

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

**FINDINGS OF THE INVESTIGATION INTO
CHINA’S ACTS, POLICIES, AND PRACTICES
RELATED TO TECHNOLOGY TRANSFER,
INTELLECTUAL PROPERTY, AND INNOVATION
UNDER SECTION 301 OF THE TRADE ACT OF 1974**

Executive Summary



March 22, 2018

EXECUTIVE SUMMARY

This Report summarizes the findings of an investigation undertaken by the U.S. Trade Representative (Trade Representative or USTR) under Section 301 of the Trade Act of 1974, as amended (Section 301). Subject to the direction of the President, Section 301 gives the Trade Representative broad authority to investigate and take appropriate and feasible action to eliminate unfair trade practices including “an act, policy, or practice of a foreign country that is unreasonable or discriminatory and burdens or restricts United States commerce.”

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

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

The President instructed the Trade Representative to determine under Section 301 whether to investigate China’s laws, policies, practices, or actions that may be unreasonable or discriminatory and that may be harming American intellectual property (IP) rights, innovation, or technology development. After consultations with the interagency Section 301 committee and private sector advisory committees, USTR initiated an investigation.

The notice of initiation identified four specific elements of China’s technology transfer regime for investigation: 1) the government’s use of opaque and discretionary administrative approval processes, joint venture (JV) requirements, foreign equity limitations, procurements, and other mechanisms to require or pressure the transfer of valuable U.S. technology and IP to China; 2) government acts, policies and practices that deprive U.S. companies of the ability to set market-based terms in technology-related negotiations; 3) governmental direction and unfair facilitation of outbound Chinese investment targeting U.S. companies and assets in key industry sectors; and 4) the Chinese government’s support of unauthorized intrusions into U.S. commercial computer networks or cyber-enabled theft of trade secrets and other proprietary information. The notice also requested information on other acts, policies, and practices of the Chinese government related to technology transfer, IP, and innovation.

USTR and the Section 301 committee held a public hearing on October 10, 2017 and accepted written submissions. Based on a full review of the testimony, submissions, and other evidence, as well as the recommendation of the Section 301 committee, USTR determined that there is substantial factual support for each of the four alleged elements of China’s technology transfer regime. USTR also determined that the acts, policies, and practices that comprise China’s technology transfer regime are unreasonable or discriminatory and burden or restrict U.S.

commerce. USTR further determined that new matters raised by the public in response to the notice of investigation could be the subject of further investigation.

Overview of China's Technology Strategy

China's acts, policies, and practices directed at the transfer of U.S. technology are an important element of its strategy to become a leader in advanced technologies and strategic sectors. China regards technology development as integral to its economic development and seeks to attain domestic dominance and global leadership in a wide range of technologies for both economic and national security reasons.

Official publications of the Chinese government and the Chinese Communist Party make clear China's ambitious technology-related industrial policy objectives. China seeks to reduce its dependence on technologies from other countries and move up the value chain, advancing from low-cost manufacturing to become a "global innovation power in science and technology." The industrial policies reflect a top-down, state-directed approach to technology development and are founded on concepts such as "indigenous innovation" and "re-innovation" of foreign technologies, among others. In pursuit of this overarching objective, China has issued hundreds of industrial policies, including most notably, the Made in China 2025 plan, issued in 2015.

Made in China 2025 is part of China's strategy to become a world leader in advanced manufacturing. The plan sets forth clear principles, tasks, and tools to implement this strategy, including government intervention to foster technology transfer and substantial government financial and other support to ten strategic industries: (1) advanced information technology (IT); (2) robotics and automated machine tools; (3) aircraft and aircraft components; (4) maritime vessels and marine engineering equipment; (5) advanced rail equipment; (6) new energy vehicles; (7) electrical generation and transmission equipment; (8) agricultural machinery and equipment; (9) new materials; and (10) pharmaceuticals and advanced medical devices.

Domestic dominance and global competitiveness in these and other industries are to be achieved by upgrading China's entire research, development, and production chain, with an emphasis on localizing the output of components and finished products. Foreign technology acquisition through various means is a prime focus under Made in China 2025 and U.S. companies are front-runners in many of the targeted industries. While China's unfair trade policies and practices to acquire foreign technology have been a persistent problem for U.S. businesses for more than a decade, China's technology ambitions are now combined with its immense, government-directed investment and regulatory policies and a well-financed strategy to displace U.S. and foreign companies in global markets, undermining the global trading system.

As detailed below, a key part of China's technology drive involves the acquisition of foreign technologies through acts, policies, and practices of the Chinese government that are unreasonable or discriminatory and burden or restrict U.S. commerce and are part of a multi-faceted strategy to advance China's industrial policy objectives. These acts, policies, and practices are applied across a broad range of sectors, and are implemented through a diverse set of state and state-backed actors.

Findings

After carefully weighing all the evidence adduced in the course of this investigation, the investigation supports findings that China's acts, policies, and practices are unreasonable or discriminatory, and burden or restrict U.S. commerce.

A) China's Unfair Technology Transfer Regime

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

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

These two aspects of China's technology transfer regime are furthered by the non-transparent and discretionary nature of China's regulatory regime. Numerous submissions noted China's technology transfer requirements are often carried out through oral instructions and "behind closed doors." Foreign companies have no effective recourse in China and have been hesitant to report these informal pressures for fear of Chinese government retaliation and the potential loss of business opportunities. Confidential surveys make clear that China's technology transfer regime is a persistent problem for U.S. and other foreign companies in China, particularly in high-tech sectors prioritized by the Chinese government.

1) Foreign Ownership Restrictions as Used in China's Technology Transfer Regime

Foreign ownership restrictions such as JV requirements and foreign equity limitations are a cornerstone of China's technology transfer regime. China's *Catalogue of Industries for Guiding Foreign Investment*, and other formal and informal rules, require U.S. companies seeking to invest in certain industry sectors to enter into cooperative arrangements with Chinese partners. According to numerous submissions and testimony in this investigation, China's imposition of these requirements precludes U.S. companies from entering the market on their own terms, and lays the foundation for the Chinese government to require or pressure technology transfer.

For example, in the new energy vehicle (NEV) sector, U.S. companies typically cannot enter the market unless they partner with a Chinese company in a JV, with foreign ownership capped at 50 percent. The pressure on U.S. automotive companies to transfer technology to their Chinese partners has increased as China has sought to develop expertise in the manufacture of NEVs. Several submissions in this investigation from U.S. trade associations point to China's NEV rules as evidence of China's unfair technology transfer regime. New market access rules issued in 2017, for example, effectively require that foreign automakers transfer key technologies to the

Chinese JV so that it can demonstrate “mastery” of the technologies needed for the development and manufacture of new energy vehicles in China.

In the aviation sector, China uses its purchasing power to pressure JVs and technology transfer in exchange for the sale of aircraft and aircraft components to Chinese state-owned enterprises that dominate the aviation market. For example, in its program to develop “indigenous” aircraft, China pressures technology transfer through a bidding process that requires foreign providers of key systems to enter into JVs with local suppliers, particularly in technology areas where Chinese capabilities are lagging.

Given the size and importance of the Chinese market, U.S. companies often have few realistic alternatives but to accede to China’s technology transfer requirements and pressure or face more limited business opportunities.

2) Administrative Licensing and Review Processes and China’s Technology Transfer Regime

China maintains numerous administrative review and licensing processes that companies must comply with before establishing or expanding operations, or offering products or services in the Chinese market. Vaguely worded provisions and uncertainty about the applicable rules provide Chinese authorities with wide discretion to use administrative processes to pressure technology transfer, restrict investments to protect domestic competitors, or otherwise act in furtherance of industrial policy objectives.

For example, according to submissions in this investigation, the language in Chinese licensing and business registration forms is often unclear. Yet government officials make their technology transfer expectations clear in person without providing any written documentation that would leave a paper trail for the foreign investor to complain.

The administrative licensing and approvals process can also work in tandem with the JV requirements described above to require or pressure technology transfer. This problem is exacerbated by the fact that in many JVs, the local partner serves as the investment approval process applicant on behalf of the JV. As a result, the Chinese JV partner is often able to control the communication channels between the foreign investor and the government approval authorities, allowing the Chinese partner to shape the approval requirement imposed by the authorities to its advantage.

Similarly, ambiguity in the administrative licensing and approvals process may result in technology transfer where existing laws and regulations are unclear as to the relevant requirements for foreign investors – a problem that is particularly acute in new and emerging industries. According to numerous submissions in this investigation, an important example of how ambiguity in China’s administrative licensing process is used to pressure technology transfer arises in the field of cloud computing.

Another technology transfer mechanism used by the Chinese government is to require the disclosure of sensitive technical information in exchange for necessary administrative approvals. According to submissions from U.S. trade associations in this investigation, forced disclosures of

information are especially problematic in cases in which the disclosure must be made not just to government officials but also to outsiders. This occurs when China requires reviews by “expert panels” that include not only government representatives but also Chinese industry, academia, and others who may have a competitive interest in the information.

Information disclosure and expert panel review requirements can arise at any stage of a company’s operations in China, and in a wide variety of industries. For example, in the pre-establishment phase, a company may be subject to expert review panels to assess the safety, environmental impact, and energy conservation of a proposed investment. Panels typically require companies to provide sensitive and proprietary information about project costs and revenue, capacity and equipment information, and raw material and energy requirements. In the post-establishment phase, cybersecurity reviews may be used to require the disclosure of critical technologies, including source codes, design databases, and other IP of U.S. companies.

3) China’s Acts, Policies, and Practices that Require or Pressure Technology Transfer are Unreasonable

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

China’s foreign investment regulatory regime has been ranked by the OECD as one of the most restrictive in the world. For example, in 2016, China was ranked the fourth most restrictive economy out of 63 OECD and non-OECD member economies measured—only the Philippines, Saudi Arabia, and Myanmar were more restrictive. This low ranking is particularly striking given that China is the world’s second largest economy and it has extensive global trading relationships as compared to the other economies at the bottom of the index.

Accordingly, China’s technology transfer regime is unfair, inequitable, and results in nonreciprocal opportunities for U.S. companies relative to Chinese companies operating in the United States. These acts, practices, and policies are unreasonable as defined in Section 301.

4) China’s Acts, Policies, and Practices that Require or Pressure Technology Transfer Burden or Restrict U.S. Commerce

The unreasonable act, policy, or practice of a foreign country must also burden or restrict U.S. commerce to be actionable under Section 301. In the present case, required or pressured technology transfer significantly undermines the value of U.S. technology and IP, thereby distorting markets and compromising U.S. companies’ global competitiveness.

Technology and IP drive economic growth and sustain the competitive edge of the U.S. economy. However, China's technology transfer policies effectively deprive U.S. companies of valuable IP and technology, and inhibit them from fairly competing in the large Chinese market. When U.S. companies are required or pressured to transfer their technology, they may experience not only a direct loss of key competitive assets, but also may lose their technological competitive edge in global markets. Moreover, as noted by submissions in this investigation, Chinese beneficiaries of technology transfer under the highly favorable circumstances created by China acquire powerful advantages without the expense or risk of developing the technology themselves, and thus enjoy an additional competitive advantage over foreign innovators. Given the strategic importance of the large and growing Chinese market, obstacles to level competition are acutely harmful to U.S. companies.

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

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

B) China's Discriminatory Licensing Restrictions

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

1) Foreign Licensing Restrictions and China's Technology Transfer Regime

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

In particular, China regulates via mandatory provisions instances in which an entity seeks to transfer technology into China under its *Regulations of the People's Republic of China on the Administration of the Import and Export of Technologies* (TIER). The entities seeking to transfer technology into China typically are foreign entities. The mandatory provisions therefore primarily affect foreign entities. China also regulates situations in which a foreign entity seeks – as part of its investment in its foreign-invested enterprise in China – to transfer technology to that entity by means of the *Regulations for the Implementation of the Law of the People's Republic of China on Chinese-Foreign Equity Joint Ventures* (*JV Regulations*). These Chinese regulations provide less favorable treatment of foreign entities than the comparable treatment of domestic Chinese entities under the *Contract Law of the People's Republic of China* (PRC Contract Law).

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

- **Indemnity terms:** TIER mandates that all indemnity risks be borne by the foreign technology transferor. Parties cannot negotiate the allocation of this risk, even if the transferee would like to bear the risk for a variety of reasons. Specifically, article 24 provides that the licensor (typically a foreign entity for a technology import contract) is liable for any claims of “infringing [a third party’s] lawful rights” made against the licensee resulting from the use of the licensed or transferred technology. This requirement is particularly onerous for small U.S. firms seeking to license technology, as they typically would not have the expertise or resources necessary to assess and cover the risk of third party litigation.
- **Rights in technology improvements:** TIER mandates that all improvements belong to the party making the improvement. TIER further provides that the licensor cannot stop the licensee from making improvements to the technology. Parties cannot negotiate shared ownership or agree that the licensor will own improvements made by the licensee. These provisions are particularly harmful to a U.S. licensor if the Chinese licensee makes an improvement severable from the original invention and then patents the severable improvement in China or elsewhere. The TIER’s provision on mandatory ownership of improvements enables the Chinese licensee to enjoy the severable improvement without the original technology licensed by the U.S. entity to the Chinese entity, and block the U.S. entity from enjoying the benefit of the severable improvement. The provisions prevent the U.S. entity from restricting its Chinese licensee from making improvements to the transferred U.S. technology or from using such improvements in the market place, including using the improvements to the detriment of the U.S. licensor.

The *JV Regulations* also mandate terms that are non-market-based for technology agreements in JVs between Chinese and foreign persons. Among other provisions, the *JV Regulations* generally limit technology contracts to a duration of ten years and provide that the Chinese JV must be granted the right to use the technology in perpetuity after the technology contract expires.

2) China's Foreign Licensing Restrictions are Discriminatory

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

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

3) China's Foreign Licensing Restrictions Burden U.S. Commerce

China's acts, policies, and practices described in this Section of the report clearly burden U.S. commerce. The licensing restrictions in the TIER and *JV Regulations* discriminate against U.S. technologies and fail to adequately protect U.S. IP rights. The licensing restrictions deprive U.S. entities from obtaining the full benefit from their innovative technology by subjecting it to a discriminatory licensing regime.

C) China's Outbound Investment Regime

A cornerstone of Chinese outbound investment is the "Going Out" strategy. This strategy encourages Chinese companies to "go out" and invest abroad, and calls on the government to guide and facilitate this effort. The strategy, as originally conceived, seeks to remove obstacles to outbound investment, and provide targeted support for specific enterprises and sectors investing abroad. Several recent Chinese policies flow from and support the "Going Out" strategy. These include policies that call for outbound investment to support the development of strategic industries, such as integrated circuits, IT, and artificial intelligence.

More generally, the *Notice on Issuing "Made in China 2025" (Made in China 2025 Notice)* outlines a wide-ranging strategy for harnessing and promoting the acquisition of foreign technology through outbound investment, including "explor[ing] the use of industrial funds, state-owned capital dividends, and other channels to support the 'Going Out' of advantageous manufacturing capacity including high-speed rail, power generation equipment, automobiles, and engineering, so as to implement overseas investment acquisitions."

To implement these policies, China employs several formal and informal mechanisms to channel and support outbound investment. For instance, the Chinese government exercises control over outbound investment through an investment approval mechanism, and through a system of "encouraged" sectors.

1) Impact on Chinese Investment in the United States

Reflecting these efforts, Chinese foreign direct investment in U.S. technology- and innovation-related sectors has grown significantly in recent years. Based on a review of hundreds of reported transactions, Chinese government policies and measures have had a significant effect on investment in these sectors, including aviation, integrated circuits, IT, biotechnology, industrial machinery, renewable energy, and automotive.

These transactions align with state objectives and policies, and are often undertaken by SOEs that are, by definition, owned and controlled by the government. Even when undertaken by companies in which the government does not own an observable controlling stake, these transactions are frequently guided and directed by the state. In addition, many of these transactions are funded by state-owned entities or banks, often in situations where comparable commercial financing would have been unavailable.

Chinese investors have been particularly active in U.S. technology centers such as Silicon Valley. Chinese companies have funded U.S. technology start-ups, established offices, and opened laboratories in Silicon Valley. These activities are directed at obtaining access to cutting-edge technology and recruiting talent to China. In some cases, Chinese companies – cooperating with the Chinese government – have established a presence in Silicon Valley with the express objective of developing competing technology centers in China.

2) China's Outbound Investment Regime is Unreasonable

China's outbound investment regime is unreasonable because it is directed and supported by the government, and unfairly targets critical U.S. technology with the goal of achieving dominance in strategic sectors. China has directed enterprises to pursue outbound investment with the express objective of acquiring and transferring technology. China has articulated this objective in numerous state planning documents and policies, in furtherance of both military and economic goals. China has also drawn on a range of tools to implement this approach – for instance, through the control that it exercises over SOEs, state-backed banks, and investment funds, and through its outbound investment approval regime. As a result of these efforts, investments are often politically driven and financially supported by Chinese government funds.

The unreasonableness of China's acts, policies, and practices is further evident in the non-reciprocal treatment of U.S. firms and investments in China. When seeking access to the Chinese market, U.S. investors face restrictive requirements and barriers – such as sectoral restrictions, JV requirements, equity caps, and technology transfer requirements. Chinese firms do not face anything remotely comparable to these restrictions when investing in the United States.

3) China's Outbound Investment Regime Burdens U.S. Commerce

Under market conditions, FDI in the United States, including investment from China, benefits the U.S. economy. However, such benefits must be considered in the broader context of U.S.

competitiveness in the global economy. As a general matter, FDI does not benefit the U.S. economy to the extent that it is directed to serve the Chinese government’s industrial policy objectives – specifically, to acquire technology and build national champions within China – and is fueled by financial support not available in the private market.

Here, the Chinese government has directed and supported the acquisition of key U.S. companies and assets to promote technology transfer, in pursuit of both military and economic objectives. These acts, policies, and practices burden U.S. commerce in three ways.

First, China’s acts, policies, and practices threaten the competitiveness of U.S. industry, especially in the sectors deemed important in China’s industrial policy. China seeks to use foreign acquisitions and investments to upgrade its domestic industries and, ultimately, degrade, reduce, or replace U.S. competition in key sectors. Subsidies and other government policies and practices supporting Chinese outbound investment give Chinese firms an unfair advantage in acquiring technology assets abroad, which undermines U.S. firms’ ability to compete in the global marketplace on a level playing field.

As a direct consequence of the Chinese government’s unfair and market-distorting action, Chinese firms are expected to gain increased market share in these industries at the expense of U.S. firms, whose market share will decline in both U.S. and global markets. This loss of market share also could force U.S. firms to shift their research and development programs, and other investment programs, into areas that may be less profitable and dynamic, which further erodes their long-term competitiveness. Moreover, the unprecedented scale of Chinese outbound foreign direct investment (OFDI) support policies suggests that Chinese firms will be able to gain significant market share at the expense of U.S. firms, threatening U.S. competitiveness in these high-technology industries.

Second, China’s acts, policies, and practices undermine the ability of U.S. firms to sustain innovation. In true market competition, foreign firms may often spur innovation and productivity spillovers to local economies when they bring technology and knowledge with them. In this case, however, that does not appear to be happening. Chinese firms invest in the United States to learn from U.S. firms, not the other way around. This policy harms innovation by essentially transferring technologies from efficient and productive firms in the United States to less innovative and less productive firms in China. Such a policy, combined with government intervention and support in China, damages U.S. companies and harms global welfare.

Third, China’s acts, policies, and practices distort pricing with respect to investments in the critical market for IP-intensive sectors. As outlined above, the Chinese government provides extensive support to its firms in connection with foreign acquisitions. This support places U.S. competitors at a disadvantage by artificially inflating the prices of potential acquisition targets. In other words, critical assets are not being sold and priced under true market conditions – a fact that threatens to distort the entire IP market. The result is that China is “exporting” its market-distorting policies to the United States and the world in critical high-technology industries.

Unlike China, the United States does not have a broad-based industrial policy through which the government directs and supports foreign investment by firms. Thus, U.S. technology enterprises

are at a distinct competitive disadvantage, since they are forced to compete with the extensive support and intervention of the Chinese state.

D) China's Unauthorized Intrusions into U.S. Commercial Computer Networks and Cyber-Enabled Theft of Intellectual Property and Sensitive Commercial Information

For over a decade, the Chinese government has conducted and supported cyber intrusions into U.S. commercial networks, targeting confidential business information held by U.S. firms. Through these cyber intrusions, China's government has gained unauthorized access to a wide range of commercially-valuable business information, including trade secrets, technical data, negotiating positions, and sensitive and proprietary internal communications. These acts, policies, and practices by the Chinese government are unreasonable and burden U.S. commerce.

Because cyber intrusions depend on deception and obfuscation, the acts, policies, and practices at issue by their nature impair the comprehensive collection and analysis of all relevant information. Businesses are often unaware that their computer networks have been compromised by an infiltration, and those that are aware of such intrusions are often apprehensive about sharing publicly the details of any compromise. Accordingly, although this report has drawn upon information in the public domain from private parties and U.S. law enforcement, publicly available information necessarily represents only a fraction of all relevant activity.

1) China's Acts, Policies, and Practices Regarding Unauthorized Intrusions into U.S. Commercial Computer Networks and Cyber-Enabled Theft of Intellectual Property and Sensitive Commercial Information

Evidence from U.S. law enforcement and private sources indicates that the Chinese government has used cyber-enabled theft and cyber intrusions to serve its strategic economic objectives. Documented incidents of China's cyber intrusions against U.S. commercial entities align closely with China's industrial policy objectives. As the global economy has increased its dependence on information systems in recent years, cybertheft has become one of China's preferred methods of collecting commercial information because of its logistical advantages and plausible deniability.

Notwithstanding an apparent decline in the observed number of cyber incidents by China, the continued use of cyber intrusions by the Chinese government targeting U.S. companies remains a serious problem. Beijing's cyber espionage against U.S. companies persists and continues to evolve. The U.S. Intelligence Community judges that Chinese state-sponsored cyber operators continue to support Beijing's strategic development goals, including its S&T advancement, military modernization, and economic development.

Accordingly, state-sponsored cyber intrusions originating from China into U.S. commercial networks occur alongside China's institutional framework for promoting its industrial and technological development through a state-led model in which state-owned enterprises and national champions are the recipients of extensive state support.

In sum, the evidence indicates that China continues its policy and practice, spanning more than a decade, of conducting and supporting cyber-enabled theft and intrusions into the commercial networks of U.S. companies. This conduct provides the Chinese government with unauthorized access to IP, trade secrets, or confidential business information, including, but not limited to, technical data, negotiating positions, and sensitive and proprietary internal business communications.

2) China's Acts, Policies, and Practices Regarding Cybertheft of Intellectual Property Are Unreasonable

Under Section 301, unreasonable acts, policies, or practices are those that are unfair and inequitable. As described above, the statute defines an “unreasonable” act, policy, or practice as one that “while not necessarily in violation of, or inconsistent with, the international legal rights of the United States is otherwise unfair and inequitable.” The statute expressly provides that acts, policies, or practices that are unreasonable include those that deny fair and equitable provision of “adequate and effective protection of IP rights notwithstanding the fact that the foreign country may be in compliance with the specific obligations of the Agreement on Trade-Related Aspects of Intellectual Property Rights.”

Claims that there is no meaningful distinction between the Chinese government's cyber activities and that of other countries, including the United States, are not valid. For example, it is the longstanding policy of the United States, most recently reaffirmed in 2014 in Presidential Policy Directive 28 (PPD-28), that “[t]he collection of foreign private commercial information or trade secrets is authorized only to protect the national security of the United States or its partners and allies. It is not an authorized foreign intelligence or counterintelligence purpose to collect such information to afford a competitive advantage to U.S. companies or U.S. business sectors commercially.”

China's cyber intrusions are unique from those of Western market economies because the intrusions occur within the framework of China's extensive state-driven economic development model, which has no parallel in Western market economies.

Not only does the United States not rely on extensive industrial policy tools to identify specific commercial sectors and commercial technologies for development, the United States does not have national champions and state-owned enterprises to implement such policies. In other words, U.S. companies “do not have the advantage of leveraging government intelligence data for commercial gain.”

Based on the foregoing factors, China's acts, policies, and practices of cyber intrusions into the computer networks of U.S. business and the theft of firms' sensitive commercial information are unreasonable.

3) China's Acts, Policies, and Practices Regarding Cybertheft of Intellectual Property Burden U.S. Commerce

China's cyber intrusion and cybertheft activities harm U.S. business interests in a variety of ways. It can be difficult to assess the full burden on U.S. commerce because of chronic under-reporting, as companies may be unaware that their networks have been compromised, or unaware of the extent of the damage done.

Chinese cybertheft of commercially sensitive information often takes place in industries that the Chinese government has prioritized for state-support, and the victims often operate in U.S. industries that are already suffering from the result of China's other policy tools. Moreover, U.S. companies often lack effective recourse under U.S. or Chinese law after they have been a victim of a Chinese cyber intrusion or cybertheft to recover the damages they incurred from such activity.

In addition, a company must incur significant remediation costs after a cyber intrusion. Even if the hackers are ultimately unable to monetize all the information they have stolen, the victim must expend significant resources to deal with the potential implications. Cyber intrusions and cyber-enabled theft can lead to service disruptions that interrupt a firm's sales or other operations. According to one study, it takes on average 191 days to identify that a data breach has occurred, and 66 days to contain it. Containing a data breach requires "forensic and investigative activities, assessment and audit services, crisis team management and communications to executive management and board of directors."

Even after a data breach is contained, companies bear significant additional burdens including legal and other regulatory costs. Reputational damage is also a burden that companies in many instances bear after experiencing cyber intrusion or cyber theft. After such breaches, experts observe that a company's valuation may decrease from a drop in stock prices after the company publicly reports that it has been hacked.

For all of the foregoing reasons, China's cyber activities targeting U.S. companies impose significant costs on U.S. companies and burden U.S. commerce.

E) China's "Other" Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation Which May Burden or Restrict U.S. Commerce

In this investigation, USTR also invited comments from interested parties on other acts, policies and practices of China relating to technology transfer, IP, and innovation that might be included in this investigation, and/or might be addressed through other applicable mechanisms. Stakeholders identified a number of issues, including: Chinese measures purportedly related to national security or cybersecurity; inadequate IP protection in China, including widespread trade secret theft, counterfeiting, and bad faith trademarking; China's Anti-Monopoly Law; China's Standardization Law; and China's talent acquisition strategy.

USTR acknowledges the importance of these issues and agrees with stakeholders that the matters warrant further investigation. A number of concerns of this nature have previously been raised in USTR's annual proceedings under Special 301 and the annual review of China's WTO accession compliance. A range of tools may be appropriate to address these serious matters

including more intensive bilateral engagement, WTO dispute settlement, and/or additional Section 301 investigations.