

# False Promises II: The Continuing Gap Between China's WTO Commitments and Its Practices

STEPHEN EZELL | JULY 2021

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Nearly 20 years after joining the World Trade Organization, China remains woefully short of meeting a broad range of commitments and responsibilities, to the detriment of both its trading partners and the international economic system.

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## KEY TAKEAWAYS

- China's state-led economic model, driven heavily by innovation-mercantilist practices, stands at odds with the foundational WTO principles of pursuing market-oriented policies while providing non-discrimination, national treatment, and reciprocity.
- China has failed to meet numerous WTO commitments on issues such as industrial subsidization, protection of foreign intellectual property, forcing joint ventures and technology transfer, and providing market access to services industries.
- China's behavior toward the WTO and its trading partners is that of a nation that knew what it had to promise to enter the organization, but its subsequent actions have demonstrated it never intended to keep those promises.
- Decades of gaming the global trading system and failing to meet WTO commitments have enabled China to accumulate tremendous trade surpluses and foreign currency reserves, which it uses to pursue domestic and foreign policy objectives.
- It is time for like-minded nations to join together to forcefully insist that China come into full and immediate compliance with all its WTO commitments and more broadly to contest China's innovation-mercantilist strategies.

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## INTRODUCTION

As China nears its 20th year of World Trade Organization (WTO) membership, originally acceding to the organization on December 11, 2001, it has never been further away from faithfully committing to the foundational principles and tenets of the organization and its fundamental obligations and commitments. WTO membership comes with rights to enjoy preferential access to other nations' markets, but also responsibilities. In particular, it commits nations to support and pursue "open, market-oriented policies" in accordance with the foundational principles of "non-discrimination, market access, reciprocity, and fairness."<sup>1</sup>

China has taken full advantage of its WTO rights. It has also largely ignored the responsibilities and commitments through its embrace of state-directed capitalism predicated upon an aggressive innovation mercantilism. This mercantilism denies foreign enterprises access to Chinese markets on reciprocal terms; distorts global markets, including for advanced-technology goods; and deprives nations of the benefits they believed they would receive when granting China accession into the community of trading nations.

In this report, China's accession to the WTO is recounted along with the trade rules with which it fails to comply. The report also describes the economic benefits China has accrued in part by not complying with its WTO commitments. Lastly, it offers policy recommendations for policymakers from the United States and like-minded nations to address the continuing China trade challenge.

Our initial 2015 Information Technology and Innovation Foundation (ITIF) report on this topic, on which this report is based, is premised on China's false promises to the WTO. Even with a full-scale Section 301 investigation initiated by the Trump administration, China has made little progress in fulfilling a wide range of its WTO commitments over the past two decades.<sup>2</sup>

As such, the report's policy recommendations reflect China's failings and present a path forward to rectify the false promises. These recommendations include the following measures:

- Develop a comprehensive "Bill of Particulars" against China
- Revoke China's Permanent Normal Trade Relations (PNTR) and renegotiate WTO market access schedules for Chinese goods and services
- Pursue a nonviolation nullification and impairment case against China at the WTO
- Insist that China extend to other nations provisions from the U.S.-China Phase One agreement
- Strengthen subsidies disciplines at the WTO
- Create a Democracies' Alliance Treaty Organization (DATO) for trade
- Form a Global Strategic Supply Chain Alliance (GSSCA)
- The United States should join the Comprehensive and Progressive Trans-Pacific Partnership (CPTPP) and pursue free trade agreements (FTAs) with like-minded nations
- The United States Trade Representative's Office (USTR) should self-initiate more cases against China before the WTO.
- Elevate the focus on technology, innovation, and intellectual property (IP) in U.S. trade policymaking

## HIGH EXPECTATIONS

Negotiations toward China's accession to the General Agreement on Tariffs and Trade (GATT) and its successor organization, the WTO, began in 1986 and took 15 years to complete. China ultimately entered the WTO on December 11, 2001, with the WTO's then-142 members voting in favor.<sup>3</sup> Policymakers believed that giving China a stake in global institutions such as the WTO would bind it into the rules-based system set up after World War II. As the *Economist* wrote, they hoped "that economic integration would encourage China to evolve into a market economy and that, as they grew wealthier, its people would come to yearn for democratic freedoms, rights and the rule of law."<sup>4</sup>

At the time, pundits hailed China's accession as a pivotal moment that heralded the country's shift toward a market-based economy that would adhere to the rules of international trade. WTO Director General Dr. Supachai Panitchpakdi, who led the organization from 2002 to 2005, and Mark Clifford, then a regional editor for *BusinessWeek*, heralded the move in their book *China and the WTO: Changing China, Changing World Trade*. "It is virtually impossible to overstate the importance of bringing the world's most populous nation into a system that establishes internationally accepted rules for economic behavior," they wrote.<sup>5</sup> Furthermore, "The WTO will set out the rules for a market-based economy ... The agreement signals China's willingness to play by international trade rules and to bring its often opaque and cumbersome governmental apparatus into harmony with a world order that demands clarity and fairness."<sup>6</sup>

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**Now, nearly 20 years on, a serious evaluation of China's time in the WTO shows that on balance the country has not moved significantly toward the WTO trading order, and by and large has not lived up to its commitments.**

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Panitchpakdi and Clifford were not alone. Then-WTO Director General Mike Moore gushed in 2001 about China's decision to join the WTO, describing it as "momentous," and asserting that "China's opaque and arbitrary trade and investment rules will become transparent, stable, and more predictable."<sup>7</sup> Moore assuaged those concerned China might not live up to its commitments, intoning, "If it doesn't, the U.S. or any other WTO member government can use the organization's dispute-settlement procedures to ensure it does."<sup>8</sup>

The WTO itself stated, "China has agreed to undertake a series of important commitments to open and liberalize its regime in order to better integrate into the world economy and offer a more predictable environment for trade and foreign investment in accordance with WTO rules."<sup>9</sup>

Pascal Lamy, the European Union (EU) trade commissioner who negotiated Chinese WTO entry on behalf of the EU and later became WTO director-general, deemed China's accession a "win-win agreement" that would "serve to boost the rule of law in China" while giving countries (including China itself) "predictable, rules-based access to other markets."<sup>10</sup>

Global major powers rejoiced. "China's accession can only lock in and deepen market reforms, empowering those in leadership who support further and faster moves toward economic freedom," wrote the European Commission.

President Clinton called China's accession "a hundred-to-nothing deal for America when it comes to the economic consequences," and one that would "have a profound impact on human

rights and liberty” in China.<sup>11</sup> Then-president George W. Bush promised that granting permanent normal trade relations to the Middle Kingdom would “narrow our trade deficit with China.”<sup>12</sup>

If China had been a “normal” country, such expectations might very well have been warranted. But it was not. Its massive economic size and growth rates impeded foreign business from a “capital strike” to punish China for its mercantilist behavior. China could and does punish any company that has the temerity to encourage countries to bring a case to the WTO.

Consider the case of one high-level official of a U.S. *Fortune 100* company. He met with the head of a major Chinese Ministry to complain about an egregious violation of WTO rules that was hurting his business to the benefit of a Chinese competitor, and threatened a WTO case. The response: If the company advocated for a WTO case to be brought forward, they would be foreclosed in the future from selling in China.<sup>13</sup> Needless to say, the company did nothing, as it was better to have a shrinking share of the market than nothing at all.

In essence, many companies have no choice but to tolerate China’s actions because they must have access either to the market or the low-priced labor, whose low price was subsidized even more by currency manipulation.

In addition, the WTO has lacked tools to discipline many of China’s most-effective mercantilist practices, including currency manipulation, IP theft, and the forced technology transfer carried out by administrative guidance rather than formal rules. Neither the WTO itself nor its member countries have ever had the political courage to take on China’s misdeeds in a serious and sustained way.

As a result, many early supporters of China’s WTO accession soon realized a problem was brewing. In 2010, former U.S. trade representative Charlene Barshefsky, who led China’s WTO accession negotiations for the United States, observed that China’s embrace of trade-distorting industrial policies, “raises a significant and profound—almost theological—question about the rules as they exist.”<sup>14</sup>

In 2018, two former Obama administration officials—Kurt M. Campbell, who now leads the Biden administration’s Asia policy team at the National Security Council, and Ely Ratner (now at the Office of the Secretary of Defense)—admitted that both Democratic and Republican administrations “had been guilty of fundamental policy missteps on China.”<sup>15</sup> That same year, even the *Economist* magazine wrote that the West’s gamble on China had failed and “the illusion has been shattered” that China will integrate into the liberal international order.<sup>16</sup>

China may have evinced some degree of economic liberalization and market opening in the first decade after WTO accession, particularly in initially shrinking its large state-owned enterprise (SOE) sector. However, since President Xi Jinping’s ascent to leadership in 2013, these reforms have reversed and reformers who were sympathetic to a more market-driven model shunted to the sidelines.

As Nicholas Lardy of the Peterson Institute of International Economics explained, “Xi came into office endorsing wide-ranging market-oriented economic reform but quickly abandoned this design in favor of a more-statist approach.” Lardy continued that, since 2012, market-driven growth has made way for “a resurgence of the role of the state in resource allocation and a shrinking role for the market and private firms.”<sup>17</sup>

Nearly 20 years on, a serious evaluation of China’s time in the WTO shows that the country has not moved significantly toward the WTO trading order. By and large, China has not lived up to its commitments. Nor has it led to a reduced trade deficit for the United States (or for many other nations). The WTO’s dispute settlement system also fails to constrain China’s actions.

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**Whereas the United States had the wherewithal to “sue” China for not living up to many of the commitments and standards it should have already been adhering to as a WTO member, most nations don’t have that ability, and so continue to suffer from China’s refusal to play by WTO rules.**

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In short, China knew what it had to promise to gain access to the WTO. It made these promises. Its subsequent actions, however, have demonstrated its lack of intention to keep them. Getting into the WTO enabled China to gain largely carte blanche protection against trade enforcement measures that other nations might take. Accession was not about driving internal reform and moving toward a market-based economy.<sup>18</sup> China ramped up its innovation mercantilist policies and practices after joining the WTO. Its actions also revealed WTO enforcement against informal and subtle, yet effective, mercantilist practices to be no more than a paper tiger.

## **TWO DECADES OF FALSE PROMISES**

China continues to fail to meet a wide range of its WTO commitments. According to USTR’s *2020 USTR Report to Congress on China’s WTO Compliance*:

China’s record of compliance with the terms of its WTO membership has been poor. China has continued to embrace a state-led, non-market and mercantilist approach to the economy and trade, despite WTO members’ expectations—and China’s own representations—that China would transform its economy and pursue the open, market-oriented policies endorsed by the WTO. China’s non-market approach has imposed, and continues to impose, substantial costs on WTO members.<sup>19</sup>

Such was the extent of China’s failure to meet its commitments to the United States that in 2018, the Trump administration opened a Special 301 investigation into China’s trade and economic practices. The effort culminated in the imposition of tariffs on approximately \$350 billion worth of Chinese exports to the United States—that’s about 66 percent of Chinese exports to America, at an average tariff rate of 19 percent. A Phase One “China-US Economic and Trade Agreement” ensued, which mandated structural reforms and other changes to China’s economic and trade regime in the areas of IP, technology transfer, agriculture, financial services, and currency and foreign exchange.<sup>20</sup> The Biden administration has left most of those tariffs in place.<sup>21</sup>

The United States had the wherewithal to “sue” China for not living up to many of the commitments and standards it should have been adhering to as a WTO member. Most nations do not have that ability. They continue to suffer from China’s refusal to play by the rules it signed up for in joining the WTO.

In its “2019 Global Mercantilist Index” report, ITIF ranked 60 nations on 18 mercantilist-oriented variables, including market access restrictions, forced localization of production, currency manipulation, IP theft, digital protectionism, and benefits for domestically owned enterprises, among others. The report found that China is in a class of its own when it comes to

innovation mercantilism—it is the only country to score in the “High” category. Of the 60 nations assessed, China tied (with Brazil, India, and Russia) for the highest score in both the Preferences for Domestic Production and NTE (National Trade Estimate) Report Ranking (with Brazil and Russia) categories. China also had the highest Digital Trade Barriers score outright and scores above 1 in every category except Currency Manipulation and Tariffs and Import Discrimination.<sup>22</sup>

To enumerate every Chinese failure to live up to its WTO commitments over the past two decades would represent an exhaustive undertaking. Hence, this report examines the 12 highest-level, most-important examples of China’s continuing failure to meet its WTO commitments, though primarily oriented toward the U.S.-China trade relationship. (See table 1.) They are

- Fundamentally rejecting the WTO’s market orientation;
- State-led industrial planning that defies WTO norms;
- Continuing prevalence of and preferences for SOEs;
- Massive industrial subsidization often leading to overcapacity;
- Failure to make timely and transparent notifications of subsidies;
- Forced technology transfer and joint venture requirements;
- Failure to respect foreign IP rights;
- Abuse of antitrust rules;
- Discriminatory technology standards;
- Failure to reciprocally open government procurement;
- Continuing use of service-market access restrictions; and
- Retaliatory use of trade remedies.

This report represents an effort to place China’s WTO-contravening economic and trade practices within these 12 discrete buckets. However, the essential point is that the policies collectively represent the Chinese Communist Party’s (CCP) concerted effort to effectuate its brand of state-led capitalism with a heavy dollop of innovation mercantilism.

To be clear, China is not expected to be a free-market, libertarian haven. A nation such as China will want to have industrial policies to spur growth. That is not what is in dispute. What is in dispute is the overall extent of these policies and, importantly, whether they violate the spirit and letter of the WTO.

**Table 1: WTO commitments China has failed to fully meet**

<b>Chinese WTO Commitment</b>	<b>Has China Lived up to the Commitment?</b>
Embracing open, market-oriented policies	No
Embracing national treatment—treating foreign firms the same as domestic ones	No
SOEs shrinking as a share of the economy, especially in technology industries	No
SOEs making purchases based on commercial considerations	No
Curtailing extensive industrial subsidization	No
Providing timely and transparent notification of subsidies	No
Curtailing forced technology transfer, including through coerced joint ventures	No
IP theft and violations being significantly reduced	No
Technology standards developed transparently according to WTO Technical Barriers to Trade principles	No
Competition and antimonopoly policies applied on non-discriminatory terms	No
Joining the Government Procurement Agreement	No
Information and Communications Technology and telecommunications market opening to foreign producers	No
Foreign film distribution being liberalized	No
Foreign banks enjoying genuine national treatment and market access	No
Responsible and nonretaliatory use of trade remedies	No

## Rejection of the WTO's Market Orientation

There are myriad specific areas where China has failed to meet its WTO commitments. Fundamentally, China rejects the most foundational principle of the WTO: a market-based orientation.

Launched in 1995, the WTO grew out of the GATT set up after World War II. The GATT is fundamentally based on a market-economy view of world trade.<sup>23</sup> In 1994, the Marrakesh Declaration, signed by 123 nations, brought eight years of Uruguay Round negotiations to a conclusion. The WTO launched the following year. The declaration affirmed that WTO members participate “based upon open, market-oriented policies.”<sup>24</sup> As USTR noted, “It clearly was not contemplated that any WTO member would reject market-based policies in favor of a state-led trade regime.”<sup>25</sup>

Similarly, WTO Deputy Director-General Alan Wolff recently stated:



[T]he fundamental underlying assumption of the WTO is that market forces will dictate competitive outcomes. Few if any of the rules would have their intended positive effect if commercial considerations—price, quality, delivery, and the like—were overcome by political considerations, such as the implementation of buy national policies due to government influence.<sup>26</sup>

The distinction matters because market-oriented economies simply cannot interact fairly with nonmarket economies (NMEs) in “unconditional” market-based trade agreements such as the GATT/WTO. Mutually beneficial market access cannot be guaranteed when governments, not market forces, dictate competitive outcomes.<sup>27</sup>

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**While this report places China's WTO incompliant polices into 12 discrete buckets, it's essential to recognize their inherent “interwoven, overlapping, and reinforcing” nature, constituting the core of China's innovation-mercantilism-driven brand of state-led capitalism.**

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Such a situation means none of the following three outcomes can be guaranteed to governments with market-oriented economies: 1) their own companies and workers will enjoy equal opportunities for market access or legal protections in NME systems; 2) imports from NMEs will compete against market-oriented producers on fair market conditions; and 3) trade-related employment gains and losses will reflect a fair and efficient allocation of resources.<sup>28</sup> USTR summed up the quandary well when it noted, “Companies in economies disciplined by the market cannot effectively compete with both Chinese companies and the Chinese state.”<sup>29</sup>

Yet, during WTO entry negotiations, Chinese representatives averred that China would hew to a market orientation and that its government would not influence trade and business operations.

As the *WTO Report of the Working Party on the Accession of China* notes, “The Government of China would not influence, directly or indirectly, commercial decisions on the part of state-owned or state-invested enterprises, including on the quantity, value, or country of origin of any goods purchased or sold, except in a manner consistent with the WTO Agreement.”<sup>30</sup>

China's representative reiterated these points in an introductory statement to the report:

A nation-wide unified and open market system had been developed. An improved macroeconomic regulatory system used indirect means and market forces to play a central role in economic management and the allocation of resource. ...Further liberalization of pricing policy had resulted in the majority of consumer and producer products being subject to market prices.<sup>31</sup>

China has backtracked from (or simply ignored) this essential requirement of WTO membership through its embrace of, in Chinese President Xi Jinping's framing, a “socialist market economy with Chinese characteristics.” The Chinese government—that is, the CCP—exercises effective control over all domestic firms (SOE or private) operating in its economy.

In 2001, China promised WTO members that the government would not influence, directly or indirectly, the commercial decisions of SOEs. That has not been the case. Under Article 19 of the *Company Law*, all SOEs or private Chinese companies have a Chinese CCP cell that

management must listen to, if not necessarily obey.<sup>32</sup> Article 19 in essence codifies CCP influence over corporate governance and business decisions in China.

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**While Chinese leaders attempt to obfuscate and prevaricate about the true nature of their economic system with epithets such as “a socialist market economy with Chinese characteristics,” the essential point is China’s fundamental rejection of a market-based system.**

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China’s “state capitalism,” or “China Inc.,” as described by Mark Wu, is not found anywhere else in the world and differs significantly from the economic models that influenced the Uruguay Round agreements. Wu outlines six elements that make China Inc. unique:

- The state (i.e., the State-owned Assets Supervision and Administration Commission of the State Council (SASAC)) as a corporate holding entity
- State control of financial institutions
- State control over planning and inputs (i.e., the National Development and Reform Commission (NDRC))
- Chinese-style corporate groups and affiliated networks
- Communist Party involvement and control
- The intertwined nature of private enterprises and the party-state<sup>33</sup>

This gives rise to an economy wherein the party-state—a form of government in which a political party, rather than citizens or individual politicians, are the primary basis of rule—remains all powerful, though with a veneer of economic activity putatively driven by private enterprises. It is difficult to apply labels such as “market vs. nonmarket” and “private-led vs. state-led” to the Chinese context.<sup>34</sup> Chinese leaders may attempt to obfuscate and prevaricate about the true nature of their economic system with epithets. Essentially, China fundamentally rejects a market-based system.

China also rejects the fundamental WTO principle of comparative advantage. Countries all have an advantage in production relative to others and should specialize in the production and export of those products or services—and subsequently use those gains to trade for products and services for which they have less comparative advantage.<sup>35</sup> China increasingly rejects this view and seeks absolute advantage across virtually all advanced-technology industries (as the following section will elaborate).

To be sure, this does not mean that only one version of capitalism fits within the WTO. In his classic 1967 book *Modern Capitalism: The Changing Balance of Public and Private Power*, Andrew Shonfield outlined the distinctly different flavors of capitalism that evolved in the post-war era. In the German model, large banks play a key role in allocating investment. The Italian model espouses public–private ownership of key industries, the French model touts indicative planning, and the Japanese model favors state-led industrial policy. Meanwhile, the American and British models offer largely free-market, laissez-faire capitalism, albeit leavened with a growing social-welfare state.<sup>36</sup>

Notwithstanding their differences, Shonfield concluded that advanced capitalist economies share basic convictions. Private capital should be at the center of economic activity, market-based transactions are the key to prosperity, and private property should be protected. In short, any differences between capitalist nations are of degree, not of kind.

Against this understanding, China tries to portray itself as a market economy.

Indeed, many simply assume China has become capitalist. For instance, Wall Street financier Steven Rattner argued that China “understands the benefits of incorporating a robust free-enterprise element.” Nobel laureate Ronald Coase and his coauthor Ning Wang have proclaimed that China has “embraced capitalism,” citing, in part, the reference to Adam Smith’s book *The Theory of Moral Sentiments* having more than a dozen Chinese translations.

China does have many “private” companies, which allowed Communist Party member Jack Ma to become a billionaire as head of Alibaba Group, which, among other things, translates capitalist classics into Mandarin. This does not mean it is capitalist. Few describe the Chinese economic system without putting a modifier in front of the terms “capitalism,” “authoritarian,” “state,” “predatory,” or “Communist.” This tells us something—as should the CCP’s calls for a socialist market economy. The differences between the Chinese and Western variants of capitalism are more of kind than of degree.<sup>37</sup>

China is a hybrid economy in which the state uses an array of tools for Communist-Party ends. To start with, China has more than 150,000 SOEs. However, Chinese state capitalism is not just, or even principally, about the number and size of such enterprises. It is about the CCP’s central role in virtually all aspects of economic life. In fact, CCP officials are part of many Chinese companies in order to make sure the company follows the “direction” of the state.

Indeed, the party takes great effort to make its central planning sound like a jubilant, bottom-up exercise developed by cherubic-faced workers and wise intelligentsia. At its heart, however, Chinese state capitalism is a system in which the purpose of private and public firms is to fulfill the goals of the CCP—which itself uses an array of tools to obtain that alignment: hard and soft power; carrots and sticks. As Mavroidis and Sapir wrote in *China and the WTO: Why Multilateralism Still Matters*, “In China, the market economy is subservient to the needs of the state.”<sup>38</sup>

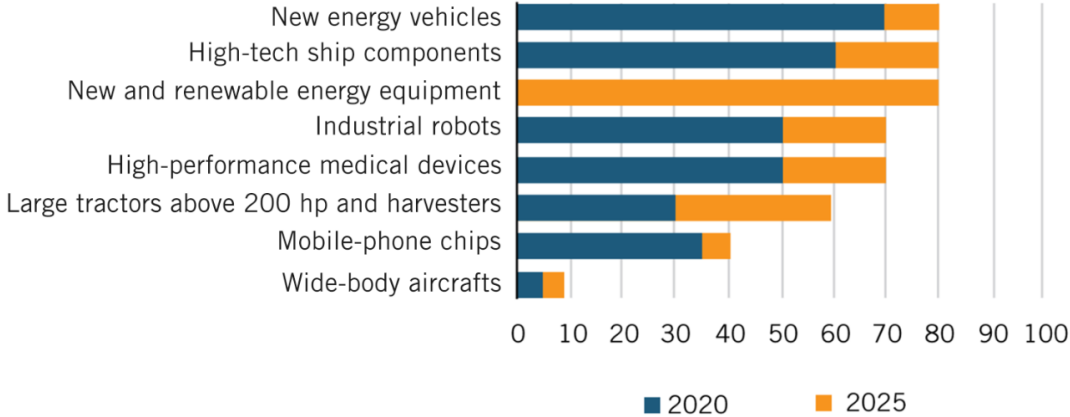
Confusion about the Chinese economic system may stem from the view of capitalism as a system built on private ownership of property. Capitalism is more than that. It is a system in which those property owners have considerable, albeit not unlimited, freedom to pursue their goals without undue influence from the state. By this standard, China is far from a capitalist economy.

### **Indigenous Innovation: Industrial Planning Defying WTO Norms**

A good prism to view China’s state-led capitalism through is its Made in China 2025 strategy: a 10-year, \$500 billion blueprint aimed at transforming China into an advanced technology leader. The strategy specifically targets 10 strategic industries, including advanced information and communications technology (ICT); robotics and automated machine tools; aircraft and aircraft components; maritime vessels and marine engineering equipment; advanced rail equipment; new energy vehicles; electrical generation and transmission equipment; agricultural machinery; new materials; and pharmaceuticals and medical devices.<sup>39</sup>

China is well within its rights to develop competitiveness and innovation strategies. In fact, ITIF would counsel all nations to do so.<sup>40</sup> However, predicated in a drive for absolute as opposed to comparative advantage, China’s Made in China 2025 approach is palpably different in many ways from the approaches of other nations. Key differences include its government-directed, government-funded approach and mechanisms to increase Chinese global market share in these industries, as well as its overt attempts to decrease the market share of foreign enterprises in China.

**Figure 1: Semi-official targets for domestic market share of Chinese products in Made in China 2025 (%)<sup>41</sup>**



Across these 10 industries, China has developed a series of national and provincial funds to progress Chinese firms toward three key strategic goals. The first goal is to “localize and indigenize,” which means “to indigenize research and development (R&D) and control segments of global supply chains.” The second goal is to “substitute.” This refers to the replacement of foreign suppliers with domestic sourcing wherever possible in value chains toward the production of final products. Third is to “capture global market share.”<sup>42</sup>

The aim is to supplant foreign market share with domestic market share in these industries. This is tantamount to a strategy of indigenous innovation. To these ends, the Chinese government established semi-official targets to achieve the desired domestic share of Chinese products identified in the Made in China strategy by 2020 and 2025. This translates to 80 percent domestic sourcing of new energy vehicles, high-tech ship components, and new and renewable energy equipment by 2030; 70 percent for industrial robots and high-performance medical devices by 2030; and 35 percent domestic sourcing of mobile-phone chips by 2025 and 40 percent by 2030.<sup>43</sup> (See figure 1.)

USTR describes the Made in China 2025 strategy thusly:

While ostensibly intended simply to raise industrial productivity through more advanced and flexible manufacturing techniques, Made in China 2025 is emblematic of China’s evolving and increasingly sophisticated approach to “indigenous innovation,” which is evident in numerous supporting and related industrial plans. Their common, overriding aim is to replace foreign technologies, products, and services with Chinese technologies, products, and services in the China market through any means possible to enable Chinese companies to dominate international markets.<sup>44</sup>

The semiconductor sector provides a representative case study of the Made in China 2025 plan. The implementing strategy, referred to as the “National IC Plan,” calls for \$150-\$170 billion in government subsidies—from central, provincial, and municipal Chinese governments as well as a variety of SOEs, from the technology sector and beyond. The goal is to enable China to become self-sufficient or autarkic in every facet of the industry. These subsidies were not designed to merely prop up domestic competitors, however. They are also to be deployed in international markets to acquire the companies and technologies needed to help strengthen China’s position in the industry.<sup>45</sup>

The Organization for Economic Cooperation and Development (OECD), in describing the strategy, noted, “Chinese authorities have indicated that ‘they intend to use the national [semiconductor] funds selectively’ in order to acquire foreign technology.”<sup>46</sup> From 2015 to 2017 alone, Chinese investors and firms offered more than \$30 billion in bids for U.S. and European semiconductor companies.<sup>47</sup> From 2014 to 2019, China’s Tsinghua Unigroup Ltd.—the technology investment arm of one of China’s top state-led universities—attempted to invest an estimated \$47 billion to acquire Western companies.<sup>48</sup>

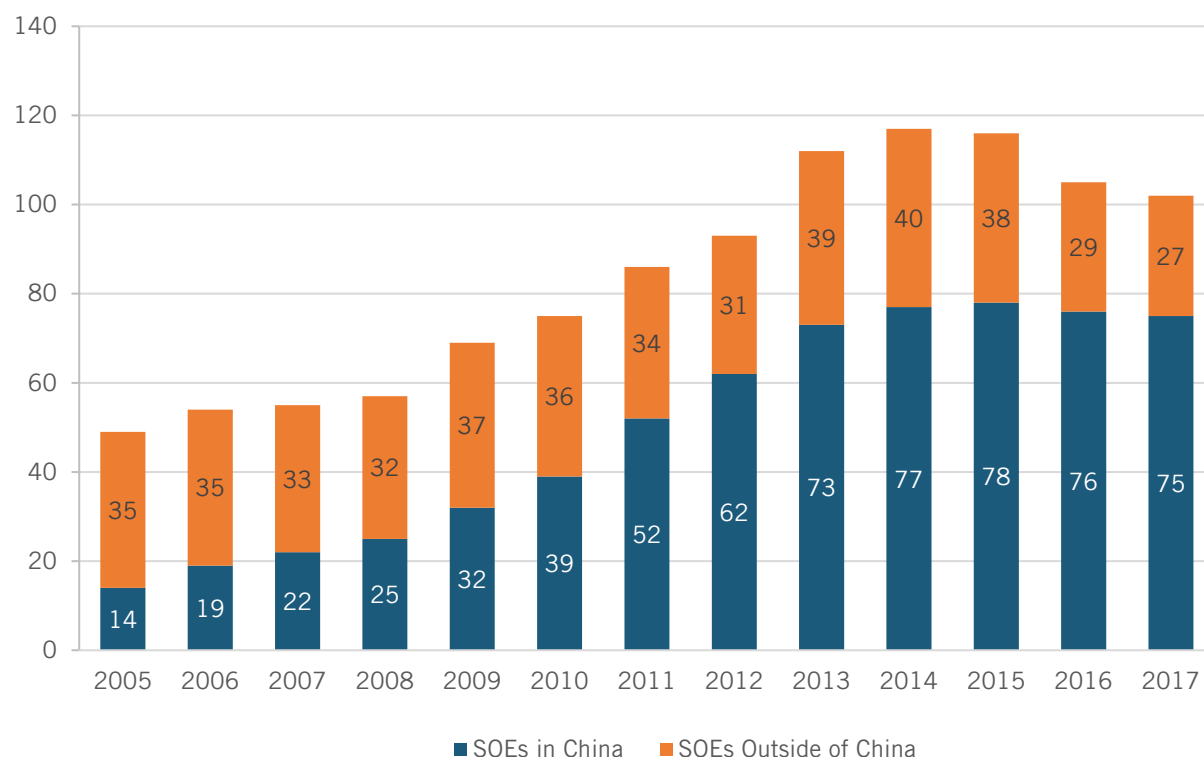
By December 2020, government-guided technology funds controlled more than RMB 4 trillion (\$610 billion) in capital.<sup>49</sup> This represents Chinese government-directed manipulation, not market-based competition, in one of the world’s most-important industries. It is perfectly symbolic and representative of the centralized industrial planning system that is inconsistent with WTO principles.

### **The Prominence of State-Owned Enterprises**

According to China, as of 2016, there were 150,000 state-owned or state-controlled enterprises at the central and local government levels (excluding financial institutions) with total assets worth \$15.2 trillion. The SOEs employed 30 million workers and accounted for 40 percent of industrial assets.<sup>50</sup> Joining the WTO was supposed to lead to a decline in the prevalence of and preferences for Chinese SOEs. That has not been the reality.

Rather, China’s SOE sector has grown significantly over the last four decades, both in total numbers and market capitalization.<sup>51</sup> In fact, the number of Chinese SOEs in the Fortune Global 500 has grown considerably since 2005. China’s share of such firms has also increased substantially over that time, to where Chinese SOEs account for about three-quarters of such firms today. (See figure 2.) As of 2019, 109 Chinese corporations were listed on the Fortune Global 500. Only 15 percent of those were privately owned, and 93 were SOEs.<sup>52</sup>

**Figure 2: Number of SOEs in Fortune Global 500, 2005–2017<sup>53</sup>**



China’s SOEs have only gotten stronger under the leadership of President Xi Jinping. According to a 2019 OECD report, “Somewhat surprisingly, over the past decade state assets doubled relative to GDP in competitive industry SOEs.”<sup>54</sup>

China’s SOEs play an outsized role in its economy, particularly in strategic sectors.<sup>55</sup> For instance, China’s banking system is largely dominated by state-owned or state-controlled banks. According to the U.S. Congressional Research Service, China has identified the industries in which the state should have full control. These industries include autos, aviation, banking, coal, construction, environmental technology, information technology, insurance, media, metals (such as steel), oil and gas, power, railways, shipping, telecommunications, and tobacco.”<sup>56</sup>

Moreover, SOEs’ share in many key strategic industries is rising. Again, the semiconductor industry provides a good example. Out of China’s top-10 semiconductor companies by revenue, China’s National IC Plan Fund and Chinese SOEs together hold more than 25 percent of at least 5 of those firms.<sup>57</sup> An OECD report on government-induced distortions in the global semiconductor industry finds that Chinese government investment has “profoundly reshaped China’s semiconductor industry, combining to give the state a stronger influence over domestic companies.”<sup>58</sup> Distinguishing between SOEs and other companies in China, the report explains, is complicated by the “blurring of boundaries between the state and private interests” through critical avenues of state influence.<sup>59</sup>

Chinese SOEs enjoy considerable advantages unavailable to private enterprises, domestic or foreign. SOEs receive preferred access to bank capital, below-market interest rates on loans from state-owned banks, and favorable tax treatment. They also operate under regulatory policies that

create a favorable competitive environment relative to non-SOE firms and receive capital injections when needed.<sup>60</sup> They further benefit by being the preferred suppliers to China's government, at all levels. Thanks to government subsidies and support, they survive without having to earn the market-based returns that are required of companies competing in open markets.

In 2020, despite one of history's worst global economic downturns, nearly 80 percent of centrally administered Chinese SOEs reported year-on-year profit growth, with net profits up 2.1 percent to 1.4 trillion yuan (\$215.9 billion) for the year.<sup>61</sup> A 2015 study finds that the pretax profits of China's SOE sector were roughly one half of the pretax profits in the US nonfinancial corporate sector.<sup>62</sup>

Yet, global competitors have to earn market-based rates of return to survive, let alone to realize funds that can be reinvested in future generations of R&D and innovation. Chinese firms can endure long periods of below-market rates of return, giving them a competitive advantage over more innovative firms.<sup>63</sup>

"China claims that its SOEs make business decisions of the state based on market principles," a USTR report summarizes. "However, the government and the Party continue to exercise control over SOEs."<sup>64</sup>

Again, this stands in direct contravention to China's promises to WTO members that it "would not influence, directly or indirectly, commercial decisions on the part of state-owned or state-invested enterprises."

### **Subsidies Leading to Overcapacity**

Observers suggested that levels of state subsidies to enterprises would fall dramatically with China's entry into the WTO. Yet, across a wide range of industries—from semiconductors and solar panels to steel, aluminum, glass, and auto parts—massive Chinese government subsidies continue apace. For instance, an estimated 95 percent of Chinese firms in technology industries received R&D subsidies in 2015, which accounted for 22 percent of those firms' R&D investments.<sup>65</sup>

Since China joined the WTO in 2001, subsidies have financed approximately 20 percent of China's manufacturing capacity every year.<sup>66</sup> The subsidies help economically inefficient firms to be more competitive. Markets are distorted and firms trying to compete on market-based terms are disadvantaged, in part by being deprived the revenues needed to reinvest in R&D and innovation.<sup>67</sup>

According to the U.S. International Trade Commission, subsidies are essential to China's semiconductor industrial plans and can take the form of regional, provincial, and national funds (such as the National IC Plan Fund); investment vehicles; and policies that incentivize industry investment, such as tax breaks.<sup>68</sup> As noted, China's "Guidelines to Promote the National Integrated Circuit Industry"—the National IC Plan—has sought to contribute as much as \$170 billion in funding from Chinese central, provincial, and municipal governments to establish a closed-loop semiconductor ecosystem in China.

An OECD study of subsidies in the semiconductor industry finds that government support "through below-market equity appears to be particularly large in the semiconductor industry and

concentrated in one jurisdiction [China].”<sup>69</sup> State subsidies accounted for over 40 percent of the revenues of Semiconductor Manufacturing International Corporation (SMIC) and over 30 percent of Tsinghua Unigroup’s from 2014 to 2018. Moreover, the report concludes that there appears to be a direct connection between equity injections by China’s government funds and the construction of new semiconductor fabs in the country.<sup>70</sup>

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**China’s industrial subsidies significantly distort markets and disadvantage firms trying to compete on market-based terms, in part by depriving them of revenues needed to reinvest in R&D and innovation.**

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Massive industrial subsidies have been critical to China’s emergence in other industries as well. With its global market share growing from practically nothing in 2005 to over 60 percent by 2011, China became the dominant global player in solar photovoltaic (PV) manufacturing during the 2000s—with critical help from government subsidies.<sup>71</sup> Chinese solar output was turbocharged by at least \$42 billion of subsidies from 2010 to 2012 alone, according to the GW Solar Institute at George Washington University. The subsidies allowed China’s major PV manufacturers to sustain enormous losses during their scale-up phase.<sup>72</sup>

The global glut that followed led to a crash in solar panel prices, by 80 percent from 2008 to 2013. Most of the more-innovative foreign competitors went bankrupt, thus setting up Chinese producers for a final coup de grace. They used their government-enabled profits to buy bankrupt Western solar firms in order to strip out their remaining technology and send it back to China.<sup>73</sup> As a spokesperson for SolarWorld, a German solar PV firm, explained in 2011, “Pervasive and all-encompassing Chinese subsidies are decimating our industry.”<sup>74</sup>

Similarly, in high-speed rail, CRRC Corporation Limited’s Chinese financial documents have reported more than 5.4 billion RMB (almost \$800 million) in direct subsidies since 2015, with some 1.37 billion RMB (approximately \$191 million) provided in 2018 alone.<sup>75</sup>

Extensive subsidization has also turbocharged the growth of Chinese telecommunication firms Huawei and ZTE. The *Wall Street Journal* reported that Huawei has received some \$75 billion in state support over the past 25 years, including \$1.6 billion in grants, \$46.3 billion in credit facilities, \$25 billion in tax breaks, and \$2 billion in subsidized land purchases.<sup>76</sup> By comparison, since 2000, Cisco Systems has received \$44.5 million in total state and federal subsidies, loans, guarantees, grants, and other assistance from the U.S. government.<sup>77</sup>

China is the world’s largest telecommunications market, with approximately half of global 5G base stations found in the country. This market guarantee is the biggest “subsidy” provided to Huawei and ZTE, giving them billions of additional RMB annually in revenue. Furthermore, Huawei and ZTE have long benefited from a deeply undervalued Chinese currency, which provided it with a 25 to 35 percent price subsidy.<sup>78</sup>

China’s subsidies in semiconductors, solar panels, high-speed rail, and telecommunications are certainly problematic. But they are equaled by Chinese subsidies in other sectors, particularly steel and aluminum. China’s share of world steel output grew from just 15 percent in 2000 to 50 percent by 2015. During the same period, America’s share fell by half (from about 12 to 6 percent), Japan’s by roughly equivalent amounts, and Europe’s cratered from 22 to 10 percent. By 2015, China’s steel output had doubled to 112 million tons annually—more than America’s



total consumption of steel in a single year.<sup>79</sup> Today, two individual Chinese steel producers alone manufacture more steel than Japan's annual output.

Similarly, Chinese primary aluminum production capacity increased by more than 1,500 percent between 2000 and 2020. China accounted for more than 80 percent of global capacity growth during that period, and much of this capacity addition has been built with support by the Chinese government.<sup>80</sup> One study finds that the Chinese government provided \$52 billion in subsidies to steel producers from 2001 to 2006 alone.<sup>81</sup> Again, these subsidies kept unprofitable Chinese firms alive. According to one report, subsidies accounted for four-fifths of the profits reported by Chinese steel companies in the first half of 2014.<sup>82</sup>

Elsewhere, a study by Harvard scholar Myrto Kalouptsi finds that Chinese government subsidies decreased the cost of production in Chinese shipyards by 13 to 20 percent from 2006 and 2012.<sup>83</sup> That estimate does not include the government-directed undervaluation of China's currency, which provided their shipbuilders with another 25 to 35 percent price subsidy. Without the subsidies, China's estimated market share would be cut up to 50 percent, while Japan's share would increase by 70 percent.<sup>84</sup>

Once firms accumulate the technology, competencies, and scale needed to go global, the Chinese government then often subsidizes their global market expansion, such as through the China Export-Import Bank and China's Export and Credit Insurance Corporation (Sinosure).<sup>85</sup> As the *Washington Post* reported, Huawei's customers in the developing world can take advantage of loans at below-market interest rates, drawing on a staggering \$100 billion line of credit at state-owned banks."<sup>86</sup>

According to the U.S. ExIm Bank, China's official MLT [medium-long term] export credit activity from 2015 to 2019 alone was at least equal to 90 percent of that provided by all G7 countries combined. China's aggressive provision of export credits were "fundamentally changing the nature of export credit competition," the bank noted.<sup>87</sup> These subsidies not only help the recipients directly but are often tied to buying Chinese components. For example, in the high-end equipment manufacturing sector, China maintains a program that conditions the receipt of a subsidy on an enterprise's use of at least 60 percent Chinese-made components when producing intelligent manufacturing equipment.<sup>88</sup> This represents a direct violation of WTO subsidies rules.

### **Lack of Notification and Transparency**

Putting aside concerns regarding the propriety of China's industrial subsidies under WTO rules is the separate issue that countries must notify their trading partners about their subsidies in a timely manner. China has failed to provide these notifications to the WTO in accordance with its WTO obligations. USTR describes China's disregard of its WTO transparency obligations, which places its trading partners at a disadvantage, as a cloak for China to conceal unfair trade policies and practices from scrutiny."<sup>89</sup> According to USTR:

Since joining the WTO, China has not yet submitted to the WTO a complete notification of subsidies maintained by the central government, and it did not notify a single sub-central government subsidy until July 2016, when it provided information largely only on sub-central government subsidies that the United States had challenged as prohibited subsidies in a WTO case.<sup>90</sup>

From 2011 to 2017 alone, the United States made formal requests (i.e., counter-notifications) for information from China regarding over 350 unreported Chinese subsidy measures.<sup>91</sup> China has consistently failed to provide a complete and comprehensive response.

Furthermore, China fails to provide a period for public comment for new trade-related laws and regulations—as it agreed to as part of its WTO accession and (again) at the U.S.-China Strategic and Economic Dialogue (S&ED) in 2011. Multiple USTR reports show that this is part of a consistent pattern by China to avoid scrutiny for discriminatory and trade-distorting rules, regulations, and subsidies.<sup>92</sup> China also regularly fails to publish measures in English, French, or Spanish before it implements them.

### **Forced Joint Ventures and Technology Transfer**

In 2011, the *Economist* wrote erroneously, “Thanks to the WTO, foreign firms are no longer required to hand over technology in exchange for entry to China’s market.”<sup>93</sup>

Their comment is understandable, as China clearly committed, in one of the legally binding paragraphs of its Working Party report, that it would not condition investments on the transfer of technology. The report stated:

The allocation, permission or rights for importation and investment would not be conditional upon performance requirements set by national or sub-national authorities, or subject to secondary conditions covering, for example, the conduct of research, the provision of offsets or other forms of industrial compensation including specified types or volumes of business opportunities, the use of local inputs or the transfer of technology.<sup>94</sup>

In reality, Chinese technology transfer requirements are a continuing feature of Chinese policy. In 2012, 23 percent of the value of all foreign direct investment (FDI) projects were joint ventures.<sup>95</sup> In 2015, 6,000 new international joint ventures, amounting to \$27.8 billion of FDI inflows, were established in China.<sup>96</sup> In their report *China vs the World: Whose Technology Is It?*, Harvard Business School professors Thomas Hout and Pankaj Ghemawat documented the technology transfer required in China as a condition of market access and impacted scores of companies in industries as diverse as aviation, automotive, chemicals, renewable energy, and high-speed rail.<sup>97</sup>

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**Not only do China’s forced joint venture and technology transfer practices continue to exist but they may actually be getting even worse.**

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ITIF’s recent report, “Heading Off Track: The Impact of China’s Mercantilist Policies on Global High-Speed Rail Innovation,” comprehensively documents how China forced foreign competitors to transfer rail technology to domestic competitors. After assimilating the technology with “stunning quickness,” the local companies then supplanted the foreign competitors in China’s domestic market and used the technology to compete with the original innovators in international markets.<sup>98</sup>

Because such conditions contravene China’s WTO commitments, officials are careful not to put such requirements in writing. Instead, they often resort to oral communications to pressure foreign firms to transfer technology, although recent decisions of the WTO Appellate Body have made it clear these unwritten measures can also be challenged.<sup>99</sup> USTR’s 2018 Special 301

report comprehensively documents how industrial plans such as Made in China 2025 apply foreign ownership restrictions, including formal and informal joint venture requirements, “to require or pressure technology transfer from U.S. companies to Chinese entities.”<sup>100</sup>

China has employed different tactics to the same end in the biopharmaceutical industry, wherein various policies enable Chinese firms to get access to U.S. technology. For example, the relatively short six-year term for data exclusivity, coupled with the lack of a formal definition of a “new chemical entity,” means the Chinese government can pressure U.S. firms to turn over important data to Chinese generic-drug firms.

Similarly, the Chinese government requires that all drugs sold in China go through Chinese clinical trials, even if they have already been approved in the United States. This extends the waiting time for a company to sell a drug by as much as eight years. In other words, the company has only 12 years left of patent-protected sales in China before a Chinese generic company can copy the drug. Moreover, unlike in the United States and Europe, there is no extension in China of marketing exclusivity at the back end to reflect long clinical trial delays. Finally, China pressures foreign biopharmaceutical companies to form joint ventures if they want their products included on the government list of drugs that qualify for reimbursement.<sup>101</sup>

Forced technology transfer is also prevalent in cloud computing.<sup>102</sup> China requires companies running cloud-computing operations to be locally controlled. This means that if a company such as Amazon Web Services or Microsoft wants to serve the rapidly growing Chinese market, it must partner with a Chinese company and sell their services under the Chinese company brand. The partnership includes the expectation for the foreign cloud provider to provide the Chinese firm with technology and know-how.<sup>103</sup> Chinese cloud providers such as Aliyun—the cloud services unit of Alibaba—can establish their own data centers in the United States without any similar requirements.

China’s forced joint venture and technology transfer practices not only continue but may be getting worse. In May 2019, the *Wall Street Journal* reported the increasing frequency of forced technology transfers between European firms in China to local firms.<sup>104</sup> That same year, the European Chamber of Commerce found that more than twice as many firms felt compelled to undertake technology transfer in China as they did in 2017.<sup>105</sup>

European companies in high-value, cutting-edge industries felt more pressure than usual, the Chamber reported. Some 30 percent of chemicals and petroleum companies, 28 percent of medical-device companies, 27 percent of pharmaceutical companies, and 21 percent of automotive companies reported such transfers.

Clearly, the practice has concerned foreign firms for a long time, and is not abating. According to a survey conducted by the U.S.-China Business Council in 2015, some 59 percent of firms were worried about transferring technology to China. Some 23 percent had been asked to transfer technology within the previous three years.<sup>106</sup>

## **Intellectual Property Theft and Discriminatory Treatment**

In *China and the WTO*, Panitchpakdi and Clifford were sanguine about the strength of China’s commitments to protect foreign IP. China has promised “to make a number of long-term structural changes to limit IPR [intellectual property rights] violations,” they wrote.<sup>107</sup> Joining the

WTO, they added, would require China to recognize the Trade-related Aspects of Intellectual Property Rights (TRIPS) agreement, which provides protections for patents, copyrights, trademarks, service marks, industrial designs, digital content, and other intangible property.

However, IP theft by China has grown, and much of it is directly sponsored or instigated by the Chinese government. Jim Lewis of the Center for International and Strategic Studies described the action as “long-running state espionage programs targeting Western firms and research centers” that has carried over into cyberspace.<sup>108</sup>

Scores of researchers have documented the economic espionage. Nicholas Eftimiades in the *Brown Journal of World Affairs* characterized the actions as “a massive, whole-of-society approach to economic espionage.”<sup>109</sup> Michael Pillsbury referred to the regular hacking into foreign commercial entities as “the world’s largest perpetrator of IP theft.”<sup>110</sup> USTR’s 2021 National Trade Estimate Barriers (NTE) report laments that “actors affiliated with the Chinese Government and the Chinese military have infiltrated the computer systems of U.S. companies, stealing terabytes of data, including the companies’ proprietary information and IP, for the purpose of providing commercial advantages to Chinese enterprises.”<sup>111</sup>

Indeed, China remains on USTR’s Priority Watch List of countries committing the most-extensive IP rights infringements.<sup>112</sup>

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### **The acquisition of foreign semiconductor technology through IP theft has been a key pillar of Chinese industrial strategy.**

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Indeed the acquisition of foreign semiconductor technology through IP theft has been a key pillar of Chinese industrial strategy.<sup>113</sup> In November 2018, the U.S. Department of Justice (DOJ) charged China’s Fujian Jinhua Integrated Circuit Co. with working to steal trade secrets from U.S. chipmaker Micron Technologies.<sup>114</sup> That charge was followed in June 2020 with the conviction of Chinese national Hao Zhang for economic espionage and theft of trade secrets. Zhang had stolen from Avago, a California-based developer of semiconductor design and processing for optoelectronics components and subsystems, and Skyworks, a Massachusetts-based innovator of high-performance analog semiconductors.<sup>115</sup>

Nor are U.S. firms alone in being targeted. One assessment found that China’s SMIC alone has been responsible for billions of dollars in semiconductor IP theft from Taiwan.<sup>116</sup>

China’s IP theft is also rampant in the life sciences sector.<sup>117</sup> Chinese actors have hacked into the ICT systems of numerous U.S. biopharmaceutical companies, including Abbott Laboratories and Wyeth (now part of Pfizer).<sup>118</sup> Similarly, a report to the U.S. China Economic and Security Review Commission notes that Ventria Bioscience, GlaxoSmithKline, Dow AgroSciences LLC, Cargill Inc, Roche Diagnostics, and Amgen have all experienced theft of trade secrets or biological materials perpetrated by current or former employees with the intent to sell to a Chinese competitor.

In the academic sector, researchers have stolen information or samples from their employers at Cornell University, Harvard University, and University of California at Davis.<sup>119</sup> China also issues compulsory licenses for the IP for particular drugs.<sup>120</sup> In the clean energy sector, Chinese IP theft may have contributed to the collapse of SolarWorld, which claimed that \$60 million in R&D

investment and \$600 million overall was “undercut” by Peoples Liberation Army hackers who stole the firm’s technology and shared it with Chinese manufacturers in 2012.<sup>121</sup>

In 2013, the *IP Commission Report on the Theft of U.S. Intellectual Property* found that China accounted for nearly 80 percent of all IP thefts from U.S.-headquartered organizations, amounting to an estimated \$300 billion in lost business.<sup>122</sup> Updating its assessment in 2017, the Commission on the Theft of American Intellectual Property estimated that China’s IP theft may cost the U.S. economy as much as \$600 billion annually.<sup>123</sup> By 2019, a CNBC Global CFO Council report found that one in five North American corporations had their IP stolen in China within the past year.<sup>124</sup>

As Timothy Qiu of China’s Shenzhen College of International Education wrote in one scholarly article, “It’s also important to note that coerced joint ventures often represent a critical conduit of involuntary IP transfer. American companies seeking to enter the China market are required to partner with an existing Chinese firm. These joint ventures become the vehicles for the siphoning of technologies and trade secrets.”<sup>125</sup>

Again, the United States is not alone. In 2019, the European Union Intellectual Property Office issued a report that estimates foreign IP infringement costs for the EU to reach €60 billion (\$73 billion) in annual sales through IP theft in goods and services. The report identifies China/Hong Kong as the “main offender.”<sup>126</sup>

China also deals with IP unfairly by treating IP owned or developed in other countries in the same manner as IP owned or developed in China. At an S&ED meeting in May 2012 and again at a U.S.-China Joint Commission on Commerce and Trade (JCCT) meeting in December 2014, China agreed to treat both IP owned by or developed in other countries and IP owned by or developed in China as the same. Once again, however, USTR noted in a 2021 report that China “continues to pursue myriad policies that require or favor the ownership or development of intellectual property in China.”<sup>127</sup>

Some claim that the United States and other like-minded nations have little ground to stand on in contesting Chinese IP theft or forced tech transfer. They argue that the United States did the very same to the United Kingdom and other nations as it developed. For instance, as Martin Wolf wrote in the *Financial Times*:

In the 18th and early 19th centuries, the UK was the leading country and the U.S. striving to catch up. In the late 18th century, England duly criminalized the export of textile machinery and the emigration of textile mechanics. But one Samuel Slater emigrated covertly in 1789, to start a modern textile industry in the U.S. (the “technology” industry of the era). Other British ideas crossed the Atlantic, notably railways, just as Chinese ideas had come to Europe centuries earlier.<sup>128</sup>

This argument collapses when we are reminded that the WTO did not exist in the 1700s. Nor was the United States committed to a certain set of trade obligations in return for a certain set of trade benefits. China is a sovereign actor, but it is bound to the international treaty commitments it has made and the trade agreements it has entered. This includes the covenants of the WTO TRIPS agreement.

If China wishes to pursue a strategy of unfettered economic espionage, IP theft, and forced tech and IP transfer, it has that option. However, it should then remove itself from the WTO. Such policies and behaviors are fundamentally inconsonant with the commitments China has made to other nations in order to receive the benefits of market access that come with WTO membership.

### **Abuse of Antitrust Laws**

China's use of antitrust law as an industrial policy weapon poses a significant threat to many U.S. firms operating in China. It provides the Chinese government with a large and flexible tool to target foreign firms for almost any reason. Indeed, China's 2007 antimonopoly law was designed to treat legitimately acquired IP rights as a monopolistic abuse. Article 55 states, "This Law is not applicable to undertakings' conduct in exercise of intellectual property rights pursuant to provisions of laws and administrative regulations relating to intellectual property rights; but this Law is applicable to undertakings' conduct that eliminates or restricts competition by abusing their intellectual property rights."<sup>129</sup>

For the Chinese government, abuse means charging market-based IP licensing fees to Chinese companies. This provision has been used to take legal action against companies whose only "crime" is to be innovative and hold patents. Indeed, Chinese law allows compulsory licensing of IP by a "dominant" company that refuses to license its IP if access to it is "essential for others to effectively compete and innovate."<sup>130</sup>

With Chinese courts largely rubber-stamping CCP dictates, foreign companies have little choice but to comply. All too often, complying means changing their terms of business so that they sell to the Chinese for less, transfer even more IP and technology to Chinese-owned companies, or both.

USTR wrote that:

Through the threat of steep fines and other punitive actions, China's regulatory authorities have pressured foreign companies to "cooperate" in the face of unspecified allegations and have discouraged or prevented foreign companies from bringing counsel to meetings. In addition, U.S. companies continue to report that the Chinese authorities sometimes make "informal" suggestions regarding appropriate company behavior, including how a company is to behave outside China, strongly suggesting that a failure to comply may result in investigations and possible punishment.<sup>131</sup>

Yet, this stands in contravention of China's commitments under the WTO. Specifically, it is in violation of TRIPS Article 40 Section 8, which addresses "control of anti-competitive practices in contractual licenses" covenants.<sup>132</sup> The section essentially covers antitrust concerns relating to IP licensing, such as were at play in the Qualcomm and InterDigital cases.

In 2015, China's NDRC fined Qualcomm, the world's largest producer of smartphone chips, \$975 million for purportedly using its dominant market share to overcharge Chinese telecommunications firms for its patent royalties. The governments of the EU, Japan, and the United States had concluded the contrary. In addition, China forced Qualcomm to offer 3G and 4G licenses at a lower price in China than Qualcomm's normal wholesale rate.<sup>133</sup>

The WTO offers few antitrust remedies other than what is afforded under the TRIPS agreement. The first clause of Section 8, Article 40 states, "Members agree that some licensing practices or

conditions pertaining to intellectual property rights which restrain competition may have adverse effects on trade and may impede the transfer and dissemination of technology.”<sup>134</sup>

Hence, a country must conduct economic analysis to prove adverse effects if it is going to assert that a company has abused anticompetitive practices in IP or technology licensing.<sup>135</sup>

Furthermore, paragraph 3 entitles WTO members to enter consultations on this issue. As such, countries can insist that that all related decisions be made publicly available.

Moreover, since Article 40 is governed by other standards in TRIPS, such as due process, members are obligated to additional standards, such as “making decisions on the merits,” “without undue delay,” “based only on evidence,” “with an opportunity for review,” “with the right to written notice,” and “the right to be represented by independent legal counsel.”<sup>136</sup> China fails to meet virtually all these standards with regard to the investigations it has opened into alleged anticompetitive practices in IP and technology licensing agreements.

The WTO’s national treatment requirement obliges nations to treat foreign enterprises no worse than domestic ones. Yet, USTR reports that many U.S. companies have cited selective enforcement of the Anti-monopoly Law against foreign companies seeking to do business in China as a “major concern” and highlighted the limited enforcement of this law against SOEs.<sup>137</sup>

## **DISCRIMINATORY STANDARDS AND PRACTICES**

China is perhaps the world’s most-aggressive nation in terms of trying to develop technology standards and influence the direction of international standards development organizations (SDOs). One Chinese official framed China’s prevailing view of technology standards as, “Third tier companies make products; second tier companies make technology; first tier companies make standards.”<sup>138</sup> China pursues indigenous (i.e., China-specific) technology standards because it believes China’s domestic producers will gain advantage over foreign competitors and the royalties Chinese firms pay for foreign technologies will be reduced.

In June 2020, China unveiled its “China Standards 2035” strategy. The culmination of two years of development work, the strategy lays out a blueprint for China’s government and leading technology companies to set global standards in emerging technologies such as artificial intelligence (AI), 5G, the Internet of Things, and advanced manufacturing systems. The strategy seeks to help turn China’s enterprises into “tier-one” standards-making ones.<sup>139</sup>

China is certainly within its right to develop a strategy to influence standards development in a way that is advantageous to its companies. It is also reasonable for China to try to gain as much influence as possible in SDOs—that’s just smart and tough competition. However, China is not within its right to develop discriminatory technology standards, to prevent foreign companies from equitably participating in domestic standards-setting processes, or to otherwise contravene principles for the development of international standards identified in the WTO’s Technical Barriers to Trade agreement.

All too often, these latter practices have unfortunately characterized China’s standards-development efforts. China is not only aggressively writing standards for emerging technologies to benefit its own firms. It is also reportedly “exporting its standards through its Belt and Road initiative.”<sup>140</sup>

ITIF documented in its report “The Middle Kingdom Galapagos Island Syndrome: The Cul-De-Sac of Chinese Technology Standards” China’s development of indigenous technology standards, particularly for ICTs, even when effective international standards already exist. This approach is a core part of China’s industrial strategy. China developed unique indigenous technology standards across six key ICTs: wireless telecommunications networks, wireless local area networking, encryption technology, audio/video encoding, optical storage media, and Internet of Things.<sup>141</sup>

China is also trying to dominate the development of global AI standards. In 2018, China created an AI roadmap that identifies 23 critical near-term standards and 200 additional standards to be developed.<sup>142</sup>

That same year, China also introduced a new standardization law that appeared to favor local firms, goods, and services. The legislation referenced “indigenous innovation” while failing to note either its WTO commitments (thereby raising questions about WTO compliance) or its acceptance of existing international standards, as approved by various global SDOs.<sup>143</sup> In its new standardization law, China could have made clear it is committed to global rules and best practices on technical standards by explicitly acknowledging WTO technical barriers to trade commitments and core principles. It chose not to do so.<sup>144</sup>

Early evidence shows that China is continuing this trade-restrictive approach for new and emerging technologies. A report by the German think tank Mercator Institute for China Studies (MERICS) shows that Chinese standards for basic smart manufacturing correlate with about 70 percent of relevant international standards. It falls to around 53 percent for key smart manufacturing technology standards, and to 0 percent for standards relating to cloud computing, industrial software, and big data.<sup>145</sup>

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**China has become perhaps the world’s most-aggressive nation in terms of trying to develop technology standards and to influence the direction of international SDOs.**

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The United States and most other nations have adopted a voluntary, transparent, market-led, and global approach to standards development. In comparison, China has adopted a government-directed system and made it difficult for foreign firms to equitably engage in Chinese standards-setting processes.

According to USTR, foreign companies are often unable to effectively influence China’s domestic standards-setting processes. For instance, the technical committee for cybersecurity standards (known as TC-260) allows foreign companies to participate in standards development and setting, but does not universally permit them to participate as voting members. They face difficulties getting included in drafting and remain prohibited from participating in certain TC-260 working groups, such as the working group on encryption standards.<sup>146</sup>

Moreover, the Chinese government often exerts leverage on Chinese firms to favor domestic technology standards. In 2016, the Third Generation Partnership Project—one of the largest international bodies that sets standards on mobile technologies—was developing standards for fifth-generation mobile telecommunications networks. The project worked to develop standards for how to encode information and correct for errors in data transmission in a new enhanced mobile broadband scheme.<sup>147</sup> Several mathematical techniques were proposed, including one by



Qualcomm, known as a “low-density parity-check” (LDPC) and one by Huawei called “polar coding.”

However, the Chinese firm Lenovo, which had voted for [Qualcomm’s proposed] LDPC, returned home to an online outcry for its “unpatriotic vote.”<sup>148</sup> Several months later, when a second part of the standard was being adopted, Lenovo switched to support Huawei’s polar codes, with Lenovo founder Liu Chuanzhi commenting, “We all agree that Chinese companies should be united and cannot be played off one another by outsiders.”<sup>149</sup>

## Government Procurement

In joining the WTO, China agreed to also join the Government Procurement Agreement (GPA), which prohibits restrictions on government purchases between member countries in accordance with the national treatment principle. The agreement also further commits member countries to “to full transparency and non-discrimination (i.e., most-favored nation ‘MFN’) in government purchases.”<sup>150</sup> China thus made a commitment to open its vast government procurement market to the United States and other GPA parties.

To date, however, USTR reports that GPA parties view China’s offers as “highly disappointing in scope and coverage” and “incommensurate with the coverage offered by other GPA parties.”<sup>151</sup>

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**Nearly 20 years after it joined the WTO, China has yet to make a credible offer for GPA coverage, despite its commitment to do so swiftly in 2001.**

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China submitted its sixth revised GPA offer in October 2019. The entry showed some progress, but fell short of U.S. expectations (and those of other WTO members) and remains “far from acceptable to the United States and other GPA parties as significant deficiencies remain in a number of critical areas, including thresholds, entity coverage, services coverage, and exclusions.”<sup>152</sup>

Following the Phase One agreement, China said that it would “speed up the process of joining” the GPA. However, it did not submit a new offer in 2020.<sup>153</sup> In other words, nearly 20 years after it joined the WTO, China has yet to make a credible offer for GPA coverage, despite its commitment to do so swiftly in 2001.

Another facet of discriminatory Chinese government procurement practices relates to “indigenous innovation,” or discriminatory preferences for indigenously made Chinese products in government procurement. According to USTR, China agreed to de-link indigenous innovation policies at all levels of the Chinese government from government procurement preferences, including through the issuance of a State Council measure mandating that provincial and local governments eliminate any remaining linkages by December 2011.<sup>154</sup>

A decade later, that promise remains unfulfilled. In 2020, China’s Ministry of Finance made amendments to its Government Procurement Law and Tendering and Bidding Laws. However, USTR has assessed that “China continues to implement policies favoring products, services, and technologies made or developed by Chinese-owned and Chinese-controlled companies through explicit and implicit requirements that hamper foreign companies from fairly competing in China.”<sup>155</sup>

## Restricting Access to Services Markets

Across a range of services markets, from financial services to telecommunications and information technology services to theatrical films and audiovisual services, China fails to honor many of its decades-old commitments.

### Banking and Electronic Payment Services

In the early years following China's accession to the WTO, optimism reigned. In their book *China and the WTO*, Panitchpakdi and Clifford contended that foreign banks would enjoy the same privileges as domestic banks. "Chinese banks," they wrote, "will for the first time face real competition."<sup>156</sup>

This has not been the reality. Instead, the United States brought a case before the WTO challenging China's restrictions to banking market access, prevailing in 2013. By 2021, China had opened its banking sector to wholly foreign-owned banks. However, at the same time, it has maintained restrictions on market access in other ways. (For instance, discriminatory and non-transparent regulations have limited foreign banks' ability to provide capital market-related activities in China.) Consequently, foreign banks have been unable to establish, expand, and obtain significant market share in China.<sup>157</sup> In fact, as of year-end 2020, foreign banks held only 1.4 percent of banking assets in the country.<sup>158</sup>

China has long placed restrictions on foreign companies operating in the electronic payment services sector, such as credit and debit card processing companies, despite promising to open the sector by 2006. In 2010, the United States launched a WTO dispute over these restrictions. A WTO panel sided with the United States in a 2012 decision, and China agreed to abide by the panel's ruling in 2013. However, it did not take the needed steps to allow foreign enterprises to apply for such licenses until June 2017.<sup>159</sup>

By January 2020, no foreign supplier of electronic payment services had yet been able to secure the license needed to operate in China's market due largely to delays caused by China's regulator, the People's Bank of China (PBoC). At times, the PBoC has simply refused to accept applications from U.S. suppliers to begin preparatory work, the first of two required steps in the licensing process. These actions have enabled China to build up domestic players in the sector, such as China Union Pay and Ant Financial. USTR noted that "China has been able to maintain market-distorting practices that benefit its own companies, even in the face of adverse rulings at the WTO."<sup>160</sup>

### Cloud and Telecommunications

In joining the WTO, China made a number of commitments in the telecommunications sector, including liberalizing foreign investment, agreeing to implement "pro-competitive regulatory principles, and agreeing to allow foreign suppliers to use any technology they choose to provide telecommunications services."<sup>161</sup> USTR noted, however, that "China's restrictions on basic telecommunications services, such as informal bans on new entry, a requirement that foreign suppliers can only enter into joint ventures with state-owned enterprises, and exceedingly high capital requirements, have blocked foreign suppliers from accessing China's basic [telecommunications] services market."<sup>162</sup>

Since 2001, not one single foreign firm has successfully established a new joint venture in the telecommunications sector.<sup>163</sup>

China maintains extensive restrictions on foreign cloud service providers despite committing to provide nondiscriminatory treatment and broad market access to foreign firms in “computer and related services” as part of its WTO accession commitments.<sup>164</sup> This category of Internet-based computer services includes email, voicemail, online information and database retrieval, electronic data interchange, enhanced facsimile services, code and protocol conversion, and online information and data processing. China categorizes cloud and related services as valued-added telecommunication services (VATS) and not as computer and related services, as it has much greater freedom in its WTO commitments to enact barriers to foreign firms and services in this sector.<sup>165</sup>

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**China maintains extensive restrictions on foreign cloud service providers despite committing to provide nondiscriminatory treatment and broad market access to foreign firms in “computer and related services” as part of its WTO accession commitments.**

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China uses restrictive and discriminatory licensing and joint venture requirements to control foreign competition and to force foreign companies to help local competitors, including through forced technology transfers. Of the thousands of VATS licenses given out, only a small handful have gone to U.S. or other foreign firms.

Thus, for most U.S. cloud service firms, China’s market is essentially closed. Although not explicitly stated in rule or policy, China appears to apply an economic needs test to new entrants in this sector to avoid “unhealthy competition,” according to USTR.<sup>166</sup> Meanwhile, Chinese cloud firms take advantage of open markets in the United States and elsewhere around the world.

### Distribution and Production of Theatrical Films

When China joined the WTO, it committed to allowing “20 films to be imported on a revenue-sharing basis in each of the three years after accession.” It also committed to permit U.S. firms to “form joint ventures to distribute videos, software entertainment, and sound recordings and to own and operate cinemas.”<sup>167</sup>

China’s continuing failure to meet this standard led the United States to initiate a WTO dispute in 2009. That action resulted in the WTO ruling that “many of China’s regulations on trading rights and distribution of films for theatrical release, DVDs, music, and books and journals were inconsistent with China’s WTO obligations.”<sup>168</sup>

A memorandum of understanding (MOU) initially negotiated in February 2012, and updated in 2017, between China and the United States facilitated change. The number of foreign films imported and distributed in China each year can increase, along with substantial additional revenue for U.S. film producers. However, as of March 2021, China has not yet fully implemented its MOU commitments, including with regard to critical commitments to open up film distribution opportunities for imported films.<sup>169</sup> China further prohibits foreign companies from providing film production and distribution services in the country. Due to its restrictions in the area of theatre services, investors have been discouraged from investing in cinemas in China.”<sup>170</sup>

## Retaliatory Use of Trade Remedies

When a country's enterprises dump products into foreign markets—selling them below their cost of production or their cost in the home market—or when a country's enterprises benefit from excessive subsidization, injured parties in other nations can petition their governments to apply antidumping (AD) or countervailing duties (CVD) measures, respectively. In most cases, foreign enterprises are petitioning their governments for assistance in redressing mercantilist Chinese practices.

China manages its own AD and CVD regime. As of March 2021, China had in place 111 AD measures that affect imports from 16 countries or regions and 6 CVD measures affecting imports from 4 countries.<sup>171</sup> China is certainly within its rights to operate an AD/CVD regime. However, as USTR noted, “[T]he greatest systemic shortcomings in China’s AD and CVD practice continue to be in the areas of transparency and procedural fairness.”<sup>172</sup> China’s recent invocation of AD and CVD remedies have been under troubling circumstances.

The 2021 USTR NTE report elaborates that:

China’s pursuit of AD and CVD remedies (appear) intended to discourage the United States and other trading partners from the legitimate exercise of their rights under WTO AD and CVD rules and the trade remedy provisions of China’s accession agreement. China’s regulatory authorities in some instances seem to be pursuing AD and CVD investigations and imposing duties—even when necessary legal and factual support for the duties is absent—for the purpose of striking back at trading partners that have exercised their WTO rights against China.<sup>173</sup>

This is not evidence of a country responsibly operating its AD/CVD regime in accordance with the WTO’s Agreement on Subsidies and Countervailing Measures (ASCM).<sup>174</sup> The United States alone has filed three WTO cases against China regarding its AD/CVD regime pertaining to grain-oriented, flat-rolled electrical steel (GOES); automobiles; and chicken broiler products. In adjudicating these cases, the WTO has confirmed that China failed to abide by WTO disciplines when imposing the duties at issue.<sup>175</sup> Beyond the use of retaliatory trade practices, China has also threatened other trading partners such as Australia, Canada, and Sweden with limiting or restricting their ability to export products to China’s markets when the CCP has been dissatisfied with those nations’ actions in nontrade arenas such as diplomatic or national security interests.<sup>176</sup>

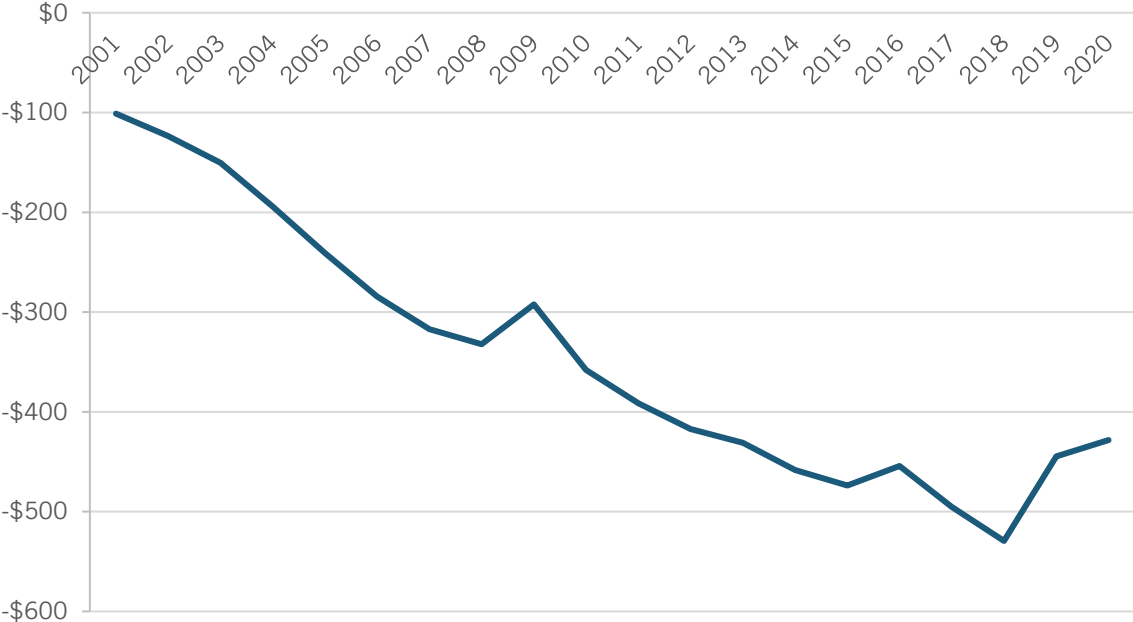
## UNFAIR TRADE PRACTICES HARM COMPETITORS

Decades of innovation mercantilism have enabled China to accrue tremendous trade surpluses, build foreign currency reserves, and use this economic wherewithal to further a range of foreign policy objectives. These objectives range from building up its military to using its largesse to curry favor with other nations through initiatives such as the Belt and Road Initiative (BRI) and Digital Silk Road (DSR) initiative. In doing so, China has surpassed the United States to become the world’s largest economy. In its 2020 World Economic Outlook, the International Monetary Fund estimated that China’s economy has grown to be one-sixth larger than America’s, at \$24.2 trillion versus \$20.8 trillion for the United States (on a purchasing power parity basis).<sup>177</sup>

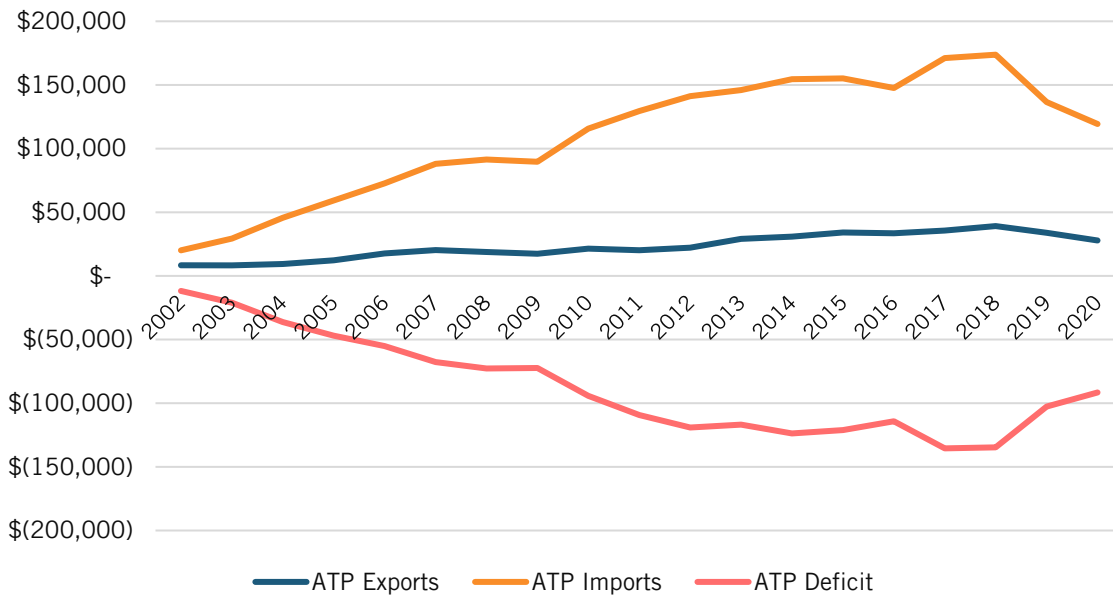
A number of statistics complicate the tale. The United States has been running large trade deficits with China for some time. From 2001 to 2020, the United States accrued a \$6.82 trillion deficit in trade in goods with China. Throughout the prior decade, U.S. goods trade deficits with China were consistently in the \$400 billion to \$500 billion range annually, topping out with a \$539 billion trade deficit in 2018. (See figure 3.) America's goods trade deficit with China is only slightly offset by a services trade surplus that, in 2019 for instance, was just \$36 billion, itself a 4.1 percent decrease from 2018.

Moreover, the United States has consistently run a trade deficit with China in Advanced Technology Products (ATP) that goes back to the early 2000s. From the full years 2001 through 2020, the United States accrued a \$1.65 trillion deficit with China in ATP trade. (See figure 4.)

**Figure 3: U.S. goods trade deficit with China, 2001–2020 (US\$billions)<sup>178</sup>**

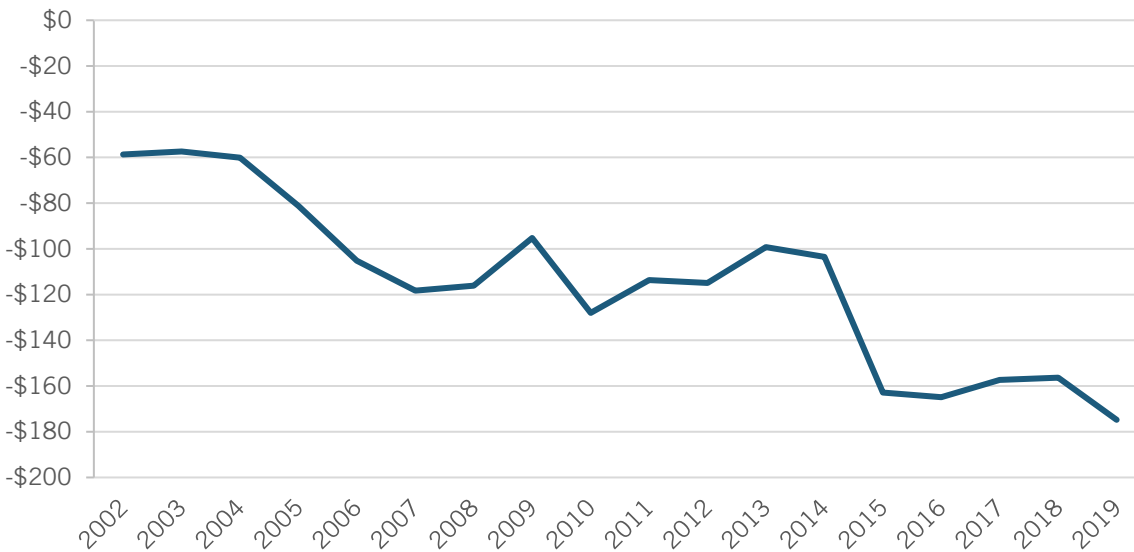


**Figure 4: U.S. trade balances with China in advanced technology products, 2002–2020 (US\$millions)**<sup>179</sup>



The United States is not the only country to have experienced unbalanced trade with China since the country’s entry into the WTO. The 28 countries of the European Union also experienced an aggregate \$2.1 trillion goods trade deficit with China over this period, with annual deficits consistently exceeding \$100 billion annually in every year since 2006. (See figure 5.)

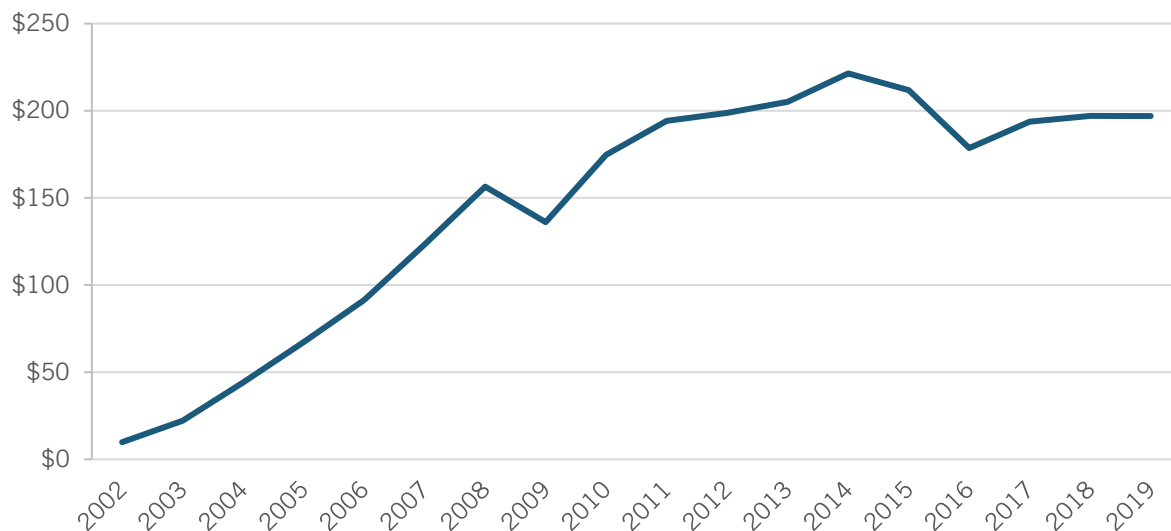
**Figure 5: European Union goods trade deficit with China, 2002–2019 (US\$billions)**<sup>180</sup>



One of China’s strongest economic and export sectors since the country’s entry into the WTO has been ICT goods. In absolute terms, China generated a cumulative surplus of \$2.6 trillion from 2002 to 2019, the latest year for which data is available. China’s trade surplus in this sector rocketed from neutral—a \$2 billion surplus in 2001—up to \$150 billion in China’s first decade

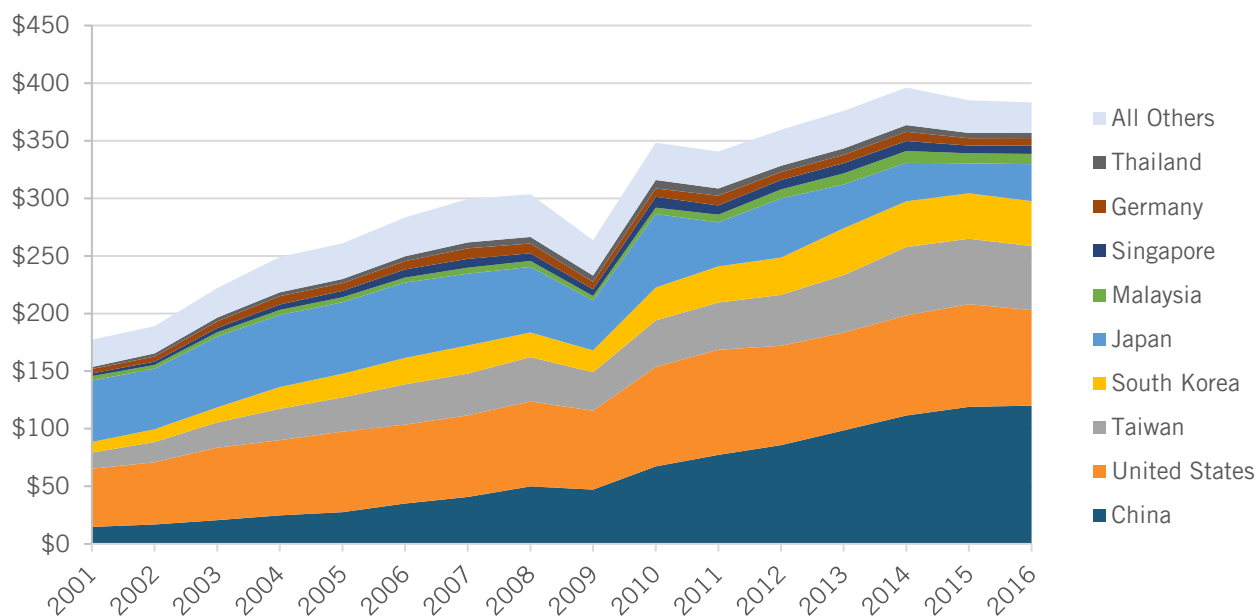
in the WTO. This continued to increase, up to about a \$200 billion annual surplus over the prior decade. (See figure 6.)

**Figure 6: China’s annual surplus in global ICT goods trade, 2002–2019 (US\$billions)<sup>181</sup>**



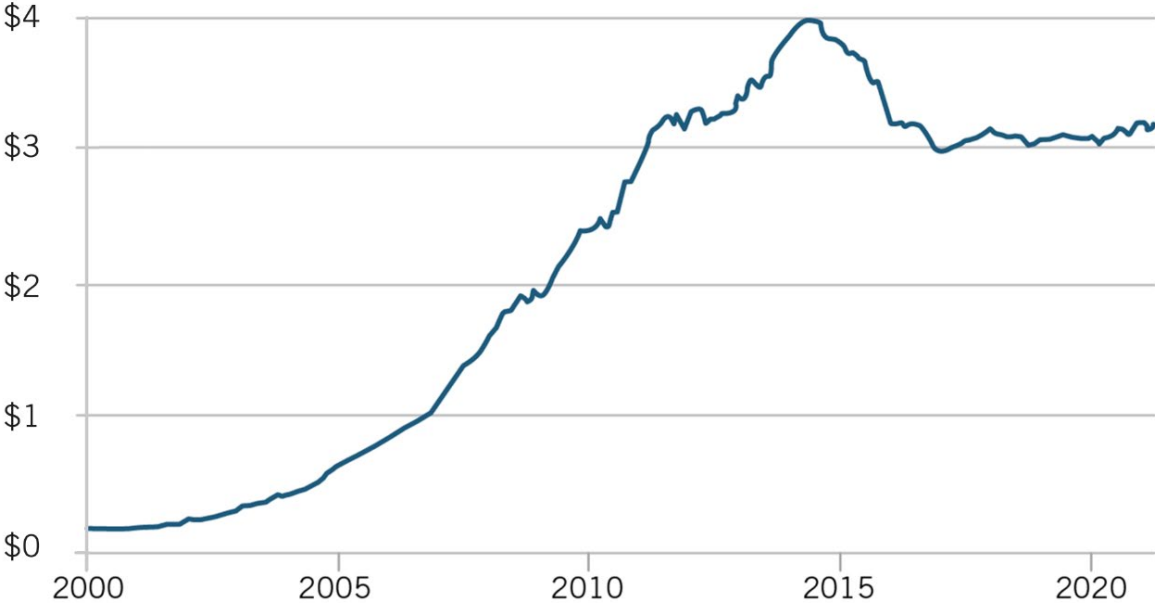
Within the ICT sector, one of China’s strongest areas of growth has been semiconductors.<sup>182</sup> For instance, China’s value added in the global semiconductor industry grew from a paltry \$15 billion in 2001 to \$120 billion by 2016. The country’s share of global value added grew almost fourfold, from 8 to 31 percent. Both the United States and Japan saw their shares fall, from 28 to 22 percent for the former, and by over two-thirds, from 30 to 8 percent, for the latter. (See figure 7).

**Figure 7: Value added of semiconductor industry by economy, 2001–2016 (US\$billions)<sup>183</sup>**



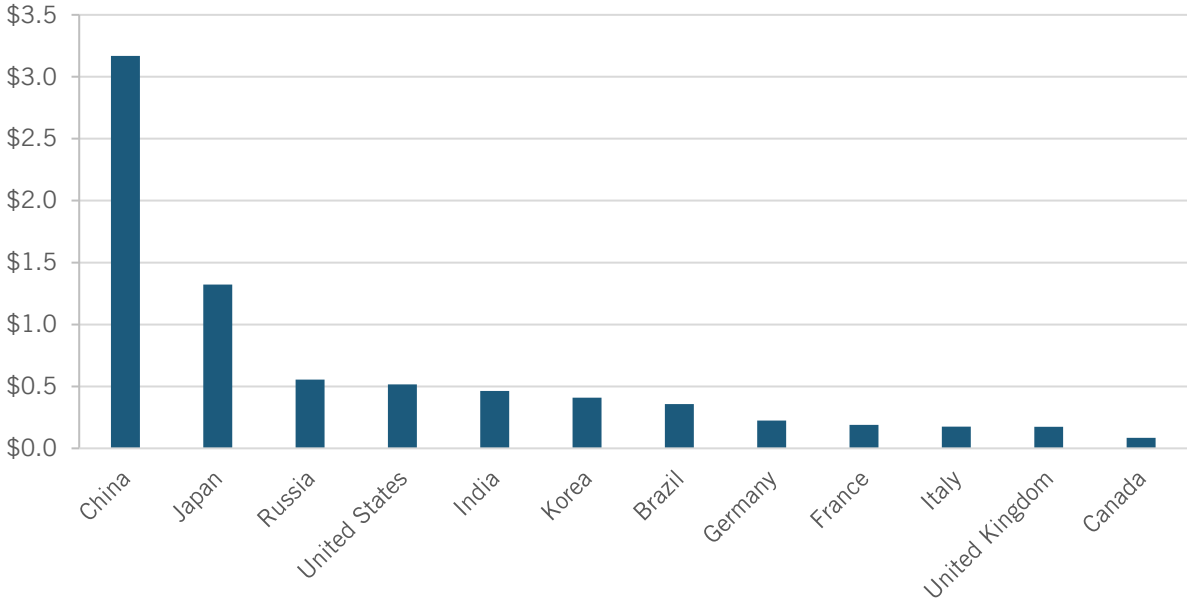
China’s massive trade surpluses with the United States (and the rest of the world) have swelled its foreign-currency reserves. In fact, China’s stock of foreign-currency reserves grew from a meager \$212 billion in 2000 to \$4 trillion by August 2015, and stands at slightly over \$3 trillion today. (See figure 8.)

**Figure 8: China’s foreign currency reserves, 2000–May 2021 (in US\$trillions)<sup>184</sup>**



Today, China’s foreign currency reserves (including gold) far outstrip those of any other nation. The volume is more than double second place Japan’s level of foreign currency reserves exceeds those of the United States by almost sixfold. (See figure 9.)

**Figure 9: Total reserves (including gold), select countries, 2019 (US\$trillions)<sup>185</sup>**





America’s trade imbalances with China have generated a significant deleterious impact on U.S. employment. A *Bloomberg* report notes, “Studies examining the impact of China’s entry to the WTO have made the case that as many as 2 million of the 5 million American factory jobs lost since 2000 are traceable to low-cost imports.”<sup>186</sup>

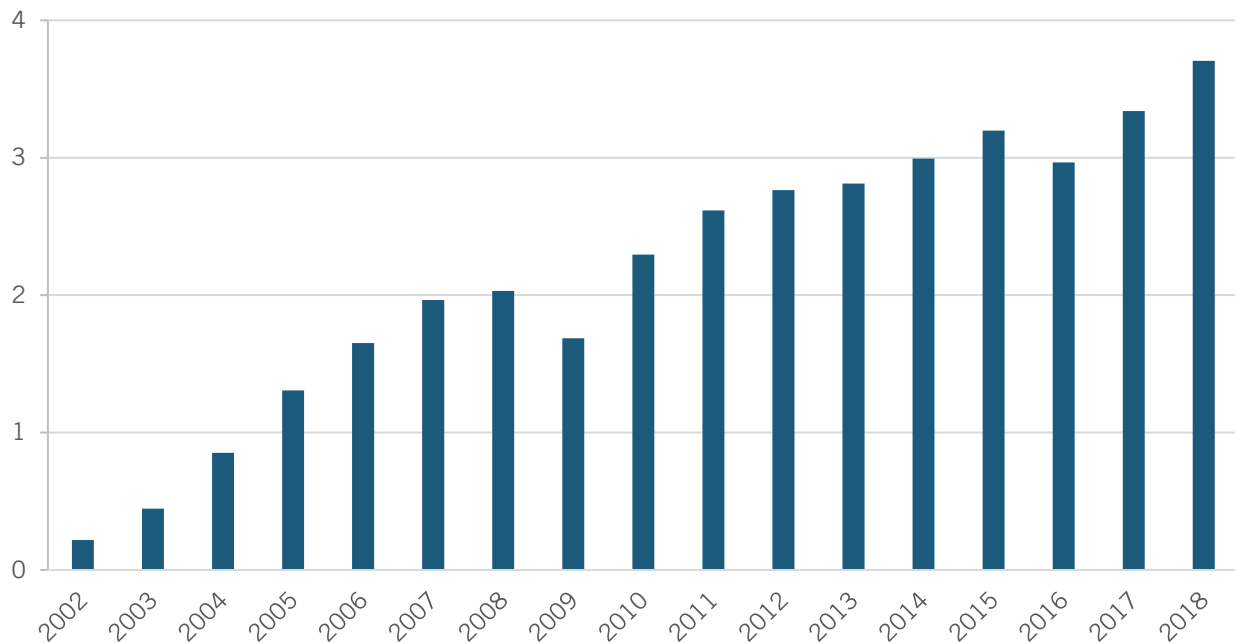
According to a report by MIT economists David Autor, David Dorn, and Gordon Hanson on China’s trade surpluses on US labor markets, “Amplifying China’s potential impact on the US labor market are sizable current account imbalances in the two countries. In the 2000s, China’s average current-account surplus was 5 percent of GDP, a figure equal to the contemporaneous average U.S current-account deficit.”<sup>187</sup>

The authors estimated that, between 2000 and 2007, the United States lost 982,000 manufacturing jobs because of Chinese import competition.<sup>188</sup> In particular, U.S. regions most exposed to China tended not only to lose more manufacturing jobs but also see overall employment declines.<sup>189</sup>

Furthermore, they calculated that the cost to the economy from the increased government payments (e.g., unemployment compensation, worker retraining, etc.) amounts to one- to two-thirds of the consumer welfare gains from trade with China.<sup>190</sup>

Updating this work in 2020, the Economic Policy Institute estimated that the growth of the U.S. trade deficit with China between 2002 and 2018 was responsible for the loss of 3.7 million U.S. jobs, including 1.7 million jobs lost since 2008.<sup>191</sup> (See figure 10.) Three-fourths of the jobs—about 2.8 million in total—lost between 2001 and 2018 were in manufacturing.

**Figure 10: U.S. jobs displaced by the growing goods trade deficit with China after 2001 (in millions of jobs)<sup>192</sup>**



## POLICY RECOMMENDATIONS

Nearly 20 years on, it's more apparent than ever that China simply refuses to buy into the fundamental spirit and tenets of the WTO, which are rooted in the principles of market orientation, rule of law, nondiscrimination, market access, reciprocity, fairness, and transparency. China is not complying with the specific rules designed to make those principles a reality and has continually deflected, delayed, or blithely ignored most of its WTO obligations.

China has taken advantage of its WTO rights, but not its responsibilities. China's wide range of mercantilist practices have been designed to empower Chinese enterprises, especially in high-tech industries, and to shield them in protected domestic markets so that they can grow, achieve scale, and compete in third-party markets.

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**China has taken advantage of its WTO membership, using its participation in the body to gain access to other nations' markets while consistently deigning to provide fully, reciprocally equitable access to foreign enterprises.**

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These policies harm foreign enterprises in a variety of ways: Denying or restricting foreign enterprises' access to Chinese markets inhibits their ability to scale. Massive subsidization creates overcapacity or bolsters the competitiveness of economically inefficient firms that can subsist on much lower margins. Firms trying to compete on market-based terms are disadvantaged or deprived of the revenues needed to invest in the R&D-sustaining future generations of innovations.

Recently, ITIF documented this process across five high-tech industries—solar panels, high-speed rail, telecom equipment, semiconductors, and biopharmaceutical products—whereby greater market share for Chinese firms in these markets consistently leads to lower rates of R&D, patenting, and innovation.<sup>193</sup> Put simply, China's aggressive mercantilism harms foreign enterprises, foreign economies, and the global innovation system itself. Accordingly, it is time for like-minded nations to take far more aggressive steps to reign in China's unbridled innovation mercantilism. As Jennifer Hillman of the Council on Foreign Relations reminded, “[F]undamental reform is required if China is to remain a member in good standing at the WTO.”<sup>194</sup>

As such, this report recommends the following policy actions.

### **Develop a Comprehensive “Bill of Particulars” Against China**

USTR's NTE report provides a comprehensive inventory of nations' unfair trade practices. The European Union's “Report from the Commission to the Parliament and the Council on Trade and Investment Barriers,” published in 2020, also found, unsurprisingly, that “China remains the country with the highest stock of recorded barriers.”<sup>195</sup> The Biden administration should direct USTR to work with like-minded allies to integrate such reports to create and maintain a comprehensive “bill of particulars” on Chinese innovation-mercantilist policies and practices. The coalition can then decide which elements can be brought to the WTO for action and which need new rules.<sup>196</sup>

In addition to developing a comprehensive list of China's unfair trade practices, like-minded nations should develop a comprehensive list of Chinese enterprises and individuals who have attempted or affected IP theft. Subsequently, mechanisms should be developed to restrict such

firms and individuals from competing in the coalition's markets.<sup>197</sup> In other words, Chinese companies found guilty, for instance, of stealing foreign IP would not just be barred from selling infringing products in a country, they would also be banned from competing in foreign markets of coalition countries altogether. Similarly, the U.S. government should develop relevant lists of Chinese individuals, organizations, and other entities that have engaged in IP theft to ensure that they not be permitted to participate in R&D activities by American business, universities, or similar facilities. Moreover, like-minded nations should enhance information-sharing efforts to combat foreign economic espionage and IP/technology/trade-secret theft.

## **Revoke China's PNTR and Renegotiate Market Access Schedules for Chinese Goods and Services at the WTO**

The WTO operates on the most-favored nation (MFN) principle. Essentially, this means that countries cannot discriminate among their trading partners and their best offer (e.g., a lower tariff rate on a product) must be offered to all other member nations.<sup>198</sup> Outside of the WTO, nations may elect to confer MFN status on other trade partners at their own discretion.

For instance, the United States suspended China's MFN status in 1951 and conditionally restored it in 1980 (in accordance with the 1974 Trade Act, but amended by Jackson-Vanik freedom-of-emigration provisions). The United States renewed China's MFN status on an annual basis until January 2002, when legislation (P.L. 104-286) was enacted granting permanent normal trade relations to China, following its accession to the WTO.<sup>199</sup>

In other words, before China's WTO accession in 2001, and since 1951, the United States applied MFN conditionally to China and other communist regimes. This is an important distinction, because annual congressional debates on MFN renewal have led to sustained pressure on China on issues such as human rights and unfair trade practices.

The following is an example of explicit Congressional attention on human rights in the 2000 legislation conferring PNTR status upon China:

The human rights record of the People's Republic of China is a matter of very serious concern to the Congress. The Congress notes that the Department of State's 1999 Country Reports on Human Rights Practices for the People's Republic of China finds that "[t]he Government's poor human rights record deteriorated markedly throughout the year, as the Government intensified efforts to suppress dissent, particularly organized dissent."<sup>200</sup>

It is time for the United States to rethink its grant of PNTR to China. The United States could return to the practice of annually applying MFN "conditionally," with a link to labor rights and environmental protections. Furthermore, if China consistently refuses to adhere to MFN commitments, the United States and its allies should consider renegotiating market access levels for goods and services at the WTO. This would create a more meaningful difference between the preferential rates for allied trading partners and those for nonfavored countries such as China. Put simply, the WTO is for market-oriented economies that actually implement its foundational principles and clear obligations; if China decides to develop an alternative economic system that is not compatible with existing multilateral rules, then it shouldn't be in the WTO—or at least it shouldn't enjoy the same benefits as countries that respect agreed-upon rules.

## **Pursue a Nonviolation Nullification and Impairment Case Against China at the WTO**

Article XXIII of GATT addresses dispute-settlement provisions and includes a “non-violation” clause that provides a legal cause of action against measures that do not explicitly violate the treaty but nevertheless upset the reasonable expectations of the parties and which can be aimed at policies that might otherwise be beyond the reach of the GATT/WTO agreements.<sup>201</sup> Such a “non-violation nullification and impairment” claim would assert that the United States—and other like-minded nations that might join the case—is being denied the benefits of reasonably expected market access. China’s manifold mercantilist policies, it can be argued, undermine the benefits and rights that the United States expected when it assented to China joining the WTO.<sup>202</sup>

Indeed, as Hillman wrote, “It is exactly for this type of situation [i.e., China’s innovation mercantilism] that the non-violation nullification and impairment clause was drafted.” Hillman further elaborated, regarding WTO members’ expectations of China:

That it would achieve a discernable separation between its government and its private sector, that private property rights and an understanding of who controls and makes decisions in major enterprises would be clear, that subsidies would be curtailed, that theft of IP rights would be punished and diminished in amount, that SOEs would make purchases based on commercial considerations, that the CCP would not, by fiat, occupy critical seats within major “private” enterprises and that standards and regulations would be published for all to see.... Addressing these cross-cutting, systemic problems is the only way to correct for the collective failures of both the rules-based trading system and China.<sup>203</sup>

## **Insist That China Extend to Other Nations Provisions From the U.S.-China Phase One Agreement**

With the Phase One agreement, the Trump administration had to fight tooth and nail to get China to comply with the promises it had already made as part of its WTO accession. However, most other nations lack the wherewithal to aggressively push China to honor its WTO obligations. While certainly this would not cover every facet of the Phase One agreement (e.g., soybeans or semiconductors purchase commitments), it should extend to every WTO-pertinent element of the agreement.

China’s discriminatory technology-licensing laws are a good example. Historically, under Chinese contract law and technology import-export regulations (TIER), a foreign licensor into China was obligated to offer an indemnity against third-party infringement to the Chinese licensee. In other words, a foreign licensor licensing into China had to provide an insurance that practicing the licensed technology did not infringe any IP held by a third party. Another provision in TIER mandated that in technology-import contracts, improvements belong to the party making the improvements, which is typically the Chinese licensee. Thus, foreign licensors, including U.S. firms, could not negotiate to own any improvements or share the improvements with Chinese licensees, even if both licensing parties desire for the improvements to be shared or owned by the foreign licensors.

China agreed to modify these practices as part of the Phase One agreement. In doing so, this should apply to all foreign enterprises. The United States and other nations should be vigilant to

ensure that such discriminatory technology-licensing laws and practices have in fact been modulated and are indeed being applied to enterprises from all nations. Identifying any such discrepancies would make excellent fodder for the aforementioned bill of particulars.

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**With the Phase One agreement, the Trump administration had to fight tooth and nail to get China to do many things it had already promised to do as part of WTO accession.**

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### **Strengthen Subsidies Disciplines at the WTO**

China's abuse of industrial subsidies is designed to knock out foreign competitors such as SolarWorld before they can mount an effective response. Completing the time-consuming process of seeking countervailing duties or challenging such actions at the WTO often makes such procedures a "coroner's inquest" of a fatally harmed enterprise. As such, like-minded nations should work together to considerably strengthen subsidies disciplines at the WTO.

In particular, the United States should work with its European and Japanese peers in the Trilateral Framework and at the WTO to update the organization's rules to impose much stiffer conditions on, and penalties for, aggressive industrial subsidization.<sup>204</sup> This should start with clarifying the definition of a "public body," extending it to include state-influenced activities of entities such as SOEs and private firms.<sup>205</sup> Rules should obligate the subsidizing country to prove that a given subsidy does not inflict harm on others. Like-minded nations should focus on achieving a significant increase in global subsidies transparency, including insisting upon timely and complete notification of subsidies and establishing a presumption of prejudice toward subsidies not timely notified.<sup>206</sup> The countries should also designate an annual meeting between WTO members and the WTO appellate body to discuss patterns and challenges pertaining to the excessive use of subsidies.

### **Create a "DATO" for Trade**

Allied nations should form a new "NATO for trade" to combat Chinese trade aggression. Allied nations should form a pact wherein they agree to come to the aid of each other when economically threatened by the CCP.<sup>207</sup> The new organization, a DATO, would be governed by a council of participating countries, and if any individual nation were threatened or attacked, the DATO would quickly convene and potentially agree to take joint action to defend the nation attacked. For example, if China threatened to expel a given nation's students, DATO nations could agree to ban Chinese students in return. If China threatened to put a country's firms on its "unreliable list," the DATO nations could agree to limit imports from Chinese firms. Any democratic nation would be welcome to join DATO, including Taiwan, but should any nation not take the steps needed to respect after a DATO decision, they would lose the right to be a member.<sup>208</sup>

### **Form a Global Strategic Supply Chain Alliance**

A related approach some have called for would be for like-minded nations to come together to form a GSSCA that could collectively address security needs with respect to critical strategic items.<sup>209</sup> Such a GSSCA would organize certain key industries for the benefit of its member states, with members agreeing to develop supply chains within the GSSCA to the exclusion of similar items from non-member states. Such an alliance could be organized around particular

items or products, such as 5G networks, rare earth metals, active pharmaceutical ingredients, or perhaps a key tool or component in the semiconductor supply chain.

The theory behind the GSCCA structure would be “an economically oriented calculus that combines risk assessment at a supply chain level with a strategic overlay.”<sup>210</sup> An open approach to trade and globalization in the semiconductor sector (and the broader global economy) outlined at the start of this report is preferable. However, such a structure could become necessary in the future should some nation(s) seek to corner certain key inputs or supplies to the detriment of the international supply chain or other nations.

## **The United States Should Join the CPTPP and Continue to Aggressively Pursue Other Free Trade Agreements**

In November 2020, China and 14 other nations concluded the Regional Comprehensive Economic Partnership (RCEP) agreement, thus creating the world’s largest regional trade block. RCEP also represents the first trade agreement between China, Japan, and South Korea. As Robert Ward of the geopolitical risk consultancy IISS writes, this represented a “significant geopolitical win for China.”<sup>211</sup>

In the meantime, the United States has lamentably retreated from such trade-deepening efforts. The Trump administration withdrew from the now-11-nation CPTPP. The Biden administration is evincing no signals of reengaging.

Yet, the CPTPP positioned the United States to take the leading role in shaping the future of Asia-Pacific trade and economic integration. It featured 21st-century trade rules and norms, including higher standards for digital trade, protection of IP, services-market access, labor and environmental standards, disciplines on SOEs, and rules facilitating many others facets of modern trade. It was a grave strategic error of the Trump administration to withdraw the United States from the CPTPP, thus ceding leadership of regional economic integration to China. It will constitute an equally grave geostrategic error should the Biden administration fail to redress this misstep. Beyond the CPTPP, the United States should continue to seek FTAs, or at least trade facilitation agreements, with a variety of other countries, from Kenya in Africa to India and Taiwan in Asia.

## **Direct USTR to Self-Initiate More WTO Cases Against China**

The U.S. approach in bringing cases before the WTO has generally been for industry to lead in making a complaint and engaging USTR to formally bring the dispute up with a trade partner or before the WTO. But USTR could be bringing a number of cases against China without waiting for industry. Consider China’s unbalanced TIER licensing. That law was passed in November 2001, a month before China entered the WTO. It took 16 years before the United States brought a WTO case against China over the practice, which it won. When China or another nation implements a law that substantially contravenes the WTO and is likely to harm U.S. industry, USTR should proactively file a dispute rather than wait for industry to lead the charge.

The USTR has other options too. For instance, the WTO requires that “cases of general applicability be published”—in other words, countries must publish their court decisions. However, often this is not the case for China.

Similarly, Article 270 of China's Civil Procedure Law puts China in violation of the WTO. Essentially, it states that for foreign litigants bringing any form of civil case, the amount of time the courts have to make a ruling is unlimited. If it is a domestic case, rulings must be made in six months.<sup>212</sup> This disparity gives Chinese courts free reign on how long they may take to decide a foreign case, which can and has been strategically used against foreign firms—and this again represents a national treatment violation.

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**It was a grave strategic error of the Trump administration to withdraw the United States from the CPTPP; it will constitute an equally grave geostrategic error should the Biden administration fail to redress this misstep.**

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The egregiousness of China's innovation mercantilist practices means that cases brought before the WTO are often likely to be successful. Since its accession to the WTO, China has been a defendant in 44 cases. Six have been settled or terminated, while 12 are still in consultation. Of the remaining 26 cases, 21 have been adjudicated while 5 are pending. Of the 21 cases that have been adjudicated before the WTO's Dispute Settlement Board, China has lost every single one.<sup>213</sup>

## **Elevate Focus on Technology, Innovation, and Intellectual Property in U.S. Trade Policymaking**

Congressional legislation has directed USTR to appoint a Deputy USTR in charge of Innovation and IP. This position can become, by dint of rank, the highest-ranking person in the U.S. government solely devoted to innovation and IP, because that would be at a Deputy Secretary level, whereas leaders at the National Institute of Standards and Technology (NIST) and the U.S. Patent and Trademark Office (USPTO) are at the undersecretary level.

However, the Biden administration has yet to signal any action toward making such an appointment. This lacuna, coupled with open leadership appointments at other key federal agencies focused on innovation and IP, such as USPTO and NIST, shortchange the role of IP and innovation in U.S. trade policymaking. These gaps should be addressed as part of a broader effort to elevate the focus on technology, innovation, and IP in U.S. trade policymaking.

## **CONCLUSION**

Today, China remains quite far from either being a market economy or embracing the fundamental principles and spirit—let alone the specific rules—of the WTO. While China evinced some economic liberalization and market opening in the first decade after its WTO accession, since President Xi Jinping's arrival, these reforms have been thrown into reverse. China's aggressive innovation mercantilism has harmed other nations' economies, their high-tech enterprises, and the global innovation system itself.

It is time for like-minded, market-oriented nations to acknowledge the full scale of China's repudiation of the core tenets of the liberal international economic order, and to confront its continuing failure to meet its WTO commitments. The situation demands action on many fronts. It can range from changing the laws of individual nations or regions on issues such as FDI and export controls to like-minded nations working collaboratively to push back against China's

mercantilist practices to deepening and expanding trade agreements among market-based economies to strengthening the WTO's rules in order to better discipline nonmarket activities.

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**Today, China is further than it has even been from either being a market economy or embracing the fundamental principles and spirit—let alone the specific rules—of the WTO.**

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A China that faithfully plays by the WTO rules and evolves toward a market-based economy could represent a responsible global actor whose behavior creates win-win outcomes benefitting global society. A China that continues on the current path represents a fundamental threat to the liberal international economic order and the global community. The Biden administration needs to lead the charge, with like-minded nations, to ensure that if China continues to pursue an alternative economic path, the terms of China's WTO membership change to reflect the reality of China's economic policy choices.



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## About the Author

ITIF Vice President, Global Innovation Policy Stephen J. Ezell focuses on science, technology, and innovation policy as well as international competitiveness and trade policy issues. He is the coauthor of *Innovating in a Service Driven Economy: Insights Application, and Practice* (Palgrave McMillan, 2015) and *Innovation Economics: The Race for Global Advantage* (Yale 2012).

## About ITIF

The Information Technology and Innovation Foundation (ITIF) is an independent, nonprofit, nonpartisan research and educational institute focusing on the intersection of technological innovation and public policy. Recognized by its peers in the think tank community as the global center of excellence for science and technology policy, ITIF's mission is to formulate and promote policy solutions that accelerate innovation and boost productivity to spur growth, opportunity, and progress.

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## ENDNOTES

1. United States Trade Representative's Office (USTR), "2020 Report to Congress on China's WTO Compliance" (USTR, January 2021), 3, <https://ustr.gov/sites/default/files/files/reports/2020/2020USTRReportCongressChinaWTOCompliance.pdf>.
2. Robert D. Atkinson and Stephen J. Ezell, "False Promises: The Yawning Gap Between China's WTO Commitments and Practices" (ITIF, September 2015), <https://itif.org/publications/2015/09/17/false-promises-yawning-gap-between-china%E2%80%99s-wto-commitments-and-practices>.
3. Wayne M. Morrison, "China-U.S. Trade Issues" (Congressional Research Service (CRS), March 17, 2015), 41, <https://www.fas.org/sgp/crs/row/RL33536.pdf>. China's WTO membership was formally approved at the WTO Ministerial Conference in Doha, Qatar, on November 10, 2001. On November 11, 2001, China notified the WTO that it had formally ratified the WTO agreements, and on December 11, 2001, China formally joined the WTO.
4. "How the West got China wrong," *The Economist*, March 1, 2018, <https://www.economist.com/leaders/2018/03/01/how-the-west-got-china-wrong>.
5. Supachai Panitchpakdi and Mark Clifford, *China and the WTO: Changing China, Changing World Trade* (New York: John Wiley & Sons, 2012), 2–4.
6. Ibid.
7. World Trade Organization (WTO), "Speeches of Mike Moore: The WTO and the New Economy" (WTO, May 22, 2000), [https://www.wto.org/english/news\\_e/spmm\\_e/spmm31\\_e.htm](https://www.wto.org/english/news_e/spmm_e/spmm31_e.htm).
8. Ibid.
9. World Trade Organization, "WTO Successfully Concludes Negotiations on China's Entry," news release, September 17, 2001, [https://www.wto.org/english/news\\_e/pres01\\_e/pr243\\_e.htm](https://www.wto.org/english/news_e/pres01_e/pr243_e.htm).
10. Pascal Lamy, "Lamy: China's WTO Membership Is 'Win-Win'" (speech, World Trade Organization, July 22, 2010), [https://www.wto.org/english/news\\_e/sppl\\_e/sppl162\\_e.htm](https://www.wto.org/english/news_e/sppl_e/sppl162_e.htm); European Commission, "Speech by Pascal Lamy to China-Britain Business Council" (speech, October 2, 2000), [http://europa.eu/rapid/press-release\\_SPEECH-00-349\\_en.htm](http://europa.eu/rapid/press-release_SPEECH-00-349_en.htm); Li Zengxin and Yu Hairong, "In WTO's Pascal Lamy, Free Trade Has a Voice," *Caixin Online*, December 28, 2011, <http://english.caixin.com/2011-12-28/100343605.html>.
11. Richard A. McCormack, "China's Entry Into the WTO 10 Years Later Is Not What President Clinton Promised," *Manufacturing and Technology News* Vol. 17, No. 10 (June 15, 2010), <http://www.manufacturingnews.com/news/10/0615/WTO.html>.
12. Ibid.
13. Robert D. Atkinson and Stephen J. Ezell, *Innovation Economics: The Race for Global Advantage* (New Haven, Connecticut: Yale University Press, 2012): 201.
14. Jason Dean, Andrew Browne, and Shai Oster, "China's 'State Capitalism' Sparks a Global Backlash," *The Wall Street Journal*, November 16, 2010, <http://www.wsj.com/articles/SB10001424052748703514904575602731006315198>.
15. Kurt M. Campbell and Ely Ratner, "The China Reckoning: How Beijing Defied American Expectations," *Foreign Affairs*, March/April 2018, <https://www.foreignaffairs.com/articles/china/2018-02-13/china-reckoning>; Edward Wong, Michael Crowley, and Ana Swanson, "Joe Biden's China Journey," *The New York Times*, September 6, 2020, <https://www.nytimes.com/2020/09/06/us/politics/biden-china.html>.
16. "How the West got China wrong," *The Economist*.

17. Nicholas R. Lardy, *The State Strikes Back: The End of Economic Reform in China?* (The Peterson Institute for International Economics, 2019): x, 2, <https://www.piie.com/bookstore/state-strikes-back-end-economic-reform-china>.
18. Atkinson and Ezell, “False Promises: The Yawning Gap Between China’s WTO Commitments and Practices.”
19. USTR, “2020 Report to Congress on China’s WTO Compliance,” 2.
20. Ibid, 16.
21. Katie Lobosco, “Biden has left Trump's China tariffs in place: Here's why,” *CNN*, March 24, 2021, <https://www.cnn.com/2021/03/24/politics/china-tariffs-biden-policy/index.html>.
22. Caleb Foote and Stephen J. Ezell, “The 2019 Global Mercantilist Index: Ranking Nations’ Distortive Trade Policies” (ITIF, November 2019), 14, <http://www2.itif.org/2019-global-mercantilist-index.pdf>.
23. M. M. Kosteci, *East West Trade and the GATT System* (London: Palgrave MacMillan, 1979): 60.
24. World Trade Organization, “Marrakesh Declaration of 15 April 1994,” [https://www.wto.org/english/docs\\_e/legal\\_e/marrakesh\\_decl\\_e.htm](https://www.wto.org/english/docs_e/legal_e/marrakesh_decl_e.htm).
25. USTR, “2020 Report to Congress on China’s WTO Compliance,” 5.
26. WTO Deputy Director-General Alan Wolff, “DDG Wolff: This is the time to consider the future of the multilateral trading system,” May 27, 2020, [https://www.wto.org/english/news\\_e/news20\\_e/ddgaw\\_27may20\\_e.htm](https://www.wto.org/english/news_e/news20_e/ddgaw_27may20_e.htm).
27. John H. Jackson, *State Trading and Nonmarket Economies*, 23 *The International Lawyer* 891 (1989) (citing J. Jackson, *World Trade and the Law of the GATT*, Ch. 2, at 35-57 (1969)); J. Jackson & W. Davey, *Legal Problems of International Economic Relations Second Edition* (1986): 293–298.
28. Phone interview with Daniel Crosby, Partner, King & Spalding, May 4, 2021; Also see forthcoming report from Daniel Crosby, “Chinese State Capitalism and the Challenge of Systemic Interface with the Multilateral Trading System.”
29. USTR, “2020 Report to Congress on China’s WTO Compliance,” 2.
30. Report of the Working Party on the Accession of China, “WT/ACC/CHN/49 + Corr.1; WT/MIN(01)/3” (November 10, 2001). The WTO language, “Members took note of this commitment,” confirms that the commitment in this paragraph is legal binding under China’s WTO Protocol of Accession.
31. Cited in Petros C. Mavroidis and André Sapir, *China and the WTO: Why Multilateralism Still Matters* (Princeton, New Jersey: Princeton University Press, 2021): 24.
32. USTR, “2020 Report to Congress on China’s WTO Compliance,” 9; Clyde Prestowitz, *The World Turned Upside Down: America, China, and the Struggle for Global Leadership* (New Haven, Connecticut: Yale University Press, 2021): 78.
33. Mark Wu, “The ‘China, Inc.’ Challenge to Global Trade Governance,” *Harvard International Law Journal* 57 (2016): 1001–1063, [https://papers.ssrn.com/sol3/papers2.cfm?abstract\\_id=2779781](https://papers.ssrn.com/sol3/papers2.cfm?abstract_id=2779781).
34. Ibid, 10.
35. Robert D. Atkinson, “Enough is Enough: Confronting Chinese Innovation Mercantilism” (ITIF, February 2020), <http://www2.itif.org/2012-enough-enough-chinese-mercantilism.pdf>.
36. Andrew Shonfield, *Modern Capitalism: The Changing Balance of Public and Private Power* (Oxford, England: Oxford University Press, 1967).
37. Robert D. Atkinson, “The Global Third Way,” *The International Economy*, Winter 2021, <http://www2.itif.org/2021-winter-TIE-global-third-way.pdf>.

38. Mavroidis and Sapir, *China and the WTO*, 60.
39. U.S. Chamber of Commerce, “Made in China 2025: Global Ambitions Built on Local Protections” (U.S. Chamber of Commerce, 2017), 3, [https://www.uschamber.com/sites/default/files/final\\_made\\_in\\_china\\_2025\\_report\\_full.pdf](https://www.uschamber.com/sites/default/files/final_made_in_china_2025_report_full.pdf); USTR, “2020 Report to Congress on China’s WTO Compliance,” 11–12.
40. Stephen Ezell, Frank Spring, and Katarzyna Bitka, “The Global Flourishing of National Innovation Foundations” (ITIF, April 2015), <https://itif.org/publications/2015/04/13/global-flourishing-national-innovation-foundations>.
41. Jost Wübbeke et al., “Made in China 2025: The Making of a High-Tech Superpower and Consequences for Industrial Countries” (Mercator Institute for China Studies, December 2016), 21, [https://www.merics.org/fileadmin/user\\_upload/downloads/MPOC/MPOC\\_Made\\_in\\_China\\_2025/MPOC\\_No.2\\_MadeinChina\\_2025.pdf](https://www.merics.org/fileadmin/user_upload/downloads/MPOC/MPOC_Made_in_China_2025/MPOC_No.2_MadeinChina_2025.pdf).
42. U.S. Chamber of Commerce, “Made in China 2025,” 16.
43. Wübbeke et al., “Made in China 2025,” 21.
44. USTR, “2020 Report to Congress on China’s WTO Compliance,” 36.
45. Stephen J. Ezell, “Moore’s Law Under Attack: The Impact of China’s Policies on Global Semiconductor Innovation” (ITIF, February 2018), <https://itif.org/publications/2021/02/18/moores-law-under-attack-impact-chinas-policies-global-semiconductor>.
46. Organization for Economic Cooperation and Development (OECD), “Measuring distortions in international markets: The semiconductor value chain” (OECD, November 2019), 48, <https://www.oecd-ilibrary.org/docserver/8fe4491d-en.pdf>.
47. Bob Davis and Eva Dou, “China’s Next Target: U.S. Microchip Hegemony,” *The Wall Street Journal*, July 27, 2017, <https://www.wsj.com/articles/chinas-next-target-u-s-microchip-hegemony-1501168303>.
48. James A. Lewis, “Learning the Superior Techniques of the Barbarians” (Center for Strategic and International Studies, January 2019), 16, [https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/190115\\_Lewis\\_Semiconductor\\_v6.pdf](https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/190115_Lewis_Semiconductor_v6.pdf).
49. Mercedes Ruehl, James Kygne, and Kiran Stacey, “Chinese state-backed funds invest in the U.S. despite Washington curbs,” *The Financial Times*, December 2, 2020, <https://www.ft.com/content/745abeca-561d-484d-acd9-ad1caedf9e9e>.
50. “China eyes breakthroughs in SOE reform,” *China Daily*, December 23, 2016, [http://www.chinadaily.com.cn/business/2016-12/23/content\\_27753459.htm](http://www.chinadaily.com.cn/business/2016-12/23/content_27753459.htm).
51. Karen Jingrong Lin et al., “State-owned enterprises in China: A review of 40 years of research and practice,” *China Journal of Accounting Research* Vol. 13 (2020): 31–55.
52. Amir Guluzade, “The role of China’s state-owned companies explained” (World Economic Forum, May 7, 2019), <https://www.weforum.org/agenda/2019/05/why-chinas-state-owned-companies-still-have-a-key-role-to-play/>.
53. Lin et al., “State-owned enterprises in China,” 32.
54. OECD, “State-Owned Firms Behind China’s Corporate Debt,” Economic Department Working Papers No. 1536 (2019), 11, [https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ECO/WKP\(2019\)5&docLanguage=En](https://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=ECO/WKP(2019)5&docLanguage=En).
55. USTR, “2020 Report to Congress on China’s WTO Compliance,” 9

56. Testimony for the U.S.–China Economic and Security Review Commission by Derek Scissors, Ph.D, Chinese State Owned Enterprises and the US Policy on China, February 12, 2012; Prestowitz, *The World Turned Upside Down*, 77.
57. OECD, “Measuring distortions in international markets: The semiconductor value chain,” 54.
58. Ibid, 55–56.
59. Ibid, 53.
60. Prestowitz, *The World Turned Upside Down*, 77.
61. “Centrally administered SOEs remain backbone of China’s economy,” *Global Times*, January 19, 2021, <https://www.globaltimes.cn/page/202101/1213220.shtml>.
62. Hao Qi and David M. Kotz, “The Impact of State-Owned Enterprises on China’s Economic Growth,” *Review of Radical Political Economics* Vol. 52, Issue 1 (2020): 96–114, <https://journals.sagepub.com/doi/full/10.1177/0486613419857249>.
63. Lewis, “Learning the Superior Techniques of the Barbarians,” 3.
64. USTR, “2020 Report to Congress on China’s WTO Compliance,” 9.
65. Lily Fang et al., “Corruption, Government Subsidies, and Innovation: Evidence from China,” NBER Working Paper No. 25098 (September 2018), <https://www.nber.org/papers/w25098>.
66. Usha C.V. Haley and George T. Haley, “How Chinese Subsidies Changed the World,” *Harvard Business Review*, April 25, 2013, <https://hbr.org/2013/04/how-chinese-subsidies-changed>.
67. Robert D. Atkinson, “How China’s Policies Have Stifled Global Innovation,” *BRINK*, January 13, 2020, <https://www.brinknews.com/how-chinas-policies-have-stifled-global-innovation/>.
68. John VerWey, “Global Value Chains: Explaining U.S. Bilateral Trade Deficits in Semiconductors” (U.S. International Trade Commission, March 2018), 15, [https://www.usitc.gov/publications/332/executive\\_briefings/ebot-semiconductor\\_gvc\\_final.pdf](https://www.usitc.gov/publications/332/executive_briefings/ebot-semiconductor_gvc_final.pdf).
69. OECD, “Measuring distortions in international markets: The semiconductor value chain,” 8.
70. Ibid, 9.
71. David M. Hart, “The Impact of China’s Production Surge on Innovation in the Global Solar Photovoltaics Industry” (ITIF, October 2020), <https://itif.org/publications/2020/10/05/impact-chinas-production-surge-innovation-global-solar-photovoltaics>.
72. Sherisse Pham and Matt Rivers, “China is crushing the U.S. in renewable energy,” *CNN*, July 18, 2017, <https://money.cnn.com/2017/07/18/technology/china-us-clean-energy-solar-farm/index.html>.
73. Stephen Ezell, “China-Induced Global Overcapacity an Increasing Threat to High-Tech Industries,” *The Innovation Files*, February 17, 2018, <https://itif.org/publications/2018/02/27/china-induced-global-overcapacity-increasing-threat-high-tech-industries>.
74. Keith Bradsher, “200 Chinese Subsidies Violate Rules, U.S. Says,” *New York Times*, October 6, 2011, <http://www.nytimes.com/2011/10/07/business/us-says-some-chinese-subsidies-violate-trade-rules.html>.
75. Emily de La Bruyere and Nathan Picarsic, “Beijing’s Dash for Global Rolling Stock Dominance” (Radarlock report, October 2019), <https://www.railwayage.com/wp-content/uploads/2019/11/Raderlock-CRRC-Report-October-2019.pdf>.
76. Chuin-Wei Yap, “State Support Helped Fuel Huawei’s Global Rise,” *The Wall Street Journal*, December 25, 2019, <https://www.wsj.com/articles/state-support-helped-fuel-huaweis-global-rise-11577280736>.
77. Ibid.

78. Phil Garton and Jennifer Chang, “The Chinese currency: how undervalued and how much does it matter?” Australian Government Treasury, December 12, 2005, <https://treasury.gov.au/publication/economic-roundup-spring-2005/the-chinese-currency-howundervalued-and-how-much-does-it-matter>; China Power Team, “Is the Renminbi undervalued or overvalued?” *China Power*, February 11, 2016, <https://chinapower.csis.org/renminbi-undervalued/>.
79. Heather Timmons and Zheping Huang, “Charted: How China turned the global steel industry upside down in just 15 years,” *Quartz*, June 7, 2016, <https://qz.com/699979/how-chinas-overproduction-of-steel-is-damaging-companies-and-countries-around-the-world/>.
80. USTR, “2021 National Trade Estimate [NTE] Report on Foreign Trade Barriers” (USTR, 2021), 100, <https://ustr.gov/sites/default/files/files/reports/2021/2021NTE.pdf>.
81. Alan H. Price et al., “Money For Metal: A Detailed Examination of Chinese Government Subsidies to Its Steel Industry” (Wiley Rein, 2007), 4, <https://www.wiley.law/resources/documents/fm14037.pdf>.
82. Fayen Wong, “Steel industry on subsidy life-support as China economy slows,” *Reuters*, September 18, 2014, <https://www.reuters.com/article/us-china-economy-steel/steel-industry-on-subsidy-life-support-as-china-economy-slows-idUSKBN0HD2LC20140919>.
83. Myrto Kalouptsidi, “China’s hidden shipbuilding subsidies and their impact on its industrial dominance,” *Microeconomic Insights*, April 11, 2018, <https://microeconomicinsights.org/chinas-hidden-shipbuilding-subsidies-impact-industrial-dominance>.
84. Garton and Chang, “The Chinese currency: how undervalued and how much does it matter?”
85. The World Bank provided the Chinese Export-Import Bank funding in 2006 to “formulate a medium-and-long-term development strategy ... including the strategic guiding ideology, the choosing of the medium-and-long-term development strategy together with feasibility analysis, the guidelines, policies and measures for the implementation of the strategic goals.” The project funded experts to consult with the World Bank as well as the travel of Chinese Exim Bank officials overseas to study best practices, “such as export credit, trade financing, ship financing, ODA [overseas development assistance] loan and financing for small and medium-sized enterprises.” World Bank, “Implementation Project of Chinese Economic Reforms: Fifth Technique Aid: Purchase Plan for Sub-project Consultation Service,” November 27, 2007, 52–58, [http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2007/11/27/000020953\\_20071127145624/Rendered/PDF/41638.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2007/11/27/000020953_20071127145624/Rendered/PDF/41638.pdf).
86. Ellen Nakashima, “U.S. pushes hard for a ban on Huawei in Europe, but the firm’s 5G prices are nearly irresistible,” *The Washington Post*, May 29, 2019, [https://www.washingtonpost.com/world/national-security/for-huawei-the-5g-play-is-in-europe--and-the-us-is-pushing-hard-for-a-ban-there/2019/05/28/582a8ff6-78d4-11e9-b7ae-390de4259661\\_story.html](https://www.washingtonpost.com/world/national-security/for-huawei-the-5g-play-is-in-europe--and-the-us-is-pushing-hard-for-a-ban-there/2019/05/28/582a8ff6-78d4-11e9-b7ae-390de4259661_story.html).
87. Export-Import Bank of the United States, “EXIM Debuts 2019 Competitiveness Report, Finds that China’s Predatory Practices are Fundamentally Changing Nature of Export Credit Competition,” news release, June 30, 2020, <https://www.exim.gov/news/exim-debuts-2019-competitiveness-report-finds-chinas-predatory-practices-are-fundamentally>.
88. USTR, “2017 Report to Congress On China’s WTO Compliance” (USTR, January 2018), 12, <https://ustr.gov/sites/default/files/files/Press/Reports/China%202017%20WTO%20Report.pdf>.
89. USTR, “2020 Report to Congress on China’s WTO Compliance,” 7.
90. *Ibid.*, 30.
91. Robert D. Atkinson, Nigel Cory, and Stephen Ezell, “Stopping China’s Mercantilism: A Doctrine of Constructive, Alliance-Backed Confrontation” (ITIF, March 2017), 38,

- <https://itif.org/publications/2017/03/16/stopping-chinas-mercantilism-doctrine-constructive-alliance-backed>.
92. The Office of the United States Trade Representative (USTR) and the United States Department of Commerce (DOC), “Subsidies Enforcement Annual Report to the Congress” (USTR and DOC, February 2016), <http://enforcement.trade.gov/esel/reports/seo2016/seo-annual-report-2016.pdf>.
  93. “All Change: China’s Economy and the WTO,” *The Economist*, December 10, 2011, <http://www.economist.com/node/21541448/print>.
  94. World Trade Organization, “Report of the Working Party on the Accession of China” (WTO, November 10, 2001), Paragraph 203, [https://www.wto.org/english/thewto\\_e/acc\\_e/wp\\_acc\\_china\\_e.doc](https://www.wto.org/english/thewto_e/acc_e/wp_acc_china_e.doc).
  95. Kun Jiang et al., “International Joint Ventures and Internal vs. External Technology Transfer: Evidence from China” (working paper, the National Bureau of Economic Research, Cambridge, Massachusetts, 2018), <http://www.nber.org/papers/w24455>.
  96. Ibid.
  97. Thomas M. Hout and Pankaj Ghemawat, “China vs the World: Whose Technology Is It?” *Harvard Business Review*, December 2010, <http://hbr.org/2010/12/china-vs-the-world-whose-technology-is-it/ar/1>.
  98. Nigel Cory, “Heading Off Track: The Impact of China’s Mercantilist Policies on Global High-Speed Rail Innovation” (ITIF, April 2021), <https://itif.org/publications/2021/04/26/heading-track-impact-chinas-mercantilist-policies-global-high-speed-rail>.
  99. Morrison, “2015 China-U.S. Trade Issues,” 38; See, for example, Appellate Body Reports, Argentina-Measures Affecting the Importation of Goods, WT/DS438/AB/R / WT/DS444/AB/R / WT/DS445/AB/R, adopted January 26, 2015.
  100. USTR, “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” (USTR, 2018), <https://ustr.gov/sites/default/files/Section%20301%20FINAL.PDF>.
  101. Angus Liu, “Riding on Booming Drug Sales, Astra Zeneca Forms \$133M China Joint Venture,” *FierceBiotech*, November 27, 2017, <https://www.fiercebiotech.com/biotech/riding-booming-drug-sales-astrazeneca-forms-133mchina-joint-venture>.
  102. Robert D. Atkinson, “Testimony of Robert D. Atkinson Before the Senate Small Business Committee: Made in China 2025 and the Future of American Industry” (ITIF, February 27, 2019), <http://www2.itif.org/2019-testimony-atkinson-small-business.pdf>.
  103. Cate Cadell, “Amazon Sells Off China Cloud Assets as Tough New Rules Bite,” *Reuters*, November 13, 2017, <https://www.reuters.com/article/us-china-amazon-cloud/amazon-sells-off-china-cloud-assets-as-tough-new-rulesbite-idUSKBN1DEOCL>.
  104. Julie Wernau, “Forced Tech Transfers Are on the Rise in China, European Firms Say,” *The Wall Street Journal*, May 20, 2019, <https://www.wsj.com/articles/forced-tech-transfers-are-on-the-rise-in-china-european-firms-say-11558344240>.
  105. Ibid.
  106. The U.S.-China Business Council, “2015 USCBC Member Survey: Growth Continues Amidst Economic Slowdown, Rising Competition, Policy Uncertainty” (The U.S.-China Business Council, 2015), [https://www.uschina.org/sites/default/files/USCBC%202015%20China%20Business%20Environment%20Member%20Survey\\_0.pdf](https://www.uschina.org/sites/default/files/USCBC%202015%20China%20Business%20Environment%20Member%20Survey_0.pdf).
  107. Panitchpakdi and Clifford, *China and the WTO*, 93.
  108. Lewis, “Learning the Superior Techniques of the Barbarians,” 23.

109. Nicholas Eftimiades, "On the Question of Chinese Espionage," *Brown Journal of World Affairs* Vol. 26 (2019–2020), <https://bjwa.brown.edu/26-1/on-the-question-of-chinese-espionage/>.
110. Michael Pillsbury, *The Hundred Year Marathon: China's Secret Strategy to Replace America as the World's Superpower* (Lewiston, Idaho: Griffin Publishers, 2016).
111. USTR, "2021 National Trade Estimate [NTE] Report on Foreign Trade Barriers," 116.
112. USTR, "2021 Special 301 Report" (USTR, May 2021), 3, [https://ustr.gov/sites/default/files/files/reports/2021/2021%20Special%20301%20Report%20\(fin%20al\).pdf](https://ustr.gov/sites/default/files/files/reports/2021/2021%20Special%20301%20Report%20(fin%20al).pdf).
113. Ezell, "Moore's Law Under Attack," 25.
114. Makena Kelly, "China state-owned company charged with stealing US tech trade secrets," *The Verge*, November 1, 2018, <https://www.theverge.com/2018/11/1/18052784/china-chip-stolen-trade-secrets-justice-department-semiconductor>.
115. United States Department of Justice, "Chinese Citizen Convicted of Economic Espionage, Theft of Trade Secrets, and Conspiracy," news release, June 26, 2020, <https://www.justice.gov/opa/pr/chinese-citizen-convicted-economic-espionage-theft-trade-secrets-and-conspiracy>.
116. Douglas B. Fuller, *Paper Tigers, Hidden Dragons: Firms and the Political Economy of China's Technological Development* (Oxford, UK: Oxford University Press, July 2016): 137.
117. Robert D. Atkinson, "China's Biopharmaceutical Strategy: Challenge or Complement to U.S. Industry Competitiveness?" (ITIF, August 2019), 30–31, <https://itif.org/publications/2019/08/12/chinas-biopharmaceutical-strategy-challenge-or-complement-us-industry>.
118. Zack Whittaker, "Justice Department Accuses Chinese Spies of Hacking Into Dozens of US Tech and Industry Giants," *TechCrunch*, January 2019, <https://techcrunch.com/2018/12/20/us-indictment-tech-hacks-chinese/>; Derek Lowe, "Chinese Pharma Espionage?" *Science Translational Medicine*, December 15, 2011, [https://blogs.sciencemag.org/pipeline/archives/2011/12/15/chinese\\_pharma\\_espionage](https://blogs.sciencemag.org/pipeline/archives/2011/12/15/chinese_pharma_espionage).
119. Gryphon Scientific and Rhodium Group, "China's Biotechnology Development: The Role of US and Other Foreign Engagement" (report prepared for the U.S.-China Economic and Security Review Commission, February 2019), 104, <https://www.uscc.gov/Research/china%E2%80%99s-biotechnology-development-role-us-and-other-foreign-engagement>.
120. Daniel C.K. Chow, "Three Major Problems Threatening Multi-National Pharmaceutical Companies Doing Business in China" (working paper, Ohio State Public Law and Legal Theory, 2017), [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=3029347](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3029347).
121. Hart, "The Impact of China's Production Surge on Innovation in the Global Solar Photovoltaics Industry."
122. The Intellectual Property Commission, *The Report of The Commission on the Theft of American Intellectual Property* (United States: The National Bureau of Asian Research, May 2013), 11, [http://www.ipcommission.org/report/ip\\_commission\\_report\\_052213.pdf](http://www.ipcommission.org/report/ip_commission_report_052213.pdf).
123. The Commission on the Theft of American Intellectual Property, "Update to the IP Commission Report: The Theft of American Intellectual Property: Reassessments of the Challenge and United States Policy" (National Bureau of Asian Research, 2017), [https://www.nbr.org/wp-content/uploads/pdfs/publications/IP\\_Commission\\_Report\\_Update.pdf](https://www.nbr.org/wp-content/uploads/pdfs/publications/IP_Commission_Report_Update.pdf).
124. Eric Rosenbaum, "1 in 5 corporations say China has stolen their IP within the last year: CNBC CFO Survey," *CNBC*, March 1, 2019, <https://www.cnbc.com/2019/02/28/1-in-5-companies-say-china-stole-their-ip-within-the-last-year-cnbc.html>.



125. Timothy Tackett Qiu, “The US-China IP Dispute: How Will the US Respond to and Address China’s Persistent Violation of International and US IP Regulations,” *European Journal of Humanities and Social Sciences* Vol. 5 (2019): 77–83, [http://ppublishing.org/upload/iblock/809/EJH-5\\_2019\\_EV.pdf#page=77](http://ppublishing.org/upload/iblock/809/EJH-5_2019_EV.pdf#page=77).
126. Frank Dillon, “EU may be losing €60bn in annual sales through IP theft in goods and services,” *The Irish Times*, June 6, 2019, <https://www.irishtimes.com/business/innovation/eu-may-be-losing-60bn-in-annual-sales-through-ip-theft-in-goods-and-services-1.3914540>.
127. USTR, “2020 Report to Congress on China’s WTO Compliance,” 40.
128. Martin Wolf, “The fight to halt the theft of ideas is hopeless,” *The Financial Times*, November 19, 2019, <https://www.ft.com/content/d592af00-0a29-11ea-b2d6-9bf4d1957a67>.
129. “Anti-Monopoly Law of the People’s Republic of China,” *China.Org.Cn*, (accessed January 28, 2015), [http://www.china.org.cn/government/laws/2009-02/10/content\\_17254169.htm](http://www.china.org.cn/government/laws/2009-02/10/content_17254169.htm).
130. James McGregor, “China’s Drive for ‘Indigenous Innovation’: A Web of Industrial Policies” (U.S. Chamber of Commerce Global Intellectual Property Center and APCO Worldwide, July 2010), [https://www.uschamber.com/sites/default/files/documents/files/100728chinareport\\_0\\_0.pdf](https://www.uschamber.com/sites/default/files/documents/files/100728chinareport_0_0.pdf).
131. USTR, “2020 Report to Congress on China’s WTO Compliance,” 38.
132. WTO, “TRIPS Agreement Part II — Standards concerning the availability, scope and use of Intellectual Property Rights,” [https://www.wto.org/english/docs\\_e/legal\\_e/27-trips\\_04\\_e.htm](https://www.wto.org/english/docs_e/legal_e/27-trips_04_e.htm).
133. Robert D. Atkinson, “How China’s Mercantilist Policies Have Undermined Global Innovation in the Telecom Equipment Industry” (ITIF, June 2020), <https://itif.org/sites/default/files/2020-china-mercantilist-telecom-equipment-industry.pdf>.
134. Article IV of the General Agreement on Trade in Services, which addresses “Business Practices” may also provide a vehicle to contest abusive antitrust practices. It notes, “Members recognize that certain business practices of service suppliers, other than those falling under Article VIII, may restrain competition and thereby restrict trade in services,” and, “Each Member shall, at the request of any other Member, enter into consultations with a view to eliminating [these] practices.” See World Trade Organization, “WTO Analytical Index GATS—Article IX (Practice),” [https://www.wto.org/english/res\\_e/publications\\_e/ai17\\_e/gats\\_art9\\_oth.pdf](https://www.wto.org/english/res_e/publications_e/ai17_e/gats_art9_oth.pdf).
135. TRIPS Section 8, Article 40, Clause 1.
136. Mark Cohen, “RCEP And Phase 1: Strange Bedfellows in IP,” *China IPR*, December 3, 2020, <https://chinaipr.com/2020/12/03/rcep-and-phase-1-strange-bedfellows-in-ip/>; World Trade Organization, “Agreement on Trade-related Aspects of Intellectual Property Rights,” [https://www.wto.org/english/docs\\_e/legal\\_e/27-trips.pdf](https://www.wto.org/english/docs_e/legal_e/27-trips.pdf).
137. USTR, “2020 Report to Congress on China’s WTO Compliance,” 38.
138. Stephen J. Ezell and Robert D. Atkinson, “The Middle Kingdom Galapagos Island Syndrome: The Cul-De-Sac of Chinese Technology Standards” (ITIF, December 2014), <https://itif.org/publications/2014/12/15/middle-kingdom-galapagos-island-syndrome-cul-de-sac-chinese-technology>.
139. Alexander Chipman Koty, “What is the China Standards 2035 Plan and How Will it Impact Emerging Industries?” *China Briefing* by Dezan, Shira, and Associates, July 2, 2020, <https://www.china-briefing.com/news/what-is-china-standards-2035-plan-how-will-it-impact-emerging-technologies-what-is-link-made-in-china-2025-goals/>.
140. Keith B. Belton et al., “Who Will Set the Rules for Smart Factories?” *Issues in Science and Technology* Vol. XXXV, No. 3 (Spring 2019), <https://issues.org/who-will-set-the-rules-for-smart-factories/>.
141. Ezell and Atkinson, “The Middle Kingdom Galapagos Island Syndrome,” 14.

142. Belton et al., “Who Will Set the Rules for Smart Factories?”
143. Nigel Cory and Robert D. Atkinson, “Why and How to Mount a Strong, Trilateral Response to China’s Innovation Mercantilism” (ITIF, January 2020), 24, <https://itif.org/publications/2020/01/13/why-and-how-mount-strong-trilateral-response-chinas-innovation-mercantilism>.
144. “China’s National People’s Congress Officially Promulgates Standardization Law,” American National Standards Institute website, accessed January 10, 2018, [https://www.ansi.org/news\\_publications/news\\_story?menuid=7&articleid=7ab2aae7-c29b-438a-8a7d-0f19b94ee737](https://www.ansi.org/news_publications/news_story?menuid=7&articleid=7ab2aae7-c29b-438a-8a7d-0f19b94ee737).
145. Wübbeke et. al, “Made in China 2025.”
146. USTR, “2021 National Trade Estimate [NTE] Report on Foreign Trade Barriers,” 103.
147. Lindsay Gorman, “The U.S. Needs to Get in the Standards Game—With Like-Minded Democracies,” *Lawfare*, April 2, 2020, <https://www.lawfareblog.com/us-needs-get-standards-game%E2%80%94minded-democracies>.
148. Ibid.
149. Ibid.
150. Panitchpakdi and Clifford, *China and the WTO*, 238.
151. USTR, “2020 Report to Congress on China’s WTO Compliance,” 44–45.
152. Ibid, 45.
153. Ibid.
154. USTR, “2021 National Trade Estimate [NTE] Report on Foreign Trade Barriers” (USTR, March 2021), 101, <https://ustr.gov/sites/default/files/files/reports/2021/2021NTE.pdf>.
155. Ibid.
156. Panitchpakdi and Clifford, *China and the WTO*, 168.
157. USTR, “2021 National Trade Estimate [NTE] Report on Foreign Trade Barriers,” 123.
158. Ibid.
159. Ibid, 125.
160. Ibid.
161. Panitchpakdi and Clifford, *China and the WTO*, 225.
162. USTR, “2015 National Trade Estimate Report,” 78.
163. Ibid, 126.
164. Nigel Cory, “Testimony Before the U.S.-China Economic and Security Review Commission Regarding China’s Cloud Computing Market” (ITIF, April 2021), 28, <https://itif.org/publications/2021/04/15/testimony-us-china-economic-and-security-review-commission-regarding-chinas>.
165. In China’s schedule of service commitments, China had no market access or national treatment restrictions on the cross-border supply, consumption abroad, and commercial presence for many computer and related sub-services. In software implementation services (CPC 842), it required joint ventures with majority foreign ownership. World Trade Organization Council for Trade in Services, “Computer and Related Services Background Note by the Secretariat S/C/W/45” (World Trade Organization, July 14, 1998), [https://www.wto.org/english/tratop\\_e/serv\\_e/w45.doc](https://www.wto.org/english/tratop_e/serv_e/w45.doc); Nigel Cory, “The Worst Innovation Mercantilist Policies of 2016” (ITIF, January 2017), <http://www2.itif.org/2017-worst-innovation-mercantilist-policies.pdf>.

166. USTR, “China’s Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation under Section 301 of the Trade Act of 1974” (USTR, March 22, 2018), <https://ustr.gov/sites/default/files/Section%20301%20FINAL.PDF>.
167. Panitchpakdi and Clifford, *China and the WTO*, 227.
168. Morrison, “China-U.S. Trade Issues,” 44–45.
169. USTR, “2021 National Trade Estimate [NTE] Report on Foreign Trade Barriers,” 127.
170. Ibid.
171. Ibid, 111.
172. USTR, “2020 Report to Congress on China’s WTO Compliance, 51.
173. USTR, “2021 National Trade Estimate [NTE] Report on Foreign Trade Barriers,” 112.
174. World Trade Organization, “Agreement on Subsidies and Countervailing Measures,” [https://www.wto.org/english/docs\\_e/legal\\_e/24-scm.pdf](https://www.wto.org/english/docs_e/legal_e/24-scm.pdf).
175. Ibid.
176. Helen Davidson and Daniel Hurst, “China threatens to retaliate after Australia cancels two Belt and Road agreements,” *The Guardian*, April 22, 2021, <https://www.theguardian.com/australia-news/2021/apr/23/china-threatens-to-retaliate-after-australia-cancels-two-belt-and-road-agreements>.
177. International Monetary Fund (IMF), “World Economic Outlook, October 2020: A Long and Difficult Ascent” (IMF, October 2020), <https://www.imf.org/en/Publications/WEO/Issues/2020/09/30/world-economic-outlook-october-2020>; Graham Allison, “China Is Now the World’s Largest Economy. We Shouldn’t Be Shocked,” *National Interest*, October 15, 2020, <https://nationalinterest.org/feature/china-now-world%E2%80%99s-largest-economy-we-shouldn%E2%80%99t-be-shocked-170719>.
178. United States Census Bureau, “Trade in Goods with China,” <https://www.census.gov/foreign-trade/balance/c5700.html>.
179. United States Census Bureau, “Foreign Trade: Advanced Technology Product Data - Imports and Exports - ATP Group by Country,” <https://www.census.gov/foreign-trade/statistics/product/atp/select-atpctry.html>.
180. Eurostat, “China-EU - international trade in goods statistics,” [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=China-EU\\_-\\_international\\_trade\\_in\\_goods\\_statistics](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=China-EU_-_international_trade_in_goods_statistics).
181. United Nations Conference on Trade and Development (UNCTAD), “Bilateral trade flows by ICT goods categories, annual,” <https://unctadstat.unctad.org/wds/TableView/tableView.aspx?ReportId=15850>.
182. Ezell, “Moore’s Law Under Attack.”
183. National Science Foundation, “Science & Engineering Indicators 2018” (Appendix Table 6-14), accessed July 14, 2020, <https://nsf.gov/statistics/2018/nsb20181/assets/1235/tables/at06-14.pdf>.
184. Trading Economics, “China Foreign Currency Reserves” (accessed May 14, 2021), <https://tradingeconomics.com/china/foreign-exchange-reserves>.
185. “Total Reserves (Includes Gold, Current US\$),” The World Bank, (accessed May 14, 2021), <http://data.worldbank.org/indicator/FI.RES.TOTL.CD>.
186. Peter Gosselin, “After Doubts, Economists Find China Kills U.S. Factory Jobs,” *Bloomberg*, June 18, 2015, <http://www.bloomberg.com/politics/articles/2015-06-18/after-doubting-economists-find-china-killing-u-s-factory-jobs>.

187. David H. Autor, David Dorn, and Gordon H. Hanson, “The China Syndrome: Local Labor Market Effects of Import Competition in the United States,” *American Economic Review* 103, No. 6 (2013): 2121–2168, <http://dx.doi.org/10.1257/aer.103.6.2121>.
188. Gosselin, “After Doubts, Economists Find China Kills U.S. Factory Jobs.”
189. Justin Lahart, “Tallying the Toll of U.S.-China Trade,” *The Wall Street Journal*, September 27, 2011, <http://www.wsj.com/articles/SB10001424052970204010604576595002230403020>.
190. Autor, Dorn, and Hanson, “The China Syndrome.”
191. Robert E. Scott and Zane Mokhiber, “Growing China trade deficit cost 3.7 million American jobs between 2001 and 2018” (Economic Policy Institute, January 2020), <https://files.epi.org/pdf/181374.pdf>.
192. Ibid.
193. Robert D. Atkinson, “Industry by Industry: More Chinese Mercantilism, Less Global Innovation” (ITIF, May 2021), <https://itif.org/sites/default/files/2021-industry-chinese-mercantilism.pdf>.
194. Jennifer Hillman, “Testimony of Jennifer Hillman Before the U.S.-China Economic and Security Review Commission: Hearing on U.S. Tools to Address Chinese Market Distortions,” USCC, June 8, 2018, 7, [https://www.uscc.gov/sites/default/files/Hillman%20Testimony%20US%20China%20Comm%20w%20Appendix%20A.pdf?mod=article\\_inline](https://www.uscc.gov/sites/default/files/Hillman%20Testimony%20US%20China%20Comm%20w%20Appendix%20A.pdf?mod=article_inline).
195. European Commission, “Report from the Commission to the Parliament and the Council on Trade and Investment Barriers” (European Commission, 2020), 5, [https://trade.ec.europa.eu/doclib/docs/2020/june/tradoc\\_158789.pdf](https://trade.ec.europa.eu/doclib/docs/2020/june/tradoc_158789.pdf).
196. Atkinson, Cory, and Ezell, “Stopping China’s Mercantilism,” 6.
197. Stephen Ezell, “An Allied Approach to Semiconductor Leadership” (ITIF, September 2020), <https://itif.org/publications/2020/09/17/allied-approach-semiconductor-leadership>.
198. World Trade Organization, “Trade without discrimination,” [https://www.wto.org/english/thewto\\_e/whatis\\_e/tif\\_e/fact2\\_e.htm#seebox](https://www.wto.org/english/thewto_e/whatis_e/tif_e/fact2_e.htm#seebox).
199. Wayne H. Morrison, “China-U.S. Trade Issues” (Congressional Research Service, July 2018), 2, <https://fas.org/sgp/crs/row/RL33536.pdf>.
200. United States Congress, “NORMAL TRADE RELATIONS FOR THE PEOPLE’S REPUBLIC OF CHINA: PUBLIC LAW 106–286,” October 10, 2020, 893, <https://www.congress.gov/106/plaws/publ286/PLAW-106publ286.pdf>.
201. Hillman, “Testimony at Hearing on U.S. Tools to Address Chinese Market Distortions.”
202. Stephen Ezell, “Tariffs Won’t Stop China’s Mercantilism. Here Are 10 Alternatives,” *RealClearPolicy*, April 23, 2018, [https://www.realclearpolicy.com/articles/2018/04/23/tariffs\\_wont\\_stop\\_chinas\\_mercantilism\\_here\\_are\\_10\\_alternatives\\_110605.html](https://www.realclearpolicy.com/articles/2018/04/23/tariffs_wont_stop_chinas_mercantilism_here_are_10_alternatives_110605.html).
203. Hillman, “Testimony at Hearing on U.S. Tools to Address Chinese Market Distortions,” 11–12.
204. Cory and Atkinson, “Why and How to Mount a Strong, Trilateral Response to China’s Innovation Mercantilism.”
205. Office of the United States Trade Representative, “Joint Statement on Trilateral Meeting of the Trade Ministers of the United States, Japan, and the European Union,” news release, May 31, 2018, <https://ustr.gov/about-us/policy-offices/press-office/press-releases/2018/may/joint-statement-trilateral-meeting>.
206. Stephen Ezell, “Strengthening Subsidies Rules to Tackle Trade-Distortions: Perspectives From the High-Tech Sector” (power point presentation at 2019 WTO Public Forum, “Trading Forward: Adapting to a Changing World,” October 11, 2019).

207. Robert D. Atkinson, "What is Chinese "Innovation Mercantilism" and How Should the UK and Allies Respond?" (ITIF, June 28, 2021), <https://itif.org/publications/2021/06/28/what-chinese-innovation-mercantilism-and-how-should-uk-and-allies-respond>.
208. Ibid.
209. Paul Murphy and Dr. Paul Sullivan, "Formation of a Global Strategic Supply Chain Alliance (GSSCA): A New Strategic Multilateralism" (Global America Business Institute, May 2020), <http://thegabi.com/wp-content/uploads/2020/05/40-Formation-of-a-Global-Strategic-Supply-Chain-Alliance-GSSCA-A-New-Strategic-Multilateralism-Paul-Murphy-and-Paul-Sullivan-5-22-2020.pdf>.
210. Ibid, 2.
211. Robert Ward, "RCEP trade deal: a geopolitical win for China," November 25, 2020, <https://www.iiss.org/blogs/analysis/2020/11/rcep-trade-deal>.
212. See: China Commercial International Court, "Civil Procedure Law of the People's Republic of China (Revised in 2017)," <http://cicc.court.gov.cn/html/1/219/199/200/644.html>.
213. Mavroidis and Sapir, *China and the WTO*, 48–50.