S. companies to Chinese entities—is unfair, inequitable, and results in nonreciprocal opportunities relative to Chinese companies operating in the United States. These acts, practices, or policies are unreasonable as defined in Section 301.

### E. China's Acts, Policies, and Practices Burden or Restrict U.S. Commerce

The unreasonable act, policy, or practice of a foreign country must also burden or restrict U.S. commerce to be actionable under Section 301. In the present case, required or pressured technology transfer significantly undermines the value of American technology (including IP), thereby distorting markets and compromising U.S. companies' global competitiveness. Therefore, China's acts, policies, and practices that effectuate technology transfer burden and restrict U.S. commerce.

Technology and IP drive economic growth and sustain the competitive edge of the U.S. economy.<sup>255</sup> According to the Department of Commerce, in 2014, IP-intensive industries

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account for restrictions that are informally applied "behind closed doors", by government officials. *See* Blanka Kalinova, et. al., OECD, FDI RESTRICTIVENESS INDEX: 2010 UPDATE 6 (2010).

<sup>250</sup> *See supra* Section II.A-C.

<sup>251</sup> *See supra* Section II.C. In a recent AmCham China survey, 52% of respondents believe that in China the risk of "IP leakage and IT and data security threats" was greater than those in other countries. AMCHAM CHINA, 2018 CHINA BUSINESS CLIMATE SURVEY REPORT 31 (2018).

<sup>252</sup> BSA, *Submission, Section 301 Hearing* 3-4 (Sept. 28, 2017); CSI, *Submission, Section 301 Hearing* 5 (Sept. 28, 2017); NAM, *Submission, Section 301 Hearing* 12-13 (Sept. 28, 2017).

<sup>253</sup> BSA, *Submission, Section 301 Hearing* 3 (Sept. 28, 2017); U.S. CHAMBER, *Submission, Section 301 Hearing* 15 (Oct. 3, 2017).

<sup>254</sup> U.S. CHAMBER, *Submission, Section 301 Hearing* 40 (Oct. 3, 2017).

<sup>255</sup> U.S. PATENT & TRADEMARK OFFICE [*hereinafter* "USPTO"], & ECON. & STATISTICS ADMIN. INTELLECTUAL PROPERTY AND THE U.S. ECONOMY: 2016 UPDATE 1 (2016); *see also* NAT'L SCIENCE BOARD, SCIENCE & ENGINEERING INDICATORS, 6-20 (2016) (among all major economies, the United States has the highest concentration of knowledge-intensive and technology-intensive industries as a share of total economic activity).

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supported approximately 45.5 million jobs in the United States, and workers in those industries earned significantly higher wages on average than those working in non-IP-intensive industries.<sup>256</sup> Further, IP-intensive companies represented more than 39 percent of U.S. GDP, and accounted for 52 percent of U.S. exports.<sup>257</sup> Therefore, as noted by multiple submissions in this investigation, the well-being of U.S. companies and their workers, along with the broader U.S. economy, is dependent in substantial part on the continued strength of IP-intensive industries.<sup>258</sup>

China's technology transfer policies effectively deprive U.S. companies of the full value of their IP and technology and inhibit them from fairly competing in the large China market. When U.S. companies are required or pressured to transfer their technology, they may experience not only a direct loss of key competitive assets, but also may lose their technological competitive edge in global markets. Moreover, as noted by submissions in this investigation, Chinese beneficiaries of technology transfer under the highly favorable circumstances created by China acquire powerful advantages without the expense or risk of developing the technology themselves, and thus enjoy an additional competitive advantage over foreign innovators.<sup>259</sup> If U.S. companies alternatively elect not to comply with Chinese requirements, the companies are excluded from an important and growing market, foregoing sales and export opportunities, and economies of scale.<sup>260</sup>

No matter how a U.S. company responds, the Chinese government's technology transfer regime generates considerable negative impacts on competition by depriving U.S. companies of the ability to achieve reasonable returns on their investments in the Chinese market and exploit legitimately obtained intellectual property rights, and prevents them from making investments at all.<sup>261</sup> Given the strategic importance of the large and growing Chinese market, obstacles to level competition are acutely harmful to U.S. companies.

Moreover, U.S. companies that lose the option of exclusive enjoyment of their valuable technology and are therefore unable to compete fairly in China may become less globally competitive in the long run. When U.S. companies are deprived of fair returns on their investment in IP, they are unable to achieve the growth necessary to reinvest in innovation.<sup>262</sup> In this sense, China's technology transfer regime directly burdens the innovation ecosystem that is an engine of economic growth in the United States and similarly-situated economies.<sup>263</sup>

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<sup>256</sup> USPTO, *INTELLECTUAL PROPERTY AND THE U.S. ECONOMY: 2016 UPDATE* 4, 30 (2016).

<sup>257</sup> USPTO, *INTELLECTUAL PROPERTY AND THE U.S. ECONOMY: 2016 UPDATE* iii (2016).

<sup>258</sup> WILEYREIN, *Submission, Section 301 Hearing* 11 (Sept. 28, 2017); IP COMMISSION, *Submission, Section 301 Hearing* 6 (Sept. 28 2017); *see generally* USPTO, *INTELLECTUAL PROPERTY AND THE U.S. ECONOMY: 2016 UPDATE* (2016).

<sup>259</sup> WILEYREIN, *Submission, Section 301 Hearing* 11 (Sept. 28, 2017); SOLARWORLD, *Submission, Section 301 Hearing* 2 (Oct. 20, 2017); NAM, *Submission, Section 301 Hearing* 9-10 (Sept. 28, 2017); CSIS, *Submission, Section 301 Hearing* 1 (Sept. 28, 2017).

<sup>260</sup> AMCHAM SHANGHAI, *Submission, Section 301 Hearing* 2 (Sept. 28, 2017); NAM, *Submission, Section 301 Hearing* 13 (Sept. 28, 2017).

<sup>261</sup> WILEYREIN, *Submission, Section 301 Hearing* 11 (Sept. 28, 2017).

<sup>262</sup> WILEYREIN, *Submission, Section 301 Hearing* 11 (Sept. 28, 2017); *see also* IAM, *Submission, Section 301 Hearing* 1 (Sept. 29, 2017).

<sup>263</sup> WILEYREIN, *Submission, Section 301 Hearing* 11 (Sept. 28, 2017).

## II. China's Unfair Technology Transfer Regime for U.S. Companies in China

In fact, the displacement of global industrial leaders—including U.S. companies—so that China may achieve global market dominance is an explicit policy goal of the Chinese government.<sup>264</sup> According to China's *Made in China 2025* initiative, for example, the Chinese government seeks to acquire foreign technology, absorb that technology to boost indigenous innovation, and displace foreign competitors in both domestic and international markets.<sup>265</sup> China's technology transfer regime is a key mechanism to achieve this goal.<sup>266</sup>

Annual surveys of companies conducted by AmCham China and USCBC indicate that addressing China's technology transfer regime would significantly increase U.S. investment in China. According to the 2018 AmCham China survey of U.S. companies, surveyed companies stated that they would significantly increase investment if China's government were able to: provide greater regulatory transparency and predictability; limit the use of industrial policies that create barriers; allow U.S. companies to enter business segments that are currently restricted; provide recourse for unfair investment treatment; allow U.S. companies to increase control over their operations by reducing the need for joint ventures and local business partners; allow strategic acquisitions; and reduce the need to engage in technology transfer.<sup>267</sup>

Ultimately, China's acts, policies, and practices that require or pressure technology transfer undermine U.S. companies' valuable IP, weaken their global competitiveness, and stunt investment in innovation.<sup>268</sup> Therefore, China's acts, policies, and practices with respect to technology transfer burden and restrict U.S. commerce.<sup>269</sup>

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<sup>264</sup> U.S. CHAMBER, *MADE IN CHINA 2025: GLOBAL AMBITIONS BUILT ON LOCAL PROTECTIONS* 13 (2017); BJÖRN CONRAD, ET AL., MERCATOR INST. FOR CHINA STUDIES [*hereinafter* "MERICS"], *MADE IN CHINA 2025* 14, 16 (2016).

<sup>265</sup> MERICS, *MADE IN CHINA 2025* 16 (2016) (technological development to achieve the ultimate objective of import substitution is pervasive throughout the plan, which specifically calls for the development and usage of indigenous products in a variety of industries).

<sup>266</sup> *See* MERICS, *MADE IN CHINA 2025* 41 (2016).

<sup>267</sup> AMCHAM CHINA, *2018 CHINA BUSINESS CLIMATE SURVEY REPORT* 53 (2018).

<sup>268</sup> WILEYREIN, *Submission, Section 301 Hearing* 11 (Sept. 28, 2017); U.S. CHAMBER, *MADE IN CHINA 2025: GLOBAL AMBITIONS BUILT ON LOCAL PROTECTIONS* 7 (2017).

<sup>269</sup> This finding is consistent with numerous other sources that confirm that Chinese technology transfer practices burden U.S. commerce. *See generally* USTR, NTE, SPECIAL 301 AND WTO COMPLIANCE REPORTS; U.S.-CHINA EC. & SEC.REV. COMM'N (2016); USITC, INV. NO. 332-519, CHINA: EFFECTS OF INTELLECTUAL PROPERTY INFRINGEMENT AND INDIGENOUS INNOVATION POLICIES ON THE U.S. ECONOMY (2011); USITC, INV. NO. 332-514, CHINA: INTELLECTUAL PROPERTY INFRINGEMENT, INDIGENOUS INNOVATION POLICIES, AND FRAMEWORKS FOR MEASURING THE EFFECTS ON THE U.S. ECONOMY (2010); U.S.-CHINA ECON. & SEC. REV. COMM'N, CHINA'S FIVE-YEAR PLAN, INDIGENOUS INNOVATION AND TECHNOLOGY TRANSFERS, AND OUTSOURCING (2011).



### **III. China's Discriminatory Licensing Restrictions**

### **III. China's Discriminatory Licensing Restrictions**

#### **A. Introduction**

The second category of conduct set forth in the *Federal Register Notice* issued on August 24, 2017, addresses China's acts, policies, and practices depriving U.S. companies of the ability to set market-based, mutually-desirable terms in licensing and other technology-related negotiations with Chinese companies. In addition to the difficulties with administrative licensing discussed in Section II, China also intervenes in U.S. firms' investments and related activities in China through restrictions on their technology licensing. These restrictions result in discriminatory technology transfer-related acts, policies, and practices that burden U.S. commerce.

China's regime of technology regulations deprives U.S. technology owners of the ability to bargain and set terms for technology transfer that are free from interference by China. U.S. firms seeking to license technologies to Chinese enterprises must do so on non-market-based terms that favor Chinese recipients. Moreover, the bureaucratic hurdles contained in licensing regulations provide China with an additional opportunity to pressure firms to transfer more technology, or transfer it on more favorable terms, in exchange for administrative approvals.

China's imposition of mandatory adverse licensing terms is reflected in official measures that impose a different set of rules for imported technology transfers originating from outside China, such as from U.S. entities attempting to do business in China, compared to separate rules for technology transfers occurring between two domestic companies. The mandatory requirements for importation of foreign technology are discriminatory and clearly more burdensome than the domestic requirements, as explained in detail below. The result of these mandatory terms imposed only on technology import contracts is that foreign entities (including U.S. entities) doing business in China are at a disadvantage compared to Chinese entities. These restrictions benefit domestic entities at the expense of foreign competitors, including U.S. competitors, because the mandatory terms are only imposed on technology import contracts and do not govern technology contracts between two domestic parties. From the outset, the regime is tipped in favor of Chinese entities before a U.S. company even attempts to enter the market in China through a legal framework adversely influencing all technology negotiations and contracts.

As explained in more detail below, due to mandatory provisions in China's regime of technology regulations, U.S. entities seeking to license foreign technologies to enterprises in China must do so on non-market-based terms that favor Chinese recipients. One such entity, the Office of Intellectual Property (IP) and Industry Research Alliances (IPIRA) at the University of California, Berkeley, summarized its experiences with these unacceptable terms mandated by the Chinese regime, provided at Appendix E to this report.

#### **B. Foreign Licensing Restrictions and China's Technology Transfer Regime**

China regulates instances in which an entity seeks to transfer technology into China under its *Regulations of the People's Republic of China on the Administration of the Import and Export of*

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*Technologies* (TIER)<sup>270</sup> and situations in which a foreign entity seeks — as part of its investment in its foreign-invested enterprise in China — to transfer technology to that entity by means of the *Regulations for the Implementation of the Law of the People's Republic of China on Chinese-Foreign Equity Joint Ventures* (JV Regulations).<sup>271</sup> These Chinese regulations provide less favorable treatment of foreign entities than the comparable treatment of domestic Chinese entities under the *Contract Law of the People's Republic of China* (PRC Contract Law).<sup>272</sup>

Specifically, TIER imposes the following restrictions (among others) on the ability of U.S. technology owners to negotiate market-based terms for the transfer of technology into China:<sup>273</sup>

- **Indemnity terms:** TIER mandates that all indemnity risks be borne by the foreign technology transferor. Parties cannot negotiate the allocation of this risk, even if the transferee would like to bear the risk for a variety of reasons. Specifically, the licensor (typically a foreign entity for a technology import contract) is liable for any claims of “infringing [a third party’s] lawful rights” made against the licensee resulting from the use of the licensed or transferred technology.<sup>274</sup> This requirement is particularly onerous for small U.S. firms seeking to license technology, as they typically would not have the expertise or resources necessary to assess and cover the risk of third party litigation.
- **Rights in technology improvements:** TIER mandates that all improvements belong to the party making the improvement. TIER further provides that the licensor cannot stop the licensee from making improvements to the technology.<sup>275</sup> Parties cannot negotiate shared ownership or that the licensor will own improvements made by the licensee.<sup>276</sup> These provisions are particularly harmful to a U.S. licensor if the Chinese licensee makes an improvement severable from the original invention and then patents the severable improvement in China or elsewhere. The TIER’s provision on mandatory ownership of improvements enables the Chinese licensee to enjoy the

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<sup>270</sup> *Regulations of the People's Republic of China on the Administration of the Import and Export of Technologies* [hereinafter “TIER”] (Order of the State Council No. 331, issued Dec. 10, 2001, effective Jan. 1, 2002, amended Jan. 8, 2011, in Order of the State Council No. 588). Art. 2 of TIER defines technology import and export as “the act of transferring technology from outside the territory of ... China to inside the territory of ... China or from inside the territory of ... China to outside the territory of ... China.” Several key provisions impose mandatory terms only on technology import contracts. For example, art. 24 provides that “[t]he licensor of a technology *import* contract shall ...” while art. 27 applies “[d]uring the valid term of a technology *import* contract” and art. 29 provides that “[a] technology *import* contract may not contain ....” (emphases added).

<sup>271</sup> *Regulations for the Implementation of the Law of the People's Republic of China on Chinese-Foreign Equity Joint Ventures* [hereinafter “JV Regulations”] (Order of the State Council No. 148, issued Sep. 20, 1983, effective Sep. 20, 1983, amended Jan. 15, 1986, in Guo Fa [1986] No. 6, further amended Dec. 21, 1987, in Guo Fa [1987] No. 110, Jul. 22, 2001, in Order of the State Council No. 311, Jan. 8, 2011, in Order of the State Council No. 588, and Feb. 19, 2014, in Order of the State Council No. 648).

<sup>272</sup> *Contract Law of the People's Republic of China* [hereinafter “PRC Contract Law”] (adopted at the Second Session of the Ninth NPC on Mar. 15, 1999, effective Oct. 1, 1999).

<sup>273</sup> TIER, art. 2.

<sup>274</sup> TIER, art. 24.

<sup>275</sup> TIER, art. 29(3).

<sup>276</sup> TIER, art. 27.

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severable improvement without the original technology licensed by the U.S. entity to the Chinese entity, and block the U.S. entity from enjoying the benefit of the severable improvement. The provisions prevent the U.S. entity from restricting its Chinese licensee from making improvements to the transferred U.S. technology or from using such improvements in the market place, including using the improvements to the detriment of the U.S. licensor.

The JV Regulations also mandate terms that are non-market-based for technology agreements in joint ventures between Chinese and foreign entities. Among other provisions, the JV Regulations generally limit technology contracts to a duration of ten years and provide that the Chinese joint venture must be granted the right to use the technology in perpetuity after the technology contract expires.<sup>277</sup>

The JV Regulations further impose requirements on the characteristics of transferred technologies. The technologies must be capable of (i) significantly improving the performance or quality of existing products and increasing productivity or (ii) significantly saving raw materials, fuel, or power; and (iii) being applicable and advanced, such that the joint venture's products generate significant social and economic benefits in the domestic market or are competitive in the international market.<sup>278</sup> These requirements provide opportunities for Chinese officials to pressure foreign firms to transfer the latest and most advanced versions of their technologies, restricting their freedom to deploy the technology as they choose, and notwithstanding any intellectual property infringement concerns the firm may have.

The JV Regulations in particular provide ample opportunities for Chinese officials to review foreign technologies in detail and pressure transfer to Chinese partners. For example, as with wholly foreign-owned enterprises, initial capital contributions from the foreign party may include industrial property rights, know-how, and other intellectual property rights.<sup>279</sup> The foreign party may also license the right to use technology to the joint venture. The license must be reviewed and approved by China, typically at the same time as the joint venture application. Although there are no express limits on the amount that the foreign licensor is paid for the license, Chinese regulations provide guidelines to determine if the payments are appropriate and should be approved by China.<sup>280</sup>

The technology licensing regime in China applies to all importers of foreign technology. The TIER, JV Regulations, and the *PRC Contract Law* all have provisions applicable to technology transfer agreements involving a foreign party. TIER applies to "acts of transferring technology from outside the territory of the People's Republic of China into the territory of the People's Republic of China or vice versa by way of trade, investment, or economic and technical

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<sup>277</sup> *JV Regulations*, art. 43.

<sup>278</sup> *JV Regulations*, arts. 25, 41.

<sup>279</sup> *JV Regulations*, art. 5. See also *Law of the People's Republic of China on Chinese-Foreign Contractual Joint Ventures* art. 8 (adopted at the First Session of the Seventh NPC on Apr. 13, 1988, amended by the 18th Session of the Standing Committee of the NPC on Oct. 31, 2000, further amended Sep. 3, 2016, in Executive Order No. 51, and Nov. 7, 2016, in Executive Order No. 57, and Nov. 4, 2017, in Executive Order No. 81).

<sup>280</sup> JAMES ZIMMERMAN, *CHINA LAW DESKBOOK: A LEGAL GUIDE FOR FOREIGN-INVESTED ENTERPRISES* 102, 109–110 (Am. Bar Ass'n 4th ed. 2014).

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cooperation.”<sup>281</sup> The TIER further defines these acts to “include assignment of the patent right or right to apply for patents, licensing for patent exploitation, assignment of technical know-how, technical services and transfer of technology by other means.”<sup>282</sup> The JV Regulations apply to technology “introduction” contracts under Article 40, defined as the “necessary technology obtained by the joint venture by means of technology transfer from a third party or parties to the joint venture.” The *PRC Contract Law* addresses “Technology Contracts” in its Chapter 18. Within Chapter 18, Article 322 defines a technology contract as a “contract made by the parties to define their mutual rights and obligations for technology development, transfer, consultation or service.”

#### 1. Different Outcomes for U.S. Companies versus Chinese Competitors

Foreign entities cannot fully take advantage of the domestic Chinese contract licensing regime under the *PRC Contract Law* because conflicting articles of the TIER and JV Regulations control over the *PRC Contract Law*. Article 123 of the *PRC Contract Law* provides that the *PRC Contract Law* will not control under Chinese law “where other laws stipulate otherwise on contracts.” In addition, Chapter 18 of the *PRC Contract Law*, which covers technology contracts, specifically addresses the “Applicability of Other Laws of Administrative Regulations” in Article 355, which stipulates that “[w]here laws and administrative regulations stipulate otherwise on contracts for technology import and export or on contracts for patents and patent applications, the relevant provisions thereof shall govern.” Thereby, and as explained in detail below, where the provisions of the TIER and the JV Regulations are in conflict with those of the *PRC Contract Law*, the TIER and the JV Regulations, respectively, control under the licensing regime in China.<sup>283</sup>

TIER imposes a number of procedural requirements that the *PRC Contract Law* does not impose. Under TIER, all technology import contracts must be notified to China and copies of such contracts provided.<sup>284</sup> If such contracts are not duly notified as required, the foreign technology licensor is denied the ability to remit any royalty payments back to its home country.<sup>285</sup> From the outset, foreign imported technology licensors, including U.S. technology licensors, must meet obligations that are not imposed on their Chinese competitors under the *PRC Contract Law*.

#### 2. Indemnification Against Infringement Claims

The TIER imposes obligatory indemnifications and other special treatment in favor of Chinese licensees of imported technology.<sup>286</sup> Under Article 24, in a technology import contract the “liabilities shall be borne by the licensor” for any infringement of the “lawful interests of any other person.” The TIER does not permit parties to freely contract issues of liability. Therefore,

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<sup>281</sup> TIER, art. 2.

<sup>282</sup> TIER, art. 2.

<sup>283</sup> See NATIONAL FOREIGN TRADE COUNCIL [hereinafter “NFTC”], *Submission, Section 301 Hearing 7* (Sept. 28, 2017).

<sup>284</sup> TIER, art. 18.

<sup>285</sup> See TIER, art. 20.

<sup>286</sup> TIER, art. 24. See also BSA | THE SOFTWARE ALLIANCE [hereinafter “BSA”], *Submission, Section 301 Hearing § II(A)* (Sept. 28, 2017) (referring to art. 24 of the TIER as part of “insufficient and contradictory laws relating to contracts and liability for infringement” in China).

### III. China's Discriminatory Licensing Restrictions

all U.S. technology licensors of imported technology are required to indemnify Chinese technology licensees for, among other things, third party infringement claims based on use of the imported technology.<sup>287</sup> In addition, the indemnification requirement in the TIER on “lawful interests of any other person” does not appear to be limited to the “other person’s” intellectual property rights. Therefore, the TIER potentially obligates a U.S. technology licensor to indemnify its Chinese licensee for any infringement suit by a third party.<sup>288</sup>

In contrast, Article 353 of the *PRC Contract Law* provides parties negotiating for the transfer of domestic technology within China with flexibility to determine the scope of the licensor’s liability for indemnification. Article 353 sets out that “[w]here the exploitation of the patent or utilization of the technical know-how by the transferee as contracted infringes upon the legitimate rights and interests of others, the liability therefor shall be borne by the transferor, *unless the parties stipulate otherwise.*”<sup>289</sup> Unlike for licensors of foreign technology, the *PRC Contract Law* permits parties to a domestic technology transfer agreement to negotiate issues of liability in Article 353, whereas Article 24 of the TIER does not permit parties to contract around liability for infringement claims and no other article of the TIER permits parties to agree to terms on liability.<sup>290</sup>

#### 3. Ownership of Improvements to Licensed Technology

Article 29(3) of the TIER prohibits U.S. technology licensors from restricting their Chinese licensees to make or use improvements to the transferred technology. Article 29(3) prohibits technology import contracts from including any clause that “restrict[s] the receiving party from improving the technology supplied by the supplying party, or restricting the receiving party from using the improved technology.” This prohibition means that U.S. licensors cannot restrict their Chinese licensees from using the transferred technologies, which could include valuable information protected not only by patent laws but also by trade secret protections resulting from research and development conducted and paid for by the U.S. licensors, to then improve the transferred technologies. By prohibiting any restriction on the licensee to make or use improved technology, Article 29 permits Chinese licensees to free ride on U.S. technology licensors’ research and development costs in any imported technology transfer agreement.

Article 27 of the TIER requires that the rights to any of these improvements to imported technology will vest in the party making the improvement.<sup>291</sup> As with the liability issues in

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<sup>287</sup> See CHINA CHAMBER OF COMMERCE FOR IMPORT & EXPORT OF MACHINERY AND ELECTRONIC PRODUCTS [*hereinafter* “CCCME”], *Submission, Section 301 Hearing* 10 (Sept. 27, 2017) (“the provision only mentions the liability of the licensor”).

<sup>288</sup> See INFORMATION TECHNOLOGY & INNOVATION FOUNDATION [*hereinafter* “ITIF”], *Submission, Section 301 Hearing* 15–16 (Oct. 25, 2017) (“Article 24 requires that licensor (licensor importing technology into China for that matter) to bear full liability regardless whether or [*sic*] the licensor is aware that use of the licensed technology may ‘infringe upon the lawful rights and interests of another person.’ In fact, not only does awareness not matter, the liability could result from any third party’s ‘lawful rights and interest.’ That is, the liability could include tort and other liability beyond IP infringements.”).

<sup>289</sup> Emphasis added.

<sup>290</sup> See NFTC, *Submission, Section 301 Hearing* 7 (Sept. 28, 2017).

<sup>291</sup> See, e.g., CHINA CHAMBER OF INT’L. COMMERCE [*hereinafter* “CCOIC”], *Submission, Section 301 Hearing* 62 (Sept. 28, 2017) (stating that “the basic meaning is that an achievement made in improving the technology

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Article 24, the TIER restrictions on the ownership of improvements cannot be contractually avoided by parties to the imported technology contract because “[the right over] any improvement on the technologies shall be vested with the party which has made the improvement.” The “shall be vested” language in Article 27 of the TIER does not permit the parties to a technology import contract to negotiate other terms. The restriction means that a U.S. technology licensor cannot negotiate for ownership rights to any improvements made by its Chinese licensee while that licensee is using the U.S. licensor’s technology, and, with the restriction against prohibiting improvements from Article 29, the U.S. technology licensor has no means to negotiate how its technology will be “improved” or how rights in that improved technology will be vested in the Chinese licensee.

By contrast, under Article 354 of the *PRC Contract Law*, domestic Chinese companies have flexibility to determine how any benefits, licenses, and ownership rights arising from improvements to technology will be shared between the parties to the technology transfer contract. Article 354 provides that “[t]he parties to a technological transfer contract may, in accordance with the principle of mutual benefit, stipulate the method for sharing any subsequently improved technological result obtained from the patent exploitation or utilization of the technical know-how.” Unlike the restrictions placed on U.S. importing technology licensors, licensors party to domestic technology transfer agreements can negotiate the terms for sharing the benefits of any improvements to a licensed patent or trade secret.<sup>292</sup>

The *PRC Contract Law* also provides a default position for parties to domestic technology transfer agreements such that, should the parties fail to agree on how to determine ownership of any improvements, or if the contractual language regarding improvements is vague,<sup>293</sup> then the default is that neither party owns any improvement made by the other party to the contract. This default provision only provides a non-mandatory backstop position for technology transfer contracts, as well as a position from which to negotiate such contracts, yet such flexibility is only available to companies transferring technology domestically.

#### 4. Use of Technology after the Technology Contract Expires

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concerned belongs to the party making the improvement”); CCCME, *Submission, Section 301 Hearing 10* (Oct. 23, 2017).

<sup>292</sup> A Chinese commentator has also identified this inconsistency between the terms of art. 27 of TIER and art. 354 of the *PRC Contract Law*. In a general overview to TIER published shortly after its promulgation, a Chinese patent attorney noted that it was a “very real problem” that a foreign party might see its co-ownership rights to an improvement rescinded by a Chinese court, even if the foreign party and Chinese party had agreed to share ownership of such improvements based on the *PRC Contract Law*. In that writer’s opinion, the *PRC Contract Law* permitted “a comparatively flexible and elastic means” by which the parties may, on the principle of mutual benefit, contract for ownership of these improvements which are “seeking truth from facts, in the long term interests of the parties.” Wang Chongfang, *Thoughts and Interpretations of TIER*, 13 INTELLECTUAL PROPERTY RIGHTS 31 (2003).

<sup>293</sup> Art. 61 of the *PRC Contract Law* applies to “Indeterminate Terms; Supplementary Agreement” and states that if a “[f]or a contract that has become valid, where the parties have not stipulated the contents regarding quality, price or remuneration or the place of performance, or have stipulated them unclearly, the parties may supplement them by agreement; if they are unable to reach a supplementary agreement, the problem shall be determined in accordance with the related clauses of the contract or with trade practices.” Art. 354 of the *PRC Contract Law* specifies that art. 61 applies when determining whether the method of sharing improvement is “not stipulated or not clearly stipulated, nor can [...] be determined pursuant to the provisions of Article 61,” and is therefore vague.

### III. China's Discriminatory Licensing Restrictions

In the course of the Section 301 investigation, USTR identified additional licensing restrictions in the JV Regulations. In addition to the TIER, the JV Regulations, too, include licensing restrictions on technology exporting parties involved in joint ventures within China's territory (e.g., U.S. parties exporting technology to their Chinese joint venture). The licensing restrictions result in securing benefits for technology importing parties (the Chinese joint ventures importing technology into China from the United States). Article 43(3) of the JV Regulations states that the term of the technology transfer agreement to the JV shall "generally not exceed ten years." The provision may result in U.S. companies only having control over their transferred technology for ten years, even though some forms of technology, such as patents and trade secrets, may be protectable for much longer than ten years. After the conclusion of the JV-related technology transfer agreement, Article 43(4) stipulates that the "technology importing party shall have the right to continue using the technology." The result of Article 43(4) is that Chinese joint ventures to technology contracts have the right under the JV Regulations to continue to use transferred technology after the expiration of the related technology contract, even if the transferred technology would otherwise be protected from use by that Chinese party. This means that under the JV Regulations, the Chinese joint venture licensee has the right to use the U.S. licensor's technology in perpetuity after the technology contract expires, without paying compensation or subject to other terms.

#### C. Concerns Raised by Other Trading Partners

Other governments have identified China's technology transfer licensing regime as a problem. In connection with the Trade-Related Aspects of Intellectual Property Rights (TRIPS) Council transitional reviews of China at the World Trade Organization in 2009 and 2011, Japan, the EU, and the United States requested information from China to explain its technology transfer regime and address other areas of concern as well. In the last review of China in 2011, Japan specifically noted its concern that the TIER contains discriminatory provisions as to the treatment of foreign licensors when compared to their domestic counterparts.<sup>294</sup>

Japan continues to raise concerns about the system in China for regulating importation of technology.<sup>295</sup> In its 2016 Annual Compliance Report, Japan's Ministry of Economy, Trade and Industry (METI) devoted a section of its report on China specifically to the discriminatory articles of the TIER, including Articles 24, 27, and 29. METI notes that "[i]n many cases of technology import and export subject to the [TIER], foreign companies are assumed to be the parties providing the technology" and that therefore the "mandatory provisions [of the TIER] are applied only to foreign companies providing the technology and therefore can be a measure that discriminates between Chinese and foreign technology transfer."<sup>296</sup>

Foreign stakeholders also have raised concerns. The European Union Chamber of Commerce in China concluded in its "Intellectual Property Rights Working Group Position Paper 2016/2017"

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<sup>294</sup> China's only response to these criticisms was that there are no discriminatory regulations in the TIER. For a summary of the 2011 TRIPS Council meeting, see the 2016 report of the Ministry of Economy, Trade and Industry (METI) of Japan, THE 2016 REPORT ON COMPLIANCE BY MAJOR TRADING PARTNERS WITH TRADE AGREEMENTS - WTO, EPA/FTA AND IIA [*hereinafter* "2016 Report on Compliance"] 67 (2016), available at [http://www.meti.go.jp/english/report/data/2016WTO/pdf/01\\_01.pdf](http://www.meti.go.jp/english/report/data/2016WTO/pdf/01_01.pdf).

<sup>295</sup> See 2016 REPORT ON COMPLIANCE at 64–67.

<sup>296</sup> 2016 REPORT ON COMPLIANCE at 65.

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that due to TIER, “parties to a cross-border technology transfer contract are not allowed to freely negotiate clauses concerning the ownership of subsequent developments or the liability for infringement of third parties rights....[A]s a consequence, [TIER] interfere[s] with the needs of Chinese and foreign companies for effective technology trade mechanisms.”<sup>297</sup> In its position paper for 2017/2018, the Chamber recommended that Article 27 of the TIER be deleted.<sup>298</sup>

#### D. China's Acts, Policies, and Practices are Discriminatory

The above articles of the TIER and the JV Regulations constitute discriminatory acts, policies, and practices of China.<sup>299</sup> The TIER and JV Regulations put foreign technology importers, including U.S. entities, at a disadvantage relative to their domestic Chinese counterparts because the TIER and JV Regulations impose additional restrictions on importers of foreign technology and their use and enjoyment of their rights in technology, including but not limited to rights in intellectual property.<sup>300</sup> Through these restrictions, U.S. technology importers into China often are forced to grant ownership or usage rights to valuable intellectual property to domestic Chinese entities. At the same time, the licensing restrictions result in benefits for the Chinese counterparty to those forced arrangements.<sup>301</sup>

##### 1. Justifications for Discrimination

In this Section 301 investigation, USTR received submissions and testimony stating that the licensing restrictions in China are necessary to protect Chinese companies, which are in a “weak position” in technology transfer negotiations and contracts.<sup>302</sup> Other submissions stated that

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<sup>297</sup> EUROPEAN CHAMBER IN CHINA, INTELLECTUAL PROPERTY RIGHTS WORKING GROUP POSITION PAPER 2016/2017 87, available at <http://www.europeanchamber.com.cn/documents/download/start/en/pdf/429>.

<sup>298</sup> See EUROPEAN CHAMBER IN CHINA, INTELLECTUAL PROPERTY RIGHTS WORKING GROUP POSITION PAPER 2017/2018 89, available at <http://www.europeanchamber.com.cn/documents/download/start/en/pdf/545>.

<sup>299</sup> See NFTC, *Submission, Section 301 Hearing 7* (Sept. 28, 2017) (“This lack of freedom of contract [under art. 24 of the TIER] discriminates against overseas licensors....”); US-CHINA BUSINESS COUNCIL [hereinafter “USCBC”], *Submission, Section 301 Hearing 10* (Sept. 28, 2017).

<sup>300</sup> NFTC, *Submission, Section 301 Hearing 6* (Sept. 28, 2017) (“The Regulations on the Administration of the Import and Export of Technology impose greater risks and liabilities on foreign technology licensors than China’s Contract Law imposes on domestic licensors.”).

<sup>301</sup> ITIF, *Submission, Section 301 Hearing 16* (Oct. 25, 2017) (“In summary, China imposes onerous restrictions on foreign parties involved in technology licensing activities in China which disadvantages foreign parties to the benefit of the Chinese counterparty.”).

<sup>302</sup> See Yang Guohua, *Submission, Section 301 Hearing* (Sept. 28, 2017) (“The relevant provisions of China’s *Regulation on Technology Import and Export Administration* are well-founded. The provisions are intended to safeguard the legitimate rights and interests of the licensees who have a weak position in international technology transfer negotiations, as similar laws and policies of other countries do in such circumstances.”); CCOIC, *Submission, Section 301 Hearing 63–4* (Sept. 28, 2017) (“In the context of cross-border technology transfer, the status of the licensor from developed countries and licensee from developing countries in a negotiation is usually unequal, often greatly...the *Regulations* are based on the same principle, which is to redress the imbalance of powers leading to imbalance of interests and to protect the rights of the licensee having a weak negotiation position.”).



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licensing negotiations and contracts are based on market conditions without interference from China<sup>303</sup> and that the TIER does not favor Chinese companies.<sup>304</sup>

Other submissions stated that licensing restrictions like the TIER could not constitute a problem for U.S. industry because there were no legal cases brought in China based on the TIER.<sup>305</sup> These submissions do not account for the continuing existence of the TIER (as well as the JV Regulations) in China and the effects of such restrictions on contract negotiations for U.S. technology owners.<sup>306</sup> These concerns increase when a company has valuable intellectual property and other proprietary information that may be affected by China's licensing restriction regime.<sup>307</sup> Moreover, none of the submissions justifying the discriminatory policies addressed how such a licensing regime meets a national treatment standard. National treatment means that a country (like China) accords to the nationals of other countries (like the United States) treatment that is no less favorable than that it accords to its own nationals with regard to the policies at issue. Instead, the submissions appear to implicitly acknowledge that China has discriminatory acts, policies, and practices concerning technology import contracts by justifying their existence.

Section 301 defines acts, policies, and practices that are discriminatory to "include, when appropriate, any act, policy, and practice which denies national or most-favored nation treatment to United States goods, services, or investment."<sup>308</sup> Technology transfer agreements as defined by the TIER and the JV Regulations in China cover U.S. goods, service, or investment as related to the licensing and importing of U.S.-owned technology into China when compared to the treatment of domestic licensing of Chinese goods, services, or investment.

The TIER and JV Regulations place U.S. technology owners at a disadvantage relative to their Chinese counterparts when licensing technology into the Chinese market. The disparate treatment is effectively based on nationality, resulting in discrimination under Section 301.

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<sup>303</sup> See CCCME, *Submission, Section 301 Hearing 9* (Oct. 23, 2017) (alleging that "contracts are concluded according to companies' independent willingness. Chinese governments at all levels neither participate nor intervene in any of those business decisions or activities...The intellectual property licensing or technology negotiations are carried out based on market conditions by Chinese companies and U.S. companies."); CCOIC, *Submission, Section 301 Hearing 64* (Sept. 28, 2017).

<sup>304</sup> CCCME, *Submission, Section 301 Hearing 10* (Oct. 23, 2017).

<sup>305</sup> *E.g.* CCCME, *Submission, Section 301 Hearing 5* (Oct. 23, 2017) ("Over the past five years, however, CCCME received neither dispute nor complaints related to intellectual property and technology transfer.").

<sup>306</sup> USCBC, *Submission, Section 301 Hearing 10* (Sept. 28, 2017) ("China's JV requirements and foreign equity limitations create an unequal negotiation for companies...Elimination of these policies would create a meaningful change in companies' ability to negotiate market-based terms for their IP and technology in China.").

<sup>307</sup> *Id.* at 3 ("In USCBC's recent survey, most companies report that they are concerned about transferring their technology to China, regardless of the circumstances, because of concerns about the protection of intellectual property rights and proprietary information, as well as concerns about enforcing technology licensing agreements.").

<sup>308</sup> 19 U.S.C. § 2411(d)(5).

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#### 2. Acts, Policies, and Practices of Other Countries

In addition, USTR received submissions regarding the acts, policies, and practices of other trading partners relating to licensing and technology transfer, including submissions regarding the technology licensing regime in the United States. None of the cited acts, policies, or practices in comments submitted to USTR was the same as or similar to those of China. Instead, these very different examples highlight that the acts, policies, and practices of China in technology licensing discriminate against importers of foreign technology, including U.S. entities.

USTR received comments and testimony asserting, without support or discussion, that the *PRC Contract Law* provisions regarding technology transfer “equally apply to domestic and foreign invested companies without favoring either group.”<sup>309</sup> As discussed above in Section III.B.1, the *PRC Contract Law* does not equally apply to domestic and foreign companies.<sup>310</sup> A Chinese company seeking to transfer technology within China can take full advantage of the provisions of the *PRC Contract Law*, while a U.S. technology owner seeking to transfer technology into China must adhere to the adverse terms imposed by TIER or the JV Regulations.<sup>311</sup>

Some submissions characterized other indemnity clauses in international codes and national laws as similar to those in the TIER. For example, two submissions highlighted language from the *Draft International Code of Conduct on the Transfer of Technology* (Draft Code), a United Nations text.<sup>312</sup> Article 24 of TIER states in relevant part that “[w]here any of the lawful interests of any other person is infringed upon, the liabilities shall be borne by the licensor. Chapter 5, Paragraph.4, Romanette vi (Rights to the technology transferred) of the Draft Code states that “[t]he technology supplier's representation that on the date of the signing of the agreement, it is, to the best of its knowledge, not aware of third parties' valid patent rights or similar protection for inventions which would be infringed by the use of the technology when used as specified in the agreement....” The Draft Code, drafted over thirty years ago, does not address indemnification for future liability, which is what is required by Article 24 of TIER. Instead, the Draft Code addresses a warranty issue regarding known past infringement at the time the contract is signed.<sup>313</sup> The TIER addresses all indemnification issues, not just past warranties as the Draft Code addresses.

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<sup>309</sup> CHINA GENERAL CHAMBER OF COMMERCE – USA [hereinafter “CGCC”], *Submission, Section 301 Hearing* (Sept. 28, 2017). The CGCC submission adds that “[i]n addition to the Contract Law, the Regulations on Technology Import and Export Administration of the People’s Republic of China (passed in 2001) have additionally bolstered the protection of technology transfer, licensing, ownership and indemnity in cross border transactions,” but does not include information as to how the TIER bolsters such protections nor how the TIER’s separate regime for foreign technology transfers works alongside the *PRC Contract Law*. *Id.* 14-5.

<sup>310</sup> ITIF, *Submission, Section 301 Hearing* 15 (Oct. 25, 2017) (“CCCME...holds that TIER’s relevant Articles 24 and 27 are ‘neutral in nature.’ Yet they are not, for CCCME omits that the articles only apply in a ‘technology import contract.’”).

<sup>311</sup> *See id.* (“CCCME contends that these provisions are ‘neutral in nature’....But this fails to rebut or address the real issue at hand, for it omits the fact that both articles [24 and 27 of TIER] only apply ‘in a technology import contract’ but do not hold with regard to a technology license contract.”).

<sup>312</sup> CCCME, *Submission, Section 301 Hearing* 10 (Oct. 23, 2017); CCOIC, *Submission, Section 301 Hearing* 61–2 (Sept. 28, 2017).

<sup>313</sup> ITIF, *Submission, Section 301 Hearing* 15 (Oct. 25, 2017) (“The unaware-of-dominant-patent fundamentally differs from TIER Article 24’s ‘licensor shall bear liability.’”).

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Instead of adopting the Draft Code, certain Members like China and the United States have adopted the Convention on Contracts for the International Sale of Goods, which includes a provision expressly providing for the freedom of contract around such terms. The Convention does include a related warranty provision that a seller of goods “must deliver goods which are free from any right or claim of a third party based on industrial property or other intellectual property” in Article 42, but the Convention also provides in Article 6 that parties “may...derogate from or vary the effect of any of [the Convention] provisions.” A similar freedom of contract provision is incorporated into the “Successful Technology Licensing” publication of the UN’s World Intellectual Property Organization (WIPO). WIPO, of which China and the United States are also members, provides guidance through its Successful Technology Licensing document, which recognizes the “legal complexity” of terms regarding issues like indemnity and the importance of parties being able to freely negotiate such terms. In its Successful Technology Licensing, WIPO makes clear that “there is no set answer” and “nothing is ‘standard’ or ‘customary.’” These freedom to contract provisions in the UN Convention and the WIPO document are reflected in Article 353 of the *PRC Contract Law*, but the TIER conflicts for U.S. technology importers into China.

Some submitters asserted that additional relevant laws of trading partners, including the United States, address indemnification, but the submitters failed to provide supporting legal analysis for such allegations.<sup>314</sup> USTR was unable to analyze unsupported allegations such as these, particularly when the submitters were provided an opportunity during the hearing to respond to these questions and chose not to do so in the hearing or afterwards in written submissions during the rebuttal comment period.<sup>315</sup>

For example, a submission identified the Philippines as having similar indemnification and improvement ownership clauses to China in the Voluntary Licensing chapter of the *Intellectual Property Code of the Philippines* (Republic Act No. 8293).<sup>316</sup> However, the cited provisions of the Philippine law are not similar to the Chinese regime under the TIER.

As discussed above, the TIER in China requires a technology importing licensor to be responsible for all liabilities resulting from use of the technology provided “[w]here any of the

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<sup>314</sup> For example, the China Intellectual Property Law Society submitted that German case law and the U.S. Uniform Commercial Code both included similar rules to the TIER, but did not cite to any provision in either that required foreign licensors to indemnify domestic licensees for all infringement liability. China Intellectual Property Law Society [hereinafter “CIPL”], *Submission, Section 301 Hearing* 80–1 (Sept. 27, 2017). Instead, CIPL only cited German case law and the U.S. Uniform Commercial Code with regard to express and implied warranty language for goods in Germany and the United States regarding known defects of products. Jin Haijun, CIPL, *Testimony, Section 301 Hearing* 140–1 (Oct. 10, 2017).

<sup>315</sup> E.g. Jin Haijun, CIPL, *Testimony, Section 301 Hearing* 140–1 (Oct. 10, 2017) (“We provided the explanation of your question in our written comments....We give some examples like the judgment in Germany and the UCC in the United States and the draft code in the United Nations.”); John Tang, DHH WASHINGTON DC LAW OFFICE P.C. [hereinafter “DHH”], *Testimony, Section 301 Hearing* 164 (Oct. 10, 2017) (responding that “I believe in our supplemental comments, we will address your answer in a more complete way” regarding questions about TIER) compare with DHH, *Submission, Section 301 Hearing* 4 (Oct. 23, 2017) (“In particular, China does not have any laws, rules or regulations that force foreign investors to transfer their technology. Should such situations arise, it would be an agreement among corporations subject to market conditions, instead of by government interference.”).

<sup>316</sup> CCOIC, *Submission, Section 301 Hearing* 62 (Sept. 28, 2017).

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lawful interests of any other person is infringed upon.”<sup>317</sup> The cited Philippine law states that there is a *prima facie* presumption that an adverse effect on competition and trade arises for technology transfer arrangements that “exempt the licensor for liability for non-fulfilment of his responsibilities under the technology transfer arrangement and/or liability arising from third party suits brought about by the use of the licensed product or the licensed technology.” Given that it is a presumption, the Philippine measure significantly differs from the TIER’s broad indemnification requirement. Additionally, there is an exception to the presumption under Philippine law for situations listed under Section 91 of the law, which include technology transfer arrangements that are “exceptional or meritorious cases where substantial benefits will accrue to the economy, such as high technology content, increase in foreign exchange earnings, employment generation....” The submission fails to account for the exception cited in the section, that the presumption applies “[e]xcept in cases under Section 91 [of the Intellectual Property Code].” Section 91 of the Intellectual Property Code of the Philippines specifically permits entities to seek exemptions from the cited Sections 87.14 and 87.16, including in cases “where substantial benefits will accrue to the economy, such as high technology content.” Most importantly, the Philippine law appears to apply to all technology transfer arrangements under Philippine law, whereas the Chinese TIER provision only applies to importers of foreign technology, such as U.S. industry.

For the ownership clause, Article 27 of the TIER requires that improvements to imported technology belong to the party making the improvement. As discussed above in Section III.B.3, the obligation in Article 27 means that Chinese parties to technology importing contracts have the automatic right to any improvements made by those same parties without negotiating terms with their U.S. partners. The cited Philippine law<sup>318</sup> in Section 87.6 states that there is a *prima facie* presumption that technology transfer arrangements that “obligate the licensee to transfer for free to the licensor the inventions or improvements that may be obtained through the use of the licensed technology” have an adverse effect on competition and trade. The TIER requires that all improvements made by a licensee vest with that licensee, not that there is a *prima facie* presumption of adverse effect on competition and trade where a licensee must transfer any improvements for free, as set out in the Philippine intellectual property law. Also, and as with Section 87.14, there is an exception to the presumption under Philippine law for situations listed under Section 91 of the same law, which include technology transfer arrangements that are “exceptional or meritorious cases where substantial benefits will accrue to the economy, such as high technology content, increase in foreign exchange earnings, employment generation....” Similarly, the Philippine law appears to apply to all technology transfer arrangements under Philippine law, whereas the Chinese TIER provision only applies to importers of foreign technology, such as U.S. industry.

USTR also received statements that the intellectual property regime in Vietnam is similar to the TIER.<sup>319</sup> However, just as for the Philippine system, Vietnam does not have a provision like Article 27 of the TIER in China. The regime in Vietnam addresses contracts that require licensees to transfer improvement made by the licensee free of charge to licensors. Article 144.2(a) of Vietnam’s Law on Intellectual Property Law states that “an industrial property object

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<sup>317</sup> TIER, art. 24.

<sup>318</sup> CCOIC, *Submission, Section 301 Hearing* 63 (Sept. 28, 2017).

<sup>319</sup> CCOIC, *Submission, Section 301 Hearing* 63 (Sept. 28, 2017).

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license contract must not have provisions which unreasonably restrict the right of the licensee.” Specific examples include “[p]rohibiting the licensee to improve the industrial property object other than marks” and “compelling the licensee to transfer free of charge to the licensor improvements of the industrial property object made by the licensee or the right of industrial property registration or industrial property rights to such improvements.” However, the TIER in China forbids the parties from freely contracting as to how improvements are allocated between the parties, taking into consideration that the technology at issue was provided by the licensor in the first place.<sup>320</sup>

Similar submissions failed to address whether any of these cited provisions only apply to foreign technology owners and provide different treatment for domestic technology transfers, as is the regime in China. All of the so-called “similar” legal and guidance provisions in other countries and international fora do not solely apply to imported technology transfers, as the TIER does in China, but instead apply equally to all technology transfers in licensing contracts.

USTR received comments stating that U.S. companies are not treated differently under the TIER as compared to Chinese domestic companies.<sup>321</sup> As explained above in Section I.B.2 *et seq.* and Section I.D.1, this is not the case. One submission states that “as long as the patent on the technology is still valid or the technology remains subject to confidentiality, the use of the technology by the licensee still requires licensing by the licensor” under the TIER.<sup>322</sup> Such comments do not account for the other requirements of the licensing regime in China, including the JV Regulations that, among other things, authorize the licensee to use the technology without compensation after the conclusion of the agreement. Other comments stated without citations that the Chinese contract law system “originated from those in major European countries (such as Germany) and the law has evolved into a very similar one to its U.S. counterpart.”<sup>323</sup> Assertions of such a general nature are not responsive to the concern articulated above regarding the differential and discriminatory treatment of U.S. and other foreign technology owners relative to Chinese counterparts. The submitters’ failure to provide citations to the asserted relevant U.S. counterpart contract provisions precludes USTR from concluding such statements are sound and supported by law. Moreover, no submission addressed the fact that the contract laws of the United States do not provide different treatment for domestic transfers of technology versus foreign imported transfers of technology.

USTR did not receive any submissions establishing that the United States or any third country has enacted any act, policy, or practice similar to the JV Regulations.

#### E. China's Acts, Policies, and Practices Burden U.S. Commerce

As discussed earlier under Section II.E., China's acts, policies, and practices regarding restrictions on technology transfer — including licensing and other technology-related

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<sup>320</sup> See TIER, art. 27.

<sup>321</sup> See CCCME, *Submission, Section 301 Hearing 10* (Oct. 23, 2017) (alleging that “these two provisions [arts. 24 and 27 of the TIER] are neutral in nature...Either Chinese companies or U.S. companies can be the licensor and the party who has made the improvement.”); CCCME, *Submission, Section 301 Hearing 7* (Oct. 23, 2017) (asserting without citations that “enterprises usually agree on the ownership of improved technology”).

<sup>322</sup> CCOIC, *Submission, Section 301 Hearing 62* (Sept. 28, 2017).

<sup>323</sup> CGCC, *Submission, Section 301 Hearing §2(C)* (Sept. 28, 2017).

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negotiations for U.S. entities — clearly burden U.S. commerce. Acts, policies, and practices that burden U.S. commerce include licensing requirements that result in discrimination against U.S. technologies,<sup>324</sup> as well as acts, policies, and practices that do not adequately protect U.S. intellectual property rights.<sup>325</sup> The licensing restrictions described in Section III.B on U.S. entities clearly meet these standards because they deprive U.S. entities from benefiting from their innovative technology that has been transferred into China under a discriminatory licensing regime.<sup>326</sup>

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<sup>324</sup> See *Initiation of Section 302 Investigation and Request for Public Comment: Japan Market Access Barriers to Agricultural Products*, 62 Fed. Reg. 53,853 (Oct. 16, 1997); *Petition of National Cannery Association*, 40 Fed. Reg. 44,635 (Sept. 29, 1975).

<sup>325</sup> See *Termination of Action: Protection of Intellectual Property Rights by the Government of Honduras*, 63 Fed. Reg. 37,943 (June 30, 1998).

<sup>326</sup> WILEY REIN LLP, *Submission, Section 301 Hearing 11* (Sept. 28, 2017) (“Chinese companies would be able to employ ‘winner-take-all’ strategies to keep U.S. companies from regaining market share. Therefore, it is clear that the Chinese government’s action burden and restrict U.S. commerce.”).

#### IV. Outbound Investment

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##### A. Introduction

Over the past decade, China's outbound foreign direct investment (OFDI) has grown at a rapid rate.<sup>327</sup> A longstanding focus of China's OFDI has been the acquisition of mineral deposits and other natural resource assets, principally in developing regions such as Africa and Latin America.<sup>328</sup> Yet, as China's OFDI flows have increased, technology-focused investments have become more prevalent, particularly in the United States and Europe.<sup>329</sup>

Various motives inform China's outbound investment behavior. Under the general, market-based theory of foreign direct investment (FDI), foreign investors seek (1) market expansion, (2) efficiency gains, and/or (3) resources (broadly defined to include natural resources and other strategic assets).<sup>330</sup> These motives also apply to an extent in China's case, particularly with respect to natural resource investments that aim to mitigate China's reliance on resource imports.<sup>331</sup>

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<sup>327</sup> Thilo Hanneman, Daniel H. Rosen, RHODIUM GROUP, CHINESE INVESTMENT IN THE UNITED STATES: RECENT TRENDS AND THE POLICY AGENDA 6 (Dec. 2016) (stating that, "The rapid growth of outbound foreign direct investment (FDI) by firms from China is changing the patterns of global capital flows. Chinese FDI flows grew at an average annual rate of 27 percent over the past decade, from \$3 billion in 2005 to \$123 billion in 2015."). For a definition of FDI, see Shun Chiao Chang, *The Determinants and Motivations of China's Outward Foreign Direct Investment: A Spatial Gravity Model Approach*, 43 GLOBAL ECON. REV. 260 (2014) ("'Foreign direct investment' is the category of international investment that reflects the objective of a resident entity in one economy ('direct investor' or parent enterprise) to obtain a 'lasting interest' and control in an enterprise resident in another economy ('direct investment enterprise'. The two criteria incorporated in the notion of a 'lasting interest' are the existence of a long-term relationship between the direct investor and the enterprise, and the significant degree of influence that gives the direct investor an effective voice in the management of the enterprise.").

<sup>328</sup> See, e.g., Ernst & Young data for the period 2010-2014 shows that Chinese firms transacted a total of 223 M&A deals in energy and mining, totaling \$143 billion, and 54 M&A deals in agribusiness and food, totaling \$16.7 billion. ERNST & YOUNG, RIDING THE SILK ROAD: CHINA SEES OUTBOUND INVESTMENT BOOM 7-11 (Mar. 2015).

<sup>329</sup> Thilo Hanneman, Daniel H. Rosen, RHODIUM GROUP, CHINESE INVESTMENT IN THE UNITED STATES: RECENT TRENDS AND THE POLICY AGENDA 6 (Dec. 2016) (stating that, "Initially focused on extractive sectors in developing countries, today Chinese FDI flows increasingly to advanced economies where technology, brands, and sophisticated manufacturing assets are abundant."); see also ERNST & YOUNG, RIDING THE SILK ROAD: CHINA SEES OUTBOUND INVESTMENT BOOM 7-11, 15-16 (Mar. 2015) ("European countries, especially the developed ones, are increasingly sought after by Chinese investors for their advanced technology and expertise, well-accepted and recognized brands and mature marketing networks. [...] The industrial, [technology, media, and telecommunications] and automotive sectors are favorites for Chinese investors.").

<sup>330</sup> For a general theory of FDI motives (often referred to as the "eclectic paradigm"), John H. Dunning, *The Eclectic Paradigm of International Production: A Restatement and Some Possible Extensions*, 19 J. OF INT'L BUS. STUDIES 1-31 (1988).

<sup>331</sup> Yi Zhang, Hein Roelfsema, *Unravelling the Complex Motivations behind China's Outward FDI*, 19 J. OF THE ASIA PACIFIC ECONOMY 92 (2013) ("The third pattern is that host country resources, including natural resources and strategic assets, are of growing importance in attracting China's outward FDI. Many Chinese firms specialize in mass production which involves natural resource intensive processes. Nevertheless, natural resources per capita in China are only 20 percent-25 percent of the world's average level (Guo, 1996). To secure supplies for domestic firms, the outward FDI has been used to acquire scarce natural resources such as energy, petroleum, and minerals (Wu and Sia 2002). For example, over years Chinese multinationals have invested in large projects to exploit oil in countries such as Algeria, Angola, Kenya, Nigeria, and Sudan; copper in Congo and Zambia, as well as iron ore in Gabon. With the fast expansion of the Chinese economy, in recent years there is an increasing demand for natural resources to support domestic economic growth. This path thereby leads to a more urgent need for conducting

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But as numerous studies have noted, China's OFDI is also driven by non-market factors. These factors stem from the Chinese government's extensive intervention – in the Chinese economy in general, and in foreign investment in particular – to achieve industrial policy objectives.

- The U.S. Chamber of Commerce observed in a 2017 report:

In several [Made in China 2025] sectors, the technological gap between domestic and foreign competitors is significant, and closing that gap would require extended timelines and high levels of financial commitment that could stress budgets. To accelerate the learning process, the [Chinese] state appears to be supporting acquisition strategies of Chinese state-owned and state-supported companies tied to [Made in China 2025] priority sectors.<sup>332</sup>

- The European Union Chamber of Commerce in China states in a 2017 report:

Over the course of 2015 and 2016, an unprecedented wave of outbound investments into firms in Europe and elsewhere in industries of relevance to [Made in China 2025] have either been successfully completed or attempted. Significantly, many of these investments have been in areas where European business is unable to make equivalent investments in China, and have also enabled Chinese firms to access technology, brands and management expertise that they would not otherwise have been able to acquire. In some industries, such as semiconductors, attempted and completed investments have spanned entire industrial supply chains.<sup>333</sup>

- The 2017 European Commission report on Chinese economic distortions states:

A clear acceleration of Chinese outbound investments in Europe (and elsewhere) is noticeable in the last few years [...] Most of these overseas acquisitions have the direct backing of the State. Through that state-support process, Chinese [state-owned enterprises (SOEs)] gain market share, build additional capacities [and] capital assets and gain access to inputs.<sup>334</sup>

- The Mercator Institute for China Studies, a leading German think tank, states in a 2016 report:

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natural-resource-seeking FDI over time.”). *See also* Shun Chiao Chang, *The Determinants and Motivations of China's Outward Foreign Direct Investment: A Spatial Gravity Model Approach*, 43 GLOBAL ECON. REV. 244, 260 (2014). The study, which reviews China's outbound investment in 138 countries between 2003 and 2009, finds that the “fuel extraction motive plays a key role in China's OFDI.”

<sup>332</sup> U.S. CHAMBER OF COMMERCE [*hereinafter* “U.S. Chamber”], MADE IN CHINA 2025: GLOBAL AMBITIONS BUILT ON LOCAL PROTECTIONS 22 (2017).

<sup>333</sup> EUROPEAN UNION CHAMBER OF COMMERCE IN CHINA [*hereinafter* “E.U. Chamber”], CHINA MANUFACTURING 2025: PUTTING INDUSTRIAL POLICY AHEAD OF MARKET FORCES 18-19 (2017).

<sup>334</sup> EUROPEAN COMMISSION, COMMISSION STAFF WORKING DOCUMENT ON SIGNIFICANT DISTORTIONS IN THE ECONOMY OF THE PEOPLE'S REPUBLIC OF CHINA FOR THE PURPOSES OF TRADE DEFENCE INVESTIGATIONS 426 (SWD(2017)483 final/2 (Dec. 20, 2012).



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[To] speed up China’s technological catch-up and to leapfrog stages of technological development, Chinese companies are acquiring core technologies through investment abroad. In itself, this is neither surprising nor objectionable. However, *China’s technology acquisitions are partly supported and guided by the state*. China pursues an outbound industrial policy with government capital and highly opaque investor networks to facilitate high-tech acquisitions abroad. This undermines the principles of fair competition: China’s state-led economic system is exploiting the openness of market economies in Europe and the United States. Chinese high-tech investments need to be interpreted as *building blocks of an overarching political programme*. It aims to systematically acquire cutting-edge technology and generate large-scale technology transfer.<sup>335</sup>

- Rhodium Group, in a 2016 study on Chinese investment in the United States, observes that, while it is difficult to draw clear-cut conclusions concerning aggregate FDI data, “Chinese government policies are important variables in FDI patterns,” and that “the surge in global takeover offers in the semiconductor industry is the most notable example of the industrial policy-outbound investment nexus.”<sup>336</sup>
- Ernst and Young, in a 2016 annual report on China’s outbound investment, states that “[t]he Chinese government is actively improving the strategy of outbound investment to facilitate Chinese enterprises to ‘Go Global’ by launching fiscal and financial support policies and establishing cooperation platforms.”<sup>337</sup>
- Numerous academic studies note the significance of state involvement in shaping China’s OFDI.<sup>338</sup> For example, in a widely-cited study on the determinants of China’s outbound

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<sup>335</sup> Jost Wübbeke, et. al., MERCATOR INSTITUTE FOR CHINA STUDIES [*hereinafter* “MERICS”], *MADE IN CHINA 2025: THE MAKING OF A HIGH-TECH SUPERPOWER AND CONSEQUENCES FOR INDUSTRIAL COUNTRIES* 7-8 (Dec. 2016) (emphasis added).

<sup>336</sup> Thilo Hanneman, Daniel H. Rosen, RHODIUM GROUP, *CHINESE INVESTMENT IN THE UNITED STATES: RECENT TRENDS AND THE POLICY AGENDA* 7 (Dec. 2016) (“Government policies impact patterns in Chinese companies’ outbound investment both indirectly, through economic policy, and directly through incentives and policies aimed at promoting overseas investment in specific industries, technologies, and geographies.”); *see also* RHODIUM GROUP [*hereinafter* “Rhodium”], *Submission, Section 301 Hearing* 4 (Sept. 28, 2017).

<sup>337</sup> ERNST & YOUNG, *GOING OUT – THE GLOBAL DREAM OF A MANUFACTURING POWER: 2016 CHINA OUTBOUND INVESTMENT OUTLOOK* 7 (Mar. 2016) (“In 2015, China began to comprehensively implement its ‘One Belt One Road’ strategy. It also introduced the ‘Made in China 2025’ plan and ‘Guiding Opinions on Promoting International Cooperation in Industrial Capacity and Machinery Manufacturing’, aiming at encouraging the manufacturing industry to ‘Go Global’ and to develop international capacity cooperation. These efforts have already taken some effect: In 2015, Chinese enterprises invested USD 14.8 billion along the Belt and Road territories, up 18.2 percent from 2014; meanwhile the outward FDI from the machinery manufacturing industry has grown by 154.2 percent.”).

<sup>338</sup> *See, e.g.*, Alvaro Cuervo-Cazurra et al., *Government as Owners: State-owned Multinational Companies*, *J. OF INT’L BUS. STUDIES* (July 9, 2014); Lin Cui, Fuming Jiang, *State Ownership Effect on Firms’ FDI Ownership Decisions under Institutional Pressure: A Study of Chinese Outward-Investing Firms*, 43 *J. OF INT’L BUS. STUDIES* 264-284 (2012); Chengqi Wang, et. al., *Exploring the Role of Government Involvement in Outward FDI from Emerging Economies*, 43 *J. OF INT’L BUS. STUDIES* 655-676 (2012); Luke Hurst, *Comparative Analysis of the Determinants of China’s State-owned Outward Direct Investment in OECD and Non-OECD Countries*, 19 *CHINA & WORLD ECONOMY* 74-91 (2011); Ping Deng, *Why Do Chinese Firms Tend to Acquire Strategic Assets in International Expansion*, 44 *J. OF WORLD BUS.* 74-84 (Jan. 2009).

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investment, Peter J. Buckley et al. argue for a “special theory of Chinese [OFDI]” that takes into account the degree to which China’s outbound investment is shaped by soft budget constraints afforded to outbound investors by state-owned financial institutions; pervasive state ownership of outbound investors;<sup>339</sup> and the manner in which the Chinese government exerts control over the outbound investment approval process.<sup>340</sup>

USTR determines that the Chinese government directs and unfairly facilitates the systematic investment in, and acquisition of, U.S. companies and assets by Chinese companies, to obtain cutting-edge technologies and intellectual property (IP) and generate large-scale technology transfer in industries deemed important by state industrial plans. The role of the state in directing and supporting this outbound investment strategy is pervasive, and evident at multiple levels of government – central, regional, and local. The government has devoted massive amounts of financing to encourage and facilitate outbound investment in areas it deems strategic. In support of this goal, China has enlisted a broad range of actors to support this effort, including SOEs, state-backed funds, government policy banks, and private companies.

This section is structured as follows: Section IV.B provides a review of China’s outbound investment policies, and the various state-owned and state-supported actors that participate in outbound investment. The section considers the government’s principal initiatives to acquire foreign technology, including the “Going Out” strategy, and other levers that the government employs to channel and direct investment, such as its outbound investment approval system.

Section IV.C examines the ways in which this policy framework and approach have impacted Chinese investment in the United States. The section reviews aggregate data on investment flows, followed by a detailed analysis of Chinese acquisitions in seven sectors of the U.S. economy that illustrate China’s acts, policies, and practices: (1) aviation; (2) integrated circuits (IC); (3) information technology (IT) and electronics; (4) biotechnology; (5) industrial machinery and robotics; (6) renewable energy; and (7) automotive. The section ends by analyzing Chinese investment activities that target core innovation drivers for the U.S. economy in technology centers such as Silicon Valley.

Section IV.D provides a summary of findings: China has engaged in acts, policies, and practices that are unreasonable, and that burden U.S. commerce. The market-distorting acts, policies, and

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<sup>339</sup> Peter J. Buckley et al., *Determinants of Chinese Outward Foreign Direct Investment*, 38 J. OF INT’L BUS. STUDIES 501 (July 2007) (“Market imperfections may be transformed into ownership advantages by emerging economy firms (Buckley, 2004a). This ability may arise from a number of particular and interrelated imperfections: (1) state-owned (and state-associated) firms may have capital made available to them at below- market rates (*e.g.*, in the form of soft budget constraints) [...] (2) inefficient banking systems may make soft loans to potential outward investors, either as policy or through inefficiency [...] (3) conglomerate firms may operate an inefficient internal capital market that effectively subsidizes FDI [...] There are good grounds for believing that all [...] of these imperfections exist in China. State-sponsored soft budget constraints make acquisition by Chinese enterprises a ‘normal’ mode of entering and penetrating a host economy.”).

<sup>340</sup> Peter J. Buckley et al., *Determinants of Chinese Outward Foreign Direct Investment*, 38 J. OF INT’L BUS. STUDIES 503 (July 2007) (“Given the extent of state control of the Chinese economy (Scott, 2002), the institutional environment is likely to have had far-reaching and profound effects on the internationalisation decision of Chinese firms. [...] Because various agencies within the state administration have been required to approve each and every outward FDI project from China (pre- dominantly through the control of foreign exchange), this evolution is likely to have influenced strongly the development, strength and orientation of Chinese MNEs.”).

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practices of the Chinese government in technology-focused sectors impose significant costs and risks on U.S. industry. They undermine the ability of U.S. technology companies to innovate and adapt, and threaten the long-term competitiveness of U.S. industry.

### B. Policy and Regulatory Framework

#### 1. Major Policies to Acquire Foreign Technology

##### a) *The “Going Out” Strategy*

A cornerstone of Chinese outbound investment is the “Going Out”<sup>341</sup> strategy. This strategy encourages Chinese companies to “go out” and invest abroad, and calls on the government to guide and facilitate this effort. The strategy, as originally conceived, seeks to remove obstacles to outbound investment<sup>342</sup> and provide targeted support for specific enterprises and sectors investing abroad.<sup>343</sup> This strategy appears to have been first articulated in a 1997 speech by then President Jiang Zemin,<sup>344</sup> and was enshrined in the *10th Five-year National Economic and Social Development Plan Outline (2001-2005) (10th Five-year Plan)*.<sup>345</sup> In subsequent statements, the government affirmed the linkage between the “Going Out” strategy and technology acquisition. For example, at the 2004 “International Forum on the Going Out of Chinese Companies,” a high-ranking official from the Ministry of Commerce (MOFCOM) explained that, as one of seven

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<sup>341</sup> English translation of Chinese term *zou chu qu*.

<sup>342</sup> Peter J. Buckley *et al.*, *Determinants of Chinese Outward Foreign Direct Investment*, 38 J. OF INT’L BUS. STUDIES 500 (July 2007) (“The process of accelerated outward investment liberalisation and growth can be traced from Deng Xiaoping’s tour of South China in 1992 through to the government-led ‘go global’ (*zou chu qu*) initiative, which was instigated in 1999. This initiative aims to promote the international competitiveness of Chinese firms by further reducing or eliminating foreign-exchange-related, fiscal and administrative obstacles to international investment (Sauvant, 2005)”).

<sup>343</sup> Luke Hurst, *Comparative Analysis of the Determinants of China’s State-owned Outward Direct Investment in OECD and Non-OECD Countries*, 19 CHINA & WORLD ECONOMY 77 (2011) (“A ‘Go Global’ policy was unveiled in 1999. Its fundamental aim was to encourage ODI to support national exports, with the clear objective of pushing domestic firms to internationalize their activities as a means to acquire strategic resources and expand into foreign markets. The overarching goal was to increase the competitiveness of 180 corporate champions to facilitate their rise as true multinationals and enter the Fortune 500. Firms that were identified benefited from preferential tax concessions and political backing (VanWyk, 2009)”).

<sup>344</sup> Jiang Zemin, Former General Secretary of the Communist Party of China, Implement the ‘Drawing In’ and ‘Going Out’ Combined Opening Up Strategy [Chinese] (Dec. 24, 1997), available at <http://history.mofcom.gov.cn>.

<sup>345</sup> *10th Five-year National Economic and Social Development Plan Outline* (adopted by the NPC on Mar. 15, 2001). The *10th Five-year Plan* specifically references the “Going Out” strategy in the context of science and technology development. Part 1, Chapter 1, ¶ 5 states: “Adhere to Reform and Opening Up and progress in science and technology as the driving force. [...] We shall unwaveringly expand Opening Up, and while actively ‘drawing in’, implement the ‘Going Out’ strategy. Amplify implementing the strategy of scientific education, revitalize science and technology, and foster talent for a prosperous nation.” In furtherance of this policy, the *10th Five-year Plan* calls for the expansion of “areas, pathways, and modes for international economic and technology cooperation” and encourages enterprises to “utilize foreign knowledge resources, and establish research and development institutions and design centers overseas.” Likewise, the plan calls for a broad array of support measures to help Chinese companies engage in “multinational operations” to “implement internationalization development” (including outbound investment). The government should assist in several areas, including financing, insurance, foreign exchange, fiscal policy, laws, information services, and border entry and exit administration. The plan instructs authorities to “improve corporate governance structures of enterprises with outbound investments,” and standardize supervision and administration of outbound investment (Part 5, Ch. 17, § 4).

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aspects of “Going Out,” enterprises should “set up R&D centers in regions endowed with intensive science and technology” and “intensify international technical exchange and cooperation and improve their innovative capability and technology.”<sup>346</sup>

As discussed below, several recent policies flow from and support the “Going Out” strategy. For example:

- The State Council’s *Notice on Issuing Several Policies on Further Encouraging the Development of the Software and Integrated Circuit Industries* calls for supporting the “Going Out” strategy of enterprises in establishing foreign marketing networks and R&D centers to promote IC, software, and IT service exports.<sup>347</sup>
- The *Next-Generation Artificial Intelligence Development Plan*, released in July 2017, calls for a “Going Out” strategy that includes overseas mergers and acquisitions, equity investments, venture capital (VC), and establishment of research and development centers abroad.<sup>348</sup>
- The *Notice on Issuing “Made in China<sup>349</sup> 2025” (Made in China 2025 Notice)*<sup>350</sup> outlines a wide-ranging strategy for harnessing and promoting the acquisition of foreign technology through outbound investment, including “explor[ing] the use of industrial funds, state-owned capital dividends, and other channels to support the ‘Going Out’ of advantageous manufacturing capacity including high-speed rail, power generation equipment, automobiles, and engineering, so as to implement overseas investment acquisitions.”<sup>351</sup>

China has also established the “Going Out” strategy as one element of the Introduce, Digest, Absorb, Re-innovate (IDAR) approach to technology assimilation (see Section I.C for further

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<sup>346</sup> See Karl Sauvant, *New Sources of FDI: The BRICs - Outward FDI from Brazil, Russia, India and China*, 6 J. OF WORLD INVESTMENT & TRADE 676-677 (2005) (“First, gradually increasing outward investment and develop overseas processing trade and overseas assembling trade. [...] Second, intensifying overseas cooperation of resource development. [...] Third, contracting overseas engineering projects. [...] The fourth aspect is to carry out overseas agricultural cooperation. [...] *The fifth aspect is to facilitate overseas science, technology and talent cooperation. Companies are guided to set up R&D centers in regions endowed with intensive science and technology. They should intensify international technical exchange and cooperation and improve their innovative capability and technology.* The sixth aspect is to elevate the level of foreign-related labor service cooperation. [...] The seventh aspect is to promote cooperation in the field of trade in services.”) (emphasis added).

<sup>347</sup> *Notice on Issuing Several Policies on Further Encouraging the Development of the Software and Integrated Circuit Industries* § 4(21) (State Council, Guo Fa [2011] No. 4, issued Jan. 28, 2011).

<sup>348</sup> *State Council Notice on Issuing the Next-Generation of Artificial Intelligence Development Plan* (State Council, Guo Fa [2017] No. 35, issued July 8, 2017). For full translation and analysis, see Graham Webster, et al., *China’s Plan to ‘Lead in AI: Purpose, Prospects, and Problems*, NEW AMERICA CYBERSECURITY INITIATIVE (Aug. 1, 2017), available at <https://www.newamerica.org/cybersecurity-initiative/blog/chinas-plan-lead-ai-purpose-prospects-and-problems/>.

<sup>349</sup> The literal translation is “China manufacturing”, but “Made in China” is consistent with usage in English-language documents published by China’s official state-run news agency, *Xinhua News* and with colloquial usage.

<sup>350</sup> *Notice on Issuing “Made in China 2025”* (State Council, Guo Fa [2015] No. 28, issued May 8, 2015). For a more detailed discussion on some of the broader policy goals of Made in China 2025, see Section I.C.

<sup>351</sup> *Made in China 2025 Notice* § 4, “Strategy Support and Guarantees,” § 4(7), “Further Expand Opening Up of Manufacturing Industries.”

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discussion of IDAR). This link is most clearly articulated in a 2006 document issued pursuant to the *National Medium- and Long-Term Science and Technology Development Plan Outline (2006-2020) (MLP)*,<sup>352</sup> and other policies which call on the government to “[g]uide enterprises that possess the conditions to ‘go out.’ Through the establishment of overseas research and development entities, fully utilize foreign science and technology resources, follow and study global advanced technology, and continually enhance the technological development and innovation capacity of Chinese enterprises.”<sup>353</sup>

##### *b) International Cooperation and International Industrial Capacity*

In support of the “Going Out” strategy, China has emphasized the need to promote “international cooperation,” a term that often refers to strategic outbound investments guided by state industrial policy. For example, the *Information and Communications Industry Development Plan (2016-2020)*,<sup>354</sup> released by the Ministry of Industry and Information Technology (MIIT) in December 2016, calls for “continually exploring different modes of *overseas cooperation* including joint ventures, acquisitions, equity investments, and controlling equity investments.”<sup>355</sup> The *Formal Announcement of Guidelines for the Development and Promotion of the Integrated Circuit Industry (IC Guidelines)*,<sup>356</sup> released in 2014, calls for domestic IC companies to expand “*international cooperation*, consolidate international resources, and expand international markets.”<sup>357</sup> The *Robotics Industry Development Plan (2016-2020) (Robotics Five-year Plan)*,<sup>358</sup> under the heading “expand international exchange and cooperation,” states that the government should “develop *international exchange and cooperation*” across governments, industry associations, and enterprises, and “encourage enterprises to actively expand overseas markets, and *strengthen technology cooperation* [...]”<sup>359</sup>

Likewise, China recently has called for “international industrial capacity cooperation,”<sup>360</sup> which was conceived as part of the “One-Belt One-Road” initiative launched in 2015.<sup>361</sup> This policy

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<sup>352</sup> *Notice on Issuing the National Medium- and Long-Term Science and Technology Development Plan Outline (2006-2020)* (State Council, Guo Fa [2005] No. 44, issued Dec. 26, 2005); see also *Several Supporting Policies for Implementing the “National Medium- and Long-Term Science and Technology Development Plan Outline (2006-2020)”* (State Council, Guo Fa [2006] No. 6, issued Feb 7, 2006).

<sup>353</sup> *Several Opinions on Encouraging Technology Introduction and Innovation and Promoting the Transformation of the Growth Mode in Foreign Trade [hereinafter “IDAR Opinions”]* § 3(10) (MOFCOM, NDRC, MOST, MOF, GAC, SAT, SIPO, SAFE, Shang Fu Mao Fa [2006] No. 13, issued July 14, 2006).

<sup>354</sup> *Information and Communications Industry Development Plan (2016-2020)* (MIIT, Gong Xin Bu Gui [2016] No. 424, issued Dec. 18, 2016).

<sup>355</sup> *Information and Communications Industry Development Plan* § 3(2)6, “Development Priorities” (emphasis added).

<sup>356</sup> *Notice on Issuing Guidelines for the Development and Promotion of the Integrated Circuit Industry* (State Council, issued June 24, 2014).

<sup>357</sup> *IC Guidelines* § 4(8) (emphasis added).

<sup>358</sup> *Notice on Issuing Robotics Industry Development Plan (2016-2020)* (MIIT, NDRC, MoF, Gong Xin Bu Lian Gui [2016] No. 109, issued Mar. 21, 2016) (emphasis added).

<sup>359</sup> *Robotics Five-year Plan* § 4(6).

<sup>360</sup> English translation of Chinese term *guoji channeng hezuo*.

<sup>361</sup> *Belt and Road Basics*, HONG KONG TRADE DEVELOPMENT COUNCIL, <http://beltandroad.hktdc.com/en/belt-and-road-basics> (last visited Dec. 6, 2017) (“The Belt and Road Initiative refers to the Silk Road Economic Belt and 21st Century Maritime Silk Road, a significant development strategy launched by the Chinese government with the intention of promoting economic co-operation among countries along the proposed Belt and Road routes. The

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focuses on encouraging outbound investment in manufacturing industries to expand markets for Chinese goods and technologies. In addition, “international industrial capacity cooperation” encompasses possible arrangements by which Chinese companies can obtain technology from foreign entities –including acquisitions, various forms of equity investments, and JVs.

In May 2015, the State Council issued the *Guiding Opinion on Promoting International Industrial Capacity and Equipment Manufacturing Cooperation (International Cooperation Opinion)*,<sup>362</sup> which identifies 11 sectors as priorities for international expansion: (1) steel and nonferrous metals, (2) construction materials, (3) rail equipment, (4) power generation and infrastructure, (5) resource development, (6) textiles, (7) automotive, (8) information technology, (9) machinery, (10) aviation, and (11) shipbuilding.<sup>363</sup> With respect to information and communications technology (ICT), the measure calls for “[p]romoting innovation upgrading” and “raising [...] international competitiveness.”<sup>364</sup> To do this, authorities are directed to “[e]ncourage telecoms operating enterprises and Internet enterprises to *use methods, including mergers and acquisitions* and investments in infrastructure and facilities operations, to ‘Go Out’ [...]”<sup>365</sup>

To facilitate this “Going Out” strategy, the *International Cooperation Opinion* calls for government support, including preferential financing through: (1) equity investment and other new forms of financing; (2) international use of the Renminbi (hereinafter Chinese Yuan or CNY) to facilitate transactions, with support from the state-owned policy banks Export-Import Bank of China (China Exim) and China Development Bank (CDB); (3) diversified funding sources, including low-cost access to funding through domestic fund-raising and preferential access to foreign exchange funds; (4) increases in equity investment resources through more use of state-backed funds, such as the Silk Road Fund; and, (5) export credit insurance.<sup>366</sup>

China appears to be implementing the “international industrial capacity cooperation” strategy on a large scale. China Exim has described “international industrial capacity cooperation” as a government policy that has informed its lending for outbound investment projects.<sup>367</sup> Likewise, on its online “Going Out” Public Service Platform, MOFCOM manages a website dedicated to “international industrial capacity cooperation.”<sup>368</sup> This website regularly publishes “industrial capacity statistical data,” which quantifies the growth of China’s outbound investment in “manufacturing industries” and, within that category, the share of outbound investment in

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Initiative has been designed to enhance the orderly free-flow of economic factors and the efficient allocation of resources. It is also intended to further market integration and create a regional economic co-operation framework of benefit to all. The National Development and Reform Commission (NDRC) issued its *Vision and Actions on Jointly Building the Silk Road Economic Belt and 21st Century Maritime Silk Road* on 28 March 2015. This outlined the framework, key areas of co-operation and co-operation mechanisms with regard to the Belt and Road Initiative.”)

<sup>362</sup> *Guiding Opinion on Promoting International Industrial Capacity and Equipment Manufacturing Cooperation* (State Council, Guo Fa [2015] No. 30, issued May 13, 2015).

<sup>363</sup> *International Cooperation Opinion* § 3(7-18).

<sup>364</sup> *International Cooperation Opinion* § 3(15).

<sup>365</sup> *International Cooperation Opinion* § 3(15).

<sup>366</sup> *International Cooperation Opinion* § 6(32-36).

<sup>367</sup> See EXPORT-IMPORT BANK OF CHINA, ANNUAL REPORT 2016 37 (2016) (“The Bank provided financial services to facilitate China’s major strategic plans, including [...] international industrial capacity cooperation.”).

<sup>368</sup> “Going Out” Service Platform [Chinese], available at <http://fec.mofcom.gov.cn/article/tjgjcnhz/>.

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“equipment manufacturing.”<sup>369</sup> Moreover, Chinese media reports indicate that China has signed over 30 “international industrial capacity cooperation” agreements<sup>370</sup> with foreign countries and launched outbound investments in a wide range of industries in pursuit of this policy.<sup>371</sup>

##### 2. The Chinese Outbound Investment Approvals System

The Chinese government also exercises control over outbound investment through an investment approval mechanism. As described in more detail below, the government retains considerable ability to influence investment decisions through its use of administrative procedures and foreign exchange controls.

By way of background, until the early 2000s, Chinese outbound investment was relatively rare. The government began to permit inbound FDI only in the 1980s, under the aegis of the “Reform and Opening Up Policy.” In the 1980s and 1990s, China’s outbound investment regime remained highly restrictive. Only a small number of enterprises – mostly SOEs – invested abroad during this period.<sup>372</sup>

Beginning in 2004, the government relaxed certain restrictions on outbound investment, while formalizing its outbound investment approval system in laws and regulations. An important foundation for this shift was the *Administrative License Law of the People's Republic of China*,<sup>373</sup> which came into effect on July 1, 2004. The law draws a distinction between a set of items that may be and set of items that may not necessarily be subject to government approval,

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<sup>369</sup> *January-October 2017 Statistical Data on Industrial Capacity Cooperation* [Chinese], MINISTRY OF COMMERCE (Nov. 23, 2017), <http://fec.mofcom.gov.cn/article/tjgcnhz/tjsj/201711/20171102674823.shtml>.

<sup>370</sup> Signatories are primarily developing countries, such as Kazakhstan, Egypt, and Brazil. These agreements generally entail cooperation on industrial projects in the foreign country with which China signs the agreement, financed primarily or entirely by China. For example, China and Brazil have established an “industrial capacity cooperation fund” with capital of \$20 billion, of which \$15 billion is provided by China. Sectors in which the fund will invest include advanced technology, among others. *China Has Signed Industrial Capacity Cooperation Agreements with 37 Countries* [Chinese], XINHUA NEWS, Sept. 8, 2017, available at [http://news.xinhuanet.com/politics/2017-09/08/c\\_129699618.htm](http://news.xinhuanet.com/politics/2017-09/08/c_129699618.htm); Press Release, Permanent Secretariat of Forum for Economic and Trade Co-operation between China and the Portuguese-Speaking Countries, US\$20-Billion Chinese-Backed Fund to Build Brazilian Industry Starts Next Week (May 26, 2017).

<sup>371</sup> *China Signs International Industrial Capacity Cooperation Agreements with Over 30 Countries* [Chinese], PHOENIX NEWS, May 12, 2017, available at <http://news.ifeng.com/a/20170512/510838270.shtml>. The report states, for example: “In the information technology industry, several solar PV companies have invested in solar PV station infrastructure and developed engineering, procurement, and construction full-package services in locations including the United States, Japan, Europe, South America, and Southeast Asia.”

<sup>372</sup> Thilo Hanneman, Daniel H. Rosen, RHODIUM, CHINESE INVESTMENT IN THE UNITED STATES: RECENT TRENDS AND THE POLICY AGENDA 66 (Dec. 2016) (“While China embraced inward foreign direct investment (FDI) to a far greater extent than most developing countries since the 1980s, it long prohibited its firms from investing overseas. For most of the first two decades of China’s economic reform period, Chinese companies were forbidden from investing overseas unless they had direct approval from the government. [...] The approval regime was modified several times but outbound FDI remained largely the domain of state-owned trading and technology companies.”); Peter J. Buckley et al., *Determinants of Chinese Outward Foreign Direct Investment*, 38 J. OF INT’L BUS. STUDIES 500 (July 2007) (“Since 1979, when ODI was formally permitted under the ‘Open Door’ policies, the internationalisation of Chinese firms has been tightly controlled by national and provincial government, either directly, by administrative fiat, or indirectly, via economic policy and other measures designed to advance the economic development agenda (Buckley et al., 2006)”).

<sup>373</sup> *PRC Administrative License Law* (adopted by the NPC on Aug. 27, 2003, effective July 1, 2004).

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and codifies relevant regulatory procedures.<sup>374</sup> In conjunction with this law, the State Council released a catalogue of all administrative approval items “absolutely necessary to be retained.”<sup>375</sup> Also in July 2004, the State Council released a guiding decision on reforming investment approvals. The document recommends an aggregate reduction in approvals, but also the formulation of long-term economic development plans and investment guidance catalogues to channel investment into areas favored by the government.<sup>376</sup> This legal and normative framework continues to inform China’s outbound investment approval system.

Several features of the outbound approval system afford Chinese authorities significant influence over outbound investment flows.

##### *a) Formal Approval Authority*

Individual government agencies have authority to approve important items relating to outbound investment:

- The National Development and Reform Commission (NDRC) has authority to “screen and approve”<sup>377</sup> outbound investment projects involving overseas resource extraction or large amounts of foreign exchange, as well as the amount of foreign exchange used for outbound investment.<sup>378</sup>
- The State Administration of Foreign Exchange (SAFE), the arm of China’s central bank that administers foreign exchange, has authority to “examine and approve”<sup>379</sup> the overseas transfer of foreign exchange for capital projects and to “screen and examine”<sup>380</sup> the originating source and the overseas transfer of foreign exchange for overseas investment.<sup>381</sup>
- MOFCOM has authority to “examine and approve” the establishment of enterprises overseas and to “examine and approve” participation in foreign contract bidding.<sup>382</sup>

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<sup>374</sup> *PRC Administrative License Law*, art. 12-14. art. 12 authorizes the government to maintain administrative approvals for a variety of reasons including, *inter alia*, “special activities that directly bear on national security, public security, macro-economic adjustment and control”; “vocations and trades that provide public services and directly relate to the public interest,”; “important equipment, facilities, products, articles that directly concern public security”; “the establishment of the enterprises or other institutions for which the subject qualifications need to be determined”; “other matters for which administrative licenses may be established in accordance with the laws and regulations”.

<sup>375</sup> *Decision on Establishing Administrative License for the Administrative Screening and Approval Items Absolutely Necessary to Be Retained* [hereinafter “Approval Items Decision”], (State Council 2004 Order No. 412, issued June 29, 2004, effective July 1, 2004, amended Jan.29, 2009, further amended Aug. 25, 2016).

<sup>376</sup> *State Council Decision on Investment System Reform* §§ 4(2) (State Council, Guo Fa [2004] No. 20, issued July 16, 2004).

<sup>377</sup> English translation of Chinese term *shenpi*.

<sup>378</sup> *Approval Items Decision*, Annex items 1 and 2.

<sup>379</sup> English translation of Chinese term *hezhun*.

<sup>380</sup> English translation of Chinese term *shenhe*.

<sup>381</sup> *Approval Items Decision*, Annex items 468, 487.

<sup>382</sup> *Approval Items Decision*, Annex items 188, 191.



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### b) *The Investment Catalogue*

In July 2004, the State Council began to publish the *Catalogue of Investment Projects for Government Examination and Approval (Investment Catalogue)*, which informs both domestic and foreign investment approvals.<sup>383</sup> The *Investment Catalogue*, since updated in 2013, 2014, and 2016, lists government approval requirements for investments in “high and new technology” and nine other sectors of the Chinese economy.<sup>384</sup> It also specifies, in a general sense, which type and amount of outbound foreign investment is subject to approval or “filing-for-records” requirements with government departments under the State Council.

The 2016 edition of the *Investment Catalogue* provides that all outbound investments in “sensitive countries”<sup>385</sup> and “sensitive sectors”<sup>386</sup> require “examination and approval” by government departments under the State Council, and that all outbound investments “administered by the central government,” as well as all investments by “local enterprises” at or above \$300 million, require “filing-for-records”<sup>387</sup> with government departments under the State Council.

The 2016 edition also refers to government-issued “development plans,” “industrial policies,” and “technology policies”<sup>388</sup> as an “important basis”<sup>389</sup> for enterprises engaging in investment projects.<sup>390</sup>

### c) *MOFCOM and NDRC Approval Roles*

MOFCOM and NDRC maintain separate legal instruments to exercise approval and review authority over outbound investment. MOFCOM exercises its authority pursuant to the *Measures on Administering Overseas Investment (2014 MOFCOM Approval Measures)*.<sup>391</sup> The measure provides that investments in “sensitive countries” and “sensitive sectors” require “examination and approval” by MOFCOM.<sup>392</sup> All other investments are subject to “filing-for-records” requirements,<sup>393</sup> which involve the submission of a form and corresponding paperwork. Upon

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<sup>383</sup> The first edition of the *Investment Catalogue* was appended to the *State Council Decision on Investment System Reform* (State Council, Guo Fa [2004] No. 20, issued July 16, 2004). *State Council Decision on Investment System Reform* § 3(1), also contains a notable provision that grants broad authority to maintain “government investment” in areas that affect “national security” or “fill gaps left by the market,” to expressly include “promoting science and technology advances and the industrialization of high and new technology.”

<sup>384</sup> The 11 sectors are: (1) Agriculture and irrigation, (2) energy (3) transportation (4) IT industry (5) raw materials (6) machinery manufacturing (7) light industry and tobacco (8) high and new technology (9) urban construction (10) public services, (11) finance, (12) inbound FDI, and (13) OFDI.

<sup>385</sup> English translation of Chinese term *mingan guojia*.

<sup>386</sup> English translation of Chinese term *mingan hangye*.

<sup>387</sup> English translation of Chinese term *bei'an*.

<sup>388</sup> English translation of Chinese term *jishu zhengce*.

<sup>389</sup> English translation of Chinese term *zhongyao yiju*.

<sup>390</sup> *State Council Notice on Issuing the Investment Projects for Government Examination and Approval (2016 Edition)* §§ 2, 3 (State Council, Go Fa [2016] No. 72, issued Dec. 12, 2016).

<sup>391</sup> *Measures on Administering Overseas Investment* (MOFCOM, Shang Wu Bu Ling [2014] Order No. 3, issued Sept. 6, 2014).

<sup>392</sup> *2014 MOFCOM Approval Measures*, art. 6.

<sup>393</sup> *2014 MOFCOM Approval Measures*, art. 6.

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MOFCOM review, the information submitted is “filed for records,” combined with the issuance of a certificate to the enterprise.<sup>394</sup> MOFCOM can choose to reject a “filing-for-records” submission if it deems the information to be “untruthful”<sup>395</sup> or “incomplete.”<sup>396</sup> These administrative procedures are significant because they allow MOFCOM to collect detailed information on and intervene administratively in individual investment transactions.

Pursuant to the *Measures on the Administration of Examination and Approval and Filing-for-Records of Overseas Investment Projects (2014 NDRC Approval Measures)*,<sup>397</sup> effective through February 2018, NDRC examines and approves investments that (1) exceed \$1 billion in value or (2) involve “sensitive countries” or “sensitive sectors.” For investments at or above \$2 billion that are also in “sensitive countries” or “sensitive sectors,” State Council approval is required.<sup>398</sup> The *2014 NDRC Approval Measures* list “conformity with [...] industrial policies” as one of several “examination and approval” criteria.<sup>399</sup> All other investments are “filed-for-records” with NDRC at the central level (for all investments by central SOEs and for investments at or above \$300 million for all other enterprises) or the local level (below \$300 million).<sup>400</sup> Like MOFCOM, NDRC performs an administrative evaluation of investments that are “filed for records,” and its criteria include conformity with “industrial policies.”<sup>401</sup>

Effective March 1, 2018, the *2014 NDRC Approval Measures* were replaced by the *Measures on the Administration of Enterprise Outbound Investment (2018 NDRC Approval Measures)*, which adjust but do not fundamentally alter the existing regulations.<sup>402</sup> NDRC will only “examine and approve” investments in “sensitive countries” or “sensitive sectors;” yet, in other respects, the new rules are more stringent. In particular, NDRC will now regulate not only outbound investments of People’s Republic of China (PRC)-registered enterprises, but also those overseas investments that are made by foreign entities that are ultimately “controlled” by PRC-registered

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<sup>394</sup> *2014 MOFCOM Approval Measures*, art. 9.

<sup>395</sup> English translation of Chinese term *bu rushi*.

<sup>396</sup> *2014 MOFCOM Approval Measures*, art. 9. English translation of Chinese term *bu wanzheng*.

<sup>397</sup> *Measures on the Administration of Examination and Approval and Filing-for-Records of Overseas Investment Projects* (NDRC, 2014 Order No. 9, issued Apr. 8, 2014).

<sup>398</sup> *2014 NDRC Approval Measures*, art. 7.

<sup>399</sup> *2014 NDRC Approval Measures*, art. 18(1).

<sup>400</sup> *2014 NDRC Approval Measures*, art. 8.

<sup>401</sup> In particular, art. 22 of the *2014 NDRC Approval Measures* provides: “For outbound investment projects applying for filing for records, NDRC performs screening and examination mainly with respect to whether the project belongs within the administrative scope of filing for records, conforms with relevant laws and regulations, industrial policies, and outbound investment policies [...] harms national sovereignty, security, or the public interest, and whether the investment entity possesses the corresponding investment capacity.” *2014 NDRC Approval Measures*, art. 22. See also arts. 20, 21, 23.

<sup>402</sup> *Measures on the Administration of Enterprise Outbound Investment* (NDRC, Order No. 11, issued Dec. 26, 2017, effective Mar. 1, 2018). Also in December 2017, NDRC and other government authorities jointly released a notice establishing behavioral norms for “private enterprises” (*minyingshi qiye*) investing abroad. This measure provides, for example, that private enterprises are to participate in the “One Belt One Road” initiative, promote international industrial capacity and equipment manufacturing cooperation, act in the interest of the Chinese government’s supply side structural reform agenda, and help “protect China’s sovereignty (*guojia zhuquan*), security (*guojia anquan*), and public interest (*shehui gonggong liyi*).” *Notice on Issuing Behavioral Norms for Private Enterprise Foreign Investment Operations* § 1(2), § 3(18) (NDRC, MOFCOM, PBOC, Ministry of Foreign Affairs, and All-China Federation of Industry and Commerce, Fa Gai Wai Zi [2017] No. 2050, issued Dec. 6, 2017).

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enterprises.<sup>403</sup> Moreover, NDRC will evaluate investments based on conformity with the “national interest”<sup>404</sup> and “national security”<sup>405</sup> (see below).

##### d) “National Security,” “National Interest,” and “Sensitive Sectors”

The Chinese government uses expansive definitions of “national security,” “national interest,” and “sensitive sectors” that leaves considerable discretion to government authorities when making outbound investment approval decisions.

The *2018 NDRC Approval Measures*, effective March 1, 2018, provide that outbound investment “must not threaten or harm our country’s national interest and national security,”<sup>406</sup> and instruct NDRC to supervise outbound investment based on “protecting our country’s national interest and national security.”<sup>407</sup> NDRC can order the suspension or modification of an outbound investment deemed to “threaten the national interest and national security.”<sup>408</sup> Where an outbound investment is deemed to “harm the national interest and national security,” NDRC can terminate or modify the investment, take “remedial measures,”<sup>409</sup> issue a warning to the investors, and, where a crime is suspected to have occurred, pursue criminal liability.<sup>410</sup> In addition, “national interest” and “national security” now serve as criteria for both “examination and approval” and “filing for records” reviews.<sup>411</sup>

The Chinese government also applies an expansive and inconsistent definition of “sensitive sectors.”

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<sup>403</sup> The *2014 NDRC Approval Measures* applied solely to the overseas investments of PRC-registered enterprises (art. 2). The *2018 NDRC Approval Measures* (art. 2) significantly expand this scope to also cover overseas investments that are made by foreign entities that are ultimately “controlled” by a PRC-registered enterprises. “‘Control’ (*kongzhi*) in the regulation is broadly defined to mean either holding the majority of voting shares of the overseas enterprise or, in lieu of such majority, having “decisive power” over the major matters of that enterprise, such as its operations or finances. This amendment broadens the ability of the NDRC to monitor overseas investments connected to a Chinese investor and subjects them to the same verification and approval or recordation requirements that applies to investments made by PRC-registered enterprises.

<sup>404</sup> English translation of Chinese term *guojia liyi*.

<sup>405</sup> English translation of Chinese term *guojia anquan*.

<sup>406</sup> *2018 NDRC Approval Measures*, art. 5.

<sup>407</sup> *2018 NDRC Approval Measures*, art. 6.

<sup>408</sup> *2018 NDRC Approval Measures*, art. 56.

<sup>409</sup> English translation of Chinese term *bujiu cuoshi*.

<sup>410</sup> *2018 NDRC Approval Measures*, art. 56.

<sup>411</sup> With respect to investments subject to “examination and approval,” art. 19 provides that the application form must include a “national interest and national security impact analysis”; art. 26 provides that NDRC will apply “not threaten or harm our country’s national interest and national security,” as well as conformity with “macro-adjustment and control policies,” as evaluating criteria; and art. 28 provides that NDRC is now authorized to “directly issue a non-approval decision”, without soliciting input or commissioning additional assessments, if an investment is deemed to “threaten or harm our country’s national interest and national security.” With respect to investments subject to “filing for records”, art. 31 authorizes NDRC to reject the filing if the investment is deemed to “threaten or harm our country’s national interest and national security”.

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- The 2016 edition of the *Investment Catalogue* states that “[r]elevant departments under the State Council will examine and approve projects in sensitive countries and regions and sensitive sectors,” yet fails to define the term “sensitive.”<sup>412</sup>
- The 2018 *NDRC Approval Measures* list specific examples of “sensitive sectors,” but also define such sectors to include those that “require restricting enterprise outbound investment in accordance with our country’s macro-adjustment and control policies.”<sup>413</sup>
- Likewise, the 2014 *MOFCOM Approval Measures* provide that MOFCOM will examine and approve investments in “sensitive sectors,” and explains that “the sectors for which examination and approval administration will be implemented refer to sectors that have a bearing on exports of products and technologies that are restricted for export from the PRC, and sectors that affect the interests of more than one country (region).”<sup>414</sup> The inconsistent, vague, and open-ended use of this concept gives government agencies wide discretion to deploy their approval authority, and thus, the ability to influence the shape and direction of outbound investment.

##### e) Foreign exchange restrictions

Control over the use of foreign exchange is a crucial tool for the government to influence outbound investment. China operates a closed capital account that restricts currency convertibility, as well as monetary inflows and outflows.<sup>415</sup> Once enterprises have successfully undergone “examination and approval” or “filing for records” with MOFCOM and NDRC, they undergo additional review and approval in order to receive foreign exchange to make outbound investments. Prior to 2015, enterprises seeking to invest abroad had to apply for foreign exchange directly with the State Administration of Foreign Exchange (SAFE); subject to a reform instituted in 2015, enterprises now undergo review and approval from local banks, under SAFE supervision and guidance.<sup>416</sup>

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<sup>412</sup> *Investment Catalogue* (2016 edition) § 12.

<sup>413</sup> 2018 *NDRC Approval Measures*, art. 13. The sectors listed are weapons equipment, trans-border water resource development and use, and news media.

<sup>414</sup> 2014 *MOFCOM Approval Measures*, art. 7.

<sup>415</sup> *China’s Capital Account – An Open and Shut Case*, WALL STREET JOURNAL, Feb. 25, 2014. (“As part of its push to give markets a “decisive” role in the economy, China has pledged to drop controls on the movement of capital and make its currency, the yuan, fully convertible. China for years has maintained a “closed” capital account, meaning companies, banks and individuals can’t move money in or out of the country except in accordance with strict rules. The limit for individuals is currently \$50,000 a year, while corporate investments need government approval.”).

<sup>416</sup> *Notice of the State Administration of Foreign Exchange on Further Simplifying and Improving Policies on the Administration of Foreign Exchange for Direct Investment* §§ 1(1)-1(2) (SAFE, Hui Fa [2015] No 13, issued Feb. 13, 2015). See also Thilo Hanneman, Daniel H. Rosen, RHODIUM, CHINESE INVESTMENT IN THE UNITED STATES: RECENT TRENDS AND THE POLICY AGENDA 67-68 (Dec. 2016) (“[Prior to 2015], [t]he State Administration of Foreign Exchange (SAFE) became the third major actor in the outbound FDI approval system. SAFE was a hurdle that investors had to take as it controlled access to foreign currency needed for outbound investments. [...] [I]n 2015 SAFE simplified and shortened the review process for foreign exchange approvals and delegated the verification of foreign exchange needs for outbound investments to local bank branches.”).

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Despite this recent change, SAFE significantly influences the decisions of local banks regarding the provision of foreign exchange.<sup>417</sup> In 2016, the government reportedly introduced various types of restrictions on the use of foreign exchange.<sup>418</sup> The restrictions were applied in an informal manner – *i.e.*, not set forth in official government measures – to several forms of foreign investment disfavored by the government.<sup>419</sup>

Some observers have suggested that the government’s recent restrictions on certain outbound investments serve to enhance Chinese companies’ incentives to align their investments with government policies and priorities. According to the European Union Chamber of Commerce in China:

While [recent restrictions have] contributed to uncertainty regarding the ability of Chinese entities to complete investments, there is no reason to conclude that outbound investments that are not disguised capital flight or tainted by corruption will be brought to a halt, especially in sectors that have been identified as strategic priorities by the government. This conclusion is supported by a 26th December statement made at the 2016 National Commerce Work Conference by Minister of Commerce Gao Hucheng that the government “will promote the healthy and orderly development of outbound investment and cooperation” in 2017. During his January 2017 speech at the World Economic Forum in Davos, President Xi also stated that he expected outbound Chinese

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<sup>417</sup> Thilo Hanneman, Daniel H. Rosen, RHODIUM, CHINESE INVESTMENT IN THE UNITED STATES: RECENT TRENDS AND THE POLICY AGENDA 70 (Dec. 2016) (“The degree of scrutiny exerted by banks depends on guidance by SAFE, and this guidance often correlates with the macroeconomic situation.”).

<sup>418</sup> Thilo Hanneman, Daniel H. Rosen, RHODIUM, CHINESE INVESTMENT IN THE UNITED STATES: RECENT TRENDS AND THE POLICY AGENDA 70 (Dec. 2016) (“In the first half of 2016, banks were asked by SAFE officials to tighten reviews of foreign exchange restrictions for outbound FDI projects following pressure by SAFE to slow down the outflow of foreign exchange. Banks were reportedly asked by SAFE to submit outbound FDI transactions of a certain size and type directly to SAFE.”). *See also* ALLEN & OVERY, CHINA’S NEW RESTRICTIONS ON OUTBOUND INVESTMENTS AND REMITTANCE (Dec. 30, 2016) (“1. Banks are now required to report any overseas transfer of \$5m or more under any capital account item (covering both foreign currency and CNY) per transaction to Beijing SAFE. Such overseas transfers can only be made after the Chinese regulators have re-examined the underlying transaction of the requested transfer to verify its authenticity and compliance with relevant regulations. 2. SAFE also tightened controls over ODI with a capital outflow of \$50m or more. Such fund transfers will only be made after re-examination of the underlying transaction for authenticity and compliance with relevant regulations. 3. The rules for cross-border CNY lending by Chinese companies (which used to be more relaxed than the regime for cross-border lending in foreign currency) has also been modified by the PBOC recently. The cross-border lending limit (which is below 30 percent of the lender’s total equity) and shareholding requirement (that the lender and the borrower must have a shareholding relationship) which previously applied only to foreign currency lending now also applies to cross-border CNY lending. In addition, the rules now make it clear that such cross-border CNY lending by Chinese companies need to be registered with SAFE.”).

<sup>419</sup> The Chinese government reportedly placed restrictions on: (1) Extra-large outbound investments: outbound real property acquisitions or developments by state-owned enterprises with an investment value of \$1bn or above; outbound investments of more than \$1bn outside of the core business of a Chinese buyer; and extra-large outbound investments valued at \$10bn or more; (2) OFDI by limited partnership; (3) Minority investments in listed companies: OFDI involving the acquisition of 10 percent or less of the shares in an overseas listed company; (4) “Small parent, big subsidiary”: OFDI where the size of the target is substantially larger than the size of the Chinese buyer or where the Chinese buyer makes the investment shortly after its establishment; (5) Privatization: participation in the delisting of overseas listed companies which are ultimately controlled by Chinese companies or individuals; (6) High risk/low return transactions: OFDI into an overseas target resulting in a high debt-to-asset ratio and low return on equity. ALLEN & OVERY, CHINA’S NEW RESTRICTIONS ON OUTBOUND INVESTMENTS AND REMITTANCE (Dec. 30, 2016).

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investment to amount to USD 750 billion over the next five years. *These strengthened controls may actually motivate more Chinese companies to look for ways to align their investment plans with government priorities outlined in [Made in China 2025], since presenting investments to the authorities that support their priorities—for example those outlined in [Made in China 2025] or the Belt and Road Initiative (BRI)—can be expected to achieve a higher rate of approval.*<sup>420</sup>

##### 3. Sectors “Encouraged” for Outbound Investment

To channel outbound investments towards state priorities, China has instituted a system of “encouraged”<sup>421</sup> sectors. Although the list of encouraged sectors has evolved over time, the general approach is to induce investment in these sectors through preferential treatment and financing.

China launched this system in 2006, when NDRC, MOFCOM, and other government authorities jointly issued the *Overseas Investment Industrial Guiding Policy*.<sup>422</sup> The stated objective of this policy was to “accelerate the implementation of the ‘Going Out’ strategy” and to “formulate a guiding policy especially for outbound investment pursuant to China’s five-year plans for national economic and social development and in accordance with requirements of investment system reform and industrial policy.”<sup>423</sup>

The *Overseas Investment Industrial Guiding Policy* identifies categories of “encouraged-type overseas investment projects;” (1) investments that enable the acquisition of resources and raw materials that are in short supply domestically and which are “in urgent demand for national economic and social development;” (2) investments that support the export of products, equipment, technology, and labor for which China has a comparative advantage; and, (3) investments that “are able to clearly enhance China’s technology research and development capacity, including an ability to use international leading technology and advanced management experience and professional talent.”<sup>424</sup> Thus, the acquisition and subsequent use of technology is a central feature of “encouraged” outbound investments.

In addition, the *Overseas Investment Industrial Guiding Policy* targets specific sectors for preferential treatment. The policy includes a catalogue of 40 industries that are “encouraged” and eight industries that are “prohibited” for overseas investment. The catalogue appended to the *Overseas Investment Industrial Guiding Policy* includes several technology-related sectors, such as overseas manufacturing investments in chemical product manufacturing advanced technology which China is unable to access and passenger vehicles (including engine products with advanced technology), as well as overseas services investments relating to high and new technology and product research.<sup>425</sup>

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<sup>420</sup> E. U. CHAMBER, CHINA MANUFACTURING 2025: PUTTING INDUSTRIAL POLICY AHEAD OF MARKET FORCES 21 (2017) (emphasis added).

<sup>421</sup> English translation of Chinese term *guli*.

<sup>422</sup> *Overseas Investment Industrial Guiding Policy* (NDRC, MOFCOM, Ministry of Foreign Affairs, GAC, SAFE, Fa Gai Wai Zi [2006] No. 1312, issued July 5, 2006).

<sup>423</sup> *Overseas Investment Industrial Guiding Policy*, art. 1.

<sup>424</sup> *Overseas Investment Industrial Guiding Policy*, art. 6.

<sup>425</sup> *Overseas Investment Industrial Guiding Policy*, Annex §§ 3(8), 3(17), 4(5).

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Investments that are “encouraged” receive several forms of government support, including: subsidies for fees incurred, and bank loans at government-subsidized interest rates; policy bank loan support; priority administrative approval; priority support for the use of foreign exchange; export tax rebates on exports of equipment and other materials relating to the overseas investment project; priority access to services relating to overseas financing, investment consultation, risk evaluation, risk control, and investment insurance; and coordinated support from several government departments with respect to information exchange, diplomatic protections, the travel of personnel abroad, and registration of import and export rights.<sup>426</sup>

A recent State Council opinion clarifies and supplements this approach. In its *Guiding Opinion on Further Guiding and Standardizing the Direction of Overseas Investment (2017 Investment Opinion)*, issued in August 2017, the State Council re-affirmed the importance of “catalyzing the ‘Going Out’ strategy for products, technologies, and services.”<sup>427</sup> It also aims to expand the speed, scale, and efficacy of China’s outbound investment, so as to promote “transformation and upgrading of the domestic economy” and “international industrial capacity cooperation.”<sup>428</sup>

In addition, the *2017 Investment Opinion* re-defines the broad categories of “encouraged” investments. Technology acquisition and utilization is a key consideration in determining whether a sector is “encouraged.” For instance, the *2017 Investment Opinion* encourages investments that strengthen “investment cooperation” with “overseas high and new technology and advanced manufacturing industry enterprises,” as well as investments that promote the “sending out” from China to the world of “advantageous manufacturing capacity, advantageous equipment, and technology standards.”<sup>429</sup>

Echoing previous state policies, the *2017 Investment Opinion* also states that “encouraged” investments will receive “a more enhanced level of service with respect to tax collection, foreign exchange, insurance, customs, information, and other matters, so as to create more favorable facilitating conditions for the enterprise,”<sup>430</sup> In addition, the opinion introduces the “negative list” concept<sup>431</sup> with respect to general overseas investment.

#### 4. Outbound Investment Policy in Technology and Sectoral Policies

As mentioned in Section I.C, China has issued a series of science and technology (S&T) and sectoral policies that are intended to promote indigenous innovation and technology transfer. S&T planning documents also reference the role of outbound investment in achieving these objectives. For instance, the 2010 *Decision on Accelerating the Cultivation and Development of Strategic Emerging Industries (SEI Decision)* – which targets strategic emerging industries –

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<sup>426</sup> *Overseas Investment Industrial Guiding Policy*, art. 8.

<sup>427</sup> *Guiding Opinion on Further Guiding and Standardizing the Direction of Foreign Investment*, preamble (NDRC, MOFCOM, PBOC, Ministry of Foreign Affairs, Guo Ban Fa [2017] No. 74, issued Aug. 4, 2017).

<sup>428</sup> *2017 Investment Opinion* Preamble, § 3.

<sup>429</sup> *2017 Investment Opinion* §§ 3(1)-3(6).

<sup>430</sup> *2017 Investment Opinion* § 6(1).

<sup>431</sup> *2017 Investment Opinion* § 2, ¶2.

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contains provisions on “deepening international cooperation and enhancing the level of internationalized development.”<sup>432</sup> The document calls on authorities to:

Pragmatically enhance the quality and level of international investment financing cooperation. [...] Support capable enterprises to engage in overseas investment [...] Expand the autonomy of enterprises to make overseas investments, improve the approval process, and further amplify foreign exchange support for enterprises to make overseas investments. Actively explore the establishment of science and technology and industrial parks abroad, formulate a country-specific industrial guidance catalogue to guide enterprises in development of multinational investments.<sup>433</sup>

The *SEI Decision* also calls for “supporting enterprises to use methods including overseas registered trademarks and overseas acquisitions [...]”<sup>434</sup>

Likewise, the *Made in China 2025 Notice*, which, as discussed in Section I.C, serves as the basis for the Made in China 2025 policy, calls for “supporting enterprises to make acquisitions, equity investments, and venture investments overseas, and to establish R&D centers and testing bases and global distribution and services networks overseas.”<sup>435</sup> The *Made in China 2025 Notice* also outlines a wide-ranging strategy for harnessing and promoting the acquisition of foreign technology through outbound investment:

[...] Promote a transition from prioritizing introducing investment, technology, and equipment to the development of joint ventures and cooperation, outbound acquisitions, and the introduction of leading talent. Strengthen legislation governing outbound investment, strengthen “Going Out” legal guarantees for manufacturing enterprises, and standardize enterprise overseas operating behavior, to protect enterprises’ lawful rights. Explore the use of industrial funds, state-owned capital dividends, and other channels to support the “Going Out” of advantageous manufacturing capacity including high-speed rail, power generation equipment, automobiles, and engineering, to implement overseas investment acquisitions. Accelerate the establishment of entities for, and enhance the level of, services that support manufacturing industries “Going Out”; establish a public service platform for manufacturing industry outbound investment and a services platform for export product technology-type trade, and optimize early warning coordinating mechanisms to respond to trade frictions and major incidents in outbound investment.<sup>436</sup>

Planning documents for the ITC and IC sectors also emphasize the role of outbound investment in promoting technological development. For instance, the *Made in China 2025 Key Area Technology Roadmap (Made in China 2025 Roadmap)* contains a chapter devoted to the IT sector, and calls for development in this sector through the “Going Out” strategy

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<sup>432</sup> *Decision on Accelerating the Cultivation and Development of Strategic Emerging Industries* § 6 (State Council, Guo Fa [2010] No. 32, issued Oct. 10, 2010).

<sup>433</sup> *SEI Decision* § 6(2).

<sup>434</sup> *SEI Decision* § 6(3).

<sup>435</sup> *Made in China 2025 Notice* § 3, “Strategic Tasks and Priorities,” § 3(9), “Raise the Level of Internationalized Development of the Manufacturing Industry.”

<sup>436</sup> *Made in China 2025 Notice* § 4, “Strategy Support and Guarantees,” § 4(7), “Further Expand Opening Up of Manufacturing Industries”.



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and overseas investment.<sup>437</sup> The 2014 *IC Guidelines* also call for “encourag[ing] domestic enterprises to engage in international cooperation, integrate international resources, and expand international markets,” in conjunction with “making every effort to introduce foreign capital, technology, and talent” into China and encouraging international IT enterprises to “establish R&D, manufacturing, and operating centers [in China].”<sup>438</sup>

##### 5. State-Backed Actors

To implement its outbound investment strategy, China relies on an array of actors with ties to the government. These actors have traditionally comprised non-financial SOEs and the largest state-owned policy and commercial banks. But more recently, this set of actors has grown to include nominally private enterprises and financial entities, such as funds and investment companies, that have connections with or are funded by the government. Each group of actors is discussed in more detail below.

###### a) *State-Owned Enterprises and State-owned Banks*

In the early stages of Chinese outbound investment, SOEs played a leading role – particularly national oil companies and state-owned mining and metal processing companies.<sup>439</sup> Today, SOEs continue to account for a significant share of overall outbound investment, and are responsible for many of the largest overseas transactions.<sup>440</sup> For example, the central SOE ChemChina acquired the Swiss firm Syngenta for \$43 billion in 2016.<sup>441</sup> State-owned banks, in particular the policy banks China Exim and CDB, and the four largest state-owned commercial banks, have facilitated outbound investments, primarily through financing support to SOEs.<sup>442</sup> In October 2016, China’s president Xi Jinping, who also serves as General Secretary of the CCP, described

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<sup>437</sup> *Made in China 2025 Key Area Technology Roadmap* § 1.2.5.4 (National Strategic Advisory Committee on Building a Powerful Manufacturing Nation, issued Oct. 2015).

<sup>438</sup> *Formal Announcement of Guidelines for the Development and Promotion of the Integrated Circuit Industry* § 4(8) (MIIT, issued June 24, 2014).

<sup>439</sup> For studies of investments by Chinese SOEs in the mining and energy sectors, see, e.g. ROBERT EVAN ELLIS, *THE EXPANDING CHINESE FOOTPRINT IN LATIN AMERICA: NEW CHALLENGES FOR CHINA AND DILEMMAS FOR THE US* (2012); Ruben Gonzalez-Vicente, *Mapping Chinese Mining Investment in Latin America: Politics or Market?*, *THE CHINA Q.* 209 35, 35–58 (2012); BARBARA KOTSCHWAR, THEODORE H. MORAN & JULIA MUIR, *CHINESE INVESTMENT IN LATIN AMERICAN RESOURCES: THE GOOD, THE BAD, AND THE UGLY*, PETERSON INSTITUTE FOR INTERNATIONAL ECONOMICS (2012); Chen Shaofeng, *Has China’s Foreign Energy Quest Enhanced Its Energy Security?* *THE CHINA QUARTERLY* 207, 600–625 (2011); CHRIS ALDEN ET AL (ED.), *CHINA RETURNS TO AFRICA: A RISING POWER AND A CONTINENT EMBRACE* (C. Hurst & Co Publishers Ltd 2008); Erica S. Downs, *The Fact and Fiction of Sino-African Energy Relations*, 3(3) *CHINA SECURITY* 42, 42–68 (2007).

<sup>440</sup> Thilo Hanneman, Daniel H. Rosen, RHODIUM, *CHINESE INVESTMENT IN THE UNITED STATES: RECENT TRENDS AND THE POLICY AGENDA* 7 (2016), (“[recent] Chinese restructuring plans suggest that SOEs will remain an important part of China’s FDI flows in years ahead . . . .”); see also Haiyan Zhang & Daniel Van Den Bulcke, *China’s Direct Investment in the European Union: A New Regulatory Challenge*, 12 *ASIA EUROPE J.* 168, 168 (2014) (“The five Chinese ‘acquirers’ that were investigated within the [EU Merger Regulation] framework were all large state-owned enterprises that are ranked among Fortune Magazine’s global 500 companies, i.e. China National Bluestar of ChemChina, Huaneng, Sinochem, China National Agrochemical Corporation and PetroChina.”).

<sup>441</sup> Press Release, Syngenta, ChemChina Cash Offer to Acquire Syngenta at a Value of Over US\$ 43 Billion (Mar. 2, 2016).

<sup>442</sup> See Kevin P. Gallagher & Amos Irwin, *Exporting National Champions: China’s Outward Foreign Direct Investment Finance in Comparative Perspective*, 22 *CHINA & WORLD ECONOMY* 6, 1–21 (2014).

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the role of SOEs as extensions of the Party-state, and clarified that SOEs are “important forces to implement decisions” of the CCP and “major strategies,” such as industrial “Going Out” strategies to “enhance overall national power, economic and social development, and people’s wellbeing.”<sup>443</sup>

SOEs remain prevalent throughout the Chinese economy, and are market leaders in key sectors deemed strategic by the government, such as banking and finance, energy, telecommunications, aviation, and automotive.<sup>444</sup> The presence of SOEs in the Chinese economy is especially evident with respect to credit allocation. The International Monetary Fund (IMF), for example, reports that domestically the “SOE share in credit stock” was 55.6 percent in 2014.<sup>445</sup>

SOEs are also subject to state direction and control. Indeed, the Chinese government has a constitutional and legal mandate to maintain a leading role for the state sector.<sup>446</sup> The largest central SOEs in China are administered by the State Council’s State-owned Assets Supervision

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<sup>443</sup>Xi *Stresses CPC Leadership of State-owned Enterprises*, XINHUA NEWS, Oct. 11, 2016, available at <http://news.xinhuanet.com/english/2016-10/11/c135746608.htm>.

<sup>444</sup> For example:

- In the banking sector, the “Big Five” commercial banks in China – Bank of China (BoC), Industrial and Commercial Bank of China (ICBC), China Construction Bank Corporation (CCBC), Agriculture Bank of China (ABC), and Bank of Communications (BCM) – are majority-owned by the central government and account for almost half the total loan market. DOUGLAS J ELLIOTT & KAI YAN, BROOKINGS, *THE CHINESE FINANCIAL SYSTEM: AN INTRODUCTION AND OVERVIEW* 3 (2013).
- In the oil and gas sector, three enterprises administered by SASAC—China National Offshore Oil Corp., China National Petroleum Corp. and Sinopec—accounted for 94 percent of domestic oil production and 99 percent of domestic gas production in 2015. See Lei Wang, Presentation to the Colorado School of Mines at the Oil & Gas Conference, slide 13 (Aug. 17, 2016).
- In the aviation sector, Commercial Aircraft Corporation of China, Ltd. (COMAC), managed by SASAC, is the only major firm dedicated to producing large commercial aircraft. See Keith Crane et al, RAND, *THE EFFECTIVENESS OF CHINA’S INDUSTRIAL POLICIES IN COMMERCIAL AVIATION MANUFACTURING* 25 (2014). See also *About Us*, COMMERCIAL AIRCRAFT CORPORATION OF CHINA, LTD., <http://english.comac.cc/aboutus> (last visited Jan. 11, 2018); *China’s Big Three Airlines Set to Report Biggest Combined Profit Since 2010*, BLOOMBERG NEWS, Mar. 29, 2017.
- In the automotive sector, the market leaders in domestic vehicle sales are joint ventures between foreign automakers and the three SIEs: Shanghai Automotive Industry Corp., First Automotive Works, and Dongfeng Motor Corporation. See *Top 10 Chinese Automotive Firms by Revenue in 2015*, CHINA DAILY, Jun. 6, 2016.

<sup>445</sup> KANG ET AL., *PEOPLE’S REPUBLIC OF CHINA: SELECTED ISSUES*, INTERNATIONAL MONETARY FUND COUNTRY REPORT NO. 16/271, at “Table 1. Rebalancing Score Card” (2016).

<sup>446</sup> The guiding principles for government ownership and control are set forth in the *Constitution of the People’s Republic of China* [hereinafter “China Constitution”] and the *CCP Constitution*. *China Constitution*, art. 7, provides that “[t]he state-owned economy, that is, the socialist economy with ownership by the whole people, is the leading force in the national economy. The state ensures the consolidation and growth of the state-owned economy.” Article 11 also provides that “[t]he state permits the private sector of the economy to exist and develop within the limits prescribed by law. The private sector of the economy is an important component of the socialist market economy.” Article 11 states that “[t]he state encourages, supports, and guides the development of the non-public sectors of the economy [...]” (emphasis added). The state is to take active steps to ensure the growth of the state-owned economy as the core of the economic system, and it will also intervene in the private sector, a component of the overall economy. The *CCP Constitution*, in turn, states: “[T]he Party must uphold and improve the basic economic system, with public ownership playing a dominant role and different economic sectors developing side by side [...]” (emphasis added). Accordingly, CCP members and the leadership have a mandate to ensure the dominance of the state and SOEs in the economy.

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and Administration Commission (SASAC), the government's representative shareholder responsible for the largest central government SOEs. Likewise, provincial and municipal SOEs are administered by local SASAC entities. Other government bodies are also controlling shareholders of certain enterprises.

SASAC imposes an elaborate system of rules, plans, and reporting requirements, which it uses to monitor and influence the outbound investments of central SOEs. SASAC has articulated these requirements in two measures: the *Provisional Measures on Supervision and Administration of Central State-Owned Enterprise Overseas Investments (2012 SOE Measures)*,<sup>447</sup> and its successor, the *Measures on Supervision and Administration of Central State-Owned Enterprise Overseas Investments (2017 SOE Measures)*.<sup>448</sup>

- Conformity with state policies: The *2012 SOE Measures* stipulated that when undertaking outbound investments, SOEs are to act in accordance with basic principles including “conformity with plans for national economic and social development and overseas investment industrial policies;” “conformity with the composition of the state-owned economy and the direction of structural adjustment;” “conformity with enterprise-level strategies for development and enterprise-level strategies for internationalizing operations, focusing on core industries, conducive to enhancing the enterprise’s international competitiveness.”<sup>449</sup> The updated *2017 SOE Measures* simplify these principles, but likewise maintain that central SOEs are to act in accordance with “strategic guidance,” including devising plans to internationalize their business and making investments that enhance innovative capacity and international competitiveness.<sup>450</sup> Central SOEs are also to abide by the principle of “maintaining and enhancing the value of state-owned assets” when undertaking outbound investments.<sup>451</sup>
- Negative list: The *2017 SOE Measures* call for establishing an “enterprise overseas investment administration system.” As part of this system, central SOEs are to act in accordance with an individualized “negative list”<sup>452</sup> formulated by SASAC that outlines types of investments the enterprise should not make. If the enterprise nonetheless chooses to make a “negative list” investment, it must seek formal approval from SASAC and submit a prescribed set of application materials, including internal company decision documents, a financing plan, and feasibility study.<sup>453</sup>

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<sup>447</sup> *Provisional Measures on Supervision and Administration of Central State-Owned Enterprise Overseas Investments* (SASAC, 2012 Order No. 28, issued Mar. 18, 2012).

<sup>448</sup> *Measures on Supervision and Administration of Central State-Owned Enterprise Overseas Investments* (SASAC, 2017 Order No. 35, issued Jan. 7, 2017). This measure was formulated expressly pursuant to laws and regulations governing state-owned assets and recent initiative to improve the performance of SOEs. The *2017 SOE Measures* were issued pursuant to the *Guiding Opinion on Deepening Reform of State-owned Enterprises* (CCP Central Committee and State Council, Guo Fa [2015] No. 22, issued Aug. 24, 2015), the *Several Opinions on Reforming and Optimizing the State-owned Asset Administration System* (State Council, Guo Fa [2015] No. 63, issued Oct. 25, 2015).

<sup>449</sup> *2012 SOE Measures*, art. 5.

<sup>450</sup> *2017 SOE Measures*, art. 6(1).

<sup>451</sup> *2017 SOE Measures*, art. 6(4).

<sup>452</sup> English translation of Chinese term *fumian qingdan*.

<sup>453</sup> *2017 SOE Measures*, arts. 7, 12.

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- Overseas investment plans: The *2017 SOE Measures* state that central SOEs are to formulate “plans for the internationalization of operations”<sup>454</sup> that define priority regions, sectors, and projects for medium- and long-term internationalization of operations, in accordance with state-owned enterprise five-year plan outlines and enterprise development strategies and plans formulated by SASAC. In turn, central SOEs are to formulate a more detailed “annual overseas investment plan”<sup>455</sup>.<sup>456</sup>
- Reporting obligations: The *2017 SOE Measures* also instruct central SOEs to submit quarterly reports on the status of overseas investments to SASAC via an internal IT network, and to draft an “annual overseas investment completion status report” to be submitted to SASAC on January 31 of each year, which is to detail the overall status and positive results of overseas investment, progress on major overseas investment projects, and a post-investment evaluation work, and the main problems confronted.<sup>457</sup>
- Review and discipline: The *2017 SOE Measures* provide that SASAC will establish a system of indices to evaluate the internationalization of operations of central SOEs, to include, among other criteria, the “direction of investment.”<sup>458</sup> Moreover, if central SOE personnel take actions in outbound investment that “cause an unfavorable impact,” SASAC will take disciplinary action against those personnel. If the actions “cause the loss of state-owned assets,” then the CCP can take disciplinary action; and if the actions violate the law, the personnel can be handed over to law enforcement.<sup>459</sup>

In addition to SASAC, the Ministry of Finance (MOF) has recently adopted regulations specific to the outbound investment of SOEs. The *Measures on the Financial Administration of State-owned Enterprises Overseas Investment (MOF Measures)*, issued in June 2017, call for “enhanc[ing] the capacity of state-owned capital in the service of national strategies including ‘One-Belt One-Road’ and ‘Going Out.’”<sup>460</sup> The *MOF Measures* provide that an SOE’s CCP Committee is to participate, alongside the company’s board, chief executives, and shareholders, in deliberating the financial feasibility of the projects outlined in the enterprise’s “overseas investment plan.”<sup>461</sup>

Under the *MOF Measures*, SOEs also must submit to MOF annual reports on the financial status of overseas investments.<sup>462</sup> Local branches of MOF are in charge of collecting and summarizing these documents.<sup>463</sup> SOEs also are required to provide an annual overseas investment evaluation report, which will largely determine (1) the degree of government support for that SOE’s overseas investment activities, (2) the state shareholders’ treatment of the SOE (e.g., whether to

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<sup>454</sup> English translation of Chinese term *guojihua jingying guihua*.

<sup>455</sup> English translation of Chinese term *niandu jingwai touzi jihua*.

<sup>456</sup> *2017 SOE Measures*, art. 11.

<sup>457</sup> *2017 SOE Measures*, arts. 19, 20.

<sup>458</sup> *2017 SOE Measures*, arts. 22, 23.

<sup>459</sup> *2017 SOE Measures*, art. 30.

<sup>460</sup> *Notice on Issuing the “Measures on the Financial Administration of State-owned Enterprises Overseas Investment”*, cover sheet (MOF, Cai Zi [2017] No. 24, issued Jun. 12, 2017).

<sup>461</sup> *MOF Measures*, arts. 6, 7.

<sup>462</sup> *MOF Measures*, art. 8.

<sup>463</sup> *MOF Measures*, art. 9.

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restructure the enterprise's assets), and (3) local government officials' assessment of how well the SOE is executing its "Going Out" strategy, and whether more support should be provided to the SOE for "Going Out" purposes.<sup>464</sup>

Through the CCP, the Chinese government exercises additional control over SOE behavior. Top executives of SOEs are generally CCP members, cycle between corporate and government positions, and are subject to evaluation by the CCP Organization Department.<sup>465</sup> SOEs also host CCP committees that actively participate in corporate governance. This arrangement is codified in Chinese law: according to Article 19 of the *Company Law of the People's Republic of China (PRC Company Law)*,<sup>466</sup> an organization of the CCP may be set up in all enterprises, regardless of whether it is a state, private, domestic, or foreign-invested enterprise, to carry out activities of the CCP.

There are indications that a coordinated push is now underway to increase Party committee influence on company decisions.<sup>467</sup> More than thirty Hong Kong-listed Chinese SOEs reportedly altered their articles of association in 2017 to codify a more explicit operational role for their internal Party committees.<sup>468</sup> For instance, Sinopec amended its articles of association to call for increased CCP input on major corporate matters and management personnel:

When making decisions on significant matters such as direction of reform and development, key objectives, and priority operational arrangements of the Company, the board of directors should seek advice from the Party organization. When the board of directors appoints the management personnel of the Company, the Party organization shall consider and provide comments on the candidates for management positions nominated by the board of directors or the president, or recommend candidates to the board of directors and/or the president.<sup>469</sup>

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<sup>464</sup> *MOF Measures*, arts. 39-41.

<sup>465</sup> U.S. DEPARTMENT OF COMMERCE, CHINA'S STATUS AS A NON-MARKET ECONOMY 82-94 (Oct. 26, 2017). RICHARD MCGREGOR, THE CCP: THE SECRET WORLD OF CHINA'S COMMUNIST RULERS 49-50 (2010) (stating that "the CCP has remained unyielding on a number of fronts. Its control over personnel appointments has been inviolate."); *see also*, ZHENG YONGNIAN, THE CHINESE COMMUNIST PARTY AS ORGANIZATIONAL EMPEROR: CULTURE, REPRODUCTION, AND TRANSFORMATION 103-104 (2010) ("The CCP's most powerful instrument in structuring its domination over the state is a system called the 'Party management of cadres' (dangguan ganbu), or more commonly known in the West as the nomenklatura system. The nomenklatura system 'consists of lists of leading positions, over which Party units exercise the power to make appointments and dismissals; lists of reserves or candidates for these positions; and institutions and processes for making the appropriate personnel changes.'").

<sup>466</sup> *PRC Company Law* (adopted by the NPC on Dec. 29, 1993, amended Dec. 25, 1999, further amended Aug. 28, 2004 and Oct. 27, 2005 and Dec. 28, 2013).

<sup>467</sup> These efforts may be traced back to the March 2012 release of a document titled "Opinions on Strengthening and Improving Party Building in Nonstate Enterprises," issued by the CCP Organization Department. More recently, the party has issued a directive targeting party-building in entrepreneurial ventures. *See Opinions on Creating a Healthy Environment for the Development of Entrepreneurs, Promoting Entrepreneurship and Allowing Full Play to the Role Played by Entrepreneurs* (CCP and State Council, Sept. 8, 2017).

<sup>468</sup> Jennifer Hughes, *China's Communist Party Writes Itself into Company Law*, FINANCIAL TIMES, Aug. 14, 2017.

<sup>469</sup> SINOPEC, PROPOSED AMENDMENTS TO THE ARTICLES OF ASSOCIATION AND THE RULES OF PROCEDURE FOR THE BOARD OF DIRECTORS' MEETING, art. 109, available at <http://www.hkexnews.hk/listedco/listconews/SEHK/2017/0427/LTN201704272794.pdf>

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Given the level of control exerted over SOEs by the state and CCP, outbound investment by SOEs is frequently directed at achieving state policies and objectives. As one participant in the investigation observed, “[m]uch Chinese FDI comes from state-owned enterprises that often have different motives than simply maximizing profits. Rather, their investments often serve strategic state goals.”<sup>470</sup> Likewise, in its 2017 report on China’s status as a non-market economy, the European Commission remarked on “the [Chinese] government’s determination to further develop the dominant role of the state-owned economy, in particular by selectively creating large SOEs, shielded from competition domestically and expanding internationally which would serve the Government’s strategic industrial policies rather than focusing on their own economic performance.”<sup>471</sup>

Tsinghua Unigroup and its parent company, Tsinghua Holdings Co., Ltd. (Tsinghua Holdings), illustrate the extent to which state policies direct SOE activities, including outbound investment. The decision to establish Tsinghua Holdings was approved by the State Council.<sup>472</sup> Tsinghua Holdings is wholly state-owned,<sup>473</sup> via Tsinghua University,<sup>474</sup> and controls Tsinghua Unigroup through a 51 percent ownership stake.<sup>475</sup> Tsinghua Unigroup is funded, in part, through an equity investment of CNY 10 billion (\$1.6 billion)<sup>476</sup> from China’s National Integrated Circuit Investment Fund (National IC Fund).<sup>477</sup> At one point the company’s CCP secretary was Hu Haifeng, the son of China’s former president Hu Jintao.<sup>478</sup> Reflecting these state ties, Tsinghua Holdings notes in its annual report that its development strategy is oriented toward the needs of national strategy,<sup>479</sup> and that Tsinghua Unigroup employs an “international acquisition + indigenous innovation” development model focused on the IC industry.<sup>480</sup>

Tsinghua Unigroup’s Chairman, Zhao Weiguo, is also the Deputy Director General of the “China High-End Chip Alliance,” which is composed of 27 “backbone enterprises” and research institutes and is tasked with creating an IC industry ecosystem in China. The alliance was

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<sup>470</sup> INFORMATION TECHNOLOGY & INNOVATION FOUNDATION [*hereinafter* “ITIF”], *Submission, Section 301 Hearing 7* (Oct. 25, 2017).

<sup>471</sup> EUROPEAN COMMISSION, COMMISSION STAFF WORKING DOCUMENT ON SIGNIFICANT DISTORTIONS IN THE ECONOMY OF THE PEOPLE’S REPUBLIC OF CHINA FOR THE PURPOSES OF TRADE DEFENCE INVESTIGATIONS 108-109 (SWD(2017)483 final/2 (Dec. 20, 2012).

<sup>472</sup> *Letter Regarding Approval for Beijing University and Tsinghua University to Establish Peking University Asset Management Company Limited and Tsinghua Holdings Company Limited* (State Council, Guo Ban Han [2003] No. 30, issued Apr. 24, 2003).

<sup>473</sup> TSINGHUA HOLDINGS, 2016 BOND PROSPECTUS 13[Chinese] (2016).

<sup>474</sup> Imagination Technologies filing with the U.K. Financial Conduct Authority, *TR-1: Notification of Major Interest in Shares*, notified on May 22, 2017.

<sup>475</sup> TSINGHUA HOLDINGS, 2016 BOND PROSPECTUS 44 [Chinese] (2016).

<sup>476</sup> Foreign currency values are followed by a parenthetical estimation of the USD value. When available, USD conversion values are taken from primary or secondary sources. In cases where a U.S. dollar estimate is unavailable, the foreign currency value is generally based on the U.S. Federal Reserve Bank average annual exchange rate for the relevant year. The U.S. Federal Reserve Bank’s average annual currency exchange rates are available at <https://fred.stlouisfed.org>.

<sup>477</sup> Press Release, Tsinghua Unigroup, Tsinghua Unigroup Receives CNY 10 Billion Investment from the National Integrated Circuit Investment Fund [Chinese] (Feb.14, 2015), available at <http://www.unigroup.com.cn/newscenter/jtxw/2015/0214/138.html>.

<sup>478</sup> Gerry Shih, *Political Ties Could Prove Double-edged Sword for Chinese Chipmaker*, REUTERS, July 14, 2015.

<sup>479</sup> TSINGHUA HOLDINGS, 2016 BOND ANNUAL REPORT 55 [Chinese] (Apr. 28, 2017).

<sup>480</sup> TSINGHUA HOLDINGS, 2016 BOND ANNUAL REPORT 50 [Chinese] (Apr. 28, 2017).

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proposed by Chairman Xi and established by the National IC Industry Development Leading Small Group in July 2016.<sup>481</sup> On the establishment of the alliance, Tsinghua Unigroup's Chairman stated that:

We are in the midst of a great country, a great era, and a great undertaking. The establishment of the 'China High-End Chip Alliance' expresses the desire of the alliance members and the broader China IC industry to work as one to carry out properly the great undertaking that is China's IC industry. We will work together to consolidate industry resources and advance strategy, technology, standards, the market, and other cooperative links to jointly drive the future of China's chip industry.<sup>482</sup>

Reflecting its commitment to these objectives, Tsinghua Unigroup has attempted to acquire several U.S. IC companies. In July 2015, Unigroup made a \$23 billion bid for Micron Technologies, the Idaho-based world leader in memory chips, but the deal was abandoned, reportedly due to concerns about whether the Committee on Foreign Investment in the United States (CFIUS) would approve the transaction.<sup>483</sup> Unigroup, through its Unisplendour subsidiary, also offered to purchase a 15 percent stake in Western Digital, an industry leader in storage solutions; but the offer was withdrawn in early 2016, reportedly due to concerns with CFIUS scrutiny of the transaction.<sup>484</sup>

##### *b) Other Enterprises with State Support and Linkages*

A growing share of China's outbound investment is undertaken by private enterprises in which the government does not own an observable controlling stake.<sup>485</sup> Nonetheless, the government may exert substantial influence over the outbound investment behavior of such nominally private

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<sup>481</sup> Press Release, Chipone, IC National Team: Which Enterprises Participate in the High-end Chip Alliance? [Chinese] (Aug. 8, 2016), available at <http://www.chiponeic.com/content/details1264.html>.

<sup>482</sup> Press Release, Tsinghua Unigroup, Tsinghua Unigroup Joins Hands with 27 Organizations to Jointly Establish the 'China High-End Chip Alliance' [Chinese] (Aug. 2, 2016), available at <http://www.unigroup.com.cn/newscenter/jtxw/2016/0802/238.html>. The General Manager of the National IC Fund, Ding Wenwu, is Director General of the Alliance. Press Release, Chipone, IC National Team: Which Enterprises Participate in the High-end Chip Alliance? [Chinese] (Aug. 8, 2016), available at <http://www.chiponeic.com/content/details1264.html>.

<sup>483</sup> Liana B. Baker, Greg Roumeliotis, *Exclusive: Micron does not believe deal with Tsinghua is possible – sources*, REUTERS, July 21, 2015.

<sup>484</sup> *Tsinghua Kills \$3.8bn Investment Plan in Western Digital*, FINANCIAL TIMES, Feb. 23, 2016.

<sup>485</sup> Thilo Hanneman, Daniel H. Rosen, RHODIUM GROUP, CHINESE INVESTMENT IN THE UNITED STATES: RECENT TRENDS AND THE POLICY AGENDA 7 (Dec. 2016) (“The shift in investment patterns has also informed the mix of Chinese investors in the US economy. Previously dominated by trading companies and large state-owned enterprises (SOEs), investment in recent years was almost entirely driven by private sector firms.”). *But see also* Curtis J. Milhaupt & Wentong Zheng, *Beyond Ownership: State Capitalism and the Chinese Firm*, 103 GEO. L.J. 665, 701 (2015) (stating that “[o]wnership of the firm as such provides relatively little information about the degree of autonomy the firm enjoys from the state... because the Chinese party state retains (relatively undefined) residual control rights in firms of all types, corporate ‘ownership’ is less central to understanding the attributes of the Chinese firm as compared to firms operating under market-neutral institutions and relatively robust constraints on state intervention.”).

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entities through other means – for instance, through the government approvals and financing processes described above, and the pervasive influence of the CCP.<sup>486</sup>

As discussed above, the outbound investment approvals system applies to all enterprises, not just SOEs. This gives the state a decisive role in determining which industry sectors should be targeted or closed for overseas investment. As a result, any enterprise seeking to receive government support for such acquisitions are incentivized to invest in sectors favored by the government, including those classified as “encouraged” in outbound investment measures and those identified in major S&T plans such as the *Made in China 2025 Notice*.<sup>487</sup>

Senior executives at China’s largest private companies regularly acknowledge the influence of this investment approvals system on their investment decisions. For instance, the *2017 Investment Opinion* of the State Council restricted overseas investments in property, sports, hotels, cinemas and entertainment,<sup>488</sup> and encouraged companies to invest in China’s “One-Belt One-Road” initiative.<sup>489</sup> Two of China’s largest overseas acquirers publicly announced their intention to comply with the new policy direction. Adam Tan, CEO of Hainan Airlines (HNA), noted that the company would “listen to orders” and pledged that HNA “will not invest in anything the government does not support.”<sup>490</sup> Wang Jianlin, CEO of Wanda Group, stated that the company has “actively respond[ed] to the state’s call and decided to put its main investments within China.”<sup>491</sup> Wang further noted that recent asset sales were based on “state policy and the macro-environment.”<sup>492</sup> One U.S. lawyer, commenting on the effect of this policy change on his

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<sup>486</sup> See e.g. Bruce J. Dickson, *Integrating Wealth and Power in China: The Communist Party’s Embrace of the Private Sector*, 192 THE CHINA Q. (2007). Xiaojun Yan & Jie Huang, *Navigating Unknown Waters: The Chinese Communist Party’s New Presence in the Private Sector*, 37 CHINA REV. (2017).

<sup>487</sup> E.U. CHAMBER, CHINA MANUFACTURING 2025: PUTTING INDUSTRIAL POLICY AHEAD OF MARKET FORCES 18-19 (2017).

<sup>488</sup> *Guiding Opinion on Further Guiding and Standardizing the Direction of Foreign Investment* § 4 (NDRC, MOFCOM, PBOC, Ministry of Foreign Affairs, Guo Ban Fa [2017] No. 74, issued Aug. 4, 2017).

<sup>489</sup> *2017 Investment Opinion* § 2.

<sup>490</sup> Over the last several years, HNA has invested in Deutsche Bank, Swissport, Carlson Hotels, Hilton Worldwide, Ingram Micro, and logistics firm CWT. Frank Tang, *China’s HNA Says It Will Pull Out of Deals on Beijing’s Investment Blacklist*, SOUTH CHINA MORNING POST, Nov. 27, 2017. See also *HNA Considers Asset Sales, Signals Reversal of Buying Spree*, BLOOMBERG, Nov. 28, 2017.

<sup>491</sup> Hou Wen & Han Wei, *Wanda Will Keep Major Investments in China*, CAIXIN, July 21, 2017. In recent years Wanda has acquired AMC Cinemas, Carmike, Odeon UCI Legendary Entertainment, Infront Sports, World Triathlon, and yacht maker Sunseeker. In 2015, the New York Times noted that Wanda’s increase in overseas media acquisitions “coincided with a policy push by the Chinese leadership to expand the nation’s cultural influence both overseas and at home.” Michael Forsythe, *Wang Jianlin, A Billionaire at the Intersection of Business and Power in China*, NEW YORK TIMES, Apr. 28, 2015.

<sup>492</sup> Wang’s comments came before China officially issued its new foreign investment restrictions but after China’s National Reform and Development Commission had issued informal guidance suggesting the rules were forthcoming. Michael Forsythe, *Wang Jianlin, A Billionaire at the Intersection of Business and Power in China*, NEW YORK TIMES, Apr. 28, 2015. Although the asset sales involved properties located on mainland China, they were viewed as necessary to free up working capital following the government’s decision to withhold financing for some of the company’s overseas deals. Li Xuanmin, *Wanda in Big Sell-off*, GLOBAL TIMES, Aug. 2, 2017 (“The conglomerate’s surprising move comes after the central government began prioritizing financial risk reduction in the second half of this year and warned against ‘irrational investment abroad,’ which the market believe has prompted Wang’s knee-jerk decision.”).



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Chinese clients, noted that his clients had merely redirected outbound investment from real estate and hotels to industries such as mining and aviation.<sup>493</sup>

These statements suggest that private companies' overseas investment decisions are not, as claimed by some participants in the investigation, wholly based on "market need" and "without intervention by the Chinese government,"<sup>494</sup> but rather are strongly influenced by the Chinese government's decision to encourage or restrict a given overseas investment sector in line with the country's industrial policy.

Pervasive state involvement in China's financial sector is closely tied to China's outbound investment approvals regime. Private enterprises often rely on capital from state-owned policy banks, state-owned commercial banks, or state-backed funds to make an investment project viable.<sup>495</sup> Moreover, there is an "abundance of empirical evidence [indicating] that the political connections of [private] firms in China are a strong indicator of their access to bank loans."<sup>496</sup> This relationship is reinforced by government policy that directs state-owned financial institutions to support technological development objectives. For example, the 2014 *IC Guidelines* and the *International Cooperation Opinion* expressly direct China Exim and CDB to

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<sup>493</sup> Sui-Lee Wee, *Geely Buys Take in Volvo Trucks, Despite China Restrictions*, NEW YORK TIMES, Dec. 27, 2017.

<sup>494</sup> See, e.g., Wang Guiqing, CHINA CHAMBER OF COMMERCE FOR IMPORT AND EXPORT OF MACHINERY AND ELECTRONIC PRODUCTS [*hereinafter* "CCCME"], *Testimony, Section 301 Hearing* 159 (Oct. 10, 2017) (explaining that business operations and acquisitions are "market oriented," and "[t]here is no intervention by the Chinese government in companies' business decisions"); John Tang, DHH WASHINGTON DC LAW OFFICE P.C. [*hereinafter* "DHH"], *Testimony, Section 301 Hearing* 155 (Oct. 10, 2017) ("Chinese companies including our firm have made billions of investments in the U.S. These investments are purely driven by market need. [...] [P]olitics does not have an influence on the business decisions."); CCCME, *Submission, Section 301 Hearing* 11 (Sept. 28, 2017) ("Chinese companies can choose any project independently and there are no government-motivated actions."); DHH, *Submission, Section 301 Hearing* 7 (Sept. 28, 2017) ("Chinese acquisitions overseas (including intellectual property) are not driven by the government, but instead by market need."); CHINA CHAMBER OF INTERNATIONAL COMMERCE [*hereinafter* "CCOIC"], *Submission, Section 301 Hearing* 64-65 (Sept. 26, 2017) ("Chinese companies' investment and acquisition in U.S. companies is normal commercial behavior, with no government direction behind it.").

<sup>495</sup> U.S.-CHINA ECON. & SEC. REV. COMM'N, 2016 ANNUAL REPORT TO CONGRESS 102 (2016) ("Private firms often rely heavily on government subsidies to increase profit margins. In Professor Zheng's testimony to the Commission, he explained that private companies 'have to have the help of the state in order to prosper or even survive.' Huawei, for example, is a privately held firm but receives major funding from state-owned commercial and policy banks due to its status as a "national champion." [...] [A] private automobile manufacturer, BYD Co., has also benefitted from state support, receiving \$108 million in 2013 from local and central government subsidies, nearly 130 percent of its net profits for the year.").

<sup>496</sup> Curtis J. Milhaupt & Wentong Zheng, *Beyond Ownership: State Capitalism and the Chinese Firm*, 103 GEO. L.J. 665, 690 (2015) (citing e.g., Clement Kong Wing Chow et al., *Investment Opportunity Set, Political Connection and Business Policies of Private Enterprises in China*, 38 REV. QUANTITATIVE FIN. ACCT. 367 (2012) (finding that firms with political connections in China are able to borrow more); Hongbin Li et al., *Political Connections, Financing and Firm Performance: Evidence from Chinese Private Firms*, 87 J. DEV. ECON. 283, 284 (2008) (finding that Communist Party membership helps private entrepreneurs in China to obtain loans from banks or other state institutions); Wubiao Zhou, *Bank Financing in China's Private Sector: The Payoffs of Political Capital*, 37 WORLD DEV. 787, 788 (2008) (finding that membership in China's legislative or semi-legislative organs helps private entrepreneurs obtain access to bank loans); Robert Cull et al., WORLD BANK, GOVERNMENT CONNECTIONS AND FINANCIAL CONSTRAINTS: EVIDENCE FROM A LARGE REPRESENTATIVE SAMPLE OF CHINESE FIRMS, Working Paper No. 6352, 7 (2013) (finding that government connections are associated with substantially less severe financial constraints at private firms in China").

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provide financial support as needed.<sup>497</sup> These incentives provide a further opportunity for the state to direct private enterprises' overseas investment in line with industrial policy.

The recent expansion of CCP committees in nominally private enterprises also enhances state influence over these enterprises' decision-making – including outbound investment activities. As noted above, the *Company Law of the People's Republic of China* authorizes the establishment of CCP committees in enterprises that are not state-owned. Recent statistics indicate that these Party committees now exist in “70 percent of some 1.86 million privately owned companies,”<sup>498</sup> a sharp increase from 2014, when only 53.1 percent of China's 1.60 million private companies had such committees.<sup>499</sup>

The increasing influence of the CCP has affected foreign enterprises that are located in China. 106,000 firms had set up Party units in 2016, compared to only 47,000 firms in 2011.<sup>500</sup> As a result, several of these companies report “political pressure” to allow their internal Party committees greater input on business operations and investment decisions.<sup>501</sup> Some foreign executives have reported that company investment decisions have already been made to satisfy internal CCP pressure.<sup>502</sup> These efforts are so pervasive that at least one foreign industry group – the Delegations of Germany Industry and Commerce – released a public statement in November 2017 pushing back against attempts by the CCP “to strengthen their influence in wholly foreign owned German companies in China.” The statement concluded that German companies may choose to leave China or reconsider investment strategies if such attempts continued.<sup>503</sup>

Recent CCP documents indicate that these Party-building efforts are affecting all types of enterprises in China, not just SOEs and foreign-invested entities (FIEs).<sup>504</sup> Although there are few public reports concerning Party-building efforts within Chinese companies that lack significant foreign investment or control, it is reasonable to suppose that the CCP is making

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<sup>497</sup> *IC Guidelines* § 4(3); *International Cooperation Opinion* § 33.

<sup>498</sup> Michael Martina, *Exclusive: In China, the Party's Push for Influence inside Foreign Firms Stirs Fears*, REUTERS, Aug. 24, 2017.

<sup>499</sup> Xiaojun Yan & Jie Huang, *Navigating Unknown Waters: The Chinese Communist Party's New Presence in the Private Sector* 37 CHINA REVIEW (2017).

<sup>500</sup> He Hui Feng, *German Trade Body Warns Firms May Pull Out of China Over Communist Party Pressure*, SOUTH CHINA MORNING POST, Nov. 29, 2017.

<sup>501</sup> Michael Martina, *Exclusive: In China, the Party's Push for Influence Inside Foreign Firms Stirs Fears*, REUTERS, Aug. 24, 2017.

<sup>502</sup> Michael Martina, *Exclusive: In China, the Party's Push for Influence Inside Foreign Firms Stirs Fears*, REUTERS, Aug. 24, 2017 (“A sales and marketing head in China for a major U.S. consumer goods firm said its party cell had recently become more active, and had pushed for locating a new facility in a district where the local government was promoting investment, a move the company made.”).

<sup>503</sup> Press Release, Delegations of German Industry and Commerce, *Increasing business challenges – Delegations of German Industry & Commerce in China concerned about growing influence of Chinese Communist Party on foreign business operations* (Nov. 24, 2017), available at <http://china.ahk.de/news/single-view/artikel/press-statement-increasing-business-challenges-delegations-of-german-industry-commerce-in-china-concerned-about-growing-influence-of-chinese-co/>.

<sup>504</sup> See e.g., Lucy Hornby, *Communist party asserts control over China Inc.*, FINANCIAL TIMES, Oct. 3, 2017 (noting CCP's push to increase influence on SOEs, private companies, and joint ventures); *Provisions of the CCP Regarding On-Site Inspections* (2017 Revision) (CCP Central Committee, July 1, 2017) (Calling on central, provincial and local CCP committees to increase inspection and supervision of all Party organizations under their jurisdiction, including those existing in enterprises).

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similar demands on these companies.<sup>505</sup> Unlike FIEs, Chinese companies likely have far less freedom to push back against such requests or to make them public.

Company executives often maintain close ties to the Party, either through their own membership in the Party or through cultivating political connections with influential Party cadres or organs in their locality.<sup>506</sup> Likewise, industry associations may influence outbound investment behavior in line with government objectives. Industry associations exist for most of the technology-intensive manufacturing sectors of the Chinese economy, and most trace their origins to a government body. The members of these associations include SOEs as well as nominally private enterprises.<sup>507</sup>

##### c) State-backed Funds

The emergence of state-backed funds and investment companies represents an important new feature of China's financial sector.

An early development in this regard was the establishment in 2007 of China's sovereign wealth fund China Investment Corporation (CIC).<sup>508</sup> CIC has received periodic capital injections from the foreign exchange reserves managed by SAFE.<sup>509</sup> A large portion of its assets are located in its subsidiary, Central Huijin Investment Ltd., which holds stakes in China's state-owned commercial banks, policy banks, securities companies, and insurance companies.<sup>510</sup> Members of

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<sup>505</sup> According to a recent report, over 35 of China's largest technology companies have "quietly instituted Party committees in recent years" but declined to give further specifics on the operational role of such committees. Emily Feng, *Chinese Tech Groups Display Closer Ties with the Communist Party*, FINANCIAL TIMES, Oct. 10, 2017.

<sup>506</sup> U.S.-CHINA ECON. & SEC. REV. COMM'N, 2016 ANNUAL REPORT TO CONGRESS 102 (2016) (stating that, "In their research, Professor Zheng and Curtis Milhaupt, a professor at Columbia Law School, found 95 out of the top 100 private Chinese firms by revenue and eight out of the top ten Internet firms by revenue were founded or are controlled by a current or former member of a central or local political organization such as the People's Congresses and People's Political Consultative Conferences. These connections are integral to a private firm's success, creating and reinforcing important networks to top banks, other leading SOEs, and government regulators.").

<sup>507</sup> U.S.-CHINA ECON. & SEC. REV. COMM'N, 2016 ANNUAL REPORT TO CONGRESS 102 (2016) ("Private companies are subjected to largely undefined regulations that dilute the rights of corporate owners. Take, for instance, China's state-run industry associations, which were created in the 1990s amid mounting pressure for the government to separate its regulatory power from its business activities. State-run industry associations were meant to provide industrial coordination and private regulation, but they have become quasi-governmental entities: created and staffed by former government officials from defunct ministries, they supervise and coordinate the activities of firms whose ministries have been disbanded. Compulsory participation in these state-led industrial restructuring efforts, along with other forms of pressure from regulators to comply with government-favored policies, contribute to the state's extralegal control over private enterprises.").

<sup>508</sup> CIC was established as a wholly state-owned enterprise pursuant to the *PRC Company Law. Profile* [Chinese], CHINA INVESTMENT CORP., available at <http://www.china-inv.cn>.

<sup>509</sup> CIC received a \$200 billion capital injection at its founding and a \$30 billion capital injection in December 2011. CHINA INVESTMENT CORP., 2011 ANNUAL REPORT (2011); Lingling Wei, *China's CIC Works on Funding Mechanism*, THE WALL STREET JOURNAL, Mar. 6, 2012.

<sup>510</sup> Central Huijin Investment Ltd. stakes include Agricultural Bank of China, Industrial and Commercial Bank of China, and CDB. *Shareholdings* [Chinese], CENTRAL HUIJIN INVESTMENT LTD, [http://www.huijin-inv.cn/wps/portal/!ut/p/a1/jZDLDoIwEEW\\_yMxYsOCygPKQ6oIQsRvSGIEmUoghLvx6q2FrcXY3OSf3ZkBABULLp2rlpAYt758saH1EiuuwwAw52yPzccdpTkbYGOAiwHCmCWulyOi6xNMoyCJvC1HTKnN9ws6-\\_\\_jjGP7nW4CF\\_dkXsPSbAvLgIW9BjHLqVko3A1Td0N\\_qq4YzCGvDgSwArjMDthcubRz7sqxeeVOKir0BYO0FNg!!/dl5/d5/L2dBISvZ0FBIS9nQSEh](http://www.huijin-inv.cn/wps/portal/!ut/p/a1/jZDLDoIwEEW_yMxYsOCygPKQ6oIQsRvSGIEmUoghLvx6q2FrcXY3OSf3ZkBABULLp2rlpAYt758saH1EiuuwwAw52yPzccdpTkbYGOAiwHCmCWulyOi6xNMoyCJvC1HTKnN9ws6-__jjGP7nW4CF_dkXsPSbAvLgIW9BjHLqVko3A1Td0N_qq4YzCGvDgSwArjMDthcubRz7sqxeeVOKir0BYO0FNg!!/dl5/d5/L2dBISvZ0FBIS9nQSEh) (last visited Nov. 20, 2017).

#### IV. Outbound Investment

CIC's supervisory committee and executive board include current and former government officials.<sup>511</sup>

CIC is tasked with “implementing the diversification of investments of national foreign exchange reserves.”<sup>512</sup> In fulfilling this role, CIC has not only made portfolio investments, but also purchased substantial equity shares in U.S. financial institutions and companies in the energy and resource sectors, including the U.S. energy company AES.<sup>513</sup> In recent years, CIC has played a more indirect role by contributing capital to other funds. Notably, CIC contributed \$550 million to the Asia-Germany Industrial Promotion Capital (AGIC), a private Chinese-owned investment fund based in Germany targeting investment in European “Industry 4.0”<sup>514</sup> enterprises.<sup>515</sup>

Since 2007, state-backed funds and investment companies have proliferated, to the extent that these entities now constitute a central feature of China's technology acquisition strategy. In a 2016 report, the Mercator Institute observes that:

Sovereign investment funds and governmental investment management companies play an increasing role in high-tech FDI. While these funds and their management often present themselves as private enterprises, the state's active role is concealed behind an opaque network of ownership and funding structures. The State Council and local governments primarily use these funds and the expertise of private managers to make subsidies to Chinese enterprises more efficient. These funds are now becoming increasingly active with regard to investment in overseas markets.<sup>516</sup>

One of the largest state-backed funds is the National IC Fund. This fund was established in September 2014, soon after the June 2014 release of the *IC Guidelines*. The Semiconductor

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<sup>511</sup> CIC's supervisory committee consists of representatives from MOF, PBOC, and other government organs. Its executive board is staffed primarily by former government officials. *Executive Committee* [Chinese], CHINA INVESTMENT CORP, [http://www.china-inv.cn/wps/portal/!ut/p/a1/jZBNC4JAEIZ\\_Ucy02mrHVcsP3CJEsr3IEqkLuUpIh359Jl1dndvA8\\_DOvCCgAKHIW9VyUJ2Wz98uaHICils\\_wwQ5OyJz8cDPVvkKYZ43AbR4IbWL0L7u\\_74cssp0UEW2XYBx4UeDsOWJM1\\_k4MwzX-QZg4f9kAgz5Ywb5cZ\\_XIH05NBulqw6Kpmsf5V3DFYQxIbPMwNTwBJgqXLqxb\\_M8Lz5plcXqCxDtLo!/dl5/d5/L2dBISEvZ0FBIS9nQSEh/](http://www.china-inv.cn/wps/portal/!ut/p/a1/jZBNC4JAEIZ_Ucy02mrHVcsP3CJEsr3IEqkLuUpIh359Jl1dndvA8_DOvCCgAKHIW9VyUJ2Wz98uaHICils_wwQ5OyJz8cDPVvkKYZ43AbR4IbWL0L7u_74cssp0UEW2XYBx4UeDsOWJM1_k4MwzX-QZg4f9kAgz5Ywb5cZ_XIH05NBulqw6Kpmsf5V3DFYQxIbPMwNTwBJgqXLqxb_M8Lz5plcXqCxDtLo!/dl5/d5/L2dBISEvZ0FBIS9nQSEh/) (last visited Nov. 20, 2017).

<sup>512</sup> *Profile* [Chinese], CHINA INVESTMENT CORP., [http://www.china-inv.cn/wps/portal/!ut/p/a1/jZHRCoIwGIWfpQeI\\_U2ddjm1dOKKkMh2IyNSBzklpIuePpVunZ67H77DOfwHCZQjoeVHVbJXrZav8RakOAGBXZBBApwegXpw4GerwdRxBuA-D0Q2Nvp96-8PIhrbbgoAtoeBhX4cunsOwMg6P8yIgtF\\_Weg\\_AqvyDcDC\\_5IJMPQfAvCbB7xCopN9vVW6bFFet82zeGh0Q8KYkFlmYFpoAkwTLHU0d-AEdc11UP5Ny4wpRjc\\_2EaqQw!/dl5/d5/L2dBISEvZ0FBIS9nQSEh/](http://www.china-inv.cn/wps/portal/!ut/p/a1/jZHRCoIwGIWfpQeI_U2ddjm1dOKKkMh2IyNSBzklpIuePpVunZ67H77DOfwHCZQjoeVHVbJXrZav8RakOAGBXZBBApwegXpw4GerwdRxBuA-D0Q2Nvp96-8PIhrbbgoAtoeBhX4cunsOwMg6P8yIgtF_Weg_AqvyDcDC_5IJMPQfAvCbB7xCopN9vVW6bFFet82zeGh0Q8KYkFlmYFpoAkwTLHU0d-AEdc11UP5Ny4wpRjc_2EaqQw!/dl5/d5/L2dBISEvZ0FBIS9nQSEh/) (last visited Nov. 20, 2017).

<sup>513</sup> See IACOB KOCH-WESER, OWEN HAACKE, U.S.-CHINA ECON. & SEC. REV. COMM'N, CHINA INVESTMENT CORPORATION: RECENT DEVELOPMENTS IN PERFORMANCE, STRATEGY, AND GOVERNANCE 29 (June 13, 2014); Eiichi Sekine, *China Investment Corporation: Investment Performance in 2010 and Outlook*, 3 NOMURA J. OF CAPITAL MARKETS 6 (Winter 2012).

<sup>514</sup> “Industry 4.0” refers to the “fourth industrial revolution” resulting from the integration of the “internet of things” into the entire industrial value chain. See Bill Lydon, *Industry 4.0: Intelligent and flexible production*, 63 INTECH 12–17 (2016).

<sup>515</sup> Jost Wübbeke, et al., MERICS, MADE IN CHINA 2025: THE MAKING OF A HIGH-TECH SUPERPOWER AND CONSEQUENCES FOR INDUSTRIAL COUNTRIES 53 (Dec. 2016).

<sup>516</sup> Jost Wübbeke, et al., MERICS, MADE IN CHINA 2025: THE MAKING OF A HIGH-TECH SUPERPOWER AND CONSEQUENCES FOR INDUSTRIAL COUNTRIES 53 (Dec. 2016).

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Industry Association (SIA) reports that, to date, the National IC Fund has secured approximately \$21 billion in funding.<sup>517</sup> The fund has used these resources to support numerous technology-related outbound investments in the United States (see Section IV.C.2 for further discussion).

A media article by China's official state-run news agency, *Xinhua News*, reposted on the website of the MOF, states that the National IC Fund will adopt a variety of investment forms, including equity investment, with a focus on the integrated circuit and microchip manufacturing industry, in order to “propel enterprises to upgrade their industrial capacity level and implement mergers, restructuring, and standardized enterprise management.”<sup>518</sup> The article further states that the IC Fund was established “under the guidance” of MIIT and MOF, and lists several large SOEs and state-owned financial institutions as key capital contributors, including:<sup>519</sup>

- China Development Bank Capital, a subsidiary of the state-owned policy bank CDB;<sup>520</sup>
- China National Tobacco Corp., a central SOE that administers a quasi-monopoly in China's tobacco sector;<sup>521</sup>
- China Mobile Communications Corporation, a central SOE and market leader in China's telecommunications sector;<sup>522</sup>
- Beijing E-Town International Investment and Development Co., Ltd. (Beijing E-Town), an investment company owned by the municipal government of Beijing,<sup>523</sup> which has made several technology-related investments in the United States (see further discussion below and in Section IV.C.2);

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<sup>517</sup> SEMICONDUCTOR INDUSTRY ASSOCIATION [hereinafter “SIA”], *Submission, Section 301 Hearing 6* (Oct. 5, 2017).

<sup>518</sup> *National Integrated Circuit Industry Investment Fund Officially Established* [Chinese], XINHUA NEWS, Oct.14, 2014, available at [http://www.mof.gov.cn/zhengwuxinxi/caizhengxinwen/201410/t20141014\\_1149902.html](http://www.mof.gov.cn/zhengwuxinxi/caizhengxinwen/201410/t20141014_1149902.html).

<sup>519</sup> *National Integrated Circuit Industry Investment Fund Officially Established* [Chinese], XINHUA NEWS, Oct.14, 2014, available at [http://www.mof.gov.cn/zhengwuxinxi/caizhengxinwen/201410/t20141014\\_1149902.html](http://www.mof.gov.cn/zhengwuxinxi/caizhengxinwen/201410/t20141014_1149902.html).

<sup>520</sup> See China Development Bank Capital, available at <http://www.cdb-intl.com/eng/about/about.htm>. See also *Capital Markets – Company Overview of China Development Bank Capital Corporation Ltd.*, BLOOMBERG, available at <https://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=115838167> (last visited Nov. 20, 2017) (“China Development Bank Capital Corporation Ltd. is an investment arm of China Development Bank specializing in direct, mezzanine, and fund of fund investments. For direct investments, the firm specializes in growth capital, pre-IPO investments, mergers & acquisition, and restructuring. It seeks to make direct investments in new energy, healthcare, environmental protection technologies, oil and gas supply, and industrials sectors.”).

<sup>521</sup> China Tobacco Overview [Chinese], State Tobacco Monopoly Bureau, available at [www.tobacco.gov.cn/html/10/1004.html](http://www.tobacco.gov.cn/html/10/1004.html).

<sup>522</sup> China Mobile Communications Corporation is administered by SASAC. See SASAC, Enterprise List [Chinese], available at <http://www.sasac.gov.cn/n2588035/n2641579/n2641645/index.html>.

<sup>523</sup> *Company Introduction* [Chinese], BEIJING E-TOWN, [http://www.etowncapital.com/comcontent\\_detail/columnsId=36&&i=2&comContentId=2.html](http://www.etowncapital.com/comcontent_detail/columnsId=36&&i=2&comContentId=2.html), (last visited Nov.20, 2017).

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- Shanghai Guosheng (Group) Co., Ltd., an investment company owned by the municipal government of Shanghai;
- Tsinghua Unigroup, a company owned by Tsinghua University, a public university, which has attempted to make several technology-related investments in the United States (see above for further discussion);
- China Electronics Technology Group Corporation, a state-owned defense enterprise established under the former Ministry of Electronics Industry (now part of MIIT), which describes itself as an “important state-owned backbone enterprise directly administered by the central government.”<sup>524</sup>

A 2017 corporate filing, relating to the acquisition of a National IC Fund-invested company, discloses further information on the National IC Fund’s shareholders. The list contains 19 entities, the largest of which are the government ministry MOF (25.95 percent), China Development Bank Capital (23.07 percent), China National Tobacco Corp. (14.42 percent), and Beijing E-Town (7.21 percent).<sup>525</sup> The fund has used part of this capital to collaborate with its founding capital contributors. For example, in February 2015, the fund provided Tsinghua Unigroup with CNY 10 billion (\$1.6 billion) in equity investment.<sup>526</sup>

The National IC Fund is part of an “Integrated Circuit Industry Technological Innovation Strategic Alliance” established in March 2017 “in conformity with [...] the guiding spirit of General Secretary Xi Jinping.”<sup>527</sup> The objective of the alliance is to “implement the ‘Strong Internet Nation’ strategy, achieve breakthroughs in cutting-edge core technologies, and establish secure and controllable information technology [IT] systems.”<sup>528</sup> The alliance comprises “62 leading enterprises, higher-education institutions, research academies, and social organizations,” and is supported by the Ministry of Science and Technology (MOST), NDRC, and MIIT.<sup>529</sup>

In the period since September 2014, numerous provinces and municipalities have established their own IC Funds, or received capital from the National IC Fund to establish other IC-

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<sup>524</sup> See CHINA ELECTRONICS TECHNOLOGY GROUP CORPORATION [Chinese], [http://www.cetc.com.cn/zgdzkj/\\_300891/\\_300895/index.html](http://www.cetc.com.cn/zgdzkj/_300891/_300895/index.html) (last visited Nov.20, 2017).

<sup>525</sup> Zhejiang Wansheng Co., *Zhejiang Wansheng Co., Ltd. Public Notice In Response to a Letter from the Shanghai Stock Exchange Requesting Information Disclosure Regarding the Company’s Issuance of Shares to Acquire Assets and Raise Supporting Funds in a Related Party Transaction* [Chinese] (Code 603010, Public Notice 2017-042).

<sup>526</sup> Press Release, Tsinghua Unigroup, Tsinghua Unigroup Receives CNY 10 Billion Investment from the National Integrated Circuit Investment Fund [Chinese] (Feb.14, 2015), *available at* <http://www.unigroup.com.cn/newscenter/jtxw/2015/0214/138.html>.

<sup>527</sup> Press Release, China National Science and Technology Major Project, Integrated Circuit Industry Technological Innovation Strategic Alliance Officially Established [Chinese] (Mar. 22, 2017), *available at* [http://www.nmp.gov.cn/gzxcgz/jcdl/201703/t20170323\\_5031.htm](http://www.nmp.gov.cn/gzxcgz/jcdl/201703/t20170323_5031.htm).

<sup>528</sup> Press Release, China National Science and Technology Major Project, Integrated Circuit Industry Technological Innovation Strategic Alliance Officially Established [Chinese] (Mar. 22, 2017), *available at* [http://www.nmp.gov.cn/gzxcgz/jcdl/201703/t20170323\\_5031.htm](http://www.nmp.gov.cn/gzxcgz/jcdl/201703/t20170323_5031.htm).

<sup>529</sup> Press Release, China National Science and Technology Major Project, Integrated Circuit Industry Technological Innovation Strategic Alliance Officially Established [Chinese] (Mar. 22, 2017), *available at* [http://www.nmp.gov.cn/gzxcgz/jcdl/201703/t20170323\\_5031.htm](http://www.nmp.gov.cn/gzxcgz/jcdl/201703/t20170323_5031.htm).

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related funds.<sup>530</sup> Reports on the establishment of IC Funds in Hubei,<sup>531</sup> Fujian,<sup>532</sup> and Anhui provinces<sup>533</sup> indicate the high degree of Chinese government involvement in establishing the funds in order to meet national strategic objectives. According to the SIA, provincial and municipal IC funds have raised a staggering sum – more than \$80 billion.<sup>534</sup>

In addition to funds that specifically target the IC sector, China has developed a number of other funds directed to all high-technology industries identified in the *Made in China 2025 Notice* and *Made in China 2025 Roadmap*. As reported by the U.S. Chamber of Commerce, these funds include:

- (1) *Advanced Manufacturing Industry Investment Fund* – This fund received initial funding of CNY 20 billion (\$3 billion), and aims to support all industries prioritized under the Made in China 2025 policy.

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<sup>530</sup> The full scope of sub-central IC Funds is difficult to ascertain, as there is no single list published a government website. A publication by the news website Sohu lists 13 IC Funds, located in the following localities (in the order they were established): (1) Beijing municipality (est. July 2014, capital CNY 30 billion (\$4.9 billion)), (2) Hubei province (est. August 2015, capital CNY 30 billion (\$4.8 billion)), (3) Shenzhen municipality (est. October 2015, capital CNY 20 billion (\$3.2 billion)), (4) Guizhou province (est. December 2015, capital CNY 1.8 billion (\$286 million)), (5) Hunan province (est. December 2015, CNY 5 billion (\$795 million)), (6) Xiamen municipality (est. March 2016, capital CNY 16 billion (\$2.4 billion)), (7) Sichuan province (est. March 2016, capital CNY 4 billion (\$604 million)), (8) Guangdong province (est. June 2016, capital CNY 15 billion (\$2.3 billion)), (9) Shaanxi province (est. August 2016, capital CNY 30 billion (\$4.5 billion)), (10) Shanghai municipality (est. December 2016, capital CNY 28.5 billion (\$4.3 billion)), (11) Nanjing municipality (est. December 2016, capital CNY 60 billion (\$9.1 billion)), (12) Wuxi municipality (est. January 2017, capital CNY 20 billion (\$3 billion)), and (13) Kunshan municipality (est. February 2017, capital 10 billion (\$1.5 billion)). See *A Compilation of Domestic Integrated Circuit Industry Funds in Each Locality* [Chinese], SOHU, <https://m.sohu.com/n/481699130/>.

<sup>531</sup> Hubei established an IC Fund in August 2015 with initial funding of CNY 30 billion (\$4.4 billion). In March 2016, a “national storage equipment” base was established in Wuhan, the capital of Hubei, with support from the Hubei IC Fund and the National IC Fund. Press Release, Wuhan Municipal Government International and IT Office, Construction Begins to Establish National Storage Equipment Base in Our Municipality [Chinese] (Mar. 31, 2016), available at [http://www.whwx.gov.cn/zhgl/gzdt/201603/t20160331\\_68082.html](http://www.whwx.gov.cn/zhgl/gzdt/201603/t20160331_68082.html); Press Release, Hubei Province Science and Technology Office, Hubei Establishes CNY 30 billion Integrated Circuit Industry Investment Fund [Chinese] (Aug. 24, 2015), available at [http://www.most.gov.cn/dfkj/hub/zxdt/201508/t20150821\\_121241.htm](http://www.most.gov.cn/dfkj/hub/zxdt/201508/t20150821_121241.htm).

<sup>532</sup> The Fujian Anxin Capital Fund was established in June 2016 with funding from the National IC Fund, with pledged capital of at least CNY 46.8 billion (\$7.1 billion). Among the fund’s goals is to “promote domestic and foreign integrated circuit project acquisitions, technological R&D and the new construction and expansion of production lines [...]” At the unveiling of the new fund, National IC Fund Chairman Wang Zhanfu stated: “On one hand, we can break through monopolies, protect national security, and implement national strategic objectives. On the other hand, we can optimize the industrial composition of domestic mobile integrated circuits, and promote the healthy development of industries including manufacturing, materials, and equipment.” *Entering the Structure of the National Integrated Circuit ‘13th Five-year’ Strategy; Pujiang Recreates New Competitive Advantages* [Chinese], PUJIANG NEWS, June 25, 2016, available at <http://www.jinjiang.gov.cn/hm/20160625/89981.html>.

<sup>533</sup> The Anhui province IC Fund was established in May 2017 with CNY 30 billion (\$4.4 billion) in initial funding. Capital contributors to the fund include the National IC Fund, the Chinese Academy of Sciences, the Anhui Province Investment Group, and the Hefei Industrial Investment Group. The fund’s activities will promote IC industry development in Anhui province through various methods, including equity infusions into subsidiary funds, equity investments, and industrial acquisitions. *Anhui Province Establishes CNY 30 Billion Integrated Circuit Industrial Investment Fund* [Chinese], XINHUA NEWS, May 19, 2017, available at [http://www.gov.cn/xinwen/201705/19/content\\_5195371.htm](http://www.gov.cn/xinwen/201705/19/content_5195371.htm).

<sup>534</sup> SIA, *Submission, Section 301 Hearing* 6 (Oct. 5, 2017).

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- (2) *National Strategic Emerging Industries Investment Guiding Fund* – This fund received initial funding of CNY 40 billion (\$6 billion), and focuses on strategic emerging industries.
- (3) *Made in China 2025 Strategic Cooperation* – This fund is a strategic partnership between CDB and the government ministry MIIT, with funding valued at CNY 300 billion (\$44.8 billion). It provides financial support to implementing the Made in China 2025 policy. There are also province-level Made in China 2025 funds in Shaanxi, Gansu, and Sichuan provinces.<sup>535</sup>

Moreover, China relies on a web of state-backed investment companies to support outbound technology investments. A primary example is Beijing E-Town, which is owned by the Beijing municipal government. As noted above, Beijing E-Town is a capital contributor to the National IC Fund. According to a 2015 presentation by its General Manager, Wang Xiaobo, Beijing E-Town seeks to build a system of funds that includes not only the National IC Industry Fund, but also various province- and municipal-level funds, as well as smaller VC funds, in order to accelerate industrial clustering, incubate innovation, and cultivate an industrial ecosystem.<sup>536</sup> As of the end of 2016, Beijing E-Town, on behalf of Beijing municipality, had committed CNY 10 billion (\$1.5 billion) (and already disbursed CNY 1.6 billion (\$242 million)) to the National IC Fund.<sup>537</sup>

A specific objective of Beijing E-Town is to cluster technology companies in the Beijing Economic-Technological Development Zone.<sup>538</sup> A broader objective is to partner with domestic industry leaders to promote international acquisitions to acquire a number of key technologies in the IC industry – including mobile telecom base chips, RF chips, memory chips, insulated-gate bipolar transistors (IGBT) / power electronics, LCD driver chips, CPU chips, and MEMS sensor chips – in order to reduce China’s reliance on IC imports.<sup>539</sup> This broader objective aligns closely with government policies outlined in the *IC Guidelines* and other documents.

#### d) Military Civil Fusion

The Chinese government’s interest in securing advanced technology through outbound investment reflects both economic and national security objectives. The close relationship

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<sup>535</sup> U.S. CHAMBER, *MADE IN CHINA 2025: GLOBAL AMBITIONS BUILT ON LOCAL PROTECTIONS* 63-64 (2017).

<sup>536</sup> Wang Xiaobo, Beijing E-Town General Manager, Presentation at TIF China 2015, *Establishing an Investment Financing Platform; Promoting Development of the Integrated Circuit Industry* [Chinese] (Mar. 2015), available at [http://www.semi.org/en/sites/semi.org/files/data15/docs/Wangxiaobo\\_TIF.pdf](http://www.semi.org/en/sites/semi.org/files/data15/docs/Wangxiaobo_TIF.pdf).

<sup>537</sup> *CCXR 2017 Credit Report on Beijing E-Town International Investment and Development Co., Ltd.* 12 [Chinese] (Credit Committee [2017] No. G229-1). See also Wang Xiaobo, Beijing E-Town General Manager, Presentation at TIF China 2015, *Establishing an Investment Financing Platform; Promoting Development of the Integrated Circuit Industry* [Chinese] (Mar. 2015), available at [http://www.semi.org/en/sites/semi.org/files/data15/docs/Wangxiaobo\\_TIF.pdf](http://www.semi.org/en/sites/semi.org/files/data15/docs/Wangxiaobo_TIF.pdf).

<sup>538</sup> Wang Xiaobo, Beijing E-Town General Manager, Presentation at TIF China 2015 *Establishing an Investment Financing Platform; Promoting Development of the Integrated Circuit Industry* [Chinese] (Mar. 2015), available at [http://www.semi.org/en/sites/semi.org/files/data15/docs/Wangxiaobo\\_TIF.pdf](http://www.semi.org/en/sites/semi.org/files/data15/docs/Wangxiaobo_TIF.pdf).

<sup>539</sup> *CCXR 2017 Credit Report on Beijing E-Town International Investment and Development Co., Ltd.* 15 [Chinese] (Credit Committee [2017] No. G229-1).



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between these objectives is reflected in the strategy of “military-civil fusion” (MCF), which is an important driver of government policy and outbound investment patterns. In 2016, China established the country’s first MCF fund, which allocated CNY 2 Billion (\$ 302 million) to fund domestic projects and “overseas acquisitions.”<sup>540</sup>

Elevated as a national strategy by General Secretary Xi Jinping in 2014, MCF embodies China’s national strategic philosophy of coordinating the planning of economic development and national security (i.e. military-defense) to fully realize the rejuvenation of the Chinese nation.<sup>541</sup> MCF emphasizes indigenous development, restriction of inbound FDI, and the absorption of foreign technologies and know-how in key sectors.<sup>542</sup> The People’s Liberation Army (PLA) has drawn a direct link between MCF policy and overseas investment.<sup>543</sup>

In June 2017, General Secretary Xi called for focusing MCF on infrastructure, national defense related S&T, weapon and equipment procurement, talent cultivation, and implementing MCF in outer space, cyberspace, biology, new energy, and maritime space.<sup>544</sup> Fundamentally, MCF captures China’s efforts to leverage its economic scale to more effectively capture and apply technological innovations in the commercial space in a national defense context.

As a national strategy, MCF cuts across economic and industrial development, talent acquisition, and military modernization plans. It calls for the development of integrated MCF information sharing platforms and MCF industry demonstration bases to facilitate S&T resource sharing and collaboration between state laboratories, the PLA, and enterprises, including foreign companies and Sino-foreign joint ventures.<sup>545</sup>

The State Administration for Science, Technology, and Industry for National Defense (SASTIND) oversees implementation of MCF policies within industry and coordinates MCF action across agencies and local governments. SASTIND’s 2016 and 2017 MCF Special Action Plans prioritize expanding defense industry collaborations, “guiding” social investment in military projects, including with private enterprises; implementing import substitution plans for key defense-related materials; establishing MCF investment funds to promote development of dual-use S&T industries; and supporting the “Going Out” for China’s defense industry groups, including enhancing cooperation with foreign governments and promoting the diffusion of China’s civilian nuclear technologies.<sup>546</sup>

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<sup>540</sup> Wang Yuxi, *First Domestic MCF Transfer Results Fund is Established – Total Scale of 2 Billion RMB* [Chinese], SICHUAN DAILY, Sept. 22, 2016, available at [http://news.china.com.cn/2016-09/22/content\\_39347495.htm](http://news.china.com.cn/2016-09/22/content_39347495.htm).

<sup>541</sup> *Xi Urges Efforts to Boost Integrated Military and Civilian Development*, XINHUA NEWS, June 21, 2017, available at [http://news.xinhuanet.com/english/2017-06/21/c\\_136381507.htm](http://news.xinhuanet.com/english/2017-06/21/c_136381507.htm).

<sup>542</sup> *IGCC Report*, 155.

<sup>543</sup> Jiang Luming, *Comprehensively Planning an Overall Strategy for National Security and Development* [Chinese], PLA DAILY June 2, 2016, available at [http://www.81.cn/gfbmap/content/2016-06/02/content\\_146372.htm](http://www.81.cn/gfbmap/content/2016-06/02/content_146372.htm).

<sup>544</sup> *Xi Urges Efforts to Boost Integrated Military and Civilian Development*, XINHUA NEWS, June 21, 2017, available at [http://news.xinhuanet.com/english/2017-06/21/c\\_136381507.htm](http://news.xinhuanet.com/english/2017-06/21/c_136381507.htm).

<sup>545</sup> *See Description of National New Industrial Demonstration Base* [Chinese], MIIT, available at <http://sfjd.miit.gov.cn/BaseInfoAction!findListIndustry.action>. See also *Notice of the MIIT General Office on Organizing the Establishment of the 2015 “National New Industrialization Demonstration Base”* (MIIT Gong Xin Ting Gui Han [2015] No. 319, May 12, 2015).

<sup>546</sup> *2017 SASTIND Military-Civilian Fusion Special Action Plan* (State Administration of Science, Industry, and Industry for National Defense, published June 23, 2017); *2016 SASTIND Military-Civilian Fusion Special Action*

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The State Council Notice on the Issuance of the Next Generation Artificial Intelligence Development Plan specifically calls for strengthening MCF in the artificial intelligence (AI) domain and developing “a new generation of AI technology as a support to command and decision-making, military deduction, defense equipment, and other applications.”<sup>547</sup>

##### C. Impact of Policies and Implementing Measures on Chinese Investment in the United States

This section considers how the policies and implementing measures outlined above impact Chinese investment in the United States.

Certain public hearing participants in the investigation have asserted that all Chinese investment in the United States is driven by market considerations – not government policy.<sup>548</sup> According to these participants, government policies and measures are essentially irrelevant to outbound investment decisions.<sup>549</sup> USTR does not find these statements persuasive.

Certain evidence in the record suggests that Chinese OFDI often reflects commercial considerations. These factors include commercial interest in acquiring technology and R&D facilities, financial diversification, acquisitions of consumer-oriented assets, localization of production inside tariff boundaries, and the possibility of a CNY devaluation.<sup>550</sup>

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*Plan* (MOST, Guo Gong Ji [2016] No. 204, issued Mar. 16, 2016).

<sup>547</sup> *State Council Notice on Issuing the Next-Generation of Artificial Intelligence Development Plan* § 3(4) (State Council, Guo Fa [2017] No. 35, issued Aug. 20, 2017). For full translation and analysis, see Graham Webster, et al., *China’s Plan to ‘Lead in AI: Purpose, Prospects, and Problems*, NEW AMERICA CYBERSECURITY INITIATIVE (Aug. 1, 2017), available at <https://www.newamerica.org/cybersecurity-initiative/blog/chinas-plan-lead-ai-purpose-prospects-and-problems/>.

<sup>548</sup> See, e.g., Wang Guiqing, CCCME, *Testimony, Section 301 Hearing* 158-9 (Oct. 10, 2017) (business operations and acquisitions are “market oriented,” and “[t]here is no intervention by the Chinese government in companies’ business decisions”); John Tang, DHH, *Testimony, Section 301 Hearing* 154 (Oct. 10, 2017) (“Chinese companies including our firm have made billions of investments in the U.S. These investments are purely driven by market need. [...] [P]olitics does not have an influence on the business decisions.”); CCCME, *Submission, Section 301 Hearing* 11 (Sept. 28, 2017) (stating that, “Chinese companies can choose any project independently and there are no government-motivated actions.”); DHH, *Submission, Section 301 Hearing* 7 (Sept. 28, 2017) (“Chinese acquisitions overseas (including intellectual property) are not driven by the government, but instead by market need.”); CCOIC, *Submission, Section 301 Hearing* 64-5 (Sept. 26, 2017) (stating that “Chinese companies’ investment and acquisition in U.S. companies is normal commercial behavior, with no government direction behind it.”).

<sup>549</sup> One witness from the China General Chamber of Commerce testified that “every specific acquisition deal is decided by the companies based on their own business strategy and market opportunities [...]”. Chen Xu, CHINA GENERAL CHAMBER OF COMMERCE [*hereinafter* “CGCC”], *Testimony, Section 301 Hearing* 147-48 (Oct. 10, 2017). But this witness also underscored the importance of Chinese government policy in shaping and directing outbound investment. See, e.g., *id.* at 176 (observing that, in the context of increased real estate investment into the United States, “China’s central bank and China’s central government, of course, will maybe redirect or reconcile the direction of China’s investment into the U.S. market. It is very necessary, I think.”); see also *id.* at 178.

<sup>550</sup> RHODIUM, *Submission, Section 301 Hearing* 3 (Sept. 28, 2017); see also *China Investment in Silicon Valley: The Rise of Chinese Investment in U.S. Tech Companies*, CBINSIGHTS, available at [https://www.cbinsights.com/reports/CB-Insights\\_China-in-US\\_webinar.pdf](https://www.cbinsights.com/reports/CB-Insights_China-in-US_webinar.pdf) (last visited Nov. 20, 2017).

#### IV. Outbound Investment

But the record also compels the conclusion that the state plays a vital role in shaping and facilitating outbound investment activity. As some participants observe, China is a managed economy,<sup>551</sup> and the influence of the government is pervasive. As discussed above, a range of measures – such as control over foreign exchange, state-backed financing, and outbound investment approvals – give the state considerable ability to channel outbound investment to effect state policy objectives.<sup>552</sup>

Below, aggregate data and trends are examined, as well as specific transactions, to show how government policies and measures are shaping investment flows. USTR has found that, at multiple levels of government – central, regional, and local – the Chinese state has directed and facilitated investment in, and acquisition of, U.S. companies and assets in technology-intensive sectors and in U.S. technology centers such as Silicon Valley.

##### 1. Chinese Investment Activity in the United States: Analysis of Data

China's OFDI has accelerated over the decade since China began to articulate and implement the policies outlined in Section IV.B. China's Ministry of Commerce (MOFCOM) reports that China's OFDI flows totaled \$145.7 billion in 2015 and \$196.1 billion in 2016 – a new record, and a substantial increase over the \$21.1 billion reported in 2006.<sup>553</sup> Likewise, data from the United Nations Conference on Trade and Development (UNCTAD) shows that between 2009 and 2016, enterprises from China transacted 2,715 cross-border merger and acquisition (M&A) deals, compared to 1,250 deals in the 1990-2008 period.<sup>554</sup>

The growth of Chinese investment in the United States is evident in each of the primary sources of data: the U.S. Bureau of Economic Analysis (BEA), the *China Global Investment Tracker* (AEI), and the *China Investment Monitor* (Rhodium Group, or “Rhodium”). Based on data collected under a balance-of-payments approach, BEA estimates that flows of Chinese OFDI into the United States rose by 835 percent, from \$1.1 billion in 2011 to \$10.3 billion in 2016 (see Figure 1).<sup>555</sup>

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<sup>551</sup> See, e.g., James Lewis, CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES [*hereinafter* “CSIS”], *Submission, Section 301 Hearing 1-2* (Sept. 2017).

<sup>552</sup> For these reasons, the suggestion by certain participants that the Chinese government simply provides “more information to the companies” to help them invest is not credible. Liu Chiao, CCOIC, *Testimony, Section 301 Hearing 182* (Oct. 10, 2017).

<sup>553</sup> See MOFCOM, NBS, and SAFE *Jointly Issue Statistical Bulletin of China's Outward Foreign Direct Investment*, available at <http://hzs.mofcom.gov.cn/article/date/201612/20161202103624.shtml>, and the *2006 Statistical Bulletin of China's Outward Foreign Direct Investment* [Chinese], available at <http://images.mofcom.gov.cn/hzs/accessory/200709/1190343657984.pdf>.

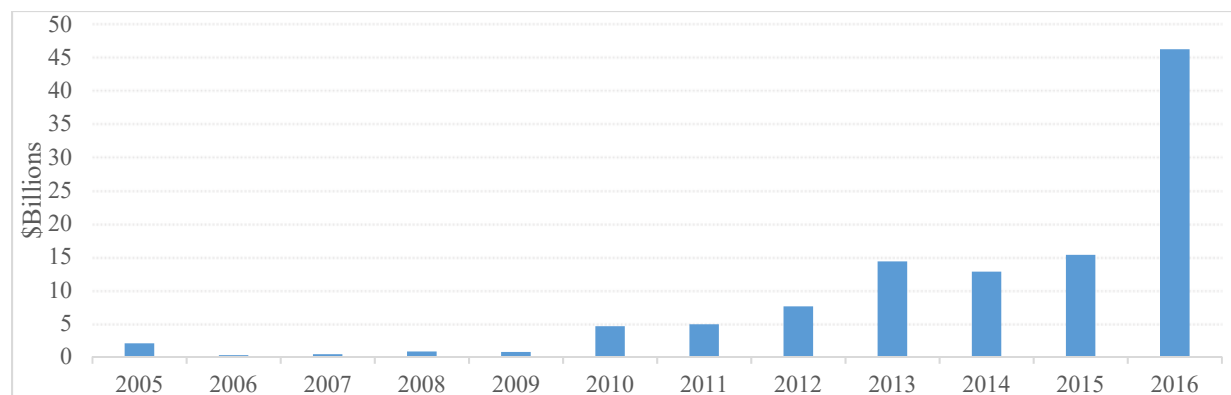
<sup>554</sup> Calculations based on UNCTAD, *Annex Table 12. Number of Cross-border M&As by Region/Economy of Purchaser, 1990-2016*, available at <http://unctad.org/en/Pages/DIAE/World%20Investment%20Report/Annex-Tables.aspx>.

<sup>555</sup> *Foreign Direct Investment in the United States*, BEA (2017), [https://www.bea.gov/iTable/index\\_MNC.cfm](https://www.bea.gov/iTable/index_MNC.cfm) (last visited Oct. 25, 2017). BEA collects data from legally mandated surveys of foreign-owned affiliates operating in the United States. BEA data cover all completed FDI transactions based on the value of dollars “crossing the border” in a year, per the Balance of Payments Guidelines.

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Although AEI and Rhodium employ different methodologies for collecting investment data, they also show an increasing trend over this period.<sup>556</sup> AEI data indicate a very large increase (*i.e.*, 2,460 percent), with investment rising from \$2.2 billion in 2011 to \$53.7 billion in 2016. In 2017, Chinese investment in the United States totaled \$24.2 billion, representing a significant year-on-year decline, but still marking the second-highest annual total on record.<sup>557</sup> Likewise, Rhodium data shows cumulative Chinese OFDI into the United States growing from a mere \$4.9 billion in 2011 to \$45.2 billion in 2016 – an increase of 843 percent.<sup>558</sup>

**Figure 1: Chinese OFDI Flows in the United States<sup>559</sup>**



At the same time, Chinese OFDI has shifted away from predominantly “greenfield” investment,<sup>560</sup> towards an investment model driven primarily by acquisitions. In 2000, while at low levels, greenfield investment constituted 99.6 percent of all Chinese OFDI flows by value; in

<sup>556</sup> AEI compiles data from publicly available or voluntarily submitted information, for all announced investment transactions over \$100 million in value. This data is premised on the entire value of the transaction, including U.S. domestic financing (*e.g.*, bonds and loans) for projects. *China Global Investment Tracker* (Jan. 2018), AMERICAN ENTERPRISE INSTITUTE, available at <http://www.aei.org/china-global-investment-tracker> (last visited Oct. 25, 2017). For its part, Rhodium collects data through publicly available or voluntarily submitted information, for completed direct investment transactions valued at \$500,000 or more. Transaction values are based on the entire value of transaction, including U.S. domestic financing (*e.g.*, bonds and loans) for projects. *China Investment Monitor* (2017), RHODIUM, available at <http://rhg.com/interactive/china-investment-monitor> (last visited Oct. 25, 2017).

<sup>557</sup> *China Global Investment Tracker* (Jan. 2018), AEI, available at <http://www.aei.org/china-global-investment-tracker> (last visited Oct. 25, 2017).

<sup>558</sup> *China Investment Monitor* (2017), RHODIUM, <http://rhg.com/interactive/china-investment-monitor> (last visited Oct. 25, 2017).

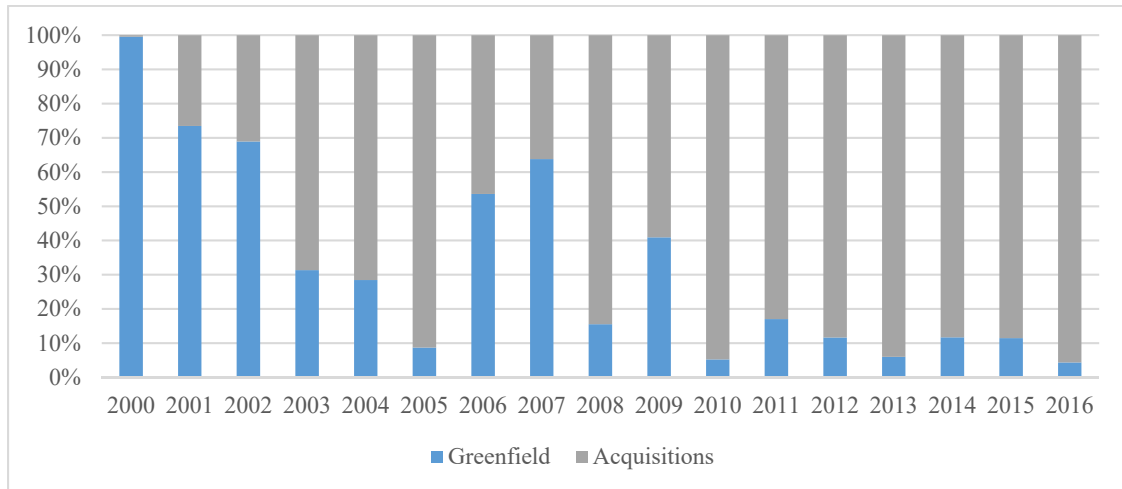
<sup>559</sup> *China Investment Monitor* (2017), RHODIUM, <http://rhg.com/interactive/china-investment-monitor> (last visited Oct. 25, 2017).

<sup>560</sup> For a definition of Greenfield investment, see Erik Canton, Irune Solera, *Greenfield Foreign Direct Investment and Structural Reforms in Europe: What Factors Determine Investments?*, prepared for the European Commission Directorate-General for Economic and Financial Affairs 033 3 (June 2016) (“Three main types of FDI can be distinguished, namely cross-border mergers and acquisitions, greenfield investments and the extension of existing capacity. According to the definition in the data source this paper focuses on the last two: greenfield investments – the creation of a firm from scratch by one or more nonresident investors – and the extension of capacity – an increase in the capital of already established foreign enterprises. [...] Greenfield FDI thus implies an expansion of the capital stock, directly generating new economic activity and jobs. It is also a vehicle for international technology spillovers, and can thereby contribute to productivity growth.”).

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2005-2009, greenfield investments accounted for 22.7 percent of OFDI.<sup>561</sup> In contrast, from 2010 to 2016, greenfield investments made up only 7.6 percent of OFDI, whereas acquisitions accounted for 92.4 percent (*see* Figure 2).

**Figure 2: Chinese OFDI in the United States: Greenfield vs. Acquisitions<sup>562</sup>**



Chinese SOEs have played an important role in shaping these investment flows. From 2000 to 2016, 351 of the 1,395 acquisitions (25 percent) were carried out by government-owned enterprises, which accounted for 29 percent of the monetary value of these deals.<sup>563</sup>

Chinese OFDI also has grown significantly in technology- and innovation-related sectors targeted by Chinese industrial policies. Figure 3 reflects the growth in Chinese OFDI flows into the United States, with respect to seven sectors – automobiles, aviation, electronics, energy, health and biotechnology, industrial machinery (including robotics), and ICT. As this chart reflects, aggregate growth for this group of sectors has risen considerably, from \$1.9 billion in 2005 to \$9.8 billion in 2016. Annual investment totals were particularly high for this group during the 2013-2016 period, when the average annual OFDI was \$6.9 billion.

**Figure 3: Chinese OFDI in the United States: Technology-related Sectors<sup>564</sup>**

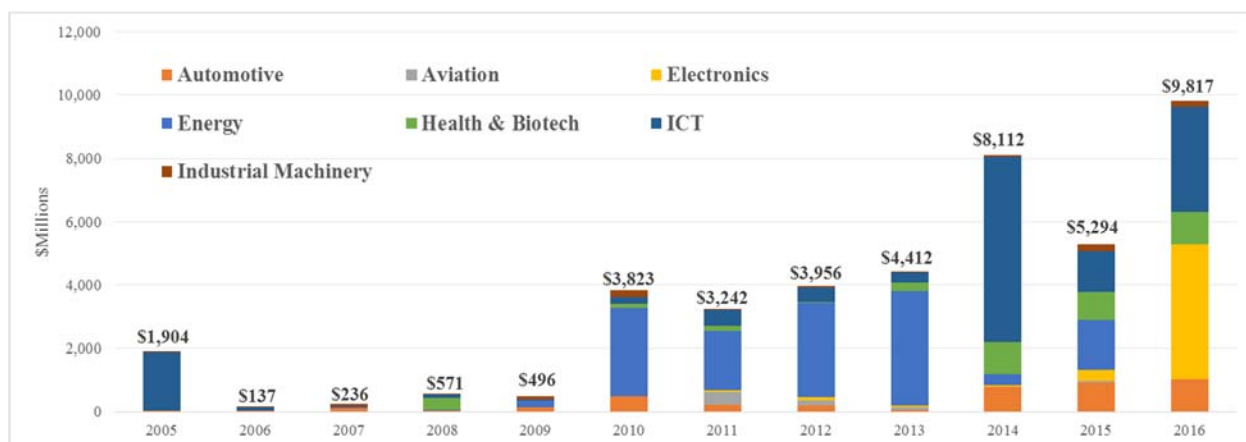
<sup>561</sup> *China Investment Monitor* (2017), RHODIUM, <http://rhg.com/interactive/china-investment-monitor> (last visited Oct. 25, 2017).

<sup>562</sup> *China Investment Monitor* (2017), RHODIUM, <http://rhg.com/interactive/china-investment-monitor> (last visited Oct. 25, 2017).

<sup>563</sup> *China Investment Monitor* (2017), RHODIUM, <http://rhg.com/interactive/china-investment-monitor> (last visited Oct. 25, 2017). Rhodium defines “government-owned enterprises” as central SOEs under State-Owned Assets Supervision Administration and Commission, local SOEs controlled by provincial or municipal governments, sovereign investors, and any other entities that have more than 20 percent combined government ownership. *Sources and Methodology* (2017), RHODIUM, <http://rhg.com/wp-content/themes/rhodium/interactive/china-investment-monitor/sources-and-methodology.html> (last visited Oct. 31, 2017). *See also* Thilo Hanneman, Daniel H. Rosen, RHODIUM, CHINESE INVESTMENT IN THE UNITED STATES: RECENT TRENDS AND THE POLICY AGENDA 66 (Dec. 2016).

<sup>564</sup> *China Investment Monitor* (2017), RHODIUM, <http://rhg.com/interactive/china-investment-monitor> (last visited Oct. 25, 2017). The sectors identified in the chart are intended to be a representative basket of technology-related

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Although trends vary from sector to sector, investment has generally risen significantly across each of the seven sectors.<sup>565</sup>

- Automotive:** Prior to 2014, the largest annual Chinese investment in the U.S. automotive industry was \$474 million, in 2010. During the 2009-2013 period, the average annual investment inflow was \$214 million. In 2014, investment flows in this sector increased to \$771 million, and have risen each subsequent year (\$915 million in 2015 and \$1.0 billion in 2016).<sup>566</sup>
- Aviation:** According to Rhodium, prior to 2010 there was no Chinese investment in the U.S. aviation industry. In 2010, Chinese OFDI was \$5 million in this sector, growing to \$401 million in 2011. The annual average OFDI from 2012 through 2016 was \$66 million. Chinese worldwide investment patterns are more pronounced in this sector. AEI reports that in the 2005-2013 period, there were only 7 investment transactions worldwide, totaling \$2.5 billion; since the start of 2014, there have been 17, totaling \$19.8 billion (of which \$10.4 billion resulted from a single investment in the United States).<sup>567</sup>
- Electronics:** From 2009 through 2014, the annual average Chinese investment in the U.S. electronics industry was \$49 million. In 2015, inflows increased nearly six-fold from the prior year to \$349 million, and then increased twelve-fold over those levels to \$4.2 billion, in 2016.
- Energy:** Before 2010, the largest annual Chinese investment in the U.S. energy industry was \$212 million, in 2009. In the first decade of the 21st century, the annual average investment

industries, drawn from Rhodium data, and not a comprehensive list. Other sectors not identified here also may have a nexus to technology or innovation.

<sup>565</sup> Unless otherwise indicated, data in this paragraph is drawn from *China Investment Monitor* (2017), RHODIUM, <http://rhg.com/interactive/china-investment-monitor> (last visited Oct. 25, 2017).

<sup>566</sup> *China Global Investment Tracker* (2018), AEI, available at <http://www.aei.org/china-global-investment-tracker>, (last visited Oct. 25, 2017).

<sup>567</sup> *China Global Investment Tracker* (2018), AEI, <http://www.aei.org/china-global-investment-tracker>, (last visited Oct. 25, 2017). AEI data includes announced deals, as well as completed transactions; it is possible that some of these transactions have not closed as of the date of publication of this report.

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inflow was a mere \$52.6 million. In 2010, investment in this sector rose to \$2.8 billion, and reached a high of \$3.6 billion in 2013; levels declined thereafter. Chinese worldwide investment patterns show a clear shift to investment in alternative energy<sup>568</sup> since 2013. AEI reports that, in the 2005-2013 period, China's average annual worldwide investment in alternative energy was \$673 million. This average rose to \$4.2 billion during the 2014-2017 period. As reported by AEI, China's only investments in the U.S. energy sector in 2016 and 2017 were in alternative energy, amounting to \$150 million and \$230 million, respectively.<sup>569</sup>

- **Health and Biotechnology:** During the 2009-2013 period, annual Chinese investment in the U.S. health and biotechnology industry averaged \$116 million. In 2014, investment in this sector grew rapidly to \$1.0 billion, and remained at higher levels in 2015 (\$900 million) and 2016 (\$1.0 billion).
- **Information and Communication Technology (ICT):** Before 2014, the largest annual Chinese investment in the U.S. ICT industry was \$1.9 billion, in 2005. In 2009-2013, annual average investment inflow was \$312 million. In 2014, investment in this sector rose to \$5.9 billion and remained at higher levels in 2015 (\$1.3 billion) and 2016 (\$3.3 billion).
- **Industrial Machinery (including Robotics):** The largest annual inflow of investment in industrial machinery and equipment was in 2010, in which investment totaled \$218 million. Average annual investment fell to \$15-\$45 million in 2011-2014. Then, in 2015 and 2016, investment in this industry returned to near-record high levels of \$214 million and \$207 million, respectively.

##### 2. Effect of State Policies and Implementing Measures on Chinese Acquisitions

Growth in Chinese technology investment coincides with an array of policy statements and implementing measures that are geared to promote technology transfer. As discussed in Section IV.B, above, over the past 10-15 years, the Chinese government has deployed a series of state industrial plans, approval mechanisms, and support measures designed to direct and facilitate outbound investment in technology-related sectors.<sup>570</sup> The edifice of policies and implementing measures has grown more elaborate over time, and increasingly tailored to specific sectors. Likewise, aggregate Chinese OFDI in technology has witnessed a substantial increase over this period, particularly since 2009.

This apparent temporal relationship is particularly evident in certain sectors and industries, such as semiconductors. As discussed in Section IV.B.4, above, the Chinese government announced

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<sup>568</sup> "Alternative energy" includes non-fossil fuel energy investments, including renewable energy such as wind and solar, and nuclear energy. According to AEI data, most of the "alternative energy" investments fall under renewable energy, though there are some nuclear transactions, mostly in European countries. *China Global Investment Tracker* (2018), AEI, <http://www.aei.org/china-global-investment-tracker>, (last visited Oct. 25, 2017).

<sup>569</sup> *China Global Investment Tracker* (2018), AEI, <http://www.aei.org/china-global-investment-tracker>, (last visited Oct. 25, 2017). AEI data includes announced deals, as well as completed transactions; it is possible that some of these transactions have not closed as of the date of this report's publication.

<sup>570</sup> As discussed in Section IV.B.1., the antecedents of this policy change were present as early as 2000 with the introduction of the "Going Out" strategy.

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in 2014 a policy to accelerate the development of the IC industry, including semiconductors. Prior to this announcement, global outbound Chinese investment in semiconductor manufacturing did not exceed \$1 billion in a single year. In 2014, the value of announced Chinese acquisitions increased to \$3 billion, and in 2015 surged to \$35 billion.<sup>571</sup>

Thus, the aggregate data suggest a possible causal link between state policies and implementing measures, on the one hand, and trends in technology-driven OFDI, on the other. Indeed, given the scope and scale of these measures, it would be surprising if they had no effect on investment flows.

To further examine the impact of state measures on OFDI, USTR reviewed hundreds of reported transactions, in the following technology-intensive sectors: (1) aviation, (2) integrated circuits, (3) information technology, (4) biotechnology, (5) industrial machinery, (6) renewable energy, and (7) automotive. Several of these transactions are discussed in detail below and are presented as representative examples. The analysis is based on publicly available information concerning these transactions, and given the difficulty of obtaining information on the precise role of the government and CCP in individual cases, there are limits to the information available concerning each transaction.

Nonetheless, the evidence establishes that Chinese government policies and measures have had a significant effect on investment in each of the technology-intensive sectors examined. At multiple levels of government – central, regional, and local – the Chinese state has directed and facilitated the acquisition of U.S. companies and assets in these sectors. In the representative examples provided, the transactions align with state objectives and policies, and are often undertaken by SOEs that are, by definition, owned and controlled by the government. Even when undertaken by companies in which the government does not own an observable controlling stake, the transactions identified are frequently guided and directed by the state. CCP members often act as board members and officers of these companies, and are responsive to state directives. In addition, many of these transactions are funded by state-owned entities or banks, often in situations where comparable commercial financing would have been unavailable.

##### *a) Aviation*

#### ***Government Policies***

Chinese investments in the U.S. general aviation (GA) industry illustrate the role of Chinese government policies in directing the commercial activities of Chinese companies.

Obtaining and developing cutting-edge technology in the aviation sector has long been an objective of the Chinese government. As discussed above, aviation technology has featured in numerous state planning documents, such as the *MLP* and the *State Council Opinions on Deepening Reform of the National Defense Science and Technology Industry Investment System*, the measure which called for development of *National Defense Science & Technology Social*

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<sup>571</sup> RHODIUM, *Submission, Section 301 Hearing 4* (Sept. 28, 2017). Rhodium finds that there is a “readily apparent” nexus between Chinese industrial policy and outbound investment in the semiconductor industry.



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*Investment Guidance Catalogue*, which specifically targets aviation.<sup>572</sup> Several five-year plans for China's civil aviation industry underscore the government's objective of developing this technology,<sup>573</sup> as do opinions and directives issued by government ministries such as MOST and SASTIND.<sup>574</sup> These documents confirm that the pursuit of aviation technology is intended to fulfill both civil and military objectives.<sup>575</sup>

Reflecting these objectives, Chinese firms have acquired at least 11 U.S. aviation companies, established three joint ventures, and signed five cooperation agreements since 2005.<sup>576</sup> The central state-owned Aviation Industry Corporation of China (AVIC)<sup>577</sup> leads this investment effort, and, since 2010, has spent more than \$3 billion acquiring U.S. and European aviation companies to address key gaps in general aviation technologies.<sup>578</sup> As the successor to the Ministry of Aviation Industry, AVIC has implicit responsibility for China's state-run aviation sector.<sup>579</sup> AVIC is also the sole domestic supplier of military aircraft to the PLA.<sup>580</sup>

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<sup>572</sup> *Notice on Issuing the National Medium- and Long-Term Science and Technology Development Plan Outline (2006-2020)* (State Council, Guo Fa [2005] No. 44, issued Dec. 26, 2005); *State Council Opinions on Deepening Reform of the National Defense Science and Technology Industry Investment System* (State Council, Guo Han [2007] No. 9, issued Jan. 30, 2007); *Ministry of Industry and Information Technology, Ministry of Science and Technology, National Defense Science & Technology Social Investment Guidance Catalogue (Release of 2010 Edition)* (MIIT, MOST, issued Dec. 1, 2012).

<sup>573</sup> *China Civil Aviation Industry 13th Five-year Development Plan* (CAAC, issued Mar. 2017); *China Civil Aviation Industry 12th Five-year Development Plan* (CAAC, issued Apr. 2011).

<sup>574</sup> *Provisional Measures on the Administration and Approval of Social Investment Projects of National Defense Science and Technology Industry* (MIIT, Ke Kong Ji [2009] Document No. 1516, issued Dec. 30, 2009) manages approval of investments in the *National Defense Science & Technology Social Investment Guidance Catalogue; Opinions Encouraging Technology Transfer and Innovation and Promoting the Transformation of the Growth Mode of Foreign Trade* (MOFCOM, NDRC, MOST, GCA, GTA, SIPO, SAFE, Shang Fu Mao Fa [2006] No. 13, issued July 14, 2006); *2016 SASTIND Military-Civilian Fusion Special Action Plan* (MOST, Guo Gong Ji [2016] No. 204, issued Mar. 16, 2016); *2017 SASTIND Military-Civil Fusion Special Action Plan* (SASTIND, posted June 23, 2017).

<sup>575</sup> *2017 SASTIND Military-Civil Fusion Special Action Plan*, ¶ 2, the action plan identifies three ways in which aviation technology is to be shared: (1) deepening "civil participation in the military" (2) advancing military transfers to civil, and (3) promoting military-civil resource sharing.

<sup>576</sup> See Chad J. R. Ohlandt, et al., RAND, CHINESE INVESTMENT IN U.S. AVIATION, prepared for the U.S.-China Economic & Security Review Commission 45, 54-6, (Mar. 29, 2017).

<sup>577</sup> AVIC is a state-owned industrial conglomerate that focuses on aerospace manufacturing but offers a wide range of goods and services, some of which extend beyond the aerospace sector. See *About Us*, AVIC, <http://www.avic.com/en/aboutwebsite/contactus/index.shtml>, (last visited Dec. 7, 2017) ("The Aviation Industry Corporation of China (AVIC) was founded on November 6th, 2008 through the restructuring and consolidation of the China Aviation Industry Corporation I (AVIC I) and the China Aviation Industry Corporation II (AVIC II). We are centered on aviation and provide complete services to customers in many sectors - from research and development to operation, manufacturing and financing. Our business units cover defense, transport aircrafts, helicopters, avionics and systems, general aviation, research and development, flight testing, trade and logistics, assets management, finance services, engineering and construction, automobiles and more. We have over 100 subsidiaries, nearly 27 listed companies and more than 450,000 employees."). See also *Company Overview of AVIC International Holding Corporation*, BLOOMBERG, <https://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=5480121>, (last visited Dec. 7, 2017).

<sup>578</sup> Greg Levesque, Mark Stokes, POINTE BELLO, BLURRED LINES: MILITARY-CIVIL FUSION AND THE 'GOING-OUT' OF THE CHINESE DEFENSE INDUSTRY 36 (Dec. 2016).

<sup>579</sup> See *About Us*, AVIC, <http://www.avic.com/en/aboutwebsite/contactus/index.shtml> (last visited Dec. 7, 2017).

<sup>580</sup> *Moody's Assigns First-time Baa3 Rating to AVIC International*, MOODY'S INVESTOR SERVICE (Aug. 30, 2013).

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AVIC is the focal point of China's plans to develop a globally competitive aerospace industry. The company holds a 38.18 percent stake<sup>581</sup> in Commercial Aircraft Corporation of China, Ltd. (COMAC), which was established by the Chinese government in 2008 for the purpose of designing and producing commercial aircraft, including the C919 single-aisle large commercial aircraft. The C919 project has served as a catalyst for COMAC, as well as smaller Chinese enterprises along the aerospace supply chain, to work with foreign companies on production tooling and manufacturing processes.<sup>582</sup> This has allowed Chinese aerospace companies – including AVIC itself – to acquire foreign know-how and technology, an important step toward strengthening China's domestic aerospace industry.

AVIC's acquisitions have facilitated the transfer of engine, avionics, and production processes to China, resulting in so-called “breakthroughs” in domestic piston engine technology, solutions to production bottlenecks, and the development of advanced Unmanned Aerial Vehicles (UAV) manufacturing (for both Chinese military use and for export to foreign countries).<sup>583</sup> Moreover, AVIC's acquisitions have provided China with a fully integrated general aviation aircraft engine business encompassing marketing, sales, maintenance, repair, and overhaul (MRO), manufacturing, and R&D.<sup>584</sup> In addition, AVIC acquisitions are supporting its key role in developing China's general aviation infrastructure network<sup>585</sup> in line with China's civil aviation industry development plans.<sup>586</sup>

#### *Chinese Investments in the U.S. General Aviation Sector*

Since 2010, AVIC has acquired the following U.S. companies in the GA sector:

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<sup>581</sup> COMMERCIAL AIRCRAFT CORPORATION OF CHINA, 2016 ANNUAL REPORT 54 [Chinese] (Mar. 2017).

<sup>582</sup> See Micah Springut, Stephen Schlaikjer, David Chen, CENTRA Technology, Inc., *China's Program for Science and Technology Modernization: Implications for American Competitiveness*, prepared for the U.S.-China Economic & Security Review Commission 124-25 (2011) (“China's development of the single-aisle civil airliner C919 is one major project involving multiple multinational suppliers, from whom Chinese companies will learn advanced production tooling and manufacturing processes. Some of the Chinese companies producing subsystems with multinationals will be able to apply their know-how to the J-20 and other military models. Despite both government and corporate technology transfer restrictions and intellectual property guarantees, China's experience working with General Electric and the German firm MTU in producing propulsion units for the C919 could help serve the development of more reliable military jet engines. AVIC subsidiaries, such as Xi'an Aero-engine PLC, also have joint ventures with engine manufacturers Pratt & Whitney, Rolls Royce and Balcke Durr.”). See also Chad J.R. Ohlandt, RAND, *Implications of China's Aerospace Industrial Policies* 76 (testimony presented before the U.S.-China Economic and Security Review Commission on Apr. 27, 2016).

<sup>583</sup> *The Heart of China's Unmanned Aerial Vehicles Will Be Domestic-Made: Precision Shot to Acquire the Top-Tier Manufacturers in the United States and Germany* [Chinese], PHOENIX MILITARY NEWS, Dec. 6, 2016, available at [http://news.ifeng.com/a/20161206/50370941\\_0.shtml](http://news.ifeng.com/a/20161206/50370941_0.shtml); Lin Feng, *China's 'Trojan Horse' has Entered the U.S. Military Enterprises*, VOICE OF AMERICA MANDARIN SERVICE, Apr. 11, 2017.

<sup>584</sup> Press Release, Continental Motors, AVIC International Announces the Formation of Continental Motors Group and Expansion into China, Continental Motors (Apr. 10, 2014) available at <http://www.continentalmotors.aero/xPublications/News%20Releases/AVIC%20International%20announces%20the%20Founding%20of%20the%20Continental%20Motors%20Group>.

<sup>585</sup> *Cirrus Building China GA Infrastructure*, AVIATION INTERNATIONAL NEWS, Apr. 12, 2017.

<sup>586</sup> *China Civil Aviation Industry 12th Five-year Development Plan* (CAAC, issued Apr. 2011); *China Civil Aviation Industry 13th Five-year Development Plan* (CAAC, issued Mar. 2017).

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- **Epic Aircraft**—acquired by China Aviation Industry General Aircraft Co. (CAIGA), an AVIC subsidiary, for \$4.3 million in April 2010 after a bankruptcy judge approved the asset purchase agreement.<sup>587</sup> According to the court, CAIGA’s bid was the highest and best offer.<sup>588</sup> The acquisition included Epic intellectual property and technology.<sup>589</sup>
- **Teledyne Technologies (Continental Motors and Mattituck Services)**—acquired by Technify Motors USA Inc., a subsidiary of AVIC International Holding Corporation, in December 2010 for \$186 million.<sup>590</sup> Continental Motors<sup>591</sup> is a pioneer in the area of full authority digital engine control (FADEC) technology.<sup>592</sup>
- **Cirrus Aircraft**—acquired by CAIGA in February 2011 for \$210 million.<sup>593</sup> At the time of purchase, Cirrus was the second largest manufacturer of GA aircraft and the largest manufacturer of piston-engine powered GA aircraft.<sup>594</sup>
- **Southern Avionics & Communications Inc.**—acquired by Continental Motors Group in November 2014.<sup>595</sup> Southern Avionics is a leader in avionics sales, installation, and service. The company represents most major global avionics manufacturers through distribution or representative agreements.<sup>596</sup>
- **United Turbine and UT Aeroparts**—acquired by Continental Motors Group in January 2015.<sup>597</sup> United Turbine and UT Aeroparts provide turbine aircraft engine and accessory MRO services.
- **Align Aerospace**—acquired by AVIC International in April 2015.<sup>598</sup> Align provides supply chain services for the aerospace industry and distributes fasteners and other hardware for aerospace original equipment manufacturers.

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<sup>587</sup> *Chinese Firm to Buy Epic Assets*, AVIATION INTERNATIONAL NEWS, Apr. 30, 2010.

<sup>588</sup> *Chinese Firm to Buy Epic Assets*, AVIATION INTERNATIONAL NEWS, Apr. 30, 2010.

<sup>589</sup> *Chinese Firm to Buy Epic Assets*, AVIATION INTERNATIONAL NEWS, Apr. 30, 2010.

<sup>590</sup> Press Release, Teledyne Technologies Inc., Teledyne Technologies Agrees to Sell Teledyne Continental Motors to AVIC International (Dec. 14, 2010).

<sup>591</sup> See *Continental Motors Inc.*, BLOOMBERG, <https://www.bloomberg.com/profiles/companies/0116585D:US-continental-motors-inc> (last visited Dec. 7, 2017) (stating that, “Continental Motors, Inc. produces aviation products. The Company manufactures fuel injected, turbocharged, radial, and horizontally opposed cylinder aircraft piston engines for the aerospace industry.”).

<sup>592</sup> Bill Cox, *FADEC Comes of Age*, PLANE & PILOT, Feb. 9, 2010.

<sup>593</sup> Norihiko Shirouzu, *China to Buy Small U.S. Planemaker*, WALL STREET JOURNAL, Mar. 3, 2011.

<sup>594</sup> Chad J. R. Ohlandt, et al., RAND, CHINESE INVESTMENT IN U.S. AVIATION, prepared for the U.S.-China Economic and Security Review Commission 49 (Mar. 29, 2017).

<sup>595</sup> Press Release, Continental Motors, Continental Motors Group Announces Completed Acquisition of Southern Avionics and Communications (Nov. 24, 2014).

<sup>596</sup> Press Release, Continental Motors, Continental Motors Group Announces Completed Acquisition of Southern Avionics and Communications (Nov. 24, 2014).

<sup>597</sup> Press Release, Continental Motors, Continental Motors Services Acquires United Turbine and UT Aeroparts Corporations (Feb. 2, 2015).

<sup>598</sup> Juliet Van Wagenen, *AVIC Looks to Up Global Push with Align Aerospace Acquisition*, AVIATION TODAY, Apr. 2, 2015.

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- **Danbury Aerospace**—acquired by Continental Motors Group in April 2015.<sup>599</sup> Danbury Aerospace specializes in engine design and certification.<sup>600</sup> In October 2016, Danbury operations in San Antonio were closed, resulting in layoffs of 57 people.<sup>601</sup>

AVIC International Holding Corporation subsidiary Technify Motors GmbH acquired German-based Thielert Aircraft in July 2013.<sup>602</sup> Thielert's 1.7L engine powered the MQ-10C Gray Eagle UAV, a derivative of the General Atomics Predator drone used by the U.S. Air Force (a defense article that is export controlled by the International Traffic in Arms Regulations, ITAR).<sup>603</sup> This engine also has been used in the military versions of the Diamond Aircraft DA42,<sup>604</sup> a largely composite twin-engine aircraft used for both manned and unmanned surveillance.<sup>605</sup>

AVIC's GA acquisitions in the United States align with Chinese government aviation S&T and industrial development policy directives. For example, the timing of AVIC's acquisition of U.S. piston engine manufacturers follows the December 2009 release of the *National Defense Science and Technology Social Investment Guidance Catalogue*.<sup>606</sup> Promulgated by MIIT, which regulates the defense industry, the catalogue "guides" domestic investment in defense S&T assets, including UAV manufacturing, and piston engine development and manufacturing.<sup>607</sup> The use of the term "social investment"<sup>608</sup> in Chinese denotes the pursuit of investments which

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<sup>599</sup> Press Release, Continental Motors, Continental Motors to Purchase Assets from Danbury Aerospace (May 4, 2015).

<sup>600</sup> Press Release, Continental Motors, Continental Motors to Purchase Assets from Danbury Aerospace (May 4, 2015). Continental Motors states: "Danbury Aerospace is a holding company that has led the industry in parts manufacturing authorization (PMA) and experimental engine technologies for the certified and experimental piston engine powered segments of the General Aviation market. [...] Its capabilities include PMA design and certification, engine design and certification, operation of a Part 145 Repair Station for piston aircraft engines and parts, manufacturing process design, manufacturing system design and production and sales, service and support."

<sup>601</sup> Rye Druzin, *Aircraft Engine Manufacturer Shuttters San Antonio Factory, Lays Off 56*, MY SAN ANTONIO, Oct. 12, 2016.

<sup>602</sup> Press Release, Continental Motors, AVIC International Holding Corporation Acquires the Assets of Thielert Aircraft Engines Out of Bankruptcy (July 22, 2013).

<sup>603</sup> DEPARTMENT OF DEFENSE, SELECTED ACQUISITION REPORT: MQ-1C UAS GRAY EAGLE 33 (Dec. 31, 2010).

<sup>604</sup> Civil Aviation Safety Investigation Authority, Ministry of Ecology, Sustainable Development, and Energy (France), EVENTS ASSOCIATED WITH AN ENGINE MALFUNCTION; THIELERT TAE 125 ENGINES 7 (2014). available at <https://www.bea.aero/etudes/thielert.tae125.engines/thielert.tae125.engines.pdf>.

<sup>605</sup> Technify Motors GmbH key customers are: manufacturers of new piston engine-powered aircraft; fleets and owner/operators of existing aircraft that would convert from gasoline-fueled engines to diesel-fueled engines; owner/operators requiring maintenance and spare parts for their diesel-fueled aircraft engines; and developers/manufacturers/users of UAVs. AVIC International Holding (HK) Limited notification to the Hong Kong Stock Exchange, *Very Substantial Acquisition and Connected Transaction and Application for Whitewash Waiver and Appointment of Independent Financial Adviser and Clawback Offer by AVIC International (HK) Group Limited* (Sept. 19, 2017).

<sup>606</sup> AVIC's investment activities in the United States significantly ramped up following the release of the *National Defense Science & Technology Social Investment Guidance Catalogue*, as well as other state aviation industrial development policies and the establishment of an aviation industry investment fund, see Mao Haifeng, *China's First National Level Aviation Industry Fund Administration Lists Operations*, XINHUA NEWS, June 28, 2009, available at [http://www.gov.cn/jrzq/2009-06/28/content\\_1352458.htm](http://www.gov.cn/jrzq/2009-06/28/content_1352458.htm) (last visited Feb. 12, 2018).

<sup>607</sup> The catalogue specifically identifies manufacturing of unmanned combat aircraft parts, communications, and electronic warfare platforms (§ 5.1.1) and the development and manufacturing of aviation piston engines (§ 5.3.1) as targets for social investment. See *National Defense Science & Technology Social Investment Guidance Catalogue*.

<sup>608</sup> English translation of Chinese term *shehui touzi*.

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create a positive return to society, including R&D investments that generate a social or public benefit, rather than purely profit.<sup>609</sup>

AVIC's pursuit of state policies is evident in its public statements:

- During a February 2009 meeting between officials from AVIC and the Civil Aviation Administration of China (CAAC), Li Jian, then deputy director of CAAC, stressed that the development of the GA industry was far from meeting central government requirements of economic and social development.<sup>610</sup> In response, then AVIC officer, Xu Zhanbin, replied that the company would promote institutional and technological innovation as soon as possible to achieve breakthroughs in the GA market and effectively promote industry development.<sup>611</sup>
- AVIC president Tan Ruisong has noted that the group's "coordinated development" of its non-aviation civilian business and military business embodies China's Military-Civil Fusion (MCF) strategy, as well as aviation industry policies.<sup>612</sup> AVIC chairman, Lin Zuoming, publicly stated that "AVIC always regards civil-military integration as its historical mission."<sup>613</sup>
- In July 2010, AVIC, the Tianjin Municipal Government, and China Construction Bank set up a CNY 20 billion (\$3 billion) private equity fund to acquire dual-use technology companies and invest in defense R&D projects that support the restructuring and development of China's aviation industry.<sup>614</sup> When announcing the launch of this fund, AVIC specifically referenced restructuring in the U.S. GA market, suggesting that one objective of this fund was to further acquisitions in the U.S. market.<sup>615</sup>

Reflecting the extent of government support of AVIC's commercial activities, both China Exim and PBC have provided financing for AVIC acquisitions in the United States.<sup>616</sup>

AVIC International is in the process of transferring ownership of its U.S. GA subsidiaries (*i.e.*,

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<sup>609</sup> *State Council Guiding Opinions on Innovating Systems for Key Sectors to Encourage Social Investment* (State Council, Guo Fa [2014] No. 60, issued Nov. 24, 2014, effective Nov. 14, 2014).

<sup>610</sup> Press Release, Civil Aviation Administration of China, CAA and AVIC Collaborate on the Future of General Aviation [Chinese] (Feb. 18, 2009), *available at* [http://www.caac.gov.cn/XWZX/MHYW/200902/t20090218\\_12250.html](http://www.caac.gov.cn/XWZX/MHYW/200902/t20090218_12250.html).

<sup>611</sup> Press Release, Civil Aviation Administration of China, CAA and AVIC Collaborate on the Future of General Aviation [Chinese] (Feb. 18, 2009), *available at* [http://www.caac.gov.cn/XWZX/MHYW/200902/t20090218\\_12250.html](http://www.caac.gov.cn/XWZX/MHYW/200902/t20090218_12250.html).

<sup>612</sup> *Convening of AVIC 2016 Non-Aviation Business & Equity Investment Work Meeting* [Chinese], AVIC, (Apr. 23 2016), *available at* <http://www.avic-intl-capital.com/detail.aspx?cid=1577&siteid=27568>.

<sup>613</sup> AVIC, TOGETHER WITH US: SOCIAL RESPONSIBILITY REPORT 2014 8 (June 2015).

<sup>614</sup> *China's First Aviation Industry Support Fund Established* [Chinese], CHINA AVIATION NEWS, July 12, 2010, *available at* <http://www.avic.com/cn/xwzx/jqyw/390801.shtml>.

<sup>615</sup> *China's First Aviation Industry Support Fund Established* [Chinese], CHINA AVIATION NEWS, July 12, 2010, *available at* <http://www.avic.com/cn/xwzx/jqyw/390801.shtml>.

<sup>616</sup> AVIC International Holding (HK) Limited notification to the Hong Kong Stock Exchange, *Very Substantial Acquisition and Connected Transaction and Application for Whitewash Waiver and Appointment of Independent Financial Adviser and Clawback Offer by AVIC International (HK) Group Limited* (Sept. 19, 2017).

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Continental Motors and Cirrus) to a separate AVIC-owned company.<sup>617</sup> According to AVIC, the “proposed reorganization is being contemplated by the Company as part of a wider restructuring campaign being implemented by SASAC.”<sup>618</sup> This announcement underscores the extent to which the Chinese government oversees and directs, through SASAC, the commercial activities of SOEs operating in the United States.

##### *AVIC Technology Transfer—Achieving Breakthroughs*

AVIC’s U.S. GA acquisitions and its transfer of technology appear to conform to a government-prescribed policy of introducing, digesting, absorbing, and re-innovating foreign acquired technology (see IDAR policy discussed in Section I). Research conducted by a Chinese defense industry analyst documents this IDAR process in relation to AVIC’s GA engine acquisitions in the United States and Europe.<sup>619</sup> According to this report, piston engine technology transferred to China, including Chinese universities, from several sources – including Continental Motors, Thielert Aircraft, and Cirrus Aircraft, as well as joint development agreements covering single engine turboprops and piston engines with Cessna – has led to “breakthroughs” in piston engine technology and production bottlenecks.<sup>620</sup> Key breakthroughs were achieved in gasoline-modified heavy oil technology, electric fuel injection technology, and turbocharging.<sup>621</sup>

U.S. companies acquired by AVIC now provide ongoing R&D and fill critical nodes in China’s GA aircraft and piston engine manufacturing industry. For example, in April 2014, AVIC announced the consolidation of “its aircraft engine businesses under a single corporate structure” — Hong Kong incorporated Continental Motors Group Limited (CMG).<sup>622</sup> Following the incorporation of CMG, AVIC expanded its GA technology portfolio by acquiring Danbury Aerospace, United Turbine & UT Aeroparts, and Southern Avionics and Communications.<sup>623</sup> According to a company press release, these acquisitions were driven by AVIC’s “special place

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<sup>617</sup> AVIC International Holding (HK) Limited notification to the Hong Kong Stock Exchange, *Potential Continuing Connected Transactions* (Oct. 24, 2017).

<sup>618</sup> AVIC International Holding (HK) Limited notification to the Hong Kong stock exchange, *Very Substantial Acquisition and Connected Transaction and Application for Whitewash Waiver and Appointment of Independent Financial Adviser and Clawback Offer by AVIC International (HK) Group Limited* 15 (Sept. 19, 2017).

<sup>619</sup> *The Heart of China’s Unmanned Aerial Vehicles Will Be Domestic-Made: Precision Shot to Acquire the Top-Tier Manufacturers in the United States and Germany* [Chinese], PHOENIX MILITARY NEWS, Dec. 6, 2016, available at [http://news.ifeng.com/a/20161206/50370941\\_0.shtml](http://news.ifeng.com/a/20161206/50370941_0.shtml).

<sup>620</sup> *The Heart of China’s Unmanned Aerial Vehicles Will Be Domestic-Made: Precision Shot to Acquire the Top-Tier Manufacturers in the United States and Germany* [Chinese], PHOENIX MILITARY NEWS, Dec. 6, 2016, available at [http://news.ifeng.com/a/20161206/50370941\\_0.shtml](http://news.ifeng.com/a/20161206/50370941_0.shtml).

<sup>621</sup> *The Heart of China’s Unmanned Aerial Vehicles Will Be Domestic-Made: Precision Shot to Acquire the Top-Tier Manufacturers in the United States and Germany* [Chinese], PHOENIX MILITARY NEWS, Dec. 6, 2016, available at [http://news.ifeng.com/a/20161206/50370941\\_0.shtml](http://news.ifeng.com/a/20161206/50370941_0.shtml).

<sup>622</sup> Press Release, Continental Motors, AVIC International Announces the Formation of Continental Motors Group and Expansion into China (Apr. 10, 2014), available at <http://www.continentalmotors.aero/xPublications/News%20Releases/AVIC%20International%20announces%20the%20Founding%20of%20the%20Continental%20Motors%20Group>.

<sup>623</sup> Press Release, Continental Motors Group Announces Completed Acquisition of Southern Avionics and Communications (Nov. 24, 2014); Press Release, Continental Motors, Continental Motors Services Acquires United Turbine and UT Aeroparts Corporation (Feb. 2, 2015); Press Release, Continental Motors, Continental Motors to Purchase Assets from Danbury Aerospace (May 4, 2015).

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and obligation to bring general aviation products to China.”<sup>624</sup>

Consolidation of AVIC-acquired GA assets in the United States has provided the company a fully integrated GA aircraft engine marketing, sales, MRO, manufacturing, and R&D business.<sup>625</sup> As AVIC notes, “CMG is the only global player capable of designing, manufacturing and maintaining both gasoline and diesel piston engines.”<sup>626</sup>

##### *b) Integrated Circuits*

#### **Government Policies**

As the SIA has observed, “[s]emiconductors are the building blocks upon which U.S. technological leadership rests.”<sup>627</sup> Semiconductors play a key role in many sectors of the economy that are at the forefront of U.S. competitiveness.<sup>628</sup> Likewise, a strong domestic IC sector is important to U.S. national security.<sup>629</sup>

An erosion of U.S. technological leadership in this sector could have significant and potentially irreversible effects. As Robert Atkinson of the Information Technology and Innovation Foundation (ITIF) has observed:

[I]f America’s technology base was substantially lost, no adjustment of currency decline could bring it back because national strength in technology industries is based less on cost and more on a complex array of competencies at the firm- and ecosystem-level. *For example, a firm could not simply buy some semiconductor equipment and start cranking out chips.* To do that would require not just machines but deep and complex tacit knowledge embedded in the firm in workers from the shop floor to research and development (R&D) scientists coupled with an innovation ecosystem (universities training the right talent, a network of suppliers of materials, etc.). *Once those capabilities are lost, they are essentially gone, and are very difficult to resurrect.*<sup>630</sup>

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<sup>624</sup> Press Release, Continental Motors, AVIC International Announces the Formation of Continental Motors Group and Expansion into China (Apr. 10, 2014), available at <http://www.continentalmotors.aero/xPublications/News%20Releases/AVIC%20International%20announces%20the%20Founding%20of%20the%20Continental%20Motors%20Group>.

<sup>625</sup> Press Release, Continental Motors, AVIC International Announces the Formation of Continental Motors Group and Expansion into China (Apr. 10, 2014), available at <http://www.continentalmotors.aero/xPublications/News%20Releases/AVIC%20International%20announces%20the%20Founding%20of%20the%20Continental%20Motors%20Group>.

<sup>626</sup> Press Release, Continental Motors, AVIC International Announces the Formation of Continental Motors Group and Expansion into China (Apr. 10, 2014), available at <http://www.continentalmotors.aero/xPublications/News%20Releases/AVIC%20International%20announces%20the%20Founding%20of%20the%20Continental%20Motors%20Group>.

<sup>627</sup> SIA, *Submission, Section 301 Hearing 2* (Oct. 5, 2017).

<sup>628</sup> SIA, *Submission, Section 301 Hearing 2* (Oct. 5, 2017).

<sup>629</sup> *China’s Technological Rise: Challenges to U.S. Innovation and Security: Hearing Before the House Committee on Foreign Affairs, Subcommittee on Asia and the Pacific*, 115th Cong. 11 (2017) (Statement of Robert D. Atkinson) (emphasis added).

<sup>630</sup> *China’s Technological Rise: Challenges to U.S. Innovation and Security: Hearing Before the House Committee on Foreign Affairs, Subcommittee on Asia and the Pacific*, 115th Cong. 4 (2017) (Statement of Robert D. Atkinson).

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In recent decades, the Chinese government has repeatedly underscored the importance of developing an indigenous IC industry and challenging U.S. leadership in this sector. Since 2014, the government has taken concrete steps to realize this objective, mobilizing multiple state actors and committing vast sums of money to support the acquisition of foreign IC technology. Chinese companies have been close partners in this effort, and have embarked on what one participant in the investigation referred to as a “buying spree”<sup>631</sup> – acquiring a large number of foreign IC companies and assets, primarily in the United States.

In its five-year plans for the Chinese economy, the government has consistently flagged the IC industry as a national priority:

- In 1991 China’s *8th Five-year National Economic and Social Development Plan Outline (8th Five-year Plan)* called the development of the domestic integrated circuit industry a “main task”<sup>632</sup> of the state.<sup>633</sup>
- In 1996, China’s *9th Five-year National Economic and Social Development Plan Outline and 2010 Long-Term Goals (9th Five-year Plan)* called for the development of new generation integrated circuits, and for China to catch up to global technology levels.<sup>634</sup>
- In 2001, the *10th Five-year National Economic and Social Development Plan Outline (10th Five-year Plan)* called for the focused development of high-tech industries with localized breakthroughs and development, as well as using the IDAR approach to “vigorously develop the IC and software industry.”<sup>635</sup>
- In 2006, China’s *11th Five-year National Economic and Social Development Plan Outline (10th Five-year Plan)* called for the “vigorous” development of integrated circuits and other industries at the core of the “digitization trend.”<sup>636</sup>
- In 2011, China’s *12th Five-year National Economic and Social Development Plan Outline (12th Five-year Plan)* once again called for rapid development by cultivating a group of “backbone enterprises”<sup>637</sup> and demonstration bases in the strategic emerging industries.<sup>638</sup>

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<sup>631</sup> ITIF, *Submission, Section 301 Hearing 9* (Oct. 25, 2017).

<sup>632</sup> English translation for Chinese term *zhuyao renwu*.

<sup>633</sup> *8th Five-year National Economic and Social Development Plan Outline* § 1(3) (adopted by the NPC on Apr. 9, 1991).

<sup>634</sup> *9th Five-year National Economic and Social Development Plan Outline and 2010 Long-Term Goals* § 2(4) (adopted by the NPC on Mar. 17, 1996).

<sup>635</sup> *10th Five-year National Economic and Social Development Plan Outline* Ch. 6 § 3 (adopted by the NPC on Mar. 15, 2001).

<sup>636</sup> *11th Five-year National Economic and Social Development Plan Outline* Ch. 10 § 1 (adopted by the NPC on Mar. 14, 2006).

<sup>637</sup> English translation for Chinese term *gugan qiye*.

<sup>638</sup> *12th Five-year National Economic and Social Development Plan Outline* Ch. 10 § 2 (adopted by the NPC on Mar. 14, 2011).



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- In 2016, China's *13th Five-year National Economic and Social Development Plan Outline (13th Five-year Plan)* called for the active promotion of advanced semiconductor technology.<sup>639</sup>

A series of other government policies and planning documents echo the consistent message of the Five-year Plans. For instance, policies addressing the broad development of science and technology call for the support of a domestic IC industry.<sup>640</sup> In addition, the government released several policies and plans that are specific to the IC industry, and call for its promotion and development.<sup>641</sup>

MIIT's issuance of the *Guidelines for the Development and Promotion of the Integrated Circuit Industry (IC Guidelines)* in 2014 marked a turning point in the evolution of Chinese policy in the IC sector. This measure called for establishing a National IC Industry Development Leading Small Group, with responsibility for the overall design and coordination of China's IC industry development.<sup>642</sup>

The *IC Guidelines* also called for substantial funding to support the growth of China's IC industry. The *IC Guidelines* directed the creation of a National IC Fund to mobilize capital from large enterprises, financial organizations, and society to invest in the development of China's IC industry and promote industrial upgrading.<sup>643</sup> The *IC Guidelines* also called for policy banks (in particular, China Exim and CDB) and commercial banks to provide financial support to the IC industry.<sup>644</sup>

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<sup>639</sup> *13th Five-year National Economic and Social Development Plan Outline* Ch. 23 § 1 (adopted by the NPC on Mar. 16, 2016).

<sup>640</sup> These include the *Notice on Issuing the National Medium- and Long-Term Science and Technology Development Plan Outline (2006-2020)* (State Council, Guo Fa [2005] No. 44, issued Dec. 26, 2005); see also *Several Supporting Policies for Implementing the "National Medium- and Long-Term Science and Technology Development Plan Outline (2006-2020)"* (State Council, Guo Fa [2006] No. 6, issued Feb. 7, 2006); *11th Five-year Science and Technology Development Plan* (MOST, issued Oct. 27, 2006); *Electronic Information Industry Restructuring and Revitalization Plan* (State Council, published Apr. 15, 2009); *Decision on Accelerating and Fostering the Development of Strategic Emerging Industries* (State Council, Guo Fa [2010] No. 32, issued Oct. 18, 2010); *Notice on the National 12th Five-year Science and Technology Development Plan* (MOST, issued July 4, 2011); *Notice on Corporate Income Tax Policies to Further Encourage the Development of the Software and Integrated Circuit Industries* (State Council, Guo Fa [2011] No. 4, issued Jan. 28, 2011); *Notice on Issuing the 12th Five-year National Strategic Emerging Industries Development Plan* (State Council, Guo Fa [2012] No. 28, issued July 9, 2012); *Made in China 2025 Notice*; *Made in China 2025 Roadmap*; *Ministry of Industry and Information Technology Notice on Issuing the Industry Technology Innovation Capacity Development Plan (2016-2020)* (MIIT, Gong Xin Bu Gui [2016] No. 344, issued Oct. 31, 2016); *Notice on Issuing the National 13th Five-year Science and Technology Innovation Plan* (State Council, Guo Fa [2016] No. 43, issued July 28, 2016); *Notice on the 13th Five-year Strategic Emerging Industries Development Plan* (State Council, Guo Fa [2016] No. 67, issued Nov. 29, 2016).

<sup>641</sup> *12th Five-year Development Plan for the Integrated Circuit Industry [hereinafter "IC 12th Five-year Plan"]* (MIIT, issued Feb. 24, 2012); *Notice on Issuing Several Policies to Further Encourage the Development of the Software and Integrated Circuit Industries* (State Council, Guo Fa [2011] No. 4, issued Jan. 28, 2011); *Notice on Issuing Several Policies to Encourage the Development of the Software and Integrated Circuit Industries* (State Council, Guo Fa [2000] No. 18, issued June 24, 2000).

<sup>642</sup> *IC Guidelines* § 4(1).

<sup>643</sup> *IC Guidelines* § 4(2).

<sup>644</sup> *IC Guidelines* § 4(3).

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Taken together, the series of policies and plans issued by the Chinese governments set out a comprehensive strategy for developing indigenous IC capacity and reducing imports. In these documents, the Chinese government disapproves of the fact that China relies on imports of IC products, and underscores the importance of achieving a self-sufficient IC industry that is capable of meeting domestic demand and contributing to exports.<sup>645</sup> Indeed, some plans set specific targets for domestic market share to be achieved by Chinese companies,<sup>646</sup> and call for a technologically advanced and “secure and reliable” IC industry by 2020.<sup>647</sup>

China’s strategy calls for creating a closed-loop semiconductor manufacturing ecosystem with self-sufficiency at every stage of the manufacturing process – from IC design and manufacturing to packaging and testing, and the production of related materials and equipment.<sup>648</sup>

A central pillar of this strategy is achieving technology transfer through foreign acquisitions. For example, the *Notice on Issuing the Industrial Technology Innovation Capability Development Plan (2016-2020)* expressly encourages foreign acquisitions to increase the international competitiveness of China’s domestic industry through “*technology acquisition*”<sup>649</sup> and “*technology transfer*”<sup>650</sup>.<sup>651</sup> The *National 13th Five-year Science and Technology Innovation Plan* calls for the “capture<sup>652</sup> of ‘key core technologies’ (electronic components, high-end telecom chips, foundational software), integrated circuit equipment, broadband mobile communications [...]”<sup>653</sup> State plans also underscore the need to apply the IDAR method to cultivate the domestic IC industry.<sup>654</sup>

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<sup>645</sup> See e.g., *Notice on Issuing Several Policies to Encourage the Development of the Software and Integrated Circuit Industries* (State Council, Guo Fa [2000] No. 18, issued June 30, 2000), which provides at art. 2: “Through 5 to 10 years of efforts, domestically produced software products are to be able to satisfy a large portion of domestic market demand, and achieve a large volume of exports; domestically produced integrated circuit products are to be able to satisfy a large portion of domestic market demand, and achieve a certain volume of exports. At the same time, further shrink the gap with advanced countries in developing and manufacturing technology.” See also § 1.1.1 of the *Made in China 2025 Roadmap*, which notes that in 2015, China’s domestic IC production was \$48.3 billion, which satisfied 41 percent of China’s domestic demand. China’s domestic IC production is forecast to reach \$85.1 billion by 2020, meeting 49 percent of China’s domestic demand, and \$183.7 billion by 2030, meeting 75 percent of China’s domestic demand. Therefore, meeting domestic demand, increasing China’s rate of IC self-sufficiency, and at the same time satisfying China’s needs for national security is the greatest requirement and motivation of developing China’s IC industry.

<sup>646</sup> See e.g., *Notice on the 12th Five-year Strategic Emerging Industries Development Plan* (State Council, Guo Fa [2012] No. 28, issued July 9, 2012), which provides at § 4(1): “By 2015, raise IC industry value-added domestic market share from five percent to 15 percent.”

<sup>647</sup> *IC Guidelines* § 2(3).

<sup>648</sup> *IC Guidelines* § 2(3); *Notice on the 12th Five-year Strategic Emerging Industries Development Plan*, Box 5.

<sup>649</sup> English translation of the Chinese term *jishu bingou*.

<sup>650</sup> English translation of the Chinese term *jishu zhuananyi*.

<sup>651</sup> *Ministry of Industry and Information Technology Notice on Issuing the Industry Technology Innovation Capacity Development Plan (2016-2020)* (MIIT, Gong Xin Bu Gui [2016] No. 344, issued Oct. 31, 2016) (emphasis added).

<sup>652</sup> English translation of the Chinese term *gongke*.

<sup>653</sup> *Notice on Issuing the National 13th Five-year Science and Technology Innovation Plan* Ch. 4 § 1 (State Council, Guo Fa [2016] No. 43, issued Aug. 8, 2016).

<sup>654</sup> *IC 12th Five-year Plan* § 3(1), “Guiding Thoughts, Basic Principles, and Development Targets”. (“Strengthen introduce, digest, absorb, and re-innovate, and tread a path of method innovation and internationalizing development.”).

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State funding plays a key role in this acquisition strategy. State policies call on the departments under the State Council and all levels of local governments to develop financing measures, including policy funds, loan guarantees, and new financial instruments, to support this effort.<sup>655</sup>

Ultimately, the objective of these policies is to create competitive Chinese enterprises in the IC sector. The policies prioritize the cultivation of strong backbone enterprises to upgrade domestic competitiveness and perfect the industrial ecosystem.<sup>656</sup> The formation of a favorable industrial ecosystem environment is intended to include clusters of upstream and downstream enterprises achieving breakthroughs and upgrading along the value chain.<sup>657</sup> These enterprises – supported by a network of government bodies, investment funds, research institutions, legal organizations, and other intermediary organizations – should play a key role in acquiring foreign technology and introducing it to the domestic industrial ecosystem.<sup>658</sup> The *13th Five-year Science and Technology Innovation Plan* released in 2016 calls specifically for supporting Beijing and Shanghai in building globally influential science and technology innovation centers, including internationally competitive high-tech industrial clusters.<sup>659</sup>

#### *Chinese Investments in the U.S. Integrated Circuit Sector*

In recent years, these policy directives have prompted a flood of foreign acquisitions. Since 2014, when the government issued the Guidelines, Chinese companies and investors – often backed by state capital – have undertaken a series of acquisitions to achieve technology breakthrough, shrink the technology gap between China and advanced countries, cultivate domestic innovation clusters, and reduce China’s reliance on IC imports. Government leadership in these operations is clear. In many cases, the Chinese acquirers openly admit the role played by the state in guiding and facilitating these acquisitions.

Below, several Chinese acquisitions of U.S. companies and assets that illustrate this development are discussed in detail.

#### Beijing E-Town Chipone/iML

On June 1, 2016, California-based Exar Corporation agreed to sell its subsidiary, Integrated Memory Logic Limited (iML), to Beijing E-Town Chipone Technology Co., Ltd. (Beijing E-Town Chipone) for \$136 million. iML is a leading provider of power management and color calibration solutions for the flat-panel display and LED lighting markets.<sup>660</sup>

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<sup>655</sup> *Notice on Issuing Several Policies on Further Encouraging the Development of the Software and Integrated Circuit Industries* § 4(2) (State Council, Guo Fa [2011] No. 4, issued Jan. 28, 2011); *Electronic Information Industry Restructuring and Revitalization Plan* § 2(12) (State Council, issued Apr. 15, 2009).

<sup>656</sup> *IC 12th Five-year Plan* § 4(1).

<sup>657</sup> *IC Guidelines* § 4(6).

<sup>658</sup> *Notice on the 13th Five-year National Strategic Emerging Industries Development Plan* § 9(3) (State Council, Guo Fa [2016] No. 67, issued Nov. 29, 2016).

<sup>659</sup> *Notice on Issuing the National 13th Five-year Science and Technology Innovation Plan* Ch. 11, § 3 (State Council, Guo Fa [2016] No. 43, issued Aug. 8, 2016).

<sup>660</sup> Exar Corporation 8-K filed with the Securities and Exchange Commission on May 31, 2015. Commission File No. 0-14225.

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Beijing E-Town Chipone was formed by Beijing E-Town and Chipone Technology Co., Ltd. (Chipone). (Beijing E-Town is both a separate entity and a partner with Chipone in forming Beijing E-Town Chipone, the vehicle used to acquire iML.) Beijing E-Town is an SOE, and provided the largest source of capital for the acquisition of iML.<sup>661</sup> As discussed in Section IV.B.5, above, Beijing E-Town was established and approved by the Beijing Municipal Government in February 2009, and is wholly owned and controlled by the Beijing Economic-Technological Development Zone State Asset Management Office.<sup>662</sup>

Beijing E-Town's investment strategy reflects Chinese government policy and strategy. According to a 2015 presentation by General Manager Wang Xiaobo, Beijing E-Town seeks to integrate government leadership and market operations in building a system of funds that includes the National IC Fund, provincial/municipal-level funds, and smaller VC funds.<sup>663</sup> This system of funds seeks to accelerate industrial clustering, incubate innovation, and cultivate an industrial ecosystem.<sup>664</sup>

A key aspect of Beijing E-Town's investment philosophy is the objective of clustering technology companies in the Beijing Economic-Technological Development Zone.<sup>665</sup> According to an article on the Beijing Economic-Technological Development Zone website, sources familiar with the acquisition say that after Chipone has integrated iML, Chipone plans to move iML operations to its headquarters in the Beijing Economic-Technological Development Zone.<sup>666</sup>

Beijing E-Town's goal is to partner with domestic industry leaders to promote international acquisitions to acquire a number of key technologies in the IC industry – including mobile telecom base chips, RF chips, memory chips, IGBT / power electronics, LCD driver chips, CPU

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<sup>661</sup> To finance the acquisition entity, Beijing E-Town International Emerging Industries Investment Center, which is 92.83 percent owned by Beijing E-Town, contributed CNY 500 million (\$74 million) (45.5 percent), Chipone contributed CNY 400 million (\$59 million) (36.4 percent), and real-estate company named Beijing Yongchang Huanyu contributed CNY 200 million (\$30 million) (18.2 percent), for a total of CNY 1.1 billion (\$163 million). See *China's National Enterprise Credit Information Publicity System* [Chinese], available at <http://www.gsxt.gov.cn>; *Qi Xin Bao database* [Chinese], available at <http://www.qixin.com>; *CCXR 2017 Credit Report on Beijing E-Town International Investment and Development Co., Ltd.* 22 [Chinese] (Credit Committee [2017] No. G229-1).

<sup>662</sup> *CCXR 2017 Credit Report on Beijing E-Town International Investment and Development Co., Ltd.* [Chinese] (Credit Committee [2017] No. G229-1).

<sup>663</sup> Wang Xiaobo, General Manager Beijing E-Town, Presentation at TIF China 2015, *Establishing an Investment Financing Platform; Promoting Development of the Integrated Circuit Industry* [Chinese] (Mar. 2015), available at [http://www.semi.org/en/sites/semi.org/files/data15/docs/Wangxiaobo\\_TIF.pdf](http://www.semi.org/en/sites/semi.org/files/data15/docs/Wangxiaobo_TIF.pdf).

<sup>664</sup> Wang Xiaobo, General Manager Beijing E-Town, Presentation at TIF China 2015, *Establishing an Investment Financing Platform; Promoting Development of the Integrated Circuit Industry* [Chinese] (Mar. 2015), available at [http://www.semi.org/en/sites/semi.org/files/data15/docs/Wangxiaobo\\_TIF.pdf](http://www.semi.org/en/sites/semi.org/files/data15/docs/Wangxiaobo_TIF.pdf).

<sup>665</sup> Wang Xiaobo, General Manager Beijing E-Town, Presentation at TIF China 2015, *Establishing an Investment Financing Platform; Promoting Development of the Integrated Circuit Industry* [Chinese] (Mar. 2015), available at [http://www.semi.org/en/sites/semi.org/files/data15/docs/Wangxiaobo\\_TIF.pdf](http://www.semi.org/en/sites/semi.org/files/data15/docs/Wangxiaobo_TIF.pdf).

<sup>666</sup> *Development Area's IC Industry Pours a Strong Dose of 'Chips'* [Chinese], BDA Nov. 11, 2016, available at <http://www.bda.gov.cn/cms/jryz/136640.htm>.

#### IV. Outbound Investment

chips, MEMS sensor chips. This strategy is intended to effect technology transfer, and in so doing, achieve the government's stated objective of reducing China's reliance on IC imports.<sup>667</sup>

Consistent with this strategy, Beijing E-Town's partner in the iML acquisition, Chipone, has publicly stated that the iML acquisition was undertaken to further Chinese national policy goals to limit IC imports. According to Chipone's press release for the iML acquisition, domestic Chinese flat-panel display chip producers have an obligation to substitute domestic production for imports, and the acquisition of iML would reduce IC imports in the flat-panel display industry.<sup>668</sup>

The iML acquisition hinged on Beijing E-Town's financial support, which took three forms: (1) a loan guarantee of CNY 200 million (\$30 million) to Chipone;<sup>669</sup> (2) the provision of land and capital to one of Chipone's largest customers – the liquid crystal display manufacturer BOE,<sup>670</sup> which is also located in the Beijing Economic-Technological Development Zone cluster;<sup>671</sup> and (3) a financial commitment of CNY 10 billion (\$1.5 billion) to the National IC Fund by Beijing E-Town on behalf of Beijing municipality,<sup>672</sup> which played an indirect role in the acquisition of iML.<sup>673</sup>

#### Beijing E-Town/Mattson

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<sup>667</sup> Wang Xiaobo, General Manager Beijing E-Town, Presentation at TIF China 2015, *Establishing an Investment Financing Platform; Promoting Development of the Integrated Circuit Industry* [Chinese] (Mar. 2015), available at [http://www.semi.org/en/sites/semi.org/files/data15/docs/Wangxiaobo\\_TIF.pdf](http://www.semi.org/en/sites/semi.org/files/data15/docs/Wangxiaobo_TIF.pdf).

<sup>668</sup> Press Release, Chipone, Chipone Announces Acquisition of iML, 1+1>2 Strengthen Future Development New Force [Chinese] (Nov. 10, 2016), available at [http://www.chiponeic.com/content/details11\\_299.html](http://www.chiponeic.com/content/details11_299.html).

<sup>669</sup> *CCXR 2017 Credit Report on Beijing E-Town International Investment and Development Co., Ltd.* 19 [Chinese] (Credit Committee [2017] No. G229-1).

<sup>670</sup> *Chipone's LCD Driver Chip Mass Produced for BOE's 32-inch TV Screen* [Chinese], CHIPONE, Oct. 29, 2015, available at [http://www.chiponeic.com/content/details11\\_267.html](http://www.chiponeic.com/content/details11_267.html). Wang Xiaobo, General Manager Beijing E-Town, Presentation at TIF China 2015, *Establishing an Investment Financing Platform; Promoting Development of the Integrated Circuit Industry* [Chinese] (Mar. 2015), available at [http://www.semi.org/en/sites/semi.org/files/data15/docs/Wangxiaobo\\_TIF.pdf](http://www.semi.org/en/sites/semi.org/files/data15/docs/Wangxiaobo_TIF.pdf).

<sup>671</sup> Wang Xiaobo, General Manager Beijing E-Town, Presentation at TIF China 2015, *Establishing an Investment Financing Platform; Promoting Development of the Integrated Circuit Industry* [Chinese] (Mar. 2015), available at [http://www.semi.org/en/sites/semi.org/files/data15/docs/Wangxiaobo\\_TIF.pdf](http://www.semi.org/en/sites/semi.org/files/data15/docs/Wangxiaobo_TIF.pdf).

<sup>672</sup> *CCXR 2017 Credit Report on Beijing E-Town International Investment and Development Co., Ltd.* 12 [Chinese] (Credit Committee [2017] No. G229-1).

<sup>673</sup> SMIC received an investment of approximately \$400 million from the National IC Fund in February 2015. Press Release, SMIC Receives Investment from China Integrated Circuit Industry Investment Fund (Feb. 12, 2015), [http://www.smics.com/eng/press/press\\_releases\\_details.php?id=264990](http://www.smics.com/eng/press/press_releases_details.php?id=264990). SMIC received another investment of approximately \$750 million from the Shanghai IC Fund in January 2016. *SMIC to Benefit from \$3 Billion Investment*, EE TIMES, Jan. 26, 2016. Beijing E-town also provided CNY 700 million (\$111 million) to finance the B2 300nm fab, which is located in the Beijing Economic-Technological Development Area (Beijing E-Town Investment Strategy - March 2015 [Chinese], slide 13). SMIC is both an investor in and a major customer of Chipone. In March 2014, SMIC established China Fortune-Tech Capital with an initial size of CNY 500 million (\$76 million), of which 75 percent came from SMIC and 25 percent came from Finehome Holding Group. (*SMIC Establishes Fund to Invest in Integrated Circuits* [Chinese], SINA FINANCE, Mar. 3, 2014, <http://finance.sina.com.cn/stock/hkstock/ggscyd/20140303/094118384624.shtml>). Chipone lists investment from China Fortune-Tech Capital in December 2015 as a major milestone. *Chipone IC Timeline*, CHIPONE, <http://www.chiponeic.com/auto/f-course.html>. Chipone signed the agreement to acquire iML six months after receiving this investment and completed the acquisition 11 months after.

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In December 2015, a wholly-owned subsidiary of Beijing E-Town acquired Mattson Technology, Inc. (Mattson), a global semiconductor wafer processing equipment provider.<sup>674</sup> Under the terms of the sale, Beijing E-Town acquired all of the outstanding shares of Mattson for \$3.80 per share in cash. The price “represents a 55 percent premium to the 30-trading day average closing price for the period ending December 1, 2015, a 23 percent premium to Mattson’s closing stock price on December 1, 2015, and values Mattson’s equity at approximately \$300 million on a fully diluted basis.”<sup>675</sup>

According to Beijing E-Town’s 2016 bond prospectus, through this acquisition Beijing E-Town acquired the “millisecond anneal, rapid thermal processing, laser etching, and other key technologies in the semiconductor chip processing area.”<sup>676</sup> Beijing E-Town explained that, along with other IC acquisitions, the Mattson acquisition implemented the national strategy of “cultivating strategic emerging industries” and “strengthening smart manufacturing capability.”<sup>677</sup>

##### Uphill Investment Co./Integrated Silicon Solutions (ISSI)

In June 2015, the shareholders of Integrated Silicon Solutions (ISSI) approved the company’s acquisition by Uphill Investment Co. (Uphill), a Chinese investment consortium led by SummitView Capital, eTown MemTek, Hua Capital, and Huaqing Jiye Investment Management Co. Ltd.

After several rounds of bidding against U.S.-based Cypress Semiconductor Corp. (Cypress), Uphill’s winning bid and final purchase price was \$23 per share, yielding a purchase price of approximately \$765 million<sup>678</sup> – well in excess of the initial price proposed by ISSI (\$18.19 per share).<sup>679</sup> At the time, industry analysts observed that “ISSI was a particularly desirable acquisition for Cypress because of its patents.”<sup>680</sup> Nonetheless, Cypress was outbid by its Chinese competitor.

Uphill’s acquisition of ISSI was made possible by state support and financing. The Uphill consortium was comprised of a network of investment funds working to achieve Chinese state objectives:

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<sup>674</sup> Beijing E-Town Dragon Semiconductor Industry Investment Center (Limited Partnership) (E-Town Dragon) is a wholly owned subsidiary of Beijing E-Town International Investment & Development Co., Ltd. (Beijing E-Town). See CCXR, 2017 CREDIT REPORT ON BEIJING E-TOWN 22 (2017).

<sup>675</sup> Press Release, Mattson Technology, Mattson Technology, Inc. Enters into a Definitive Agreement to be Acquired by the Beijing E-Town Dragon Semiconductor Industry Investment Center for \$3.80 per Share in Cash, (Dec. 1, 2015).

<sup>676</sup> BEIJING E-TOWN INTERNATIONAL INVESTMENT AND DEVELOPMENT CO., LTD. 2016 PUBLIC BOND ISSUANCE COLLECTION MANUAL ABSTRACT 1-2-58 [Chinese] (July 14, 2016).

<sup>677</sup> BEIJING E-TOWN INTERNATIONAL INVESTMENT AND DEVELOPMENT CO., LTD. 2016 PUBLIC BOND ISSUANCE COLLECTION MANUAL ABSTRACT 1-2-50 [Chinese] (July 14, 2016).

<sup>678</sup> BEIJING E-TOWN INTERNATIONAL INVESTMENT AND DEVELOPMENT CO., LTD. 2016 PUBLIC BOND ISSUANCE COLLECTION MANUAL ABSTRACT 1-2-58 [Chinese] (July 14, 2016).

<sup>679</sup> Integrated Silicon Solutions, Inc. Schedule 14A filed with the SEC: “Uphill Investment Co. Merger Proposal, Special Meeting of Stockholders, June 19, 2015” [Chinese] (slides 4, 10).

<sup>680</sup> Gary Hilson, *ISSI Acquired: An Analyst’s Thoughts*, EE TIMES, July 8, 2015.

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- SummitView Capital: This entity manages the Shanghai Government’s SummitView IC and IT Industry Fund, which was jointly established with the Shanghai government-owned Venture Capital Guiding Fund of Shanghai in November 2014 in response to the State Council’s *IC Guidelines*.<sup>681</sup> According to the Shanghai Government’s *Provisional Measures on the Administration of the Shanghai Venture Capital Guiding Fund*, the purpose of the Venture Capital Guiding Fund of Shanghai is to “vigorously advance indigenous innovation,” and “accelerate the cultivation and development of strategic emerging industries.”<sup>682</sup> The SummitView Capital website states that “using high-level national strategy and industrial strategy as the starting point, we establish a whole-of-industry investment fund and advance the construction and optimization of an industry ecosystem.”<sup>683</sup>
- Hua Capital: This fund was established by Tsinghua Holdings and China Fortune-Tech Capital,<sup>684</sup> a fund under the Semiconductor Manufacturing International Corporation (SMIC). Hua Capital manages the Beijing government’s Integrated Circuit Design and Test Fund.<sup>685</sup> According to Hua Capital’s website, the ISSI acquisition “has important meaning for filling a void in China’s memory storage industry, advancing automotive semiconductors, and maintaining the security of domestically produced smart cards.”<sup>686</sup>
- Beijing E-Town: The investment funds in the consortium are all connected through investment from Beijing E-Town, which is part-owner of one of the consortium members (eTown MemTek). Beijing E-Town invested CNY 300 million (\$49 million) in SummitView Pujiang on December 15, 2014, for a 20.03 percent stake in the CNY 1.5 billion (\$243 million) fund.<sup>687</sup> Likewise, Beijing E-Town invested CNY 200 million (\$32 million) in the Hua Capital-managed Beijing Integrated Circuit Design and Test Fund on September 25, 2014, for an 8.96 percent stake in the CNY 2.232 billion (\$362 million) fund.<sup>688</sup> Beijing E-Town gave Huaqing Jiye – the only “private” company in the consortium – a CNY 247 million (\$39 million) 2-year loan on November 20, 2015, in relation to the acquisition of ISSI.<sup>689</sup> The acquisition was also supported by debt financing from Chinese state-owned commercial banks.

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<sup>681</sup> *Shanghai Establishes IC Industry Development Leading Small Group* [Chinese], SUMMITVIEW Aug. 18, 2015, <http://www.summitviewcapital.com/plus/view.php?aid=27>.

<sup>682</sup> *Provisional Measures on the Administration of the Shanghai Venture Capital Guiding Fund*, art.1 (Shanghai Municipal Government, Hu Fu Fa [2010] No. 37, issued Oct. 26, 2010).

<sup>683</sup> *Founding Partners* [Chinese], SUMMITVIEW, <http://www.summitviewcapital.com/plus/list.php?tid=16>, (last visited Nov. 3, 2017).

<sup>684</sup> *Company Profile* [Chinese], HUA CAPITAL, <http://www.hua-capital.com/about.aspx?id=609>, (last visited Nov. 3, 2017).

<sup>685</sup> Integrated Silicon Solutions, Inc. Schedule 14A filed with the SEC: Uphill Investment Co. Merger Proposal, Special Meeting of Stockholders [Chinese], June 19, 2015, (slide 10).

<sup>686</sup> *News* [Chinese], HUA CAPITAL, [http://www.hua-capital.com/ne\\_ws.aspx](http://www.hua-capital.com/ne_ws.aspx), (last visited Nov. 3, 2017).

<sup>687</sup> BEIJING E-TOWN INTERNATIONAL INVESTMENT AND DEVELOPMENT CO., LTD. 2016 PUBLIC BOND ISSUANCE COLLECTION MANUAL ABSTRACT 1-2-64 [Chinese] (July 14, 2016).

<sup>688</sup> BEIJING E-TOWN INTERNATIONAL INVESTMENT AND DEVELOPMENT CO., LTD. 2016 PUBLIC BOND ISSUANCE COLLECTION MANUAL ABSTRACT 1-2-65 [Chinese] (July 14, 2016).

<sup>689</sup> BEIJING E-TOWN INTERNATIONAL INVESTMENT AND DEVELOPMENT CO., LTD. 2016 PUBLIC BOND ISSUANCE COLLECTION MANUAL ABSTRACT 1-2-101 [Chinese] (July 14, 2016).

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Industrial and Commercial Bank of China, in conjunction with the Bank of Beijing and Beijing Rural Commercial Bank, reportedly provided the consortium with a \$480 million loan, with a five-year term.<sup>690</sup>

##### Seagull/Omnivision

On January 28, 2016, Seagull International Ltd. and Seagull Acquisition Corp. (collectively, Seagull) announced the completion of the acquisition of OmniVision Technologies, Inc. (OmniVision) for approximately \$1.9 billion.<sup>691</sup> OmniVision is a leading developer of advanced digital imaging solutions. The company's CameraChip™ and CameraCubeChip™ products are highly integrated, single-chip complementary metal-oxide semiconductor (CMOS) image sensors for consumer and commercial applications.<sup>692</sup>

Seagull is a consortium composed of Hua Capital, CITIC Capital Holdings Limited (CITIC Capital), and Goldstone Investment Co., Ltd. (Goldstone). These investment funds are backed by state capital and claim to pursue state objectives. CITIC Capital is partly owned by CITIC Group,<sup>693</sup> which describes itself as “a large state-owned multinational conglomerate.”<sup>694</sup> CITIC Capital's investment capital comes primarily from China's sovereign wealth funds and pension funds.<sup>695</sup> Goldstone, which is a wholly-owned subsidiary of CITIC Securities,<sup>696</sup> stated in regulatory filings that the OmniVision investment fulfills Goldstone's objective of providing both a financial return and advancing the development of China's national integrated circuit

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<sup>690</sup> *Banks Provide \$480 Million Loan, Assist Chinese Financial Consortium Acquire ISSI* [Chinese], REUTERS, Dec. 15, 2015.

<sup>691</sup> Omnivision & Hua Capital Management, Citic Capital and Goldstone Investment Announce the Completion of the Acquisition of Omnivision by Hua Capital Management, Citic Capital and Goldstone Investment, OmniVision Exhibit 99.1. filed with the SEC, Jan. 28, 2016. *See also Beijing Ingenu Swallows U.S.'s OmniVision* [Chinese], CAIXIN, Mar. 9, 2017, <http://opinion.caixin.com/2017-03-09/101064177.html> (last visited Nov. 3, 2017).

<sup>692</sup> Omnivision & Hua Capital Management, Citic Capital and Goldstone Investment Announce the Completion of the Acquisition of Omnivision by Hua Capital Management, Citic Capital and Goldstone Investment, OmniVision Exhibit 99.1. filed with the SEC, Jan. 28, 2016. *See also* OmniVision's camera sensors have been used in Apple's iPhone. *Hua Capital hires Bank of America for OmniVision deal*, SOUTH CHINA MORNING POST, Sept. 19, 2014.

<sup>693</sup> CITIC Group owns a 24.06 percent stake in CITIC Capital. CITIC 2015 ANNUAL REPORT 314 (2016).

<sup>694</sup> *See Brief Introduction*, CITIC GROUP CORPORATION, [http://www.group.citic/wps/portal!/ut/p/b1/04\\_Sj9CPyKssy0xPLMnMz0vMAfGjzOI9w8zcLULdQoM9XV1MDRxNXL283H09DE1cjPQLsh0VAc\\_K3bQ!/?lctn=1&flag=11](http://www.group.citic/wps/portal!/ut/p/b1/04_Sj9CPyKssy0xPLMnMz0vMAfGjzOI9w8zcLULdQoM9XV1MDRxNXL283H09DE1cjPQLsh0VAc_K3bQ!/?lctn=1&flag=11) (last visited Jan. 9, 2018) (“CITIC Group was established in 1979 by Mr. Rong Yiren with the support of late Chinese leader Deng Xiaoping. Since its inception, CITIC Group has been a pilot for national economic reform and an important window on China's opening to the outside world. It has blazed a new trail of development for China's Reform and Opening-up by raising foreign capital, *introducing advanced technologies*, and adopting advanced international practice in operation and management, thus building up good reputation both home and abroad” (emphasis added)). CITIC Limited (SEHK: 00267) is one of the largest constituents of the Hang Seng Index. As of December 31, 2016, CITIC Limited had total assets of HK\$7,238 billion (\$934 million), total revenue of HK\$381 billion (\$49.1 billion), and total equity attributable to ordinary shareholders of HK\$431 billion (\$55.6 billion).

<sup>695</sup> *Ingenu Semiconductor Co. Stock Issuance and Cash Payment to Purchase Assets and Raise Accompanying Capital as well as Affiliated Transaction Contingency Plan 27* [Chinese] filed with the Shenzhen Stock Exchange in Nov. 2016.

<sup>696</sup> OmniVision Exhibit 99.1. Omnivision & Hua Capital Management, Citic Capital and Goldstone Investment Announce The Completion Of The Acquisition Of Omnivision By Hua Capital Management, Citic Capital and Goldstone Investment, SEC, filed Jan. 28, 2016.



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industry.<sup>697</sup> Hua Capital, which manages the Beijing government's Integrated Circuit Design and Test Fund, "actively looks for outstanding IC design and test companies to execute acquisitions."<sup>698</sup> Hua Capital states on its website that not only will the OmniVision acquisition provide a return to investors, but it will also effectively advance the development of China's semiconductor industry.<sup>699</sup>

The investment funds in the consortium provided two-thirds of the \$1.9 billion purchase price, with state-owned banks providing the remaining one-third of the purchase price. A consortium of Chinese finance entities contributed \$1.1 billion, while the state-owned Bank of China (Macao Branch) and China Merchants Bank (New York branch) provided loans of \$800 million.<sup>700</sup> Bank of America and China's sovereign wealth fund, CIC, advised the Chinese consortium on the transaction.<sup>701</sup>

##### *c) Information Technology*

#### **Government Policies**

The IT sector has long been a focus of Chinese development policy. The *11th Five-year Plan*, *12th Five-year Plan*, and *13th Five-year Plan* have all emphasized the development of China's IT sector. MIIT issued the IT sector specific plans including the *Information Industry 11th Five-year Plan*<sup>702</sup> during the 11th (2006-2010) Five-year Plan period, the *Telecom Industry 12th Five-year Plan*<sup>703</sup> during the 12th (2011-2015) Five-year Plan period, and the *Information Industry Development Guidelines (IT Development Guidelines)*<sup>704</sup> during the 13th (2016-2020) Five-year Plan period. The 2016 *IT Development Guidelines* call for "IT industry backbone enterprises to launch overseas acquisitions through acquiring bills, acquiring funds, acquiring debt etc."<sup>705</sup>

The Chinese government has issued other policies, plans, and decisions that focus on the IT sector. For instance, in 2009, the State Council's *Electronic Information Industry Restructuring and Revitalization Plan* identified information technology as an important driving force of the global economy and pointed to the strategic, foundational, and guiding role of the IT sector.<sup>706</sup>

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<sup>697</sup> Press Release, Ingenic Semiconductor Co. Stock Issuance and Cash Payment to Purchase Assets and Raise Accompanying Capital as well as Affiliated Transaction Contingency Plan 28 [Chinese] (Nov. 2016), filed with the Shenzhen Stock Exchange.

<sup>698</sup> Press Release, Ingenic Semiconductor Co. Stock Issuance and Cash Payment to Purchase Assets and Raise Accompanying Capital as well as Affiliated Transaction Contingency Plan 26-7 [Chinese] (Nov. 2016), filed with the Shenzhen Stock Exchange.

<sup>699</sup> News [Chinese], HUA CAPITAL, <http://www.hua-capital.com/news.aspx> (last visited Nov. 3, 2017).

<sup>700</sup> *Beijing Ingenic Swallows U.S.'s OmniVision* [Chinese], CAIXIN, Mar. 9, 2017, <http://opinion.caixin.com/2017-03-09/101064177.html> (last visited Nov. 3, 2017).

<sup>701</sup> Press Release, OmniVision, OmniVision To Be Acquired By Hua Capital Management, CITIC Capital and Goldstone Investment for \$29.75 Per Share in Cash (Apr. 30, 2015).

<sup>702</sup> *Information Industry 11th Five-year Plan* (MIIT, published Oct. 30, 2008).

<sup>703</sup> *Telecom Industry 12th Five-year Development Plan* (MIIT, published June 27, 2013).

<sup>704</sup> *Information Industry Development Guidelines* (MIIT and NDRC, Gong Xin Bu Lian Gui [2016] No. 453, issued Jan.16, 2017).

<sup>705</sup> *Information Industry Development Guidelines*, Section 5(3) (MIIT and NDRC, Gong Xin Bu Lian Gui [2016] No. 453, issued Jan.16, 2017).

<sup>706</sup> *Electronic Information Industry Restructuring and Revitalization Plan*, preamble (State Council, published Apr. 15, 2009).

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In 2010, the State Council's *SEI Decision* identified new-generation information technology as a strategic emerging industry.<sup>707</sup> In 2011, the State Council's *Notice on Issuing Several Policies on Further Encouraging the Development of the Software and Integrated Circuit Industries*, called for supporting the "Going Out" strategy of enterprises in establishing foreign marketing networks and R&D centers to promote IC, software, and IT service exports.<sup>708</sup>

These government policies and plans call for a particular focus on developing core foundational industries, such as new displays, high-end software, and high-end servers.<sup>709</sup> To develop these technologies, they call for government-industry collaboration, the pursuit of indigenous innovation, and "international cooperation."<sup>710</sup> In particular, these plans call for support of domestic IC, software, telecom, and new display enterprises that are implementing the "Going Out" strategy in the form of acquisitions or equity investment in foreign information technology companies to strengthen international competitiveness.<sup>711</sup> The plans also call for government-directed investment in the IT industry,<sup>712</sup> and for financial organizations to support outbound investment.<sup>713</sup>

In 2015 Premier Li Keqiang introduced the "*Internet Plus*" *Action Plan*, which calls for the integration of the Internet into every aspect of the Chinese economy and society. In particular, in the section titled "Expanding Foreign Cooperation," the plan calls for competitive Chinese enterprises to "go out" in groups, via foreign acquisitions, in order to increase their global competitiveness in this area.<sup>714</sup> The NDRC, Ministry of Foreign Affairs, MIIT, MOFCOM, and Cyberspace Administration of China are responsible for supporting this effort.<sup>715</sup>

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<sup>707</sup> *SEI Decision* § 3(2).

<sup>708</sup> *Notice on Issuing Several Policies on Further Encouraging the Development of the Software and Integrated Circuit Industries* § 4(21) (State Council, Guo Fa [2011] No. 4, issued Jan. 28, 2011).

<sup>709</sup> *SEI Decision* § 3(2).

<sup>710</sup> *Electronic Information Industry Restructuring and Revitalization Plan* § 2(2) (State Council, published Apr. 15, 2009).

<sup>711</sup> *Electronic Information Industry Restructuring and Revitalization Plan* § 4(5) (State Council, published Apr. 15, 2009).

<sup>712</sup> *Electronic Information Industry Restructuring and Revitalization Plan* § 4(4) (State Council, published Apr. 15, 2009). *Notice on Issuing Several Policies on Further Encouraging the Development of the Software and Integrated Circuit Industries* § 2(12) (State Council, Guo Fa [2011] No. 4, issued Jan. 28, 2011).

<sup>713</sup> *Electronic Information Industry Restructuring and Revitalization Plan* § 4(5) (State Council, published Apr. 15, 2009).

<sup>714</sup> *Guiding Opinions on the Active Promotion of "Internet +" Action* § 3(4.1) (State Council, Guo Fa [2015] 40, issued July 04, 2015).

<sup>715</sup> *Guiding Opinions on the Active Promotion of "Internet +" Action* § 3(4.1) (State Council, Guo Fa [2015] 40, issued July 04, 2015).

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Likewise, in 2016, the Chinese government released a wave of IT-related plans and policies,<sup>716</sup> several of which encourage foreign acquisitions as a means of obtaining technology.<sup>717</sup> For instance, the *Software and Information Technology Services Development Plan (2016-2020)* encourages the use of the “public-private partnership” model, wherein public and private capital cooperate, as well as the mobilization of financial services in support of foreign acquisitions.<sup>718</sup>

Three transactions that reflect and exemplify the impact of these policies are discussed below.

##### *Chinese Investments in the U.S. Information Technology Sector*

###### Ant Financial/EyeVerify

In September 2016, Alibaba’s Ant Financial Services Group (Ant Financial) acquired 100 percent of U.S.-based EyeVerify Inc. (EyeVerify), for an undisclosed amount<sup>719</sup> (Bloomberg reported a transaction value of \$70 million).<sup>720</sup> EyeVerify is a creator of biometric verification technology. EyeVerify’s patented authentication solution uses existing cameras on smartphones to image and pattern match the blood vessels in the whites of the eye. The application protects data with a high entropy encryption key which is equivalent to a 50-character complex password.<sup>721</sup>

Government investment and financing was crucial to this transaction. Five months before the acquisition, in April 2016, China’s sovereign wealth fund, CIC, and CCB Trust, a subsidiary of state-owned China Construction Bank, each leading a consortium, participated in a \$4.5 billion series B investment in Ant Financial as new strategic investors.<sup>722</sup> CIC and CCB Trust were joined by existing Ant Financial shareholders, including state-owned China Life and other leading Chinese insurance companies, state-owned China Post Group, China Development Bank Capital, a wholly-owned subsidiary of the state-owned policy bank, and Primavera Capital Group.<sup>723</sup> In addition to the state-funding in the Series B described above, China’s National

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<sup>716</sup> *Big Data Industry Development Plan (2016-2020)* (MIIT, Gong Xin Bu Gui [2016] No. 412, issued Dec. 18, 2017); *Information and Industry Integration Development Plan (2016-2020)* (MIIT, Gong Xin Bu Gui [2016] 333, issued Nov. 3, 2016); *Information and Communications Industry Development Plan (2016-2020)* (MIIT, Gong Xin Bu Gui [2016] No. 424, issued Dec. 18, 2016); *Software and Information Technology Services Development Plan (2016-2020)* (MIIT, Gong Xin Bu Gui [2016] No. 425, issued Dec. 18, 2016); *13th Five-year Transportation and Shipping Informatization Development Plan* (Ministry of Transportation, Jiao Gui Hua Fa [2016] 74, issued Apr. 19, 2016); *13th Five-year Transportation Science and Technology Development Plan* (Ministry of Transportation, Jiao Ke Ji Fa [2016] 51, issued Mar. 16, 2016).

<sup>717</sup> See e.g., *Information and Communications Industry Development Plan (2016-2020)* § 3(2)6 (MIIT, Gong Xin Bu Gui [2016] No. 424, issued Dec. 18, 2016).

<sup>718</sup> See *Software and Information Technology Services Development Plan (2016-2020)* § 5(3) (MIIT, Gong Xin Bu Gui [2016] No. 425, issued Dec. 18, 2016).

<sup>719</sup> Press Release, EyeVerify, Ant Financial Acquires EyeVerify to Boost Trust, Security, and Convenience of Mobile Financial Transaction (Sept. 13, 2016).

<sup>720</sup> *Alibaba Finance Arm Buys Eye-Scan Startup in First U.S. Foray*, BLOOMBERG, Sept. 13, 2016.

<sup>721</sup> Press Release, BioConnect and EyeVerify Collaborate to Improve Identity and Authentication in Financial Sector (Aug. 30, 2016).

<sup>722</sup> Press Release, Ant Financial, Ant Financial Closes \$4.5bn Series B Financing (Apr. 26, 2016).

<sup>723</sup> Press Release, Ant Financial, Ant Financial Closes \$4.5bn Series B Financing (Apr. 26, 2016).

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Social Security Fund acquired a 5 percent stake in Ant Financial through a previous Series A round.<sup>724</sup>

According to Ant Financial's series B press release, Ant Financial's "strategic partnership with China Investment Corp Capital will support its continued push into international markets." In addition, the press release notes that the "capital raised in the Series B round will be invested partly in further development of the company's cloud computing infrastructure and biometric verification technologies."<sup>725</sup>

##### Apex/Lexmark

On November 29, 2016, Lexmark International, Inc. (Lexmark) announced the completion of its acquisition by a consortium of investors led by Apex Technology Co., Ltd. (Apex) and PAG Capital for \$3.6 billion.<sup>726</sup> Lexmark manufactures and sells primarily laser printers and toner cartridges.<sup>727</sup> Prior to the acquisition, the National IC Fund invested CNY 569 million (\$86 million) in Apex.<sup>728</sup>

The Chinese consortium paid well over Lexmark's market capitalization of about \$2.2 billion. Various other printer companies including Canon, Konica Minolta, and Ricoh are said to have considered acquiring Lexmark.<sup>729</sup> The largest shareholder (at nearly 70 percent)<sup>730</sup> in Apex is Ninestar (also known as Zhuhai Seine Technology Co., Ltd.), a company which a U.S. court found in 2012 had imported patent-infringing printer cartridges into the United States "deliberately and in bad faith."<sup>731</sup>

In its 2015 Annual Report, Apex noted the guiding influence of the *Electronics Information Manufacturing Industry 12th Five-year Development Plan* and the *IC Industry 12th Five-year Development Plan*.<sup>732</sup> Apex also pointed to the encouragement in the State Council's 2009

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<sup>724</sup> *Alibaba Arm Ant Financial Completes Private Placement of Shares*, REUTERS, July 3, 2015.

<sup>725</sup> Press Release, Ant Financial, Ant Financial Closes \$4.5bn Series B Financing (Apr. 26, 2016).

<sup>726</sup> Press Release, Lexmark, Lexmark Announces Completion of Acquisition by Apex Technology and PAG Asia Capital (Nov. 29, 2016).

<sup>727</sup> *Technology Hardware, Storage and Peripherals – Company Overview of Lexmark International, Inc.*, BLOOMBERG (last visited Nov. 20, 2017) ("Lexmark International, Inc., together with its subsidiaries, operates as a developer, manufacturer, and supplier of printing, imaging, device management, managed print services (MPS), document workflow, and business process and content management solutions worldwide. It operates through two segments, Imaging Solutions and Services (ISS), and Enterprise Software. The ISS segment offers a portfolio of color and monochrome laser printers, laser multifunction products, and dot matrix printers, as well as various cartridges, service parts, and other supplies for use in the installed base of laser, inkjet, and dot matrix printers. It also provides maintenance, consulting, and systems integration services, as well as MPS offerings, such as asset lifecycle management, implementation and decommissioning services, consumables management, remote device monitoring and management, and business process optimization services.").

<sup>728</sup> Zhejiang Wansheng Co., *Zhejiang Wansheng Co., Ltd. Public Notice In Response to a Letter from the Shanghai Stock Exchange Requesting Information Disclosure Regarding the Company's Issuance of Shares to Acquire Assets and Raise Supporting Funds in a Related Party Transaction* [Chinese] (Code 603010, Public Notice 2017-042).

<sup>729</sup> Charles Brewer, *Apex Closes Lexmark Deal; Up Next, HP's Acquisition of Samsung's Printer Biz*, ENX MAGAZINE, Dec. 27, 2016.

<sup>730</sup> ZHUHAI APEX TECHNOLOGY CO., LTD. 2016 ANNUAL REPORT 72 [Chinese] (2016).

<sup>731</sup> *Ninestar Tech. Co. v. ITC*, 667 F.3d 1373 (Fed. Cir. 2012).

<sup>732</sup> ZHUHAI APEX TECHNOLOGY CO., LTD. 2015 ANNUAL REPORT SUMMARY 5-6 [Chinese] (2016).

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*Electronic Information Industry Restructuring and Revitalization Plan* for outstanding enterprises to “go out” and acquire high-tech foreign enterprises to strengthen their international competitiveness.<sup>733</sup>

##### Genimous/Spigot

In May 2016, China-based Genimous Investment Co., Ltd. (Genimous), formerly a manufacturer of electronics products, acquired 100 percent of Spigot Inc. (Spigot), a U.S.-based digital marketing company, for over \$250 million.<sup>734</sup> Genimous was able to complete this transaction despite having recorded a net loss, after deducting income from any non-recurring gain or loss, of CNY 40 million (\$6 million) in 2015; that year, it collected only CNY 318 million (\$51 million) in revenue, CNY 55 million (\$9 million) less than in 2014.<sup>735</sup> Spigot is one of the world’s leading digital performance-based marketing companies.<sup>736</sup> According to its website, Spigot’s “proprietary technology platform marries the power of big-data with the flexibility of self-training algorithms to produce rapid, hyper-optimized results for clients.”<sup>737</sup>

The fact that the Genimous acquisition of Spigot conformed to Chinese industrial policy appears to have been instrumental in securing regulatory approval for the acquisition. In response to a China Securities Regulatory Commission inquiry about the transaction, Genimous explained that in accordance with the *Henan Province Provisional Measures on the Administration of Foreign Investment Projects*, foreign investments under \$300 million are managed by the Henan Province Development and Reform Commission (Henan DRC). After it was determined that the acquisition fell within the “encouraged” industries of the *Guiding Catalogue of Foreign Investment Industries*, the Henan DRC issued the *Notice Regarding Genimous Investment Ltd., Co. Acquisition in the U.S. of Spigot, Inc.*, which approved the acquisition.<sup>738</sup>

From its founding in 1996, Genimous manufactured and sold electronic products.<sup>739</sup> Following the Spigot transaction, Genimous radically changed its business model, shifting its focus from the manufacture of electronic products to the mobile Internet software industry.<sup>740</sup>

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<sup>733</sup> ZHUHAI APEX TECHNOLOGY CO., LTD. 2015 ANNUAL REPORT SUMMARY 5-6 [Chinese] (2016).

<sup>734</sup> GENIMOUS INVESTMENT CO., STOCK ISSUANCE AND CASH PAYMENT TO PURCHASE ASSETS AND RAISE THE ACCOMPANYING CAPITAL AND AFFILIATED TRANSACTION REPORT 1-1-5 [Chinese] (Apr. 2016).

<sup>735</sup> GENIMOUS INVESTMENT CO. 2016 ANNUAL REPORT 7-8 [Chinese] (2017).

<sup>736</sup> GENIMOUS INVESTMENT CO., STOCK ISSUANCE AND CASH PAYMENT TO PURCHASE ASSETS AND RAISE THE ACCOMPANYING CAPITAL AND AFFILIATED TRANSACTION REPORT 1-1-855 [Chinese] (Apr. 2016).

<sup>737</sup> SPIGOT (Dec. 13, 2017), <https://www.spigot.com/>.

<sup>738</sup> Genimous applied for approval from the Zhengzhou High-Tech Industrial Development Park, which determined that the acquisition fell within the “encouraged” industries of the *Guiding Catalogue of Foreign Investment Industries*, and subsequently submitted the application materials to the Zhengzhou Development and Reform Commission (Zhengzhou DRC) on November 6, 2015. On November 12, 2015, the Zhengzhou DRC consented to the foreign investment project. On November 24, 2015, the Henan DRC issued the *Notice Regarding Genimous Investment Ltd., Co. Acquisition in the U.S. of Spigot, Inc.*, which approved the acquisition. See GENIMOUS INVESTMENT LTD., CO. RESPONSE TO FEEDBACK FROM “NOTICE ON CHINA SECURITIES REGULATORY COMMISSION’S ADMINISTRATIVE PERMIT PROJECT INVESTIGATION SECOND FEEDBACK OPINIONS” 1-1-54 [Chinese] [152981], REVISED VERSION (Dec. 2015).

<sup>739</sup> GENIMOUS INVESTMENT CO., STOCK ISSUANCE AND CASH PAYMENT TO PURCHASE ASSETS AND RAISE THE ACCOMPANYING CAPITAL AND AFFILIATED TRANSACTION REPORT 1-1-151 [Chinese] (Apr. 2016).

<sup>740</sup> GENIMOUS INVESTMENT CO., STOCK ISSUANCE AND CASH PAYMENT TO PURCHASE ASSETS AND RAISE THE ACCOMPANYING CAPITAL AND AFFILIATED TRANSACTION REPORT 1-1-156 [Chinese] (Apr. 2016).

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Genimous cites several Chinese government policies and plans in connection with this strategic shift and its acquisition of Spigot. For instance, in Genimous's stock issuance and major transaction disclosure, the company points to government policies that support the development of the mobile Internet and encourage leading Chinese internet enterprises to expand into the international market, as background for the acquisition.<sup>741</sup> Genimous's acquisition of Spigot closely mirrors this policy directive. According to Genimous, the purpose of the acquisition of Spigot was to acquire quickly foreign technology, human capital, brand, and revenue channels,<sup>742</sup> and help Genimous expand into international markets.<sup>743</sup>

##### *d) Biotechnology*

#### **Government Policies**

The Chinese government has actively directed and supported the acquisition of biotechnology, which is an important component of advanced agricultural technology and medical technology.<sup>744</sup> The emphasis of these policies has shifted over time, from enhancing food security and medical services to advanced manufacturing of biotechnology products.

A series of five-year plans specifically targets biotechnology. These include the “12th Five-year” *Biotechnology Development Plan*,<sup>745</sup> the “13th Five-year” *Biological Industry Development Plan*<sup>746</sup> (which was issued pursuant to the *13th Five-year Plan* and the “13th Five-year” *National Strategic Emerging Industry Development Plan*), and the “13th Five-year” *Biotechnology Innovation Special Plan*<sup>747</sup> (pursuant to the *13th Five-year Plan* and the “13th Five-year” *Plan for Technology Innovation*).

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<sup>741</sup> GENIMOUS INVESTMENT CO., STOCK ISSUANCE AND CASH PAYMENT TO PURCHASE ASSETS AND RAISE THE ACCOMPANYING CAPITAL AND AFFILIATED TRANSACTION REPORT 1-1-155 [Chinese] (Apr. 2016). The company cites a range of policies, including the *National Focused Support for High-Tech Areas* (2008); the *Electronic Information Industry Reorganization and Revitalization Plan* (2009); the *IT Industry “Five-year” Development Plan* (2012); the *Guiding Catalogue of Industrial Structure Adjustment* (2011); and the *Internet Plus Action Plan* (2015), which called for the promotion of the mobile internet and big data, while instructing leading internet companies to expand into the international market.

<sup>742</sup> GENIMOUS INVESTMENT CO., STOCK ISSUANCE AND CASH PAYMENT TO PURCHASE ASSETS AND RAISE THE ACCOMPANYING CAPITAL AND AFFILIATED TRANSACTION REPORT 1-1-104 [Chinese] (Apr. 2016).

<sup>743</sup> GENIMOUS INVESTMENT CO., STOCK ISSUANCE AND CASH PAYMENT TO PURCHASE ASSETS AND RAISE THE ACCOMPANYING CAPITAL AND AFFILIATED TRANSACTION REPORT 1-1-157 [Chinese] (Apr. 2016).

<sup>744</sup> In agriculture, genetically modified (GM) seed varieties can improve food security, output and production, and increase exports. See USAID, ABSP II & PROGRAM FOR BIOSAFETY SYSTEMS, BRIEF #1: WHAT IS AGRICULTURAL BIOTECHNOLOGY? (2004) (stating that biotechnology in medicine includes biological diagnostics and treatment, such as genetic analysis and gene therapy); see also Albert Sasson, MEDICAL BIOTECHNOLOGY: ACHIEVEMENTS, PROSPECTS AND PERCEPTIONS, UNITED NATIONS UNIVERSITY (Tokyo: 2005).

<sup>745</sup> *Notice on the “12th Five-year” Biotechnology Development Plan* (MOST, Guo Ke Fa She [2011] No. 588, issued Nov. 4, 2011).

<sup>746</sup> *National Development and Reform Commission Notice on Issuing the “13th Five-year” Biological Industry Development Plan* (NDRC, Fa Gai Gao Ji [2016] No. 2665, issued Dec. 20, 2016).

<sup>747</sup> *MOST Notice on Issuing the “13th Five-year” Biotechnology Innovation Special Plan* (MOST, Guo Ke Fa She [2017] No. 103, issued Apr. 24, 2017).

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Collectively, these “Biotechnology Five-year Plans” direct Chinese enterprises to seek out advanced biotechnology overseas, through cooperation in research;<sup>748</sup> promoting international biotechnology transfer;<sup>749</sup> and promoting the acquisition of new products and “key technology” through mergers and acquisitions,<sup>750</sup> aided by government financial support.<sup>751</sup>

Other state planning documents articulate similar objectives. For instance, medical Five-year Plans and agricultural Five-year Plans underscore the need for advancing biotechnology<sup>752</sup> and promoting the use of foreign cooperation and acquisitions as a means of technology transfer.<sup>753</sup> The biopharmaceutical sector is also a major target of the Made in China 2025 policy.<sup>754</sup>

The effect of these policies is evident in recent acquisitions of U.S. biotechnology firms. As discussed below, both Chinese SOEs and private enterprises have undertaken acquisitions in this sector to meet government objectives. Government financial support – including direct grants, state-backed investment funds, and debt financing by state-run policy banks – continues to play a key role in enabling these transactions.

#### *Chinese Investments in the U.S. Biotechnology Sector*

##### China National Chemical Corp./Syngenta AG

The acquisition of Swiss-based Syngenta by the China National Chemical Corp. (ChemChina) in May 2017 is the largest acquisition or merger ever completed by a Chinese enterprise, with a final price of \$43 billion on May 18, 2017.<sup>755</sup> Through this acquisition, ChemChina gained access to a long list of patented genetically modified (GM) seed, agriculture, and biotech products cited as targets in Five-year Plans.<sup>756</sup> ChemChina also obtained Syngenta’s entire U.S.

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<sup>748</sup> *Notice on the “12th Five-year” Biotechnology Development Plan* § 5(6) (MOST, Guo Ke Fa She [2011] 588, issued on Nov. 4, 2011).

<sup>749</sup> *MOST Notice on Issuing the “13th Five-year” Biotechnology Innovation Special Plan* § 5(6).

<sup>750</sup> *National Development and Reform Commission Notice on Issuing the “13th Five-year” Biological Industry Development Plan* § 8(4).

<sup>751</sup> *National Development and Reform Commission Notice on Issuing the “13th Five-year” Biological Industry Development Plan* § 7(3).

<sup>752</sup> *“12th Five-year” Agricultural Science and Technology Development Plan* § 3(1)2 (MOA, posted online Dec. 26, 2011); *Notice on Issuing the “13th Five-year” Agricultural and Rural Science and Technology Innovation Special Plan* § 4(2), Special Box 7 (MOST, Ministry of Agriculture, Ministry of Education, MIIT, Ministry of Land and Resources, Ministry of Environmental Protection, Housing Urban and Rural Construction Department, Ministry of Water Resources, SASAC, AQSIQ, State Forestry Administration, Chinese Academy of Sciences, China Meteorological Administration, National Food Administration, State Oceanic Administration, Supply and marketing cooperatives, Guo Ke Fa Nong [2017] No. 170, issued June 9, 2017); *MOA Notice on Issuing the “13th Five-year” Agriculture Science and Technology Development Plan* § 1 ¶ 2 (MOA, Nong Ke Jiao Fa [2017] No. 4, issued Jan. 25, 2017); the accelerating speed of biotechnology development is also cited as a reason for issuing the *Ministry of Science and Technology Office Notice on Issuing “13th Five-year” Medical Machinery Science and Technology Innovation Special Plan* § 1(2) (MOST, Guo Ke Ban She [2017] No. 44, May 26, 2017).

<sup>753</sup> *“12th Five-year” Agricultural Science and Technology Development Plan* § 3(1)5 (MOA, posted online Dec. 26, 2011); *Ministry of Science and Technology Office Notice on Issuing “13th Five-year” Medical Machinery Science and Technology Innovation Special Plan* § 1(1) § 5(2).

<sup>754</sup> *Made in China 2025 Roadmap* § 10(1).

<sup>755</sup> Syngenta AG, *Ex-99 (A)* 13 (May 23, 2016), on file with the SEC..

<sup>756</sup> *“12th Five-year” Agricultural Science and Technology Development Plan* §§ 3(1)2 (MOA, posted online Dec. 26, 2011); *Notice on Issuing the “12th Five-year” Agricultural and Rural Science and Technology Development*

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business, including over 4,000 employees, 33 research sites, and 31 production and supply sites.<sup>757</sup>

ChemChina is an SOE, and the transaction is directly linked to the “Going Out” strategy, as reported by *Xinhua News*.<sup>758</sup> As a result of this transaction, two ChemChina executives who are also CCP officials – Ren Jianxin and Chen Hongbo – were appointed to the Syngenta board of directors, with Ren Jianxin named as chairman of the board.<sup>759</sup> The transaction was financed in large part by loans from a consortium of Chinese state-run policy banks, municipal policy banks, private banks, bonds issued to special purpose vehicles backed by state-owned commercial and policy banks and the China Reform Holdings Corporation.<sup>760</sup> This financing was made available even though a 2016 credit report on the ChemChina Group reported a debt-to-capital ratio of 74.78 percent.<sup>761</sup>

#### Beijing Genomics Institute/Complete Genomics

In January 2013, Beijing Genomics Institute (BGI) acquired Complete Genomics for \$117 million.<sup>762</sup> Through the acquisition, BGI gained access to Complete Genomics’ “gene sequencing equipment intellectual property rights, and the development of domestic equipment production”<sup>763</sup> – technology that the Chinese government has targeted in related sectoral Five-year Plans.<sup>764</sup> In fact, NDRC featured the BGI acquisition of Complete Genomics in its report on

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*Plan* §§ 2(4), 3(2)1 (MOST, Ministry of Agriculture, Ministry of Education, Ministry of Water Resources, Housing and Urban-Rural Development, Ministry of Land and Resources, AQSIQ, State Forestry Administration, Chinese Academy of Sciences, National Food Administration, China Meteorological Administration, State Oceanic Administration, National Federation of Supply and Marketing Cooperatives, issued Mar. 15, 2012); *Notice on Issuing the “13th Five-year” Agricultural and Rural Science and Technology Innovation Special Plan* § 4(2)1. In the aforementioned *Agriculture Five-year Plans*, the importance of developing GMO technology is not only for food security, but also for agricultural industrialization strategy. Gene technology in an agricultural context is also part of the biotechnology Five-year Plans. *MOST Notice on Issuing the “13th Five-year” Biotechnology Innovation Special Plan* § 4(2)5; *Notice on the “12th Five-year” Biotechnology Development Plan* § 4(3)2.

<sup>757</sup> SYNGENTA, 2016 ANNUAL REVIEW 26 (2016).

<sup>758</sup> *Financial Watch: Acquisition of Syngenta Obtains Approval Chinese Capital Hugs the Whole World’s Resources for a Win-Win Strategy* [Chinese], XINHUA NEWS, 2017, available at [http://www.gov.cn/xinwen/2017-04/06/content\\_5183844.htm](http://www.gov.cn/xinwen/2017-04/06/content_5183844.htm).

<sup>759</sup> Syngenta AG, *Ex-99.(A)*, A-1 (May 23, 2016), on file with the SEC. Ren Jianxin is the chairman of the CCP Committee of ChemChina. Chen Hongbo is secretary of the Hubei Province Discipline Inspection Commission, which acts as the local version of the central level Commission responsible for implementing President Xi Jinping’s anti-corruption drive. Syngenta AG, *Ex-99.(A)*, A-1 (May 23, 2016), on file with the SEC.

<sup>760</sup> Syngenta AG, Schedule 13D 12 (May 18, 2017), on file with the SEC.

<sup>761</sup> Dagong Global Credit Rating Co., Ltd., Tracking the Rating Announcement 1, 22 [Chinese] (Da Gong Bao SD [2016] No. 242).

<sup>762</sup> *Shenzhen Beijing Genomics Institute Completes Acquisition of the United States’ Complete Genomics* [Chinese], GENOMICS Mar. 19, 2013, [http://www.genomics.cn/news/show\\_news?nid=99461](http://www.genomics.cn/news/show_news?nid=99461).

<sup>763</sup> Jiang Jiang, and Han Qi, NDRC INSTITUTE OF INDUSTRIAL ECONOMICS AND TECHNOLOGY ECONOMICS “12<sup>TH</sup> FIVE-YEAR” PERIOD GENE DETECTION INDUSTRY DEVELOPMENT REVIEW [Chinese] (Aug. 8, 2017), available at [http://gjss.ndrc.gov.cn/zftp/xyqzlxhg/201708/t20170802\\_856974.html](http://gjss.ndrc.gov.cn/zftp/xyqzlxhg/201708/t20170802_856974.html).

<sup>764</sup> *Notice on Issuing the “13th Five-year” Agricultural and Rural Science and Technology Innovation Special Plan* § 4(2)1; *MOST Notice on Issuing the “13th Five-year” Biotechnology Innovation Special Plan* §§ 4(1)1, 4(1)3, 4(2)1.



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biopharmaceutical industry development during the 12th Five-year Plan period, under the section heading “overseas acquisitions begin to take shape.”<sup>765</sup>

BGI has even been a major recipient of assistance from the state policy bank, CDB.<sup>766</sup> The Shenzhen municipal government has singled out BGI as a target of support in multiple government measures, including development of both an international and domestic outsourcing industry.<sup>767</sup> BGI has received local government grants from the Donghu New Technology Development Zone Management Committee Finance Bureau for its Complete Genomics subsidiary to develop a local Chinese production base of Complete Genomics sequencer machinery.<sup>768</sup>

Although BGI is privately-owned, it has operated at the center of China’s gene research industry since participating in the Human Genome Project, and has evident links to the government. BGI leadership features multiple officials who held CCP and government positions before joining BGI.<sup>769</sup>

In a company press release, BGI states that, “after the acquisition of U.S. listed company Complete Genomics (CG), BGI rapidly achieved technology transformation and re-innovation” resulting in the development and production of new gene sequencer machines in 2015 and

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<sup>765</sup> Wang Xuegong, Zhu Jun, Zhong Qian, Li Qian, CHINA BIOPHARMACEUTICAL MANAGEMENT ASSOCIATION, REVIEW OF BIOPHARMACEUTICAL INDUSTRY DEVELOPMENT DURING THE 12TH FIVE-YEAR PLAN [Chinese] (Aug. 2, 2017), available at [http://gjss.ndrc.gov.cn/zttp/xyqzlxhg/201708/t20170802\\_856972.html](http://gjss.ndrc.gov.cn/zttp/xyqzlxhg/201708/t20170802_856972.html).

<sup>766</sup> CDB officials have held up BGI as an example of a company that CDB supports. *Zheng Zhijie, Servicing Innovation Development with Development Type Finance* [Chinese], ECONOMIC DAILY Dec. 16, 2016. Zheng Zhijie is the Vice Party Secretary, Vice Chairman and President of CDB. *Leader Profiles – Zheng Zhijie* [Chinese], CDB, <http://www.cdb.com.cn/gykh/lbzb/zjzj> (last visited Oct. 26, 2017). In 2010, BGI also received CNY 600 million (\$89 million) in loans from CDB to help BGI purchase sequencing machinery from U.S.-based Illumina. The sequencing machines were installed in BGI’s Hong Kong facility, putting BGI “on the path to become world’s largest sequencing facility;” Illumina stated that this was the single largest order to date for its technology. Press Release, Illumina Inc., Acquisition Puts Beijing Genomics Institute on Path to Become World’s Largest Sequencing Facility (Jan. 12, 2010), available at <https://www.illumina.com/company/news-center/press-releases/press-release-details.html?newsid=1374343>. CDB Shenzhen Branch referred to BGI as a “[s]trategic emerging industry leading enterprise.” See *China Development Bank Shenzhen City Branch Injects New Momentum into Upgrading ‘Shenzhen Quality’ Sustainability* [Chinese], SHENZHEN PRESS GROUP, Jan. 5, 2013, available at <http://www.cbrc.gov.cn/shaanxi/docPcgView/C4DDC24B06384D3CB47268D0DDDA18AC/600211.html>, (last visited Oct. 26, 2017).

<sup>767</sup> *Shenzhen City Economic Trade and Informatization Commission Notice on Issuing the Shenzhen City Service Outsourcing Development Plan (2012-2015)* § 4(2)2 (Shenzhen City Trade and Informatization Commission, Jing Ji Mao Xin Xi Fu Wu Zi [2012] No. 43); *Shenzhen City People’s Government Office Notice on Issuing Several Measures on Strengthening Enterprise Service Support of Strategic Emerging Industry Development (2012-2013 Annual)* §5(27) (Shenzhen City People’s Government Office, Shen Fu Ban Han [2012] No. 169, issued Nov. 19, 2012); *Notice on Issuing Shenzhen National Innovation City Overall Plan (2008-2015)* §4(1)2 (Shen Fu [2008] No. 201, issued Sept. 21, 2008).

<sup>768</sup> SHENZHEN BGI HOLDINGS CO., LTD., 2017 FIRST HALF ANNUAL REPORT 129, 138 [Chinese] (Aug. 2017), available at [www.szse.cn/](http://www.szse.cn/).

<sup>769</sup> At the management level, the Executive vice President and Director of Strategic Planning at BGI, Yanmei Zhu, used to be vice-director of the Yangpu District NDRC, and the Chairman and CEO of BGI Agriculture Group, Yonghong Mei, is currently also the director of the China National GeneBank, and previously held the position of Deputy Party Secretary and Mayor of Jining City. *About BGI/Leadership* [Chinese], BGI-Shenzhen, [http://www.genomics.cn/en/navigation/show\\_navigation?nid=292](http://www.genomics.cn/en/navigation/show_navigation?nid=292) (last visited Nov. 1, 2017).

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2016.<sup>770</sup> This achievement is attributed to “focusing on the 18th National Congress of the CCP[...] internal governance, foreign relations, and national defense, and governance of the Party, the nation, and the military.”<sup>771</sup>

##### e) Industrial Machinery and Robotics

#### Government Policies

Developing advanced industrial machinery, including robotics with industrial applications, is an important policy goal of the Chinese government. Chinese authorities hope to increase productivity<sup>772</sup> at a time of increasing labor costs in China,<sup>773</sup> and are attempting to acquire advanced technology so that China can join the ranks of high-tech manufacturing economies by 2025.<sup>774</sup> By supporting acquisitions in machinery and robotics, Chinese authorities hope to gain access to advanced technology, and they see this technology as vital to meeting Made in China 2025 policy objectives with respect to the production of large aircraft,<sup>775</sup> auto manufacturing,<sup>776</sup> agricultural machinery,<sup>777</sup> and medical technology.<sup>778</sup>

Several state planning documents underscore the importance of obtaining technology for advanced industrial machinery – for instance, the *Robotics Five-year Plan*, the *Industry Technology Innovation Capacity Development Plan (2016-2020)*<sup>779</sup> (*Industry Five-year Plans*), and the recently released *Next-Generation Artificial Intelligence Development Plan*<sup>780</sup> (*AI Plan*).

As these documents make clear, a key strategy for the “transformation and upgrading” of these sectors is a combination of government support<sup>781</sup> and the use of mergers and acquisitions to gain access to foreign technology.<sup>782</sup> Authorities have made frequent use of this approach,

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<sup>770</sup> BGI High-Throughput Gene Sequencer Debut "to Forge Ahead for Five-years" Large-Scale Achievements Exhibition [Chinese], BGI (Oct. 11, 2017), [http://www.genomics.cn/news/show\\_news?nid=105368](http://www.genomics.cn/news/show_news?nid=105368) (last visited Nov. 1, 2017).

<sup>771</sup> BGI High-Throughput Gene Sequencer Debut "to Forge Ahead for Five-years" Large-Scale Achievements Exhibition [Chinese], BGI (Oct. 11, 2017), [http://www.genomics.cn/news/show\\_news?nid=105368](http://www.genomics.cn/news/show_news?nid=105368) (last visited Nov. 1, 2017).

<sup>772</sup> *Made in China 2025 Notice* § 2(3); *State Council Notice on Issuing the Next-Generation of Artificial Intelligence Development Plan* § 3(2) (State Council, Guo Fa [2017] No. 35, issued Aug. 20, 2017).

<sup>773</sup> *Made in China 2025 Notice*, Section 1(2); *Notice on Issuing Robotics Industry Development Plan (2016-2020)* § 1, ¶ 4 (MIIT, NDRC, MoF, Gong Xin Bu Lian Gui [2016] No. 109, issued Mar. 21, 2016).

<sup>774</sup> *Made in China 2025 Notice* § 1(3), § 2(1).

<sup>775</sup> *Made in China 2025 Notice* § 1(3). See also Zhejiang Wanfeng Technology Development Co. Ltd./Paslin Co.

<sup>776</sup> *Made in China 2025 Notice* § 3(6)2.

<sup>777</sup> *Made in China 2025 Notice* § 3(6)8.

<sup>778</sup> *Made in China 2025 Notice* § 3(6)2, § 3(6)10.

<sup>779</sup> *Ministry of Industry and Information Technology Notice on Issuing the Industry Technology Innovation Capacity Development Plan (2016-2020)* (MIIT, Gong Xin Bu Gui [2016] No. 344, issued Oct. 31, 2016).

<sup>780</sup> *State Council Notice on Issuing the Next-Generation of Artificial Intelligence Development Plan* § 3(2) (State Council, Guo Fa [2017] No. 35, issued Aug. 20, 2017).

<sup>781</sup> *Industry Five-year Plan* § 5(3); *AI Plan* § 4(1); *Robotics Five-year Plan* § 4(3).

<sup>782</sup> *Industry Five-year Plan* § 5(5); *AI Plan* § 4(3). The *Robotics Five-year Plan* § 4(6) also suggests government support for “international cooperation.”; *State Council Guiding Opinion on Promoting International Capacity and Equipment Cooperation* § 46(35) (State Council, Guo Fa [2015] No. 30, issued May 13, 2015), also, § 4 of the same plan is wholly dedicated to improving “Going Out” capacity, and § 6 is dedicated to “Expanding Policy Support Intensity.”

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supporting transactions through grants, state-led policy bank debt financing, and financing through state-sponsored investment funds.

##### *Chinese Investments in the U.S. Industrial Machinery and Robotics Sector*

###### Zhejiang Wanfeng Technology Development Co. Ltd./Paslin Co.

The acquisition activities of Zhejiang Wanfeng Technology Development Co. (Wanfeng) illustrate the approach outlined above. In 2016, Wanfeng wholly acquired Paslin Co. (Paslin), a developer and manufacturer of “complex automated assembly and welding systems,”<sup>783</sup> for \$302 million.<sup>784</sup> Paslin Co. produces advanced manufacturing robots used primarily in the assembly of automobiles.<sup>785</sup>

To support the acquisition, Shaoxing City provided CNY 300 million (\$45 million) to the Wanfeng Acquisition Fund, which was able to raise a total of CNY 1 billion (\$151 million) from Wanfeng and other public and private companies,<sup>786</sup> significantly reducing Wanfeng’s own capital contribution to the acquisition. In an interview with a Chinese financial daily, Wanfeng Director Zhao Yahong attributed the Paslin acquisition to financial assistance from the Wanfeng Acquisition Fund.<sup>787</sup> Wanfeng is also a recipient of government assistance, including a total of CNY 73 million (\$11 million) in government grants from a combination of dozens of central and local governments.<sup>788</sup>

Although a private company, Wanfeng cultivates close ties to government authorities. The company is part of a family conglomerate, and run by Chen Ailian,<sup>789</sup> a well-connected CCP member who served as a representative from Zhejiang Province at the 12th National People’s Congress (NPC) in 2016,<sup>790</sup> where she proposed that the government establish a new China High-Tech Development Bank policy bank to provide “low-interest medium- and long-term loans” and “financial assistance” to enterprises in the high-tech manufacturing industry.<sup>791</sup> She is also currently a member of the Standing Committee of Shaoxing City’s 8th People’s

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<sup>783</sup> *Our Company*, PASLIN, <http://www.paslin.com/our-company/> (last visited Oct. 23, 2017).

<sup>784</sup> Liang Zhen, *Zhejiang Wanfeng Acquires US Robotics Maker Paslin*, CHINA DAILY, Apr. 20, 2016.

<sup>785</sup> *Milestones + History*, PASLIN, <http://www.paslin.com/milestones-history/> (last visited Oct. 23, 2017).

<sup>786</sup> *Announcement on the 2016 Zhejiang Shaoxing Transformation and Upgrading Industry Fund Investment into Wan Feng Commercial Industry Merger and Acquisition Fund Project* [Chinese] (Shaoxing City Financial Bureau, issued Feb. 26, 2016).

<sup>787</sup> Xu Ning, *Foreign Mergers and Acquisitions Adhere to the Industrial Chain and Value Chain High-End Extensions* [Chinese], JINRONG SHIBAO Aug. 28, 2017, available at <http://www.whjr.gov.cn/sinfo-2-36686-0.html> (last visited Oct. 23, 2017).

<sup>788</sup> WANFENG AUTO WHEEL CO. LTD., 2016 ANNUAL REPORT 163-173 [Chinese] (Apr. 11, 2017), available at [www.szse.com](http://www.szse.com).

<sup>789</sup> WANFENG AUTO WHEEL CO. LTD., 2016 ANNUAL REPORT 61-2 [Chinese] (Apr. 11, 2017), available at [www.szse.com](http://www.szse.com). Wanfeng is owned jointly by Chen Ailian’s husband, Wu Liangding, and her son, Wu Jie. Wu Liangding is the owner of Rifa Group, and Wu Jie is the President of Rifa Group, another large investment company.

<sup>790</sup> *Representative List, ‘92 Zhejiang Representatives Group’* [Chinese], NPC, <http://www.npc.gov.cn/delegate/dbmd.action?id=b2> (last visited Oct. 28, 2017).

<sup>791</sup> *NPC Representative Chen Ailian: Establish the China High-Tech Development Bank* [Chinese], 2016 CCP and CPPCC Plenary Session Opinions, available at <http://zt.ccln.gov.cn/2016lh/tian/39017.shtml> (last visited Oct. 23, 2017).

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Congress,<sup>792</sup> the same municipal government which, a year earlier, had chosen her company to lead a joint private-public partnership (PPP) investment fund, the Wanfeng Commercial Industry Merger and Acquisition Fund (Wanfeng Acquisition Fund).<sup>793</sup>

By acquiring Paslin, Wanfeng not only gained access to advanced robotics technology, but also supported the objective of the municipal government of Shaoxing City, Zhejiang Province, to build a new aircraft manufacturing hub in its jurisdiction. This acquisition was supported by substantial government funding. Shaoxing City began issuing policy directives as early as 2012 in support of developing the city as a center for developing aircraft and aerospace equipment manufacturing. For instance, the *Shaoxing City Development Strategic Emerging Industry Key Field Guiding Catalogue (2013-2015)* identified GA manufacturing as a key “emerging information industry” and aerospace equipment as an “advanced equipment manufacturing industry,” and targeted both for investment and government support.<sup>794</sup> Likewise, in 2016, the *Shaoxing City “13th Five-year” Industry Development Plan* stated that developing the city as an aviation hub was an important way of developing an “urban industrial development zone”<sup>795</sup> in Shaoxing, and that such programs should be supported by government measures including establishing “industrial funds” and other “preferential policies.”<sup>796</sup>

Shaoxing City found a willing partner in Wanfeng, which began construction of the Wanfeng Aviation Special Village in 2016.<sup>797</sup> Consistent with government policies, this site was designed to become a hub for aircraft and aerospace equipment manufacturing. The site was visited by representatives from the NDRC Planning Division in October 2016, and held up as an example of Zhejiang Province’s efforts in “promoting transformation and upgrading of traditional manufacturing.”<sup>798</sup>

Government authorities viewed Wanfeng’s acquisition of Paslin as pivotal to developing the aviation hub. According to the Zhejiang Province Financial Office, government support for the acquisition is part of “activating a strategic industry,” and plays a role in a larger Shaoxing City-Wanfeng joint strategy to develop the Wanfeng Jingyuan High-End Equipment Park through a jointly administered fund valued at CNY 1 billion.<sup>799</sup> Concurrent with financing the Paslin

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<sup>792</sup> *Shaoxing Municipality 8th People’s Congress Standing Committee Member List* [Chinese], SHAOXING MUNICIPALITY, available at [http://sxdx.sx.gov.cn/art/2017/4/17/art\\_14842\\_1115531.html](http://sxdx.sx.gov.cn/art/2017/4/17/art_14842_1115531.html) (last visited Oct. 28, 2017).

<sup>793</sup> *Announcement on the 2016 Zhejiang Shaoxing Transformation and Upgrading Industry Fund Investment into Wan Feng Commercial Industry Merger and Acquisition Fund Project* [Chinese] (Shaoxing City Financial Bureau, issued Feb. 26, 2016).

<sup>794</sup> *Shaoxing City Government Office Forwards Economic and Information Commission Notice on Shaoxing City Development Strategic Emerging Industry Key Fields Guiding Catalogue (2013-2015)* (Shaoxing City Government Office, Shao Zheng Ban Fa [2012] No. 166, issued Dec. 14, 2012).

<sup>795</sup> *Shaoxing City “13th Five-year” Industry Development Plan* § 4(2), ¶ 8 (Shi Jing Xin Wei, posted June 30, 2016).

<sup>796</sup> *Shaoxing City “13th Five-year” Industry Development Plan* § 6(2).

<sup>797</sup> *Development Process* [Chinese], WANFENG AUTO HOLDING GROUP, <http://www.wfjt.com/develop.php> (last visited Oct. 30, 2017).

<sup>798</sup> *National Development and Reform Commission Research Team Visits Wanfeng Auto* [Chinese], WANFENG AUTO HOLDING GROUP, <http://www.wfjt.com/news-detail.php?id=971> (last visited Oct. 30, 2017).

<sup>799</sup> *Zhejiang Shaoxing, Three Ones’ Highly Effectively Deploying Government Industry Funds ‘Energy Storage’ Effectiveness* [Chinese], ZHEJIANG PROVINCE FINANCIAL OFFICE (May 10, 2017), [http://m.mof.gov.cn/czxw/201705/t20170509\\_2596548.htm](http://m.mof.gov.cn/czxw/201705/t20170509_2596548.htm) (last visited Oct. 23, 2017).

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acquisition, the fund forged plans to establish “three major functional zones for intelligent equipment, robotics, and R&D” inside the Wanfeng Jingyuan High-End Equipment Park, designed to form the “core of the Wanfeng Aviation Village.”<sup>800</sup>

This transaction exemplifies China’s IDAR approach to transferring foreign technology. Within one year of acquiring Paslin, Wanfeng has already invested CNY 800 million (\$118 million) in developing high-end robotics manufacturing capacity – based on technology acquired from Paslin – in Shaoxing City.<sup>801</sup> The use of Paslin’s robotic manufacturing technology is described in a Shaoxing City government report as an “important force in Shaoxing’s, even Zhejiang’s, future aviation manufacturing industry.”<sup>802</sup> As Chen Ailian stated, “by going through overseas mergers and acquisitions, we can absorb advanced technology, obtain brand value and sales channels, enter the high-end market, and greatly enhance Shaoxing enterprises’ position in global market competition.”<sup>803</sup> In its *Report on Development of China’s Outward Investment and Economic Cooperation 2016*, MOF explained that, through the Paslin acquisition, Wanfeng successfully “obtained key technology for the field of robotics.”<sup>804</sup>

#### Northern Heavy Industries Group Co. Ltd./Robbins Co.

Northern Heavy Industries Group (NHI), an SOE owned by China’s central government, acquired the Robbins Company (Robbins) through a “three-phase merger,” beginning in 2016.<sup>805</sup> NHI first invested heavily in Robbins, then increased its stake to 61 percent, and intends to acquire a 100 percent stake in the future.<sup>806</sup> Through this transaction, NHI gained access to Robbins’ manufacturing capacity with respect to “advanced, underground construction machinery.”<sup>807</sup> As an SOE, NHI pursues state policy goals, including “the four upgrades (technological upgrades, market upgrades, management upgrades, and talent upgrades), and major equipment and high-end sets [of products],” which the company describes as “the major striking direction.”<sup>808</sup> China Exim was the only bank that financed NHI’s acquisition of

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<sup>800</sup> Zhejiang Shaoxing, *Three Ones’ Highly Effectively Deploying Government Industry Funds ‘Energy Storage’ Effectiveness* [Chinese], ZHEJIANG PROVINCE FINANCIAL OFFICE (May 10, 2017), [http://m.mof.gov.cn/czxw/201705/t20170509\\_2596548.htm](http://m.mof.gov.cn/czxw/201705/t20170509_2596548.htm) (last visited Oct. 23, 2017).

<sup>801</sup> Zhejiang Shaoxing, *Three Ones’ Highly Effectively Deploying Government Industry Funds ‘Energy Storage’ Effectiveness* [Chinese], ZHEJIANG PROVINCE FINANCIAL OFFICE (May 10, 2017), [http://m.mof.gov.cn/czxw/201705/t20170509\\_2596548.htm](http://m.mof.gov.cn/czxw/201705/t20170509_2596548.htm) (last visited Oct. 23, 2017).

<sup>802</sup> Zhejiang Shaoxing, *Three Ones’ Highly Effectively Deploying Government Industry Funds ‘Energy Storage’ Effectiveness* [Chinese], ZHEJIANG PROVINCE FINANCIAL OFFICE (May 10, 2017), [http://m.mof.gov.cn/czxw/201705/t20170509\\_2596548.htm](http://m.mof.gov.cn/czxw/201705/t20170509_2596548.htm) (last visited Oct. 23, 2017).

<sup>803</sup> Wang Dandong, *Our City Introduces Encouraging Privately Operated Enterprise Going Out Three Year Action Plan for 12 Industry Leaders to Enter the List of Cultivated Multinational Companies* [Chinese], SHAOXING DAILY, July 25, 2017, available at [http://www.sx.gov.cn/art/2017/7/25/art\\_126\\_1144927.html](http://www.sx.gov.cn/art/2017/7/25/art_126_1144927.html) (last visited Oct. 23, 2017).

<sup>804</sup> MOFCOM, *Report on Development of China’s Outward Investment and Economic Cooperation 2016* 148 (Dec. 2016).

<sup>805</sup> *About Us*, THE ROBBINS COMPANY, <http://www.therobbinscompany.com/about/> (last visited Oct. 20, 2017). This is NHI’s second significant acquisition in the high-tech tunnel boring machinery field, following on the acquisition of NFM Technologies of France. In a similar “three-stage merger” pattern, NHI first acquired 70 percent of NFM Technologies in 2007, and increased its ownership stake to 100 percent in 2011. *History*, NFM TECHNOLOGIES, <http://www.nfm-technologies.com/-History-.html> (last visited Nov. 1, 2017).

<sup>806</sup> *About Us*, THE ROBBINS COMPANY, <http://www.therobbinscompany.com/about/> (last visited Oct. 20, 2017).

<sup>807</sup> *About Us*, THE ROBBINS COMPANY, <http://www.therobbinscompany.com/about/> (last visited Oct. 20, 2017).

<sup>808</sup> *Group Introduction* [Chinese], NHI, <http://www.china-sz.com/jituanjianjie/> (last visited Oct. 20, 2017).

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Robbins,<sup>809</sup> and China Exim identified the acquisition as an “important project”<sup>810</sup> and an “international industrial capacity cooperation” project.<sup>811</sup> As such, the transaction qualified for China Exim’s “Two Preferential” loan programs, which generally provide financing on below-market terms.<sup>812</sup>

##### Midea Group Co., Ltd./Kuka AG (2017)

In 2017 the Midea Group Co., Ltd. (Midea) bought €3.7 billion (\$4.2 billion) worth of shares to expand its original 13.51 percent share in Kuka AG (Kuka) to 94.55 percent.<sup>813</sup> Kuka AG is based in Germany, but has substantial assets in the United States.<sup>814</sup> Midea explained that the transaction would promote “transformation and upgrading,”<sup>815</sup> noting that by “taking KUKA as a platform, we will continue the layout of industrial robots, commercial robots, service robots and artificial intelligence, and actively develop key components in the field of industrial automation.”<sup>816</sup>

Although Midea is privately owned,<sup>817</sup> the acquisition relied on financing from a consortium of banks headed by Chinese state-led policy banks. In particular, China Exim provided €770

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<sup>809</sup> *Exim Bank Liaoning Branch Actively Promotes Supply-side Reform Deploys the Role of Policy-type Finance Functions to Support Liaoning Equipment Manufacturing Industry Transformation and Upgrading* [Chinese], THE EXPORT IMPORT BANK OF CHINA, [http://english.eximbank.gov.cn/tm/nineteen/list\\_1198\\_30375.html](http://english.eximbank.gov.cn/tm/nineteen/list_1198_30375.html), (last visited Oct.20, 2017).

<sup>810</sup> EXPORT-IMPORT BANK OF CHINA, ANNUAL REPORT2016, 57. The two preferential programs are the Concessional Loan and Preferential Export Buyer’s Credit programs.

<sup>811</sup> *First Half Year Liaoning Province Equipment Manufacturing Foreign Investment Grows Three Fold* [Chinese], Policy Office of the NDRC Old Industrial Base Revitalization Division (July 28, 2017), [http://dbzxs.ndrc.gov.cn/ztp/dwkf/201707/t20170728\\_855981.html](http://dbzxs.ndrc.gov.cn/ztp/dwkf/201707/t20170728_855981.html) (last visited Oct. 28, 2017); *Exim Bank Liaoning Branch Actively Promotes Supply-side Reform Deploys the Role of Policy-type Finance Functions to Support Liaoning Equipment Manufacturing Industry Transformation and Upgrading* [Chinese], THE EXPORT IMPORT BANK OF CHINA, [http://english.eximbank.gov.cn/tm/nineteen/list\\_1198\\_30375.html](http://english.eximbank.gov.cn/tm/nineteen/list_1198_30375.html) (last visited Oct. 20, 2017).

<sup>812</sup> EXPORT-IMPORT BANK OF CHINA, ANNUAL REPORT2016, 37. The two preferential programs are the Concessional Loan and Preferential Export Buyer’s Credit programs. These loans generally have a subsidized interest rate of 2-3 percent and a term of 15-20 years. See THE EXPORT IMPORT BANK OF CHINA, TWO PREFERENTIAL” LOAN BUSINESS INTRODUCTION [Chinese], slide 5 (2013).

<sup>813</sup> MIDEA GROUP CO., LTD 2016 ANNUAL REPORT 77 (Mar. 31, 2017), available at [www.szse.cn](http://www.szse.cn).

<sup>814</sup> *About Kuka*, KUKA, <https://www.kuka.com/en-us/about-kuka/>. The company’s U.S. locations comprise: KUKA Assembly and Test Corporation (Saginaw, MI); KUKA College USA - Shelby Township (Shelby Township, MI); KUKA ROBOTICS CORPORATION (Shelby Township, MI); KUKA Systems North America LLC (Sterling Heights, MI); KUKA Toledo Production Operations LLC (Toledo, OH); Reis Robotics USA Inc. d/b/a KUKA Industries (Carpentersville, IL); Swisslog Healthcare – Chicago Office (Schaumburg, IL); Swisslog Healthcare – Dallas Office (Farmers Branch, TX); Swisslog Healthcare – North America Headquarters (Denver, CO); Swisslog Healthcare – North Carolina (Kannapolis, NC); Swisslog Healthcare – Philadelphia Office (Bensalem, PA); Swisslog Healthcare – Seattle Office (Kirkland, WA); Swisslog Logistics – Americas Regional Headquarters (Newport News, VA); Swisslog Logistics – Midwest Office (Mason, OH); Swisslog Logistics – West Coast Office (Salida, CA).

<sup>815</sup> MIDEA GROUP CO., LTD 2016 ANNUAL REPORT 44 (Mar. 31, 2017), available at [www.szse.cn](http://www.szse.cn).

<sup>816</sup> MIDEA GROUP CO., LTD 2016 ANNUAL REPORT 44 (Mar. 31, 2017), available at [www.szse.cn](http://www.szse.cn).

<sup>817</sup> Midea Group is 34.75 percent owned by Midea Holding Co., Ltd., the parent, which is 94.55 percent owned by He Xiangjian (individual), who also owns 1.2 percent of Midea Group directly. Other shareholders hold less than 3 percent of shares each. MIDEA GROUP CO., LTD 2016 ANNUAL REPORT 83, 86 (Mar. 31, 2017), available at [www.szse.cn](http://www.szse.cn).

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million (\$870 million) in loans,<sup>818</sup> and in a press release, linked this loan to the “One Belt One Road” and to promoting “international industrial capacity and equipment manufacturing cooperation” strategies, both of which are part of the “Going Out” strategy. China Exim states that the acquisition will “assist in optimizing the domestic robotics industry layout, promote the process of multi-industry production automation, and enhance China’s intelligent manufacturing technology level.”<sup>819</sup>

##### *f) Renewable Energy*

#### **Government Policies**

In the early 2000s, Chinese companies attempted significant oil and shale investments in the United States to improve China’s energy security<sup>820</sup> and gain access to advanced technology.<sup>821</sup> After the major oil SOE China National Offshore Oil Corp. (CNOOC), one of China’s major state-owned oil companies, failed in its bid to acquire Unicol in 2005,<sup>822</sup> it signed a series of shale gas “drill and carry”<sup>823</sup> agreements with foreign companies in 2010.<sup>824</sup> CNOOC’s attempts to invest in such drill and carry deals in the United States fell off after CNOOC acquired Canada’s Nexen in 2013 for \$15 billion.<sup>825</sup> Nexen is a company with advanced shale gas technology,<sup>826</sup> of the kind targeted by Chinese development plans.<sup>827</sup>

Beginning in 2014, Chinese outbound investments in the U.S. energy sector declined significantly, especially in oil and gas. This decline appears to reflect a significant drop in

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<sup>818</sup> *Export-Import Bank of China Guangdong Branch Participates in Signing Ceremony for Bank Conglomerate for Financing Acquisition of Midea’s KUKA* [Chinese], XINHUA NEWS, Aug. 21, 2017, available at [http://www.gd.xinhuanet.com/newscenter/2017-08/21/c\\_1121516160.htm](http://www.gd.xinhuanet.com/newscenter/2017-08/21/c_1121516160.htm).

<sup>819</sup> *Export-Import Bank of China Guangdong Branch Participates in Signing Ceremony for Bank Conglomerate for Financing Acquisition of Midea’s KUKA* [Chinese], XINHUA NEWS, Aug. 21, 2017, available at [http://www.gd.xinhuanet.com/newscenter/2017-08/21/c\\_1121516160.htm](http://www.gd.xinhuanet.com/newscenter/2017-08/21/c_1121516160.htm).

<sup>820</sup> For instance, in the *12th Five-year Energy Development Plan*, Part 2, Chapter 2, one of the “basic principles” is to “improve energy security and the level of [energy] guarantee,” see *State Council Notice on Issuing the 12th Five-year Energy Development Plan* (State Council, Guo Fa [2013] No. 2, issued Jan. 1, 2013).

<sup>821</sup> *The Notice on Issuing the Shale Gas Development Plan (2011-2015)* (NDRC, MoF, MLR, NEA, Fa Gai Neng Yuan [2012] No. 612, issued Mar. 23, 2012), at § 2(2)1(1), specifically calls for employing the IDAR methodology to gain and re-innovate advanced technology.

<sup>822</sup> David Barboza, Andrew Ross Sorkin, *Chinese Company Drops Bid to Buy U.S. Oil Concern*, THE NEW YORK TIMES, Aug. 3, 2005, available at <http://www.nytimes.com/2005/08/03/business/worldbusiness/chinese-company-drops-bid-to-buy-us-oil-concern.html>.

<sup>823</sup> Drill and carry agreements are transactions in which one company invests in another company by covering the costs of ongoing or future development/drilling. This lowers the capital expenditure of the target company, and gives the investing company a share of the resulting asset once it is in operation.

<sup>824</sup> CNOOC entered into two drill and carry agreements with the Chesapeake Energy Corporation in 2010. See Chesapeake Energy Corporation, 2010 Form 10-K 3, 113 (Mar. 1, 2011), on file with the SEC; see also Jenny Mandel, *Will U.S. Shale Technology Make the Leap Across the Pacific?*, E&E NEWS, July 17, 2012, <https://www.eenews.net/stories/1059967354>.

<sup>825</sup> Press release, Nexen Company, Nexen Announces Completion of Acquisition by CNOOC Limited (Feb. 25, 2013); Euan Rocha, CNOOC Closes \$15.1 Billion Acquisition of Canada’s Nexen, REUTERS, Feb. 25, 2013.

<sup>826</sup> *Operations - Shale Gas / Oil*, NEXEN COMPANY, available at <http://www.nexencnooltd.com/en/Operations/ShaleGasOil.aspx> (last visited Dec. 27, 2017).

<sup>827</sup> See, e.g., *State Council Notice on Issuing the 12th Five-year Energy Development Plan (2011-2015)* (State Council, Guo Fa [2013] No. 2, Jan. 1, 2013).

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commodity prices;<sup>828</sup> restrictions on investment related to an internal corruption crackdown carried out by the CCP and heavily focused on the energy industry;<sup>829</sup> and growing attention to pollution and greenhouse gases, as reflected in the 2014 revision of the *Environmental Protection Law of the People's Republic of China*.<sup>830</sup>

Nonetheless, in recent years, Chinese investment appears to have grown in the renewable energy sector (see Section IV.C.1, above). For instance, as reported by AEI, China's investments in the U.S. energy sector in 2016 and 2017 were in alternative energy.<sup>831</sup>

The Chinese government has issued several policies to support the development of renewable energy technologies. Both the *12th Five-year Renewable Energy Development Plan*<sup>832</sup> and *13th Five-year Renewable Energy Development Plan*<sup>833</sup> touch on the need to develop renewable energy for the sake of “ensuring energy security, protecting the ecological environment, and responding to climate change.”<sup>834</sup> Wind, solar, and hydroelectric power all play an important role in the development of renewable energy technologies.

Renewable energy equipment was listed as a “Key Sector” for development in the *Made in China 2025 Notice*.<sup>835</sup> The more detailed *Made in China 2025 Roadmap* calls for 90 percent of Chinese electricity needs to be met by Chinese electricity producers by 2020, and for 30 percent of energy production to be exported by 2020.<sup>836</sup> Likewise, the *Made in China 2025 Roadmap* seeks to have renewable energy equipment containing Chinese IP exceed 80 percent of China's domestic market by 2025.<sup>837</sup>

As discussed below, these policies have directed and influenced Chinese outbound investment in the renewable energy sector.

#### *Chinese Investments in the U.S. Renewable Energy Sector*

##### Hanergy Holding Group Ltd.

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<sup>828</sup> Henry Sanderson, Aniji Raval, David Sheppard, *Explainer: Why Commodities have Crashed*, FINANCIAL TIMES, Aug. 24, 2015.

<sup>829</sup> *Perspectives on Energy Sector Corruption and Anti-Corruption* [Chinese], CENTRAL COMMISSION FOR DISCIPLINE INSPECTION AND MINISTRY OF SUPERVISION OF THE PEOPLE'S REPUBLIC OF CHINA (Jul. 30, 2014), [http://www.ccdi.gov.cn/lt/lly/czfb/201407/t20140730\\_45795.html](http://www.ccdi.gov.cn/lt/lly/czfb/201407/t20140730_45795.html).

<sup>830</sup> *Environmental Protection Law of the People's Republic of China* (adopted Dec. 26, 1989, amended Apr. 24, 2014).

<sup>831</sup> *China Global Investment Tracker* (Jan. 2018), AEI, available at <http://www.aei.org/china-global-investment-tracker>, (last visited Oct. 25, 2017). AEI data includes announced deals, as well as completed transactions; it is possible that some of these transactions have not closed as of the date of this report's publication.

<sup>832</sup> *National Development and Reform Commission Notice on Issuing the 12th Five-year Renewable Energy Development Plan* (NDRC, Fa Gai Neng Yuan [2012] No. 1207, issued July 31, 2012).

<sup>833</sup> *National Development and Reform Commission Notice on Issuing the 13th Five-year Renewable Energy Development Plan* (NDRC, Fa Gai Neng Yuan [2016] No. 2619, issued Dec. 2016).

<sup>834</sup> *National Development and Reform Commission Notice on Issuing the 13th Five-year Renewable Energy Development Plan*, Preamble and § 1(1).

<sup>835</sup> *Made in China 2025 Notice* § 3(6)(7).

<sup>836</sup> *Made in China 2025 Roadmap* § 7(1)2.

<sup>837</sup> *Made in China 2025 Roadmap* § 7(1)2.



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Since 2012, Hanergy Holding Group Ltd. (Hanergy) has acquired several U.S. and European companies specializing in thin-film solar technology. Hanergy was founded in 1994, and aims to be the largest thin-film solar technology producer in the world.<sup>838</sup> The advanced technology gained from these acquisitions contributed to Hanergy winning the “Made in China Top Ten Outstanding Quality Product Contribution Award” from the Made in China 2025 Summit Forum on November 25, 2017.<sup>839</sup> In Hanergy’s press release on winning the award, Hanergy attributed its success to foreign acquisitions made between 2012 and 2014, and the company’s desire to meet goals set out in the *13th Five-year Energy Development Plan* and realize Made in China 2025 goals through its solar film production.

In 2011, CDB extended a CNY 30 billion (\$4.7 billion) line of credit to Hanergy, which provided “various types of financing services, including investment, loans, debt, leasing, and certification” to support Hanergy’s development.<sup>840</sup> According to the official Hanergy press release on the CDB line of credit, the funding was intended to “assist Hanergy in introducing, digesting, and absorbing the world’s advanced solar energy power technology.”<sup>841</sup>

The CDB line of credit appears to have fueled a buying spree. In 2013, Hanergy acquired Solibro, a world-leading German CIGS<sup>842</sup> thin-film module manufacturer<sup>843</sup> for CNY 200 million (\$33 million). Hanergy had already acquired two U.S. companies by 2014 – Global Solar Energy<sup>844</sup> and MiaSolé.<sup>845</sup> These acquisitions gave Hanergy access to advanced CIGS technology, which enabled the company to achieve potential solar cell efficiency of nearly 20 percent.<sup>846</sup> And in 2015, Hanergy acquired U.S.-based Alta Devices,<sup>847</sup> an award-winning thin-film solar technology producer. Alta Devices had been named to MIT’s list of “Most Disruptive Companies” and broke multiple world records for solar cell efficiency.<sup>848</sup>

Hanergy’s efforts to acquire thin-film solar cell technology align with government policy objectives. This fact is evident in the *Solar Energy Power Technology Development “12th Five-*

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<sup>838</sup> *Thin-film Solar Power Generation*, HANERGY, [http://www.hanergy.com/en/industry/industry\\_310.html](http://www.hanergy.com/en/industry/industry_310.html) (last visited Nov. 15, 2017).

<sup>839</sup> Press Release, Hanergy, Hanergy Wins “Made in China Top Ten Outstanding Quality Product Contribution Award” [Chinese] (Dec. 8, 2017), available at [http://www.hanergy.com/content/details\\_37\\_24993.html](http://www.hanergy.com/content/details_37_24993.html).

<sup>840</sup> Zhao Xiaohui, Tao Junjie, *China Development Bank Will Provide CNY 30 billion to Hanergy Group to Support Development of Clean Energy* [Chinese], XINHUA NEWS, Nov. 11, 2013, <http://www.ccchina.gov.cn/Detail.aspx?newsId=15735&Tid=57> (last visited Nov. 6, 2017).

<sup>841</sup> *Hanergy Holding Group Obtains CNY 30 billion in China Development Bank Financial Support – Accelerating Clean Energy Development – Expanding Overseas Business* [Chinese], HANERGY [http://www.hanergy.com/mobile/content/details\\_37\\_924.html](http://www.hanergy.com/mobile/content/details_37_924.html) (last visited Nov. 6, 2017) (emphasis added).

<sup>842</sup> Copper indium gallium selenide (CIGS) solar cells are one of three types of mainstream thin-film solar cells, a technology some analysts predict will be the market leader in thin-film technology due to “advantages on [sic] cost, flexibility, weight, and manufacturability.” See *Thin-Film Photovoltaic (PV) Cells Market Analysis to 2020*, SUN&WIND ENERGY, <http://www.sunwindenergy.com/news/thin-film-photovoltaic-pv-cells-market-analysis-2020> (last visited Nov. 6, 2017).

<sup>843</sup> *About Us*, SOLIBRO, <http://solibro-solar.com/en/company/about-us/> (last visited Nov. 16, 2017).

<sup>844</sup> HANERGY THIN FILM POWER GROUP LTD, 2013 ANNUAL REPORT 249 (Mar. 24, 2014).

<sup>845</sup> HANERGY THIN FILM POWER GROUP LTD, 2013 ANNUAL REPORT 6 (Mar. 24, 2014).

<sup>846</sup> HANERGY THIN FILM POWER GROUP LTD, 2013 ANNUAL REPORT 6 (Mar. 24, 2014).

<sup>847</sup> HANERGY THIN FILM POWER GROUP LTD, 2015 ANNUAL REPORT 49 (Mar. 31, 2016).

<sup>848</sup> *Company Highlights*, ALTA DEVICES, <https://www.altadevices.com/about-overview/> (last visited Nov. 6, 2017); HANERGY THIN FILM POWER GROUP LTD, 2015 ANNUAL REPORT 5 (Mar. 31, 2016).

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year” *Special Plan*,<sup>849</sup> which affirmed the state objective of “break through scaling key equipment design and manufacturing bottlenecks in CIGS thin-film solar cell production lines.”<sup>850</sup> Likewise, Hanergy’s president and chairman, Li Hejun, attributed his company’s success in acquiring these companies and becoming a world leader in thin-film solar panels to “the strong support of the local Party committee and government.”<sup>851</sup> Li Hejun serves in the Chinese People’s Political Consultative Conference (CPPCC) and is the vice chairman of the National Federation of Industry and Commerce.<sup>852</sup>

Chinese authorities have pointed to Hanergy as an example of “unceasingly enlarging the area of investment in developed countries in Europe and America.”<sup>853</sup> In an article on Hanergy’s acquisition of MiaSolé, the Chinese consulate in San Francisco reportedly stated that the Chinese government has begun to restrict large loans to companies in the solar industry, now that the investments “have caused this industry to expand capacity by 17 times.”<sup>854</sup>

#### Goldwind/Renewable Energy Systems Americas

In 2016, Goldwind Americas (Goldwind) acquired a 160 MW wind project from Renewable Energy Systems Americas in a “balance of plant”<sup>855</sup> deal worth \$250 million.<sup>856</sup> Through the transaction, Goldwind obtained the ability to install 64 of its own Permanent-Magnet Direct Drive (PMDD) 2.5 MW wind turbines in the United States,<sup>857</sup> the same technology Goldwind acquired through previous overseas transactions. A May 2016 report states that once complete, the wind project will become Goldwind’s largest U.S. wind project to date.<sup>858</sup>

Goldwind is a subsidiary of Xinjiang Goldwind Technology Holding Co., Ltd., a company whose three largest shareholders are (1) undisclosed shareholders from the Hong Kong Stock

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<sup>849</sup> *Notice on Issuing Solar Energy Power Technology Development “12th Five-year” Special Plan* (MOST, Guo Ke Fa Ji [2012] No. 198, issued Mar. 27, 2012).

<sup>850</sup> *Notice on Issuing Solar Energy Power Technology Development “12th Five-year” Special Plan* § 4(2)2(3).

<sup>851</sup> Zhang Zhirong, *Li Xinyuan Agricultural Rate of Investment Promotion Small Group Team Arrives at Hangery Holding Group to Inspect and Present* [Chinese], GUIGANG NEWS NET Aug. 31, 2017, available at <http://www.gxgg.gov.cn/news/2017-08/140463.htm> (last visited Nov. 6, 2017).

<sup>852</sup> *Li Hejun Introduction* [Chinese], HANERGY <http://www.hanergy.com/about/mrLi.html> (last visited Nov. 6, 2017).

<sup>853</sup> MOFCOM, *Report on Development of China’s Outward Investment and Economic Cooperation 2016* 132 (Dec. 2016).

<sup>854</sup> *Hanergy Completes U.S. Thin Film Solar Energy Firm Acquisition* [Chinese], MOFCOM (Jan. 17, 2013), <http://dwtztj.hzs.mofcom.gov.cn/article/i/jyj1/1/201301/2013010005202.shtml> (last visited Nov. 6, 2017).

<sup>855</sup> This “balance of plant” deal is an agreement between RES, which supplies and installs the infrastructure for the project as a contractor, and Goldwind, which installs the wind turbines – here, Goldwind’s China-produced 2.5 MW PMDDs. See Press Release, Goldwind, Goldwind Americas Signs 160 MW Texas Deal with RES (May 17, 2016); Press Release, Goldwind, Rattlesnake Stirs Texas, available at <http://www.goldwindamericas.com/rattlesnake-stirs-texas>; XINJIANG GOLDWIND SCIENCE & TECHNOLOGY CO., LTD., OVERSEAS SUPERVISION REPORT 7 [Chinese] (Aug. 25, 2017).

<sup>856</sup> XINJIANG GOLDWIND SCIENCE & TECHNOLOGY CO., LTD., OVERSEAS SUPERVISION REPORT 6-7 [Chinese] (Aug. 25, 2017), available at [www.goldwind.com.cn](http://www.goldwind.com.cn). Goldwind Americas’ parent company, Goldwind Holdings, provided bridge financing and “construction and tax equity financing and a long-term ERCOT fixed price hedge for power production.” See Press Release, Xinjiang Goldwind Technology Holding Company, Goldwind Americas Signs 160 MW Texas Deal with RES (May 17, 2016).

<sup>857</sup> XINJIANG GOLDWIND SCIENCE & TECH CO., LTD, 2016 ANNUAL REPORT 18 [Chinese] (Mar. 2017).

<sup>858</sup> *Texas Wind-Power Project Acquired*, CHINA DAILY (USA), May 23, 2016.

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Exchange (18.23 percent), (2) the SOE Xinjiang Wind Energy Ltd., Co. (13.74 percent), and (3) the central SOE China Three Gorges New Energy Ltd., Co. (10.52 percent).<sup>859</sup>

The PMDD technology that Goldwind now produces and is exporting to the United States is technology that Goldwind gained by acquiring a 70 percent share of German company Vensys in March 2008.<sup>860</sup> Goldwind's acquisition of Vensys was financed through a €4.9 million (\$7 million) equity investment and a €36.34 million (\$54 million) "financing guarantee" loan<sup>861</sup> with the China Construction Bank as the guarantor.<sup>862</sup> At the time, MOFCOM pointed to the acquisition of Vensys as an example of "German Enterprises Actively Undertaking Technology Transfer to China,"<sup>863</sup> and as an example of the effectiveness of the "Financing Guarantee" policy bank loan program.<sup>864</sup>

The Goldwind 2016 Annual Report points to the *13th Five-year Plan*'s push to have "three to five equipment manufacturing enterprises fully attain international advanced levels, and clearly increase market share" as one of Goldwind's "policy considerations" for future development planning.<sup>865</sup>

#### g) Automotive

#### Government Policies

Since 2004, the Chinese government has issued a series of plans to encourage technological development in the automotive sector:

- The NDRC 2004 *Policy on Development of the Automotive Industry*<sup>866</sup> established the basis for China's automotive industrial policy after WTO accession. It includes specific provisions on mandating approvals of foreign investments,<sup>867</sup> in addition to long-term

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<sup>859</sup> XINJIANG GOLDWIND SCIENCE & TECH CO., LTD, 2016 ANNUAL REPORT 53 [Chinese] (Mar. 2017).

<sup>860</sup> Press Release, Xinjiang Goldwind Technology Holding Company, Announcement on Acquiring German Vensys Energy Holding Company §4(1) [Chinese] (Jan. 25, 2008), available at [www.szse.cn](http://www.szse.cn).

<sup>861</sup> The "Financing Guarantee" loan is a special loan program from Chinese policy banks in which a Chinese enterprise can guarantee a loan for a foreign enterprise, and by using a Chinese loan, gain access to lower interest loan financing to "lower the cost of financing". See, *Credit Business* [Chinese], CHINA CONSTRUCTION BANK, available at <http://www.ccb.com/tokyo/cn/service/244780.html> (last visited Nov. 1, 2017).

<sup>862</sup> Press Release, Xinjiang Goldwind Technology Holding Company, Announcement on Acquiring German Vensys Energy Holding Company §5(2)2 (Jan. 25, 2008). This loan scheme allows a Chinese bank, in this case CCB, to back Goldwind, which otherwise may not have qualified for a loan large enough for the transaction. *Credit Business* [Chinese], CHINA CONSTRUCTION BANK, available at <http://www.ccb.com/tokyo/cn/service/244780.html> (last visited Nov. 1, 2017).

<sup>863</sup> *Overview of German Wind Industry, Current Situation and Prospects of Cooperation with China* § 2(1) [Chinese], MOFCOM'S GERMAN COUNSELLOR'S OFFICE (Dec. 14, 2009), <http://munich.mofcom.gov.cn/article/ztdy/201005/20100506926532.shtml> (last visited Nov. 1, 2017).

<sup>864</sup> *Overview of German Wind Industry, Current Situation and Prospects of Cooperation with China* § 2(4) [Chinese], MOFCOM'S GERMAN COUNSELLOR'S OFFICE (Dec. 14, 2009), available at <http://munich.mofcom.gov.cn/article/ztdy/201005/20100506926532.shtml> (last visited Nov. 1, 2017).

<sup>865</sup> XINJIANG GOLDWIND SCIENCE & TECH CO., LTD, 2016 ANNUAL REPORT 12 (Mar. 2017).

<sup>866</sup> *Policy on Development of the Automotive Industry* (NDRC, Order No. 8, issued May 21, 2004).

<sup>867</sup> *Policy on Development of the Automotive Industry*, arts. 43, 44.

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objectives to create global well-known brands<sup>868</sup> and indigenously develop electric, hybrid, and alternative fuel technologies.<sup>869</sup>

- The State Council's 2009 *Plan on Adjusting and Revitalizing the Auto Industry* pledges CNY 10 billion (\$1.4 billion)<sup>870</sup> in government financing over three years to promote technological progress, part of China's CNY 4 trillion (\$586 billion)<sup>871</sup> stimulus plan. The financing would go toward targeted support for safer, fuel-efficient, environmentally friendly vehicles; filling domestic supply chain gaps; and creating collective platforms for technology R&D and testing in the auto parts sector.<sup>872</sup>
- The 2009 *Opinions on Promoting the Sustainable and Healthy Development of China's Exports of Automotive Products*<sup>873</sup> targets a 10 percent share of global auto parts exports for Chinese automakers by 2020.<sup>874</sup> The *Opinions* also call for improvements in the composition of exports to include a higher share of indigenous brands and passenger sedans, as well as new energy vehicles.<sup>875</sup>
- The 2013 MIIT *Guiding Opinions on Accelerating and Promoting Industry Mergers and Restructuring* set a target to establish three to five globally competitive, large-scale domestic automakers through mergers and acquisitions among existing players and a consolidation of their respective global assets.<sup>876</sup>
- China identified NEVs as one of the priority research areas in the 2006 (*MLP*),<sup>877</sup> and NEVs were selected as one of China's seven SEIs, as set forth in the 2012 *12th Five-year Strategic Emerging Industries Development Plan*.<sup>878</sup> Pursuant to these plans, the *Energy-Saving and New-Energy Automotive Industry Development Plan (2012-2020)*,<sup>879</sup> which

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<sup>868</sup> *Policy on Development of the Automotive Industry*, art. 3.

<sup>869</sup> *Policy on Development of the Automotive Industry*, art. 8.

<sup>870</sup> *Plan on Adjusting and Revitalizing the Auto Industry* § 4(9) (State Council, Issued Mar. 20, 2009).

<sup>871</sup> In 2008, the dollar value of this stimulus plan was reported as \$586 billion. See, *China Seeks Stimulation*, THE ECONOMIST, Nov. 10, 2008. Due to subsequent appreciation of the CNY against the USD, the plan would now be worth approximately \$600 billion.

<sup>872</sup> *Plan on Adjusting and Revitalizing the Auto Industry* § 4(9) (State Council, Issued Mar. 20, 2009).

<sup>873</sup> *Opinions on Promoting the Sustainable and Healthy Development of China's Exports of Automotive Products* (MOFCOM, NDRC, MIIT, MOF, General Administration of Customs, and General Administration of Quality Supervision, Inspection and Quarantine, Shang Chan Fa [2009] No. 523, issued Oct. 23, 2009).

<sup>874</sup> *Opinions on Promoting the Sustainable and Healthy Development of China's Exports of Automotive Products* § 2(2) (MOFCOM, NDRC, MIIT, MOF, General Administration of Customs, and General Administration of Quality Supervision, Inspection and Quarantine, Shang Chan Fa [2009] No. 523, issued Oct. 23, 2009).

<sup>875</sup> *Opinions on Promoting the Sustainable and Healthy Development of China's Exports of Automotive Products* § 2(2) (MOFCOM, NDRC, MIIT, MOF, General Administration of Customs, and General Administration of Quality Supervision, Inspection and Quarantine, Shang Chan Fa [2009] No. 523, issued Oct. 23, 2009).

<sup>876</sup> *Guiding Opinions on Accelerating and Promoting Industry Mergers and Restructuring* § 2(1) (MIIT, NDRC, MOF, and nine other ministries, Gong Xin Bu Lian Chan Ye [2013] No. 16, published Jan. 22, 2013).

<sup>877</sup> *Notice on Issuing the National Medium- and Long-Term Science and Technology Development Plan Outline (2006-2020)* § 3(36) (State Council, Guo Fa [2005] No. 44, issued Dec. 26, 2005).

<sup>878</sup> *Notice on Issuing the 12th Five-year National Strategic Emerging Industries Development Plan* § 3(7).

<sup>879</sup> *Energy-Saving and New-Energy Automotive Industry Development Plan (2012-2020)* § 3(2) (State Council, Guo Fa [2012] No. 22, issued June 28, 2012).

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was issued in 2012, sets ambitious targets for increasing the production and consumption of NEVs in China (see Section II.B.2(a) above for further discussion).

The Chinese government has made clear that outbound investment is an important part of this strategy. For instance, the 2009 *Plan on Adjusting and Revitalizing the Automotive Industry* states:

Formulate policies corresponding to aspects including technological development, government procurement, and financing channels; guide automotive manufacturing enterprises in making the development of indigenous brands a priority for enterprise strategy; support automotive manufacturing enterprises to use multiple methods, including indigenous development, coordinate development, and domestic and *foreign acquisitions*, to develop indigenous brands.<sup>880</sup>

State-owned entities have played an important role in China's automotive sector. Two of China's three largest automakers – First Automotive Works (FAW) and Dongfeng Motor – are central SOEs administered by SASAC. Several other automakers, including SAIC, are owned by provincial governments.<sup>881</sup> The market leaders in China in terms of sales are SOEs, and these firms are the principal beneficiaries of government-mandated joint ventures with foreign carmakers.<sup>882</sup>

State-owned policy banks have provided financial support to Chinese automakers investing overseas. For example, the provincial state-owned automaker Chery Motors signed a strategic cooperation agreement with China Exim that involved a CNY 10 billion (\$1.4 billion) loan to finance overseas expansion.<sup>883</sup> When China Exim in 2012 highlighted its support for China's outbound investment, it listed Chery alongside major steel, machinery and petrochemical companies.<sup>884</sup>

#### *Chinese Investments in the U.S. Automotive Sector*

##### AVIC-Pacific Century Motors/Nexteer Automotive

AVIC, the central SOE tasked with developing China's aviation industry, has been an active investor in the U.S. automotive sector.

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<sup>880</sup> *Plan on Adjusting and Revitalizing the Automotive Industry* § 3(6).

<sup>881</sup> *State Asset Report Independent Interpretation of 48 Central and 18 Local SOEs Enter the 2017 Fortune World 500 List* [Chinese], <http://www.sasac.gov.cn/n2588025/n2588164/n4437287/c7428253/content.html>. The "500 List" includes BAIC Group and GAC Group as local state owned auto manufacturers.

<sup>882</sup> A June 2015 article lists the leading brands in China as: (1) Volkswagen (VW -FAW – SAIC joint venture); (2) Chang'an; (3) Hyundai (Hyundai – BAIC joint venture); (4) Buick (GM – SAIC joint venture); (5) Ford (Ford – Chang'an joint venture). *Vehicle Sales Rankings in China: Strong Performance for Domestic Brands, Changan Ranked Second Behind Market Leader Volkswagen*, AUTOMOTIVE WORLD, June 1, 2015.

<sup>883</sup> Patti Waldmeir, *Chery Gets \$1.5bn Loans from China Exim Bank*, FINANCIAL TIMES, Dec. 8, 2008.

<sup>884</sup> *Economic Daily: Export-Import Bank of China Strategy Transformed into Innovation Development* [Chinese], THE EXPORT IMPORT BANK OF CHINA (Oct. 30, 2012), [http://www.eximbank.gov.cn/tm/medialist/index\\_26\\_16570.html](http://www.eximbank.gov.cn/tm/medialist/index_26_16570.html).

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In 2010, Pacific Century Motors purchased Nexteer Automotive, a maker of steering systems, from General Motors,<sup>885</sup> in a deal with an estimated value of \$450 million.<sup>886</sup> At the time, Pacific Century Motors was owned by an investment company under the Beijing municipal government. In 2011, majority ownership of Pacific Century Motors was transferred to the central SOE AVIC, which acquired a 51 percent stake in the firm.<sup>887</sup> As a result, AVIC is now the majority owner of Nexteer Automotive.

##### AVIC/Hilite International

In May 2014, ACIF Electromechanical Systems Co., Ltd. (AVICEM), a subsidiary of AVIC, acquired Hilite International, a German-headquartered company with operations in the United States and China, in a deal valued at €473 million (\$629 million).<sup>888</sup> Hilite International describes itself as “a global supplier of leading automotive system solutions” with “engine, transmission and emission control products [that] are used to improve fuel efficiency and reduce emissions for passenger cars and commercial vehicles.”<sup>889</sup> The company’s U.S. operations comprise three units: (1) a sales and R&D center in Orion, Michigan; (2) a production site for camphasing valves, on/off & PWM solenoids, cylinder deactivation valves and integrated solenoid module assemblies in Whitehall, Michigan; and a (3) production site for machining of rotors and stators for camphasers, assembly and testing of camphasers, and coil armature assemblies for 4WD and AWD applications in Dallas, Texas.<sup>890</sup> Hilite’s China operations comprise a Shanghai office that coordinates the firm’s sales, purchasing, and engineering activities for Asia, and a plant in Changshu, Jiangsu province, which makes DCT components and VVT phasers and valves.<sup>891</sup>

##### AVIC/Henniges Automotive

In June 2015, AVIC purchased 51 percent of the shares of Henniges Automotive, a producer of sealing and anti-vibration solutions for high-end automobiles.<sup>892</sup> The remaining 49 percent of Henniges was acquired by BHR, an investment firm backed by Bank of China, one of China’s four large state-owned commercial banks, and the Chinese funds Bohai Industrial Investment Funds and Shanghai Ample Harvest (a subsidiary of Shanghai Harvest Fund).<sup>893</sup> The entire acquisition was valued at around \$600 million.<sup>894</sup>

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<sup>885</sup> Press Release, General Motors, GM Finalizes Sale of Nexteer to Pacific Century Motors (Nov. 29, 2010).

<sup>886</sup> *G.M. Sells Parts Maker to a Chinese Company*, NEW YORK TIMES, Nov. 29, 2010.

<sup>887</sup> *State-owned AVIC Buys US-based Nexteer*, CHINA DAILY, Apr. 11, 2011.

<sup>888</sup> Press Release, Hilite International, Hilite International Accelerates Global Growth Prospects with New Owner AVICEM (May 29, 2014).

<sup>889</sup> Press Release, Hilite International, Hilite International Opens New Plant in China (Dec. 6, 2011).

<sup>890</sup> *Locations – USA*, HILITE INTERNATIONAL, <http://www.hilite.com/corporate/locations/usa.html> (last visited Nov. 20, 2017).

<sup>891</sup> *Locations – USA*, HILITE INTERNATIONAL, <http://www.hilite.com/corporate/locations/usa.html> (last visited Nov. 20, 2017).

<sup>892</sup> *AVIC Agrees to Acquire the U.S. Automotive Parts Manufacturer Henniges* [Chinese], CNSTOCK, June 30, 2015, <http://news.cnstock.com/news/bwqx-201506-3477281.htm>.

<sup>893</sup> *BHR Acquires Henniges Automotive*, BHR Partners (Sept. 8, 2015); *BHR and AVIC Auto Acquire Henniges Automotive*, PR NEWswire, Sept. 15, 2015.

<sup>894</sup> *BHR and AVIC Auto Acquire Henniges Automotive*, PR NEWswire, Sept. 15, 2015.

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### Wanxiang Acquisitions in the NEV Sector

In 2013, A123 Systems, which produces lithium batteries for electric vehicles, was purchased by the U.S. subsidiary of Wanxiang Group, Wanxiang America Corp., for \$257 million.<sup>895</sup> In 2014, Fisker Automotive, a plug-in vehicle producer, was sold in bankruptcy to Wanxiang America, a subsidiary of Wanxiang Group, for \$149 million.<sup>896</sup>

Lithium batteries are a focal point of NEV development in China, and the Chinese government has restricted market access for foreign battery makers in China's fast growing NEV industry.<sup>897</sup> Lithium-ion batteries are used in the automotive sector for start-stop technology, and for use in electric and hybrid vehicles. The automotive sector presents a significant growth opportunity for lithium-ion batteries.<sup>898</sup>

Wanxiang Group has been classified as a nationally important corporation by the State Council, and it receives government support in exchange for fulfilling national policy objectives.<sup>899</sup> Wanxiang received at least \$6.5 million in Chinese government subsidies in 2015,<sup>900</sup> and received approximately \$8.8 million in government subsidies in 2016.<sup>901</sup> Based on the company's 2015 annual report, Wanxiang's chairman has been a member of the NPC,<sup>902</sup> and one board member has received a special salary from the State Council.<sup>903</sup>

### 3. Leveraging “International Innovation Resources” Through Engagement with Silicon Valley

The Chinese leadership is pursuing an “innovation-driven” strategy for civilian and military development, seeking to become a science and technology superpower<sup>904</sup> and emerge as a leading innovator by 2030.<sup>905</sup> In pursuit of this agenda, Chinese investment activities have been particularly prevalent in U.S. technology centers such as Silicon Valley and Boston.

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<sup>895</sup> *Chinese Firm Wins A123 Despite U.S. Tech Transfer Fears*, REUTERS, Jan. 29, 2013.

<sup>896</sup> J. Voelcker, *Fisker Assets Sold for \$149 Million to Wanxiang, Chinese Parts Maker*, GREEN CAR REPORTS, Feb. 15, 2014; *China's Wanxiang Wins U.S. Bankruptcy Auction for Fisker Automotive*, REUTERS, Feb. 14, 2014.

<sup>897</sup> *Chinese Battery Manufacturers Increasing Their Ternary Battery Production Volume*, MEHR NEWS AGENCY, Aug. 29, 2016.

<sup>898</sup> *Lithium-ion Battery Market to Reach \$41 Bn*, INDUSTRIAL MINERALS, Sept. 2, 2013; *Insight: Electric Car Revolution Brightens Outlook for a Medley of Metals*, THE PENINSULA Oct. 5, 2016. A marginal increase in electric vehicle units translates into a large increase in battery demand; for example, each Tesla electric vehicle contains battery capacity of approximately 85,000 watt-hours (Wh), compared to just 5 Wh for an average cell phone.

<sup>899</sup> *Joyson Electronics Receives RMB 14.95 Million for a Great and Strong New Energy Vehicle Industry* [Chinese], NINGBO JOYSON ELECTRONICS HOLDING LTD CORP. (Apr. 16, 2014), available at <http://www.joyson.cn/index.php?a=shows&catid=84&id=169>.

<sup>900</sup> WANXIANG GROUP, 2015 ANNUAL REPORT 131 [Chinese] (2015).

<sup>901</sup> WANXIANG GROUP, 2016 ANNUAL REPORT 132 [Chinese] (2015).

<sup>902</sup> WANXIANG GROUP, 2015 ANNUAL REPORT 53 [Chinese] (2015).

<sup>903</sup> WANXIANG GROUP, 2015 ANNUAL REPORT 53 [Chinese] (2015).

<sup>904</sup> English translation of the Chinese term *keji chuangxin qianguo*.

<sup>905</sup> *Xi Jinping: Comprehensively Advance an Innovation Driven Development Strategy, Advance New Leaps in Realizing National Defense and Military Construction* [Chinese], XINHUA NEWS, Mar. 13, 2016, [http://news.xinhuanet.com/politics/2016lh/2016-03/13/c\\_1118316426.htm](http://news.xinhuanet.com/politics/2016lh/2016-03/13/c_1118316426.htm). See also the official strategy released on innovation-driven development: *CCP State Council Releases the “National Innovation-Driven Development*

#### IV. Outbound Investment

According to data from CB Insights, China-based investors have engaged in technology investments (*i.e.*, corporate, VC, angel, private equity, etc.) amounting to \$19 billion in the United States, across 641 different deals, since 2012, with particular focus on AI, robotics, and augmented or virtual reality.<sup>906</sup> China's sovereign wealth fund, CIC, is reportedly taking steps to begin direct investment in U.S. technology start-ups.<sup>907</sup> In recent years, Chinese investment activities have accounted for approximately 10 percent of all U.S. venture deals per year, and have started to receive greater attention.<sup>908</sup>

Chinese investments in U.S. technology start-ups are part of a multifaceted technology and knowledge transfer strategy. This strategy is reflected in several national plans, including the Made in China 2025 policy, the “*Internet Plus*” *Artificial Intelligence Three-Year Action Implementation Plan*, the *Robot Industry Development Plan (2016-2020)*,<sup>909</sup> and the *13th Five-year National Science and Technology Innovation Plan*. The *Next-Generation Artificial Intelligence Development Plan*, released in July 2017, calls for a “Going Out” strategy that includes overseas mergers and acquisitions, equity investments, VC, and the establishment of research and development centers abroad.<sup>910</sup>

Reflecting these objectives, Chinese entities have established research centers and “talent bases” in Silicon Valley, directly funded and partnered (*e.g.*, joint laboratories) with academic research institutions, and actively recruit top talent through government programs.

For example, iFlytek, a prominent Chinese AI start-up focused on intelligent voice recognition and speech-to-text products established an office in Silicon Valley in 2016.<sup>911</sup> According to iFlytek's website, it receives 863 program funding<sup>912</sup> for speech technology and is recognized as a key software enterprise under the National Planning and Layout of Key Software Companies.<sup>913</sup> iFlytek also serves as the leading unit on MIIT's “Working Group on Technical

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*Strategy Guidelines* [Chinese], XINHUA NEWS, May 19, 2016, [http://news.xinhuanet.com/politics/2016-05/19/c\\_1118898033.htm](http://news.xinhuanet.com/politics/2016-05/19/c_1118898033.htm).

<sup>906</sup> *From China with Love: AI, Robotics, AR/VR Are Hot Areas For Chinese Investment In US*, CB INSIGHTS, Aug. 1, 2017.

<sup>907</sup> Theodore Schleifer, *Chinese investors are making moves to increase their spending in Silicon Valley*, RECODE, Oct. 29, 2017. To date, China Investment Corporation investments in U.S. tech start-ups have been through investments in VC firms as a limited partner.

<sup>908</sup> Paul Mozur, Jane Perlez, *Chinese Tech Investment Flying Under the Radar, Pentagon Warns*, NEW YORK TIMES, Apr. 7, 2017.

<sup>909</sup> *Release of the Robot Industry Development Plan* [Chinese], NATIONAL DEVELOPMENT AND REFORM COMMISSION (Apr. 26, 2016), [http://www.ndrc.gov.cn/zcfb/zcfbghwb/201604/t20160427\\_799898.html](http://www.ndrc.gov.cn/zcfb/zcfbghwb/201604/t20160427_799898.html).

<sup>910</sup> *State Council Notice on the Issuance of the New Generation Artificial Intelligence Development Plan* (State Council, Guo Fa [2017] No. 35, issued July 8, 2017), [http://www.gov.cn/zhengce/content/2017-07/20/content\\_5211996.htm](http://www.gov.cn/zhengce/content/2017-07/20/content_5211996.htm).

<sup>911</sup> *iFlytek – Why is it One of the ‘World’s Most Intelligent Companies’?* [Chinese], ECONOMICS DAILY, Aug. 17, 2017, [http://www.ce.cn/cysc/tech/gd2012/201708/17/t20170817\\_25062923.shtml](http://www.ce.cn/cysc/tech/gd2012/201708/17/t20170817_25062923.shtml).

<sup>912</sup> The 863 program is a National High-Tech R&D Program which provides funding to promote advances in technology. See *National High-tech R&D Program (863) Program*, MOST, available at <http://www.most.gov.cn/eng/programmes1> (last visited Dec. 22, 2017).

<sup>913</sup> *Administrative Measures for Accreditation of National Planning and Layout Key Software Enterprises* (SAT, MOFCOM, and MIIT, Fa Gai Gao Ji [2005] No. 2669, issued Dec. 20, 2005), pursuant to the *Several Policies on Encouraging the Development of the Software and Integrated Circuit Industry* (State Council, Guo Fa [2000] No.



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Standards for Interactive Chinese Language Technology.”<sup>914</sup> In addition, iFlytek operates from the Anhui Hefei High-tech Industry Development Zone, one of at least 28 MIIT designated national-level MCF bases.<sup>915</sup> MCF bases seek to foster development of China’s high-tech industry to support military modernization and economic development.<sup>916</sup>

A number of major Chinese technology companies have established offices and laboratories in Silicon Valley, and there are even a number of new incubators that seek to establish closer engagement with start-ups. These same companies, in turn, are cooperating with the Chinese government to establish technology centers within China, often in the form of local government initiatives that focus on emerging and dual-use technologies.

For instance, in 2014, the Hangzhou Hi-Tech Venture Capital Co. Ltd., a company owned by the municipal government of Hangzhou,<sup>917</sup> founded the Hangzhou Silicon Valley Incubator,<sup>918</sup> located in Redwood City, California.<sup>919</sup> As of late 2016, the incubator had supported 30 projects, investing a total of \$3.4 million, and attracting 41 overseas projects to settle or plan to return to Hangzhou, which has the official goal of becoming “China’s Silicon Valley.”<sup>920</sup> Projects promoted in the incubator include autonomous driving and smart vehicles, robotics, and the conversion of exhaust gas into electrical energy.<sup>921</sup>

In this context, it is important to consider that the “Going Out” strategy is part of a dual “Going Out and Drawing In” approach. While China incentivizes domestic companies to invest abroad, it also encourages innovative enterprises from Silicon Valley and worldwide to establish operations in China under the “Drawing In”<sup>922</sup> strategy. For example, the concept of “Drawing

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18, issued June 24, 2000). Becoming an accredited “key software enterprise” requires companies to submit corporate records, including contracts, exports, and financial data, to the China Software Industry Association for examination. Accredited “key software companies” receive preferential tax treatment, notably a corporate income tax rate of 10 percent. *See also Company Profile*, iFLYTEK, <http://www.iflytek.com/about/index.html> (last visited Nov. 8, 2017).

<sup>914</sup> *Company Profile*, iFLYTEK, <http://www.iflytek.com/about/index.html> (last visited Nov. 8, 2017).

<sup>915</sup> *Description of National New Industrial Demonstration Base* [Chinese], MIIT (Feb. 2012), <http://sfjd.miit.gov.cn/BaseInfoAction!findListIndustry.action>; Huai Chuai, *Let the World Hear ‘Anhui’s Voice’—Hefey High Tech Industry Development Zone Smart Language Industry’s Concentrated Development Base Quest* [Chinese], ANHUI DAILY, May 4, 2016, [http://www.iflytek.com/content/details\\_135\\_2092.html](http://www.iflytek.com/content/details_135_2092.html)

<sup>916</sup> *Description of National New Industrial Demonstration Base* [Chinese], MIIT (Feb. 2012), <http://sfjd.miit.gov.cn/BaseInfoAction!findListIndustry.action>.

<sup>917</sup> Company profile available on Hangzhou municipal government website, *available at* [http://www.hangzhou.gov.cn/art/2015/11/12/art\\_810110\\_1100.html](http://www.hangzhou.gov.cn/art/2015/11/12/art_810110_1100.html) (last visited Jan. 9, 2018).

<sup>918</sup> *Hangzhou Silicon Valley Incubator Going Out to Promote 41 Overseas High-tech Projects* [Chinese], HANGZHOU NEWS, Dec. 6, 2016, [http://hznews.hangzhou.com.cn/jingji/content/2016-12/06/content\\_6410731.htm](http://hznews.hangzhou.com.cn/jingji/content/2016-12/06/content_6410731.htm); *Hangzhou, Cross-Border Venture Capital Investment Gradually Improving* [Chinese], HUANQIU NET, Dec. 21, 2016, <http://finance.huanqiu.com/roll/2016-12/9838718.html>.

<sup>919</sup> *The Journey to Knowledge Acquisition: Hangzhou Silicon Valley Incubator “Accomplish Great Things with Little Effort* [Chinese], HANGZHOU NET, Sept. 26, 2017, [http://hznews.hangzhou.com.cn/jingji/content/2017-09/26/content\\_6671062.htm](http://hznews.hangzhou.com.cn/jingji/content/2017-09/26/content_6671062.htm).

<sup>920</sup> *Hangzhou Silicon Valley Incubator Going Out to Promote 41 Overseas High-tech Projects* [Chinese], HANGZHOU NEWS Dec. 6, 2016, [http://hznews.hangzhou.com.cn/jingji/content/2016-12/06/content\\_6410731.htm](http://hznews.hangzhou.com.cn/jingji/content/2016-12/06/content_6410731.htm).

<sup>921</sup> *Hangzhou Silicon Valley Incubator Going Out to Promote 41 Overseas High-tech Projects* [Chinese], HANGZHOU NEWS Dec. 6, 2016, [http://hznews.hangzhou.com.cn/jingji/content/2016-12/06/content\\_6410731.htm](http://hznews.hangzhou.com.cn/jingji/content/2016-12/06/content_6410731.htm).

<sup>922</sup> English translation of Chinese term *zou jin lai* or *yinjin*.

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In” regularly appears in the context of MOST initiatives and high-tech parks administered by local governments.<sup>923</sup>

Below, this dual “Going Out and Drawing In” approach is discussed in the context of the activities of Zhongguancun Development Group (ZGC Group).

##### *Zhongguancun and the Zhongguancun Development Group*

ZGC Group is an SOE established in April 2010 by the Beijing municipal government in order to accelerate development of Zhongguancun,<sup>924</sup> a Beijing-based technology park vying with other localities to become China’s next Silicon Valley.<sup>925</sup> ZGC Group is actively seeking opportunities to expand its overseas presence, particularly in the United States’ Silicon Valley. The ZGC Group website states:

[W]e are accelerating the expansion of overseas operations with a view toward “One Belt One Road” and the internationalization of Zhongguancun, in accordance with the concept of “drawing in, going out, and localization,” we are establishing a “one office, one fund, one center” constellation of operations in Silicon Valley, and are constructing a platform that links Zhongguancun to Silicon Valley through reciprocal exchanges. And by emulating the Silicon Valley model, we are undertaking an expansion of our operations toward innovation resource cluster areas and national strategic node areas in North America, Europe, and elsewhere, advancing the global distribution of Zhongguancun enterprises and accelerating the internationalization of Zhongguancun.<sup>926</sup>

In pursuit of these objectives, ZGC Group established the ZGC Group Silicon Valley Incubator Center in December 2012. According to ZGC Group, this center is “ZGC Group’s trial base for establishing a branch entity in the United States’ Silicon Valley.”<sup>927</sup> It is located inside the Zhongguancun Hanhai Science and Technology Park, established by another Chinese company, Beijing Hanhai Zhiye Investment Management Co., Ltd.,<sup>928</sup> a subsidiary of Beijing Hanhai Holdings Group.<sup>929</sup> The Zhongguancun Hanhai Science and Technology Park is designed to

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<sup>923</sup> See, e.g., *Aligning to the Standards, Promote the Close Promotion of Science and Technology—Take Advantage of Strength, Build a Science Technology Innovation Center* [Chinese], SHENZHEN MUNICIPAL SCIENCE AND TECHNOLOGY INNOVATION COMMITTEE, (Nov. 18, 2016), available at <http://www.szsti.gov.cn/news/2016/11/18/1>.

<sup>924</sup> *About Us* [Chinese], ZHONGGUANCUN DEVELOPMENT GROUP, <http://www.zgcgroup.com.cn/about/index.html> (last visited Jan. 11, 2018).

<sup>925</sup> *Vying for “China Silicon Valley”* [Chinese], XINHUA NEWS, Apr. 20, 2017, [http://news.xinhuanet.com/fortune/2017-04/20/c\\_129557023.htm](http://news.xinhuanet.com/fortune/2017-04/20/c_129557023.htm).

<sup>926</sup> *Group Overview* [Chinese], ZHONGGUANCUN DEVELOPMENT GROUP, <http://www.zgcgroup.com.cn/about/intro.html> (last visited Jan. 11, 2018).

<sup>927</sup> *ZGC Group Silicon Valley Incubator Center Established and Open for Business* [Chinese], ZHONGGUANCUN DEVELOPMENT GROUP, Dec. 6, 2012, [http://www.zgcgroup.com.cn/news/details\\_16\\_927.html](http://www.zgcgroup.com.cn/news/details_16_927.html).

<sup>928</sup> *Zhongguancun Hanhai Silicon Valley Science and Technology Park Reaches Out Feelers to Silicon Valley to Influence the World* [Chinese], PEOPLE’S DAILY, Nov. 14, 2012, <http://usa.people.com.cn/n/2012/1114/c241376-19581508.html>.

<sup>929</sup> Beijing Hanhai Holdings Group manages numerous science and technology parks outside China, and in introducing these overseas projects on its website, states: “In recent years, Beijing Hanhai Holdings Group, under the resolute guidance of leaders at all levels, including the national Ministry of Science and Technology, the

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serve as an incubator for U.S and Chinese ventures and to facilitate Chinese investment in the United States, promoting the combination of “drawing in<sup>930</sup>” – *i.e.*, attracting investment and talent to China – and implementing the “Going Out” strategy.<sup>931</sup>

In October 2014, ZGC Group established ZGC Capital Corporation, a wholly-owned subsidiary based in Santa Clara, California.<sup>932</sup> Subsequently, in May 2016, the ZGC Innovation Center @ Silicon Valley, co-founded by ZGC Capital Corporation and the California-based fund C.M. Capital,<sup>933</sup> officially began operations in Silicon Valley.<sup>934</sup> The project is described by ZGC Capital Corporation as the “core of the Zhongguancun overseas strategy,” as a means of “advancing the going out of capital from Zhongguancun and the drawing in of advanced technology and talent,” and as a way to use a “‘fund plus incubator’ model” in order to “guide and support projects to come to Zhongguancun for industrial application.”<sup>935</sup> An article by *Xinhua News*, republished on the Chinese government’s principal website, characterizes the ZGC Innovation Center @ Silicon Valley as “a strategic step” for Zhongguancun to establish a foreign presence and “leverage innovation resources.”<sup>936</sup>

ZGC Capital Corporation has been actively engaged in Silicon Valley. To date, the company’s investments there include Meta, an augmented reality platform; Everstring, a forecasting platform; and Optimizely, which helps corporate entities improve user conversion and activity.<sup>937</sup> ZGC Capital Corporation has also invested in a series of local Silicon Valley funds, including Danhua, Plug & Play, and KiloAngel.<sup>938</sup>

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Ministry of Commerce, and the Beijing municipal government, [...] has actively developed ‘Drawing In’ and ‘Going Out’ international science and technology exchange platforms [...] [and has] actively explored and guided the internationalization development of China’s science and technology incubators.” *Overseas Parks* [Chinese], HANHAI HOLDINGS, <http://www.hanhaiholding.com/overseas.aspx> (last visited Jan. 11, 2018); *Hanhai Holdings* [Chinese], HANHAI HOLDINGS, <http://www.hanhaiholding.com/> (last visited Jan. 11, 2018).

<sup>930</sup> English translation of Chinese term *yin jin lai*.

<sup>931</sup> *Zhongguancun Development Group Leaders Guidance Work Touring Zhongguancun Hanhai Science and Technology Park* [Chinese], HANHAI HOLDINGS, Jan. 3, 2014, <http://www.hanhaiholding.com/newscon.aspx?id=80>. See also *U.S. Silicon Valley Zhongguancun Hanhai Science and Technology Park* [Chinese], HANHAI HOLDINGS, <http://www.hanhaiholding.com/overseascon.aspx?id=66> (last visited Jan. 11, 2018).

<sup>932</sup> *About Us*, ZGC CAPITAL CORPORATION, <http://zgccapital.com/about-us/> (last visited Jan. 11, 2018).

<sup>933</sup> *Company Overview of C.M. Capital Corporation*, BLOOMBERG, <https://www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=3375306> (last visited Jan. 11, 2018) (“C.M. Capital Corporation is a private equity and VC arm of C.M. Capital (De) Inc. The firm also makes direct and indirect real estate investments. It also provides investment advisory services for various Cha Group affiliates. C.M. Capital Corporation was founded in 1969 and is based in Palo Alto, California.”).

<sup>934</sup> *About Us* [Chinese], ZGC INNOVATION CENTER @ SILICON VALLEY, <http://zgccapital.com/cn/about-us/>. See also *Zhongguancun Silicon Valley Innovation Center to Build a Bridge of innovation and Cooperation for Sino-US Enterprises* [Chinese], PEOPLE’S DAILY, May 12, 2016, <http://world.people.com.cn/n1/2016/0512/c1002-28346254.html>.

<sup>935</sup> *About Us* [Chinese], ZGC INNOVATION CENTER @ SILICON VALLEY, <http://zgccapital.com/cn/about-us/>. See also *Zhongguancun Silicon Valley Innovation Center to Build a Bridge of innovation and Cooperation for Sino-US Enterprises* [Chinese], PEOPLE’S DAILY, May 12, 2015, <http://world.people.com.cn/n1/2016/0512/c1002-28346254.html>.

<sup>936</sup> *Zhongguancun Development Group Sets Up Innovation Center in Silicon Valley* [Chinese], XINHUA NEWS, May 12, 2016, [http://www.gov.cn/xinwen/2016-05/12/content\\_5072814.htm](http://www.gov.cn/xinwen/2016-05/12/content_5072814.htm).

<sup>937</sup> *Structure of Overseas Funds*, ZHONGGUANCUN CAPITAL, <http://zgccapital.com/overseafund/>.

<sup>938</sup> *Structure of Overseas Funds* [Chinese], ZHONGGUANCUN CAPITAL, <http://zgccapital.com/overseafund/>.

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In parallel, the company has engaged in talent recruitment. For example, in September 2017, ZGC Innovation Center @ Silicon Valley held a “Beijing-Silicon Valley Talent and Technology Summit” in Santa Clara, attended by the Acting Mayor of Beijing Chen Jining and the PRC’s San Francisco Consul General Luo Linquan. At the event, ZGC Capital Corporation described its ongoing efforts to identify overseas talent and technology that can “make a contribution to Beijing’s science and technology innovation development.”<sup>939</sup> Furthermore, ZGC Group maintains an active partnership with Stanford University.<sup>940</sup>

#### D. China’s Acts, Policies, and Practices are Unreasonable

As Sections IV.A-IV.C confirm, China has engaged in a wide-ranging, well-funded effort to direct and support the systematic investment in, and acquisition of, U.S. companies and assets to obtain cutting-edge technology, in service of China’s industrial policy. USTR finds these acts, policies, and practices to be unreasonable under 19 U.S.C. § 2411(b)(1).

The “unreasonable” conduct of a foreign government is defined as an act, practice, or policy as one that “while not necessarily in violation of, or inconsistent with, the international legal rights of the United States is otherwise unfair and inequitable.”<sup>941</sup> In determining reasonableness, USTR also takes into account, to the extent appropriate, whether foreign firms in the United States are provided reciprocal opportunities to those denied U.S. firms.<sup>942</sup>

China’s acts, policies, and practices are unreasonable because they are directed and supported by the government, and unfairly target critical U.S. technology with the goal of achieving dominance in strategic sectors. As discussed in Section IV.B, China has directed enterprises to pursue outbound investment with the express objective of acquiring and transferring technology. China has articulated this objective in numerous state planning documents and policies, in furtherance of both military and economic goals. China has also drawn on a range of tools to implement this approach – for instance, through the control that it exercises over SOEs, state-backed banks, and investment funds, and through its outbound investment approval regime.<sup>943</sup> As a result of these efforts, investments are often “politically driven and financially supported by Chinese government funds.”<sup>944</sup> In short, the Chinese government has the means and authority to prevail (and does prevail) on Chinese firms on where to invest, what to invest, and how much to invest.

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<sup>939</sup> *Beijing Municipality Silicon Valley Talent and S&T Summit Held in the United States; Advances Synergies in Chinese and U.S. Innovation Resources* [Chinese], PEOPLE’S DAILY, Sept. 21, 2017, <http://world.people.com.cn/n1/2017/0921/c1002-29550670.html>.

<sup>940</sup> In May 2013, ZGC Group partnered with Stanford University to establish the Zhongguancun-Stanford New Emerging Technologies Innovation Investment Fund. This fund, established with Stanford physics professor Shoucheng Zhang, has raised \$91.25 million to support innovative and disruptive technology projects from Stanford and Silicon Valley, and the funds are also to be used in cooperation with the Zhongguancun Development Group Silicon Valley International Incubation Center to guide and support technology projects to settle in Beijing’s Zhongguancun. *Overseas Investment Platform* [Chinese], ZHONGGUANCUN GROUP, [http://www.zgcgroup.com.cn/business/overseas\\_funds.html](http://www.zgcgroup.com.cn/business/overseas_funds.html).

<sup>941</sup> 19 U.S.C. § 2411(d)(3)(A).

<sup>942</sup> 19 U.S.C. § 2411(d)(3)(D).

<sup>943</sup> See Section IV.B.

<sup>944</sup> WILEY REIN, *Submission, Section 301 Hearing 4* (Sept. 28, 2017) (quoting Ryan Morgan, *Two Sessions: Made in China 2025*, APCO Forum (Mar. 26, 2017)).

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In market-based transactions, economic actors generally look to maximize return on their investment in making foreign investment and acquisition decision. Firms looking to acquire and invest in a foreign country generally seek integration, synergy, and efficiencies from these transactions.<sup>945</sup>

Likewise, investment funds seek financial returns. With respect to sovereign wealth funds, the “Santiago Principles” set out widely recognized practices and principles, developed and supported by members of the International Working Group of Sovereign Wealth Funds, including China’s China Investment Corporation (CIC). As described in the Santiago Principles,

The [sovereign wealth fund’s] investment decisions should aim to maximize risk-adjusted financial returns in a manner consistent with its investment policy, and based on economic and financial grounds.<sup>946</sup>

CIC ostensibly aims to “increase the return of China’s currency reserve above that of sovereign debt holding.”<sup>947</sup>

Market-based considerations, however, do not appear to be the primary driver of much of China’s outbound investment and acquisition activity in areas targeted by its industrial policies. Instead, China directs and supports its firms to seek technologies that enhance China’s development goals in each strategic sector.

Indeed, many of the Chinese firms that engage in overseas acquisitions in manufacturing do not appear to possess the firm-specific ownership advantages normally associated with acquiring firms, such as core technology, management and organizational skills, or brand names.<sup>948</sup> Instead, Chinese firms’ comparative advantages rest with having a large domestic market and the support the government provides to Chinese outbound direct investment.<sup>949</sup>

The unreasonableness of China’s acts, policies, and practices is also evident in the non-reciprocal treatment of U.S. firms and investment in China. As discussed in Section II, China’s investment

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<sup>945</sup> *Chinese Investments in the United States: Impacts and Issues for Policymakers: Hearing Before the U.S.-China Econ. & Sec. Rev. Comm’n*, 115th Cong. 113 (2017) (statement of Robert D. Atkinson).

<sup>946</sup> INT’L WORKING GRP. ON SOVEREIGN WEALTH FUNDS, SOVEREIGN WEALTH FUNDS GENERALLY ACCEPTED PRINCIPLES AND PRACTICES: SANTIAGO PRINCIPLES 8 (2008).

<sup>947</sup> KEITH BLACK, CHARTERED ALTERNATIVE INV. ANALYST ASS’N, INVESTMENT STRATEGIES OF SOVEREIGN WEALTH FUNDS (2016); see also *CIC Culture Consensus*, CIC (Dec. 8, 2017), [http://www.china-inv.cn/wps/portal/!ut/p/a1/jZJNb4JAEIZ\\_DVf2FQmgt60ffl1t0hpxLwYNriTAETiWv19Ke2mio3ObyfNkJu8uEyxlos6-CpnpQtVZ-dML57iFg8niHRESvvgb3sEpep1EY76wBONwFLN-2SH\\_1\\_PkLnwe2uwFgexbC5UuwdGcJEDrP-bhTHKQfgLx\\_BJ7aTwAP8tszQSKxTQP-h0sCv28wAITI0CISB45rliYkKU6jV\\_mwOvT1JNMtPklb\\_PW\\_GyH8VXrppsBMND3vSmVkmVunlV14JZyVZ1m6X-SNdVuqBRFWLxVe6\\_7Bm90WyA!/dl5/d5/L2dBISEvZ0FBIS9nQSEh](http://www.china-inv.cn/wps/portal/!ut/p/a1/jZJNb4JAEIZ_DVf2FQmgt60ffl1t0hpxLwYNriTAETiWv19Ke2mio3ObyfNkJu8uEyxlos6-CpnpQtVZ-dML57iFg8niHRESvvgb3sEpep1EY76wBONwFLN-2SH_1_PkLnwe2uwFgexbC5UuwdGcJEDrP-bhTHKQfgLx_BJ7aTwAP8tszQSKxTQP-h0sCv28wAITI0CISB45rliYkKU6jV_mwOvT1JNMtPklb_PW_GyH8VXrppsBMND3vSmVkmVunlV14JZyVZ1m6X-SNdVuqBRFWLxVe6_7Bm90WyA!/dl5/d5/L2dBISEvZ0FBIS9nQSEh).

<sup>948</sup> Bijun Wang, Huiyao Wang, *Chinese Manufacturing Firms’ Overseas Direct Investment (ODI): Patterns, Motivations and Challenges*, in *RIISING CHINA: CHALLENGES AND OPPORTUNITIES* 100 (Jane Golley and Ligang Song ed. 2011), available at <https://ssrn.com/abstract=1907170>, 105.

<sup>949</sup> Bijun Wang, Huiyao Wang, *Chinese Manufacturing Firms’ Overseas Direct Investment (ODI): Patterns, Motivations and Challenges*, in *RIISING CHINA: CHALLENGES AND OPPORTUNITIES* 107 (Jane Golley and Ligang Song ed. 2011).

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and administrative approval regime imposes substantially more restrictive requirements than the United States. U.S. firms face numerous barriers, such as sectoral restrictions, joint venture requirements, equity caps, and technology transfer requirements when they seek to access to the Chinese market. Chinese firms do not face anything remotely approaching these types of restrictions when investing in the United States.

Indeed, China's state-directed outbound investment regime works in tandem with its non-reciprocal treatment of U.S. firms. A recent study notes the following characteristics regarding China's strategic foreign acquisitions:

- To achieve its industrial policy objectives in a sector, China uses sovereign wealth funds and other state-backed actors to obtain foreign knowledge and expertise through foreign acquisitions;
- Foreign companies become more susceptible to Chinese acquisitions because of the difficult investment and market access environment in China; and
- Chinese firms are willing to bear losses in foreign markets both for their investments and sales as a cost of acquiring foreign proprietary technology, in part because the Chinese government will make up a portion of their loss.<sup>950</sup>

Certain participants in our investigation have asserted that Chinese firms invest in the United States based solely on commercial considerations, and that the Chinese government does not intervene in its firms' daily operations.<sup>951</sup> They assert that any technology and other intellectual property transferred during the merger and acquisition process is based on fair valuation and mutual assent of the parties.<sup>952</sup> Thus, in their view, China's policies and practices are not unreasonable.

These submissions are not persuasive. The above findings – based on a comprehensive assessment of government policies and investment transactions – leave no room for doubt concerning the role of the Chinese government. This is not to suggest that the Chinese government directs and supports every Chinese investment in the United States, but China's intervention has been decisive in transactions involving advanced technology in sectors that the government deems strategic.

The fact that many mergers and acquisition deals result in commercial advantages for the parties, as certain participants claim, does not negate these findings. The existence of possible mutual commercial benefit to the parties does not alter the reality that China directs and supports foreign investment in the United States to achieve industrial policy goals. In fact, China has begun

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<sup>950</sup> *Chinese Investments in the United States: Impacts and Issues for Policymakers: Hearing Before the U.S.-China Econ. & Sec. Rev. Comm'n*, 115th Cong. 111 (2017) (statement of Robert D. Atkinson).

<sup>951</sup> CGCC, *Submission, Section 301 Hearing* 15 (Sep 28, 2017).

<sup>952</sup> CGCC, *Submission, Section 301 Hearing* 15 (Sep 28, 2017).

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limiting “irrational” overseas investment to encourage outbound investment that “enhances China’s technical standards, research and development.”<sup>953</sup>

In sum, as one participant in the investigation has observed:

No one can object to a country trying to increase its innovative capabilities or research productivity, but it is the methods China uses that are a problem....China aggressively pursues illicit technology transfer and intervenes to support Chinese firms against foreign competitors. Illicit acquisition of foreign technology has been promoted by the government policy since China opened its economy. The greater concern is that long standing Chinese practices on technology acquisition are now married to an aggressive, well-funded industrial policy.<sup>954</sup>

#### E. China’s Acts, Policies, and Practices Burden U.S. Commerce

To be actionable, the unreasonable act, policy, or practice of a foreign country must burden or restrict U.S. commerce.<sup>955</sup> The acts, policies, and practices identified above burden U.S. commerce.

Under market conditions, FDI in the United States, including investment from China, benefits the U.S. economy. In the high-tech sector, FDI plays a critical role in the industry’s growth, supports employment, and makes a significant contribution to research and development spending, exports, and value-added activities.<sup>956</sup> With respect to employment, one commentator notes that Chinese-owned firms in the United States have actually “ramped up local spending and employment because they benefit from abundant U.S. high-tech talent, clustering effects, freedom to innovate and the rule of law driving the American innovation environment.”<sup>957</sup>

However, such benefits must be considered in the broader context of U.S. competitiveness in the global economy. As a general matter, FDI does not benefit the U.S. economy to the extent that it is directed to serve the Chinese government’s industrial policy objectives – specifically, to acquire technology and build national champions within China – and is fueled by financial support not available in the private market.

Here, the Chinese government has directed and supported the acquisition of key U.S. companies and assets to promote technology transfer, in pursuit of both military and economic objectives. These acts, policies, and practices burden U.S. commerce in three ways.

First, China’s acts, policies, and practices threaten the competitiveness of U.S. industry, especially in the sectors deemed important in China’s industrial policy. As discussed in Section IV.B, China seeks to use foreign acquisitions and investments to upgrade its domestic industries

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<sup>953</sup> WILEY REIN, *Submission, Section 301 Hearing 4* (Sep 28, 2017) (quoting *China Codifies Crackdown on ‘Irrational’ Outbound Investment*, BLOOMBERG (Aug. 18, 2017)).

<sup>954</sup> James Lewis, CSIS, *Submission, Section 301 Hearing 5* (Sept. 27, 2017).

<sup>955</sup> 19 U.S.C. §2411(b)(1).

<sup>956</sup> See *High-Tech Industries: The Role of FDI in Driving Innovation and Growth 2017*, SELECTUSA, available at [https://www.selectusa.gov/servlet/servlet.FileDownload?file=015t0000000U1eE\\_](https://www.selectusa.gov/servlet/servlet.FileDownload?file=015t0000000U1eE_)

<sup>957</sup> RHODIUM, *Submission, Section 301 Hearing 5* (Sep 28, 2017).

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and, ultimately, degrade, reduce, or replace U.S. competition in key sectors. These key sectors include the aviation, integrated circuits (IC), information technology (IT), biotechnology, industrial machinery and robotics, renewable energy, and automotive industries. Subsidies and other government policies and practices supporting Chinese outbound investment give Chinese firms an unfair advantage in acquiring technology assets abroad, which undermines U.S. firms' ability to compete in the global marketplace on a level playing field.

As a direct consequence of the Chinese government's unfair and market-distorting action, Chinese firms are expected to gain increased market share in these industries at the expense of U.S. firms, whose market share will decline in both U.S. and global markets.<sup>958</sup> The loss of market share could also force U.S. firms to shift their research and development programs, and other investment programs, into areas that may be less profitable and dynamic, which further erodes their long-term competitiveness. Moreover, the unprecedented scale of Chinese OFDI support policies suggest that Chinese firms will be able to gain significant market share at the expense of U.S. firms, threatening U.S. competitiveness in these high-technology industries.

In the IC sector, for example, China's National IC Fund has been used to support numerous technology-related outbound investments in the United States. The President's Council of Advisors on Science and Technology concluded that the "concerted push by China to reshape the market in its favor, using industrial policies backed by over one hundred billion dollars in government-directed funds, threatens the competitiveness of U.S. industry and the national and global benefits it brings."<sup>959</sup> Furthermore, if strategic foreign acquisitions lead to a dominant Chinese domestic semiconductor industry, downstream industries may do less business with U.S. firms, making it more difficult for them to survive over time. Indeed, the Mercator Institute assesses that "if Chinese enterprises prove capable of using this technology effectively, a hollowing out the technology leadership of industrial countries in pillar industries is possible."<sup>960</sup>

Second, China's acts, policies, and practices undermine the ability of U.S. firms to sustain innovation. In true market competition, foreign firms may often spur innovation and productivity spillovers to local economies when they bring technology and knowledge with them.<sup>961</sup> In this case, however, that does not appear to be happening. Unlike companies in prior waves of OFDI to the United States, "virtually all Chinese firms are less productive than their U.S. counterpart."<sup>962</sup> Chinese firms invest in the United States to learn from U.S. firms, not the

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<sup>958</sup> See Ryan Morgan, *Two Sessions: Made in China 2025*, APCO Forum (Mar. 26, 2017) ("Businesses in China are not only facing competition from domestic firms that are slowly catching up, but also face the risk of Chinese firms acquiring their international competitor. A business that becomes Chinese through acquisition can then receive government support and other domestic advantages, potentially putting their foreign business competition at an immediate and severe competitive disadvantage both domestically and globally.")

<sup>959</sup> Wayne M. Morrison, CONG. RESEARCH. SERV., RL 33536, CHINA-U.S. TRADE ISSUES 65 (2017) (emphasis added).

<sup>960</sup> Jost Wübbeke, et. al., MERICS, MADE IN CHINA 2025: THE MAKING OF A HIGH-TECH SUPERPOWER AND CONSEQUENCES FOR INDUSTRIAL COUNTRIES 54 (Dec. 2016).

<sup>961</sup> *Chinese Investments in the United States: Impacts and Issues for Policymakers: Hearing Before the U.S.-China Econ. & Sec. Rev. Comm'n*, 115th Cong. 13 (2017) (statement of Robert D. Atkinson).

<sup>962</sup> *Chinese Investments in the United States: Impacts and Issues for Policymakers: Hearing Before the U.S.-China Econ. & Sec. Rev. Comm'n*, 115th Cong. 13 (2017) (statement of Robert D. Atkinson).



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other way around.<sup>963</sup> This policy harms innovation by essentially transferring technologies from efficient and productive firms in the United States to less innovative and less productive firms in China. Such a policy, combined with government intervention and support in China, damages U.S. companies and harms global welfare.<sup>964</sup>

Third, China's acts, policies, and practices distort pricing with respect to investments in the critical market for IP-intensive sectors. As outlined above, the Chinese government provides extensive support to its firms in connection with foreign acquisitions. This support places U.S. competitors at a disadvantage by artificially inflating the prices of potential acquisition targets.<sup>965</sup> In other words, critical assets are not being sold and priced under true market conditions – a fact that threatens to distort the entire IP market. The result is that China is “exporting” its market-distorting policies to the United States and the world in critical high-technology industries.

Unlike China, the United States does not have a broad-based industrial policy through which the government directs and supports foreign investment by firms. Thus, U.S. technology enterprises are at a distinct competitive disadvantage, since they are forced to compete with the extensive support and intervention of the Chinese state.<sup>966</sup>

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<sup>963</sup> *Chinese Investments in the United States: Impacts and Issues for Policymakers: Hearing Before the U.S.-China Econ. & Sec. Rev. Comm'n*, 115th Cong. 13 (2017) (statement of Robert D. Atkinson).

<sup>964</sup> Lee Branstetter, *Submission, Section 301 Hearing 3* (Sept. 28, 2017).

<sup>965</sup> WILEY REIN, *Submission, Section 301 Hearing 5* (Sep 28, 2017).

<sup>966</sup> WILEY REIN, *Submission, Section 301 Hearing 5* (Sep 28, 2017).

## V. Unauthorized Intrusions into U.S. Commercial Computer Networks and Cyber-Enabled Theft of Intellectual Property and Sensitive Commercial Information

## V. Unauthorized Intrusions into U.S. Commercial Computer Networks and Cyber-Enabled Theft of Intellectual Property and Sensitive Commercial Information

### A. Introduction

For over a decade, the Chinese government has conducted and supported cyber intrusions into U.S. commercial networks targeting confidential business information held by U.S. firms. Through these cyber intrusions, China's government has gained unauthorized access to a wide range of commercially-valuable business information, including trade secrets, technical data, negotiating positions, and sensitive and proprietary internal communications. These acts, policies, or practices by the Chinese government are unreasonable or discriminatory and burden or restrict U.S. commerce.

Section V.B of this report will first detail the cyber actions taken by the Chinese government against U.S. companies including the theft of confidential business information that would have provided a competitive economic advantage. Section V.B will then analyze how the Chinese government's cyber intrusions support its industrial policy goals and how this activity has continued in recent years. Section V.C concludes that China's actions are unreasonable and Section V.D explains the economic burden on and harm felt by targeted U.S. companies.

Experts have acknowledged that China's cyber activities represent a grave threat to U.S. competitiveness and the U.S. economy. Starting in 2008, experts expressed concern that China's cyber intrusions were becoming more frequent, more targeted, and more sophisticated.<sup>967</sup> As one expert has noted, "[w]hereas before the activities were targeted at government and military networks..., the new intrusions went beyond state-on-state espionage to threaten American technological competitiveness and economic prosperity."<sup>968</sup> The Office of the National Counterintelligence Executive added in 2011 that "Chinese actors are the world's most active and persistent perpetrators of economic espionage."<sup>969</sup>

As discussed in more detail below, evidence from U.S. law enforcement and private sources indicates that the Chinese government has used cyber intrusions to serve its strategic economic objectives. Documented incidents of China's cyber intrusions against U.S. commercial entities align closely with China's industrial policy objectives. As the global economy has increased its dependence on information systems in recent years, cyber theft became one of China's preferred methods of collecting commercial information because of its logistical advantages and plausible deniability.<sup>970</sup>

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<sup>967</sup> See e.g., Shane Harris, *China's Cyber Militia*, NAT'L J., May 31, 2008. (citing remarks of a senior official from the U.S. Director of National Intelligence).

<sup>968</sup> HANNAS, ET AL., CHINESE INDUSTRIAL ESPIONAGE: TECHNOLOGY ACQUISITION AND MILITARY MODERNIZATION, 217 (2013).

<sup>969</sup> OFFICE OF THE NATIONAL COUNTERINTELLIGENCE EXECUTIVE, FOREIGN SPIES STEALING US ECONOMIC SECRETS IN CYBERSPACE: REPORT TO CONGRESS ON FOREIGN ECONOMIC COLLECTION AND INDUSTRIAL ESPIONAGE, 2009-2011 i (Oct. 2011).

<sup>970</sup> A number of public submissions provided to USTR state that the Chinese government has no reason to conduct cyber intrusions or commit cyber theft for commercial purposes, see CHINA GENERAL CHAMBER OF COMMERCE [*hereinafter* "CGCC"], *Submission, Section 301 Hearing* 16 (Sept. 28, 2017); that the US has not provided evidence of such actions by China, that China is also a target of cyberattacks, and that the two countries should work together

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The Chinese and American presidents reached a commitment on refraining from the cyber-enabled theft of intellectual property (IP) and other confidential business information for commercial advantage in September 2015.<sup>971</sup> The United States has been closely monitoring China's cyber activities and the evidence indicates that China continues its policy and practice, spanning more than a decade, of using cyber intrusions to target U.S. firms to access their sensitive commercial information and trade secrets. For example, as described in more detail below, in September 2017 the U.S. Department of Justice filed an indictment against Chinese nationals for intruding into U.S. commercial networks and stealing commercially sensitive information. Cybersecurity firms have linked the firm for which these individuals worked to the Chinese government.<sup>972</sup>

Because cyber intrusions depend on deception and obfuscation, the acts, policies, and practices at issue by their nature impair the comprehensive collection and analysis of all relevant information. Businesses are often unaware that their computer networks have been compromised by an infiltration,<sup>973</sup> and those that are aware of such intrusions are often apprehensive about sharing publicly the details of any compromise. Accordingly, this report has drawn upon information in the public domain from both private parties and U.S. law enforcement. However, publicly available information necessarily represents only a fraction of all relevant activity.

### **B. China's Acts, Policies, and Practices Regarding Unauthorized Intrusions into U.S. Commercial Computer Networks and Cyber-Enabled Theft of Intellectual Property and Sensitive Commercial Information**

#### 1. The Chinese Government's Extensive Cyber Activities

The Chinese government's cyber intrusions into U.S. firms' networks have been well documented by private cybersecurity companies. For example, McAfee's 2011 *Night Dragon* report documents advanced persistent threat, or APT, activity from China against global oil, energy, and petrochemical companies "targeting and harvesting sensitive competitive proprietary operations and project-financing information with regard to oil and gas field bids and operations."<sup>974</sup>

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to address cybersecurity issues. See CHINA CHAMBER OF INTERNATIONAL COMMERCE [*hereinafter* "CCOIC"], *Submission, Section 301 Hearing* 68-70 (Sept. 39, 2017); CHINA CHAMBER OF COMMERCE FOR IMPORT AND EXPORT OF MACHINERY AND ELECTRONIC PRODUCTS [*hereinafter* "CCCME"], *Submission, Section 301 Hearing* 12 (Sept. 27, 2017). The discussion and accompanying references that follow establish a record of China's cyber intrusions and cyber theft. That China may also be a target of cyberattack is outside the scope of this investigation.

<sup>971</sup> Press Release, The White House, Fact Sheet: President Xi Jinping's State Visit to the United States (Sept. 25, 2015).

<sup>972</sup> INSIKT GROUP, *Recorded Future Research Concludes Chinese Ministry of State Security Behind APT3*, RECORDED FUTURE (May 17, 2017) (last visited Jan. 10, 2018).

<sup>973</sup> See VERIZON, 2017 DATA BREACH INVESTIGATIONS REPORT (2017).

<sup>974</sup> MCAFEE FOUNDSTONE PROFESSIONAL SERVICES & MCAFEE LABS, GLOBAL ENERGY CYBER ATTACKS: "NIGHT DRAGON" 3 (Feb. 10, 2011).

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Verizon’s 2013 *Data Breach Investigations Report* concluded that “State-affiliated actors tied to China are the biggest mover in 2012. Their efforts to steal IP comprise about one-fifth of all breaches in this dataset.”<sup>975</sup> Moreover, 95% of the espionage cases<sup>976</sup> in the dataset were attributed to threat actors in China, which “may mean that other threat groups perform their activities with greater stealth and subterfuge. But it could also mean that China is, in fact, the most active source of national and industrial espionage in the world today.”<sup>977</sup>

In 2013, the cybersecurity firm Mandiant released a detailed report connecting the theft of hundreds of terabytes of data by China’s People’s Liberation Army (PLA) General Staff Department, Third Department (3PLA), Second Bureau—a signals intelligence component of the PLA, known by its Military Unit Cover Designation as Unit 61398<sup>978</sup> and referred to by Mandiant as “Advanced Persistent Threat 1” or “APT1.”<sup>979</sup> At the time of the report, Mandiant estimated that Unit 61398 was “staffed by hundreds, and perhaps thousands of people based on the size of Unit 61398’s physical infrastructure.”<sup>980</sup> The report includes details on more than 3,000 indicators associated with APT1 and Mandiant’s attribution of the cyber incidents to the 3PLA.<sup>981</sup>

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<sup>975</sup> VERIZON, 2013 DATA BREACH INVESTIGATIONS REPORT 5 (2013) (“State-affiliated actors tied to China are the biggest mover in 2012. Their efforts to steal IP comprise about one-fifth of all breaches in this dataset.”).

<sup>976</sup> The report defined this as “state-sponsored or affiliated actors seeking classified information, trade secrets, and intellectual property in order to gain national, strategic, or competitive advantage”. VERIZON, 2013 DATA BREACH INVESTIGATIONS REPORT 11 (2013).

<sup>977</sup> VERIZON, 2013 DATA BREACH INVESTIGATIONS REPORT 21 (2013).

<sup>978</sup> MANDIANT, APT1: EXPOSING ONE OF CHINA’S CYBER ESPIONAGE UNITS 3 (2013); *see also* Mark Stokes, PROJECT 2049 INSTITUTE, THE PLA GENERAL STAFF DEPARTMENT THIRD DEPARTMENT SECOND BUREAU: AN ORGANIZATIONAL OVERVIEW OF UNIT 61398, 3-4 (July 27, 2015) (“Signals intelligence (SIGINT), or technical reconnaissance in PLA lexicon, advances the interests of the Chinese Communist Party (CCP) and the People’s Republic of China (PRC). The PLA’s SIGINT community consists of at least 28 technical reconnaissance bureaus (TRBs)... The Second Bureau (Unit 61398) is one of the largest among the 12 operational bureaus that comprise the GSD Third Department.”).

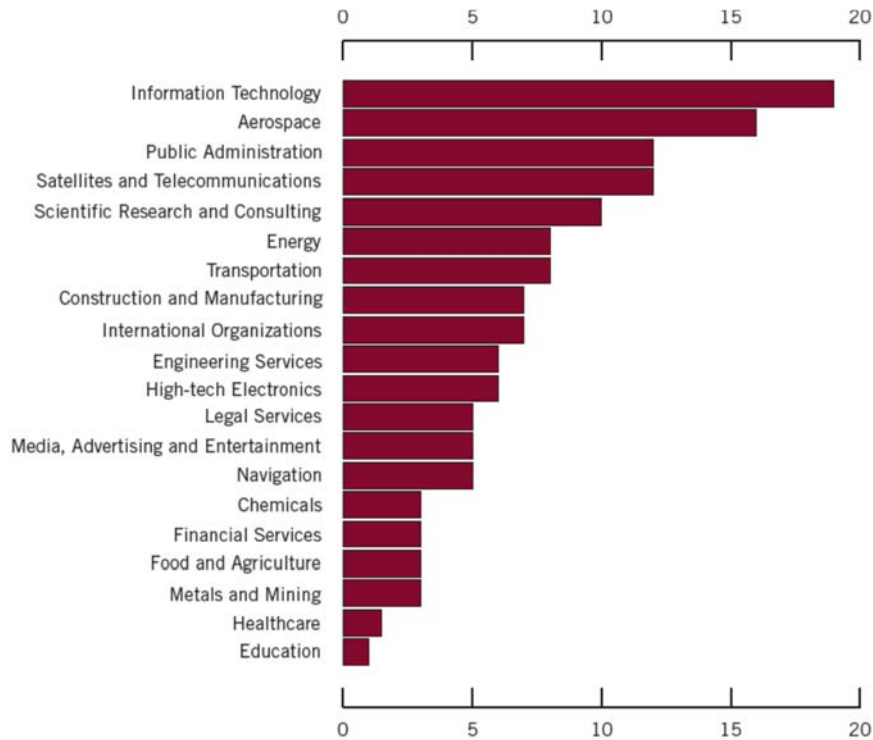
<sup>979</sup> An “APT” or “Advanced Persistent Threat” uses multiple phases to break into a computer network, avoid detection, and harvest valuable information over the long term. *Advanced Persistent Threats: How They Work*, SYMANTEC, <https://www.symantec.com/theme.jsp?themeid=apt-infographic-1> (last visited Jan. 10, 2018).

<sup>980</sup> MANDIANT, APT1: EXPOSING ONE OF CHINA’S CYBER ESPIONAGE UNITS 3 (2013).

<sup>981</sup> MANDIANT, APT1: EXPOSING ONE OF CHINA’S CYBER ESPIONAGE UNITS 5 (2013).

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According to Mandiant, this unit of the 3PLA stole data from at least 141 organizations, 115 of which are based in the United States, representing 20 major business sectors. The victims of these intrusions match industries that China has identified as strategic priorities, including four of the seven “strategic emerging industries” that China identified in its 12th Five-year Plan.<sup>982</sup> The table below illustrates the number of 3PLA victims by sector in Mandiant’s data set.



*Source:* MANDIANT APT1: EXPOSING ONE OF CHINA’S CYBER ESPIONAGE UNITS

Mandiant identified a wide range of commercial sector targets of 3PLA, including information technology, energy, financial services, food and agriculture, metals and mining, electronics, and chemicals. According to the report, 3PLA has stolen a wide range of sensitive commercial information from these victims including:

- product development and use, including information on test results, system designs, product manuals, parts lists, and simulation technologies;
- manufacturing procedures, such as descriptions of proprietary processes, standards, and waste management processes;
- business plans, such as information on contract negotiation positions and product pricing, legal events, mergers, joint ventures, and acquisitions;
- policy positions and analysis, such as white papers, and agendas and minutes from meetings involving high ranking personnel;
- e-mails of high-ranking employees; and

<sup>982</sup> MANDIANT, APT1: EXPOSING ONE OF CHINA’S CYBER ESPIONAGE UNITS 3, 24 (2013).

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- user credentials and network architecture information.<sup>983</sup>

The Mandiant report suggests that a reasonable inference from the evidence it has collected is that intrusions conducted by this unit of the 3PLA supported commercial interests in China. For example, the report points to a company involved in a wholesale industry whose network was compromised by 3PLA for over two and half years. During this time, 3PLA reportedly stole countless files from the victim.<sup>984</sup> According to the report, the 3PLA unit repeatedly accessed the e-mail accounts of several executives, including the CEO and General Counsel.<sup>985</sup> The Mandiant report states that at the same time as these intrusions were occurring:

[M]ajor news organizations reported that China had successfully negotiated a double-digit decrease in price per unit with the victim organization for one of its major commodities. This may be coincidental; however, it would be surprising if APT1 could continue perpetrating such a broad mandate of cyber espionage and data theft if the results of the group's efforts were not finding their way into the hands of entities able to capitalize on them."<sup>986</sup>

### 2. The United States Department of Justice Indicted Chinese Government Hackers in May 2014

In May 2014, the United States Department of Justice (DOJ) announced an indictment against five 3PLA officers for cyber intrusions and economic espionage directed against U.S. firms.<sup>987</sup> These five officers were assigned to 3PLA's Second Bureau, Unit 61398, which Mandiant had identified as APT1 the year prior.<sup>988</sup> The 3PLA officers were charged with cyber intrusions into the computer networks of six U.S. victims: Westinghouse Electric Company (Westinghouse), SolarWorld Americas, Inc. (SolarWorld), United States Steel Corporation (U.S. Steel), Allegheny Technologies, Inc. (ATI), Alcoa Inc. (Alcoa), and the United Steel, Paper and Forestry, Rubber, Manufacturing, Energy, Allied Industrial and Services Workers International Union (USW).<sup>989</sup>

The intrusions by the 3PLA were conducted at times when each of the victims had a significant business relationship or business issue with China.<sup>990</sup> In addition, each of the victims operate in a sector that the Chinese government has prioritized for development.<sup>991</sup> The indictment alleges

<sup>983</sup> MANDIANT, APT1: EXPOSING ONE OF CHINA'S CYBER ESPIONAGE UNITS 25 (2013).

<sup>984</sup> MANDIANT, APT1: EXPOSING ONE OF CHINA'S CYBER ESPIONAGE UNITS 25 (2013).

<sup>985</sup> MANDIANT, APT1: EXPOSING ONE OF CHINA'S CYBER ESPIONAGE UNITS 25 (2013).

<sup>986</sup> MANDIANT, APT1: EXPOSING ONE OF CHINA'S CYBER ESPIONAGE UNITS 25 (2013).

<sup>987</sup> U.S. v. Wang Dong et al., (W. D. Pa. May 1, 2014) (Crim. No. 14-118 W.D.Pa.); *see also* Mark Stokes, PROJECT 2049 INSTITUTE, THE PLA GENERAL STAFF DEPARTMENT THIRD DEPARTMENT SECOND BUREAU: AN ORGANIZATIONAL OVERVIEW OF UNIT 61398, 3 (July 27, 2015).

<sup>988</sup> *See* Mark Stokes, PROJECT 2049 INSTITUTE, THE PLA GENERAL STAFF DEPARTMENT THIRD DEPARTMENT SECOND BUREAU: AN ORGANIZATIONAL OVERVIEW OF UNIT 61398 (July 27, 2015); *see also* MANDIANT, APT1: EXPOSING ONE OF CHINA'S CYBER ESPIONAGE UNITS 3 (2013).

<sup>989</sup> U.S. v. Wang Dong et al., 4-8 (W. D. Pa. May 1, 2014).

<sup>990</sup> U.S. v. Wang Dong et al., 13-26 (W. D. Pa. May 1, 2014).

<sup>991</sup> *See e.g.*, *The Plan for the Adjustment and Revitalization of the Steel Industry* (State Council, published Mar. 20, 2009); *12th Five-year Steel Industry Development Plan* (MIIT, Gong Xin Bu Gui [2011] No. 480, issued Oct. 24,

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that “the defendants conspired to hack into American entities, to maintain unauthorized access to their computers and to steal information from those entities that would be useful to their competitors in China, including state-owned enterprises (SOEs).”<sup>992</sup> In some cases, the indictment alleges that the defendants stole trade secrets that “would have been particularly beneficial to Chinese companies at the time they were stolen.”<sup>993</sup> In other cases, the indictment alleges that the defendants “stole sensitive, internal communications that would provide a competitor, or an adversary in litigation, with insight into the strategy and vulnerabilities of the American entity.”<sup>994</sup> Meanwhile, during the period relevant to the cyber intrusions, the indictment states:

Chinese firms hired the same PLA Unit where the defendants worked to provide information technology services. For example, one SOE involved in trade litigation against some of the American victims mentioned herein hired the Unit, and one of the co-conspirators charged herein, to build a ‘secret’ database designed to hold corporate ‘intelligence’.<sup>995</sup>

### a) *SolarWorld*

The indictment alleges that in 2012, while SolarWorld was litigating a petition it had filed against solar imports from China, the 3PLA stole thousands of sensitive files from SolarWorld. According to the indictment, these files included:

(1) cash-flow spreadsheets maintained by the Chief Financial Officer that would enable a Chinese competitor to identify the length of time that SolarWorld might survive a financial or market shock; (2) detailed manufacturing metrics, technological innovations, and production line information that would enable a Chinese competitor to mimic SolarWorld’s proprietary production capabilities without the need to invest time or money in research and development; (3) specific production costs for all manufacturing inputs that would enable a Chinese competitor to undermine SolarWorld financially through targeted and sustained underpricing of solar products; and (4) privileged attorney-client communications related to SolarWorld’s ongoing trade litigation with

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2011); *12th Five-year Solar Power Development Plan*, (NEA, Guo Neng Xin Neng [2012] No. 194, issued July 7, 2012); *Medium-Long Term Nuclear Power Development Plan* (NDRC, issued Oct. 2007).

<sup>992</sup> Press Release, Department of Justice, U.S. Charges Five Chinese Military Hackers for Cyber Espionage Against U.S. Corporations and a Labor Organization for Commercial Advantage (May 19, 2014), *available at* <https://www.justice.gov/opa/pr/us-charges-five-chinese-military-hackers-cyber-espionage-against-us-corporations-and-labor>.

<sup>993</sup> Press Release, Department of Justice, U.S. Charges Five Chinese Military Hackers for Cyber Espionage Against U.S. Corporations and a Labor Organization for Commercial Advantage (May 19, 2014), *available at* <https://www.justice.gov/opa/pr/us-charges-five-chinese-military-hackers-cyber-espionage-against-us-corporations-and-labor>.

<sup>994</sup> Press Release, Department of Justice, U.S. Charges Five Chinese Military Hackers for Cyber Espionage Against U.S. Corporations and a Labor Organization for Commercial Advantage (May 19, 2014), *available at* <https://www.justice.gov/opa/pr/us-charges-five-chinese-military-hackers-cyber-espionage-against-us-corporations-and-labor>.

<sup>995</sup> U.S. v. Wang Dong et al., 3 (W. D. Pa. May 1, 2014).

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China, including confidential Question and Answer documents submitted to the Department of Commerce that were not discoverable by the Chinese respondents.<sup>996</sup>

According to DOJ, “such information would have enabled a Chinese competitor to target SolarWorld’s business operations aggressively from a variety of angles.”<sup>997</sup>

The indictment alleges that data were stolen from SolarWorld on at least twelve occasions, including during the following the incidents:

- On May 3 and May 9, 2012, the 3PLA stole files and e-mails from SolarWorld employees, including three senior SolarWorld executives.<sup>998</sup> The May 3 cyber intrusion occurred one day after the Coalition for American Solar Manufacturing led by SolarWorld issued a public analysis criticizing China’s new Five-year Plan for Solar Photovoltaic Industry<sup>999</sup> and about two weeks before the U.S. Department of Commerce announced its preliminary determination in a trade complaint SolarWorld had filed against Chinese producers of solar cells.<sup>1000</sup>
- On July 27, 2012, the 3PLA stole e-mails and files belonging to five employees,<sup>1001</sup> just two days after SolarWorld’s parent company filed a trade complaint with the European Commission against Chinese producers of solar modules and components.<sup>1002</sup>
- Between May 9 and September 26, 2012, the 3PLA conducted at least twelve more intrusions into and exfiltrations from SolarWorld’s computers.<sup>1003</sup> The intrusion on September 26, 2012 occurred on the same day that SolarWorld filed a second trade complaint against Chinese solar products with the European

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<sup>996</sup> U.S. v. Wang Dong et al., 18 (W. D. Pa. May 1, 2014).

<sup>997</sup> Press Release, Department of Justice, U.S. Charges Five Chinese Military Hackers for Cyber Espionage Against U.S. Corporations and a Labor Organization for Commercial Advantage (May 19, 2014), *available at* <https://www.justice.gov/opa/pr/us-charges-five-chinese-military-hackers-cyber-espionage-against-us-corporations-and-labor>.

<sup>998</sup> U.S. v. Wang Dong et al., 17, 34, 35 (W. D. Pa. May 1, 2014).

<sup>999</sup> COALITION FOR AMERICAN SOLAR MANUFACTURING, ANALYSIS: CHINA'S NEW FIVE-YEAR PLAN FOR SOLAR CALLS FOR ESCALATION IN GOVERNMENT SPONSORSHIP OF EXPORT-INTENSIVE, PRICE-SUBSIDIZED TRADE (May 2, 2012), *available at* <http://www.americansolarmanufacturing.org/news-releases/05-02-12-chinas-five-year-plan.htm>.

<sup>1000</sup> U.S. v. Wang Dong et al., 17 (W. D. Pa. May 1, 2014).

<sup>1001</sup> U.S. v. Wang Dong et al., 35 (W. D. Pa. May 1, 2014).

<sup>1002</sup> EU ProSun filed an anti-dumping complaint against certain photovoltaic products from China on July 25, 2012 with the European Commission. *See* European Commission, Notice of initiation of an anti-dumping proceeding concerning imports of crystalline silicon photovoltaic modules and key components (i.e. cells and wafers) originating in the People’s Republic of China, 2012/C 269/04 (Sept. 9, 2012)

<sup>1003</sup> Fact Sheet, International Trade Administration, Department of Commerce, Commerce Finds Dumping and Subsidization of Crystalline Silicon Photovoltaic Cells, Whether or Not Assembled into Modules from the People’s Republic of China (2012), *available at* [http://ia.ita.doc.gov/download/factsheets/factsheet\\_pre-solar-cells-ad-cvd-finals-20121010.pdf](http://ia.ita.doc.gov/download/factsheets/factsheet_pre-solar-cells-ad-cvd-finals-20121010.pdf).



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Commission,<sup>1004</sup> about one week before SolarWorld testified to the U.S. International Trade Commission about the harm caused by certain Chinese solar products,<sup>1005</sup> and two weeks before the U.S. Department of Commerce announced its final affirmative determination in its trade complaint against Chinese producers of solar cells.<sup>1006</sup>

As described more below in Part D, SolarWorld testified that these intrusions have resulted in significant harm to its business, including the loss of a competitive advantage and a loss of a return on its significant investment in a new solar technology.<sup>1007</sup>

### b) U.S. Steel

According to the indictment, between February 8 and 23, 2010, 3PLA actors sent spearphishing e-mails with malware to U.S. Steel employees to gain unauthorized access to its network.<sup>1008</sup> On February 26, 2010, a 3PLA actor accessed at least one U.S. Steel computer and stole computer hostnames and descriptions for more than 1,700 U.S. Steel computers, including servers used for network security, applications for U.S. Steel employees' mobile devices, and physical access to U.S. Steel's facilities.<sup>1009</sup> The 3PLA actor then took steps to identify and exploit vulnerable servers on that list.<sup>1010</sup> In February 2010, at the same time as these cyber intrusions were occurring, U.S. Steel was a petitioner in two trade remedy investigations in the United States against imported steel products from China.<sup>1011</sup> The Chinese respondents named in these two

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<sup>1004</sup> EU ProSun filed an anti-subsidies complaint against certain photovoltaic products from China on September 26, 2012 with the European Commission. See European Commission, *Notice of initiation of an anti-subsidy proceeding concerning imports of crystalline silicon photovoltaic modules and key components (i.e. cells and wafers), originating in the People's Republic of China*, 2012/C 340/06 (Nov. 8, 2012).

<sup>1005</sup> On October 3, 2012, the U.S. International Trade Commission held a hearing on the matter of certain photovoltaic products from China. See USITC, Inv. Nos. 701-TA-481 and 731-TA-1190, "Key Dates", available at [https://www.usitc.gov/investigations/701731/2012/crystalline\\_silicon\\_photovoltaic\\_cells\\_and\\_modules/final.htm](https://www.usitc.gov/investigations/701731/2012/crystalline_silicon_photovoltaic_cells_and_modules/final.htm)

<sup>1006</sup> On October 10, 2012, the U.S. Department of Commerce announced its affirmative final determinations in the antidumping and countervailing duty investigations of imports of certain photovoltaic cells from China. See Fact Sheet, INTERNATIONAL TRADE ADMINISTRATION, DEPARTMENT OF COMMERCE, *Commerce Finds Dumping and Subsidization of Crystalline Silicon Photovoltaic Cells, Whether or Not Assembled into Modules from the People's Republic of China* (2012).

<sup>1007</sup> Juergen Stein, SOLARWORLD AMERICAS INC. [hereinafter "SolarWorld"], *Testimony, Section 301 Hearing* 76 (Oct. 10, 2017).

<sup>1008</sup> U.S. v. Wang Dong et al., 20 (W. D. Pa. May 1, 2014). "In a spear-phishing attack, a target recipient is lured to either download a seemingly harmless file attachment or to click a link to a malware- or an exploit-laden site. The file, often a vulnerability exploit, installs a malware in a compromised computer. The malware then accesses a malicious command-and-control (C&C) server to await instructions from a remote user. At the same time, it usually drops a decoy document that will open when the malware or exploit runs to hide malicious activity." TREND MICRO INC., SPEAR-PHISHING EMAIL: MOST FAVORED APT ATTACK BAIT, RESEARCH PAPER 2012 (2012), available at <http://www.trendmicro.com/cloud-content/us/pdfs/security-intelligence/white-papers/wp-spear-phishing-email-most-favored-apt-attack-bait.pdf>.

<sup>1009</sup> U.S. v. Wang Dong et al., 21 (W. D. Pa. May 1, 2014).

<sup>1010</sup> U.S. v. Wang Dong et al., 21 (W. D. Pa. May 1, 2014).

<sup>1011</sup> These two cases involved oil country tubular goods (OCTG), which are steel piping used by oil and gas companies and seamless standard line pipes (SSLP), which are steel pipes specifically constructed without a welded

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investigations include the operating companies of several Chinese SOEs, including the Baosteel Group.<sup>1012</sup>

In U.S. Steel's submission to USTR in connection with this investigation, U.S. Steel explains that the second hack "resulted in the exfiltration of highly sensitive commercial secrets regarding [its] development of lightweight, high-strength steel."<sup>1013</sup> U.S. Steel responded by filing claims under Section 337 of the Trade Act before the U.S. International Trade Commission (USITC) against Baosteel, which it claims "was known to be one of the beneficiaries of China's state-sponsored cyber-attacks."<sup>1014</sup>

### c) ATI

According to the indictment, on April 13, 2012, the 3PLA actors stole usernames and passwords for thousands of ATI employees.<sup>1015</sup> The stolen network credentials would have provided wide-ranging access to the company's computers and sensitive information.<sup>1016</sup> In 2012, ATI was engaged in a joint venture with Baosteel in Shanghai, which manufactures precision rolled stainless steel strips.<sup>1017</sup> On April 12, 2012, one day before the 3PLA exfiltrated these credentials, ATI officials met with officials from Baosteel in Shanghai for a board meeting<sup>1018</sup> related to their joint venture.

### d) United Steel Workers (USW)

According to the indictment, the 3PLA stole sensitive information from USW computer networks on two separate occasions.<sup>1019</sup>

The indictment alleges that in January 2012, at the same time that USW was preparing a public campaign to counter what it viewed as a wide array of unfair Chinese government policies,

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seam down the length of the pipes. *See* Department of Commerce, ITA Case No. A-570-943, A-570-956, and C-570-957.

<sup>1012</sup> Baosteel Group (now known as Baowu Steel) is a state-owned enterprise wholly-owned by China's State-owned Assets Supervision and Administration of Commission. *See* SASAC website for the full list, *available at* <http://www.sasac.gov.cn/n2588035/n2641579/n2641645/index.html> (last visited Jan. 23, 2018).

<sup>1013</sup> U.S. STEEL CORPORATION, *Submission, Section 301 Hearing* (Sept. 28, 2017).

<sup>1014</sup> U.S. STEEL CORPORATION, *Submission, Section 301 Hearing* (Sept. 28, 2017).

<sup>1015</sup> U.S. v. Wang Dong et al., 22-3 (W. D. Pa. May 1, 2014).

<sup>1016</sup> U.S. v. Wang Dong et al., 21-3 (W. D. Pa. May 1, 2014).

<sup>1017</sup> *See Global Joint Ventures – Shanghai STAL Precision Stainless Steel Co., Ltd (STAL), ATI, available at* <https://www.atimetals.com/businesses/joint-ventures/Pages/default.aspx>. *See also* Allegheny Technologies Incorporated, 2012 Form 10-K.

<sup>1018</sup> U.S. v. Wang Dong et al., 21-3 (W. D. Pa. May 1, 2014). Two months prior to this intrusion, the joint venture announced it was selling off its loss-making stainless steel assets to the Baosteel Group, its parent company for RMB 2.6 billion. The sale of assets to the Baosteel Group was the largest M&A transaction in China announced that month. *See* BAOSHAN IRON AND STEEL LTD. RELATED PARTY TRANSACTIONS REPORT. Report No. 2012-005, 24 (Feb. 29, 2012); *See* MIIT, MERGER AND RESTRUCTURING MONTHLY REPORT, VOL. 2, *available at* <http://merger.miit.gov.cn/observation/briefing/2012-03-23/381.html>.

<sup>1019</sup> U.S. v. Wang Dong et al., 7 (W. D. Pa. May 1, 2014).

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3PLA stole sensitive information from USW computer networks.<sup>1020</sup> On January 31, 2012, USW issued a statement from its International President, calling on the U.S. Government to take action to protect the U.S. automobile and auto parts industry from “China’s predatory, protectionist and illegal trade practices.”<sup>1021</sup> USW through its trade counsel also released a report on Chinese auto policies that threaten the U.S. jobs in the auto industry on January 31, 2012.<sup>1022</sup> Meanwhile, on the same day, the 3PLA gained unauthorized access to USW computers, and stole e-mails from six senior USW employees, including USW’s International President, most of whom were personally and publicly involved in formulating USW strategy towards combatting China’s trade practices in this sector.<sup>1023</sup>

On March 7, 2012, 3PLA actors again gained unauthorized access to USW employees’ e-mails<sup>1024</sup> at a critical period for USW as it was considering whether to request an extension of tariffs imposed on Chinese tires that would expire in September 2012.<sup>1025</sup> USW announced in September 2012 that it would not seek an extension of the tariffs, but revealed in its September announcement that it had notified the Administration in March that it would not seek an extension.<sup>1026</sup> The 3PLA stole e-mails from the inboxes of six senior employees that included sensitive, non-public, and deliberative information about USW trade strategy, including its decision not to seek an extension of the tariffs, which would not be announced publicly for another six months.<sup>1027</sup>

### e) Westinghouse

Westinghouse was affected by four major cyber intrusions by the 3PLA – one occurring in May 2010, one in late December 2010, and two in early January 2011.<sup>1028</sup> According to the indictment, the PLA obtained at least 1.4 gigabytes of data, the equivalent of roughly 700,000 pages of e-mail messages and attachments from Westinghouse’s computers,<sup>1029</sup> including: trade secrets; technical and design specifications; network credentials; and, sensitive e-mails belonging to senior decision-makers.<sup>1030</sup>

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<sup>1020</sup> U.S. v. Wang Dong et al., 23 (W. D. Pa. May 1, 2014)

<sup>1021</sup> U.S. v. Wang Dong et al., 24 (W. D. Pa. May 1, 2014)

<sup>1022</sup> See Statement of Terence Stewart, Jan. 31, 2012 available at: <http://assets.usw.org/releases/china-trade/Final-SS-Press-Release.pdf>. See also LAW OFFICES OF STEWART & STEWART, CHINA’S SUPPORT PROGRAMS FOR AUTOMOBILES AND AUTO PARTS UNDER THE 12<sup>TH</sup> FIVE YEAR PLAN (Jan. 2012).

<sup>1023</sup> U.S. v. Wang Dong et al., 24-5 (W. D. Pa. May 1, 2014).

<sup>1024</sup> U.S. v. Wang Dong et al., 25 (W. D. Pa. May 1, 2014).

<sup>1025</sup> Imported Chinese tires became subject to a tariff for a period of three years starting on September 26, 2009, after the USW successfully petitioned the USITC for relief. See *Certain Passenger Vehicle and Light Truck Tires from the People’s Republic of China*, Investigation No. TA-421-7, USITC Publication No. 4085.

<sup>1026</sup> USW announced on September 24, 2012 that it would not seek an extension of the tariffs. *USW Acclaim Success of Trade Relief for Tire Sector; Extension Not Requested*, UNITED STEELWORKERS (Sept. 24, 2012), available at: <http://www.usw.org/news/media-center/releases/2012/usw-acclaim-success-of-trade-relief-for-tire-sector-extension-not-requested>. The USW announcement states that it notified the Administration of its decision in March before the renewal request deadline

<sup>1027</sup> U.S. v. Wang Dong et al., 25-6 (W. D. Pa. May 1, 2014).

<sup>1028</sup> U.S. v. Wang Dong et al., 4, 15-6. (W. D. Pa. May 1, 2014).

<sup>1029</sup> U.S. v. Wang Dong et al., 16 (W. D. Pa. May 1, 2014).

<sup>1030</sup> U.S. v. Wang Dong et al., 2, 4, 15-6 (W. D. Pa. May 1, 2014).

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In 2010, Westinghouse was building four AP1000 power plants in China and negotiating other terms of the construction, including technology transfers, with State Nuclear Power Technology Corporation (SNPTC), a Chinese SOE.<sup>1031</sup> At the same time, a 3PLA actor stole confidential and proprietary technical and design specifications for pipes, pipe supports, and pipe routing within the AP1000 plant buildings.<sup>1032</sup> The stolen trade secrets and technical information would permit a competitor to build a power plant without having to invest in associated research and development costs that had been borne by Westinghouse in the past.<sup>1033</sup>

Additionally, in 2010 and 2011, while Westinghouse was exploring other business ventures with SNPTC, a 3PLA actor stole sensitive, non-public, and deliberative e-mails belonging to senior decision-makers responsible for the Westinghouse business relationship with SNPTC.<sup>1034</sup> In January 2011, as the 3PLA were infiltrating Westinghouse's servers and exfiltrating its information, Westinghouse announced the signing of two agreements with SNPTC.<sup>1035</sup>

### f) Alcoa

The indictment alleges that on February 1, 2008, Alcoa announced that it was entering into a partnership with a Chinese SOE, Chinalco to acquire an interest in a foreign mining company.<sup>1036</sup> After the announcement, on February 20, 2008, the 3PLA obtained access to nearly 3,000 Alcoa e-mails through a spearphishing message that installed malware into Alcoa's computer system.<sup>1037</sup> The stolen e-mails included internal discussions among Alcoa's senior managers regarding the acquisition of the foreign mining company.<sup>1038</sup>

The facts of each of these incidents provides a chilling warning to U.S. companies that engage or seek to engage in business in China or seek to challenge China's trade practices through legal means. If a company operates in a sector that China deems strategic to its economic interests or particularly if it has business relations with an SOE, the company must risk being targeted by Chinese government hackers for cyber intrusions and cyber theft, putting sensitive commercial information about its products, business strategy, and other matters at risk. These firms are forced to operate on the assumption that they are under constant surveillance by the Chinese

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<sup>1031</sup> U.S. v. Wang Dong et al., 14 (W. D. Pa. May 1, 2014); *see also* *China signs first engineering contracts for Westinghouse AP1000-derived CAP1400 reactor*, POWER ENGINEERING, Nov. 29, 2010. *Foreign Companies Eyeing Chinese Nuclear Power Market*, SINOCAS, COMTEX NEWS NETWORK, Dec. 2, 2010; *First Concrete Pour for Haiyang Unit 2 Completed in Record Time; 4 AP1000 Units Now Under Construction in China*, PR NEWSWIRE, June 25, 2010.

<sup>1032</sup> U.S. v. Wang Dong et al., 14-5 (W. D. Pa. May 1, 2014).

<sup>1033</sup> U.S. v. Wang Dong et al., 14-5 (W. D. Pa. May 1, 2014).

<sup>1034</sup> U.S. v. Wang Dong et al., 16 (W. D. Pa. May 1, 2014)

<sup>1035</sup> *Westinghouse, China extend AP1000 reactor agreement*, POWER ENGINEERING, Jan. 20, 2011, *available at* <http://www.power-eng.com/articles/2011/01/westinghouse--china.html>.

<sup>1036</sup> U.S. v. Wang Dong et al., 26 (W. D. Pa. May 1, 2014); *see also* Eric Onstad, Lucy Hornby, *Chinalco and Alcoa buy stake in Rio Tinto*, NY TIMES (Feb. 1, 2008).

<sup>1037</sup> U.S. v. Wang Dong et al., 26-7 (W. D. Pa. May 1, 2014).

<sup>1038</sup> U.S. v. Wang Dong et al., 27 (W. D. Pa. May 1, 2014).

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government's extensive system of corporate surveillance and control, which is discussed in greater detail in Section VI of this report.<sup>1039</sup>

### 3. China's Institutional Framework Supports Cyber Intrusions into U.S. Commercial Networks

As discussed in detail in other sections of this report, China relies primarily on a state-led approach to technology development and economic growth.<sup>1040</sup> Through an extensive planning system, China identifies certain sectors and technologies for development and fosters national champions to achieve dominance in both domestic and global markets.<sup>1041</sup> China's industrial plans and innovation goals, such as Made in China 2025,<sup>1042</sup> aim to provide support and assistance through the use of state resources to Chinese companies and commercial sectors.<sup>1043</sup> At the same time, China maintains an extensive state sector and uses state-invested enterprises and other mechanisms as instruments to achieve the government's economic objectives.

As noted above in Section IV.B.5, China's policy of "military-civil fusion" calls for the development of integrated information sharing platforms to facilitate science and technology (S&T) resource sharing and collaboration between state laboratories, the PLA, and enterprises.<sup>1044</sup> China's government-directed cyber capabilities exist alongside an institutional framework that provides state-invested enterprises and national champions with privileged access to various forms of Chinese government support and information.

Indeed, the U.S. government has evidence that the Chinese government provides competitive intelligence through cyber intrusions to Chinese state-owned enterprises through a process that includes a formal request and feedback loop, as well as a mechanism for information exchange via a classified communication system.

For example, according to U.S. government information, China National Offshore Oil Corporation (CNOOC), a state-owned enterprise, submitted formal requests to Chinese

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<sup>1039</sup> Andrew Browne, *China's Big Brother Is Watching You Do Business*, WALL STREET J., May 23, 2017.

<sup>1040</sup> See Section I.C.

<sup>1041</sup> See Section I.C.

<sup>1042</sup> See Section I.C for more information on the Made in China 2025 policy.

<sup>1043</sup> For example, China's Made in China 2025 policy documents set out targets for developing ten key industries. U.S. CHAMBER OF COMMERCE, MADE IN CHINA 2025: GLOBAL AMBITIONS BUILT ON LOCAL PROTECTIONS 17-18 (2017) (stating that the policy "appears to provide preferential access to capital to domestic companies to promote their indigenous [research and development] capabilities, enhance their competitiveness, and support their ability to acquire technology from abroad."). U.S. CHAMBER OF COMMERCE, MADE IN CHINA 2025: GLOBAL AMBITIONS BUILT ON LOCAL PROTECTIONS 6 (2017) ("In concert with the 13th Five-Year Plan, Internet Plus Action Plan, and other state-led development plans, [Made in China 2025] constitutes a broader strategy to use state resources to alter and create comparative advantage in these sectors on a global scale."). EUROPEAN CHAMBER OF COMMERCE IN CHINA, CHINA MANUFACTURING 2025: PUTTING INDUSTRIAL POLICY AHEAD OF MARKET FORCES 1 (2017) (stating that the policy's references to "'indigenous innovation'—along with mentions of the need to realise 'self-sufficiency' . . . suggests that Chinese policies will further skew the competitive landscape in favour of domestic companies.").

<sup>1044</sup> See *Description of National New Industrial Demonstration Base*, MIIT, <http://sfjd.miit.gov.cn/BaseInfoAction!findListIndustry.action>

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intelligence services seeking intelligence information on several U.S. oil and gas companies and on U.S. shale gas technology. One instance occurred in January 2012 in the context of commercial negotiations between a U.S. company (“U.S. Company 1”), CNOOC, and the PRC Ministry of Agriculture regarding oil leaks that had occurred at a facility jointly owned and operated by U.S. Company 1 and CNOOC in June 2011.

In January 2012, these Chinese intelligence services provided CNOOC information ahead of and during negotiations with U.S. Company 1. The information that the intelligence services provided to CNOOC included details on U.S. Company 1’s position in the negotiation. CNOOC attributed their ultimate success in the negotiation with U.S. Company 1 to the information that CNOOC had received from the intelligence services. According to information the U.S. Government has access to, senior Chinese Intelligence officials, including a PLA director, Liu Xiaobei, endorsed the use of the intelligence information during CNOOC’s negotiations with U.S. Company 1.

In a second instance, in July 2012, CNOOC requested that Chinese Intelligence provide specific information on five named U.S. oil and natural gas companies. Specifically, CNOOC sought information on:

- U.S. Company 2’s operations, asset management, and the movements of its senior personnel;
- U.S. Company 3’s developments in shale gas technology; and
- The status of U.S. Company 4 and U.S. Company 5’s research in certain areas, including lab procedures, fracking technology and fracking formulae.

These examples illustrate how China uses the intelligence resources at its disposal to further the commercial interests of Chinese state-owned enterprises to the detriment of their foreign partners and competitors.

Available evidence also indicates that China uses its cyber capabilities as an instrument to achieve its industrial policy and S&T objectives. Indeed, based on available information on China’s cyber intrusions, experts have concluded that China’s cyber intrusions and cyber theft align with its industrial policy goals.<sup>1045</sup> For example:

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<sup>1045</sup> During the hearing for this investigation, Richard Ellings of the Commission on the Theft of American Intellectual Property and the President of the National Bureau of Asian Research, was asked whether there is a correlation between China’s industrial plans and reported cyber intrusions directed against U.S. businesses. Mr. Ellings testified in response: “Absolutely. In fact, the whole history of cyber intrusions and more broadly industrial espionage from China correlates with all the Five-year Plans, the Indigenous Innovation Policy that came out 10 years ago, 12 years ago, 11 years ago, current Five-year Plan, 2025 Plans. This is, as I said, kind of a standard that is given out to the country and to accomplish the goals set out in these plans becomes a measure by which cadres and entities throughout the country, their performance is measured. So they have tremendous incentive. So all of our tracking, whether they be through the court cases that make it into the public realm, whether cyber intrusion surveys and studies, Verizon did one, the Mandiant one, and so on, they all show a correlation between the priorities of the Chinese government at any time and the kinds of industrial espionage undertaken.” Richard Ellings,

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As noted above, Mandiant observed in its 2013 report that “organizations in all industries related to China’s strategic priorities are potential targets of APT1’s comprehensive cyber espionage campaign.” The victims of the intrusions in Mandiant’s data set match industries that China has identified as strategic priorities in its five year plan and S&T development plans.<sup>1046</sup>

In a review of cybertheft by a group associated with China’s intelligence services, cybersecurity firm Novetta found the group targeting entities including Fortune 500 companies and firms with innovative information technology.<sup>1047</sup> Such targeting converged with China’s strategic interests and the aims of China’s 11th Five Year plan for the 2006-2011 period.<sup>1048</sup>

In 2015, one cybersecurity expert testified to the U.S.-China Economic and Security Review Commission that “China’s commercial cyber espionage activity likely supports Communist Party central planning policies designed to provide a competitive advantage for Chinese companies.”<sup>1049</sup>

SolarWorld, in its submission to USTR, stated: “In our view, Chinese hacking and technology theft is pervasive and encouraged by the Chinese Government, as demonstrated by the 2014 indictment of the Chinese People’s Liberation Army and as driven by China’s Five Year Plans, which target specific high-tech and developing industries.”<sup>1050</sup>

The 3PLA’s cyber theft of trade secrets from Westinghouse, documented in the DOJ indictment, is illustrative of how China uses cyber theft as one of multiple instruments to achieve its state-led technology development goals. During China’s 12th Five-year planning period (2011-2015), China issued several documents demonstrating its commitment to developing “indigenous” nuclear power technology capabilities. For example, the *12th Five-year Science and Technology Development Plan* expressly states that China should “comprehensively master” Westinghouse’s AP1000 nuclear power design technology and “indigenously” complete standard designs at domestic facilities.<sup>1051</sup> The plan also states that China should establish demonstration power

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COMMISSION ON THE THEFT OF AMERICAN INTELLECTUAL PROPERTY [*hereinafter* “IP Commission”], *Testimony, Section 301 Hearing* 51 (Oct. 10, 2017).

<sup>1046</sup> MANDIANT, APT1: EXPOSING ONE OF CHINA’S CYBER ESPIONAGE UNITS 24 (2013).

<sup>1047</sup> NOVETTA, OPERATION SMN: AXIOM THREAT ACTOR GROUP REPORT 4, 8-9 (2014). Such innovative technology includes telecommunications equipment manufacturers, infrastructure providers, integrated circuit manufacturers, software vendors, pharmaceutical and cloud computing companies, networking equipment manufacturers, and energy firms.

<sup>1048</sup> NOVETTA, OPERATION SMN: AXIOM THREAT ACTOR GROUP REPORT 9-10 (2014).

<sup>1049</sup> *Hearing on Commercial Cyber Espionage and Barriers to Digital Trade in China: Hearing Before the U.S.-China Econ. & Sec. Rev. Comm’n* (June 15, 2015) (Statement of Jen Weedon), available at <https://www.uscc.gov/sites/default/files/Weedon%20Testimony.pdf>; see also Richard J. Ellings, IP COMMISSION, *Submission, Section 301 Hearing* 3-4 (Sept. 28, 2017); but see James Lewis, CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES [*hereinafter* “CSIS”], *Submission, Section 301 Hearing* 4 (Sept. 2017).

<sup>1050</sup> SOLARWORLD, *Submission, Section 301 Hearing* 2 (Oct. 20, 2017).

<sup>1051</sup> *Notice on Issuing the 12th Five-year Science and Technology Development Plan (2011-2015)* § 3, Item 6 (MOST, Guo Ke Fa Ji [2011] No. 270, issued July 4, 2011).

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plants for CAP1400 technology, which is China’s domestic nuclear design technology based on Westinghouse’s AP1000 design with its input.<sup>1052</sup> In addition, China’s *12th Five-year Energy Technology Development Plan* contains specific references to developing the AP1000 and similar technologies through a process of “indigenization with outside support.”<sup>1053</sup>

For Westinghouse to operate in China, Westinghouse was required to invest through a joint venture controlled by an SOE,<sup>1054</sup> SNPTC, and in order to win the bid it had to agree to transfer all relevant technology for the AP1000 to the SOE.<sup>1055</sup> This circumstance is hardly unique to Westinghouse. Section II of this report details how China uses its restrictive foreign investment regime to put pressure on U.S. companies to transfer technology to Chinese enterprises, often state-owned enterprises. As described above, according to the DOJ indictment, 3PLA actors stole thousands of files from Westinghouse’s computers, including: trade secrets; technical and design specifications; network credentials; and sensitive e-mails belonging to senior decision-makers, while commercial negotiations between Westinghouse and SNPTC were ongoing.<sup>1056</sup> In sum, China first expressly identified through its industrial policies a U.S. technology that China sought to indigenize. China then required technology transfer to an SOE in order for the U.S. company holding the technology to be able to access the China market. China then used its cyber capabilities to steal commercially sensitive information, including trade secrets, negotiating positions and technical designs, from the U.S. company that could provide the SOE with an advantage in its business dealings with the U.S. company.

### 4. China’s Recent Cyber Intrusion Activities Against U.S. Commercial Networks

Beginning in 2014, the United States began stepping up pressure on China for its cyber intrusions into U.S. firms and the theft of commercial information through a number of mechanisms. In September 2015, then-U.S. President Obama and Chinese President Xi reached a commitment that “neither country’s government will conduct or knowingly support cyber-enabled theft of intellectual property, including trade secrets or other confidential business information, with the intent of providing competitive advantages to companies or commercial

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<sup>1052</sup>*Notice on Issuing the 12th Five-year Science and Technology Development Plan (2011-2015)* § 3, Item 6 (MOST, Guo Ke Fa Ji [2011] No. 270, issued July 4, 2011).

<sup>1053</sup> *12th Five-year Plan for Energy Technology (2011-2015)*, § 2.2, § 4.3 (NEA, issued Dec. 2011).

<sup>1054</sup> See e.g., *Catalogue of Industries for Guiding Foreign Investment*, (2007 Amendment) (NDRC, MOC Order No. 57, issued Oct. 31, 2007), Part IV, para. 4 “Catalogue of Restricted Industries for Foreign Investment.”

<sup>1055</sup> *Westinghouse Wins Nuclear Power Bid*, CHINA DAILY, Dec. 27, 2006 (“According to the [chief representative of Westinghouse China], the company’s success can be mainly attributed to three factors: advanced technology, competitive pricing and an offering of all-round technology transfer... [The CEO of] Westinghouse, earlier told China Daily that Westinghouse will fully co-operate with its Chinese customers to transfer all technology as requested”); See *Foreign Companies Eyeing Chinese Nuclear Power Market*, SINOCAST, COMTEX NEWS NETWORK, Dec. 2, 2010 (Westinghouse delivered “more than 75,000 pieces of documents to Chinese customers as part of a technology transfer agreement, hoping to consolidate its leading status in the world’s largest nuclear power market. The World Nuclear Association (WNA) believes that it is just because Westinghouse Electric agrees to transfer technology in its contracts with Chinese customers that it successfully wins the bid to build AP1000 nuclear reactors in China.”).

<sup>1056</sup> U.S. v. Wang Dong et al. at 4.



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sectors.”<sup>1057</sup> The United States has been closely monitoring China’s cyber activities since this consensus was reached, and the evidence indicates that cyber intrusions into U.S. commercial networks in line with Chinese industrial policy goals continue.

Beijing’s cyber espionage against U.S. companies persists and continues to evolve. The U.S. Intelligence Community judges that Chinese state-sponsored cyber operators continue to support Beijing’s strategic development goals, including its S&T advancement, military modernization, and economic development.

In September 2017, the DOJ filed an indictment against three Chinese nationals who “were owners, employees and associates of the Guangzhou Bo Yu Information Technology Company Limited<sup>1058</sup> (Boyusec), a company that cybersecurity firms have linked to the Chinese government.<sup>1059</sup> Three firms, all with operations in the United States, are named in the indictment as victims: Moody’s Analytics, Siemens AG, and Trimble Inc. The cyber intrusions against Trimble continued until March 2016 (and the related conspiracy which continued until “at least May 2017”<sup>1060</sup>), targeted the three named firms to steal confidential business and commercial information and work product.<sup>1061</sup>

Specifically, in 2015 and 2016, Trimble was working to develop a new global navigation satellite systems product that “combined software with a relatively low cost antenna to significantly improve the positioning accuracy of mobile devices”<sup>1062</sup> (Commercial GNSS Project). “Beginning no later than December 2015, and continuing through March 2016, the co-conspirators targeted the servers within Trimble’s network,” and by the middle of January 2016 the hackers had “accessed Trimble’s network and copied, packaged, and stole computer files containing commercial business documents and data” related to the GNSS project.”<sup>1063</sup> In addition to the theft of market research and strategy information, the stolen files also included

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<sup>1057</sup> Press Release, The White House, Fact Sheet: President Xi Jinping’s State Visit to the United States (Sept. 25, 2015), <https://obamawhitehouse.archives.gov/the-press-office/2015/09/25/fact-sheet-president-xi-jinpings-state-visit-united-states>. DOJ reaffirmed the 2015 joint statement in October 2017: “Both sides will continue their implementation of the consensus reached by the Chinese and American Presidents in 2015 on U.S.-China cybersecurity cooperation... [including] (2)that neither country’s government will conduct or knowingly support cyber-enabled theft of intellectual property, including trade secrets or other confidential business information, with the intent of providing competitive advantage to companies or commercial sectors[.]” See Press Release, First U.S.-China Law Enforcement and Cybersecurity Dialogue (Oct. 6, 2017), *available at* <https://www.justice.gov/opa/pr/first-us-china-law-enforcement-and-cybersecurity-dialogue>.

<sup>1058</sup> U.S. v. Wu Yingzhou et al., (September 13, 2017) (Crim. No. 17-247 W.D.Pa.).

<sup>1059</sup> There have been many public reports linking the firm Boyusec with China’s Ministry of State Security (MSS) and/or the PLA’s cyber unit. For example, a report from a private cybersecurity firm, Recorded Future, published on May 17th, 2017, links Boyusec to the Chinese Ministry of State Security. The report alleges that the known threat actor group “APT3” is in fact Boyusec and is directly linked to the Chinese state. Insikt Group, *Recorded Future Research Concludes Chinese Ministry of State Security Behind APT3*, RECORDED FUTURE, May 17, 2017 (linking these attacks to the MSS). See also *Siemens, Trimble, Moody’s breached by Chinese Hackers, U.S. Charges*, REUTERS, Nov. 27, 2017 (linking Boyusec hacks to the PLA).

<sup>1060</sup> U.S. v. Wu Yingzhou et al., at 3.

<sup>1061</sup> U.S. v. Wu Yingzhou et al., at 3-9.

<sup>1062</sup> U.S. v. Wu Yingzhou et al., at 7.

<sup>1063</sup> U.S. v. Wu Yingzhou et al., at 8.

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“confidential and proprietary schematic design for the hardware receiver equipment”<sup>1064</sup> and “two directory lists [...] listed files containing the names of a Trimble engineer related to the Commercial GNSS Project.”<sup>1065</sup> “In total, conspirators stole at least 275 megabytes of data, including compressed data, which included hundreds of files that would have assisted a Trimble competitor in developing, providing, and marketing similar software and subscriptions services, without incurring millions of dollars in research and development costs.”<sup>1066</sup> According to the indictment, intended customers of the Commercial GNSS Project included construction, land survey, and agricultural sectors and the technology had no military applications.<sup>1067</sup>

Similarly, U.S. cybersecurity firms have concluded that cyber intrusions against U.S. firms by Chinese state-sponsored and supported hackers since September 2015 have decreased or become more difficult to detect, but none has concluded that the activity has ceased entirely.<sup>1068</sup> In June 2016, the cybersecurity firm FireEye<sup>1069</sup> stated in a report that while cyber intrusions appear to be less voluminous, the attacks appear to now be more focused.<sup>1070</sup> According to the report, FireEye observed 262 cyber intrusions from late 2015 through mid-2016, conducted by 72 different China-based groups whose identities range from “government and military actors, contractors, patriotic hackers, and even criminal elements.”<sup>1071</sup> Of the 262 observed intrusions, 182 involved the networks of private and public U.S. entities.<sup>1072</sup> FireEye recorded that in April and May 2016, “three groups compromised the networks of four firms headquartered in the United States, Europe, and Asia that are involved in the manufacturing of semiconductors and chemical components used in the production of semiconductors.”<sup>1073</sup>

One of the more notable exceptions to the observed decline comes from APT10, which is believed by several cybersecurity firms to be a Chinese cyber espionage group.<sup>1074</sup> In late 2016, BAE Systems and PricewaterhouseCoopers reported that they had been investigating a campaign of

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<sup>1064</sup> U.S. v. Wu Yingzhou et al., at 8.

<sup>1065</sup> U.S. v. Wu Yingzhou et al., at 9.

<sup>1066</sup> U.S. v. Wu Yingzhou et al., at 9.

<sup>1067</sup> U.S. v. Wu Yingzhou et al., at 7.

<sup>1068</sup> FIREEYE, REDLINE DRAWN: CHINA RECALCULATES ITS USE OF CYBER ESPIONAGE 12-14 (2016).

<sup>1069</sup> FireEye is now the parent company of Mandiant.

<sup>1070</sup> Robert Hackett, *China's Cyber Spying on the U.S. Has Drastically Changed*, FORTUNE, June 25, 2016, (interviewing Laura Galante of FireEye). See also FIREEYE, REDLINE DRAWN: CHINA RECALCULATES ITS USE OF CYBER ESPIONAGE 4 (2016). FireEye concludes that Chinese cyberintrusions and cybertheft were decreasing since mid-2014 due to a number of factors including “ongoing [Chinese] military reforms, widespread exposure of Chinese cyber operations, and actions taken by the U.S. government.” *Id.* at 4; see also IP COMMISSION, UPDATE TO THE IP COMMISSION REPORT (2017) (“cyberattacks may have declined in volume since about 2014, although whether this is a result of a crackdown in China on responsible units in the People’s Liberation Army (PLA) or other factors is not entirely clear.”). Other commenters note the decrease in activity linking it to the September 2015 joint statement as well as ongoing Chinese PLA reorganization, see, for example, James Lewis, CSIS, *Submission, Section 301 Hearing 5* (Sept. 2017); and Erin Ennis, U.S.-CHINA BUSINESS COUNCIL [*hereinafter* “USCBC”], *Testimony, Section 301 Hearing* (Oct. 10, 2017) (referring to FireEye’s June 2016 report concluding “a notable decrease in reports by American companies of intrusions from suspected Chinese hackers.”).

<sup>1071</sup> FIREEYE, REDLINE DRAWN: CHINA RECALCULATES ITS USE OF CYBER ESPIONAGE 15 (2016).

<sup>1072</sup> FIREEYE, REDLINE DRAWN: CHINA RECALCULATES ITS USE OF CYBER ESPIONAGE 12 (2016).

<sup>1073</sup> FIREEYE, REDLINE DRAWN: CHINA RECALCULATES ITS USE OF CYBER ESPIONAGE 13 (2016).

<sup>1074</sup> See e.g., FireEye, APT10 (MenuPass Group): New Tools, Global Campaign Latest Manifestation of Longstanding Threat (Apr. 6, 2017); See also BAE Systems, APT10 – Operation Cloud Hopper, (2017).

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intrusions, referred to as “Operation Cloud Hopper” by APT10 against several major IT managed service providers, including some U.S. companies.<sup>1075</sup> According to BAE, APT10’s targeting is consistent with “industries that align with China’s 13th Five-year Plan which would provide valuable information to advance the domestic innovation goals held within China.”<sup>1076</sup> FireEye believes that APT10’s activities historically have been “in support of Chinese national security goals, including acquiring valuable military and intelligence information as well as the theft of confidential business data to support Chinese corporations.”<sup>1077</sup>

BAE notes that APT10’s activities use a strategy that is difficult to trace.<sup>1078</sup> By targeting IT managed service providers, APT10 is seeking the ability “to move laterally onto the networks of potentially thousands of other victims” and “has been observed to exfiltrate stolen intellectual property” while evading a network’s defenses.<sup>1079</sup> BAE concludes that APT10 has increased its sophistication and has “significant staffing and logistical resources, which have increased over the last three years, with a significant step-change in 2016.”<sup>1080</sup>

Another cybersecurity firm, Fidelis Cybersecurity, concluded that APT10 installed malware on the website of the National Foreign Trade Council (NFTC), such that when U.S. member companies registered for NFTC’s board meeting scheduled for March 2017, the malware would be executed on their computers.<sup>1081</sup> According to Fidelis Cybersecurity, this particular malware would allow APT10 to exploit vulnerabilities known to exist within the user’s applications.<sup>1082</sup> NFTC board members that may have sought to register for the meeting include a large group of leading U.S. companies across a wide range of commercial sectors.<sup>1083</sup>

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<sup>1075</sup> PWC, BAE SYSTEMS, APT10 – OPERATION CLOUD HOPPER (2017), available at <https://www.pwc.co.uk/cyber-security/pdf/cloud-hopper-report-final-v4.pdf>.

<sup>1076</sup> PWC, BAE SYSTEMS, APT10 – OPERATION CLOUD HOPPER 15 (Apr. 2017).

<sup>1077</sup> APT10 (MenuPass Group): *New Tools, Global Campaign Latest Manifestation of Longstanding Threat*, FIREEYE, Apr. 6, 2017, [https://www.fireeye.com/blog/threat-research/2017/04/apt10\\_menupass\\_grou.html](https://www.fireeye.com/blog/threat-research/2017/04/apt10_menupass_grou.html).

<sup>1078</sup> PWC, BAE SYSTEMS, APT10 – OPERATION CLOUD HOPPER (Apr. 2017).

<sup>1079</sup> PWC, BAE SYSTEMS, APT10 – OPERATION CLOUD HOPPER 8 (Apr. 2017).

<sup>1080</sup> PWC, BAE SYSTEMS, APT10 – OPERATION CLOUD HOPPER 5 (Apr. 2017). FireEye, in April of 2017 agreed that APT10 had expanded their operations. See APT10 (MenuPass Group): *New Tools, Global Campaign Latest Manifestation of Longstanding Threat*, FIREEYE, Apr. 6, 2017.

<sup>1081</sup> *Operation TradeSecret: Cyber Espionage at the Heart of Global Trade*, FIDELIS CYBERSECURITY (Apr. 6, 2017), <https://www.fidelissecurity.com/TradeSecret>.

<sup>1082</sup> *Operation TradeSecret: Cyber Espionage at the Heart of Global Trade*, FIDELIS CYBERSECURITY (Apr. 6, 2017).

<sup>1083</sup> According to NFTC’s website, board members include: ABB Incorporated, Amazon, Amgen, Applied Materials, Baxter International, British American Tobacco, Caterpillar Incorporated, Chevron, Cisco Systems, Inc., The Coca-Cola Company, ConocoPhillips, Inc, Corning Incorporated, Deloitte & Touche, LLP, Dentons US LLP, DHL Express (USA) Inc., E.I. du Pont de Nemours & Company, eBay Inc., Ernst & Young LLP, ExxonMobil Corporation, FCA US LLC, FedEx Express, Fluor Corporation, Ford Motor Company, General Electric Company, Google Inc., Halliburton Company, Hanesbrands Inc., Hewlett Packard Enterprise Company, HP Inc, IBM Corporation, Johnson Controls, KPMG, LLP, Mars Incorporated, Mayer Brown LLP, McCormick & Company, Inc., Microsoft Corporation, Mondelēz International, Occidental Petroleum Corporation, Oracle Corporation, Pernod Ricard USA, Pfizer Inc., PMI Global Services Inc, PricewaterhouseCoopers LLP, Procter & Gamble Company, Qualcomm Incorporated, Siemens Corporation, TE Connectivity, Toyota Motor Sales, USA, Incorporated, United Technologies Corporation, UPS, Visa Inc, and Wal-mart Stores.

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The data set since September 2015 is necessarily more limited than the extensive data collected over the last decade on Chinese cyber intrusions and cyber theft. Notwithstanding an apparent decline in the observed number of cyber incidents, the continued use of cyber intrusions by the Chinese government targeting U.S. companies remains a serious problem. State-sponsored cyber intrusions originating from China into U.S. commercial networks occur alongside China's institutional framework for promoting its industrial and technological development through a state-led model in which state-owned enterprises and national champions are the recipients of extensive state support. In sum, the evidence indicates that China continues its policy and practice, spanning more than a decade, of conducting and supporting cyber-enabled theft and intrusions into the commercial networks of U.S. companies. This conduct provides the Chinese government with unauthorized access to intellectual property, trade secrets, or confidential business information, including, but not limited to, technical data, negotiating positions, and sensitive and proprietary internal business communications. Indeed, the U.S. Chamber of Commerce in its submission states that the "U.S. industry does not believe there has been a full cessation of cyber enabled IP theft, and we urge the Trump Administration to ensure the Chinese government upholds the agreement."<sup>1084</sup>

### C. **China's Acts, Policies, and Practices Regarding Cybertheft of Intellectual Property Are Unreasonable**

As described above, the statute defines an "unreasonable" act, policy, or practice as one that "while not necessarily in violation of, or inconsistent with, the international legal rights of the United States is otherwise unfair and inequitable."<sup>1085</sup> The statute expressly provides that acts, policies, or practices that are unreasonable includes those that deny fair and equitable provision of "adequate and effective protection of intellectual property rights notwithstanding the fact that the foreign country may be in compliance with the specific obligations of the Agreement on Trade-Related Aspects of Intellectual Property Rights."<sup>1086</sup>

It is the longstanding policy of the United States, most recently reaffirmed in 2014 in Presidential Policy Directive 28 (PPD-28), that "[t]he collection of foreign private commercial information or trade secrets is authorized only to protect the national security of the United States or its partners and allies. It is not an authorized foreign intelligence or counterintelligence purpose to collect such information to afford a competitive advantage to U.S. companies or U.S. business sectors commercially."<sup>1087</sup>

In fact, China's activities stand in contrast to domestic and international standards adopted around the world. Many countries prohibit and even criminalize the unauthorized intrusions into computer networks in certain circumstances, including intrusions that result in

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<sup>1084</sup> U.S. CHAMBER OF COMMERCE, *Submission, Section 301 Hearing* 38 (Oct. 3, 2017).

<sup>1085</sup> 19 U.S.C. § 2411(d)(3)(A).

<sup>1086</sup> 19 U.S.C. § 2411(d)(3)(B)(i)(II).

<sup>1087</sup> *Presidential Policy Directive – 2014 Directive on Signals Intelligence Activities*, Daily Comp. Pres. Docs. Section 1(c) (Jan. 17th, 2014), <https://obamawhitehouse.archives.gov/the-press-office/2014/01/17/presidential-policy-directive-signals-intelligence-activities>.

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misappropriation of trade secrets.<sup>1088</sup> Moreover, countries around the world have repeatedly condemned activities by government actors to misappropriate trade secrets for commercial purposes. For example, leaders of the 21-member Asia-Pacific Economic Cooperation (APEC), which includes China, in November 2016 “reaffirm[ed] that economies should not conduct or support information and communications technology (ICT)-enabled theft of intellectual property or other confidential business information, with the intent of providing competitive advantages to companies or commercial sectors.”<sup>1089</sup> Similarly, in November 2015, at the Antalya Summit, the G20 Leaders’ Communique stated: “In the ICT environment, just as elsewhere, states have a special responsibility to promote security, stability, and economic ties with other nations. In support of that objective, we affirm that no country should conduct or support ICT-enabled theft of intellectual property, including trade secrets or other confidential business information, with the intent of providing competitive advantages to companies or commercial sectors.”<sup>1090</sup>

The fact that a wide group of countries, including China have condemned ICT-enabled theft of intellectual property by foreign governments reinforces the conclusion that government acts, policies, and practices involving cyber theft of trade secrets for a commercial purpose is unreasonable.

Claims that there is no meaningful distinction between the Chinese government’s cyber activities and that of other countries, including the United States, are not valid. China’s cyber intrusions are unique from those of Western market economies because the intrusions occur within the framework of China’s extensive state-driven economic development model, which has no parallel in Western market economies. Not only does the United States not rely on extensive industrial policy tools to identify specific commercial sectors and commercial technologies for development, the United States does not have national champions and state-

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<sup>1088</sup>See e.g., In the UK, Computer Misuse Act, 1990, § 1(1)(a); in Ireland, Criminal Damage Act, 1991, § 5(1); in Sweden, Lag (1990:409) Protection of Business Secrets Act and Brottsbalken [BrB][Criminal Code] 4:9c (Swed); in Italy, C.p. 615.ter; in Germany, Strafgesetzbuch [STGB][Penal Code] S (202)(2) and (303)(b); in Japan, [Unauthorized Computer Access Act], Law No. 128 of 1999, art. 3(2).

<sup>1089</sup> *Fact Sheet: 24th Annual APEC Economic Leaders’ Meeting*, White House Office of the Press Secretary (Nov. 20, 2016), available at <https://obamawhitehouse.archives.gov/the-press-office/2016/11/20/fact-sheet-24th-annual-apec-economic-leaders-meeting>. In addition, the APEC leaders adopted a series of best practices on trade secret protection and enforcement against misappropriation that recognizes that APEC economies should consider applying criminal liability for the willful theft of trade secrets that can arise through electronic intrusions for a commercial advantage. See <https://ustr.gov/sites/default/files/11202016-US-Best-Practices-Trade-Secrets.pdf>.

<sup>1090</sup> G20 LEADERS’ COMMUNIQUE, ANTALYA SUMMIT ¶26 (Nov. 2015), available at <http://g20.org.tr/g20-leaders-commenced-the-antalya-summit/>. In September 2017, the G7 issued the following G7 ICT and Industry Ministers’ Declaration, “reaffirm[ing] that no country should conduct or support ICT-enabled infringement or misappropriation of intellectual property, including trade secrets or other confidential business information, with the intent of providing competitive advantages to companies or commercial sectors.” G7 ICT and Industry Ministers’ Declaration Making the Next Production Revolution Inclusive, Open and Secure (Sept. 26 2017).

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owned enterprises to implement such policies. In other words, U.S. companies “do not have the advantage of leveraging government intelligence data for commercial gain.”<sup>1091</sup>

Moreover, China’s troubling track record of using cyber intrusion and cyber theft to target U.S. companies in sectors prioritized by China’s industrial policies is “hurting the case for free trade” because “[m]utually beneficial economic exchange occurs only when there is acceptance of the rule of law. If the legal protection of property rights is ignored, free exchange makes much less sense: One side just takes from the other.”<sup>1092</sup>

Based on the foregoing factors, China’s acts, policies, and practices of cyber intrusions into the computer networks of U.S. business and the theft of firms’ sensitive commercial information are unreasonable.

### **D. China’s Acts, Policies, and Practices Regarding Cybertheft of Intellectual Property Burden U.S. Commerce**

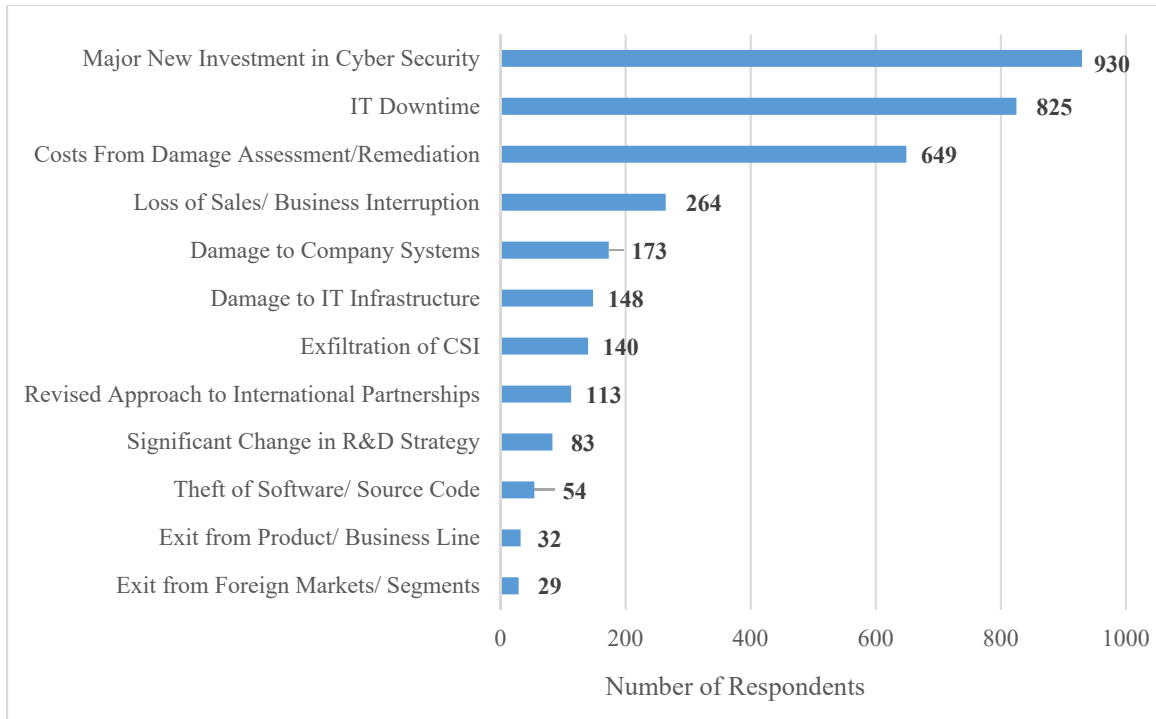
China’s cyber intrusion and cyber theft activities harm U.S. business interests in a variety of ways. It can be difficult to assess the full burden on U.S. commerce because of chronic under reporting, companies being unaware that their network have been compromised or being unaware of the extent of the damage done. Nevertheless, a recent survey conducted by the Bureau of Industry and Security (BIS) contains the responses of more than 8,000 companies in the United States about the impact they face from malicious cyber activity from all sources. Respondents noted the following impacts in descending order:

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<sup>1091</sup> *Cyber Espionage and the Theft of U.S. Intellectual Property and Technology: Hearing Before the House of Representatives Committee on Energy and Commerce Subcommittee on Oversight and Investigations* (July 9, 2013) (statement of Larry M. Wortzel).

<sup>1092</sup> Derek Scissors, *Chinese Economic Espionage Is Hurting the Case for Free Trade*, HERITAGE (Nov. 19, 2012), <http://www.heritage.org/trade/report/chinese-economic-espionage-hurting-the-case-free-trade>.

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Source: U.S. Department of Commerce, Bureau of Industry and Security, Ongoing Defense Industrial Base Assessment.

First and foremost, cyber intrusions and cyber theft damage company performance and competitiveness, and result in lost sales, lost revenue, disruption of supply chains, lost business opportunities, and failure to achieve return on investment. For example, SolarWorld in its submission to USTR in connection with this investigation stated that the Chinese government’s cyber-theft of its proprietary business information “resulted in more than \$120 million in damages in the form of lost sales and revenue” because Chinese producers entered the market earlier than expected based on the proprietary information taken.<sup>1093</sup> SolarWorld’s statement also provided the following:

The injury to SolarWorld and other solar manufacturers is particularly acute, given the [Chinese] government subsidized Chinese producers of solar cells and panels, who appear to have benefited from the stolen trade secrets, have been flooding the U.S. market with dumped products, since 2012, driving nearly 30 U.S. companies out of business, and leaving the U.S. solar manufacturing industry on the brink of collapse.<sup>1094</sup>

At the hearing, Solar World America’s CEO, Jürgen Stein, testified:

<sup>1093</sup> SOLARWORLD, *Submission, Section 301 Hearing 3-6* (Oct. 20, 2017) (“SolarWorld strongly believes that this [early entry of Chinese solar competitors] was the result of information stolen from SolarWorld’s systems and provided to SolarWorld’s Chinese competitors.”).

<sup>1094</sup> SOLARWORLD, *Submission, Section 301 Hearing 5-6* (Sept. 28, 2017).

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[SolarWorld's] efforts to stay ahead of the Chinese wave of illegally dumped and subsidized lower power and quality imports were thwarted by the hacking and theft of proprietary information about the [passivated emitter rear contact (PERC)] process that we had innovated. Between May and September 2012, exactly the time we brought this technology to mass production, SolarWorld's IT system was hacked 13 times by Chinese military hackers. Now, armed with our proprietary data and armed with our cost data, we saw our Chinese competitors leap overnight into PERC technology that we had innovated and with economic information that would unfairly enhance their positions in price negotiations.

By early 2014, a prominent Chinese-based solar rival, JA Solar, announced it was converting to PERC technology, and it began mass production of PERC in May of that year.<sup>1095</sup> By early 2015, Chinese-based Trina announced its own PERC conversion and came to the market later that year with a comparable PERC technology.

While the five Chinese military hackers have never been brought to justice in this country, we firmly believe that were it not for their economic espionage and theft from SolarWorld Americas, Chinese solar producers like JA Solar and Trina would have taken far longer to make the leap into PERC technology. State-sponsored hacking and theft by China greatly weakened SolarWorld's first-mover status and again left SolarWorld vulnerable to China's relentless effort to take over the U.S. solar industry through the sale of solar cells and panels below the cost of production.<sup>1096</sup>

In a post-hearing submission to USTR, SolarWorld stated:

Perhaps the greatest loss that SolarWorld has sustained, and continues to sustain, as a result of the Chinese government's cyberhacking is the unfair loss of its competitive advantage, thereby resulting in significant losses in market leadership, sales, and profitability.... SolarWorld has invested in significant R&D and in the application of new technologies in its manufacturing process, all with the goal of moving solar technology forward and successfully competing with the unfairly-priced solar cell and module imports from manufacturers in Asia. These efforts, however, were lost almost overnight when Chinese state-backed actors infiltrated SolarWorld's systems and stole its proprietary information. This loss has been devastating to SolarWorld. As explained in [SolarWorld CEO's] testimony, SolarWorld worked for eight years on the development of the state-of-the-art Passivated Emitter Rear Contact (PERC) technology.' After years of R&D, SolarWorld became the first manufacturer to industrialize PERC cell production, an advantage, based on the price premium for the state-of-the-art technology and high-quality materials used to produce quality product, that we expected to remain for several years. Instead, SolarWorld's significant investments in this technology - estimated at approximately \$60 million in R&D and \$600 million total in setting up all

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<sup>1095</sup> In its post-hearing submission, SolarWorld provided a correction that JA Solar announced it had launched its PERC product in October 2013. SOLARWORLD, *Submission, Section 301 Hearing* 5 (Oct. 20, 2017).

<sup>1096</sup> Juergen Stein, SOLARWORLD, *Testimony, Section 301 Hearing* 76 (Oct. 10, 2017).



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production sites, equipment and processes – have been undercut by Chinese competitors.<sup>1097</sup>

As the SolarWorld example illustrates, Chinese cyber theft of commercially sensitive information often takes place in industries that the Chinese government has prioritized for state-support, and the victims often operate in U.S. industries that are already suffering from the result of China’s other policy tools.

Moreover, U.S. companies often lack effective recourse under U.S. or Chinese law after they have been a victim of a Chinese cyber intrusion or cyber theft to recover the damages they incurred from such activity. As described above, the practical and financial challenges of litigation prevented U.S. Steel from being able to seek legal relief against its well-funded Chinese SOE adversary in litigation.<sup>1098</sup>

In addition, there are significant remediation costs a company must incur after a cyber intrusion. Even if the hackers are ultimately unable to monetize all the information they have stolen, the victim must expend significant resources to deal with the potential implications. Cyber intrusions and cybertheft can lead to service disruptions that interrupt a firm’s sales or other operations.<sup>1099</sup> According to one study, it takes on average 191 days to identify that a data breach has occurred, and 66 days to contain it.<sup>1100</sup> Containing a data breach requires “forensic and investigative activities, assessment and audit services, crisis team management and communications to executive management and board of directors.”<sup>1101</sup>

Even after a data breach is contained, companies bear significant additional burdens including “legal expenditures . . . identity protection services and regulatory interventions.”<sup>1102</sup> Reputational damage is also a burden that companies in many instances bear after experiencing cyber intrusion or cyber theft. After such breaches, experts observe that a company’s valuation may decrease from a drop in stock prices after the company publicly reports that it has been hacked.<sup>1103</sup>

At the macro-level, one study concluded that cyber intrusions and cyber theft have a significant impact on U.S. employment. A report by the Center for Strategic and International Studies

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<sup>1097</sup> SOLARWORLD, *Submission, Section 301 Hearing 2-4* (Oct. 20, 2017).

<sup>1098</sup> U.S. STEEL, *Submission, Section 301 Hearing 2* (Sept. 28, 2017).

<sup>1099</sup> MCAFEE, CSIS, *THE ECONOMIC IMPACT OF CYBERCRIME AND CYBER ESPIONAGE* 10 (July 2013).

<sup>1100</sup> PONEMON INSTITUTE, *2017 COST OF DATA BREACH STUDY 3* (June 2017).

<sup>1101</sup> PONEMON INSTITUTE, *2017 COST OF DATA BREACH STUDY 3* (June 2017). The report details these activities further: “Conducting investigations and forensics to determine the root cause of the data breach; Determining the probable victims of the data breach; Organizing the incident response team; Conducting communication and public relations outreach; Preparing notice documents and other required disclosures to data breach victims and regulators; Implementing call center procedures and specialized training.” *Id.* at 29.

<sup>1102</sup> PONEMON INSTITUTE, *2017 COST OF DATA BREACH STUDY 3* (June 2017).

<sup>1103</sup> MCAFEE, CSIS, *THE ECONOMIC IMPACT OF CYBERCRIME AND CYBER ESPIONAGE* at 12-13. The report notes that valuation drops typically do not appear to be permanent; however, financial transactions and lost expectations occurring during the window of any valuation drop would reasonably have an impact on the firm.

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(CSIS) and McAfee, found that cybercrime from all sources costs approximately 200,000 jobs annually in the United States.<sup>1104</sup> According to CSIS, “Cybercrime is a tax on innovation and slows the pace of global innovation by reducing the rate of return to innovators and investors...For developed countries; cybercrime has serious implications for employment. The effect of cybercrime is to shift employment away from jobs that create the most value. Even small changes in GDP can affect employment.”<sup>1105</sup>

For all of the foregoing reasons, China’s cyber activities targeting U.S. companies poses significant costs on U.S. companies and burdens U.S. commerce.

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<sup>1104</sup> Press Release, McAfee and CSIS: Stopping Cybercrime Can Positively Impact World Economies (June 9, 2014), <https://www.mcafee.com/us/about/news/2014/q2/20140609-01.aspx>.

<sup>1105</sup> Press Release, McAfee and CSIS: Stopping Cybercrime Can Positively Impact World Economies (June 9, 2014), <https://www.mcafee.com/us/about/news/2014/q2/20140609-01.aspx>.

## VI. Other Acts, Policies, and Practices of China

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### A. Introduction

The *Federal Register Notice* also invited comments from interested parties on other acts, policies and practices of China relating to technology transfer, intellectual property (IP), and innovation that might be included in this investigation, and/or might be addressed through other applicable mechanisms.<sup>1106</sup> The following issues were cited by interested parties as acts, policies, and practices of China that may warrant investigation. While the following actions may well meet the Section 301 standards of unreasonable or discriminatory acts, policies, and practices that burden or restrict U.S. commerce, this investigation does not make that determination. These matters warrant further investigation. Going forward, USTR will identify the best tools to address them including, but not limited to, more intensive bilateral engagement, WTO dispute settlement, and/or additional Section 301 investigations.

#### 1. Measures Purportedly Related to National Security or Cybersecurity

Stakeholders report that China increasingly is incorporating into its commercial regulations protections allegedly needed for “national security” or “cybersecurity” purposes.<sup>1107</sup> Many of China’s regulations are new or in draft form and their effect on U.S. companies is still coming into view. Companies have raised particular concerns about the *Cybersecurity Law of the People’s Republic of China (Cybersecurity Law)*. The *Cybersecurity Law*, which came into effect in June 2017, generally establishes security reviews for a broad range of IT products and services<sup>1108</sup>; imposes restrictions on the cross-border flow of data; requires data localization for certain parties and types of data; and authorizes the development of national cybersecurity standards that exceed the burden and scope of international standards.<sup>1109</sup>

The *Cybersecurity Law*’s provision requiring the implementation of a cybersecurity-specific multilevel protection scheme for information and communications technology (ICT) products used in network security appears to reinforce China’s *Regulations on Classified Protection of Information Security*, also known as the Multi-Level Protection Scheme (MLPS), about which

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<sup>1106</sup> See Appendix A.

<sup>1107</sup> These cyber-security measures/protections include: *Administrative Measures for New Internet Services Security Assessments (Draft)*, *Baseline for Cybersecurity Classified Protection: Special Security Requirements for Mobile Interconnection (Draft)*, *Catalogue of Network (Cyber) Critical Equipment and Cybersecurity Specific Products, Controllability Evaluation Index for Security of Information Technology Products, Part 1: General Principles (Draft)*, *Controllability Evaluation Index for Security of Information Technology Products, Part 2: Central Processing Unit (Draft)*, *Controllability Evaluation Index for Security of Information Technology Products, Part 5: General Purpose Computer (Draft)*, *Cryptography Law of the People’s Republic of China (Draft)*, *Cybersecurity Law, National Security Law of the People’s Republic of China, Key Network and Specialized Equipment Security Products Catalogue, Regulations on Classified Protection of Information Security (MLPS)*, and *Information Security Technology – Security Controllable Level Evaluation Index of Information Technology Products: Part 2: Central Processing Unit (Draft)*.

<sup>1108</sup> For a discussion of security review processes and requirements for disclosure of sensitive information, see Section II.C. of this report.

<sup>1109</sup> See, e.g., NAT’L FOREIGN TRADE COUNCIL [hereinafter “NFTC”], *Submission, Section 301 Hearing 4* (Sept. 28, 2017) (explaining that particularly with respect to cloud service providers, China is the only country addressing national security concerns by pressuring the transfer of technology).

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the United States has expressed concern since adoption in 2007.<sup>1110</sup> In general, the MLPS is a system that classifies ICT products and components according to their level of national security. It is reportedly aimed at promoting indigenous innovation by mandating that products used in Chinese information networks at a certain level of national security importance be developed and produced by entities owned or controlled by the government.<sup>1111</sup>

With regard to data localization, a number of interested parties discussed Chinese policies that require certain “critical information infrastructure providers” to store their data on servers in China.<sup>1112</sup> As the U.S. Chamber of Commerce explained, if a foreign company is forced to localize a valuable set of data or information in China, whether for R&D purposes or simply to conduct their business, it will have to assume a significant amount of risk that its data or information may be misappropriated or misused, especially given the environment in China, where companies face significant legal and other uncertainties when they try to protect their data and information.<sup>1113</sup> As noted further, “Chinese laws, such as the National Security, Cybersecurity, and recently passed National Intelligence Laws, give authorities expansive latitude to gain access to companies’ physical facilities and digital information.”<sup>1114</sup>

Fears about data misappropriation are also raised by Article 37 of the *Cybersecurity Law*, which prohibits critical information infrastructure operators from exporting “personal information” or “important data” unless they have first gone through a security assessment. While some other jurisdictions require companies to ensure an adequate level of protection for personal information transferred abroad, typically these rules are strictly limited to personal information. An extension to “important data” would therefore appear to sweep in much of the business data that is otherwise routinely and freely transferred cross-border by multinationals operating in other jurisdictions.<sup>1115</sup> Moreover, as the general scope of these security assessments is still being defined, it remains worth monitoring whether China will ultimately impose stricter requirements for “personal information” exports than what is now found in international practice.

Stakeholders also raised concerns with China’s encryption regulations and the China Compulsory Certification (CCC) testing regime for information security products. While these measures have been in force since 2009, until 2017 they were limited to companies seeking to sell to China’s government. However, in June 2017, the Cybersecurity Administration of China

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<sup>1110</sup> INFORMATION TECHNOLOGY & INNOVATION FOUNDATION [*hereinafter* “ITIF”], *Submission, Section 301 Hearing* (Sept. 28, 2017).

<sup>1111</sup> U.S. CHAMBER OF COMMERCE [*hereinafter* “U.S. Chamber”], *Submission, Section 301 Hearing* 32 (Oct. 3, 2017); SEMICONDUCTOR INDUSTRY ASS’N [*hereinafter* “SIA”], *Submission, Section 301 Hearing* 11-2 (Oct. 5, 2017).

<sup>1112</sup> The definition given for “critical information infrastructure operators” in the *Cybersecurity Law* (adopted by the Twentieth Session of the Twelfth NPC on Nov. 7, 2016, effective June 1, 2017) is vague and it is unclear how broadly it will be interpreted. *See Cybersecurity Law*, art. 31 (“The national government, on the basis of a network security level protection system, will prioritize protection of important industries and fields including public communications and information services, energy, transport, water utilities, finance, public services, and e-government affairs, as well as other critical information infrastructure that may result in serious damage to national security, people’s livelihoods, and the public interest as soon as it is destroyed, loses its functionality or experiences a data breach.”).

<sup>1113</sup> *See, e.g.*, U.S. CHAMBER, *Submission, Section 301 Hearing* 33-4 (Oct. 3, 2017).

<sup>1114</sup> *See, e.g.*, U.S. CHAMBER, *Submission, Section 301 Hearing* 10, 34 (Oct. 3, 2017).

<sup>1115</sup> U.S. CHAMBER, *Submission, Section 301 Hearing* 10, 34 (Oct. 3, 2017).

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released the *Catalogue of Critical Network Equipment and Network Security Products (First Batch)*,<sup>1116</sup> which expanded the restrictions beyond government procurement to 15 categories of commercial products, including routers, anti-spam software, servers, and other technology products.<sup>1117</sup> These and other final and draft regulations raise substantial concerns for U.S. stakeholders.

### 2. Inadequate Intellectual Property Protection

Inadequate protection of IP has been a top concern for American companies doing business in China for many years.<sup>1118</sup> Stakeholders identified numerous IP protection problems including trade secret theft<sup>1119</sup> and bad faith trademarking.<sup>1120</sup> With regard to patents, stakeholders also asserted that Chinese government-owned entities were responsible for substantial infringement.<sup>1121</sup> Stakeholders were further concerned about widespread counterfeiting in China and the distribution of counterfeit products over the Internet.<sup>1122</sup> Counterfeiting occurs in a wide

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<sup>1116</sup> *Four Department Notice on Announcing the Catalogue of Critical Network Equipment and Network Security Products (First Batch)* (National Internet Information Office, MIIT, Public Security Bureau, Certification and Accreditation Administration, issued June 1, 2017).

<sup>1117</sup> TELECOMMUNICATIONS INDUSTRY ASS'N [*hereinafter* "TIA"], *Submission, Section 301 Hearing 3* (Sept. 28, 2017).

<sup>1118</sup> *See e.g.*, AM. BAR ASS'N [*hereinafter* "ABA IPL"], *Submission, Section 301 Hearing 2* (Sept. 27, 2017); ABRO INDUSTRIES [*hereinafter* "ABRO"], *Submission, Section 301 Hearing 1* (Sept. 28, 2017); AM. APPAREL & FOOTWEAR ASS'N [*hereinafter* "AAFA"], *Submission, Section 301 Hearing 2, 4* (Sept. 28, 2017); AM. BRIDAL & PROM INDUSTRY ASS'N [*hereinafter* "ABPIA"], *Submission, Section 301 Hearing 2-3* (Sept. 28, 2017); AM CHAMBER OF COMMERCE SHANGHAI [*hereinafter* "Am. Cham. Shanghai"], *Submission, Section 301 Hearing 1* (Sept. 28, 2017); AM. CHEMISTRY COUNCIL [*hereinafter* "ACC"], *Submission, Section 301 Hearing 3* (Sept. 27, 2017); AM. SUPERCONDUCTOR CORP. [*hereinafter* "AMSC"], *Submission, Section 301 Hearing 2-3* (Sept. 28, 2017); BIOTECHNOLOGY INNOVATION ORG. [*hereinafter* "BIO"], *Submission, Section 301 Hearing 1-2* (Sept. 28, 2017); BONUMOSE BIOCHEM [*hereinafter* "Bonumose"], *Submission, Section 301 Hearing 3-4* (Sept. 27, 2017); LEE BRANSTETTER, *Submission, Section 301 Hearing 4* (Sept. 28, 2017); Stephen Zirschky, *Submission, Section 301 Hearing 2* (Sept. 28, 2017); BSA THE SOFTWARE ALLIANCE [*hereinafter* "BSA"], *Submission, Section 301 Hearing 2* (Sept. 28, 2017); JACK CHANG, *Submission, Section 301 Hearing 4* (Sept. 28, 2017); COMPTIA, *Submission, Section 301 Hearing 2* (Sept. 28, 2017); CONGRESSMAN PASCRELL, *Submission, Section 301 Hearing 4* (Sept. 28, 2017); CONSUMER TECHNOLOGY ASS'N [*hereinafter* "CTA"], *Submission, Section 301 Hearing 2* (Sept. 28, 2017); James Lewis, CENTER FOR STRATEGIC & INT'L STUDIES [*hereinafter* "CSIS"], *Submission, Section 301 Hearing 6* (Sept. 27, 2017); DAIS ANALYTIC CORP. [*hereinafter* "Dais"], *Submission, Section 301 Hearing 2* (Sept. 27, 2017); COMM'N ON THE THEFT OF INTELLECTUAL PROPERTY [*hereinafter* "IP Commission"], *Submission, Section 301 Hearing 3* (Sept. 28, 2017); MOTOR & EQUIPMENT MANUFACTURERS ASS'N [*hereinafter* "MEMA"], *Submission, Section 301 Hearing 2* (Sept. 28, 2017); MICHELMAN, *Submission, Section 301 Hearing 2* (Oct. 6, 2017); NAT'L ASS'N OF MANUFACTURERS [*hereinafter* "NAM"], *Submission, Section 301 Hearing 2* (Sept. 28, 2017); NFTC, *Submission, Section 301 Hearing 2* (Sept. 28, 2017); PHRMA, *Submission, Section 301 Hearing 2* (Sept. 22, 2017); SIA, *Submission, Section 301 Hearing 1* (Oct. 5, 2017); STEWART & STEWART, *Submission, Section 301 Hearing 2* (Sept. 28, 2017); U.S. CHAMBER, *Submission, Section 301 Hearing 5* (Oct. 3, 2017); U.S. CHINA BUSINESS COUNCIL [*hereinafter* "USCBC"], *Submission, Section 301 Hearing 2* (Sept. 28, 2017); U.S. COUNCIL FOR INT'L BUSINESS [*hereinafter* "USCIB"], *Submission, Section 301 Hearing 1-2* (Sept. 28, 2017); WILEY REIN, *Submission, Section 301 Hearing 12, 14* (Sept. 28, 2017).

<sup>1119</sup> SIA, *Submission, Section 301 Hearing 15-16* (Oct. 5, 2017); ABA IPL, *Submission, Section 301 Hearing 3-4* (Sept. 27, 2017).

<sup>1120</sup> CTA, *Submission, Section 301 Hearing 3-4* (Sept. 28, 2017).

<sup>1121</sup> CATHERINE LIN-HENDEL, *Submission, Section 301 Hearing* (Aug. 28, 2017); SKADDEN, ARPS. SLATE, MEAGHER & FLOM LLP [*hereinafter* "Skadden"], *Submission, Section 301 Hearing 20* (Sept. 28, 2017).

<sup>1122</sup> AAFA, *Submission, Section 301 Hearing 2, 4* (Sept. 28, 2017); ABPIA, *Submission, Section 301 Hearing 1-2* (Sept. 28, 2017).

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range of product categories, including medicines, consumer electronics, toys, computer accessories, clothing and footwear, formalwear, automobile parts, and semiconductors.<sup>1123</sup>

Stakeholders also raised concerns over inadequate IP enforcement mechanisms available in China. Although some stakeholders submit that the legal framework has improved, many reported substantial obstacles to civil enforcement and ineffective and inconsistent criminal and administrative enforcement by the government of China.<sup>1124</sup> Stakeholders further stated that enforcement problems are exacerbated by insufficient governmental coordination, insufficient political will by Chinese officials, and inadequate resources and capacity to address IP problems.<sup>1125</sup>

### 3. China's Anti-Monopoly Law

A number of submissions asserted that China uses the *Anti-Monopoly Law of the People's Republic of China* (AML) as a means to obtain U.S. IP, citing as examples the AML agencies' multiple draft guidelines. Other submissions raised general concern regarding use of the AML for industrial policy purposes, and several complained about poor procedural protections in enforcement of the AML and about certain enforcement actions allegedly addressing abuse of dominance in the exercise of IP rights.

In regard to the concerns raised on IP guidelines, submissions cited the State Administration of Industry Commerce (SAIC) *2015 Rules on the Prohibition of Conduct Eliminating or Restricting Competition by Abusing Intellectual Property Rights* (SAIC Rules) and the March 2017 draft *State Council Anti-Monopoly Commission Guidelines Against Abuse of Intellectual Property Rights* (Guidelines).<sup>1126</sup> For example, there were concerns with Article 7 of the SAIC Rules, which recognizes IP as an "essential facility," with one submission noting that this provision could allow SAIC to treat any unilateral refusal to license as an "abuse of IPR."<sup>1127</sup>

In regard to enforcement, several submissions asserted that Chinese AML authorities use the AML as a tool to advance industrial policy rather than to protect competition.<sup>1128</sup> While some submissions noted improvements in AML enforcement, they also noted continued concerns with

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<sup>1123</sup> See, e.g., COMPTIA, *Submission, Section 301 Hearing 7* (Sept. 28, 2017); CHINA CHAMBER OF INTERNATIONAL COMMERCE [hereinafter "CCOIC"], *Submission, Section 301 Hearing 24-9* (Sept. 26, 2017); ABPIA, *Submission, Section 301 Hearing 1* (Sept. 28, 2017); U.S. CHAMBER, *Submission, Section 301 Hearing 36* (Oct. 3, 2017).

<sup>1124</sup> ABA IPL, *Submission, Section 301 Hearing 2, 4* (Sept. 27, 2017); CTA, *Submission, Section 301 Hearing 4* (Sept. 28, 2017); MEMA, *Submission, Section 301 Hearing 3-4* (Sept. 28, 2017); NAM, *Submission, Section 301 Hearing 13-4* (Sept. 28, 2017); USCIB, *Submission, Section 301 Hearing 2* (Sept. 28, 2017).

<sup>1125</sup> MEMA *Submission, Section 301 Hearing 3-4* (Sept. 28, 2017); NAM, *Submission, Section 301 Hearing 13-4* (Sept. 28, 2017).

<sup>1126</sup> See, e.g., Stephen Ezell, ITIF, *Testimony, Section 301 Hearing 21* (Oct. 10, 2017); NAM, *Submission, Section 301 Hearing 9, 13* (Sept. 28, 2017).

<sup>1127</sup> SIA, *Submission, Section 301 Hearing 13* (Oct. 5, 2017).

<sup>1128</sup> See, e.g., USCIB, STATEMENT ON CHINA'S COMPLIANCE WITH ITS WTO COMMITMENTS 15 (Sept. 20, 2017); USCIB, *Submission, Section 301 Hearing 1-2* (Sept. 28, 2017).

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transparency and due process,<sup>1129</sup> and alleged discriminatory enforcement against certain foreign companies.<sup>1130</sup>

### 4. China's Standardization Law

According to stakeholder submissions, China's recently enacted *Amendments to the Standardization Law of the People's Republic of China (Standardization Law Amendments)* raise concerns related to whether U.S. companies will be required to transfer valuable IP or license it on non-market terms as a condition of participation in standards setting bodies.<sup>1131</sup> Stakeholders assert that the amendments impose unique and potentially damaging requirements on enterprises to publicly disclose functional indicators and performance indicators of their products or services, which may result in unnecessary costs and risks.<sup>1132</sup> Furthermore, the Amendments reportedly endorse a preference for indigenous innovation in Chinese standards, to the detriment of U.S. and other non-Chinese companies.<sup>1133</sup>

### 5. Talent Acquisition

Certain participants in the investigation emphasized the challenges posed by China's acquisition of U.S. engineers and other professional employees in technology-related companies. For instance, the Semiconductor Industry Association (SIA) has observed a "notable shift from M&A to a more sophisticated process of acquiring hundreds of talented engineers and managers from foreign companies."<sup>1134</sup> As SIA explains:

It has been reported that Chinese state-owned firms have been highly successful in recruiting this high-tech engineering talent, which is enabled by massive Chinese government subsidies that allow for salaries to be offered at high, non-market rates. Often high-level managers are lured away from target companies with compensation packages four or five times the market rates. These managers then target key former employees in technology development, manufacturing and facilities, promising outsized compensation.<sup>1135</sup>

The Chinese government has issued a number of medium- and long-term plans for talent development,<sup>1136</sup> while pursuing initiatives that actively encourage the recruitment of foreign

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<sup>1129</sup> AM. CHAMBER OF COMMERCE CHINA, 2017 AMCHAM CHINA WHITE PAPER 38 (2017).

<sup>1130</sup> See, e.g., USCIB, *Submission, Section 301 Hearing 2* (Sept. 28, 2017); WILEY REIN, *Submission, Section 301 Hearing 6-8* (Sept. 28, 2017); IP COMM'N, *Submission, Section 301 Hearing 8* (Sept. 28, 2017).

<sup>1131</sup> U.S. CHAMBER, *Submission, Section 301 Hearing 26* (Oct. 3, 2017); WILEY REIN, *Submission, Section 301 Hearing 6-7* (Sept. 28, 2017).

<sup>1132</sup> U.S. CHAMBER, *Submission, Section 301 Hearing 26* (Oct. 3, 2017).

<sup>1133</sup> *PRC Standardization Law Amendments*, art. 20 (promulgated by the Fifth Session of the Twelfth NPC on Dec. 29, 1988, amended by the Thirtieth Session of the Twelfth NPC on Nov. 4, 2017).

<sup>1134</sup> SIA, *Submission, Section 301 Hearing 15* (Oct. 5, 2017).

<sup>1135</sup> SIA, *Submission, Section 301 Hearing 15-6* (Oct. 5, 2017).

<sup>1136</sup> For instance, to improve the quality of high-skilled labor in the economy, the CCP Central Committee and the State Council issued the *Outline of the National Medium- and Long-Term Talent Development Plan* in 2010. See *Outline of the National Medium- and Long-Term Talent Development Plan* (CCP Central Committee and State Council, Zhong Fa [2010] No. 6, issued Apr. 1, 2010); Wang Huiyao, CHINA'S NATIONAL TALENT PLAN: KEY MEASURES AND OBJECTIVES, BROOKINGS INSTITUTE, 23 (Nov. 2010).

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talent and Chinese persons overseas to boost national competitiveness. These plans establish specific targets for attracting “talented” individuals and cut across technical specializations, finance, and high-technology domains.<sup>1137</sup>

China’s talent acquisition activities are global in their scope and scale, but reportedly have been particularly concentrated in top U.S. universities and Silicon Valley. With support from various government programs and entities, notably the China Association of Science and Technology, Chinese enterprises reportedly have begun establishing “talent bases” in China and the United States to support cutting-edge R&D and the active recruitment of top talent. For instance, Chinese government plans prioritize the pursuit of human capital in artificial intelligence (AI).<sup>1138</sup> And, as the SIA submission indicates, Chinese companies have reportedly lured top talent from foreign companies by paying well above market compensation—enabled by government financing, direction, and support.<sup>1139</sup> These activities may provide a key conduit for technology transfer from the United States to China.

### B. Conclusion

USTR acknowledges the importance of these issues and agrees with stakeholders that the matters warrant further investigation. A number of concerns of this nature have previously been raised in USTR’s annual proceedings under Special 301 and the annual review of China’s WTO accession compliance. A range of tools may be appropriate to address these serious matters including more intensive bilateral engagement, WTO dispute settlement, and/or additional Section 301 investigations.

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<sup>1137</sup> See, e.g., *Notice on Issuing the “Medium- and Long-Term Financial Sector Talent Development Plan”* (People’s Bank of China, China Banking Regulatory Commission, China Securities Regulatory Commission, China Insurance Regulatory Commission, Yin Fa [2011] No. 18, promulgated Jan. 24, 2011); *Notice on Launching Stage-Wise Evaluation Work for the “Medium- and Long-Term Plan to Establish Technical Specialization Talent Teams (2010-2020)”* (Ministry of Human Resources and Social Security, promulgated on May 27, 2013); *Medium- and Long-Term Plan to Establish High-Skilled Talent Teams* (Ministry of Human Resources and Social Security, promulgated in 2011).

<sup>1138</sup> *State Council Notice on the Issuance of the New Generation Artificial Intelligence Development Plan* (State Council, Guo Fa [2017] No. 35, promulgated on July 8, 2017), available at [http://www.gov.cn/zhengce/content/2017-07/20/content\\_5211996.htm](http://www.gov.cn/zhengce/content/2017-07/20/content_5211996.htm); see also *An Overview of Overseas Offshore Talent Innovation Base*, CAST, <http://www.cast.org.cn/n200675/n202200/n202372/c400650/content.html>.

<sup>1139</sup> SIA, *Submission, Section 301 Hearing* 15-6 (Oct. 5, 2017); Huang Yijun, Chen Liangrong, He Yunting, *Interview with Ziguang Group Chairman Zhao Weiguo*, TIANXIA NEWS, Nov. 1, 2015; *Taiwan Semiconductor Leader Jumps to the Mainland*, INITIUM MEDIA, Oct. 7, 2015; David Manners, *Micron Sues Ex-Employees Working for China DRAM Companies*, ELECTRONICS WEEKLY, Apr. 7, 2017.