



2019

REPORT TO CONGRESS

of the

**U.S.-CHINA ECONOMIC AND
SECURITY REVIEW COMMISSION**

ONE HUNDRED SIXTEENTH CONGRESS
FIRST SESSION

NOVEMBER 2019

Printed for the use of the
U.S.-China Economic and Security Review Commission
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WASHINGTON : 2019



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The Commission was created on October 30, 2000 by the Floyd D. Spence National Defense Authorization Act of 2001, Pub. L. No. 106-398 (codified at 22 U.S.C. §7002), as amended by: The Treasury and General Government Appropriations Act, 2002, Pub. L. No. 107-67 (Nov. 12, 2001) (regarding employment status of staff and changing annual report due date from March to June); The Consolidated Appropriations Resolution, 2003, Pub. L. No. 108-7 (Feb. 20, 2003) (regarding Commission name change, terms of Commissioners, and responsibilities of the Commission); The Science, State, Justice, Commerce, and Related Agencies Appropriations Act, 2006, Pub. L. No. 109-108 (Nov. 22, 2005) (regarding responsibilities of the Commission and applicability of FACA); The Consolidated Appropriations Act, 2008, Pub. L. No. 110-161 (Dec. 26, 2007) (regarding submission of accounting reports; printing and binding; compensation for the executive director; changing annual report due date from June to December; and travel by members of the Commission and its staff); The Carl Levin and Howard P. “Buck” McKeon National Defense Authorization Act for Fiscal Year 2015, Pub. L. No. 113-291 (Dec. 19, 2014) (regarding responsibilities of the Commission). The Commission’s full charter and statutory mandate are available online at: <https://www.uscc.gov/about/uscc-charter>.

U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION

NOVEMBER 14, 2019

The Honorable Chuck Grassley
President Pro Tempore of the U.S. Senate, Washington, DC 20510
The Honorable Nancy Pelosi
Speaker of the U.S. House of Representatives, Washington, DC 20510

DEAR SENATOR GRASSLEY AND SPEAKER PELOSI:

On behalf of the U.S.-China Economic and Security Review Commission, we are pleased to transmit the Commission's 2019 Annual Report to Congress. This Report responds to our mandate "to monitor, investigate, and report to Congress on the national security implications of the bilateral trade and economic relationship between the United States and the People's Republic of China." The Commission reached a broad and bipartisan consensus on the contents of this Report, with all 12 members voting unanimously to approve and submit it to Congress.

In accordance with our mandate, this Report, which is current as of October 4, includes the results and recommendations of our hearings, research, travel, and review of the areas identified by Congress in our mandate, as defined in Public Law No. 106-398 (October 30, 2000), and amended by Public Laws No. 107-67 (November 12, 2001), No. 108-7 (February 20, 2003), 109-108 (November 22, 2005), No. 110-161 (December 26, 2007), and No. 113-291 (December 19, 2014). The Commission's charter, which includes the 11 directed research areas of our mandate, is included as Appendix I of the Report.

The Commission conducted eight public hearings, taking testimony from 77 expert witnesses from government, the private sector, academia, think tanks, research institutions, and other backgrounds. For each of these hearings, the Commission produced a transcript (posted on our website at <https://www.uscc.gov>). This year's hearings included:

- What Keeps Xi Up at Night: Beijing's Internal and External Challenges;
- Risks, Rewards, and Results: U.S. Companies in China and Chinese Companies in the United States;
- An Emerging China-Russia Axis? Implications for the United States in an Era of Strategic Competition;
- China in Space: A Strategic Competition?;
- Technology, Trade, and Military-Civil Fusion: China's Pursuit of Artificial Intelligence, New Materials, and New Energy;
- A "World-Class" Military: Assessing China's Global Military Ambitions;
- Exploring the Growing U.S. Reliance on China's Biotech and Pharmaceutical Products; and
- U.S.-China Relations in 2019: A Year in Review.

The Commission received a number of briefings by executive branch agencies and the Intelligence Community, including both unclassified and classified briefings on China's military modernization, the China-Russia relationship, U.S.-Hong Kong relations, China's ambitions in space, and U.S. strategy for responding to China's Belt and Road Initiative. The Commission is preparing a classified report to Congress on these and other topics. The Commission also received briefings by foreign diplomatic and military officials as well as U.S. and foreign nongovernmental experts.

Commissioners made official visits to Australia, Singapore, Hong Kong, and China to hear and discuss perspectives on China and its global and regional activities. In these visits, the Commission delegation met with U.S. diplomats, host government officials, business representatives, academics, journalists, and other experts.

The Commission also relied substantially on the work of our excellent professional staff and supported outside research (see Appendix IV) in accordance with our mandate (see Appendix I).

The Report includes 38 recommendations for congressional action. Our ten most important recommendations appear on page 24 at the conclusion of the Executive Summary.

We offer this Report to Congress in the hope that it will be useful for assessing progress and challenges in U.S.-China relations.

Thank you for the opportunity to serve. We look forward to continuing to work with Members of Congress in the upcoming year to address issues of concern in the U.S.-China relationship.

Yours truly,

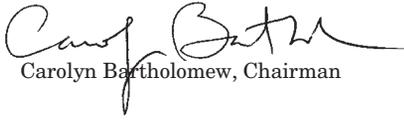


Carolyn Bartholomew
Chairman

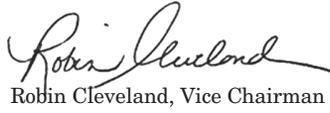


Robin Cleveland
Vice Chairman

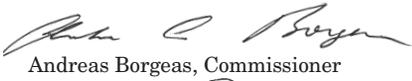
Commissioners Approving the 2019 Report



Carolyn Bartholomew, Chairman



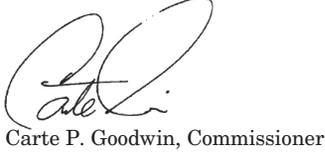
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Andreas Borgeas, Commissioner



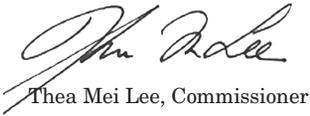
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Thea Mei Lee, Commissioner



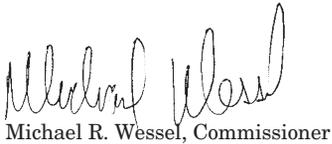
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Michael A. McDevitt, Commissioner



James M. Talent, Commissioner



Michael R. Wessel, Commissioner



Larry M. Wortzel, Commissioner

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EXECUTIVE SUMMARY

Chapter 1: 2019 in Review

Section 1: Year in Review: Economics and Trade

In 2019, the trade dispute between the United States and China entered its second year and remains mostly unresolved. The Chinese government's unwavering commitment to state management of its economy remains a major stumbling block. In response to decades of unfair economic practices, the United States wants the Chinese government to codify commitments to strengthen intellectual property protection, prohibit forced technology transfer, and remove industrial subsidies. But these practices are core features of China's economic system, and the Chinese government views U.S. demands as an attack on its national development. China continues to ignore the letter and the spirit of its World Trade Organization (WTO) commitments. The resulting impasse has led to multiple rounds of mutual tariff actions impacting more than \$500 billion in bilateral goods trade, and reducing trade between the two countries. In response to U.S. measures to address illegal activities of Chinese technology firms, China's government strengthened pursuit of technological self-reliance and its state-led approach to innovation, which uses licit and illicit means to achieve its goals. This will continue to pose a threat to U.S. economic competitiveness and national security.

Escalating trade tensions with the United States compounded China's domestic economic challenges, with the Chinese economy growing at its slowest pace in nearly 30 years in 2019. High debt levels constrain Beijing's ability to respond to the slowdown, and stimulus measures have so far been modest in comparison with past programs. The economic slowdown has disproportionately affected China's small and medium enterprises, which do not enjoy the same preferential treatment, access to credit, and government subsidies as state-owned or -supported enterprises. Meanwhile, regional banks have emerged as a key source of risk in China's financial system due to the high number of nonperforming loans on their balance sheets. China's government has also pursued limited market and financial system opening over the last year in an effort to attract foreign capital. These measures remain narrowly designed to address specific pressures facing China's economy and do not appear to herald a broader market liberalization of the kind that U.S. companies and policymakers have long advocated.

Key Findings

- On-and-off trade negotiations between the United States and China to resolve a years-long trade dispute have failed to produce a comprehensive agreement. The impasse in negotiations

underscores, in part, China's commitment to preserving the government's dominant role in determining economic outcomes.

- The United States is confronting China in response to decades of unfair Chinese economic policies and trade-distorting practices. The Chinese Communist Party (CCP) increasingly perceives U.S. actions as an attack on its vision for China's national development. China's government has intensified nationalist rhetoric criticizing the United States, applied pressure on U.S. companies, and targeted key U.S. export sectors with tariffs in response.
- U.S. measures to address illegal activities by Chinese technology companies are leading China's government to push harder on technological self-reliance. The reinvigoration of the state-driven approach to innovation will pose a sustained threat to U.S. global economic competitiveness and national security.
- A range of domestic factors and trade tensions with the United States have slowed China's economic growth. In response, China's government has deployed infrastructure spending, tax cuts, and targeted monetary stimulus. While the stimulus enabled a modest recovery during the first half of 2019, China's rate of growth continues to slow.
- China's government continues to falsify official economic statistics, obscuring the true extent of its current economic slowdown. Independent observers estimate that China's true growth rate is at least 0.5 percentage points—and possibly as much as 3 percentage points—lower than Beijing's published figures.
- Beijing's deleveraging campaign has succeeded in containing China's corporate debt growth, but local governments continue to borrow. Expanding household debt and a rapid increase in the value of nonperforming loans also pose significant risks to China's financial system and are a major challenge for Chinese policymakers.
- China's state sector is strengthening and private companies are struggling. The deleveraging campaign and related crackdown on shadow banking had the unintended effect of cutting off credit to the private sector, which traditionally relies on informal finance.
- China's government has taken limited market opening steps, including incremental liberalization of China's foreign investment regime and financial system. However, these measures have been pursued in terms favorable to the Chinese government as opposed to the market, underscoring that any changes in China's economic practices will continue to be controlled by the state.

Section 2: Year in Review: Security, Politics, and Foreign Affairs

In 2019, Beijing stepped up its efforts to promote itself as a global political and economic leader, offering the clearest evidence yet of its ambition to reshape the international order so it benefits Chinese interests and makes the world safe for the CCP. General Secretary of the CCP Xi Jinping continued to tout the CCP's model and "Chi-

nese wisdom” as solutions for the world’s problems and vowed to build a “community of common human destiny,” a CCP formulation for a China-led global governance regime. In the security realm, Beijing exhorted the People’s Liberation Army (PLA) to prepare itself for challenges in the years ahead while it continues its transformation into a “world-class” military able to conduct combat operations within and beyond the Indo-Pacific region. Meanwhile, as trade tensions between China and the United States deepened, General Secretary Xi declared that the CCP was now engaged in a “New Long March” and must prepare for a protracted, multidecade confrontation with Washington and its allies. At home, the CCP expanded its campaign of indoctrination and repression against Uyghurs, Tibetan Buddhists, Hui Muslims, Christians, and other religious groups and individuals the CCP considers to be politically unreliable.

Beijing also took new steps in 2019 to advance the aggressive approach to foreign and security policy it has taken in recent years. In the Indo-Pacific region, Beijing used displays of military force to intimidate its neighbors while applying informal economic sanctions against countries making decisions contrary to its interests. China also continued its efforts to influence or interfere with other countries’ political processes as well as global perceptions of its rise, including through United Front covert propaganda and co-optation activities, the targeting of U.S. and other foreign universities and media, arbitrary detentions of foreign citizens, and the export of censorship and surveillance technologies. Beijing also sought to shore up ties with key partners, such as North Korea and Iran, while growing its influence across the Western Hemisphere, Africa, and the Middle East.

The U.S.-China relationship deteriorated significantly over the past year as both sides blamed the other for issues such as the breakdown in trade negotiations and militarization of the South China Sea. Beijing’s views of the United States hardened as Chinese leaders took few meaningful steps to address issues of concern raised by Washington and Chinese state media intensified anti-U.S. propaganda. Meanwhile, the U.S. government increased its efforts to curb China’s influence and espionage activities in academic and commercial settings.

Key Findings

- In 2019, Beijing declared in unambiguous terms its intent to revise and reorder the international system in ways more befitting its national interests and repressive vision of governance. In a series of national addresses, Chinese leaders suggested the CCP viewed its “historic mission” as being not only to govern China, but also to profoundly influence global governance. The CCP took new steps to promote itself abroad as a model worthy of emulation, casting its political system and approach to economic development as superior alternatives to that of the United States and other democratic countries.
- Chinese leaders took a more strident tone in their discussion of military affairs, reinforcing a sense of urgency in the PLA’s preparations for a potential military conflict while indicating Beijing’s intent to position the PLA as a globally-oriented

military force. General Secretary Xi urged the PLA to make preparations for a possible conflict with the “powerful enemy adversary”—a phrase the CCP uses to refer to the United States—central to its modernization and training efforts.

- Despite signs of outward confidence, CCP leadership also revealed a growing unease over the mounting external resistance to its ambitions, which it viewed as threatening its objectives abroad and rule at home. In response to these challenges, the CCP deepened its control over the Chinese government and Chinese society and stepped up an ideological and nationalistic messaging campaign instructing key groups to “win the ideological war” against Western and other democratic countries.
- China continued its efforts to coerce or interfere in the domestic affairs of countries acting in ways contrary to its interests, detaining foreign citizens and carrying out an extensive influence campaign targeting foreign universities, media, and the Chinese diaspora. Beijing also expanded its global promotion of the Belt and Road Initiative (BRI), increasing military cooperation and exporting its censorship and surveillance technologies to countries under BRI auspices.
- In the Indo-Pacific region, China made new use of “gray zone” activities and military intimidation of its neighbors to secure its expansive sovereignty claims. Military tensions between China and Japan persisted in the East China Sea despite attempts by both countries to reset bilateral relations, while an annual poll of respondents in Southeast Asian countries found that fewer than one in ten saw China’s regional influence as benign.
- The U.S.-China relationship grew markedly more confrontational as tensions increased over political, economic, and security issues and polls reflected a significant drop in the U.S. public’s favorability toward China. Chinese leaders showed few signs of willingness to compromise on issues raised by Washington.

Chapter 2: Beijing’s Internal and External Challenges

The CCP faces a number of significant internal and external challenges as it seeks to ensure its hold on power while sustaining economic growth, maintaining control at home, and advancing its regional and increasingly global ambitions. Despite a lengthy campaign to clean up its ranks, the CCP has growing concerns over widespread corruption, weakened control and cohesion, and ideological decay. Chinese policymakers credit their state-led economic model for the country’s rapid growth, but the contradictions in China’s approach are increasingly apparent as it faces a struggling private sector, high debt levels, and a rapidly-aging population. China remains deeply dependent on foreign technology and vulnerable to supply chain disruption, but is pouring vast amounts of resources toward encouraging domestic innovation.

Externally, BRI has come under growing international skepticism over China’s opaque lending practices, accusations of corruption, and encroachment on host countries’ sovereignty. CCP leaders are also worried about the PLA’s lack of recent warfighting experience and

have long harbored concerns about the loyalty, capabilities, and responsiveness of their security forces. Furthermore, Beijing's military modernization efforts, coercion of its neighbors, and interference in other countries' internal affairs have generated global apprehension about its geopolitical ambitions.

China's leadership is acutely aware of these challenges and is making a concerted effort to overcome them. Ultimately, the extent to which Beijing can address these vulnerabilities affects its ability to contest U.S. leadership and carve out a place for its own model of global governance. In the economic realm, Beijing's commitment to its state-led economic model likely will prolong U.S.-China trade frictions and worsen China's domestic challenges. Chinese leaders' concerns over the PLA's readiness for war will continue to influence their willingness to initiate a conflict that could prompt the intervention of a modern, capable adversary such as the United States, at least in the near term. Finally, General Secretary Xi's consolidation of power has created a dangerous echo chamber for decision making, which could lead to domestic policy missteps and complicate U.S.-China relations during times of heightened tensions or crisis.

Key Findings

- The CCP is facing internal and external challenges as it attempts to maintain power at home and increase its influence abroad. China's leadership is acutely aware of these challenges and is making a concerted effort to overcome them.
- The CCP perceives Western values and democracy as weakening the ideological commitment to China's socialist system of Party cadres and the broader populace, which the Party views as a fundamental threat to its rule. General Secretary Xi has attempted to restore the CCP's belief in its founding values to further consolidate control over nearly all of China's government, economy, and society. His personal ascendancy within the CCP is in contrast to the previous consensus-based model established by his predecessors. Meanwhile, his signature anti-corruption campaign has contributed to bureaucratic confusion and paralysis while failing to resolve the endemic corruption plaguing China's governing system.
- China's current economic challenges include slowing economic growth, a struggling private sector, rising debt levels, and a rapidly-aging population. Beijing's deleveraging campaign has been a major drag on growth and disproportionately affects the private sector. Rather than attempt to energize China's economy through market reforms, the policy emphasis under General Secretary Xi has shifted markedly toward state control.
- Beijing views its dependence on foreign intellectual property as undermining its ambition to become a global power and a threat to its technological independence. China has accelerated its efforts to develop advanced technologies to move up the economic value chain and reduce its dependence on foreign technology, which it views as both a critical economic and security vulnerability.

- China's senior leaders are concerned over perceived shortfalls in the PLA's warfighting experience and capabilities and its failure to produce an officer corps that can plan and lead. These concerns undermine Chinese leaders' confidence in the PLA's ability to prevail against a highly-capable adversary. The CCP has also long harbored concerns over the loyalty and responsiveness of the PLA and internal security forces to Beijing and the potential for provincial officials to co-opt these forces to promote their own political ambitions.
- China's BRI faces growing skepticism due to concerns regarding corruption, opaque lending practices, and security threats. However, this criticism has not been followed by an outright rejection of BRI because significant infrastructure gaps persist globally and China has few competitors in infrastructure financing.
- Beijing's military modernization efforts, coercion of its neighbors, and interference in other countries' internal affairs have generated resistance to its geopolitical ambitions. Countries in the Indo-Pacific and outside the region are accelerating their military modernization programs, deepening cooperation, and increasing their military presence in the region in an attempt to deter Beijing from continuing its assertive behavior.

Chapter 3: U.S.-China Competition

Section 1: U.S.-China Commercial Relations

Chinese firms operate with far greater freedom in the United States than U.S. firms are permitted in China. The lack of reciprocity in market access, investment openness, regulatory treatment, and other areas have led to an environment where U.S. companies are disadvantaged in China's domestic market. Protected in their domestic market, Chinese companies are increasingly empowered to compete in third country markets. For this reason, many U.S. companies with operations in China, historically supportive of deepening engagement, have grown increasingly pessimistic about their ability to expand and participate in the Chinese market. The Chinese government's inbound foreign direct investment (FDI) regime has restricted foreign entry into some segments of the Chinese market, such as cloud computing and e-commerce. For high-priority sectors, China's government has made market entry conditional on transfer of technology and other concessions from U.S. and other foreign companies.

Much analysis has been done on Chinese FDI and capital raising in the United States, but little is known about Chinese companies' U.S. operations, governance, and impact on the broader U.S. economy. Chinese FDI in the United States peaked in 2016 and has subsequently fallen. By comparison, Chinese venture capital (VC) investment has not fallen as significantly. U.S. policymakers remain concerned about VC investment that might be directed by the Chinese government, as access to early-stage technologies could put U.S. national security and economic competitiveness at risk.

Beyond FDI, many Chinese companies raise capital on U.S. financial markets. Because Chinese companies frequently list in the United States using a variable interest entity, investments in U.S.-listed

Chinese companies are inherently risky, in part because the variable interest entity structure has been ruled unenforceable by China's legal system. The lack of disclosure by and oversight of U.S.-listed Chinese companies opens the door to adverse activities, such as insider trading, accounting fraud, and corporate governance concerns that could put U.S. investors, including pension funds, at risk.

Key Findings

- The nature of Chinese investment in the United States is changing. While Chinese FDI in the United States fell in 2018, VC investment in cutting-edge sectors has remained more stable. Broad trends in FDI from China mask VC investment. While lower than FDI, VC investment from Chinese entities could have more impact as it has prioritized potentially sensitive areas, including early-stage advanced technologies. This sustained Chinese investment raises concern for U.S. policymakers, as Beijing has accelerated its comprehensive effort to acquire a range of technologies to advance military and economic goals.
- U.S. laws, regulations, and practices afford Chinese companies certain advantages that U.S. companies do not enjoy. Chinese firms that raise capital on U.S. stock markets are subject to lower disclosure requirements than U.S. counterparts, raising risks for U.S. investors. The Chinese government continues to block the Public Company Accounting Oversight Board from inspecting auditors' work papers in China despite years of negotiations. As of September 2019, 172 Chinese firms were listed on major U.S. exchanges, with a total market capitalization of more than \$1 trillion.
- China's laws, regulations, and practices disadvantage U.S. companies relative to Chinese companies. China's foreign investment regime has restricted and conditioned U.S. companies' participation in the Chinese market to serve industrial policy aims. In addition, recent reports by the American and EU Chambers of Commerce in China suggest technology transfer requests have continued unabated. Technology transfer requests continue to compromise U.S. firms' operations.
- Chinese firms' U.S. operations may pose competitive challenges if they receive below-cost financing or subsidies from the Chinese state or if they can import inputs at less than fair value. There are serious gaps in the data that prevent a full assessment of the U.S.-China economic relationship. Analysis of Chinese companies' participation in the U.S. economy is constrained by the absence of empirical data on companies' operations, corporate governance, and legal compliance.

Section 2: Emerging Technologies and Military-Civil Fusion: Artificial Intelligence, New Materials, and New Energy

U.S. economic competitiveness and national security are under threat from the Chinese government's broad-based pursuit of leadership in artificial intelligence (AI), new materials, and new energy. Because these technologies underpin many other innovations, China's government has prioritized their development, aiming to en-

courage transfer of foreign technology and know-how, build national champions, and attain self-sufficiency. Beijing's enhanced program of military-civil fusion seeks to mobilize civilian technological advances in support of China's military modernization and spur broader economic growth and innovation by eliminating barriers between the commercial and defense sectors.

Chinese military planners view AI in particular as an advantage that could allow China to surpass U.S. military capabilities. In seeking to become the dominant manufacturer of new energy vehicles, Chinese firms have established control over substantial portions of the global lithium-ion battery supply chain. China's efforts to localize high-value industries that use new and advanced materials, particularly aerospace manufacturing, jeopardize critical U.S. exports and position China to develop and deploy commercial and military advances ahead of the United States.

Compared to past technological modernization efforts, China's current initiatives pose far greater challenges to U.S. interests. China's ability to capitalize on new technology has been enhanced by what it learned or stole from foreign firms. By creating complex and opaque ties between China's civilian institutions and its defense sector, military-civil fusion increases the risk that U.S. firms and universities may advance China's military capabilities while endangering future U.S. economic leadership.

China's industrial planners coordinate policy across China's economy to channel resources to targeted industries and spur demand for domestic products, harnessing the strengths of China's robust manufacturing base and a network of government-led investment funds, while disadvantaging foreign firms. Outside China's borders, the state is financing Chinese state-owned enterprises' acquisitions of leading foreign robotics, machine tooling, and other firms; promoting Chinese influence in international standards-setting bodies; and cultivating export markets for Chinese goods and services around the world.

Key Findings

- China's government has implemented a whole-of-society strategy to attain leadership in AI, new and advanced materials, and new energy technologies (e.g., energy storage and nuclear power). It is prioritizing these focus areas because they underpin advances in many other technologies and could lead to substantial scientific breakthroughs, economic disruption, enduring economic benefits, and rapid changes in military capabilities and tactics.
- The Chinese government's military-civil fusion policy aims to spur innovation and economic growth through an array of policies and other government-supported mechanisms, including venture capital funds, while leveraging the fruits of civilian innovation for China's defense sector. The breadth and opacity of military-civil fusion increase the chances civilian academic collaboration and business partnerships between the United States and China could aid China's military development.
- China's robust manufacturing base and government support for translating research breakthroughs into applications allow it

to commercialize new technologies more quickly than the United States and at a fraction of the cost. These advantages may enable China to outpace the United States in commercializing discoveries initially made in U.S. labs and funded by U.S. institutions for both mass market and military use.

- *Artificial intelligence:* Chinese firms and research institutes are advancing uses of AI that could undermine U.S. economic leadership and provide an asymmetrical advantage in warfare. Chinese military strategists see AI as a breakout technology that could enable China to rapidly modernize its military, surpassing overall U.S. capabilities and developing tactics that specifically target U.S. vulnerabilities.
- *New materials:* Chinese firms and universities are investing heavily in building up basic research capabilities and manufacturing capacity in new and advanced materials, including through acquisition of overseas firms, talent, and intellectual property. These efforts aim to close the technological gap with the United States and localize production of dual-use materials integral to high-value industries like aerospace. They could also enable China to surpass the United States in applying breakthrough discoveries to military hardware.
- *Energy storage:* China has quickly built up advanced production capacity in lithium-ion batteries and established control over a substantial portion of the global supply chain, exposing the United States to potential shortages in critical materials, battery components, and batteries. China's heavily subsidized expansion in lithium-ion batteries will likely lead to excess capacity and drive down global prices. If Chinese producers flood global markets with cheaper, technologically inferior batteries, it would jeopardize the economic viability of more innovative energy storage technologies currently under development in the United States.
- *Nuclear power:* China is positioning itself to become a leader in nuclear power through cultivating future nuclear export markets along the BRI, particularly in sub-Saharan Africa, and attracting advanced nuclear reactor designers to build prototypes in China.

Section 3: Growing U.S. Reliance on China's Biotech and Pharmaceutical Products

China is the largest producer of active pharmaceutical ingredients (APIs) in the world, and millions of U.S. consumers take life-saving drugs that contain ingredients made in China, even if the finished drugs themselves are not made in China. There are serious deficiencies in health and safety standards in China's pharmaceutical sector, and inconsistent and ineffective regulation by China's government. Nevertheless, U.S. imports of these health products—either directly from China or indirectly through companies in third countries—continue to increase. As the largest source of fentanyl, China also plays a key role in the ongoing U.S. opioid epidemic. Beijing's weak regulatory and enforcement regime allows chemical and pharmaceutical manufacturers to export dangerous controlled and uncontrolled substances.

U.S. consumers, including the U.S. military, are reliant on drugs or active ingredients sourced from China, which presents economic and national security risks, especially as China becomes more competitive in new and emerging therapies. The Chinese government is investing significant resources into the development of biotechnology products and genomics research, accumulating private and medical data on millions of U.S. persons in the process. The Chinese government also encourages mergers and acquisitions—as well as venture capital investments—in U.S. biotech and health firms, leading to technology transfer that has enabled the rapid development of China’s domestic industry. U.S. health and biotech firms in China, meanwhile, continue to face regulatory and other market barriers. While the Chinese government has taken steps in recent years to streamline regulatory procedures and allow foreign medical products to enter the market more quickly, concerns remain over China’s weak commitment to protecting intellectual property rights and willingness to favor domestic providers of health products.

Key Findings

- China is the world’s largest producer of APIs. The United States is heavily dependent on drugs that are either sourced from China or include APIs sourced from China. This is especially true for generic drugs, which comprise most prescriptions filled in the United States. Drug companies are not required to list the API country of origin on their product labels; therefore, U.S. consumers may be unknowingly accepting risks associated with drugs originating from China.
- The Chinese government has designated biotechnology as a priority industry as a part of its 13th Five-Year Plan and the Made in China 2025 initiative. The development of China’s pharmaceutical industry follows a pattern seen in some of its other industries, such as chemicals and telecommunications, where state support promotes domestic companies at the expense of foreign competitors.
- China’s pharmaceutical industry is not effectively regulated by the Chinese government. China’s regulatory apparatus is inadequately resourced to oversee thousands of Chinese drug manufacturers, even if Beijing made such oversight a greater priority. This has resulted in significant drug safety scandals.
- The U.S. Food and Drug Administration (FDA) struggles to guarantee the safety of drugs imported from China because of the small number of FDA inspectors in country, the large number of producers, the limited cooperation from Beijing, and the fraudulent tactics of many Chinese manufacturers. Because of U.S. dependency on China as a source of many critical drugs, banning certain imports due to contamination risks creating drug shortages in the United States.
- As a result of U.S. dependence on Chinese supply and the lack of effective health and safety regulation of Chinese producers, the American public, including its armed forces, are at risk of exposure to contaminated and dangerous medicines. Should Beijing opt to use U.S. dependence on China as an economic

weapon and cut supplies of critical drugs, it would have a serious effect on the health of U.S. consumers.

- Lack of data integrity in China presents challenges for U.S. and Chinese health regulators. In 2016, the China Food and Drug Administration investigated 1,622 drug clinical trial programs and canceled 80 percent of these drug applications after it found evidence of fraudulent data reporting and submissions of incomplete data, among other problems.
- China places great emphasis on genomic and other health-related data to enhance its biotech industry. Domestically, China established national and regional centers focused on big data in health and medicine. Investment and collaborations in the U.S. biotech sector give Chinese companies access to large volumes of U.S. medical and genomic data, but U.S. companies do not get reciprocal access.
- Foreign firms continue to face obstacles in China's health market. These obstacles include drug regulatory approval delays, drug pricing limitations, reimbursement controls, and intellectual property theft. U.S. companies must also compete with Chinese drug companies that introduce generic products or counterfeit drugs to the Chinese market shortly after a foreign patented drug is introduced.
- China is the largest source of fentanyl, a powerful synthetic opioid, in the United States. Although the Chinese government made multiple commitments to curtail the flow of illicit fentanyl to the United States, it has failed to carry out those commitments.

Chapter 4: China's Global Ambitions

Section 1: Beijing's "World-Class" Military Goal

In remarks before the CCP's 19th National Congress in October 2017, General Secretary Xi pledged to build the PLA into a "world-class" force by the middle of the 21st century. This milestone established a timeline for and helps define the goal of the CCP's sweeping ambition for growing China's military power—what General Secretary Xi declared shortly after assuming power in 2012 as China's "Strong Military Dream." This force would support the CCP's efforts to place China at the center of world affairs.

Beijing has instructed the PLA to remain primarily focused on a potential conflict with Taiwan, but has also directed the force to increase preparations for conflicts elsewhere around China's periphery, including with the United States, Japan, India, and other countries in the region. At the same time, it has given the PLA guidance to increase its operations beyond the Indo-Pacific region. One goal of this strategy is to defend China's overseas interests, which Beijing describes as being "crucial" and in recent years has elevated to a similar level of importance for the PLA as defending China's own territory. Another of Beijing's goals is to increase the difficulty the United States would face in intervening in a regional conflict.

Beijing's ambition to develop the PLA into a world-class force will create challenges for the United States and its allies and part-

ners. It would increase the confidence of Chinese leaders to employ the PLA to coerce China's neighbors into forfeiting their territorial claims and other sovereign interests. A military that is truly world-class in technology, training, and personnel would likely also allow China to prevail in a military conflict with any regional adversary. Moreover, Beijing could decide to initiate a military conflict even if it calculated the United States would intervene due to its confidence it would be able to effectively deter or defeat intervening U.S. military forces. Beyond armed conflict, a more robust overseas military presence will provide Beijing additional tools to support and influence countries around the world that pursue policies injurious to U.S. interests.

Key Findings

- In 2017, Beijing announced its goal to build the PLA into a world-class military, overcoming remaining shortfalls in the force's capabilities to establish China firmly among the ranks of the world's leading military powers. This objective is guided by CCP leaders' view that China is approaching the "world's center stage" and represents the military component of a multifaceted goal to establish China's leading global position in every important element of national power.
- Beijing views a world-class PLA as achieving parity in strength and prestige with the world's other leading militaries, especially with the U.S. armed forces, and being capable of preventing other countries from resisting China's pursuit of its national goals. Deterring outside intervention will be especially important in the Indo-Pacific region, where China aims to resolve territorial disputes with a number of important U.S. allies and partners—including through the use of military force if necessary—but will also extend to China's overseas interests.
- Once focused on territorial defense, China's military strategy has evolved in recent years to encompass a concept PLA strategists refer to as "forward defense," which would create greater strategic depth by extending China's defensive perimeter as far as possible from its own shores. China is developing key capabilities necessary for force projection centered on a sophisticated blue-water navy that Chinese naval leadership plans to use to combat the U.S. Navy in the far seas.
- To support this strategy, Beijing is expanding its military presence inside and beyond the Indo-Pacific, including by building a network of overseas "strategic strongpoints" consisting of military bases and commercial ports that can support military operations. China established its first permanent overseas military presence in Djibouti in 2017 and Argentina in 2018, and reportedly has reached an agreement for the PLA to operate from a naval base in Cambodia. The PLA is increasingly training and fielding capabilities for expeditionary operations, including by developing a third aircraft carrier and improving its amphibious assault capabilities.
- The PLA continues to prioritize the modernization of its maritime, air, information warfare, and long-range missile forces,

and is developing or has fielded cutting-edge capabilities in space, cyberspace, hypersonics, electronic warfare, and AI. Beijing is attempting to establish a leading position in the next global “revolution in military affairs” and is employing its “military-civil fusion” strategy to gain advantage in key emerging technologies. U.S. companies that partner with Chinese technology firms may be participants in this process.

- Notwithstanding its long-held policy of maintaining a “minimal nuclear deterrent,” Beijing is growing, modernizing, and diversifying its nuclear arsenal and delivery systems. China doubled the size of its nuclear arsenal over the last decade and U.S. officials estimate it will double it again in the next decade, while Beijing has increased the readiness and improved the accuracy of its nuclear forces.
- China continues to devote ample financial resources to its military modernization, with its officially-reported defense budget ranking second only to the United States since 2002. China’s overall defense spending has seen a nearly eight-fold increase over the past two decades, dwarfing the size and growth rate of other countries in the Indo-Pacific.

Section 2: An Uneasy Entente: China-Russia Relations in a New Era of Strategic Competition with the United States

China-Russia relations have strengthened considerably over the last decade in the face of what both countries perceive to be an increasingly threatening external environment. Beijing and Moscow believe the United States and the international liberal order pose a threat to their regime survival and national security. At the same time, they view the United States and other democracies as in decline and see an opportunity to expand their geopolitical influence at the expense of Washington and its allies. The two countries frame their relationship as the best it has ever been, but insist that it is not an alliance. However, China and Russia’s common expectation of diplomatic support in a dispute, shared antipathy to democratic values, opposition to the U.S. alliance system, and deepening diplomatic and military cooperation have already begun to challenge U.S. interests around the globe.

Nevertheless, Russia chafes at being a weaker partner in this relationship and fears becoming a mere “raw materials appendage” of China. Already scarred by historical enmity, the China-Russia relationship remains constrained by divergence over key national interests including differing stances on territorial disputes and partnerships with countries regarded as rivals by the other. Each country also harbors concerns over the potential military and geopolitical threat posed by the other. Finally, China’s growing influence in regions Russia perceives as its traditional sphere of influence—such as Central Asia and the Arctic—complicates the creation of a formal alliance.

Despite their differences, Moscow and Beijing work either independently or together to counter the United States and erode the values underpinning U.S. global leadership. China’s and Russia’s use of influence operations, cyberwarfare, and disinformation have the potential to destabilize the United States and democracies around the world. Moreover, coordinated Sino-Russian military activity has

created new security challenges for the United States and its allies. Russian sales of advanced military technology to China have bolstered PLA capabilities, while combined exercises have sought to improve interoperability. Coordinated military activity between both countries in a single theater or separate theaters could test the ability of the United States and its allies to respond. One country's success in pursuing its interests in opposition to the United States may also embolden the other to take similar actions.

Key Findings

- China and Russia both object to the current international order and the interests it promotes, including human rights, democracy, and a rules-based economic system that imposes on them obligations they wish to evade. Both countries see the values of that order as a threat to their authoritarian models and view the United States as the leader and primary defender, along with its alliance networks, of that order. Based on that common perception and their mutual interest in opposing the United States and its allies, an entente between China and Russia has emerged in recent years as the two have increased their diplomatic, military, and economic cooperation.
- China and Russia perceive threats to their regime security emanating from democracy movements—which they allege are “color revolutions” instigated by the United States—and from the free, open internet. Both countries seek to combat these challenges by interfering in democratic countries’ political processes and jointly championing the idea that the internet should be subject to sovereign states’ control. The two countries have also coordinated efforts to act as a counterweight to the United States by supporting rogue or authoritarian regimes and opposing U.S.-led votes in the UN Security Council. More broadly, China and Russia’s promotion of norms conducive to authoritarianism aims to subvert key elements of the international order.
- Beijing and Moscow’s view that the United States and its allies are in decline has emboldened both countries to take more assertive action in their regions in ways inimical to U.S. interests. These actions include military and paramilitary activities pursued separately by China and Russia that threaten the sovereignty of their neighbors as well as coordinated activity that creates new challenges for the United States and its allies in responding to combined Sino-Russian military operations.
- China and Russia’s trade in oil and gas is an important avenue by which both countries circumvent U.S. tariffs and international sanctions. Russia is China’s top source of imported oil, and is poised to become a major provider to China of natural gas over the next decade. Major energy deals and high-level contacts serve to soften the blow of sanctions and tariffs on both countries’ products, while signaling that China and Russia can rely on each other if alienated by the United States and other countries.
- Nonetheless, the China-Russia relationship remains scarred by historical enmity and constrained by Moscow’s concerns over its

increasingly subordinate role in the partnership. Divergence in key national interests, such as different stances on territorial disputes and support for regional rivals, further limits bilateral cooperation. Each country also harbors concerns over the potential military and geopolitical threat posed by the other. Moreover, China's growing influence in regions Russia perceives as its traditional sphere of influence—such as Central Asia and the Arctic—complicates the creation of a formal alliance.

Section 3: China's Ambitions in Space: Contesting the Final Frontier

China's government and military are determined to meet ambitious goals for space leadership, if not dominance, and China has connected its space program with its broader ambitions to become a terrestrial leader in political, economic, and military power. Beijing aims to establish a leading position in the future space-based economy and capture important sectors of the global commercial space industry, including promoting its space industry through partnerships under what it has termed the "Space Silk Road." Meanwhile, China has jumpstarted its domestic space industry by engaging in an extensive campaign of intellectual property theft, generous state support to commercial startups, and predatory pricing for Chinese space services in the global space market. Beijing has also used front companies to invest in U.S. space companies as part of its efforts to acquire U.S. technology by both licit and illicit means, while Chinese universities involved in developing space-related technology for the PLA have proactively pursued research collaboration with U.S. and other foreign universities.

China has aggressively pursued the development of counterspace weapons, which are inherently destabilizing. Chinese strategic writings on space warfare also appear to favor dangerously escalatory offensive tactics, raising concerns about whether it is possible to deter China from attacking U.S. space assets. China believes space is a "new commanding height in strategic competition" and views seizing dominance in space as a priority in a conflict. Beijing has also fought to promote its leadership role in international space governance institutions and indicated it may extend its vision of governance and sovereignty to outer space.

The United States retains many advantages in space, such as its international partnerships and its organizational and technical expertise, and China is in some ways attempting to follow in the footsteps of past U.S. achievements. Still, China's single-minded focus and national-level commitment to establishing itself as a global space leader harms other U.S. interests and threatens to undermine many of the advantages the United States has worked so long to establish. China is well-positioned to assume a commanding role in a future space-based economy, as its steps to dominate the global commercial launch and satellite sectors through generous subsidies and other advantages have already threatened to hollow out the U.S. space industrial base. Should the China Space Station proceed as planned and the International Space Station be retired, China may also replace the United States as many countries' default partner in human spaceflight.

Key Findings

- China's goal to establish a leading position in the economic and military use of outer space, or what Beijing calls its "space dream," is a core component of its aim to realize the "great rejuvenation of the Chinese nation." In pursuit of this goal, China has dedicated high-level attention and ample funding to catch up to and eventually surpass other spacefaring countries in terms of space-related industry, technology, diplomacy, and military power. If plans hold to launch its first long-term space station module in 2020, it will have matched the United States' nearly 40-year progression from first human spaceflight to first space station module in less than 20 years.
- China views space as critical to its future security and economic interests due to its vast strategic and economic potential. Moreover, Beijing has specific plans not merely to explore space, but to industrially dominate the space within the moon's orbit of Earth. China has invested significant resources in exploring the national security and economic value of this area, including its potential for space-based manufacturing, resource extraction, and power generation, although experts differ on the feasibility of some of these activities.
- Beijing uses its space program to advance its terrestrial geopolitical objectives, including cultivating customers for BRI, while also using diplomatic ties to advance its goals in space, such as by establishing an expanding network of overseas space ground stations. China's promotion of launch services, satellites, and the Beidou global navigation system under its Space Silk Road is deepening participants' reliance on China for space-based services.
- China is taking steps to establish a commanding position in the commercial launch and satellite sectors relying in part on aggressive state-backed financing that foreign market-driven companies cannot match. China has already succeeded in undercutting some U.S. and other foreign launch and satellite providers in the international market, threatening to hollow out these countries' space industrial bases.
- The emergence of China's indigenous space sector has been an early and notable success of Beijing's military-civil fusion strategy. The aggressive pursuit of foreign technology and talent gained through joint research and other means, especially from the United States and its allies and partners, continues to be central to this strategy and to China's space development goals in general.
- The Chinese government and military use Hong Kong-based companies to exploit legal loopholes and uneven enforcement in U.S. export controls to gain access to space capabilities which U.S. law prohibits Beijing from purchasing outright. Collaboration with foreign universities, including in the United States, is another important avenue in China's drive to acquire space technology. Chinese students enrolled in foreign science, technology, engineering, and mathematics programs are treated like

employees of China's defense industrial base, with defense enterprises regularly funding their studies in return for service commitments following graduation.

- China views space as a critical U.S. military and economic vulnerability, and has fielded an array of direct-ascent, cyber, electromagnetic, and co-orbital counterspace weapons capable of targeting nearly every class of U.S. space asset. The PLA has also developed doctrinal concepts for the use of these weapons encouraging escalatory attacks against an adversary's space systems early in a conflict, threatening to destabilize the space domain. It may be difficult for the United States to deter Beijing from using these weapons due to China's belief the United States has a greater vulnerability in space.

Section 4: Changing Regional Dynamics: Oceania and Singapore

China aims to replace the United States as a leading security and economic power in the Indo-Pacific region. While most countries in the region are aware of the risks posed by Beijing's increased assertiveness, they have struggled to effectively respond, due in part to a desire to continue benefiting from economic engagement with China.

Australia, a steadfast U.S. ally, maintains economic ties with China even as concern over Beijing's interference in its domestic politics has increased. As Australia's top trading partner, China wields significant economic leverage over Australia, which it has used during diplomatic disputes. Canberra has passed laws to address foreign political interference and economic espionage and is trying to address China's interference in Australian universities, but progress has been mixed. It has also taken measures to prevent Chinese investment in Australia's infrastructure that could harm Australia's national interest, while launching its largest military modernization effort since the Cold War to respond to China's growing military threat.

In recent years, Beijing has increased outreach to the Pacific Islands due to the region's strategic significance and voting power in the UN. Beijing's efforts have won it political support, including establishing diplomatic relations this year with the Solomon Islands and Kiribati, previously two of Taiwan's remaining diplomatic partners. Nevertheless, some South Pacific policymakers have grown concerned Chinese engagement could overwhelm these small countries and result in an excessive accumulation of debt to Beijing. China has also sought to raise its military profile in the Pacific Islands, while Australia and the United States have increased their engagement in the region in response to China's advances.

Singapore has pursued close relationships with both the United States and China while attempting to protect its autonomy in foreign affairs rather than side exclusively with either country. It remains dedicated to its relationship with the United States, as exemplified by its robust economic and security ties. At the same time, Beijing seeks a closer economic and military relationship with Singapore. Rhetorical commitment to greater security ties with China, as well as its role as a financial hub for China's BRI, demonstrates the challenges Singapore faces in hedging between the United States and China.

Beijing has benefited from popular conceptions that China is the most important economic partner to these Indo-Pacific countries, even as U.S. investment exceeds that from China. While Indo-Pacific countries understand the importance of the United States' continued presence, China's increasing influence threatens to alter the trajectory of U.S. relations with these countries absent strong U.S. involvement in the region.

Key Findings

- Beijing has used economic coercion, acquired strategically-significant assets, and interfered in the domestic politics of neighboring countries to advance its interests in the Indo-Pacific region. China seeks closer engagement with its neighbors not only for economic gain but also to gain influence over their decision making to eventually achieve regional dominance and replace the United States as a vital economic partner and preeminent regional security guarantor.
- Some targeted countries are becoming increasingly aware of these risks and are taking steps to respond to China's political interference and growing military strength. Still, countries have struggled to formulate comprehensive and effective responses.
- Australia wants to maintain positive economic ties with China, but is also wary of Beijing's increasing regional assertiveness and outright interference in Australia's political affairs. Its steps to mitigate the risks of engagement with China, including tightening foreign investment restrictions and cracking down on political interference, have had mixed success. The Australian business community still favors greater economic engagement with China while downplaying national security concerns.
- To address the growing military threat posed by China, Australia has launched its largest military modernization effort since the Cold War. Central to this effort are large-scale investments in new warships, submarines, and fighter aircraft. Australia is also standing up a new military unit dedicated to improving military coordination with Pacific Island countries and is working with the United States and Papua New Guinea to develop a naval base in the latter's territory, which will complement the already substantial U.S. military presence in Australia.
- China seeks engagement with the Pacific Islands to establish military access to the region, gain the benefit of these countries' voting power in the UN, undermine regional diplomatic support for Taiwan, and gain access to natural resources, among other goals. Pacific Island countries view China as a vital economic partner and source of infrastructure investment and aid, but some Pacific Island officials have expressed reservations about Beijing's increasing influence and presence in the region, particularly over growing indebtedness to China. As a result of China's growing inroads in the Pacific Islands, Australia has also increased its engagement in the region, though its efforts have also encountered some pushback.

- As a small country and regional economic hub, Singapore continues to work to maintain the balance between its relationships with the United States and China amid heightening U.S.-China tensions. Singapore is also concerned about China's attempts to undermine ASEAN's unity and its own ability to play a leading role in Southeast Asia. While Singapore remains a dedicated security partner of the United States, it also has close economic ties to China, including serving as an increasingly important financial and legal intermediary for BRI projects.

Chapter 5: Taiwan

The Taiwan Relations Act, which set the foundation for ties between the United States and Taiwan following the United States' severing of diplomatic ties with the Republic of China (Taiwan), celebrated its 40th anniversary in 2019. In the 40 years since the Taiwan Relations Act's signing, Taiwan has become a thriving multiparty democracy. Taiwan has a robust civil society and rule of law that protects universal human rights, open public discourse, and a free and independent media. The vibrancy of Taiwan's democratic system is on display in the ongoing campaigns for the 2020 presidential and legislative elections. In addition to being a model of a successful democracy for the Indo-Pacific region, Taiwan has become an increasingly important economic and geostrategic partner for the United States.

Meanwhile, throughout 2019 Beijing adopted a more coercive policy toward Taiwan, seeking to isolate and intimidate Taipei into unification on Beijing's terms. In January 2019, General Secretary Xi delivered a major speech on Beijing's Taiwan policy in which he claimed that Taiwan's unification with the People's Republic of China was inevitable and indicated that the "one country, two systems" model was the only acceptable arrangement for unification. That model has been roundly rejected by the Taiwan public and multiple Taiwan presidential administrations.

In implementing its more coercive approach, Beijing sharply escalated its military, diplomatic, and economic pressure against Taiwan, including interfering in Taiwan's media to shape public opinion on China and cross-Strait relations. In the Taiwan Strait area, the PLA carried out a series of provocative operations not seen in 20 years, while Beijing enticed two more of Taiwan's remaining 17 diplomatic partners to switch recognition to Beijing. It also severely curtailed cross-Strait tourism flows by suspending all approvals for individual tourists to visit Taiwan. Beijing's multipronged pressure campaign limits Taipei's ability to fully engage with the international community and diversify its economy away from deep reliance on China.

The people of Taiwan are now observing Beijing's unification model unfold in Hong Kong, where millions of people are fighting for their civil liberties against an unbending authoritarian regime. Should Beijing succeed in coercing Taiwan into submitting to a similar unification agreement, it not only would damage U.S. national security interests but also could undermine the progress of democratic values and institutions in the region.

Key Findings

- In 2019, General Secretary Xi made clear his increasingly uncompromising stance toward Taiwan's independent status and sense of urgency regarding unification. Beijing intensified its multipronged campaign to coerce and isolate Taiwan, including by supporting Taiwan politicians Beijing finds palatable, while opposing and seeking to discredit those it does not, particularly Taiwan's elected government headed by President Tsai Ing-wen. Guided by this policy, Beijing redoubled its efforts to bypass Taiwan's central government by conducting negotiations with unelected political parties, groups, and individuals.
- The deliberate crossing of the Taiwan Strait median line by Chinese fighter aircraft in March 2019 was the first such crossing in 20 years and marked a sharp escalation in the military pressure Beijing has increasingly applied against Taipei since General Secretary Xi assumed power in 2012. China signaled that its intensifying campaign of military coercion had become official policy in a key policy document released in July 2019, while the continued growth of the PLA's capabilities and budget threatened to overturn any remaining semblance of cross-Strait military balance.
- As Beijing escalated diplomatic, economic, cultural, and political warfare against Taiwan, evidence emerged that it sought to influence Taiwan's November 2018 local elections, including through traditional Taiwan media and disinformation spread through social media to exacerbate social divisions and undermine public confidence in the ruling Democratic Progressive Party government. Allegations that Beijing intervened on behalf of Taiwan presidential challenger Han Kuo-yu of the Nationalist Party (Kuomintang, or KMT) in his 2018 Kaohsiung mayoral campaign raised questions over whether it may be doing so again in the lead-up to Taiwan's presidential election in January 2020.
- The CCP adopted new tactics to leverage Taiwan media in support of its political goals, with evidence building that Beijing has shaped coverage of cross-Strait relations and potentially Taiwan's presidential election through direct partnerships with some major Taiwan media outlets. These partnerships have included China's Taiwan Affairs Office commissioning stories and giving instructions to editorial managers.
- Concerns in Taiwan over Beijing's desired "one country, two systems" unification model for Taiwan were amplified by 2019's massive protest movement in Hong Kong, which is governed by the same model and has seen the autonomy the model promises steadily erode. Presidential contenders from both major political parties in Taiwan assailed the "one country, two systems" model as unacceptable for any future sovereign agreement between the two sides.
- Taiwan took a series of steps to enhance its military capabilities and implement its new Overall Defense Concept. These measures included the island's largest increase in its defense budget

in more than a decade, breaking ground on the facility that will build Taiwan's indigenous submarines, allocating funding for the procurement of 60 new small fast-attack missile boats, and expediting production of new missile defense systems and mobile land-based antiship missile platforms.

- U.S.-Taiwan cooperation expanded into new areas as the United States took significant steps to support Taiwan, including the Trump Administration's approval of a landmark arms sale of new fighter aircraft to Taiwan, the first meeting between U.S. and Taiwan national security advisors since 1979, and a more assertive approach to U.S. Navy transits of the Taiwan Strait. However, talks under the Trade and Investment Framework Agreement have stalled since October 2016.

Chapter 6: Hong Kong

In 2019, the Hong Kong government's controversial bill that would allow for extradition to mainland China sparked a historic protest movement opposing the legislation and the Mainland's growing encroachment on the territory's autonomy. Millions of Hong Kong citizens participated in unprecedented mass demonstrations against the bill, causing its formal withdrawal, paralyzing the Hong Kong government, and dealing a major blow to Beijing. In the face of the Hong Kong authorities' intransigence and growing police violence against demonstrators, the movement's demands expanded while protesters strengthened their resolve to achieve Beijing's long-delayed promise of credible democratic elections. The protesters declared that democratic elections are essential to a truly representative government.

Instead of heeding the movement's calls for the preservation of Hong Kong's "high degree of autonomy," the CCP has used numerous tools to try to quell the demonstrations, including economic coercion, disinformation, and the apparent encouragement of pro-Beijing thugs to attack protesters. Meanwhile, the Hong Kong government, backed by Beijing, took new steps to erode the territory's freedom of expression, press freedom, rule of law, and freedom of assembly, making the territory more like any other Chinese city. These moves are having a harmful effect on Hong Kong's attractiveness as one of the world's preeminent trade and financial hubs. Hong Kong acts as a unique conduit for investment flows between mainland China and global financial markets, a role underpinned by international confidence in the strength of its institutions and the rule of law.

U.S. policy toward Hong Kong, as outlined in the U.S.-Hong Kong Policy Act of 1992, underscores U.S. support for Hong Kong's human rights and democratization, and is predicated on the territory retaining its autonomy under the "one country, two systems" framework. Beijing's growing encroachment on Hong Kong's autonomy in violation of its legal commitments has thus raised serious concerns for U.S. policymakers. The future direction of Hong Kong—and with it U.S.-Hong Kong policy—will rest upon the outcome of the anti-extradition bill protest movement and the extent to which the Hong Kong government and Beijing respect the aspirations of Hong Kong citizens.

Key Findings

- The Hong Kong government's proposal of a bill that would allow for extraditions to mainland China sparked the territory's worst political crisis since its 1997 handover to the Mainland from the United Kingdom. China's encroachment on Hong Kong's autonomy and its suppression of prodemocracy voices in recent years have fueled opposition, with many protesters now seeing the current demonstrations as Hong Kong's last stand to preserve its freedoms. Protesters voiced five demands: (1) formal withdrawal of the bill; (2) establishing an independent inquiry into police brutality; (3) removing the designation of the protests as "riots;" (4) releasing all those arrested during the movement; and (5) instituting universal suffrage.
- After unprecedented protests against the extradition bill, Hong Kong Chief Executive Carrie Lam suspended the measure in June 2019, dealing a blow to Beijing which had backed the legislation and crippling her political agenda. Her promise in September to formally withdraw the bill came after months of protests and escalation by the Hong Kong police seeking to quell demonstrations. The Hong Kong police used increasingly aggressive tactics against protesters, resulting in calls for an independent inquiry into police abuses.
- Despite millions of demonstrators—spanning ages, religions, and professions—taking to the streets in largely peaceful protest, the Lam Administration continues to align itself with Beijing and only conceded to one of the five protester demands. In an attempt to conflate the bolder actions of a few with the largely peaceful protests, Chinese officials have compared the movement to "terrorism" and a "color revolution," and have implicitly threatened to deploy its security forces from outside Hong Kong to suppress the demonstrations.
- In 2019, assessment of press freedom fell to its lowest point since the handover, while other civil liberties protected by the Basic Law (Hong Kong's mini constitution), including freedom of expression and assembly, faced increasing challenges.
- Throughout 2019, the CCP stepped up its efforts to intervene in Hong Kong's affairs, using an array of tools to increase its influence in the territory, most clearly by co-opting local media, political parties, and prominent individuals. Beijing also used overt and covert means to intervene in Hong Kong's affairs, such as conducting a disinformation campaign and using economic coercion in an attempt to discredit and intimidate the protest movement. These efforts included alleging without evidence that U.S. and other foreign "black hands" were fomenting the protests; directing and organizing pro-Beijing legislators, businesses, media, and other influential individuals against the movement; allegedly encouraging local gangs and mainland community groups to physically attack protesters and prodemocracy figures; and conducting apparent cyberattacks against Hong Kong protesters' communications and a prodemocracy media outlet.

- Hong Kong has a unique role as a conduit between Chinese companies and global financial markets. As Chinese companies are increasingly represented in key benchmark indices, analysts anticipate greater capital flows from the United States and other countries into Chinese companies through the stock and bond Connect platforms between mainland exchanges and Hong Kong. However, due to diminished confidence resulting from the extradition bill proposal and subsequent fallout, some foreign businesses are reportedly considering moving their operations away from Hong Kong.
- Hong Kong's status as a separate customs territory, distinct from mainland China, is under pressure. U.S. and Hong Kong officials cooperate on enforcing U.S. export controls of dual-use technologies, though U.S. officials continue to raise concerns about diversion of controlled items. Beijing's more assertive imposition of sovereign control over Hong Kong undermines the "high degree of autonomy" that underwrites trust in the Hong Kong government's ability to restrict sensitive U.S. technologies from being diverted to mainland China.

THE COMMISSION'S KEY RECOMMENDATIONS

The Commission considers 10 of its 38 recommendations to Congress to be of particular significance. The complete list of recommendations appears at the Report's conclusion on page 537.

The Commission recommends:

1. Congress enact legislation to preclude Chinese companies from issuing securities on U.S. stock exchanges if:
 - The Public Company Accounting Oversight Board is denied timely access to the audit work papers relating to the company's operations in China;
 - The company disclosure procedures are not consistent with best practices on U.S. and European exchanges;
 - The company utilizes a variable interest entity (VIE) structure;
 - The company does not comply with *Regulation Fair Disclosure*, which requires material information to be released to all investors at the same time.
2. Congress enact legislation stating that all provisions and the special status of Hong Kong included in the U.S.-Hong Kong Policy Act of 1992 will be suspended in the event that China's government deploys People's Liberation Army or People's Armed Police forces to engage in armed intervention in Hong Kong.
3. Congress enact legislation requiring the following information to be disclosed in all issuer initial public offering prospectuses and annual reports as material information to U.S. investors:
 - Financial support provided by the Chinese government, including: direct subsidies, grants, loans, below-market loans, loan guarantees, tax concessions, government procurement policies, and other forms of government support.
 - Conditions under which that support is provided, including but not limited to: export performance, input purchases manufactured locally from specific producers or using local intellectual property, or the assignment of Chinese Communist Party (CCP) or government personnel in corporate positions.
 - CCP committees established within any company, including: the establishment of a company Party committee, the standing of that Party committee within the company, which corporate personnel form that committee, and what role those personnel play.
 - Current company officers and directors of Chinese companies and U.S. subsidiaries or joint ventures in China who currently hold or have formerly held positions as CCP officials and/or Chinese government officials (central and local), including the position and location.
4. Congress hold hearings assessing the productive capacity of the U.S. pharmaceutical industry, U.S. dependence on Chinese pharmaceuticals and active pharmaceutical ingredients (APIs), and the ability of the U.S. Food and Drug Administration (FDA) to

guarantee the safety of such imports from China, with a view toward enacting legislation that would:

- Require the FDA to compile a list of all brand name and generic drugs and corresponding APIs that: (1) are not produced in the United States; (2) are deemed critical to the health and safety of U.S. consumers; and (3) are exclusively produced—or utilize APIs and ingredients produced—in China.
 - Require Medicare, Medicaid, the U.S. Department of Veterans Affairs, the U.S. Department of Defense, and other federally funded health systems to purchase their pharmaceuticals only from U.S. production facilities or from facilities that have been certified by the FDA to be in compliance with U.S. health and safety standards and that actively monitor, test, and assure the quality of the APIs and other components used in their drugs, unless the FDA finds the specific drug is unavailable in sufficient quantities from other sources.
 - Require the FDA, within six months, to investigate and certify to Congress whether the Chinese pharmaceutical industry is being regulated for safety, either by Chinese authorities or the FDA, to substantially the same degree as U.S. drug manufacturers and, if the FDA cannot so certify, forward to Congress a plan for protecting the American people from unsafe or contaminated drugs manufactured in China.
5. Congress require the relevant departments and agencies of jurisdiction—including the U.S. Department of the Treasury, the U.S. Department of Commerce, and the U.S. Securities and Exchange Commission—to prepare a report to Congress on the holdings of U.S. investors in Chinese bonds and other debt instruments. Such a report shall include information on the direct, indirect, and derivative ownership of any of these instruments.
 6. Congress direct the National Space Council to develop a strategy to ensure the United States remains the preeminent space power in the face of growing competition from China and Russia, including the production of an unclassified report with a classified annex containing the following:
 - A long-term economic space resource policy strategy, including an assessment of the viability of extraction of space-based precious minerals, onsite exploitation of space-based natural resources, and space-based solar power. It would also include a comparative assessment of China’s programs related to these issues.
 - An assessment of U.S. strategic interests in or relating to cis-lunar space.
 - An assessment of the U.S. Department of Defense’s current ability to guarantee the protection of commercial communications and navigation in space from China’s growing counter-space capabilities, and any actions required to improve this capability.

- A plan to create a space commodities exchange to ensure the United States drives the creation of international standards for interoperable commercial space capabilities.
 - A plan to streamline and strengthen U.S. cooperation with allies and partners in space.
 - An interagency strategy to defend U.S. supply chains and manufacturing capacity critical to competitiveness in space.
7. Congress direct the U.S. Department of Justice to reestablish a higher education advisory board under the Federal Bureau of Investigation. In concert with the U.S. Department of Commerce's Bureau of Industry and Security, U.S. Department of Homeland Security, and U.S. Department of State, the higher education advisory board would convene semiannual meetings between university representatives and relevant federal agencies to review the adequacy of protections for sensitive technologies and research, identify patterns and early warning signs in academic espionage, assess training needs for university faculty and staff to comply with export controls and prevent unauthorized transfer of information, and share other areas of concern in protecting national security interests related to academic research.
 8. Congress direct the U.S. secretary of state to submit to Congress a report on actions that have been and will be taken by the United States to counter Beijing's attempts to isolate Taiwan's democratically-elected leaders and to strengthen support for Taiwan's engagement with the international community, including actions the Administration will take should Beijing increase its coercion against Taiwan. The report should:
 - List measures the U.S. government has taken and will take to expand interactions between U.S. and Taiwan government officials in accordance with the Taiwan Travel Act.
 - Formulate a strategy to expand development aid and security assistance to countries that maintain diplomatic ties with Taiwan.
 - Detail steps to expand multilateral collaboration involving Taiwan and other democracies to address global challenges, such as the Global Cooperation and Training Framework's workshops on epidemics, cybersecurity, and media literacy.
 9. Congress direct the Office of the Director for National Intelligence to prepare a National Intelligence Estimate of China's and Russia's approaches to competition with the United States and revision of the international order. The assessment would consider the influence of both countries' ideologies on their foreign policies, including areas both of overlap and of divergence; potential "wedge issues" the United States might exploit; and the implications for the North Atlantic Treaty Organization of a two-front conflict involving both China and Russia.
 10. Congress amend the U.S.-Hong Kong Policy Act of 1992 to direct the U.S. Department of State to develop a series of specific benchmarks for measuring Hong Kong's maintenance of a "high

degree of autonomy” from Beijing. Such benchmarks should employ both qualitative and quantitative measurements to evaluate the state of Hong Kong’s autonomy in the State Department’s annual *Hong Kong Policy Act Report*.

INTRODUCTION

Three significant anniversaries occurred in 2019. Seventy years ago, on October 1, 1949, Mao Zedong declared the founding of the People's Republic of China and, as Chairman of the Chinese Communist Party (CCP), was anointed the country's paramount leader. Forty years ago, on January 1, 1979, the United States and the People's Republic of China established diplomatic relations. And thirty years ago, on June 4, 1989, the leadership of the CCP, having declared martial law, sent troops to violently extinguish a peaceful protest, resulting in the Tiananmen Square massacre.

The relationship between the United States and China has seen its ups and downs over the years. This year, 2019, has been one of the most tumultuous. Early in the year, many had hopes that negotiators would successfully conclude a trade deal that would address longstanding concerns about China's unfair trade practices and industrial policy, and set the trajectory of bilateral relations for years to come. Instead, the year was dominated by a breakdown in talks, followed by escalations and setbacks. The year looks set to conclude with the clash over China's trade-distorting practices mostly unresolved and the broader political, technological, and security differences between the two sides solidifying into prolonged strategic competition.

The U.S.-China trade tensions have come at a bad time for Beijing. General Secretary of the CCP Xi Jinping and other senior CCP leaders face multiple internal and external challenges. On the economic front, Beijing is struggling to deliver economic growth—a key pillar of its legitimacy. In 2019, China's officially reported gross domestic product growth fell to its lowest rate in nearly 30 years. Although the government claims growth at over 6 percent, some experts believe the real growth stood around 4.5 percent. Much of this slowdown can be attributed to structural weaknesses in China's economy, including a growing debt burden, wasteful investment, demographic changes, and the government-supported resurgence of inefficient state-owned enterprises. Any one of these challenges would be sufficient to rattle an economy. Taken together, they could undermine Beijing's long-term economic, political, and military goals. Chinese leaders' attempts to tackle domestic economic problems do not address the underlying structural problems of the centrally-controlled, government-managed economy. Needed economic reform has not happened.

China faces rising debt, which includes corporate debt (held both by state-owned and small- and medium-sized enterprises), local government debt (much of which was accumulated off books and cannot be accounted fully), and household debt. Concerned that debt was reaching unstable levels, China's government cut off companies' access to informal financing. This had the effect of starving small- and

medium-sized enterprises of credit, compounding China's growth slowdown, and adding to rising unemployment. Meanwhile, state-owned enterprises, protected and nurtured by the government, continue to receive unimpeded financing access. Once again, the state is ascendant, while the private sector retreats.

Beijing's concerns are not limited to the economic domain. In the Commission's first hearing for 2019, we looked specifically at "Beijing's Internal and External Challenges," where expert witnesses attested to the CCP's growing unease over perceptions of its weakening political authority and legitimacy at home, China's geopolitical setbacks abroad, and military shortfalls.

The top priority of the CCP is ensuring its own survival. To do so, it strives for total control over the economy and society. This emphasis on CCP dominance comes at the expense of the welfare of China's citizens. The government has either blocked efforts to improve safety standards and regulation or failed to fund and invest in systems and procedures to protect the health and wellbeing of its citizens. Last year, a Chinese-made blood pressure medication was contaminated with a cancer-causing chemical, triggering recalls in the United States and around the world. This year, amid the ongoing African swine fever outbreak, nearly one-third of China's pig population had to be culled, leading average prices for pork—a staple food—to jump nearly 50 percent. In both instances, the government ignored effective safety and surveillance practices, procedures, and regulation. It is noteworthy that these nationwide risks to the health and safety of Chinese citizens occur at the same time the CCP is investing substantial resources to build a comprehensive security surveillance state designed to silence any dissent. The CCP has built prison camps to control Uyghur and other Muslim minorities and rolled out a vast national surveillance system to track all its citizens instead of addressing their urgent needs related to poverty reduction, employment, and environmental safeguards.

The CCP's approach to legitimate domestic concerns is matched by its efforts to rally support for its position in trade negotiations. This year, China's government stepped up an ideological and nationalistic messaging campaign to unite the domestic population against perceived opponents abroad. Beijing has adopted new measures to increase its ideological influence over government bodies, media, educational institutions, state-owned enterprises, and private businesses—both domestic and foreign. The CCP's efforts to stamp out opposition to its authority mask deep-seated fears over the appeal of democratic values and a weakening of commitment to China's socialist system by Party cadres and the broader populace.

As it clamps down at home, the CCP has advanced a more aggressive approach to its relationships abroad. Central to these efforts is Beijing's unambiguous declaration of its intent to revise and reorder the international system in ways more befitting its interests and repressive vision of governance. The CCP has taken new steps to promote itself globally as a model worthy of emulation, attempting to cast its political system and approach to economic development as superior alternatives to that of the United States and other democratic countries. As part of this approach, Beijing has increased pressure on foreign countries, companies, and even individuals to

conform to its worldview. Meanwhile, it has used state-directed influence organizations overseas, including Chinese student groups, as tools to silence dissenting views.

This year, Beijing reiterated its call to build the People's Liberation Army (PLA) into a "world-class" military, issuing a new defense white paper that clearly marked China's intent to position the PLA as a globally-oriented and activist military force. Chinese leaders also reinforced a sense of urgency in the PLA's preparations for a potential military conflict, focusing the force on improving its combat readiness and urging it not to fear "the powerful enemy adversary"—referring to the United States. Meanwhile, China used the PLA and paramilitary forces to coerce its neighbors in the Indo-Pacific region while warning of its readiness to take military action to defend its interests.

Despite their bold talk, CCP leaders admitted a number of serious shortfalls in the PLA's ability to accomplish its assigned missions. This recognition reinforces Beijing's concern that the PLA will still require decades before it is a world-class peer of the United States. As the PLA continues its modernization drive, countries across the Indo-Pacific are also accelerating their own military improvements and banding closer together to counter China's assertive behavior.

The high degree of economic integration that has brought the United States and China closer together since China's World Trade Organization accession in 2001 is showing signs of stress. U.S. companies, increasingly concerned about the unfriendly business environment and uncertain policy direction, are delaying new investment. Both U.S. exports to and imports from China are falling, and some U.S. companies are reconsidering their supply chains. It is not just restricted market access that drives companies' worries—the Chinese government's pursuit of technological leadership at any cost means foreign companies often fall victim to theft of intellectual property or coercive technology transfer requirements to gain access to the China market. The Chinese government is also using illicit means such as cybertheft and industrial espionage to acquire U.S. data, which are both commercially valuable and important to U.S. national security.

Externally, China faced increasing resistance to its ambition to shape the regional and global order. Some countries, both Belt and Road Initiative (BRI) recipients and other donors alike, have questioned the structure of BRI projects, challenging the lack of transparency, inconsistency with global standards of governance, risks of unsustainable financial terms, and corrupt bidding and loan practices. Even as China promised this year to reform its lending practices, there is growing concern that BRI projects may undermine national sovereignty of recipient countries.

There is also rising concern regarding the CCP's increasingly brazen attempts to influence and interfere with internal political processes and social freedoms in other countries. Chinese diplomats in countries including Australia, New Zealand, and Lithuania openly praise and encourage Chinese students seeking to suppress pro-Hong Kong peaceful protesters, no longer bothering to conceal their involvement in this political interference. These actions are one outgrowth of the CCP's increasing attempts to manipulate the overseas

Chinese population into serving China's national goals. Beijing is also applying informal economic sanctions against countries that make decisions contrary to its interests, while openly threatening others considering doing so in the future.

In this year of internal and external challenges, millions of Hong Kong residents took to the streets in unprecedented mass protests against the CCP's attack on Hong Kong's autonomy. The protestors' courageous fight to defend their values and freedoms has captured the world's attention for its commitment to peaceful resistance and unwavering defense of basic human rights. The protest movement also exposes Beijing's flagrant violations of its promise, inked in an international agreement, to ensure Hong Kong's autonomy. Hong Kong is powerful proof for Taiwan that Beijing's "one country, two systems" model of unification is an empty promise. The CCP's decision to deploy thousands of paramilitary troops near the Hong Kong border in an implied threat reflects its fear that the calls for democracy in Hong Kong pose a direct threat to its own survival. Rather than displaying strength, in engaging in what it calls a "life or death" struggle over Hong Kong, the CCP has instead betrayed a profound weakness.

Amid these pressures, Xi Jinping is projecting an image of confidence and control. As China celebrates the 70-year anniversary of the founding of the People's Republic, the CCP is reinforcing its political and economic model at home while making its most forceful case yet for the legitimacy of its leadership on the world stage. It is also steeling itself to prevail in what it expects to be a protracted, multidecade confrontation with Washington and its allies. China's leadership clearly harbors no illusion of calm waters ahead. Xi Jinping himself declared in an internal speech to the Central Party School in September 2019, "We [China] face increasingly complex hazardous tests to the point of facing unimaginably stormy seas."

If there were glimmers of political opening in China, they have been firmly extinguished. It is for this reason that this year the Commission made the decision to start referring to Xi Jinping using the title by which he derives his authority: General Secretary of the Chinese Communist Party. China is not a democracy, and its citizens have no right to vote, assemble, or speak freely. Giving General Secretary Xi the unearned title of "President" lends a veneer of democratic legitimacy to the CCP and Xi's authoritarian rule.

As Beijing promotes its "China dream," which it promises to grow into the "world's dream," Washington must plan for worst-case scenarios while trying to achieve the best ones. The courageous calls in Hong Kong for an elected government accountable to the people, as well as Taiwan's upcoming presidential election, are clear reminders of the compatibility of Chinese civilization with democratic values. As we look ahead to the future of U.S.-China relations, Congress should bear this promise in mind while not forgetting the people of Xinjiang, Tibet, and elsewhere who are displaced, abused, harassed, or threatened to make way for the CCP's global ambitions.

CHAPTER 1

2019 IN REVIEW

SECTION 1: YEAR IN REVIEW: ECONOMICS AND TRADE

Key Findings

- On-and-off trade negotiations between the United States and China to resolve a years-long trade dispute have failed to produce a comprehensive agreement. The impasse in negotiations underscores, in part, China's commitment to preserving the government's dominant role in determining economic outcomes.
- The United States is confronting China in response to decades of unfair Chinese economic policies and trade-distorting practices. The Chinese Communist Party (CCP) increasingly perceives U.S. actions as an attack on its vision for China's national development. China's government has intensified nationalist rhetoric criticizing the United States, applied pressure on U.S. companies, and targeted key U.S. export sectors with tariffs in response.
- U.S. measures to address illegal activities by Chinese technology companies are leading China's government to push harder on technological self-reliance. The reinvigoration of the state-driven approach to innovation will pose a sustained threat to U.S. global economic competitiveness and national security.
- A range of domestic factors and trade tensions with the United States have slowed China's economic growth. In response, China's government has deployed infrastructure spending, tax cuts, and targeted monetary stimulus. While the stimulus enabled a modest recovery during the first half of 2019, China's rate of growth continues to slow.
- China's government continues to falsify official economic statistics, obscuring the true extent of its current economic slowdown. Independent observers estimate that China's true growth rate is at least 0.5 percentage points—and possibly as much as 3 percentage points—lower than Beijing's published figures.
- Beijing's deleveraging campaign has succeeded in containing China's corporate debt growth, but local governments continue to borrow. Expanding household debt and a rapid increase in the value of nonperforming loans also pose significant risks to

China's financial system and are a major challenge for Chinese policymakers.

- China's state sector is strengthening and private companies are struggling. The deleveraging campaign and related crackdown on shadow banking had the unintended effect of cutting off credit to the private sector, which traditionally relies on informal finance.
- China's government has taken limited market opening steps, including incremental liberalization of China's foreign investment regime and financial system. However, these measures have been pursued in terms favorable to the Chinese government as opposed to the market, underscoring that any changes in China's economic practices will continue to be controlled by the state.

Introduction

Historic patterns in the U.S.-China economic relationship are being disrupted as bilateral trade frictions take deeper hold. While the U.S. deficit in goods trade with China reached a record \$419.5 billion in 2018, the trade imbalance narrowed in 2019 as bilateral tariff actions impacted imports and exports and re-configured trading patterns and relationships. The Chinese government's commitment to preserving its dominant role in determining economic outcomes has made reaching a comprehensive agreement increasingly difficult.

Trade tensions exacerbated a slowdown in China's economy in 2019, with gross domestic product (GDP) growth falling to nearly three-decade lows. The Chinese government deployed moderate stimulus measures in response, approving \$184.1 billion in new infrastructure spending, rolling out tax cuts for businesses, and encouraging banks to lend more to the private sector. While these efforts contributed to a modest recovery in the first half of 2019, they have not stopped China's broader economic slowdown, and key indicators point to continued challenges ahead.

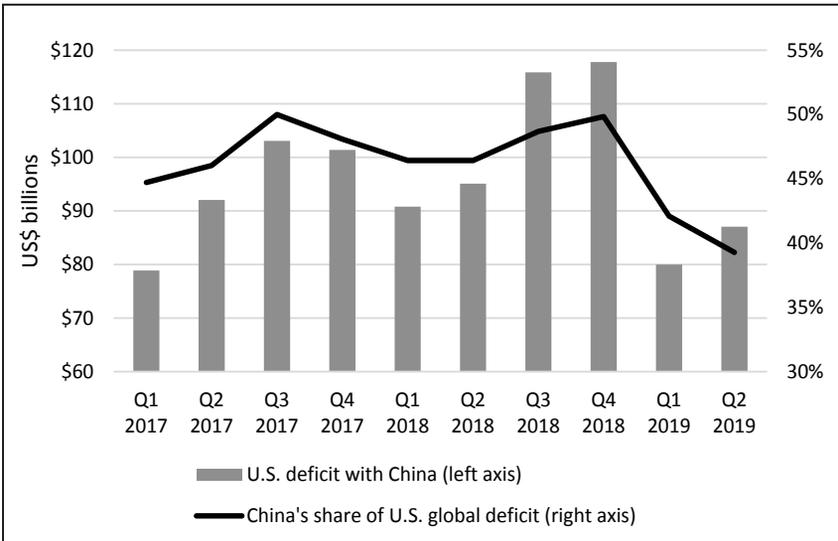
This section examines key developments in U.S.-China bilateral trade and economic tensions, as well as China's domestic and external economic rebalancing. For analysis of China's economic vulnerabilities, see Chapter 2, "Beijing's Internal and External Challenges." The activities of U.S. companies in China and Chinese companies in the United States are discussed in Chapter 3, Section 1, "U.S.-China Commercial Relations." For analysis of U.S.-China competition in emerging technologies, see Chapter 3, Section 2, "Emerging Technologies and Military-Civil Fusion: Artificial Intelligence, New Materials, and New Energy." U.S.-China links in health and medical products are discussed in Chapter 3, Section 3, "Growing U.S. Reliance on China's Biotech and Pharmaceutical Products."

U.S.-China Trade

The United States has pursued and supported China's greater economic opening since relations were normalized in 1979. However, the Chinese government chose to retain or even strengthen many

of the features of the command economy. U.S. efforts to address the Chinese government's market-distorting practices have intensified since 2018, with the United States imposing 15–25 percent tariffs covering \$362 billion worth of imports from China, and China responding with 5–25 percent tariffs covering \$139 billion worth of U.S. exports as of October 2019.¹ Reciprocal tariff actions narrowed the U.S. goods trade deficit with China to \$231.6 billion in the first eight months of 2019, an 11.4 percent decline year-on-year (see Figure 1).²

Figure 1: U.S. Goods Trade Deficit with China, Quarterly, 2017–Q2 2019



Source: U.S. Census Bureau, *Trade in Goods with China*.

The fall in the U.S.-China goods trade in 2019 reflects deeper shifts in bilateral trading patterns as tariffs take hold. Both the United States and China are stepping up engagement with other trading partners and U.S. and Chinese firms are beginning to recalibrate supply chains to circumvent reciprocal tariff actions, albeit in limited ways.³ U.S. imports of Chinese computer and electronic products, a top import category, fell 19.4 percent year-on-year to \$70.7 billion through the first six months of 2019 as a result of U.S. tariff actions, with U.S. importers upping purchases from Vietnam, South Korea, and Taiwan.⁴ Because foreign-invested enterprises operating in China produced 87 percent of China's exports of computer and electronic products in 2018, U.S. tariffs are driving some of these enterprises to consider shifting production away from China.⁵

Retaliatory Chinese tariffs have surgically targeted top U.S. exports to China, including transportation equipment and agricultural products (see Table 1). U.S. exports of transportation equipment—the top U.S. export to China in 2018—fell 22 percent year-on-year in the first six months of 2019, and are expected to fall further.⁶

U.S. exports of agricultural products* were also hard hit by Chinese retaliatory tariffs, declining by 21 percent year-on-year in the first six months of 2019 as China pushed to bolster domestic soybean cultivation and increased imports of the good from South American trading partners.⁷

Table 1: U.S. Trade with China, Top Five Exports and Imports, January–June 2019

Top Five U.S. Exports to China			Top Five U.S. Imports from China		
	Exports (US\$ billions)	Change over H1 2018		Imports (US\$ billions)	Change over H1 2018
Transportation Equipment	9.7	-22%	Computers and Electronic Products	70.7	-19.4%
Computers and Electronic Products	9.4	+10.3%	Electrical Equipment	20.7	-8.7%
Chemicals	8	-2.9%	Misc. Manufactured Goods	17.6	-0.1%
Nonelectrical Machinery	5.3	-6.1%	Nonelectrical Machinery	16.9	-15.9%
Agricultural Products	3.9	-21%	Apparel and Accessories	12.4	-0.01%
Other	15.7	-24.5%	Other	80.7	-9.5%
Total	52	-18.9%	Total	219	-12.3%

Source: U.S. Census Bureau, *NAICS Database* (Washington, DC: U.S. Department of Commerce, Foreign Trade Division, October 2019).

Impact of the African Swine Fever Outbreak

In August 2018, hogs in China's Liaoning Province tested positive for African swine fever. The disease is not harmful to humans but is highly contagious and deadly to pigs. As of August 2019, African swine fever has been identified in all of China's provinces and significantly reduced the country's hog population by 38.7 percent.⁸ The shortage also increased the price of pork in China almost 50 percent year-on-year in August.⁹

The epidemic is decreasing Chinese demand for animal feed products such as soybeans and sorghum and increasing Chinese demand for pork. U.S. exports of both product categories are sub-

*Punitive Chinese tariffs on U.S. agricultural exports exacerbate other unfair Chinese trade practices, including the opaque application of tariff-rate quotas (TRQs). TRQs are tiered tariffs, with a set volume of imports taxed at a lower level while subsequent imports are charged a higher rate. While China's World Trade Organization commitments call for these quotas to serve as a transparent way for foreign farmers to access China's market, China's uneven application and underutilization of them restricts access for U.S. farmers, protects domestic farm interests, and serves as a trade barrier. For more on U.S.-China agricultural trade, see U.S.-China Economic and Security Review Commission, Chapter 1, Section 3, "China's Agricultural Policies: Trade, Investment, Safety, and Innovation," in *2018 Annual Report to Congress*, November 2018.

Impact of the African Swine Fever Outbreak—Continued

ject to Chinese retaliatory tariffs. Since China primarily uses imported soybeans as livestock feed, the demand for soybeans has slumped due to the outbreak of African swine fever.¹⁰ The U.S. Department of Agriculture notes that this reduced demand, together with Chinese tariffs on U.S. soybeans, may limit export opportunities for U.S. soybean producers in the near term.¹¹ In contrast, U.S. pork producers stand to benefit from China's hog shortage, with U.S. pork exports to China growing 16 percent year-on-year in the first six months of 2019 despite punitive Chinese tariffs.¹²

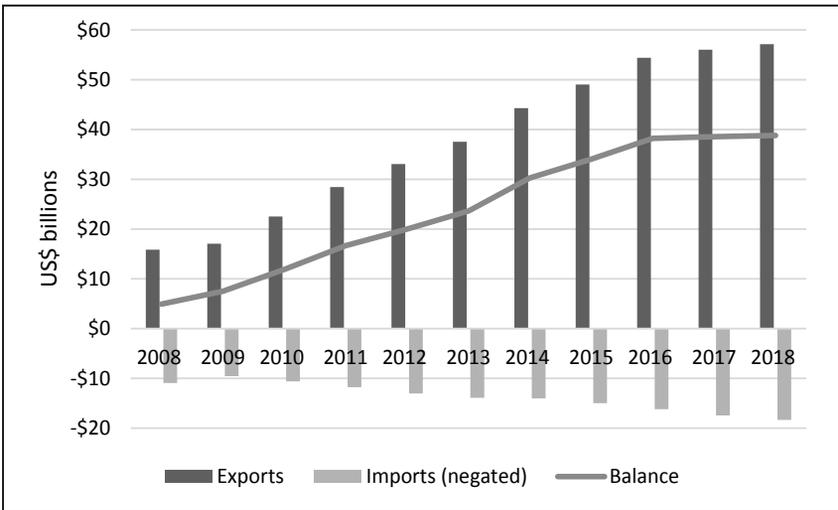
China's pork shortage is exerting pressure on the Chinese government, with Vice Premier Hu Chunhua declaring stabilization of the country's pork supply to be an "important political task."¹³ A shortfall in pork supply risks fueling discontent among Chinese citizens, for whom pork is a staple food and symbol of modern economic wellbeing.¹⁴ The Chinese government has pursued a range of measures in response, including distributing national strategic pork reserves and providing subsidies to promote hog herd expansion.¹⁵ In September 2019, the Chinese government also exempted some U.S. pork exports from tariffs to help alleviate the country's shortage.¹⁶

The United States continues to run a trade surplus with China in services,* but the pace of growth in U.S. services exports is slowing. In 2018, the United States posted a record \$38.8 billion services trade surplus with China, up less than 1 percent from \$38.5 billion in 2017 (see Figure 2).¹⁷ U.S. services exports to China grew to \$57 billion and imports reached \$18.3 billion, a modest 2 percent and 5.1 percent increase, respectively, relative to higher growth rates seen in 2017.¹⁸

The deceleration in U.S. services exports growth to China is caused by a fall in Chinese tourism to the United States, a top U.S. services export.† In 2018, 2.9 million Chinese travelers visited the United States, a 6 percent year-on-year decline that reversed a 24 percent average annual growth rate in tourism over the prior decade.¹⁹ The Chinese government's inflammatory rhetoric associated with the trade dispute, including travel advisories issued by the Ministry of Culture and Tourism warning Chinese travelers of potential harassment by U.S. authorities, as well as a slowing Chinese economy, contributed to the decline.²⁰

*Services trade includes tourism, financial services, insurance services, transportation, charges for use of intellectual property, and telecommunications services. U.S. Department of Commerce, Bureau of Economic Analysis, *Changes to Trade in Services and Comprehensive Restructuring of the International Economic Accounts*. <https://www.bea.gov/international/changes-trade-services-and-comprehensive-restructuring-international-economic-accounts>.

†Under international and U.S. standards, tourism is broadly defined to include travel and related expenses for business purposes and travel and expenses for personal purposes, such as vacation, education, and medical services. International Monetary Fund, "Balance of Payments and International Investment Position Manual," 2009, 166; U.S. Department of Commerce, Bureau of Economic Analysis, *Changes to Trade in Services and Comprehensive Restructuring of the International Economic Accounts*. <https://www.bea.gov/international/changes-trade-services-and-comprehensive-restructuring-international-economic-accounts>.

Figure 2: U.S.-China Services Trade, 2008–2018

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Table 1.3 U.S. International Transactions, Expanded Detail by Area and Country*, September 19, 2019.

The United States' trade deficit in advanced technology products* with China narrowed by 26.6 percent year-on-year to \$46.7 billion in the first six months of 2019.²¹ U.S. imports of Chinese information and communication technology products—the largest import product category for U.S.-China advanced technology products trade—fell 21.2 percent in the first six months of 2019 as U.S. tariffs targeting Chinese information and communication technology products took effect.²² A nearly 50 percent uptick in U.S. exports of electronics to China in the first six months of 2019 further narrowed the deficit in advanced technology products, as U.S. exporters rushed to complete sales prior to tightened U.S. export controls on select technology goods.²³

Bilateral Economic Tensions

After the Office of the U.S. Trade Representative (USTR) published in March 2018 its Section 301 report concerning China's unfair trade practices related to technology transfer, intellectual property (IP), and innovation, it has pursued related tariff actions. Since then, the United States and China have held 13 rounds of high-level negotiations as of October 2019.²⁴ However, a resolution of U.S.-China trade tensions remains uncertain. The United States wants China to correct a range of market-distorting policies,[†] and

*Advanced technology products (ATP) are a broad range of high-technology goods, including advanced elements of the computer and electronic parts industry, biotechnology, aerospace, and nuclear technology. U.S. Census Bureau, "Trade Definitions." <https://www.census.gov/foreign-trade/reference/definitions/index.html>.

†The Chinese government deploys a range of market-distorting and anticompetitive trade practices that contravene the commitments it made when it acceded to the World Trade Organization. These include subsidies, industrial espionage, tariffs and local content requirements, restrictions on foreign ownership, forced technology transfers, technical standards that promote Chinese technology usage and licensing, and data transfer restrictions, among others. For further discussion of Chinese trade distortions, see U.S.-China Economic and Security Review Commission, Chapter 1,

has pushed Beijing to codify commitments to structural economic reforms that strengthen IP protection, prohibit forced technology transfer, and eliminate subsidies.²⁵ Chinese negotiators demand that any agreement eliminate tariffs imposed by the Trump Administration, refrain from imposing future duties, ensure a deficit-reducing list of Chinese purchases of U.S. goods is in line with real demand in the Chinese economy, and, nebulously, respect China's "[national] dignity."²⁶

In May 2019, U.S. negotiators accused China of renegeing on commitments made in a draft deal. The resulting impasse triggered a range of policy actions, including: the United States increasing tariffs covering \$200 billion in U.S. imports from China from 10 percent to 25 percent; President Donald Trump directing the USTR to identify an additional \$300 billion in U.S. imports from China to be subject to 25 percent tariffs; and China raising tariff rates on \$60 billion worth of Chinese imports from the United States to a maximum of 25 percent.²⁷

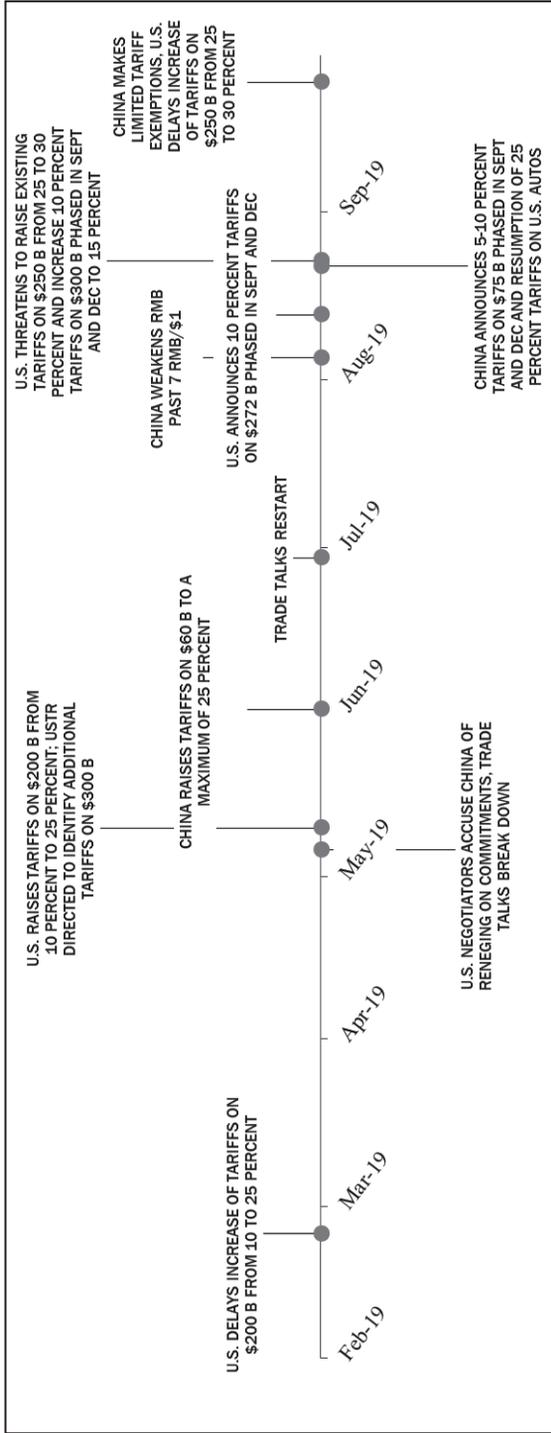
Tensions escalated further in August 2019 amid charges from the Trump Administration that China failed to follow through on promises to make large purchases of U.S. agricultural goods and curb fentanyl flows to the United States.²⁸ The United States subsequently announced new 10 percent tariffs on an additional \$272 billion worth of imports from China, with tariffs on a first list of \$112 billion worth of imports implemented in September 2019 and tariffs on a second list covering \$160 billion to be implemented in December 2019.²⁹ The Trump Administration increased these new tariffs to 15 percent, and also threatened to hike current 25 percent tariffs on \$250 billion worth of imports from China to 30 percent on October 1, 2019, following retaliatory tariff actions from the Chinese government.³⁰ This tariff hike was delayed after select tariff exemptions by the Chinese government ahead of high-level trade talks to be held in mid-October (see Figure 3).³¹

U.S. Companies Respond to Tariffs' Supply Chain Impact

The trade dispute between the United States and China has affected a wide range of multinational businesses with operations in both countries. Though U.S. tariffs on Chinese imports have endeavored to target products in sectors determined by the USTR to unfairly benefit from Chinese industrial policies, they have also disrupted the supply chains of U.S. firms that import intermediate inputs from China.³² Amid uncertainty concerning the trajectory of bilateral trade negotiations, a growing number of U.S. firms are considering or implementing adjustments of their supply chains to relocate production out of China to other emerging markets.³³ This dynamic is especially true for U.S. technology firms, with Apple moving some of its production to India and Vietnam, and Dell and Hewlett-Packard considering moving production to Taiwan, Vietnam, or the Philippines.³⁴ Other companies have also considered a "China plus one" strategy in which they relocate portions of production to Southeast Asia while continuing to manufacture in China for the Chinese and non-U.S. markets.³⁵

Section 2, "Tools to Address U.S.-China Economic Challenges," in *2018 Annual Report to Congress*, November 2018.

Figure 3: Timeline of U.S.-China Trade Tensions, 2019



Source: Created by Commission staff.

U.S. Companies Respond to Tariffs’ Supply Chain Impact—Continued

The disruptive effects of U.S. tariffs on imports from China are underscored in a 2019 survey conducted by the American Chamber of Commerce in Shanghai.* According to the survey, less than half (47.1 percent) of U.S. companies expect to increase their investments in China—versus 61.6 percent in 2018—as a result of trade frictions.³⁶ Separately, 26.5 percent of U.S. firms have redirected investments originally planned for China to other regions, an increase of 6.9 percentage points from 2018, citing a need to guard supply chains against further degradations in U.S.-China trade relations and related tariffs.³⁷ (For further discussion of U.S. companies’ operations in China, see Chapter 3, Section 1, “U.S.-China Commercial Relations.”)

China’s Response to U.S. Trade Actions

Because China cannot match U.S. tariffs dollar for dollar, it has also adopted informal measures to target the United States. Beijing stepped up the intensity of its nationalist rhetoric and threats toward the United States and deployed a range of informal barriers to trade, some of which are highlighted below.

Amplification of Nationalist Rhetoric

Prior to the May 2019 collapse of trade talks, Chinese officials and state-controlled media outlets avoided direct criticism of the United States in pursuit of a negotiated agreement. Following U.S. accusations that Chinese negotiators reneged on promises recorded in a draft agreement, the tone of Chinese reporting changed and hardened. For example, a May 25 editorial in state-run news outlet *Xinhua* argued that U.S. demands for China to curb subsidies for state-owned enterprises (SOEs) violated its economic sovereignty under the 1974 UN Charter of Economic Rights and Duties of States† by forcing China to make injurious changes to its fundamental economic system.³⁸ General Secretary of the CCP Xi Jinping has further framed the breakdown in negotiations as a national hardship, invoking Mao-era imagery of a “new long march” and referring to “unfavorable factors at home and abroad.”³⁹ Minister of Commerce Zhong Shan echoed General Secretary Xi in describing negotiations as a “national struggle” against U.S. “unilateralism and protectionism.”⁴⁰ Read together, these rhetorical shifts underscore a tougher bottom line for Chinese officials in trade negotiations with the United States, and signal a willingness to prolong tensions until their demands are met.⁴¹

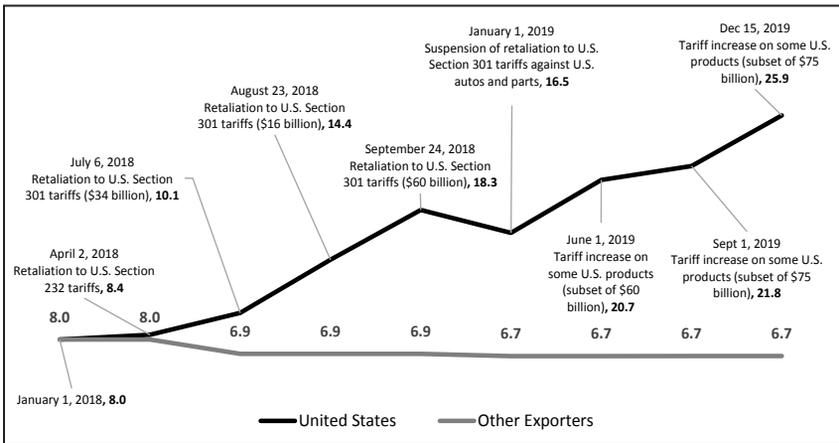
*This survey of business membership was conducted from June 27 to July 25, 2019, and received 333 responses. By sector, 52.3 percent of respondents worked in manufacturing, 30.6 percent worked in services, and 17.1 percent worked in retail and distribution. American Chamber of Commerce in Shanghai, “2019 China Business Report,” September 11, 2019, 3.

†The charter does not codify, or even use the term, “economic sovereignty.” It does indicate states must ensure prices of goods traded internationally are equitable, stable, and remunerative (i.e., not subsidized to be sold below costs of production and dumped on world markets). UN Charter of Economic Rights and Duties of States, General Assembly Resolution 3281 (XXIX), 1974.

Reduction of Tariffs on Non-U.S. Goods

China has matched its increased tariffs on U.S. exports with reduced tariffs on imports from other countries, making U.S. products comparatively more expensive and exacerbating preexisting market access barriers. Analysis by the Peterson Institute for International Economics shows the average Chinese tariff rate on U.S. products has reached 21.8 percent as of September 2019 and will jump to 25.9 percent by year-end. In contrast, the Chinese government has lowered tariff rates on competing products from other World Trade Organization (WTO) member countries from 8 percent to 6.7 percent in the same period (see Figure 4).⁴²

Figure 4: China's Average Tariff Rate on Imports from the United States versus Other Countries, 2018–2019



Source: Chad Bown, “U.S.-China Trade War: The Guns of August,” *Peterson Institute for International Economics*, August 26, 2019.

Due to this strategic adjustment of duty rates, it is 12.7 percent less expensive in China to buy something imported from Canada, Japan, Brazil, or Europe than it is to buy something imported from the United States.⁴³ In some cases, tariffs on U.S. products alone sufficed to redirect Chinese purchases, regardless of a reduction in tariffs on imports from other countries. Chinese soybean imports have shifted away from the United States toward Brazil and Argentina, for example, without any reduction of an existing 3 percent tariff rate on soybeans from those countries.⁴⁴

Coercion against U.S. Companies

China often leverages its economic heft to apply coercive measures in moments of diplomatic stress, ranging from formal barriers to trade such as tariffs and investment restrictions to more informal tactics such as popular boycotts and pressure on specific multinational companies.⁴⁵ Harassment of U.S. companies can include unwarranted tax investigations, slowed visa approval processes for foreign nationals working for U.S. firms in China, unannounced site inspections, uneven regulatory enforcement, and delayed customs

inspection procedures for U.S. goods arriving in Chinese ports.⁴⁶ While public data on such disruptions are sparse, a 2019 U.S.-China Business Council survey found that 33 percent of U.S. businesses have reported increased scrutiny from Chinese regulators as a result of rising trade frictions, up from 28 percent in 2018.⁴⁷ For example, following the U.S. Department of Commerce’s addition of Huawei to its Entity List, Chinese authorities opened an inquiry into U.S. international courier FedEx for allegedly harming “the legitimate rights and interests of customers” and violating “relevant laws and regulations of China’s delivery industry.”*⁴⁸

Separately, officials from the National Development and Reform Commission (NDRC, China’s economic planning agency), Ministry of Commerce, and Ministry of Industry and Information Technology summoned representatives from major U.S. technology companies, including Microsoft and Dell, to warn they could face “dire consequences” if they limited their sales to Chinese companies.⁴⁹

China Suspends WTO Case over Market Economy Status

In May 2019, China suspended a dispute it brought to the WTO in 2016 against the EU over China’s status as a nonmarket economy.†⁵⁰ China brought a nearly identical case against the United States, which remains open.⁵¹ In both cases, Beijing’s dispute claimed that under the terms of its 2001 WTO accession, China should have automatically qualified as a market economy‡ effective in 2016.⁵² With the dispute suspended, the EU and the United States can continue to use proxy measures to calculate duties on dumped Chinese exports. Under WTO rules, the case may be taken up again anytime within the next 12 months, after which time the WTO’s authority to review the case will lapse.⁵³

The Chinese government did not publicly explain why it decided to suspend the case. That China’s decision came after the WTO reportedly ruled against it suggests it may have been driven by a desire to limit public disclosure of the WTO’s findings that Europe can continue treating China as a nonmarket economy.⁵⁴ According to one unnamed trade official close to the case, China “lost so much that they didn’t even want the world to see the panel’s reasoning.”⁵⁵ Public release of the WTO’s report would

*Authorities in Guangzhou later briefly detained a FedEx pilot for carrying nonmetallic air gun pellets in checked luggage, alleging illegal transportation of ammunition and opening a criminal investigation into the matter. John Lyons and Wenxin Fan, “China Detains Former U.S. Air Force Pilot for Flying for FedEx,” *Wall Street Journal*, September 20, 2019.

†Under U.S. antidumping law in the Tariff Act of 1930 (19 U.S.C. § 1677 [18]), the U.S. Department of Commerce determines whether a country is a nonmarket economy based on six criteria: (1) the extent to which the currency of the foreign country is convertible into the currency of other countries; (2) the extent to which wage rates in the foreign country are determined by free bargaining between labor and management; (3) the extent to which joint ventures or other investments by firms of other foreign countries are permitted in the foreign country; (4) the extent of government ownership or control of the means of production; (5) the extent of government control over the allocation of resources and over the price and output decisions of enterprises; and (6) such other factors the administering authority considers appropriate. Tariff Act of 1930, Pub. L. No. 103–465, 1930, codified at 19 U.S.C. § 1677 (18).

‡Under China’s WTO protocol of accession, other countries can use values from a third country in a similarly situated economic position—not Chinese prices or costs—for antidumping calculations, unless China could demonstrate market economy conditions prevailed. Granting China market economy status would reduce the margins of U.S. dumping duties imposed on Chinese exports. For more on China’s market economy status, see U.S.-China Economic and Security Review Commission, “State-Owned Enterprises, Overcapacity, and China’s Market Economy Status,” in *2016 Annual Report to Congress*, November 2016, 114–119.

China Suspends WTO Case over Market Economy Status—Continued

have validated the arguments by the EU, the United States, and other critics that China is a nonmarket economy at a moment when Beijing is already fielding extensive international scrutiny of its economic policies. Contrastingly, the associate dean of the School of WTO Research and Education at the Shanghai University of International Business and Economics suggested the decision served as a negotiation tactic in the ongoing trade dispute with the United States.⁵⁶ (Ongoing U.S.-China WTO litigation is summarized in “Addendum I: WTO Cases.”)

Chinese Government Allows the Currency to Weaken against the Dollar

U.S.-China trade tensions, along with slowing growth in the Chinese economy and attendant monetary stimulus, have applied downward pressure on the renminbi (RMB). As a result, the currency depreciated significantly between March 2018—when the USTR published its Section 301 report—and August 2019 (see Figure 5).⁵⁷

Figure 5: RMB to U.S. Dollar Exchange Rate, 2018–August 2019



Source: People’s Bank of China via CEIC database.

In August 2019, the People’s Bank of China (PBOC) allowed the RMB to weaken* past the psychologically important threshold of 7

*China maintains a “managed float” in which the government plays a fundamental role in setting the exchange rate. Specifically, the PBOC establishes a daily trading midpoint, and permits the RMB to fluctuate within a 2 percent intraday band from that point. The midpoint, or central parity rate, is determined based on a combination of the previous day’s close value and assessments of market fundamentals provided by major banks. The PBOC can also leverage its \$3 trillion in foreign exchange reserves to manage the RMB’s value by, for example, selling its U.S. dollar holdings to prop up the value of the RMB. For a detailed discussion of how China’s

RMB to the U.S. dollar for the first time since 2008.⁵⁸ The August depreciation of the RMB amplified U.S. concerns that the Chinese government may be deliberately allowing its currency to slide to make its exports more competitive and thereby offset the effects of U.S. tariffs, leading the U.S. Department of the Treasury to label China a currency manipulator* for the first time since 1994.⁵⁹

In testimony before the Commission, expert on the Chinese economy Victor Shih observed that the PBOC “weaponized” the RMB in response to trade frictions.⁶⁰ Separately, senior China economist at Capital Economics Julian Evans-Pritchard noted that the PBOC’s decision to let the RMB weaken suggests the Chinese government has abandoned hopes for a trade agreement with the United States.⁶¹

Existing U.S. laws governing designation of currency manipulation offer inconsistent definitions of its practice and corresponding solutions, including bilateral negotiations—a step the United States has already taken in its ongoing trade dispute with China.⁶² In May 2019, the International Trade Administration of the Department of Commerce issued a proposal for currency manipulation to be considered a countervailable subsidy if Treasury determined a country was devaluing its currency.⁶³ Some analysts note, however, that difficulties in measuring a currency’s deviation from its equilibrium value would complicate the calculation of related countervailing duties.⁶⁴

While a weakened RMB can provide China relief from U.S. tariffs, it also presents a range of possible negative consequences for China’s economy, including:

- *Potential for capital flight:* As the RMB weakens, wealthier households in China may be motivated to move their money out of China to protect their wealth, accelerating capital outflows and putting pressure on China’s foreign exchange reserves.†
- *Depressed consumption:* Imports from abroad, particularly commodities such as agricultural and energy goods—which are mostly priced in U.S. dollars—become more expensive as the RMB declines in value, placing downward pressure on consumption activity.
- *Difficulty paying foreign debt:* A weaker RMB makes it more difficult for Chinese companies that borrowed in dollars to repay their debts. Though economists debate the magnitude of China’s external debt, some estimate that Chinese firms and financial institutions owe nearly \$3 trillion in dollar-denominat-

exchange rate system operates, see Sonali Das, “China’s Evolving Exchange Rate Regime,” *International Monetary Fund*, March 7, 2019, 9–15.

*Treasury has three criteria for determining whether a country is manipulating its currency: (1) a bilateral goods trade surplus with the United States of at least \$20 billion; (2) a current account surplus equal to at least 2 percent of GDP; and (3) persistent, one-sided intervention in currency markets, in excess of 2 percent of GDP over a 12-month period. A country has to meet all three criteria to be designated a currency manipulator. In its last official report to Congress on the foreign exchange policies of major trading partners in May 2019, Treasury determined China only met the bilateral surplus criterion and placed China on its “monitoring list.” U.S. Department of the Treasury, *Macroeconomic and Foreign Exchange Policies of Major Trading Partners of the United States*, May 28, 2019, 4–5.

†China’s financial authorities have implemented a range of policies to stem capital outflows in recent years. One study by the Mercator Institute for China Studies found that regulators made approximately 75 formal and informal capital control adjustments between June 2016 and January 2018, using measures such as restrictions on foreign currency transactions, requirements for special licenses when conducting cross-border internet transactions, and rules preventing “irrational” overseas investments. Max J. Zenglein and Maximilian Kärnfeldt, “China’s Caution about Loosening Cross-Border Capital Flows,” *Mercator Institute for China Studies*, June 19, 2019, 6.

ed debt, approximately \$215 billion of which will mature over the next two years.⁶⁵

Chinese policymakers understand the risks of an extensive depreciation, and are trying to mitigate them. In August, the PBOC took steps to control RMB weakness by, for example, selling \$4.2 billion worth of short-term RMB-denominated securities* in Hong Kong and attempting to set a stronger daily trading midpoint for the RMB in the days after it weakened past 7 RMB to the dollar.⁶⁶ PBOC Vice Governor Pan Gongsheng issued signals to this effect in an op-ed, writing that while he sees more currency weakness on the horizon due to “external shocks such as trade friction,” the currency will stabilize “after a short period of turbulence,” hinting at Chinese preparedness for prolonged trade tensions and the potential for the RMB to depreciate further to prop up exports.⁶⁷

Technological Conflict and Competition

The Chinese government has a long-term strategy aimed at establishing China as a global leader in a range of next-generation technologies, using a state-directed approach that limits opportunities for foreign firms in China and impacts U.S. technological leadership and economic competitiveness.† Chinese government policies raise a number of concerns among U.S. observers and policymakers, including unfair industrial policies that promote and protect Chinese “national champions” in key industries, the close relationships the CCP maintains with Chinese companies, and Chinese legal requirements that organizations and businesses support, assist, and cooperate with intelligence work.⁶⁸

U.S. Targets Illegal Activities by Chinese Technology Companies

In 2018–2019, the United States advanced a series of measures, including criminal indictments and bans on exports of sensitive U.S. technology, to address trade-distorting and illegal behavior by Chinese technology companies (see Figure 6).

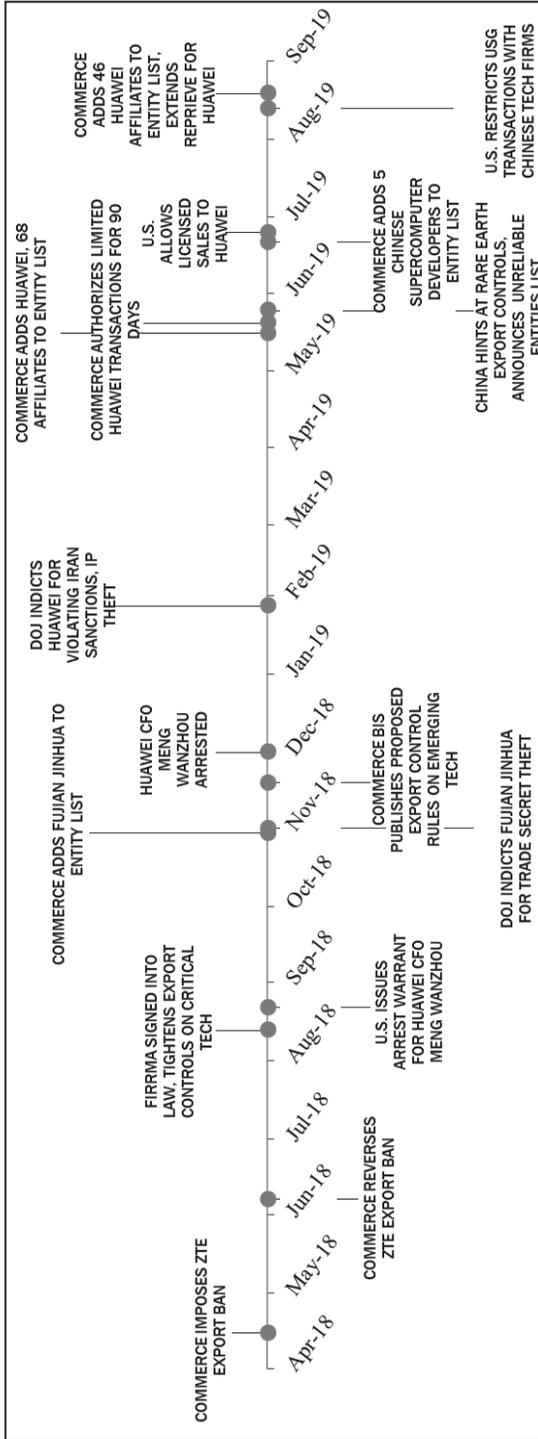
U.S. actions have focused on Chinese telecommunications firm Huawei out of concern about the firm’s close links with the Chinese government and evasion of Iran sanctions. In January 2019, the U.S. Department of Justice indicted Huawei Chief Financial Officer Meng Wanzhou for misleading banks into clearing business transactions conducted by Skycom, an Iran-based subsidiary of Huawei, in violation of U.S. sanctions.⁶⁹ The Department of Commerce’s Bureau of Industry and Security (BIS) subsequently added Huawei and 114 international affiliates to the Entity List.‡⁷⁰

*Unless noted otherwise, this section uses the following exchange rate throughout: \$1 = RMB 7.06.

†For more on China’s development of 5G and the Internet of Things, see U.S.-China Economic and Security Review Commission, Chapter 4, Section 1, “Next Generation Connectivity,” in *2018 Annual Report to Congress*, November 2018, 441–468.

‡The Entity List (Supplement No. 4 to part 744) identifies entities reasonably believed to be involved, or pose a significant risk of being or becoming involved, in activities contrary to the national security or foreign policy interests of the United States. Placement on the Entity List is not limited to technology firms. Huawei was first placed on the Commerce Department’s Entity List in May 2019 but shortly after was granted a 90-day grace period that allowed some U.S. sales to Huawei to continue temporarily. This temporary reprieve was extended in August 2019 simultaneous to the addition of a further 46 Huawei subsidiaries and affiliates to the Entity List. U.S. Department of Commerce, *Department of Commerce Adds Dozens of New Huawei Affiliates*

Figure 6: Timeline of U.S.-China Technology Tensions, April 2018–September 2019



Source: Created by Commission staff.

Following a meeting with General Secretary Xi in June 2019 at the G20 Summit, President Trump directed the Department of Commerce to allow licensed sales to Huawei that do not pose a threat to U.S. national security.⁷¹ However, BIS' separate addition of Chinese supercomputer developers* to the Entity List underscores far-reaching U.S. concerns regarding China's state support for technological development and the threat it poses to U.S. technological leadership and national security.⁷²

Observers warn that export restrictions will only accelerate China's efforts to produce sophisticated chips domestically, although some experts assess that China's hurdles to developing comparable technology are nearly insurmountable.⁷³ China's semiconductor industry is still heavily reliant on foundational technology dominated by U.S. firms at critical points in the supply chain, from the basic architecture in chip design to advanced manufacturing equipment used in semiconductor foundries.[†]⁷⁴

Chinese Responses to U.S. Technology Actions

U.S. measures to defend against adverse actions taken by China's technology companies have put Beijing on the defensive, with General Secretary Xi calling for self-reliance in "core technologies" and describing the economy's limited innovation capabilities as its "Achilles' heel."⁷⁵ Chinese policymakers appear to be following his directive, with China's Ministry of Finance granting income tax relief to Chinese chipmakers and software developers over a five-year period following the addition of Huawei to the Entity List.[‡]⁷⁶ China is also taking steps to retaliate against the U.S. technology sector, including:

- *Establishing an "unreliable entities" list:* China's Ministry of Commerce indicated it would soon publish an "unreliable entities" list, apparently modeled on the U.S. Entity List. The list could include foreign companies, organizations, and individuals who had "taken discriminatory measures on Chinese entities, caused actual damage to Chinese firms and related industries,

to the Entity List and Maintains Narrow Exemptions through the Temporary General License, August 19, 2019; U.S. Department of Commerce, Bureau of Industry and Security, "Addition of Entities to the Entity List," *Federal Register* 84:98 (May 21, 2019).

* Specific entities added included Sugon, the Wuxi Jiangnan Institute of Computing Technology, Higon, Chengdu Haiguang Integrated Circuit, and Chengdu Haiguang Microelectronics Technology. According to a notice published by the Bureau of Industry and Security at the Department of Commerce, these five entities, and the numerous aliases they used, were added to the Entity List due to growing concerns about the military applications of the supercomputers they are developing. For example, the Wuxi Jiangnan Institute of Computing Technology is affiliated with the People's Liberation Army (PLA). U.S. Department of Commerce, Bureau of Industry and Security, "Addition of Entities to the Entity List and Revision of an Entry on the Entity List," *Federal Register* 84:121 (June 24, 2019).

† For instance, although Huawei's chip manufacturing arm HiSilicon is often cited as an example of Chinese parity in chip design, the firm licenses its chips' basic architecture, or the set of instructions that determines how a processor handles comments, from British designer ARM. Because ARM in turn uses technology of U.S. origin, it canceled existing contracts with Huawei in late May to comply with Huawei's inclusion on the Entity List. Dave Lee, "Huawei: ARM Memo Tells Staff to Stop Working with China's Tech Giant," *BBC*, May 22, 2019.

‡ In line with a State Council directive in early May 2019, the Ministry of Finance announced that companies in integrated circuit design and software industries will receive eased income tax rates over a five year period. Firms that became profitable before the end of 2018 will be exempt from paying any income taxes for two years, and will have the existing 25 percent corporate income tax rate cut in half to 12.5 percent for the subsequent three years. China's Ministry of Finance, *Announcement on Corporate Income Tax Policy for Integrated Circuit Design and Software Industries* (关于集成电路设计和软件产业企业所得税政策的公告), May 17, 2019. Translation. http://szs.mof.gov.cn/zhengwuxinxi/zhengcefabu/201905/t20190521_3261938.html.

and posed actual or potential threats to China's state security."⁷⁷ The announcement of the list was followed by a white paper that blamed Washington for the breakdown in trade negotiations.*⁷⁸

- *Threatening to ban rare earths exports:* On May 28, the NDRC released a question-and-answer document suggesting China could cut rare earths† exports to the United States as a retaliatory measure.⁷⁹ The NDRC has continued to fuel speculation that it could follow through with the threat, organizing an industry symposium in June in which academics advised that supervision of the industry should increase, which later led to the announcement of a planned survey of China's rare earths supply.⁸⁰ State-run rare earths industry associations have also voiced broader support for "counter measures against U.S. import tariffs on Chinese products."⁸¹ Rare earths supplies are critical to U.S. national security, with China accounting for 80 percent of the U.S. supply from 2004 to 2017.⁸²
- *Diversifying supply chains:* As Andrew Polk, co-founder of macroeconomic research and advisory firm Trivium China, noted in testimony before the Commission that the Chinese government aspires to technologically de-couple from the United States amid concerns about overreliance on the United States for core technologies.⁸³ Trade frictions with the United States have accelerated de-coupling efforts, leading China's NDRC, Ministry of Industry and Information Technology, and Ministry of Commerce to undertake an interagency study of Chinese technology firms' reliance on U.S. suppliers.⁸⁴ Separately, Chinese technology firms have taken steps to protect their supply chains from U.S. sanctions in 2019, with Huawei increasing purchases of integrated circuits from Japanese suppliers and other Chinese firms looking for technology investment opportunities outside of the United States.⁸⁵

China's Internal and External Economic Management

The rate of China's economic growth has continued to slow over the last year as Beijing's deleveraging campaign limited investment and trade tensions with the United States hurt business operations. In March 2019, Beijing lowered its annual GDP growth target for 2019 to between 6 and 6.5 percent.⁸⁶ This range is

*The Chinese government and government agencies frequently publish "white papers" as responses to international scrutiny. Recurrent topics include defending China's human rights record, particularly in Tibet and Xinjiang, and China's WTO record. China's State Council Information Office, *White Papers*. http://english.scio.gov.cn/m/whitepapers/node_7247532.htm.

†Rare earth elements are a collection of 17 elements that are critical to the development of both high-technology consumer products, including smartphones and electric vehicle motors, and military applications, including jet engines and satellites. China mined 70.6 percent of the world's supply in 2018, and holds 36.7 percent of global rare earths reserves, leading the U.S. Department of Defense to highlight U.S. reliance on Chinese supplies of the resource as a national security risk. While China may dominate global processing and production of rare earth elements, the resource is otherwise relatively abundant around the world, and China's dominance of the industry is due, in part, to its willingness to accept high environmental and capital costs. U.S. Department of Defense, *Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resiliency of the United States*, September 2018, 96; Lee Levkowitz and Nathan Beauchamp-Mustafaga, "China's Rare Earths Industry and Its Role in the International Market," *U.S.-China Economic and Security Review Commission*, November 3, 2010, 1–3; U.S. Geological Survey, *Rare Earths Statistics and Information*. <https://www.usgs.gov/centers/nmic/rare-earths-statistics-and-information>.

lower than the previous year's target of "about 6.5 percent," and reflects the government's uncertainty about economic growth.⁸⁷ The CCP treats national GDP figures as highly politically sensitive and observers have increasingly questioned the veracity of official statistics. Foreign economists have offered a range of alternative estimates, some of which draw on data they believe are harder for Beijing to manipulate, while others use less conventional methods such as satellite imagery to assess industrial activity. Some independent estimates show China's actual GDP growth rate could be 3 percentage points lower than the official number, while others propose a half percentage point difference. However, all of the credible alternative estimates show a similar trend of decelerating growth.⁸⁸

In late 2018 and early 2019, the government deployed measures to mitigate the slowdown, including \$184.1 billion (RMB 1.3 trillion) in new infrastructure spending, \$283.3 billion (RMB 2 trillion) in cuts to taxes and fees for businesses, and targeted monetary stimulus.*⁸⁹ However, growth rates have continued to decline and the government is now taking additional steps to stimulate the economy. (For an in-depth assessment of China's economic, political, and security challenges, see Chapter 2, "Beijing's Internal and External Challenges.")

China's policymakers also pursued incremental market opening measures over the course of 2018 and 2019, including limited easing of restrictions on foreign investment, financial opening, and expansion of free-trade zones (FTZs). However, these narrow measures are not market-driven, and instead reflect efforts by the Chinese government to mitigate trade frictions with the United States and attract foreign investment to strategic sectors, underscoring the state's dominant role in managing economic outcomes.

Growing Censorship of Economic News

The Chinese government has long censored media coverage of issues deemed politically sensitive. Whereas government censors traditionally targeted subjects like human rights abuses or social unrest, slowing growth has seen their mandate extend to economic and business journalism. In the past year, Beijing has directed media outlets to avoid stories on declining consumer confidence, local government debt risks, and other unwelcome economic news.⁹⁰ Internet regulators, meanwhile, have sought to acquire government stakes in independent business media companies like wallstreet.cn.⁹¹

Heightened censorship of economic news casts further doubt on the accuracy of official Chinese data, the reliability of which has long been questionable. As economic growth slows and reporting on the economy becomes increasingly politicized, officials may feel more tempted to falsify official data releases. While this section necessarily makes reference to official figures when discussing China's domestic economy, these numbers should be viewed critically, and, when possible, are supplemented with U.S. government or independently collected statistics.

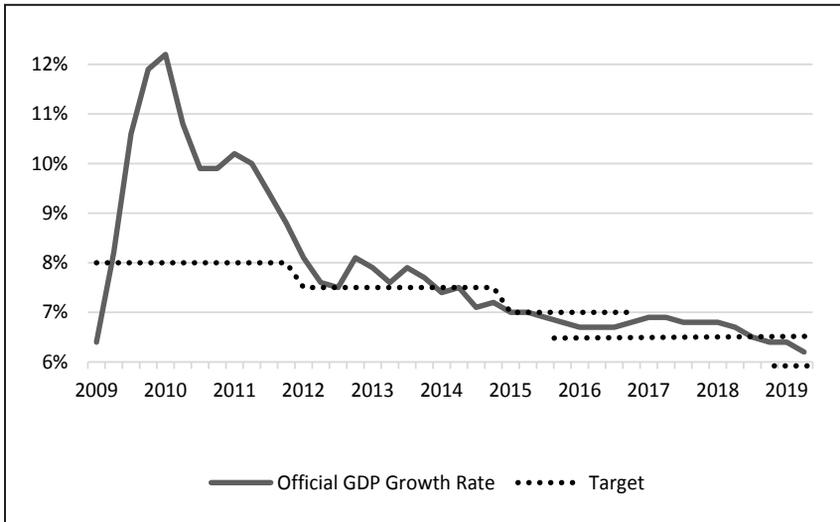
* Monetary stimulus refers to a variety of methods central banks use to increase the money supply in the economy such as lowering interest rates or lowering banks' reserve requirements.

China's Domestic Economic Slowdown

In the first half of 2019, China posted an official GDP growth rate of 6.3 percent, marking the slowest growth recorded in nearly 30 years (see Figure 7).⁹² Although slower growth is typical as a country transitions from an emerging to advanced economy, China's economy is now growing slower than it did in the first quarter of 2009 when its exports and imports collapsed amid the global financial crisis.⁹³ Moreover, China's GDP per capita remains far behind that of other advanced East Asian economies such as Japan, South Korea, and Taiwan, when their respective periods of high-speed growth ended.⁹⁴

China's slowing growth rate is the result of both long-term structural trends and recent policy decisions. The old engines of China's economy—such as state-led infrastructure investment and rapid urbanization—no longer deliver the same pace of growth they did in the past. Demographic trends are no longer favorable and returns on investments are diminishing.⁹⁵ While these factors represent longstanding threats to China's growth prospects, China's immediate economic difficulties mainly stem from Beijing's decision in late 2016 to aggressively crack down on the financial sector and risky lending.⁹⁶ China's corporations and local governments are saddled with large amounts of debt, but the government's policy response has been uneven, largely focusing on curbing corporate debt buildup while encouraging local governments to borrow more to prop up growth. Trade tensions with the United States and slowing global demand are also compounding the problem.⁹⁷

Figure 7: China's Official GDP Growth, 2009–Q2 2019
(year-on-year)



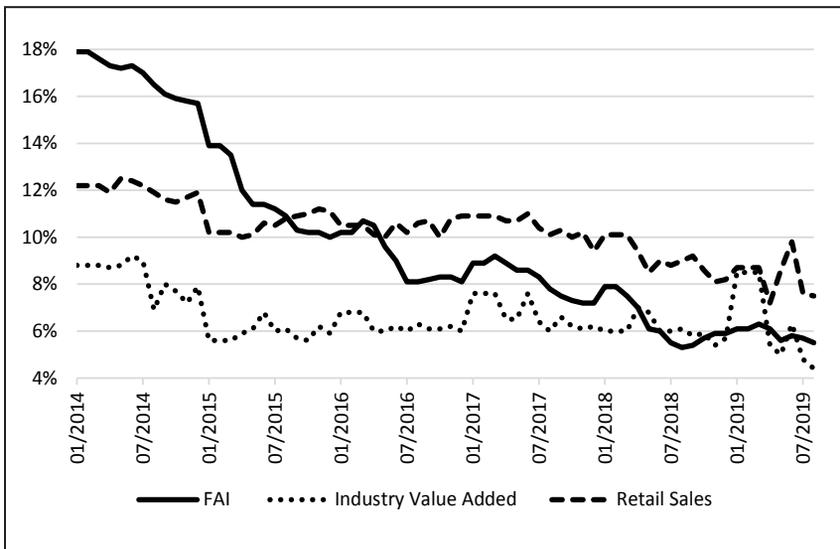
Note: In 2016, the target was set at a range of 6.5–7.0 percent GDP growth. In 2019, the target is set at a range of 6.0–6.5 percent.

Source: China's National Bureau of Statistics via CEIC database.

China's slowdown is also visible across several other major indicators (see Figure 8):

- *Fixed asset investment:* A measure of investment in physical assets such as buildings, machinery, and equipment, fixed asset investment (FAI) has historically been a major driver of China's economic growth, but has slowed significantly in recent years as the structure of China's economy shifted and regulators tightened control over lending. In the first eight months of 2019, fixed asset investment growth fell to 5.5 percent year-on-year, down from 5.9 percent growth in all of 2018.⁹⁸
- *Industrial production:* The growth rate for industrial production has fallen significantly since the fourth quarter of 2018, despite the government's efforts to stimulate production by ramping up infrastructure spending. Weak internal demand and intensifying trade tensions with the United States have contributed to the slowdown.⁹⁹ In July and August 2019, industrial output growth fell to consecutive 17-year lows of 4.8 and 4.4 percent, respectively—down from 6 and 6.1 percent in growth during the same months in 2018.¹⁰⁰
- *Retail sales:* China's economic slowdown has prompted consumers to postpone or refrain from larger purchases such as automobiles and home appliances, cutting into retail sales. Monthly retail sales growth reached a 16-year low of 7.2 percent in April this year and continues to remain suppressed in comparison with 2018 figures.¹⁰¹

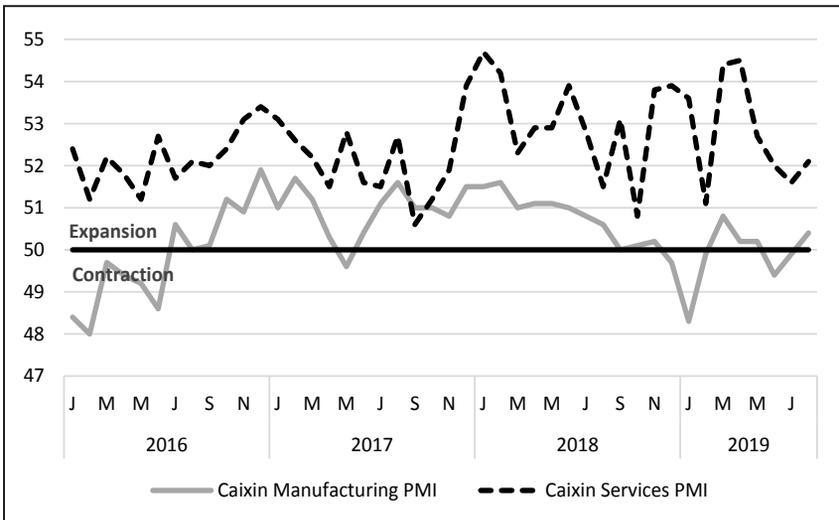
Figure 8: China's Key Economic Indicators, 2014–August 2019
(year-on-year)



Source: China's National Bureau of Statistics via CEIC database.

Unofficial estimates of China's manufacturing and services purchasing managers' indexes (PMI) published by Chinese financial media firm Caixin are also closely watched because they provide an indication of the prevailing direction of economic trends.* The Caixin Manufacturing PMI has remained weak throughout much of 2019, hovering around a reading of 50, which indicates no change, and slipping into contractionary territory several times (see Figure 9).¹⁰² This reflects weak internal demand and stronger trade headwinds and suggests a worrying outlook for the manufacturing sector absent further stimulus.¹⁰³ The services sector—which accounts for more than half of China's GDP—performed better but still showed significant volatility over the last year.¹⁰⁴

Figure 9: Caixin Manufacturing and Services PMI, 2016–Q2 2019



Source: Caixin and IHS Markit, “China General Manufacturing PMI,” September 2, 2019; Caixin and IHS Markit, “Caixin China General Services PMI,” September 4, 2019.

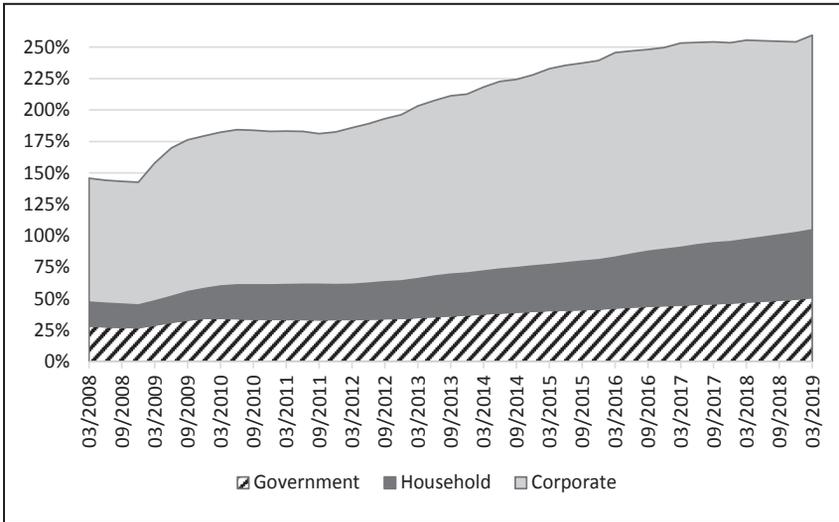
Debt and Deleveraging

A major driver of China's economic slowdown is General Secretary Xi's campaign over the past three years to curb debt growth and reduce financial risks.¹⁰⁵ This deleveraging campaign has two main components: reducing the use of monetary stimulus and curtailing shadow banking. Both of these components are aimed at slowing growth of credit and cleaning up the financial system rather than cutting the overall debt stock.¹⁰⁶ The deleveraging campaign has been fairly successful at controlling the rate of debt growth, which has slowed considerably. However, the risks it seeks to address are far from eliminated, and the campaign has had unintended negative consequences for the overall economy. According to the Bank for International Settlements, in the first

* Caixin's PMI is a survey-based index that measures production level, new orders, inventories, supplier deliveries, and employment level at both manufacturing and services firms to gauge economic activity. A reading above 50 indicates expansion; a reading below 50 indicates contraction.

quarter of 2019 (the latest data available) China's total outstanding debt accumulated by non-financial corporations, households, and the government reached \$35.4 trillion, or 259.4 percent of GDP, up from 138 percent at the end of 2008 (see Figure 10).^{*} This is relatively high compared to emerging markets, and is more comparable to debt levels observed in advanced economies like the United States.¹⁰⁷

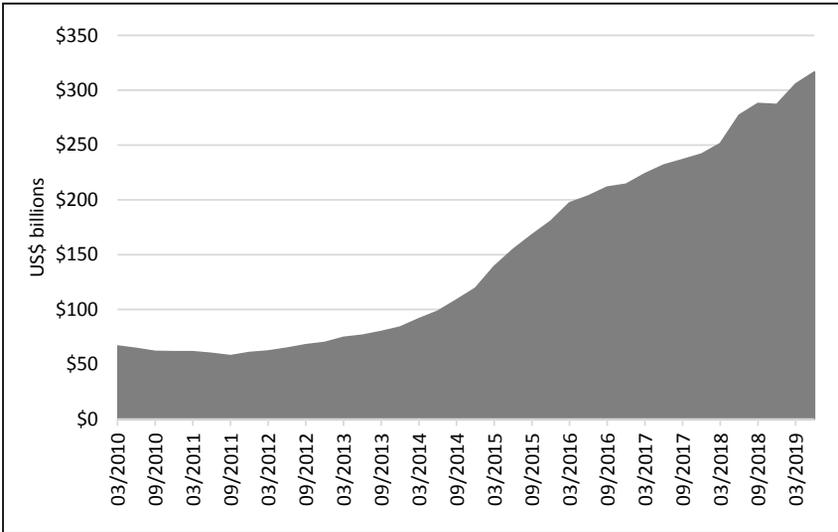
Figure 10: China's Debt-to-GDP Ratio, 2008-Q1 2019



Source: Bank for International Settlements, "Credit to the Non-Financial Sector," September 22, 2019.

Although China's overall debt stock is high, it is the speed at which it has grown that raises risks for the economy. Before the deleveraging campaign, China's debt was expanding faster than any other country's in modern times.¹⁰⁸ The speed of the buildup means that credit is created faster than it could be productively deployed, greatly increasing the amount of waste in the financial system.¹⁰⁹ This is visible in the exponential increase in the value of nonperforming loans over the last several years. Even when the deleveraging campaign was in full swing, nonperforming loans continued to climb, expanding 18.7 percent in 2018, up from 12.8 percent in 2017 (see Figure 11).¹¹⁰

^{*}In comparison, in the first quarter of 2019 the United States' total debt reached \$51.8 trillion (249.3 percent of GDP), Japan's total debt reached \$18.8 trillion (378.4 percent of GDP), and India's total debt reached \$3.4 trillion (125 percent of GDP). Bank for International Settlements, "Credit to the Non-Financial Sector," September 22, 2019.

Figure 11: China's Nonperforming Commercial Bank Loans, 2010–Q1 2019

Source: China Banking and Insurance Regulatory Commission via CEIC database.

Crackdown on Corporate Debt Hits the Private Sector, but SOEs are Unscathed

Corporations hold the largest category of debt, comprising nearly two-thirds of China's debt.¹¹¹ SOEs are responsible for the majority of corporate debt.* Not only do they have easier access to credit, but they also tend to be less efficient and profitable than private companies. This has allowed many SOEs to survive on credit past the point when they have much hope of repaying their loans—increasing overall corporate debt levels in the process.¹¹² To address this problem, Beijing undertook a deleveraging campaign focused on reducing excessive corporate borrowing. In 2016, the PBOC began reducing the money supply, and in early 2017 regulators strengthened oversight of the financial sector, cracking down on risky, off-balance-sheet lending.¹¹³ These measures succeeded in halting corporate debt growth, but had the unintended consequence of depriving small, private sector companies of credit they badly needed. This loss of access to credit by private companies is a key driver of the ongoing slowdown.¹¹⁴ Meanwhile, officials have been slow to address the problem of lossmaking SOEs, frequently intervening in bankruptcy proceedings to help them restructure instead of allowing them to exit the market, thus perpetuating China's debt problems.¹¹⁵

*While the Chinese government does not publish an official breakdown, the International Monetary Fund estimated that SOEs held 57 percent of China's corporate debt in 2016. Raphael Lam et al., "Resolving China's Zombies: Tackling Debt and Raising Productivity," *International Monetary Fund*, November 2017.

SOEs Strengthen, Private Enterprises Struggle

SOEs receive preferential treatment from the Chinese government, including public subsidies, regulatory exemptions, and access to loans. Even though SOEs are more heavily indebted than private sector companies, they still enjoy preferential access to credit because banks believe they are implicitly guaranteed by the government.¹¹⁶ Efforts to deleverage the corporate sector and crack down on risky lending have therefore disproportionately hurt private companies (especially small and medium enterprises), which are more reliant on shadow banking channels.¹¹⁷ Additionally, since 2016, “supply-side reform” policies have encouraged consolidation of SOEs* and pushed private enterprises in industries with excess capacity to shut down, effectively hollowing out private sector competition while strengthening SOEs without addressing their overall inefficiency.¹¹⁸ These dynamics have enabled SOEs to weather China’s economic slowdown better than small private companies.

As the shadow banking crackdown took hold in 2017 and 2018, private listed companies began pledging their own shares as collateral in order to access credit. By late 2018, more than \$600 billion worth of shares trading on Chinese exchanges were pledged as loan collateral.¹¹⁹ This practice developed into a crisis in October and November 2018 amid a major stock market downturn. In 2018, 136 listed firms changed ownership—compared to 85 ownership changes in 2017—with 41 changes occurring in October and November alone.¹²⁰ The government responded by organizing bailout funds through local State-Owned Assets Supervision and Administration Commissions and encouraging state owned insurers and securities companies to buy up stocks.¹²¹ According to the China Securities Regulatory Commission, by March 2019 local governments and SOEs mobilized \$99.2 billion (RMB 700 billion) to bailout private companies.¹²² While these measures have succeeded in calming markets for now—the pace of ownership turnover of China’s listed companies has slowed—structural incentives that favor SOEs remain largely in place.¹²³

External Debt Risks Loom

Estimates of China’s foreign debt vary widely. According to official figures published by the State Administration of Foreign Exchange, China’s external debt was equivalent to \$1.97 trillion in March 2019, of which \$726 billion is denominated in U.S. dollars.¹²⁴ However, some analysts claim China’s foreign debt could be as much as \$3 trillion, roughly equal to its foreign exchange reserves.¹²⁵ The discrepancy is usually attributed to the fact that government data omit debt accumulated by Chinese companies’ foreign subsidiaries based in Hong Kong and other locations abroad.¹²⁶ In August 2019, *Bloomberg* estimated that Chinese companies have accumulated another \$650 billion in debt through their overseas subsidiaries.¹²⁷

*For a discussion of central SOE mergers and their impact on state control of strategic sectors in China’s economy, see Sean O’Connor, “SOE Megamergers Signal New Direction in China’s Economic Policy,” *U.S.-China Economic and Security Review Commission*, May 24, 2018.

If these higher estimates are correct, the recent devaluation of the RMB would make repayment of external debt more expensive (as foreign currencies rise in value relative to the RMB). In testimony before the Commission, expert on the Chinese economy Victor Shih argued that one reason Chinese companies borrow such large sums through Hong Kong is because banks “lend to both their Hong Kong based subsidiaries and to the headquarters in Beijing.”¹²⁸ In other words, Hong Kong’s treatment as a separate customs area enables banks to “lend even more money than prudential, internal rules would allow.” According to Dr. Shih, banks do this because “Chinese companies will pay higher interest.”¹²⁹ However, there are some factors that help mitigate China’s external debt risks. For example, roughly 35 percent of China’s foreign debt is denominated in RMB and Chinese banks hold significant foreign-currency-denominated assets.¹³⁰ (For further discussion of Hong Kong’s special status, see Chapter 6, “Hong Kong.”)

Household Debt Is on the Rise

While China’s deleveraging campaign has focused on curbing corporate debt buildup, household borrowing has been on the rise. Growing household debt could suppress consumption and lower long-term growth. Recent scholarship on the relationship between household debt and economic growth reveals that while a rapid increase in household borrowing can boost consumption and growth in the short term, it usually leads to reduced GDP growth in the longer term as households adjust their consumption to meet debt obligations.¹³¹

At 53.6 percent of GDP in March 2019, China’s household debt remains below the international average of 60.3 percent,* and most observers agree it is manageable at current levels. But household debt has grown quickly since the 2008 financial crisis.¹³² Between December 2008 and December 2018, China’s household debt accumulated faster than any of the other 44 economies tracked by the Bank for International Settlements.¹³³ Moreover it grew roughly twice as fast as urban disposable income over the last decade, an indication that a growing number of Chinese families may need to reduce their consumption to pay off debt.¹³⁴

Continued buildup of China’s household debt could also pose risks for financial stability.¹³⁵ Because home mortgages account for about two thirds of China’s household debt, there is some risk that a financial shock that forces households to quickly deleverage could cause a downturn in the property market, which analysts generally regard as overheated. This would have wide-ranging consequences since the housing market is a key engine of China’s economic growth and real estate is a form of collateral local governments and corporations have used to secure bank loans.¹³⁶

Stimulus Pushes Local Government Debt Higher

China’s local government debt has risen consistently since the 1990s but expanded especially rapidly after the global financial crisis.¹³⁷ The persistence of local government liabilities stems from a

*This figure is the average household debt to GDP ratio of 44 countries on which the Bank for International Settlements publishes regular credit statistics. Bank for International Settlements, “Credit to the Non-Financial Sector,” September 22, 2019.

structural imbalance in the fiscal relationship between local governments and Beijing. Local governments shoulder the majority of expenditure obligations but receive less than half of all tax revenue. Theoretically, this gap is later closed with fiscal transfers from the central government, but in practice these transfers rarely cover local government expenses, resulting in a de facto unfunded mandate.¹³⁸

In 2014, the National People's Congress adopted a revision to China's Budget Law, which permitted local governments to run a deficit. Prior to this, local officials got around the deficit prohibition by establishing shell companies called local government financing vehicles (LGFVs) to borrow on their behalf, often using land as collateral.¹³⁹ While LGFVs continue to exist, local governments now have other ways of raising money. The revision to the Budget Law gave local governments permission to issue debt with the approval of—and within limits set by—the State Council. Beijing also set up a debt swap program for local governments to convert debt accumulated through LGFVs to bonds.¹⁴⁰ Official figures indicate that as of July 2019, total outstanding local government bonds were equal to \$2.98 trillion, but the true scale of local government debt is unknown as much of it is hidden through LGFVs and other shadow banking activity.¹⁴¹

In December 2018, the State Council began approving local government bonds for 2019 three months earlier than usual* as a way to encourage local officials to ramp up infrastructure spending and stimulate the economy.¹⁴² Chinese Premier Li Keqiang subsequently announced a \$113 billion increase to the annual local government bond quota in March 2019.¹⁴³ Combined with \$283.3 billion in cuts to business taxes and fees that were rolled out simultaneously, this policy strategy has had a corrosive effect on local government budgets in 2019. In the first half of the year, every province except Shanghai expanded its budget deficit compared to the same period in 2018, and many experienced severe revenue contractions or decelerations.¹⁴⁴ But in September 2019, as local government bond issuance approached annual quotas for the year, the State Council once again signaled its intention to begin early approvals for 2020 bonds.¹⁴⁵

Trading Fiscal for Monetary Stimulus: Still Risky

Historically, Beijing has used monetary policy as one of its main tools for stimulating growth. In the aftermath of the global financial crisis, and to a lesser extent in 2015 during a major stock market crash in China, the PBOC pumped vast sums of money into the economy.¹⁴⁶ However, excessive monetary stimulus is one of the reasons for China's corporate credit buildup over the last decade. Therefore, as the current economic slowdown has unfolded, policymakers have consciously sought to refrain from returning to heavy monetary stimulus. Instead, they have emphasized fiscal stimulus † and measures to improve the business environment. At the annual session of China's legislature in March 2019, for example, Premier

*Annual bond quotas for local governments are typically set during the dual meeting of the National People's Congress and the People's Political Consultative Conference in March each year.

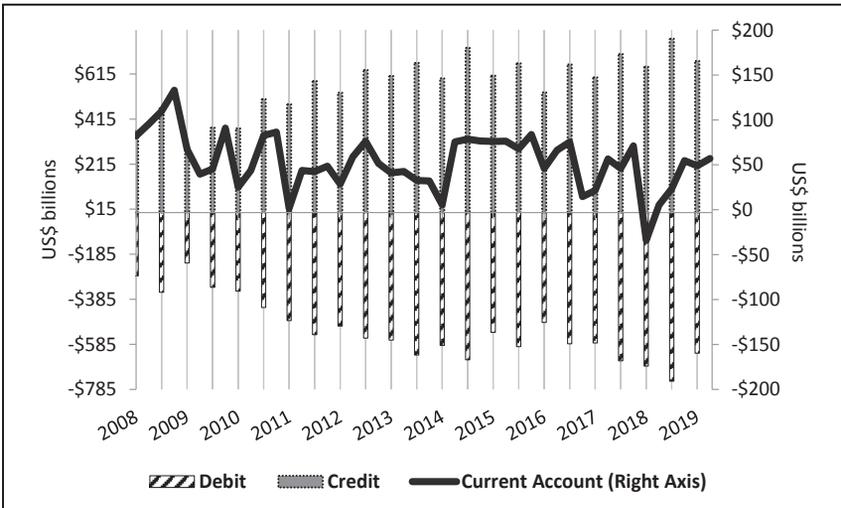
†Fiscal stimulus refers to government spending designed to prevent or alleviate an economic recession. This is distinct from monetary stimulus, which refers to measures taken by the central bank to increase the money supply.

Li promised that the government would refrain from unleashing “a deluge of stimulus” to prop up economic growth and would keep the growth of money supply in line with GDP.¹⁴⁷ Policymakers have so far maintained this commitment, instead resorting to fiscal stimulus to shore up growth. However, ramped up fiscal spending swaps increased corporate leverage for higher public debt and thus amounts to a qualitative decision about what kind of debt is preferable. It does not prevent overall debt levels from continuing to rise.

Current Account Surplus Narrows

China has long maintained a current account* surplus and continued to do so in 2018 and the first half of 2019. However, the current account surplus has trended downward over the past decade, and in the first quarter of 2018 China registered its first quarterly current account deficit in nearly 17 years (see Figure 12).¹⁴⁸

Figure 12: China’s Current Account, Quarterly, 2008–Q2 2019



Source: China State Administration of Foreign Exchange via CEIC database.

While the overall downward trend has led some observers to predict that China’s current account will turn negative sometime in the near future, debate about the extent, causes, and implications of the decline in China’s current account remains ongoing. In the first half of 2019, analysis in the *Economist* argued that higher outbound tourism and a declining savings rate will soon lead China to run a current account deficit, increasing pressure on its foreign exchange reserves and forcing Beijing to liberalize its foreign investment regime.¹⁴⁹ This is in line with an assessment published by the International Monetary Fund (IMF) in August 2019 asserting that the changing current account represents a “normalization” of China’s

*The current account balance refers to the balance of trade plus net (investment) income from abroad and net transfer payments. The current account is one half of the balance of payments; the other half is the capital account. Economists often refer to the current account as the difference between savings and investment because this is arithmetically equivalent.

domestic savings rate as the country's population ages and people naturally save less in their retirement years.¹⁵⁰

Other observers contend that the extent of the decline in China's current account is overstated and is partly the result of government policy rather than structural factors. Brad Setser and Barry Eichengreen, economists at the Council on Foreign Relations and University of California, Berkeley, respectively, have recently claimed that China's savings rate remains very high and its current account surplus will only disappear if China maintains its current levels of investment, which are a largely the result of policy-driven stimulus.¹⁵¹ The impact of a sustained current account deficit on China's economy remains unclear as it is unprecedented in the country's recent history. However, one likely outcome would be an increase in exchange-rate volatility as downward pressure on the RMB could prompt heavy-handed government intervention in currency markets. It is also possible the declining current account surplus could put pressure on Beijing to further liberalize the financial sector in order to attract foreign capital to finance continued growth.¹⁵²

The Baoshang Bank Takeover

On May 24, 2019, Inner Mongolia commercial lender Baoshang Bank ("Baoshang") was taken over by the China Banking and Insurance Regulatory Commission (CBIRC), China's primary banking and insurance sector regulator.¹⁵³ While the PBOC fully guaranteed deposits and interbank liabilities up to \$7.1 million (RMB 50 million), it forced Baoshang's larger creditors to accept losses of up to 30 percent.¹⁵⁴ This protected the bank's retail customers but passed on some of the cost of its failure to large commercial lenders.

Baoshang is a medium-size regional lender classified by the CBIRC as a city commercial bank. There are 134 city commercial banks in China that, together with 1,427 smaller rural commercial banks, are often collectively referred to as "regional banks."¹⁵⁵ Although a handful of national state-owned banks dominate China's commercial banking sector, these regional banks play an important role as intermediary lenders, borrowing funds from larger banks and making loans to local governments, property developers, and other nonbank financial actors.¹⁵⁶ Additionally, since regional banks are not permitted to operate outside of their local area, they rely on local enterprises for business and consequently tend to engage in riskier lending behavior than their national counterparts.¹⁵⁷

The Baoshang takeover was highly unusual: the Chinese government has not seized a private bank in 20 years.¹⁵⁸ Instead, in 2015 and 2016, China's financial regulators dealt with weak financial institutions by recapitalizing lenders and writing off or transferring troubled assets.¹⁵⁹ Because of this, and because analysts have identified several other regional banks as having similar risk profiles, Baoshang is more than just locally significant for China's financial system.¹⁶⁰ The takeover caused large national bank lenders to reassess their customers' credit risk, pushing up the costs of short-term borrowing and reducing regional banks'

The Baoshang Bank Takeover—Continued

access to interbank financing.¹⁶¹ In the immediate aftermath of the takeover, the PBOC pumped \$63.7 billion (RMB 450 billion) into the banking system and regulators pressured lenders to support smaller banks in order to ease the credit shortfall.¹⁶²

In shoring up Baoshang, the PBOC had two contradictory targets: reducing the problem of financial actors taking too much risk, and sustaining growth by keeping interbank credit channels open to minimize the likelihood of a financial shock. The risk aversion affecting interbank markets and decreasing credit to small and regional banks could lead to slower credit expansion—a problem because policymakers need to maintain economic growth. Since small and regional banks and nonbank financial institutions are risk-takers in the Chinese economy, reducing their access to financing could threaten China’s economic recovery.¹⁶³

It remains unclear exactly why the PBOC decided to seize Baoshang rather than recapitalize or restructure its loans. To explain the abrupt takeover, the PBOC stated that Baoshang had “serious credit risk,” and that by assuming its banking operations for a year, the government would “protect the lawful interest of depositors and other clients.”¹⁶⁴ The PBOC also emphasized that the Baoshang seizure was connected to embezzlement by its former controlling shareholder, the financial conglomerate Tomorrow Group formerly managed by detained tycoon Xiao Jianhua.*¹⁶⁵

While the PBOC characterized Baoshang’s takeover as a one-off, problems have subsequently emerged at two other regional banks. On July 29, 2019, three state-owned asset managers, operating under PBOC guidance, made strategic investments to shore up the struggling Bank of Jinzhou.¹⁶⁶ Unlike with Baoshang, however, creditors and corporate depositors reportedly suffered no losses in this process.¹⁶⁷ On August 9, 2019, a unit of China’s sovereign wealth fund acquired a stake in Hengfeng Bank after the CBIRC had earlier tried to calm markets by saying the bank’s liquidity risks were manageable.¹⁶⁸

Observers believe the different approach to resolving the Bank of Jinzhou crisis demonstrates regulators’ concern about the market reaction to Baoshang investors’ losses. Michael Pettis, senior associate at the Carnegie Endowment for International Peace, stated the interbank reaction demonstrated Chinese investors found the takeover “very significant,” given the “surge in interbank interest rates” and quick measures by the PBOC to shore up the interbank market and continue the flow of credit.¹⁶⁹

*Xiao Jianhua was abducted from a luxury Hong Kong hotel in January 2017 amid China’s crackdown on risky financial behavior that also ensnared chairman of Anbang Insurance Wu Xiaohui and CEEC China Energy chairman Ye Jianming. But analysts have speculated that Xiao may also have been targeted for political reasons. Xiao previously helped General Secretary Xi’s family members divest assets during the early stages of the Xi’s anticorruption campaign, and in 2014 he divulged details of the family’s wealth to the *New York Times*. Xiao is currently still detained in China, where he is reportedly cooperating with the government to unwind Tomorrow Group’s assets. Don Weiland and Lucy Hornby, “Tycoon Abducted by China Works with Authorities to Sell Assets,” *Financial Times*, June 10, 2018; Michael Forsythe, “Billionaire Is Reported Seized from Hong Kong Hotel and Taken into China,” *New York Times*, January 31, 2017; Michael Forsythe, “As China’s Leader Fights Graft, His Relatives Shed Assets,” *New York Times*, June 17, 2014.

China's External Economic Opening

Trade frictions with the United States and a slowing domestic economy have pushed the Chinese government to implement limited market opening measures over the course of 2019, including the liberalization of foreign investment, financial opening, and the establishment of new FTZs. While these measures narrowly open the Chinese economy on the margins, they also demonstrate that the Chinese government continues to coordinate economic activity in a manner favorable to the state.

New Foreign Investment Law Rehashes Old Promises

China's National People's Congress passed a new Foreign Investment Law in March 2019, combining three separate laws governing joint ventures established by contract, joint ventures established with equity investment, and wholly foreign-owned enterprises.¹⁷⁰ The passage of the law aims to address U.S. and international concerns about China's treatment of IP and comes as China seeks to attract more foreign capital to bolster its domestic economy.¹⁷¹ While the law consolidates previously disparate foreign investment regulations and effectively simplifies China's foreign investment regime, its purported protections for foreign-invested firms may prove unenforceable or be selectively enforced absent more substantive changes that promote genuine rule of law in China's legal system.¹⁷²

Chinese officials have indicated that swift passage of the law—the first draft was only introduced in late December 2018*—was intended to facilitate ongoing U.S.-China trade negotiations.¹⁷³ The law includes articles that appear to respond directly to a number of complaints raised in the USTR's Section 301 report concerning China's unfair trade practices related to technology transfer, IP, and innovation.¹⁷⁴ Some of these provisions include penalizing government officials for sharing foreign firms' trade secrets with their domestic competitors, forbidding use of administrative means to force technology transfers, treating foreign investors the same as domestic investors, and creating a complaint mechanism and channel for foreign firms to sue government agencies.¹⁷⁵

Both Chinese and international legal experts have noted that the Foreign Investment Law is vaguely worded and the most substantial provisions are not new.¹⁷⁶ For instance, technology transfers are already expressly banned under China's WTO accession protocol, yet numerous testimonies before the USTR detail a pattern of market access being preconditioned on the transfer of technology.¹⁷⁷ Foreign firms' trade secrets are also protected under China's Administrative Law, but the Section 301 report documents instances of Chinese regulators requiring excessive disclosure of trade secrets as a precondition to obtain licenses, and then providing this information to domestic competitors.¹⁷⁸ Since Chinese officials deny that Chinese companies or government agencies have violated these laws in the first place, additional legal mechanisms may be useless in addressing a violation if the government is unwilling to acknowledge the violation occurred.¹⁷⁹

*On average, new legislation between 1993 and 2017 took 4.7 years to pass, and amended legislation took 2.9 years to pass, with 73 percent of introduced (both new and amended) legislation passing. Yang Mingyu, "Does China Have a Legislative Backlog?" (中国也有“立法堵塞”?) *CNPolitics.org*, August 1, 2018. Translation.

Negative List Revised in Line with National Development Ambitions

Since 2016, China has managed foreign direct investment through the use of a so-called “negative list,” which classifies investment into certain sectors as prohibited, restricted, and encouraged. Sectors not specified are presumed to be open to foreign investment but are sometimes subject to separate regulations.¹⁸⁰ In June 2019, the NDRC and Ministry of Commerce published a revised version of the national negative list, reducing the number of prohibited and restricted sectors from 48 to 40.¹⁸¹ The changes from the previous year’s list are:¹⁸²

- Removal of prohibitions on foreign investment in molybdenum, tin, antimony, and fluorite mining; calligraphy paper and brush production; and development of wildlife and plant products protected by the investor’s origin country;
- Removal of the requirement for majority Chinese ownership of shipping agencies, performance companies, movie theaters, and the construction of gas and steam pipelines in cities with a population over 500,000;
- Removal of joint venture requirements and foreign equity caps for oil and gas exploration and value-added telecommunications services.

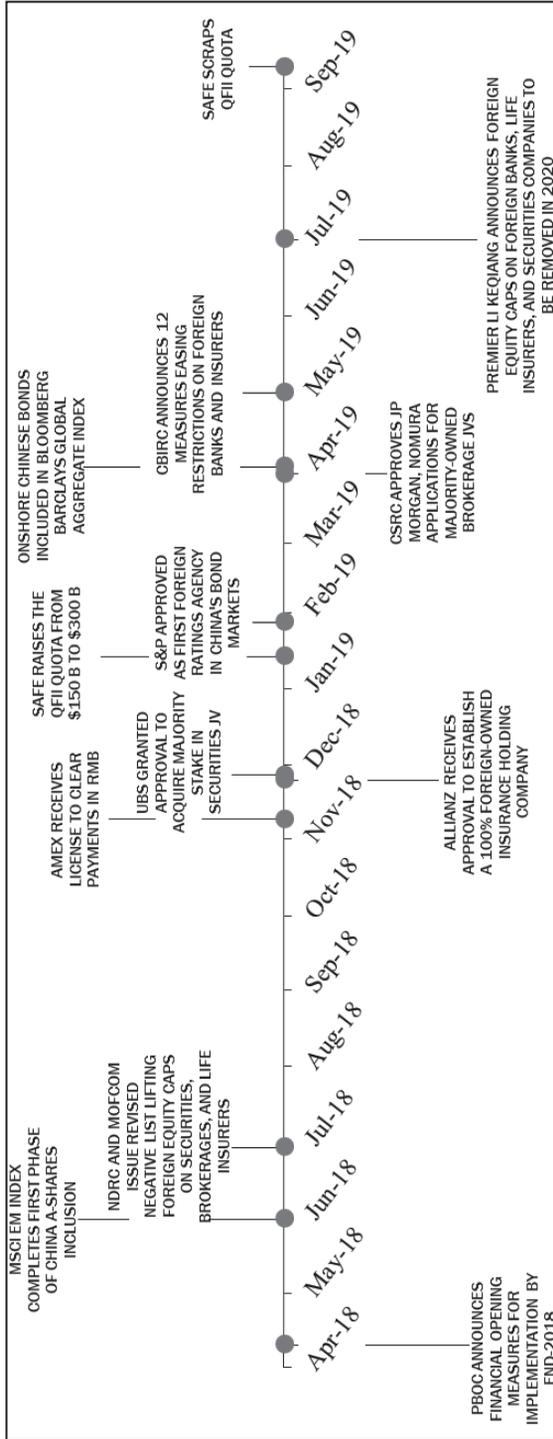
While some of these adjustments to the list—such as the removal of equity caps on multiparty telecommunications, e-storage, forwarding, and call centers—are likely welcome news to foreign companies, the changes do not amount to a significant liberalization of China’s foreign investment regime. Restrictions that affect major U.S. corporate interests, such as the 50 percent foreign equity cap on automobile production, remained in place—albeit with promises for eventual removal.¹⁸³

The NDRC and Ministry of Commerce simultaneously published an expanded list of encouraged investment areas. Unsurprisingly, most of the new additions—including semiconductors, information and communication technology, new energy vehicles, and new materials—are in high-technology areas that align with Beijing’s industrial policy goals.¹⁸⁴ (China’s efforts to develop emerging technologies are analyzed in Chapter 3, Section 2, “Emerging Technologies and Military-Civil Fusion: Artificial Intelligence, New Materials, and New Energy.”)

Financial Opening: Too Little, Too Late

Though the Chinese government has limited foreign companies’ access to its financial markets for many years, Beijing accelerated financial opening in 2018 and 2019 (see Figure 13). At the April 2018 Boao Forum for Asia, General Secretary Xi and PBOC Governor Yi Gang announced the Chinese government would deliver on longstanding pledges to open up China’s financial sector to foreign competition.¹⁸⁵ Since then, Beijing has taken several steps to (1) increase market access in the banking, securities, and insurance industries; (2) grant foreign institutions equal treatment in credit and payment sectors; and (3) open up the domestic bond market to foreign investors.¹⁸⁶

Figure 13: Timeline of China's Financial Opening, April 2018–September 2019



Source: Created by Commission staff.

The most significant opening came in June 2018, when regulators raised foreign equity caps on banking, securities, and insurance joint ventures to 51 percent, and promised to remove them entirely by 2021, a timeline that was later shortened to 2020.¹⁸⁷ These changes have enabled several major foreign companies to establish new businesses in China or take controlling stakes in existing joint ventures, and reflect a “pragmatic market opening streak” as the Chinese government endeavors to internationalize its financial markets and push domestic financial services firms to become more competitive.*¹⁸⁸

While Beijing has touted these measures, there remains skepticism that foreign companies’ market access in China will significantly improve.¹⁸⁹ For example, though American Express received approval to clear RMB payments, other foreign card service providers’ applications remain in limbo. Executives of Mastercard and Visa, which applied at the same time as American Express, say Chinese regulators have informally pressured them to form joint ventures to gain regulatory approval. Although Chinese law requires regulators to respond within 90 days of an application submission, the PBOC has stalled their applications for nearly three years.¹⁹⁰

In June 2019, China also launched the long-awaited Shanghai-London Stock Connect, which, like the Shanghai-Hong Kong Stock Connect, allows Chinese companies to raise capital abroad without needing to list on foreign stock exchanges. The connect also gives foreign investors—typically not permitted to purchase shares of Chinese companies—access to China’s onshore equities market. Separately, the State Administration of Foreign Exchange (SAFE) scrapped the qualified foreign institutional investor (QFII)† scheme (which had a ceiling of \$300 billion on total asset purchases) in September 2019, allowing qualified foreign institutional investors unrestricted access to China’s stock and bond markets.¹⁹¹ (For further discussion of the Hong Kong stock and bond connects, see Chapter 6, “Hong Kong.”)

The steady opening of China’s stock and bond markets in 2019 provides the Chinese government with additional conduits for drawing foreign capital and channels for bolstering its balance of payments in the face of a slowing economy and trade headwinds. However, the impact of the measures may be small. In the case of the stock connect, a number of unresolved compatibility issues, such as mismatched daily trading volume limits between the two exchanges,

*A range of U.S. and multinational banking, securities, and insurance firms have taken advantage of increased liberalization of China’s financial sector. American Express won approval to clear payments in RMB through a joint venture operation in November 2018, and Standard and Poor’s became the first foreign company to operate a credit rating agency in China’s domestic bond markets in July 2019. However, though China committed to a five-year phase-in for banking services by foreign firms as part of its accession to the WTO, the Chinese government has instead protected the financial services industry from foreign competition, resulting in a market dominated by unfairly state-supported Chinese firms. For more on U.S. access to the Chinese market, see Chapter 3, Section 1, “U.S.-China Commercial Relations.” Doug Palmer and Frank Tang, “China Slow-Walks Opening Country to U.S. Credit Card Companies,” *Politico*, April 2, 2019; U.S. Trade Representative, *2018 Report to Congress on China’s WTO Compliance*, February 2019, 147.

† Launched in 2002, the QFII program grants foreign investors with relevant qualifications access to Chinese stock and bond markets. An RMB-denominated cap applied to a parallel “RQFII” program was initiated in 2011. The SAFE announcement scraps quotas on both foreign investment schemes, which have become increasingly overshadowed by the Stock Connect and Bond Connect schemes. *Reuters*, “China to Scrap Quotas on QFII, RQFII Foreign Investment Schemes,” September 10, 2019.

will make it illiquid in the beginning.* Furthermore, listings are subject to minimum market capitalization requirements, limiting the number of potential participants.¹⁹² The removal of investment quotas is also mostly symbolic; despite a doubling of the QFII quota to \$300 billion in January 2019, only \$111.4 billion of the limit had been used by foreign investors by the end of August.¹⁹³

Internal and External Pressures Prompt FTZ Expansion and Reform

The Chinese government took steps to expand its FTZ program to underdeveloped provinces in 2019, as well as marginally ease business registration and licensing procedures in China's pilot FTZs.† In establishing new FTZs, Beijing seeks to deepen trade ties with neighboring countries and bolster economic development in China's poorer inland regions. The cutting of red tape in already established FTZs aims to counteract downward economic pressure by improving the business environment.

Against the backdrop of trade frictions with the United States, the expansion of pilot FTZs into border regions and underdeveloped provinces underscores efforts by the Chinese government to strengthen trade ties with other countries and boost economic growth.¹⁹⁴ Newly established FTZs in the relatively underdeveloped Yunnan and Guangxi provinces, for example, aim to promote greater economic integration between China and Southeast Asia as well as draw foreign investment.¹⁹⁵ In a press conference announcing the establishment of the new FTZs, Vice Minister of Commerce Wang Shouwen noted that the Guangxi FTZ will also “form an important gateway” to the Association of Southeast Asian Nations in advancing the Belt and Road Initiative.¹⁹⁶

Separately, in August 2019, Premier Li announced steps to simplify business registration and permit requirements for foreign companies in China's FTZs.¹⁹⁷ Foreign companies in China require a range of permits—in addition to a business license—to operate, effectively heightening market entry thresholds.¹⁹⁸ Beginning in December 2019, permit requirements for 81 items will be abolished, simplified, or replaced by precommitments of compliance.¹⁹⁹ While the move is intended to make it easier for foreign companies to start operations as quickly as possible, it only applies to China's FTZs and does not address broader market access issues in the Chinese economy. Additionally, permit requirements for 442 other items remain in force.²⁰⁰

*The Shanghai Stock Exchange enforces a 10 percent daily trading limit, while the London Stock Exchange has no such restriction, in theory making Chinese securities purchased through the connect less liquid than other securities traded on the London stock market. Tom Hancock et al., “London-Shanghai Stock Link Hailed as Groundbreaking,” *Financial Times*, June 16, 2019.

†An FTZ is a type of special economic zone. It is a designated geographic area where economic transactions are conducted under terms and regulations different from the general conditions administered outside the FTZ. China's government has used FTZs to test economic reform measures promoting financial liberalization, simplifying the foreign investment management system, and easing international trade. Customs clearances procedures are relatively streamlined in China's FTZs (e.g., goods imported into them can be stored, handled, and re-exported to other overseas destinations or routed into the Chinese market at reduced duty rates). The Chinese government established China's first FTZ in Shanghai in 2013, and has since expanded the FTZ program to a total of 18 zones as of September 2019, with more zones increasingly being located in China's underdeveloped interior. Shen Fan and Han Wei, “China Expands FTZ Pilot Program to Promote Trade and Reforms,” *Caixin*, August 27, 2019.

Addendum I: WTO Cases
Ongoing WTO Cases Brought by the United States against China

No.	Title	Request for Consultation	Panel Report	Status
DS508	Export Duties on Certain Raw Materials	July 13, 2016	Panel established November 2016, but not yet composed as of September 2019	The United States requested consultations with China over China's export duties on nine raw materials.*
DS511	Domestic Support for Agricultural Producers	September 13, 2016	Panel report circulated February 28, 2019	The dispute settlement panel found China's agricultural subsidies exceeded its allowed amount in three of the four crops for which the United States claimed Beijing was breaching its commitments.
DS517	Tariff Rate Quotas for Certain Agricultural Products	December 15, 2016	Panel report circulated April 18, 2019	The United States argued China's tariff rate quota (TRQ) treatment for rice, wheat, and corn is non-transparent and violates China's WTO commitments. The panel found the administration of China's TRQ is not transparent, predictable, or fair.
DS519	Subsidies to Producers of Primary Aluminum	January 12, 2017	In consultations; panel not yet formed as of September 2019	The United States argues China provides certain producers of primary aluminum with subsidies, including artificially cheap loans and artificially low-priced inputs for production, such as coal, electricity, and alumina.
DS542	Certain Measures Concerning the Protection of Intellectual Property Rights	March 23, 2018	Panel suspended June 2019	The United States requested consultations with China concerning certain measures pertaining to the protection of IP rights.
DS558	Additional Duties on Certain Products from the United States	July 16, 2018	Panel composed January 2019	The United States requested consultations with China concerning the imposition by China of additional duties with respect to certain products originating in the United States.

Source: World Trade Organization, Disputes by Member.

*The materials are antimony, cobalt, copper, graphite, lead, magnesite, talc, tantalum, and tin.

Addendum I: WTO Cases—Continued

Ongoing WTO Cases Brought by China against the United States

No.	Title	Request for Consultations	Panel Report	Status
DS437	Countervailing Duty Measures on Certain Products from China — Recourse to Article 21.5 of the Dispute Settlement Understanding By China	May 25, 2012	Original panel report circulated July 14, 2014; Second Recourse to Article 21.5 Appellate Body Report circulated July 16, 2019	The dispute settlement panel found select U.S. tariffs on Chinese goods do not comply with its rules, providing China the option to respond with retaliatory measures against the United States if Chinese pricing is not accepted.
DS515	Measures Related to Price Comparison Methodologies	December 12, 2016	In consultations; panel not yet established as of September 2019	China's complaint alleges the United States has failed to treat China's as a market economy for the purposes of calculating antidumping duties.*
DS543	Tariff Measures on Certain Goods from China	April 4, 2018	Panel composed June 2019	China requested consultations with the United States concerning certain tariff measures on Chinese goods which would allegedly be implemented through Section 301–310 of the U.S. Trade Act of 1974.
DS544	Certain Measures on Steel and Aluminum Products	April 5, 2018	Panel composed January 2019	China requested consultations with the United States concerning certain duties that the United States had imposed on imports of steel and aluminum products.
DS562	Safeguard Measure on Imports of Crystalline Silicon Photovoltaic Products	August 14, 2018	In consultations; dispute Settlement Body deferred establishment of a Panel in July 2019	China requested consultations with the United States concerning the definitive safeguard measure imposed by the United States on imports of certain crystalline silicon photovoltaic products.

*The case is related to the expiration on December 11, 2016 of a provision in China's WTO accession protocol that allowed its trade partners to automatically treat China as a non-market economy when calculating dumping margins. China argues it is now automatically entitled to be treated as a market economy, while the United States says there is no automaticity. China filed a similar case against the European Union.

Addendum I: WTO Cases—Continued

Ongoing WTO Cases Brought by China against the United States—Continued

No.	Title	Request for Consultations	Panel Report	Status
DS563	Certain Measures Related to Renewable Energy	August 14, 2018	In consultations; panel not yet formed as of September 2019	China requested consultations with the United States concerning certain measures allegedly adopted and maintained by the governments of certain U.S. states and municipalities in relation to alleged subsidies or alleged domestic content requirements in the energy sector.
DS565	Tariff Measures on Certain Goods from China II	August 23, 2018	In consultations; panel not yet formed as of September 2019	China requested consultations with the United States concerning certain tariff measures allegedly imposed by the United States on certain goods from China.
DS587	Tariff Measures on Certain Goods from China III	September 2, 2019	In consultations; panel not yet formed as of September 2019	China requested consultations with the United States regarding tariff measures imposed by the United States on certain goods originating from China.

Source: World Trade Organization, *Disputes by Member*.

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SECTION 2: YEAR IN REVIEW: SECURITY, POLITICS, AND FOREIGN AFFAIRS

Key Findings

- In 2019, Beijing declared in unambiguous terms its intent to revise and reorder the international system in ways more befitting its national interests and repressive vision of governance. In a series of national addresses, Chinese leaders suggested the Chinese Communist Party (CCP) viewed its “historic mission” as being not only to govern China, but also to profoundly influence global governance. The CCP took new steps to promote itself abroad as a model worthy of emulation, casting its political system and approach to economic development as superior alternatives to that of the United States and other democratic countries.
- Chinese leaders took a more strident tone in their discussion of military affairs, reinforcing a sense of urgency in the People’s Liberation Army’s (PLA) preparations for a potential military conflict while indicating Beijing’s intent to position the PLA as a globally-oriented military force. General Secretary of the CCP Xi Jinping urged the PLA to make preparations for a possible conflict with the “powerful enemy adversary”—a phrase the CCP uses to refer to the United States—central to its modernization and training efforts.
- Despite signs of outward confidence, CCP leadership also revealed a growing unease over the mounting external resistance to its ambitions, which it viewed as threatening its objectives abroad and rule at home. In response to these challenges, the CCP deepened its control over the Chinese government and Chinese society and stepped up an ideological and nationalistic messaging campaign instructing key groups to “win the ideological war” against Western and other democratic countries.
- China continued its efforts to coerce or interfere in the domestic affairs of countries acting in ways contrary to its interests, detaining foreign citizens and carrying out an extensive influence campaign targeting foreign universities, media, and the Chinese diaspora. Beijing also expanded its global promotion of the Belt and Road Initiative (BRI), increasing military cooperation and exporting its censorship and surveillance technologies to countries under BRI auspices.
- In the Indo-Pacific region, China made new use of “gray zone” activities and military intimidation of its neighbors to secure its expansive sovereignty claims. Military tensions between China and Japan persisted in the East China Sea despite attempts by both countries to reset bilateral relations, while an annual poll

of respondents in Southeast Asian countries found that fewer than one in ten saw China's regional influence as benign.

- The U.S.-China relationship grew markedly more confrontational as tensions increased over political, economic, and security issues and polls reflected a significant drop in the U.S. public's favorability toward China. Chinese leaders showed few signs of willingness to compromise on issues raised by Washington.

Introduction

In 2019, Beijing took new steps to advance the aggressive approach to foreign and security policy it has taken in recent years in the Indo-Pacific region and around the globe. Over the past year, the CCP promoted itself abroad as a model worthy of emulation, casting its political system and approach to economic development as superior alternatives to that of the United States and other democratic countries.¹ Meanwhile, Beijing used its growing economic and political clout in a campaign that increasingly extended beyond the Indo-Pacific region to silence criticism of the CCP and coerce other countries into conforming to Beijing's wishes.

Against the backdrop of deepening tensions over trade and technology with the United States and other countries, China made efforts to assuage foreign concerns over its diplomatic, economic, and military ambitions, although it gave little indication it was willing to alter the essential features of its policy. In the Indo-Pacific region, Beijing used displays of military force to intimidate its neighbors while continuing its military build-up and issuing new calls to improve military readiness, including for a possible conflict involving the United States.² In response to new challenges in China's political and security environment, the CCP reinforced ideological and nationalistic messaging as it prepared the population for a protracted, multidecade confrontation with Washington and its allies over divergent views of security issues and political and economic systems.

This section begins by examining Beijing's actions in 2019 to promote itself as a global political and economic leader, improve its military readiness, and coerce or interfere in the domestic affairs of countries acting in ways contrary to its interests. It then assesses China's attempts to strengthen its foreign relations around the globe and advance its sovereignty claims in the East China Sea, South China Sea, and along the Indian border. The section concludes with an examination of new areas of competition and attempts at cooperation in the U.S.-China relationship. This section is based on Commission hearings and briefings, the Commission's May 2019 fact-finding trip to the Indo-Pacific, discussions with outside experts, and open source research and analysis.

A Year of Both Success and Setback

In 2019, Beijing declared in unambiguous terms its intent to revise and reorder the international system in ways it believes are more befitting its national interests. Repeating language introduced at the CCP's 19th National Congress in 2017, General Secretary Xi and other top Chinese leaders reaffirmed China's view of itself as "moving closer to the world's center stage" and offering a new

“Chinese plan” to solve global challenges.³ At the National People’s Congress held in March 2019, Chinese Premier Li Keqiang spoke in stronger language than he had previously at the annual assembly, declaring China would “actively participate in the reform and improvement of the global governance system ... and push forward the building of a ‘community of common human destiny’”—the latter a formulation the CCP has used with increasing frequency to refer to what appears to be its vision for a global order revised to Beijing’s advantage.*⁴ Premier Li used more passive language in his address to the assembly in March 2018, for instance, stating only that China had “called for ... and stands ready to work with other countries to build a community of common human destiny.”⁵

Other Chinese leaders used even clearer terms to describe China’s aspirations to play a global leadership role. In an article published in the influential Party journal *Qiushi* (*Seeking Truth*) in September 2019, Chinese Politburo member and top diplomat Yang Jiechi described a central aim of China’s foreign policy since 2012 as having been to “lead and shape” changes to the global governance system.⁶ This language matched General Secretary Xi’s claim in 2018 that China would “lead” changes to global governance rather than merely participate in these changes.⁷ Over the past year, China applied its formulation for a revised international order to its relations with regions around the world, calling for the construction of “communities of common destiny” encompassing Asia,⁸ Latin America and the Caribbean,⁹ Africa,¹⁰ space,¹¹ and cyberspace.¹² Central to Beijing’s ambition is the CCP’s view that the world is currently undergoing epochal changes “not seen in a century,” driven in large part by China’s own actions, which require Chinese leaders to play an active role in leading and shaping these changes.¹³

As part of its vision for a revised world order, Beijing reaffirmed its desire to gain wider international acceptance of China’s authoritarian political system and development model, especially as embodied in its BRI. Beijing has identified BRI as its model for the construction of a new international order, with General Secretary Xi describing it as both a platform for economic cooperation and an “avenue ... for perfecting the global development model and global governance.”¹⁴ In April 2019, China held its second international forum on BRI, where General Secretary Xi repeated these themes and noted China had added 50 BRI signatories—including Italy, which in March became the first G7 country to sign onto the project—since holding its first BRI forum in 2017.¹⁵

But the CCP gave signs its ambition to reshape the international order transcended the expanded scope of BRI to include gaining acceptance of—and even promoting abroad—its repressive vision of governance. In a December 2018 speech commemorating 40 years

*The phrase “community of common human destiny”—alternately translated “community with a shared future for mankind”—was first used by former CCP general secretary Hu Jintao, but has been invoked with much greater frequency by current general secretary Xi Jinping. A recent state-backed study of CCP strategy published by Fudan University describes the phrase as “the contemporary Chinese Marxist cultural form of China moving toward and leading the world” and as China’s post-19th National Party Congress “global cultural strategy.” See Chen Mingming and Xiao Cunliang, eds., *The Frontiers of United Front Theory and Practice* (统一战线理论与实践前沿), Fudan University Press, December 2018, 268. Translation; Liza Tobin, “Xi’s Vision for Transforming Global Governance: A Strategic Challenge for Washington and Its Allies,” *Texas National Security Review* 2:1 (November 2018): 155.

of China's reform and opening era, General Secretary Xi suggested the CCP still views its "historic mission" as being not only to govern China, but also to profoundly influence global governance.* Reserving some of his highest praise for Karl Marx and Mao Zedong, General Secretary Xi invoked Mao's characterization of the revolutionary nature of the CCP's victory in the Chinese Civil War, repeating the judgment of the People's Republic's first supreme leader that the CCP had proven it was "good not only at destroying an old world, but now must become good at creating a new one."¹⁶ In his September 2019 *Qiushi* article, State Councilor Yang argued the CCP had provided the international community with a "profound" and uniquely Chinese vision for how to create and shape the world's future development.¹⁷ He concluded that China's vision would "radically reform" existing global concepts and come to "occupy the commanding heights of international morality and justice."¹⁸

Building a Combat-Ready and Increasingly Global Military

In 2019, Chinese civilian and military leaders took a more strident tone in their discussion of military affairs, reinforcing a sense of urgency in the PLA's preparations for a potential military conflict. On January 4, General Secretary Xi issued an order of instructions to the PLA for the second straight year, using more openly confrontational language than he did the year before.¹⁹ In his order, he instructed the PLA to prepare for a host of "risks and challenges" in the year ahead and to make improving combat readiness the primary focus of its efforts. In a notable addition, General Secretary Xi urged the force not to fear "the powerful enemy adversary"—a phrase used by the CCP to refer to the United States he had not used in his 2018 public instruction.²⁰ In a fiery speech at the Singapore-hosted Shangri-La Dialogue in June 2019, Chinese Defense Minister Wei Fenghe sounded similar warnings over China's readiness to go to war to defend its interests. Vowing the PLA would not "yield a single inch of [China's] sacred land," Defense Minister Wei decried the U.S. relationship with Taiwan and presence in the South China Sea, while quoting China's national anthem as evidence of China's resolve to "defeat all enemies": "Arise, all those who do not want to be enslaved. Let's build the new Great Wall with our flesh and blood."²¹

Meanwhile, Chinese leaders reiterated their call to build the PLA into a "world-class" military positioned to conduct combat operations both within and beyond the Indo-Pacific region. In July 2019, Beijing released a new defense white paper—the first it had issued since 2015—that included language unmistakably denoting China's intent to position the PLA as a globally-oriented military force.²² Although previous white papers had also tasked the PLA with requirements to undertake missions overseas, the new document was much more explicit in its call for the PLA to increase its overseas

* For more information on Chinese leaders' connection of the CCP's mission with global governance and development, see Wang Yi, "Take 'Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era' to Lead the Opening of New Frontiers for Chinese Diplomacy (以习近平新时代中国特色社会主义思想引领中国外交开辟新境界)," *People's Daily*, December 19, 2017. Translation; *Xinhua*, "Xi Jinping: Promote the Successful Implementation of One Belt, One Road to Benefit the People (习近平: 推动共建“一带一路”走深走实造福人民)," August 27, 2018. Translation.

military presence and shoulder global security responsibilities.* Drawing justification from its claim that China's overseas interests were endangered by a number of threats, the paper stated Beijing's intent to expand its overseas military presence and actively work to revise norms for global security governance.²³ Noting the "global significance" of China's new defense policy, the document further argued that in the face of increasing global security challenges from cybersecurity to Iran and Syria, "no country can stand aloof."²⁴ Later that month, prior to the PLA's anniversary celebration on August 1, General Secretary Xi admonished a gathering of senior civilian and military leaders to "resolutely eliminate all outdated ideological and behavioral obstacles" that could hamper the force's ability to build a world-class military and enhance its combat preparedness.²⁵ (For more information on China's military modernization and strategy for employing the PLA abroad, see Chapter 4, Section 1, "Beijing's 'World-Class' Military Goal.")

Concerns over Mounting External Challenges

Despite signs of outward confidence, the CCP also revealed a growing unease over the mounting external resistance to its ambitions, which it viewed as threatening its objectives abroad and even its stability at home. As trade tensions between China and the United States deepened, General Secretary Xi warned in his speech commemorating China's reform and opening era that the country could soon face "unimaginably stormy seas" as it made efforts to overcome a host of significant internal and external challenges.²⁶ In his address to the National People's Congress in March 2019, Premier Li described China as facing a "profound change" in its external environment that had contributed to "complex and severe situations ... rarely seen for many years."²⁷

In May, following a breakdown in trade negotiations with the United States and the addition of Chinese telecommunications company Huawei to the U.S. Entity List, General Secretary Xi made a highly-publicized inspection tour of central China. In a pair of symbolic gestures, he visited one of China's major mining and processing facilities for rare earths and a monument marking the beginning of the CCP's Long March to escape encirclement by Chinese Nationalist forces during the Chinese Civil War.[†]²⁸ During the visit, he declared that the CCP was now engaged in a "New Long March" amid intensifying, long-term challenges coming both from within

* For instance, China's 2015 defense white paper had included for the first time a mission for the PLA to protect China's "overseas interests." As early as 2006, China's defense white paper noted the PLA's responsibility to "maintain world peace," reflecting the increasingly global role then-CCP General Secretary Hu Jintao envisioned for the PLA in the "new historic missions" he assigned to the force. Still, Chinese officials regularly denied any intention to permanently station troops abroad, stating as recently as late 2012 that China had never and would not establish an overseas military base. See *Hindu*, "China Has No Plan for Indian Ocean Military Bases," September 4, 2012; China's State Council Information Office, "China's Military Strategy," May 27, 2015; China's State Council Information Office, "China's National Defense in 2006," December 29, 2006.

† During the Long March, the CCP's Red Army—the predecessor of today's PLA—undertook a series of military retreats from 1934 to 1935 to evade the Chinese Nationalist Army. The best known of these retreats began in Jiangxi Province in central China and involved a punishing journey over mountainous and remote terrain to Yan'an, a small town in northern China that became the CCP's wartime stronghold. It is estimated that only one tenth of the force that left Jiangxi arrived alive in Yan'an. The Long March, which also began the ascent of Mao Zedong to the CCP's top leadership position, remains an important CCP symbol of revolutionary determination in the face of hardship.

China and abroad. To prevail in this new struggle, he exhorted cadres to match the earlier generation's "revolutionary determination" and belief in the CCP's socialist system.²⁹ When Commissioners visited Beijing in May 2019, large electronic propaganda billboards were brightly lit around the city telling citizens to prepare for this "New Long March." Some billboards depicted PLA soldiers ready to fight, while others depicted scenes from the 1934–1935 Long March.

Beijing's perception of its security environment appeared to grow increasingly pessimistic as 2019 progressed. In June, as protests escalated over a proposed extradition bill in Hong Kong, China's vice minister of public security issued a notice to security bureaus across the country, warning "U.S. suppression' had become the greatest external factor affecting China's 'political security.'"³⁰ In September, General Secretary Xi delivered an address at the CCP's Central Party School, where he noted China's challenges were likely to become even more frequent and severe.³¹ Repeating the word "struggle" a total of 58 times, he used martial language normally reserved for his instructions to the PLA, calling on cadres to become "soldiers" able to "come at the first call, ready to fight and win."³² He further warned that the country must prepare for a wide-ranging struggle spanning the economic, political, cultural, foreign policy, and military domains which would last until at least the middle of the 21st century.³³ (For more information on China's concerns over its internal and external security environment, see Chapter 2, "China's Internal and External Challenges.")

Continued "Party-ification" and an Increasingly Rigid Ideology

To support its ambitions abroad while consolidating its rule at home, the CCP stepped up an ideological and nationalistic messaging campaign to unite its domestic population in support of CCP policy and against its perceived opponents abroad. In March 2019, following a common practice used by CCP leadership to emphasize key areas of national policy, *Qiushi* reprinted a 2013 speech by General Secretary Xi recalling the history behind the CCP's path to power and establishing ideological principles for its future endeavors.³⁴ In the speech, General Secretary Xi warned of the dangers of Westernization and argued it was "history's verdict ... [that] only socialism can save China."³⁵ Citing China's rapid economic growth, he continued that a "new type of Marxism" was now challenging the assumptions of the democratic model as the "superiority of China's socialist system inevitably becomes more apparent ... and the global influence of China's development model inevitably increases."³⁶ He concluded by declaring the fall of capitalism and triumph of socialism to be an "irreversible trend of history," while urging cadres to maintain their strategic resolve in realizing the ultimate goal of Communism.³⁷ In his May 2019 speech on China's New Long March, General Secretary Xi reiterated the importance of China maintaining confidence in its socialist system, declaring the CCP's "ideological conviction" and "revolutionary determination" would be crucial for overcoming China's internal and external challenges.³⁸

In reestablishing the primacy of ideological discipline, political rectitude, and social control, the CCP continued to deepen the "Par-

ty-ification” of the Chinese government and Chinese society.*³⁹ In practical terms, this effort included new steps to increase the CCP’s ideological influence over government bodies, media, educational institutions, private businesses, and state-owned enterprises.⁴⁰ In September 2019, the CCP Central Committee announced that discipline inspections would be carried out in 37 Party and state institutions, including the Ministry of Foreign Affairs and the CCP’s International Liaison Department and Central Party School.⁴¹ Considering that many of the targeted government bodies play a role in foreign affairs work and national policy formulation, the move likely aimed less to address traditional corruption issues than to ensure the compliance of key institutions with CCP leadership guidelines.⁴²

The inspections also included Chinese national academies, Party schools, and media associations, constituting the latest move by the CCP to reinforce ideological discipline in key organizations impacting education and public opinion.⁴³ Also in September, the CCP Propaganda Department gave notice that approximately 10,000 reporters and editors from 14 state-run online media outlets in Beijing would be required to pass a political loyalty exam in order to receive updated press cards required to work in the industry.⁴⁴ At a March 2019 seminar in Beijing attended by teachers from across China, General Secretary Xi called on educational institutions from primary schools to universities to curb discussion of Western ideas in their classrooms and ensure that teachers spread CCP-approved content to “nurture support” for CCP rule.⁴⁵

The CCP’s moves to enhance its influence over media and public opinion included expanding its censorship of the content of films and television. In June 2019, a much-anticipated historical drama film was canceled just before its release, allegedly due to its favorable depiction of the CCP’s historical rival, the Chinese Nationalist Party, during China’s war against Japan in the 1930s.⁴⁶ Following the incident, the film company, Huayi Brothers, publicly pledged to deepen its ties to the CCP and “integrate party-building work into every aspect ... of film and TV content creation.”⁴⁷ By mid-July 2019, a total of three major Chinese films had been abruptly canceled or suspended for unclear reasons, which some observers took to be a result of heightened caution over unfavorable portrayals of the CCP in the leadup to the People’s Republic of China’s (PRC) 70th anniversary celebrations in October.⁴⁸ State censors also delayed or canceled several popular television series, which experts cited by state tabloid *Global Times* believed might be driven by the CCP’s desire to promote a “correct historic view” among potential viewers.⁴⁹ These actions followed the CCP Propaganda Department’s assumption of direct oversight of film production in 2018, a significant step in strengthening adherence to ideological and political guidelines in Chinese media. The resulting increase in censorship was reportedly a leading factor in China’s first year-on-year decline in film revenues in a decade.⁵⁰

CCP efforts to control discourse within China’s borders also resulted in its deployment of increasingly advanced social management

* For more information on Party-ification, see U.S.-China Economic and Security Review Commission, Chapter 2, Section 1, “Year in Review: Security and Foreign Affairs,” in *2018 Annual Report to Congress*, November 2018, 159–161.

technology.*⁵¹ In 2019, the CCP introduced a mobile application called “Study Xi, Strong Country” through which Party members and state employees are required to engage in daily study of General Secretary Xi’s speeches and other CCP ideological content.⁵² Some observers have nicknamed the application the “Little Red Phone” in reference to the Cultural Revolution-era “Little Red Book” containing quotations from Mao Zedong.⁵³ Users earn “Xi Study Points” by scoring well on quizzes and using other features of the application. The application also enables digital surveillance because it is linked to users’ personal information, and metrics regarding users’ performance can be accessed by government offices, schools, and private companies to sanction employees and students who earn too few points.⁵⁴ The program builds on the CCP’s increased efforts to ensure citizens’ compliance with its social and political directives, such as through the “social credit system,” which leverages China’s vast data collection capabilities to incentivize government-approved thought and behavior.⁵⁵

Suppressing Resistance through United Front Work

CCP leaders have also pushed to ensure all relevant parts of the state contribute to the goal of “United Front” work, a strategy to secure the political support of or otherwise co-opt non-Party elements both in China and in foreign countries.⁵⁶ The United Front Work Department (UFWD), the CCP Central Committee body responsible for coordinating this mission, underwent an extensive reorganization in 2018 intended to increase the CCP’s ability to “directly influence religious groups and overseas Chinese.”†⁵⁷ The reorganization has resulted in the UFWD “effectively [subordinating] the Ministry of Foreign Affairs” in all matters related to influencing the behavior

*Social management, a product of the CCP’s core need to shape and control society to ensure its own survival, involves guiding and responding to both Party and non-Party actors as a pre-emptive form of state security to incentivize people into managing their own activities for the CCP’s benefit. A 1984 *People’s Daily* report contended effective social management would only become possible by fully grasping “information, data, systems analysis, and decision modeling,” something the influence of a “new technological revolution” on management work could make possible. Increasingly innovative social management is part of a blueprint for the CCP’s continuing ability to maintain power, according to political scientist Samantha Hoffman. The earliest forms of this social management in China were “grid management” schemes in which communities policed themselves. House Permanent Select Committee on Intelligence, *Hearing on “China’s Digital Authoritarianism: Surveillance, Influence, and Political Control,”* written testimony of Samantha Hoffman, May 16, 2019, 3. <https://docs.house.gov/meetings/IG/IG00/20190516/109462/HHRG-116-IG00-Wstate-HoffmanS-20190516.pdf>; Samantha Hoffman, “Programming China: The Communist Party’s Autonomic Approach to Managing State Security,” University of Nottingham, 2017, iii, 12, 55–56; *Xinhua*, “Outline of the 12th Five-Year Plan (Full Text)” (十二五规划纲要 (全文)), 2011, 7–8. Translation. <http://www.lse.ac.uk/GranthamInstitute/wp-content/uploads/laws/1314.pdf>; Song Jian, “Reform of Systems Engineering and Management Systems” (系统工程与管理体制的改革), *People’s Daily*, September 13, 1984. Translation.

†The UFWD promotes broader Chinese foreign policy goals by directing activities to recruit members of the Chinese diaspora as well as by affiliated organizations targeting foreign states and actors. In tandem with other Chinese government agencies, the UFWD works to induce foreign governments to adopt policy positions favorable to Beijing, often through covert, coercive or corrupt means. It restructured its existing bureaus and created four new ones—reaching a total of six new bureaus created since 2017, including new bureaus focusing on Xinjiang and China’s middle class—to more clearly delineate responsibility for influence operations targeting overseas Chinese and religious communities within China. Previously, a single bureau was responsible for activities targeting both ethnic minorities and religious communities, which has now been reorganized so that ethnic work is the responsibility of a stand-alone bureau while two new bureaus carry out different aspects of religious work. For an overview of the CCP’s United Front organization, strategy and activities, see Alexander Bowe, “China’s Overseas United Front Work: Background and Implications for the United States,” *U.S.-China Economic and Security Review Commission*, August 24, 2018. See also Alex Joske, “Reorganizing the United Front Work Department: New Structures for a New Era of Diaspora and Religious Affairs Work,” *China Brief*, May 9, 2019.

and views of ethnic Chinese individuals and communities living outside of China.⁵⁸ This change is noteworthy because such outreach beyond a country's national borders is generally associated with a government's formal diplomatic arm.

The UFWD's consolidation of control over religious groups—what CCP officials have called the “sinicization of religion”—is an attempt to “radically transform religion into the [CCP's] servant,” according to Representative Chris Smith (R-NJ), then co-chair of the Congressional-Executive Commission on China.^{*59} These efforts have involved the mass concentrations of Muslim Uyghurs in prison camps in China's western Xinjiang Uyghur Autonomous Region,[†] as well as the repression of Tibetan Buddhists, Christians, Chinese Hui Muslims, and other religious minorities.⁶⁰ Reports emerged in 2019 that Christian Uyghurs and members of China's majority Han ethnic group who sought to petition the state for official redress or were considered by the CCP to be politically unreliable have also been interned in Xinjiang's prison camps.⁶¹

These developments suggest the state-sanctioned campaign of indoctrination and religious repression has broadened its reach. Moreover, the CCP has expanded its suppression of the Muslim faith to the ethnic Chinese Hui Muslim population in the Ningxia Hui Autonomous Region. The campaign in Ningxia has accelerated since the UFWD assumed responsibility for religious affairs in 2018. The CCP has shut down mosques and Hui-run nursery schools, child care centers, and religious schools; demolished mosque domes and minarets; and imprisoned community leaders, including in Xinjiang's prison camps.⁶² In 2019, local authorities across China also reportedly replaced the Ten Commandments in Christian churches with quotations from General Secretary Xi and portraits of Xi and Mao Zedong.⁶³

Another major consequence of China's campaign has been its success in persuading other countries to at minimum not oppose—and in many cases, openly support—its policy toward its ethnic Muslim population. In July 2019, responding to a letter from 21 Western countries and Japan criticizing the CCP's treatment of Muslims,[‡] 37 African, Eurasian, Middle Eastern, and other countries—including a large number of Muslim-majority countries—sent a letter to the UN

*The CCP itself is officially atheist and claims Party membership and religious beliefs are incompatible. It prohibits its members from holding religious beliefs and has demanded the expulsion of members who belong to religious organizations. Eleanor Alberts, “Religion in China,” *Council on Foreign Relations*, October 11, 2018.

†Since 2017, the CCP has detained between one million and three million ethnic Uyghurs, Kazakhs, and other Muslims—some of whom are residents or citizens of the United States and other countries—in facilities Beijing claims are for “transformation through education” or vocational training. In fact, detainees are kept in extraordinarily cramped conditions, forced to denounce their religious beliefs, family, and culture, and subjected to brainwashing, torture, and forced labor, in some cases leading detainees to commit suicide. In May 2019, in the strongest condemnation to date from an Administration official, Assistant Secretary of Defense for East Asia and the Pacific Randall Schriver contended the facilities merit the description “concentration camp” due to the sheer number of Muslims detained in the camps, the inhumane treatment to which they are subjected, and the CCP's goals in subjecting detainees to this treatment. Phil Stewart, “China Putting Minority Muslims in ‘Concentration Camps,’ U.S. Says,” *Reuters*, May 3, 2019; *China Digital Times*, “Foreign Citizens, Residents Caught in Xinjiang Camps,” April 2, 2019; Tara Francis Chan, “U.S. Resident May Be One of a Million People Imprisoned in China's Secretive Detention Camps,” *Newsweek*, March 29, 2019; U.S.-China Economic and Security Review Commission, *2018 Annual Report to Congress*, November 2018, 271–272; Nick Cumming-Bruce, “U.N. Panel Confronts China over Reports That It Holds a Million Uighurs in Camps,” *New York Times*, August 10, 2018.

‡Signatories of this letter included Australia, Austria, Belgium, Canada, Denmark, Estonia, Finland, France, Germany, Iceland, Ireland, Japan, Latvia, Lithuania, Luxembourg, the Netherlands, New Zealand, Norway, Spain, Sweden, Switzerland, and the United Kingdom.

parroting Beijing’s justification of its policies.*⁶⁴ Nearly every signatory of the second letter participates in BRI, vividly demonstrating China’s ability to leverage economic ties to achieve its preferred geopolitical outcomes.⁶⁵

Chinese Diplomacy: Toward a China-Led World Order

In 2019, China’s top leaders continued to implement the more assertive vision for China’s foreign relations called for by General Secretary Xi in 2018.† Chinese leaders often framed their foreign policy in civilizational terms—despite publicly rebuking the United States for purportedly adopting a “clash of civilizations” mindset—while attempting to rebrand Beijing’s approach to global order as superior and in opposition to that of the United States and other democratic countries.⁶⁶ In an official compilation on BRI published in December 2018, General Secretary Xi was quoted as describing BRI as offering the world a new development model “brimming with Eastern wisdom.”⁶⁷

Building on this theme, in May 2019 China convened a “Conference on Dialogue of Asian Civilizations,” inviting attendees from 47 countries both in and outside of Asia, including leaders from countries often viewed as geographically outside of Asia, such as Armenia and Greece.⁶⁸ In his keynote address General Secretary Xi criticized the legitimacy of universal values, implying they did not apply to Asian countries—ignoring the longstanding embrace of these values by many Asian nations.⁶⁹ Instead, he called on attendees to strengthen their “civilizational self-confidence” and pursue what he described as a common dream to build an “Asian community of common destiny.”⁷⁰

Also in May, a delegation of U.S. scholars returning from Beijing reported that an unnamed member of the CCP’s Politburo had used “extreme” language to lecture the group at length on civilizational differences between the United States and China, asserting the two countries were in fact engaged in a clash of civilizations.⁷¹ During the exchange, the Politburo member accused the United States of being a Mediterranean culture based on “belligerence and internal division,” which explained its “oppressive” foreign policy.⁷² In a similar reflection of the sense of civilizational and racial difference informing the CCP’s worldview, China’s ambassador to Canada criticized Ottawa’s calls to release a Canadian citizen detained by Beijing as being an assertion of “Western egotism and white supremacy.”⁷³

Against this backdrop, Chinese officials grew more strident in their approach to diplomacy with the United States and countries both within and outside the Indo-Pacific region. In June 2019, Beijing released a white paper placing the blame for trade tensions on the United States, while a vice foreign minister accused the United States of targeting

*Signatories of the letter defending Beijing’s policies included Algeria, Angola, Bahrain, Belarus, Bolivia, Burkina Faso, Burundi, Cambodia, Cameroon, Comoros, Congo, Cuba, Democratic Republic of the Congo, Egypt, Eritrea, Gabon, Kuwait, Laos, Myanmar, Nigeria, North Korea, Oman, Pakistan, Philippines, Qatar, Russia, Saudi Arabia, Somalia, South Sudan, Sudan, Syria, Tajikistan, Togo, Turkmenistan, United Arab Emirates, Venezuela, and Zimbabwe.

†For more information on the new foreign policy guidelines introduced in 2018—known as “Xi Jinping Thought on Diplomacy of Socialism with Chinese Characteristics for a New Era”—see Chapter 2, Section 1, of the U.S.-China Economic and Security Review Commission, *2018 Annual Report to Congress*, November 2018, 161–162.

China with a campaign of “naked economic terrorism [and] economic homicide.”⁷⁴ As tensions increased over mass protests in Hong Kong pushing back against a new extradition bill backed by Beijing, a senior Chinese diplomat lashed out over social media at European critics, castigating the British as “descendants of war criminals” unfit to “[give] lessons to China on freedom.”⁷⁵ Earlier, in December 2018, Beijing released a policy paper on its relations with the EU in which it adopted a much harsher—and even didactic—tone than in its previous EU policy papers.⁷⁶ In the paper, Beijing issued instructions to EU member countries on how to approach issues such as their relations with Taiwan, Hong Kong, and the Dalai Lama; the timing for lifting the EU arms embargo on China; and cooperation with China on advanced technology and other trade issues.⁷⁷

In the Indo-Pacific region, Beijing displayed an even more uncompromising diplomatic approach. At an Asia-Pacific Economic Cooperation summit in November 2018, due to China’s objections over the inclusion of a phrase agreeing to fight “unfair trade practices,” the assembly failed to produce a joint statement for the first time in its 20-year history.⁷⁸ In what one U.S. official involved in the negotiations termed “tantrum diplomacy,” Chinese officials decried other countries’ “scheming” against China during official negotiation sessions, while several forced their way uninvited into the office of the hosting Papua New Guinea foreign minister to demand a meeting.⁷⁹ Security was ultimately called to remove the Chinese diplomats from the room. In his speech at Singapore’s Shangri-La Dialogue in June 2019, Chinese Defense Minister Wei staunchly defended China’s island-building campaign and policies in the South China Sea while warning, “Should anyone cross [China’s] bottom line, the PLA will resolutely take action and defeat all enemies.”⁸⁰ (For more information on pressure China has applied to countries in the Indo-Pacific, see Chapter 4, Section 4, “Changing Regional Dynamics: Oceania and Singapore.”)

The Myth of Chinese “Noninterference”

Despite its professed adherence to the principle of noninterference in other countries’ internal affairs, China continued its efforts in 2019 to influence other countries’ political processes as well as global perceptions of its rise. These efforts took the form of United Front work, influence activities targeting foreign universities and media, arbitrary detentions of foreign citizens, and China’s export of censorship and surveillance technologies.

United Front Work Remains a Prominent Feature of Chinese Foreign Policy

Over the past year, China continued its efforts to carry out United Front work to advance its interests while co-opting or subverting sources of potential opposition to the CCP at home and abroad. In December 2018, Fudan University published a state-supported study of the CCP’s United Front work, noting these efforts had undergone an epochal transformation. According to the study, whereas United Front work in China’s earlier reform era sought only to make the country “rich,” it now aimed to make China “powerful.”⁸¹ In May 2019, General Secretary Xi met with overseas Chinese rep-

representatives from over 90 countries involved in two “friendship” societies sponsored by entities subordinate to the UFDW.⁸² While meeting with one of the groups, UFDW head You Quan urged participants to subordinate themselves to General Secretary Xi’s ideological guidance, praised their accomplishments, and emphasized the importance of their roles in working to bring Taiwan under Beijing’s control and realizing China’s rejuvenation.⁸³ In a July 2019 speech, senior CCP official Pan Yue said General Secretary Xi had ordered the UFDW to step up its efforts in the face of “increasingly severe challenges by the West to contain China” and the urgent need to “win the ideological war.”⁸⁴ Outside of Beijing, UFDW-subordinate organizations like the Council for the Promotion of the Peaceful Reunification of China mobilized international chapters to praise General Secretary Xi’s January 2019 speech urging unification with Taiwan.*

China’s 2019 United Front activities in the United States highlighted the system’s reach and ambition. In May 2019, Li “Cindy” Yang, who previously served as vice president of the Florida chapter of the Council for the Promotion of the Peaceful Reunification of China, came under scrutiny after it emerged that she had peddled access to top U.S. government officials and potentially funneled foreign campaign contributions to the upcoming 2020 presidential election campaign.⁸⁵ According to the *Miami Herald*, in 2017 and 2018, Ms. Yang brought the president of the organization to U.S. political fundraising events.⁸⁶

Evidence also emerged of United Front activity targeting influential U.S. political figures at the subnational level. For example, in May 2019 a “U.S.-China Governors Collaboration Summit” brought together U.S. and Chinese business representatives with officials from U.S. states and Chinese municipal- and provincial-level governments to discuss trade opportunities, especially in the areas of manufacturing, infrastructure, and innovation.⁸⁷ On the Chinese side, the event was organized by entities linked to the United Front organization, and China’s Ministry of Foreign Affairs later praised the summit for its efforts to “promote the sound and steady development of China-U.S. relations through subnational exchange and cooperation.”⁸⁸

Influencing Foreign Media and Universities

In 2019, China’s media practices abroad continued to promote positive narratives and neutralize criticism of the CCP, in some cases constituting a direct assault on press freedoms and democratic values. China sought to generate favorable foreign coverage by acquiring stakes in local media, placing positive advertisements in newspapers, and offering all-expenses-paid “training” trips to China for foreign journalists, sometimes explicitly incorporating such strategies into BRI.⁸⁹ The inaugural meeting of the Belt and Road

*The China Council for the Promotion of Peaceful Reunification (CPPRC) is a prominent organization promoting China’s unification with Taiwan. The CPPRC is directly subordinate to the UFDW and has at least 200 chapters in 90 countries, including 36 chapters in the United States. For an overview of the CPPRC, see John Dotson, “The United Front Work Department Goes Global: The Worldwide Expansion of the Council for the Promotion of the Peaceful Reunification of China,” *Jamestown Foundation*, May 9, 2019 and Alexander Bowe, “China’s Overseas United Front Work: Background and Implications for the United States,” *U.S.-China Economic and Security Review Commission*, August 24, 2018, 8.

News Network, an association consisting of 182 media outlets from 86 countries, was held in Beijing in April 2019 with the aim of promoting positive coverage of the project in BRI countries.⁹⁰ A March 2019 report by Reporters Without Borders concluded that China aims to build a “new world media order” in which “journalists are nothing more than state propaganda auxiliaries.”⁹¹ China’s government has reportedly invested approximately \$1.4 billion (10 billion renminbi) annually over the last decade to improve its international media presence, according to Reporters Without Borders.*

Chinese officials also proved willing to resort to intimidation when incentives did not suffice. In some cases, this included state-sanctioned bullying of foreign media in their own countries, exhibiting a blatant disregard for local laws protecting freedom of expression. For example, the Chinese Embassy in Sweden castigated a major Swedish news outlet in March 2019 for allowing Taiwan’s government representative to publish an article calling on Sweden to support Taiwan’s democracy in the face of Chinese pressure.⁹² “The article amounts to serious political provocation and fraud,” the embassy said, accusing the outlet of providing a “platform for ‘Taiwan independence’ separatist activities.”⁹³ In May 2019, the Chinese Embassy condemned a Swedish newspaper for publishing an article advocating Taiwan’s attendance at the World Health Assembly, charging it with a “serious violation of the basic principles of Swedish diplomacy” and demanding the newspaper “immediately correct the mistake.”⁹⁴

Universities in countries around the world also faced challenges to their institutional autonomy and academic freedom stemming from China’s influence activities.† In February 2019, pro-Tibetan independence Tibetan Canadian student Chemi Lhamo received thousands of insults and death threats from Chinese students after being elected student union president at the University of Toronto.⁹⁵ According to Charles Burton, a consultant with the Canadian Security and Intelligence Service and former Canadian diplomat, Lhamo’s harassment was consistent with the Chinese government’s strategy to undermine dissidents and was likely coordinated by the UFDW’s Canada desk.⁹⁶ That same month, a group of Chinese stu-

*The Chinese state-owned broadcaster China Global Television Network, for example, now has five 24-hour TV news channels (in English, Chinese, Russian, Arabic and French) as well as an English-language documentary channel. With TV programs in 140 countries, China Global Television Network maintains 70 bureaus and employs 10,000 people around the world. China Radio International broadcasts in 65 languages from its own stations and is the largest shareholder in at least 33 other radio stations in 14 countries, including the United States, a November 2015 *Reuters* investigation found. For more information, see Koh Gui Qing and John Shiffman, “Exposed—Beijing’s Covert Global Radio Network,” *Reuters*, November 2, 2015; Reporters Without Borders, “China’s Pursuit of a New World Media Order,” March 22, 2019, 30.

†The Chinese government employs a host of tools to influence academic discourse, including the Confucius Institutes, Chinese Students and Scholars Associations, joint research initiatives between Chinese companies and U.S. universities, funding of professorships and research institutes, and the intimidation of faculty and staff. For an overview of China’s influence activities in education, see Bethany Allen-Ebrahimian, “China’s Long Arm Reaches into American Campuses,” *Foreign Policy*, March 7, 2018; Bethany Allen-Ebrahimian, “This Beijing-Linked Billionaire Is Funding Policy Research at Washington’s Most Influential Institutions,” *Foreign Policy*, November 28, 2017; Larry Diamond and Orville Schell, “Chinese Influence & American Interests: Promoting Constructive Vigilance,” Hoover Institution, November 2018; Sheena Chestnut Greitens and Rory Truex, “Repressive Experiences among China Scholars: New Evidence from Survey Data,” August 1, 2018; Anastasya Lloyd-Damjanovic, “A Preliminary Study of PRC Political Influence and Interference Activities in American Higher Education,” *Woodrow Wilson International Center for Scholars*, September 2018; Yojana Sharma, “Huawei Research Ties with World’s Top Universities at Risk from U.S. Advice,” *University World News*, January 25, 2019.

dents at McMaster University in Ontario heckled Uyghur activist Rukiye Turdush during a lecture on campus about China's mass internment of Muslims in Xinjiang, contacting the Chinese Embassy about the event and submitting photos of the event to embassy officials afterward.⁹⁷ In June 2019, New Zealand's Auckland University of Technology allegedly canceled an event commemorating the 30th anniversary of the Tiananmen Square massacre in response to pressure from China's vice consul-general in the country.⁹⁸ A July 2019 report in *The Atlantic* also found that Chinese student organizations based at German universities had distributed materials with pro-Beijing and CCP political messages, likely with state backing.⁹⁹

Over the past year, revelations of China's political influence in U.S. higher education prompted U.S. nonprofits, universities, and lawmakers to act. For example, Human Rights Watch, the Association of American Universities, and the Association of Public and Land-Grant Universities all released "best practices" for U.S. universities to curb undue foreign influence and interference activities on campus.¹⁰⁰ In May 2019, the University of Maryland publicly acknowledged the need "to prevent foreign infringement on values of free speech and scientific integrity" and formed a campus committee to explore responses to these problems.¹⁰¹

Following congressional outreach and the passage of the 2019 National Defense Authorization Act, which prohibited the use of appropriated funds for Chinese language programs at colleges or universities hosting a Confucius Institute, 22 U.S. universities closed their Confucius Institutes.*¹⁰² As of October 2019, a total of 26 Confucius Institutes have been shuttered by their host institutions since their establishment in the 2000s, while 86 remained operational at universities throughout the United States.¹⁰³ The U.S. Department of Justice's (DOJ) China Initiative also worked throughout 2019 to "educate colleges and universities about potential threats to academic freedom and open discourse from influence efforts on campus" and crack down on unregistered foreign agents seeking to advance China's political agenda.†¹⁰⁴

Arbitrary Detentions and Harassment of Foreign Citizens

China showed increased willingness to arbitrarily detain and levy severe punishment against foreign citizens in 2019, under-

*The 22 U.S. universities that made or announced their decision to close their Confucius Institutes since 2018 were: the University of Illinois-Urbana Champaign, the University of West Florida, Texas A&M University, Prairie View A&M University, the University of Iowa, the University of North Florida, North Carolina State University, the University of Michigan, the University of South Florida, the University of Rhode Island, the University of Massachusetts Boston, the University of Tennessee Knoxville, the University of Minnesota, the University of Montana, Indiana University-Purdue University Indianapolis, Western Kentucky University, the University of Oregon, Northern State University, San Francisco State University, the University of Hawaii Manoa, Arizona State University, and San Diego State University. See Kyra Hass, "ASU Closes China-Funded Institute after Defense Department Gives Ultimatum," *AZ Central*, August 24, 2019; Rachelle Peterson, "Confucius Institutes in the U.S. That Are Closing," *National Association of Scholars*, June 2019; San Diego State University News Center, "New Chinese, Global Education Center Launched at SDSU," August 7, 2019.

†The DOJ China Initiative was established in November 2018 to counter threats to U.S. national security stemming from China and is led by Assistant Attorney General John Demers. The China Initiative's goals include identifying and prosecuting those engaged in trade secret theft, hacking, and economic espionage; protecting U.S. critical infrastructure against external threats including foreign direct investment and supply chain threats; and prosecuting foreign agents seeking to influence the U.S. public and policymakers without proper registration. See U.S. Department of Justice, *Attorney General Jeff Session's China Initiative Fact Sheet*, November 1, 2018. <https://www.justice.gov/opa/speech/file/1107256/download>.

scoring the country's disregard for the rule of law and willingness to use foreign nationals as bargaining chips in inter-state political disputes. The most high-profile development of the year involved Chinese authorities' decision to charge Canadian businessman Michael Spavor and former Canadian diplomat Michael Kovrig with espionage in May 2019.¹⁰⁵ Messrs. Spavor and Kovrig, who were held under harsh conditions without access to legal representation or their families, were detained in December 2018 in apparent retaliation for Canada's arrest earlier that month of Huawei's Chief Financial Officer Meng Wanzhou in connection with Huawei's alleged violation of U.S. sanctions on Iran.¹⁰⁶ Ms. Meng is also the daughter of Huawei founder and CEO Ren Zhengfei. In an example of what Donald Clarke, expert on Chinese law at George Washington University, called "death-threat diplomacy," the Chinese government also sentenced Canadian citizen Robert Lloyd Schellenberg to death on drug charges shortly after the detention of Ms. Meng, which could indicate a linkage between the cases.¹⁰⁷ Notably, Beijing took the highly unusual step of ordering a retrial to secure the much harsher sentence for Mr. Schellenberg only weeks after Canadian authorities detained Ms. Meng, further suggesting political motivations behind the decision.¹⁰⁸ Mr. Schellenberg is in the process of appealing the sentence.¹⁰⁹

Several cases over the last two years demonstrated Beijing's willingness to apply "exit bans" to U.S. citizens, particularly those of Chinese heritage, to prevent them from leaving China. These bans may violate customary international law regarding an individual's right to leave any country such as that contained in the Universal Declaration of Human Rights and the International Covenant on Civil and Political Rights.¹¹⁰ Moreover, China's frequent targeting of foreign citizens of Chinese descent suggests a racial motivation and Beijing's apparent belief in its right to apply elements of Chinese law and sovereignty over these individuals.

In June 2019, a Chinese American executive at Koch Industries visiting southern China for business was told he would not be able to leave the country and was interrogated for several days about U.S.-China trade tensions before intervention by the U.S. Department of State led to his release.¹¹¹ U.S. citizen Wan "Fiona" Huang, who is related by marriage to jailed former Chinese security chief Zhou Yongkang, said in a series of posts on Twitter in July 2019 that Chinese authorities would not let her or her 11-year old daughter, who is also a U.S. citizen, leave the country.¹¹² Victor and Cynthia Liu, two U.S. citizens who entered China in June 2018 to visit family, remain barred from leaving the country despite local authorities' insistence they are not being investigated or charged with a crime relating to their father Liu Changming, a Chinese citizen who is wanted for fraud.¹¹³ "Our lives have been interrupted and we feel trapped," Cynthia Liu said in a video obtained by *CNN* in May 2019.¹¹⁴ "We live with the grave fear that even as Americans our safety is not guaranteed, our voices cannot be properly heard and that our destiny is not in our control." As many as two dozen U.S. citizens have been prevented from leaving China over the past two years.*¹¹⁵ The State Department's January 2019 travel

*The U.S. government has publicly criticized China's coercive use of exit bans. U.S. Secretary of State Mike Pompeo has reportedly raised concerns about the use of exit bans in meetings

advisory warned that Chinese authorities may arbitrarily enforce local laws and noted “U.S. citizens under exit bans have been harassed and threatened.”¹¹⁶

There were also several reports in 2019 of cases in which U.S. citizens were harassed by Chinese authorities during visits to the country. For example, a former U.S. diplomat was confronted at his hotel by several plainclothes officers while in Beijing for an artificial intelligence forum in June 2019.¹¹⁷ The officers pressured the former U.S. diplomat to accompany them off the premises for questioning and only dispersed after several U.S. Embassy officials arrived.¹¹⁸ Due to such cases, some U.S. companies are drawing up contingency plans should their executives face harassment during their travel to China.¹¹⁹ Chinese authorities warned major foreign technology companies in June 2019 that they would suffer dire consequences if they cooperated with the Trump Administration’s ban on sales of key U.S. technology to Chinese companies, only reinforcing concerns that trade war tensions could turn businesspeople into targets.¹²⁰

Beyond the business community, arrests and deportations of foreign teachers in China increased significantly in 2019 amid the CCP’s crackdown on foreign influences in China’s education system. According to an August 2019 *Reuters* report, requests from foreign teachers for legal representation to contest enhanced—and often arbitrary—enforcement of Chinese laws had surged by between four and tenfold since February 2019.¹²¹

Exporting Censorship and Surveillance Technologies

In 2019, China continued to export methods, technologies, and principles of internet governance that improve foreign governments’ ability to censor and surveil their own populations. In contrast to the open and free conception of internet governance championed by the United States, China promotes so-called “internet sovereignty,” or the idea that governments should be able to control their countries’ internets to prevent instability from public access to sensitive information from foreign or domestic sources.*¹²² The primary vehicle through which China advocates for internet sovereignty is its annual World Internet Conference, though it also coordinates with like-minded states to propagate this norm.¹²³ At the most recent iteration of the conference in November 2018, which discussed arti-

with Chinese interlocutors. U.S. lawmakers also identified China’s exit bans as a key problem in a November 2018 letter to Secretary Pompeo. For an overview of U.S. government responses to China’s use of exit bans, see U.S. Senate, “Senate Letter to Secretary Pompeo Re: Chinese Exit Bans,” November 29, 2018; Edward Wong and Michael Forsythe, “China’s Tactic to Catch a Fugitive Official: Hold His Two American Children,” *New York Times*, November 25, 2018.

*According to New America Foundation analysts Robert Morgus and Justin Sherman, the governments of the United States and other democratic societies have championed a global internet that has five characteristics: it is (1) free (“any user can access and exchange information on and through the internet without unreasonable restriction”); (2) open (“systems and infrastructure are merely conduits for data transmission; they are net neutral and oblivious to what goes through them”); (3) interoperable (“parts of the global system [network] work with other parts of the global system [network]; ‘A’ can easily move or convert to ‘B’”); (4) secure (“the system upholds the confidentiality, integrity, and availability of its users, its data, and itself”); and (5) resilient (“no single points of failure exist in the network; systems do their intended job despite impediments”). U.S. government policy documents have invoked these principles as far back as the early 2000s. In contrast, countries like China, Russia, and Iran have promoted regulatory and legislative structures that legitimate state control over the flow of information on the internet. These countries wish “to leverage the internet’s potential to grow wealth, while also managing its capacity to sow instability and create new harms at home and abroad.” See Robert Morgus and Justin Sherman, “The Idealized Internet vs. Internet Realities (Version 1.0),” *New America Foundation*, July 2018, 7, 10.

ficial intelligence and 5G, among other issues, General Secretary Xi sent a congratulatory letter calling on attendees to improve global internet governance and create a “community of common destiny in cyberspace.”¹²⁴ In advocating for internet sovereignty, China provides a political blueprint for other authoritarian countries seeking to manage the information space.

China also sold other countries technologies over the past year that make censorship, surveillance, and political repression possible.* An August 2019 *Wall Street Journal* investigation, for example, found that Huawei employees had assisted at least two African governments in spying on their political opponents, including intercepting their encrypted communications and tracking them through their cell data.¹²⁵ Experts offer varying assessments of the extent to which China has spread its surveillance technology and methods around the globe. Boise State University professor Steven Feldstein wrote in an April 2019 *Newsweek* article that Chinese companies have exported surveillance technology to at least 54 countries, often through deals associated with BRI.¹²⁶ Chinese companies Hikvision, Yitu, and SenseTime have supplied facial recognition cameras for use in countries like Singapore, Mr. Feldstein notes, while Huawei and ZTE are using built-in surveillance technology in their construction of “smart cities” in Pakistan, the Philippines, and Kenya.¹²⁷ The independent watchdog Freedom House offered a more conservative estimate in its October 2018 report, finding that 18 countries have to date used Chinese-made monitoring systems and 36 have received training from China in censorship-related topics like “public opinion guidance.”¹²⁸

An Expanding Network of Global Partnerships

In 2019, Beijing extended the reach of its assertive diplomacy as it sought to shore up ties with partners and promote itself as a leader in key regions around the world. China’s relations with North Korea and Iran were particularly consequential, while its growing influence in the Western Hemisphere, Africa, and the Middle East also had direct implications for U.S. interests. (For more information on China’s ties with Russia, see Chapter 4, Section 2, “An Uneasy Entente: China-Russia Relations in a New Era of Strategic Competition with the United States.”)

Improving Relations with North Korea

In June 2019, General Secretary Xi met with North Korean leader Kim Jong Un in Pyongyang in a bid to improve bilateral ties and re-establish China’s influence as a power broker between North Korea and the United States. During the two-day summit—the first time the CCP’s top leader had visited North Korea since 2005—General Secretary Xi pledged to achieve a political resolution to North Korea’s nuclear issue and cooperate with North Korea in return for concessions by Pyongyang in its negotiations with the United States

*Chinese firms have developed information filtration software, facial recognition sensors, machine learning algorithms, and surveillance cameras for use by law enforcement both at home and abroad. For an overview of Chinese sales of censorship and surveillance technologies, see Daniel Beniam and Hollie Russon Gilman, “China’s Aggressive Surveillance Technology Will Spread beyond Its Borders,” *Slate*, August 9, 2018; Paul Mozur, Jonah M. Kessel, and Melissa Chan, “Made in China, Exported to the World: The Surveillance State,” *New York Times*, April 24, 2019.

over the dismantling of its nuclear weapons program.¹²⁹ Analysts asserted that by making the rare visit, Beijing sought to bolster its position in its relationship with the United States while also exposing fears that Pyongyang might strengthen relations with Washington at the expense of Beijing.¹³⁰ The meeting was timed to occur ahead of General Secretary Xi's meeting with President Donald Trump on the sidelines of the June 28–29 G20 Summit in Osaka, Japan, and President Trump's subsequent meeting with Chairman Kim on June 30.¹³¹ Beijing's attempts to portray itself as a middle man in resolving the North Korean nuclear issue could also have been a response to previous indications from the United States that China's cooperation on North Korea could result in better terms in Beijing's trade talks with Washington.¹³²

Undermining Sanctions against Iran

As tensions mounted in 2019 between the United States and Iran over the 2015 Joint Comprehensive Plan of Action, Beijing lent rhetorical support to Tehran while undermining U.S. sanctions on Iran by clandestinely purchasing Iranian energy exports. In May 2019, Chinese Foreign Minister Wang Yi voiced China's opposition to additional U.S. sanctions placed on Iran for its violations of the nuclear agreement and vowed to support Iran's efforts to safeguard its national interests.¹³³ Geng Shuang, spokesman for China's Foreign Ministry, held the United States responsible for Iran's violations of the Joint Comprehensive Plan of Action, stating in July 2019, "The maximum pressure exerted by the United States on Iran is the root cause of the Iranian nuclear crisis."¹³⁴

Following the expiration on May 2 of sanctions waivers granted by the United States to China allowing for the temporary continued import of Iranian oil and gas, China continued importing Iranian energy in violation of U.S. sanctions, although at reduced levels compared to its previous import volume.*¹³⁵ Paris-based data intelligence firm Kpler SAS estimated that five supertankers shipped roughly \$100 million worth of Iranian liquefied petroleum gas, used for products like cooking fuel and plastic, to China in May and June 2019.¹³⁶ China acted to camouflage its import of Iranian liquefied petroleum gas, using techniques such as switching off the transponders of ships and intentionally reporting false import destinations.¹³⁷ China continued its purchase of Iranian energy in July, importing between 4.4 million and 11 million barrels of crude oil that month.¹³⁸

In addition, China and Iran have voiced their opposition to U.S. offensive cyber operations after the United States reportedly carried out cyberattacks on Iran in June.¹³⁹ Iran's Minister of Information and Communications Technology Mohammad Javad Azari Jahromi stated, "The Islamic Republic of Iran and China are standing in a united front ... to confront U.S. unilateralism and hegemony in the field of IT [information technology]."¹⁴⁰

*A July 2019 report by the Congressional Research Service found that China and Turkey were the only states to continue importing Iranian oil after the expiration of the sanctions waivers, estimating that in June 2019 China imported 133,000 barrels of Iranian oil per day, while Turkey imported 67,000 barrels per day. Kenneth Katzman, "Iran Sanctions," *Congressional Research Service*, July 12, 2019, 24.

A Growing Presence in Latin America and the Caribbean

China's growing influence in Latin America and the Caribbean (LAC) threatens U.S. interests in the region while eroding democratic norms and enabling LAC states to pursue irresponsible economic policies and governance practices.¹⁴¹ Admiral Craig S. Faller, Commander of U.S. Southern Command, testified to the Senate Armed Services Committee in July 2019 that China has reached “unprecedented levels of influence and leverage” in LAC and seeks to “displace the United States as the partner of choice and weaken the commitment of our partners to the rule of law and democracy.”¹⁴² In 2019, China continued to pursue foreign policy objectives that run counter to democratic norms as well as other U.S. interests.¹⁴³ In Venezuela, Beijing's economic and diplomatic support for authoritarian leader Nicolás Maduro has enabled the regime to maintain power despite significant domestic and international pressure for Maduro to step down amid an ongoing humanitarian crisis. U.S. Secretary of State Mike Pompeo remarked in April, “China's bankrolling of the Maduro regime helped precipitate and prolong the crisis.”¹⁴⁴

China continued to export surveillance technologies to LAC countries that could weaken or undermine the development of democratic societies. In February 2019, Uruguay began the installation of 2,100 surveillance cameras donated by the Chinese government, while Argentina planned to begin installing a \$24 million Chinese surveillance system in October 2019.¹⁴⁵ Argentina and Uruguay join Ecuador, Mexico, and Bolivia as regional operators of Chinese surveillance technology.¹⁴⁶ “These technologies can certainly be used to limit basic freedoms and suppress political opposition in countries, such as Venezuela, with authoritarian tendencies,” Margaret Meyers, director of the Inter-American Dialogue's Asia and Latin American Program, told the *South China Morning Post*.¹⁴⁷ “The result is a further weakening of democratic governance.”

China also expanded its promotion of BRI among LAC countries, including referring for the first time to a military cooperation component of the development initiative. Peru joined BRI in April 2019, bringing the total number of LAC states participating in the initiative to 17.¹⁴⁸ In July, Defense Minister Wei told a gathering of Caribbean military chiefs at a summit in Beijing that China sought to “deepen military exchanges and cooperation with the Caribbean countries ... under the framework of the BRI.”¹⁴⁹ At least some participants were reported to have responded favorably to Beijing's offer, with Chinese state media quoting the chief of staff of Guyana's military as claiming that Guyana wished to work with the Chinese military to “jointly safeguard regional and world peace and stability.”¹⁵⁰

Providing Political Training, Infrastructure, and Arms to Africa and the Middle East

China steadily increased its influence in Africa and the Middle East over the past year, including by promoting itself as a political and economic model for countries in these regions. China attempted to highlight its status as an international leader at the September 2018 summit of the Forum on China-Africa Cooperation held in Beijing. At the summit, China espoused its vision for a “China-Africa

community of common destiny,” pledging to increase China-Africa cooperation in industry, infrastructure connectivity, people-to-people exchanges, and security.¹⁵¹ Beijing sought to dispel accusations that it engages in “debt trap diplomacy” and “neocolonialism” in Africa, pledging \$60 billion in new Chinese financing for African countries and promising a larger amount of grants, interest-free loans, and concessional loans than offered in its previous financial pledges to the continent.¹⁵² Still, the majority of financing remained non-concessional, state-directed loans, and Beijing did not specify a timeline for disbursing the funding.¹⁵³

Beijing used party-to-party training for African leaders as another tool to increase its influence on the continent and promote its one-party governance system as an alternative development model for African countries. As part of these efforts, since 2014 Beijing has hosted annual summits of leaders from the developing world, including those of African political parties from both democratic and authoritarian countries, to explain what it calls its “new type of political party system”—referring to the CCP’s political model that promotes economic growth with authoritarianism.¹⁵⁴ The Central Party School’s major training partners include Angola, Ethiopia, Mozambique, Namibia, South Africa, Sudan, South Sudan, Uganda, and Zimbabwe.¹⁵⁵ China has also dispatched political advisors to provide training to African political party officials in their home countries. These trainings have grown both in frequency and profile over the past decade.¹⁵⁶ By mid-2018, China had helped fund or establish political training schools for African governing parties in South Africa, Ethiopia, Namibia, and Angola.*¹⁵⁷ Forum on China-Africa Cooperation participants underscored this longstanding practice in the forum’s 2019–2021 action plan, calling for continued exchanges between Chinese and African legislatures, consultative bodies, political parties, and local governments.¹⁵⁸

Moreover, China expanded its cooperation with African states on security issues in 2019 by sending PLA instructors to train Rwandan troops and convening the first China-Africa Peace and Security Forum in July 2019.¹⁵⁹ At the forum, which was hosted by China’s Ministry of National Defense in Beijing and attended by nearly 100 representatives from 50 African countries and the African Union, attendees discussed cooperation on regional maritime security and improving the “global security governance system.”¹⁶⁰

The growing presence of Chinese telecommunications providers across Africa and the Middle East was another significant component of Beijing’s increasing influence in both regions. Multiple U.S. partners in the Middle East and Africa voiced their willingness to conduct business with Huawei despite pressure from the United States to ban the telecommunications company from building 5G networks in allied and partner nations. In February 2019, the United Arab Emirates (UAE) announced that it would roll out a Huawei-developed 5G network later in the year.¹⁶¹ The same month, Huawei Vice President for Public Affairs Mark Xue (Xue Man) told

*South Africa, Ethiopia, Namibia, and Angola are all participants in BRI. Angola is the top recipient of Chinese loans, with \$42.8 billion disbursed between 2000 and 2017. Over the same period, Ethiopia received \$13.7 billion, South Africa received \$3.7 billion, and Namibia received \$729 million. See Johns Hopkins SAIS China-Africa Research Initiative (SAIS-CARI), “Chinese Loans to Africa.” http://www.sais-cari.org/s/Upload_LoanData_v11_October2018.xlsx.

attendees at the China-Saudi Investment Cooperation Forum that Saudi Arabia would also deploy Huawei's 5G technology over the next year.¹⁶² Vodafone Qatar and Huawei signed an agreement in April 2019 to expand Vodafone Qatar's wireless network infrastructure, in part through a large-scale 5G technology rollout.¹⁶³ In May 2019, the South African government stated it will not discriminate against Huawei, which has already partnered with major South African network operators to build the country's 5G network.¹⁶⁴ To date, Huawei has reportedly constructed approximately 70 percent of Africa's 4G networks, with construction often accompanied by loans from Chinese state banks.¹⁶⁵ It is expected that Huawei will be extensively involved in the rollout of the African continent's 5G networks.¹⁶⁶

In recent years, China has expanded its exports of armed unmanned aerial vehicles (UAVs) to countries in the Middle East and Africa, including key U.S. partners Jordan, Iraq, Saudi Arabia, and the UAE.¹⁶⁷ Across both regions, expanding sales of Chinese UAVs have increased the risk of human rights abuses by lowering the threshold for leaders of Middle Eastern and African countries to use military force.¹⁶⁸ In May 2019, UN experts found that Chinese-made missiles and UAVs were used to conduct airstrikes in the ongoing conflict in Libya and suggested that the UAE—which is prohibited by law from purchasing U.S. armed drones—was likely behind the attacks.*¹⁶⁹ Timothy Heath, senior researcher at the RAND Corporation, argued it is likely that Chinese UAVs will “appear in more and more political conflicts and civil wars around the world,” warning, “If the weapons continue to proliferate, there is a risk that the world could see an increase in violence associated with such technologies.”¹⁷⁰

Pressure on the Regional Balance

A Tenuous Sino-Japanese Reset

Over the past year, China and Japan conducted a series of diplomatic exchanges in an attempt to reset their fraught bilateral relationship. These exchanges included a meeting between Japanese Prime Minister Shinzo Abe and General Secretary Xi in Beijing in October 2018—the first official visit to China by a Japanese leader since 2011.¹⁷¹ As part of this effort, the two countries agreed to cooperate in a number of areas, such as private sector-led infrastructure development in third countries.¹⁷² Still, Prime Minister Abe urged China to curb the assertive activities of its coast guard near the Senkaku Islands, raised concerns over China's militarization of the South China Sea, and called for greater protection for intellectual property and the end of forced technology transfers.¹⁷³ According to a Japanese government spokesman, a message underlying Prime Minister Abe's visit was, “Without stability in the East China Sea, there can be no true improvement in the relationship.”¹⁷⁴

*Chinese UAVs provide a cheaper alternative to U.S. UAVs for states in the Middle East and Africa, many of whom are prohibited from purchasing U.S. UAVs under the 1987 Missile Technology Control Regime. China is not a signatory to the Missile Technology Control Regime. Arthur Herman, “The Treaty behind China's Drone Edge,” *Wall Street Journal*, July 8, 2019; Liu Zhen, “China Fills Gap Left by U.S. in Middle East Military Drone Market,” *British Think Tank Says*, *South China Morning Post*, December 18, 2018.

Prior to the 2018 Beijing summit, Tokyo ended its Official Development Assistance program to China, stating the program had helped China develop into the world's second-biggest economy and therefore completed its "historic mission."¹⁷⁵ The program, which started in 1979, provided China with \$32.4 billion in assistance over its lifetime for the purpose of improving Chinese infrastructure.¹⁷⁶ In its place, Japan and China plan to promote bilateral innovation projects and cooperate on a "development cooperation dialogue" focused on assisting developing countries.¹⁷⁷ The Japanese government, however, has taken a cautious view of BRI, refusing to sign on to the initiative while signaling its willingness to cooperate on BRI projects that are open, transparent, efficient, and economically sound.¹⁷⁸

Despite the attempt to improve relations, challenges endured over sovereignty disputes in the East China Sea and both countries' military modernization efforts. China continued to carry out coast guard and maritime militia operations challenging Japan's administrative control of the Senkaku Islands.* According to Tokyo, an average of 12 Chinese government ships, most if not all operated by the China Coast Guard, entered the territorial sea around the Senkakus each month during the first half of 2019—nearly double the seven ships per month reported during the same period in 2018.¹⁷⁹ Furthermore, in the lead-up to the Japan-hosted G20 summit, the China Coast Guard conducted its longest patrol through the contiguous zone† around the Senkakus to date, sailing for 62 days of continuous operations.¹⁸⁰ Beijing also continued to conduct military training and intelligence collection flights near Japan, with the number of Japanese scrambles to PLA aircraft between April and June increasing compared to the same timeframe in 2018.¹⁸¹ For its part, China responded negatively to Japan's plans to retrofit its largest ships to be capable of carrying F-35B fighters, claiming such moves could lead to Japan repeating its "militaristic history" and threaten the thaw in bilateral ties.¹⁸²

Increasing Coercion in the South China Sea

In 2019, China undertook a number of aggressive actions in the South China Sea, reflecting its increased assertiveness in the region. In April, the Philippines and the United States undertook a major amphibious assault drill after a fleet of approximately 275 boats thought to belong to China's maritime militia blocked the Philippines' access to Thitu Island for months, apparently in an attempt

*The Obama and Trump administrations have publicly stated that the Senkaku Islands are administered by Japan and thus covered by Article 5 of the U.S.-Japan Treaty of Mutual Cooperation and Security, which requires the parties to "act to meet the common danger" of an "armed attack against either Party in the territories under the administration of Japan." See Lindsay Maizland and Beina Xu, "The U.S.-Japan Security Alliance," *Council on Foreign Relations*, August 22, 2019; Ankit Panda, "Mattis: Senkakus Covered under US-Japan Security Treaty," *Diplomat*, February 6, 2017.

†The contiguous zone is a 12-nautical mile area adjacent to the territorial sea, which is a 12-nautical mile area extending out from a country's coastline, islands, or rocks. In its territorial sea, a state has full sovereignty, subject to the right of innocent passage. In its contiguous zone, a state can enforce customs-related laws. Under the UN Convention on the Law of the Sea, foreign civilian and military ships may transit through a country's territorial sea according to the principle of innocent passage, which prohibits activities that are "prejudicial to the peace, good order or security of the coastal State," such as military exercises or intelligence gathering. "UN Convention on the Law of the Sea Part 2: Territorial Sea and Contiguous Zone." http://www.un.org/depts/los/convention_agreements/texts/unclos/part2.htm.

to prevent Manila from constructing military facilities on its own territory.*¹⁸³ In June, a Chinese fishing vessel rammed and sank a Philippine fishing boat operating near Reed Bank—a disputed area only 85 nautical miles from the Philippines’ coast, well within its exclusive economic zone—and abandoned the boat’s crew, who nearly drowned.¹⁸⁴ A spokesman for Philippine President Rodrigo Duterte called the Chinese vessel’s desertion of the fishermen “as inhumane as it is barbaric.”¹⁸⁵

In July, China and Vietnam became embroiled in a standoff near an offshore oil block in Vietnam’s exclusive economic zone after China deployed a survey ship, heavily-armed coast guard vessels, and paramilitary fishing boats to the area.¹⁸⁶ That same month, Chinese forces launched six antiship ballistic missiles into the South China Sea—the first known time China had tested this type of missile at sea.¹⁸⁷ Two months earlier, Chinese fishing vessels likely operated by China’s maritime militia targeted Australian Navy helicopter pilots flying over the South China Sea with lasers, forcing them to conduct an emergency landing.¹⁸⁸

Southeast Asian countries continued to try to balance protecting their interests with placating Beijing, although some responded more assertively to Chinese pressure. According to a January 2019 survey of government, business, media, and academic elites in Southeast Asian countries organized by a Singaporean government-affiliated think tank, nearly half of respondents believed Beijing intended to “turn Southeast Asia into its sphere of influence.” 70 percent said Southeast Asian countries should be cautious to avoid being trapped in unsustainable BRI debt, and fewer than one in ten saw China’s influence in the region as benign. Still, nearly three quarters of respondents thought China’s influence over the region was greater than that of the United States.¹⁸⁹

Over the past year, President Duterte sought to balance relations between the United States and China. In late November 2018, he and General Secretary Xi signed a joint gas and oil exploration deal, prompting protests in the Philippines over his failure to protect the country’s rights under international law.¹⁹⁰ In the summer of 2019 the Philippines began installing Huawei 5G equipment into a new telecommunication network largely designed by China and that will be overseen by Chinese engineers for at least three years following its installation.¹⁹¹ Still, President Duterte invoked the 2016 Permanent Court of Arbitration ruling that found China’s South China Sea claims had no basis in international law during a visit to China in August—a subject he had largely avoided in favor of seeking closer ties with Beijing.¹⁹² In April, he also threatened China with a “suicide mission” if Beijing took action to seize Thitu Island.¹⁹³ Prior to President Duterte’s more assertive statements, Secretary Pompeo

*In addition to its navy and coast guard, China also employs its maritime militia to promote its sovereignty claims in the South China Sea. The maritime militia is a paramilitary force composed of civilian vessels—including but not limited to fishing boats—that engages in what researcher Gregory Poling characterizes as “patrol, surveillance, resupply, and other missions to bolster China’s presence in contested waters in the South and East China seas.” The PLA trains, directs, and equips the maritime militia. For more, see Gregory B. Poling, “Illuminating the South China Sea’s Dark Fishing Fleets,” *Center for Strategic and International Studies*, January 9, 2019; U.S.-China Economic and Security Review Commission, Chapter 2, Section 2, “China’s Military Reorganization and Modernization: Implications for the United States,” in *2018 Annual Report to Congress*, November 2018, 224.

said while visiting Manila in February that U.S. obligations under the U.S.-Philippines mutual defense treaty would be triggered by “any armed attack on Philippine forces, aircraft, or public vessels in the South China Sea.”¹⁹⁴

In 2019, the U.S. Navy formally addressed the role of China’s militia fleets in supporting Beijing’s military ambitions, recognizing the need for new tactics to address China’s destabilizing gray zone activities. In April, the United States revealed it had informed China that the U.S. Navy would in the future treat provocative actions by the China Coast Guard and Chinese maritime militia the same way it reacts to provocations by the PLA Navy.¹⁹⁵ The U.S. Department of Defense (DOD) assessed in May 2019 that China’s paramilitary and military forces had demonstrated increasing interoperability between the PLA Navy, China Coast Guard, and maritime militia, improving the latter’s ability in particular to support PLA operations.¹⁹⁶

China’s Challenges to Indian Security

Indian Prime Minister Narendra Modi’s landslide reelection in May 2019 returned him to office facing significant policy challenges posed by New Delhi’s uneasy relations with Beijing.¹⁹⁷ In 2019, while India engaged China during the G20 and Shanghai Cooperation Organization summits, significant tensions remained over India’s 5G buildout, New Delhi’s concerns over Beijing’s increasing influence in South Asia, and China’s military modernization and arms sales to Pakistan.¹⁹⁸

Although India invited Huawei to participate in field trials to develop India’s 5G infrastructure in late 2018, leaders of a high-level government committee on 5G raised national security concerns about the threat Huawei’s equipment could pose to the country’s telecommunications network.¹⁹⁹ By July 2019, reports emerged that the committee was considering banning Chinese companies from participating in India’s 5G network rollout.²⁰⁰ In response, China warned it could impose “reverse sanctions” on Indian firms engaged in business in China if New Delhi decided to block Huawei from India’s 5G network.²⁰¹

China’s pursuit of closer ties with several other South Asian countries also fueled Indian concerns over Chinese encirclement. In 2019, Beijing continued efforts to exploit diplomatic and economic rifts between India and Bhutan, promoting bilateral trade and tourism in Bhutan at a time of ongoing concerns within the Bhutanese government over its economic dependency on India.²⁰² China also saw investment in Bangladesh as an opportunity to extend its influence in the region.²⁰³ Bangladesh and China have signed deals worth \$21.5 billion for power and infrastructure projects, with the most recent agreement signed in June 2019 providing Bangladesh’s power sector with loans worth \$1.7 billion.²⁰⁴

India has taken steps to improve its military capabilities, driven in large part by China’s military modernization efforts and arms sales to Pakistan, India’s historical rival. Nevertheless, its 2019 defense budget lags far behind China’s and its own modernization requirements.²⁰⁵ India’s level of declared defense spending in 2019—\$61.96 billion compared with China’s official figure

of \$177.61 billion—was deemed by some expert observers, such as retired Indian Vice Chief of Army Staff Lieutenant General Sarath Chand, as insufficient to conduct a two-front war should India have to fight both Pakistan and China.²⁰⁶ Indian unpreparedness is exacerbated by China's continued arms sales to Pakistan, the most recent of which include the construction of four frigates to be delivered to the Pakistan Navy by 2021 and an avionics upgrade to a jointly-produced China-Pakistan fighter to enhance the aircraft's lethality.²⁰⁷

Tensions in U.S.-China Ties

Over the past year, the U.S.-China relationship grew markedly more confrontational as tensions increased over political, economic, and security issues. In October 2018, U.S. Vice President Mike Pence delivered a notable address on the Trump Administration's China policy, advocating for improved ties but denouncing China's unfair economic policies, military buildup, malign interference activities, and human rights abuses.²⁰⁸ In November 2018, DOD issued the United States' first public call for China to remove the missile systems it had deployed to the artificial islands it had constructed in the South China Sea.²⁰⁹ In testimony to Congress in February 2019, U.S. Indo-Pacific Command head Admiral Phillip S. Davidson described Beijing as the "greatest long-term strategic threat ... to the United States," with Washington facing in Beijing a "fundamental divergence in values that leads to two incompatible visions of the future."²¹⁰ Admiral Davidson's sharp language on ideological difference between the two sides, which had not been used previously by U.S. military officials, appeared to reflect a growing view within DOD that China's challenge to U.S. interests was not confined solely to the military domain.

U.S. officials also cited China's massive arsenal of precision-strike missiles as an important reason for the U.S. suspension of compliance with the Intermediate-Range Nuclear Forces Treaty in February 2019.²¹¹ Following the formal U.S. withdrawal from the treaty in August, the U.S. military conducted its first flight test of a conventional ground-launched cruise missile that would have been banned by the treaty's provisions.²¹² That same month, U.S. Secretary of Defense Mark Esper pledged to quickly deploy ground-based intermediate-range missiles to the Indo-Pacific region.²¹³ Reflecting DOD's increased focus on Beijing's military build-up, Secretary Esper emphasized in his first public interview as head of the department that China is the Pentagon's "number one priority."²¹⁴

The hardening U.S. attitude toward China was not limited to Washington, as the U.S. public's favorability toward China dropped markedly. In a national survey released in June 2019, the Chicago Council on Global Affairs found that after more than a decade during which on average approximately 50 percent of U.S. citizens viewed China as a "rival," that number jumped to 63 percent in February 2019, beginning its rise after the Trump Administration levied steel and aluminum tariffs on China in March 2018.* According to a Gal-

*In February 2019, 65 percent of Republicans, 64 percent of Democrats, and 61 percent of Independents viewed China as a rival. In March 2018, those numbers were 50 percent, 51 percent, and 49 percent, respectively. See Craig Kafura, "Public and Opinion Leaders' Views on U.S.-China Trade War," *Chicago Council on Global Affairs*, June 27, 2019.

lup poll conducted in February 2019, only 41 percent of U.S. citizens held a favorable view of China, down 12 percentage points from the year before.²¹⁵ Beijing's human rights abuses in Xinjiang also likely played a role in the drop in public opinion toward China.²¹⁶ In a statement in March 2019, the State Department sharply criticized Beijing for these actions, with Secretary Pompeo saying China was in a "league of its own" as a human rights violator.²¹⁷ The head of the department's human rights bureau described Beijing's arbitrary detention and confinement of its minority ethnic Muslim population in even more forceful terms, saying it was unlike anything seen in the world "since the 1930s," a reference many observers took to be a comparison to the creation of concentration camps by Nazi Germany.²¹⁸

Meanwhile, Beijing's views of the United States hardened as Chinese leaders showed few signs of willingness to compromise on issues raised by Washington. Amid growing trade tensions in May 2019, anti-U.S. propaganda intensified in Chinese state media, while China's main state television broadcaster interrupted normal programming to air a series of movies depicting Chinese battles with U.S. forces during the Korean War.²¹⁹ In response to U.S. criticism at the annual U.S.-China Diplomatic and Security Dialogue of China's missile deployments to the South China Sea, State Councilor Yang responded it was Washington who was at fault for "militarization" of the South China Sea.²²⁰ Luo Yuan, a retired major general affiliated with the PLA's Academy of Military Science, declared in December 2018 that sinking two U.S. aircraft carriers would kill the 10,000 sailors aboard and thus deter further U.S. "provocation" of China.²²¹ "What the United States fears the most is taking casualties," Luo said. "We'll see how frightened America is." Beijing adopted a similarly confrontational tone in response to U.S. criticism of China's detention of Uyghurs and other ethnic Muslims in prison camps, claiming the camps were more similar to "boarding schools" and labeling U.S. statements as "completely fabricated lies."²²²

Crackdown on Academic and Espionage Cases

The U.S. government intensified its efforts in 2019 to curb China's extensive influence and espionage activities in academic and commercial settings. These efforts took the form of visa restrictions for Chinese nationals, greater scrutiny of federal funding awarded to universities, legal action against those suspected of theft or espionage, and new legislation.

Increased visa restrictions for PRC students and researchers arguably offered the most conspicuous sign of the intensified U.S. government response. In June 2018, the State Department began to implement a new policy imposing a one-year limitation on PRC graduate students studying in technical fields identified as priorities in China's "Made in China 2025" manufacturing plan.²²³ Hundreds of PRC students in science, technology, engineering, and math fields have since faced delays in renewing their visas due to additional screening required by the policy.²²⁴ Some PRC researchers and experts in the social sciences also had their visas canceled or reviewed due to espionage and counterintelligence concerns in the last year, though estimates of the numbers affected range from 30 to 280.²²⁵

One of the most prominent cases involved Zhu Feng, a professor at Nanjing University known for his frequent exchanges with the CCP, China's Foreign Ministry, and the Chinese military and intelligence services.²²⁶ Mr. Zhu said he was questioned by two agents from the U.S. Federal Bureau of Investigation (FBI) about his links to Chinese intelligence while in transit at a Los Angeles airport in January 2018 and alleged that his ten-year U.S. visa was canceled because he refused to cooperate with the agents.²²⁷

Federal agencies also took steps in 2019 to increase U.S. research institutions' compliance with extant rules and security procedures to mitigate foreign influence on federally-funded scientific research. According to a December 2018 report by a panel of experts commissioned by the National Institutes of Health (NIH) to study this problem, "Small numbers of scientists have committed serious violations of NIH's policies and systems by not disclosing foreign support (i.e., grants), laboratories, or funded faculty positions in other countries."²²⁸ As of May 2019, the NIH had contacted more than 55 awardee institutions regarding violations of NIH policies relating to foreign ties, prompting some institutions to take actions such as terminations or suspensions of scientists who egregiously violated NIH policies, relinquishment of NIH funds, termination of active NIH grants, and outreach to the FBI for assistance.*²²⁹ For example, both Emory University and the MD Anderson Cancer Center at the University of Texas terminated scientists in 2019 after the NIH raised concerns regarding China-related conflicts of interest or unreported foreign income.²³⁰

Under the auspices of DOJ's China Initiative, the FBI also continued its work to develop an enforcement strategy targeting non-traditional intelligence collectors and to educate U.S. colleges and universities about the threats foreign influence poses to academic freedom.²³¹ The U.S. Department of Education also sent letters to Georgetown and Texas A&M universities in June 2019 stating its concern that they did not fully report funds received from foreign sources, including China.²³² The same month, the U.S. Department of Energy issued an order prohibiting its employees and contractors from participating in foreign governments' talent recruitment programs.²³³

The U.S. government paired official warnings about the scope of China's efforts to influence and steal scientific research with enforcement of existing laws.† According to DOJ, between 2011 and

* Prior to the release of the NIH study in December 2018, NIH Director Francis Collins sent a letter in August to approximately 10,000 institutions that receive or are applying for NIH funding warning of foreign threats to the integrity of U.S. biomedical research and that some researchers working at institutions had failed to disclose "substantial resources from other organizations, including foreign governments." Collins wrote at the time, "In the weeks and months ahead you may be hearing from [NIH] regarding ... requests about specific ... personnel from your institution." See Francis C. Collins, "NIH Foreign Influence Letter to Grantees," National Institutes of Health, August 20, 2018.

† The DOJ's July 2019 China Initiative fact sheet suggests that law enforcement has invoked legal tools like the International Emergency Economic Powers Act, Espionage Act and 18 U.S. Code § 1831 provisions related to economic espionage in its China-related criminal cases this year. In addition, the newly-proposed Securing American Science and Technology Act of 2019 would direct the Office of Science and Technology Policy to establish an interagency working group to coordinate protection of federally-funded research as well as an information exchange mechanism between academia and federal security and science agencies. Numerous universities and professional organizations have already expressed their support for the bill, which has been incorporated into the House version of the National Defense Authorization Act for Fiscal Year 2020. For more information, see: Association of American Universities, "AAU, Associations, and

2018 more than 90 percent of its state-backed economic espionage cases and two-thirds of its theft of trade secrets cases involved China.²³⁴ “China has pioneered a societal approach to stealing innovation in any way it can from a wide array of businesses, universities, and organizations,” FBI Director Christopher Wray told the Council on Foreign Relations in April 2019.²³⁵ “They’re doing it through Chinese intelligence services, through state-owned enterprises, through ostensibly private companies, through graduate students and researchers, through a variety of actors all working on behalf of China,” he said.

In September 2019, a stark illustration of such state-sponsored efforts to illegally obtain U.S. technology emerged when the FBI charged Chinese government official Liu Zhongshan with conspiracy to fraudulently procure U.S. research scholar visas for Chinese officials whose actual purpose was to recruit U.S. scientists for high technology development programs within China.²³⁶ A few months earlier, University of California, Los Angeles professor and electrical engineer Yi-Chi Shih was convicted of conspiring to illegally export semiconductor chips with missile guidance applications to China.²³⁷ In April 2019, former General Electric engineer Zheng Xiaoping and Chinese businessman Zhang Zhaoxi were charged with economic espionage and conspiring to steal General Electric’s trade secrets surrounding turbine technologies.²³⁸

The year 2019 also saw the conclusion of several traditional espionage cases, some of which involved former U.S. intelligence officers. In the spring of 2019, Jerry Lee and Kevin Mallory, both former Central Intelligence Agency officers, and Ron Hansen, a former officer at the Defense Intelligence Agency, were convicted in separate cases of conspiring to communicate, deliver, and transmit national defense information to China.²³⁹ On the occasion of Mr. Mallory’s sentencing, Assistant Attorney General for National Security John C. Demers, the official leading DOJ’s China Initiative, cited the case as “one in an alarming trend of former U.S. intelligence officers being targeted by China and betraying their country and colleagues.”²⁴⁰ He concluded that former U.S. intelligence officers “have no business partnering with [China] or any other adversarial foreign intelligence service.” In addition, DOJ charged naturalized U.S. citizen Peng Xuehua with acting as an illegal foreign agent to deliver classified U.S. national security information to China’s Ministry of State Security in September 2019.²⁴¹

While U.S. government officials defended the necessity of these policies, the Chinese government condemned the new visa restrictions on its students and researchers, framing the policy response as motivated by racism. “There are some reports saying that some Chinese-American scientists in the U.S., just because they are Chinese scientists, they have been treated unfairly,” Chinese Vice Foreign Minister Le Yucheng told the Tsinghua University-hosted World Peace Forum in July 2019. He warned that such moves demonstrated the United States views China as an “enemy” and could lead to “disastrous consequences.”²⁴²

Universities Support the Securing American Science and Technology Act,” May 30, 2019; National Defense Authorization Act for Fiscal Year 2020, H.R. 2500, introduced May 2, 2019. <https://www.congress.gov/bill/116th-congress/house-bill/2500>.

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CHAPTER 2

BEIJING'S INTERNAL AND EXTERNAL CHALLENGES

Key Findings

- The Chinese Communist Party (CCP) is facing internal and external challenges as it attempts to maintain power at home and increase its influence abroad. China's leadership is acutely aware of these challenges and is making a concerted effort to overcome them.
- The CCP perceives Western values and democracy as weakening the ideological commitment to China's socialist system of Party cadres and the broader populace, which the Party views as a fundamental threat to its rule. General Secretary Xi Jinping has attempted to restore the CCP's belief in its founding values to further consolidate control over nearly all of China's government, economy, and society. His personal ascendancy within the CCP is in contrast to the previous consensus-based model established by his predecessors. Meanwhile, his signature anticorruption campaign has contributed to bureaucratic confusion and paralysis while failing to resolve the endemic corruption plaguing China's governing system.
- China's current economic challenges include slowing economic growth, a struggling private sector, rising debt levels, and a rapidly-aging population. Beijing's deleveraging campaign has been a major drag on growth and disproportionately affects the private sector. Rather than attempt to energize China's economy through market reforms, the policy emphasis under General Secretary Xi has shifted markedly toward state control.
- Beijing views its dependence on foreign intellectual property as undermining its ambition to become a global power and a threat to its technological independence. China has accelerated its efforts to develop advanced technologies to move up the economic value chain and reduce its dependence on foreign technology, which it views as both a critical economic and security vulnerability.
- China's senior leaders are concerned over perceived shortfalls in the People's Liberation Army's (PLA) warfighting experience and capabilities and its failure to produce an officer corps that can plan and lead. These concerns undermine Chinese leaders' confidence in the PLA's ability to prevail against a highly-capable adversary. The CCP has also long harbored concerns over the loyalty and responsiveness of the PLA and internal security

forces to Beijing and the potential for provincial officials to co-opt these forces to promote their own political ambitions.

- China’s Belt and Road Initiative (BRI) faces growing skepticism due to concerns regarding corruption, opaque lending practices, and security threats. However, this criticism has not been followed by an outright rejection of BRI because significant infrastructure gaps persist globally and China has few competitors in infrastructure financing.
- Beijing’s military modernization efforts, coercion of its neighbors, and interference in other countries’ internal affairs have generated resistance to its geopolitical ambitions. Countries in the Indo-Pacific and outside the region are accelerating their military modernization programs, deepening cooperation, and increasing their military presence in the region in an attempt to deter Beijing from continuing its assertive behavior.

Recommendations

The Commission recommends:

- Congress provide resources for programs that support independent media and the free flow of information to prioritize Indo-Pacific countries in their efforts to counter China’s influence and propaganda efforts.
- Congress require the relevant departments and agencies of jurisdiction—including the U.S. Department of the Treasury, the U.S. Department of Commerce, and the U.S. Securities and Exchange Commission—to prepare a report to Congress on the holdings of U.S. investors in Chinese bonds and other debt instruments. Such a report shall include information on the direct, indirect, and derivative ownership of any of these instruments.
- Congress require the U.S. Department of the Treasury to prepare a report to Congress on the operation of China’s Cross-Border International Payment System. As part of such a report, the department shall include information on the extent to which the Cross-Border International Payment System could be used to bypass international sanctions regimes.

Introduction

In his address to the 19th National Congress of the CCP in October 2017, General Secretary Xi announced that China was approaching the “world’s center stage” and was closer than at any point in its modern history to realizing the “great rejuvenation of the Chinese nation.”¹ He declared China would no longer tolerate opposition to its rise, warning that “no one should have the fantasy of forcing China to swallow the bitter fruit of damaging its own interests.”² General Secretary Xi also pointed to China’s uncertain domestic and international situation, noting that China is in the midst of “profound and complex changes [and] an important period of strategic opportunity for development” in which “the prospects are bright, but the challenges are severe.”³ He went on to describe a litany of challenges affecting nearly every aspect of Chinese governance and society, from cadre corruption to slowing economic growth, weak in-

novative capacity, environmental degradation, ethnic tensions, and insufficient military capability and preparedness.⁴

As tensions have risen in the U.S.-China relationship and between China and countries from the Indo-Pacific to Europe, the challenges facing Beijing have become only more acute and the pressure on the CCP to resolve them even greater. Increasingly negative perceptions of Beijing in Taiwan and Hong Kong have lent these challenges an even greater sense of urgency. (For more on Taiwan and Hong Kong developments, see Chapter 5, “Taiwan” and Chapter 6, “Hong Kong.”)

This chapter examines the many challenges facing the CCP in its efforts to maintain its hold on power, develop China’s economy, and promote its influence in the region and in global affairs. It also notes the determined efforts and some of the notable progress the CCP has made in addressing these challenges. The chapter begins by assessing the CCP’s internal challenges that have driven General Secretary Xi to consolidate his power over the Party and the CCP’s control over the Chinese state. It then reviews the economic, technological, and innovation challenges that continue to plague China. Finally, the chapter surveys the limitations Beijing faces in extending its political, economic, and military influence abroad, and concludes with a discussion of the implications of these vulnerabilities for the United States. This chapter is based on the Commission’s February 2019 hearing on the topic, the Commission’s May trip to the Indo-Pacific, and open source research and analysis.

Internal Challenges to CCP Rule

In the years leading up to General Secretary Xi’s elevation to power in 2012, CCP leadership had grown increasingly concerned over mounting internal dilemmas directly threatening one-party rule, including ideological decay, weakened control and cohesion, widespread corruption, and flagging economic growth.⁵ General Secretary Xi came to power with a mandate to address these concerns and proceeded to consolidate his power over the CCP, extend further CCP control over nearly every aspect of the Chinese state and society, and launch a campaign to address corruption and revive the ideological nature of CCP leadership.⁶ Despite nearly seven years of efforts, however, significant challenges remain. In some cases, the CCP’s efforts to address its shortcomings have created new vulnerabilities. The CCP continues to focus on what it views as issues of ideology and legitimacy, political cohesion and leadership decision making, and control over the PLA and internal security forces.

Ideological Decay and the Crisis of CCP Legitimacy

The CCP perceives Western values and democracy as weakening the commitment of Party cadres and the broader populace to China’s socialist governing system and as a fundamental threat to its rule.⁷ General Secretary Xi, whose outlook is profoundly shaped by the fall of the Soviet Union, has made restoring the CCP’s belief in its founding values a focus of his leadership.⁸ He has repeatedly stated the CCP faces a legitimacy crisis from a loosening of ideological control that has allowed “subversive Western values” to penetrate Chinese politics and society.⁹ According to General Secretary Xi, reviving ideological fervor in the CCP and in Chinese society

has become a defining challenge concerning “the life and death of the party, the long-term stability of the country, and the cohesion of the nation.”¹⁰

Central to this concern is a potential crisis of confidence in Chinese socialism, Marxism, and the CCP’s leadership over China’s political system. General Secretary Xi has argued this crisis was in part brought about by Deng Xiaoping’s move toward market-oriented economic reform.¹¹ The CCP issued its “Document 9” in April 2013, which ordered officials to guard against seven “false ideological trends, positions, and activities”: Western constitutional democracy; “universal values” of Western freedom, democracy, and human rights; Western-inspired notions of media independence and civil society; pro-market neoliberalism; “nihilistic” views of the CCP’s history; and the “questioning [of] reform and opening and the socialist nature of socialism with Chinese characteristics.”¹²

In its campaign to combat Western influence and restore belief in Chinese socialism, the CCP has increasingly combined nationalism with its socialist message to rally the population around its political leadership. In testimony before the Commission, Jude Blanchette, then a senior advisor to the Crumpton Group, noted that the CCP’s compact with the Chinese population could be described as a “legitimacy meter” with different dials, including economic growth, nationalism, international prestige, and management of U.S.-China relations, which the Party adjusts according to the circumstances.¹³ Mr. Blanchette cited the response to the 1989 Tiananmen Square massacre to illustrate the CCP’s use of its legitimacy meter. He said Beijing “dialed up” the message of nationalism under the Patriotic Education Campaign, which stressed the CCP’s role in the struggle for independence from Western influence to redirect the attention of the Chinese population.¹⁴

Struggles with Intractable Corruption

An active anticorruption campaign has become a hallmark of General Secretary Xi’s administration and is a key component of the CCP’s effort to restore faith in its legitimacy and preserve its one-party rule. General Secretary Xi has also used the campaign to remove potential rivals and silence dissent over his increasingly repressive policies.¹⁵ Few checks on CCP power, combined with wealth-creating opportunities in an increasingly capitalist economy, led to widespread corruption and the weakening of the CCP’s governing legitimacy throughout China’s reform and opening era.¹⁶ Although the CCP has long acknowledged endemic corruption as a central challenge to its legitimacy and periodically launched anticorruption campaigns, the campaign carried out since 2012 has been the most far-reaching.¹⁷

Despite top leaders’ recent claims that the anticorruption campaign had “built into a crushing tide,” indicators suggest the campaign has failed to overcome the endemic nature of CCP corruption, and may have even worsened the functioning of China’s already cumbersome bureaucracy.¹⁸ The anticorruption campaign has targeted both powerful officials at the top levels of government and lower-level cadres, with the number of targeted officials continuing to climb. From 2013 to 2018, over 2.3 million officials were subjected

to disciplinary action, ranging from dismissals to prosecution and imprisonment.¹⁹ In 2018, 621,000 officials were subjected to disciplinary action, up from 182,000 officials in 2013.²⁰ Out of those punished in 2018, 51 were “tigers”—officials at or above the provincial or ministerial level.*²¹

Nevertheless, according to Transparency International’s Corruption Perceptions Index, China ranked as corrupt in 2018 as it did in 2012.† In a speech before the 13th National People’s Congress in March 2018, Premier Li Keqiang praised the anticorruption efforts, but also lamented the corruption and formalistic bureaucracy that continued to plague CCP governance. In language suggesting some of these problems had actually worsened in recent years, Premier Li criticized cadres who were “neglectful of their duties,” decried burdensome inspections where “formalities were prioritized over practical results,” and implored the CCP to promote a government that “dares not, cannot, and does not want to be corrupt.”²² In a July 2019 speech, General Secretary Xi warned that officials should not use the anticorruption campaign as “an excuse for shirking responsibilities or refusing to perform duties.”²³ According to Andrew Wedeman, professor of political science at Georgia State University, the campaign has “also reportedly led to a degree of bureaucratic paralysis because officials fear being accused of corruption,” with ordinary citizens viewing Chinese “officialdom as inherently corrupt and [believing] those who get caught and punished [are] ... the poor saps who lacked the friends in high places who could have protected them.”²⁴

Statements from China’s top leadership criticizing officials for inaction, coupled with media reports of delayed projects and officials avoiding meetings with companies, suggest the anticorruption campaign has led to bureaucratic inertia.²⁵ According to Yuen Yuen Ang, professor of political science at the University of Michigan, government officials “would rather do nothing and avoid blame than to sign off on initiatives.”²⁶ For example, in 2015 China’s top auditor found that local officials dragged their feet on implementing \$45 billion worth of investment projects, about one-sixth of the total value approved by the National Development and Reform Commission that year.²⁷

Beyond targeting corruption, General Secretary Xi has also used the anticorruption campaign to consolidate his power within the CCP by removing potential political threats and controlling dissent. According to Kerry Brown of King’s College London, the campaign has “probably been very useful as a means of clearing away potential, or real, opponents to Xi’s mission,” such as Ling Jihua—the

*The CCP’s Central Committee, which is typically composed of Party members of provincial or ministerial rank and above, has 205 full members and 171 alternate members. The 51 “tigers” caught in the anticorruption dragnet represent close to one in seven officials at this level. Yu Jie, “The Chinese Communist Party Congress: An Essential Guide,” October 2017, 4.

†Transparency International ranks 180 countries and territories by their perceived levels of public sector corruption according to experts and businesspeople from a scale of 0 to 100, where 0 is highly corrupt and 100 is very clean. China’s 2018 score of 39 placed it 87th out of 180 countries, down from a score of 41 in 2017, when it was ranked 77th out of 180 countries. China received a score of 39 in 2012, placing it 80th out of 174 countries. For comparison, in 2018 the United States received a score of 71, placing it 22nd out of 180 countries. Transparency International, “Corruptions Perception Index 2018,” January 2019; Transparency International, “Corruption Perceptions Index 2017,” February 2018; Transparency International, “Corruption Perceptions Index 2012,” 2013.

protégé of former CCP leader Hu Jintao—and Bo Xilai, the charismatic and ambitious former Politburo member and CCP chief of the western municipality of Chongqing.²⁸ A recent working paper by scholars from the University of San Francisco and National University of Singapore concludes that although the campaign’s primary target appears to have been “individuals, networks and geographic regions that departed sharply from meritocratic governance practices,” individuals with personal ties to General Secretary Xi “appear to be exempt from investigation, while individuals with ties to the other six members of the Politburo Standing Committee had no special protection.”*²⁹ These findings suggest the campaign “served both its stated goal of strengthening the party and the unstated goal of consolidating [General Secretary] Xi’s power.”³⁰

Centralization of Control and a Weakening of Collective Leadership

General Secretary Xi’s efforts to root out opposition to his leadership are reflective of the CCP’s broader concern over the deterioration of elite cohesion and its control over the state apparatus. Both the Tiananmen Square massacre and the collapse of the Soviet Union caused the CCP to explore the potential causes of regime collapse and determine that an “ossified party-state with a dogmatic ideology, entrenched elites, dormant party organizations, and a stagnant economy would lead to failure.”³¹ More recent events, such as the “color revolutions” in Eastern Europe and the Caucasus in the early 2000s, the Arab Spring (2010–2011), Hong Kong’s 2014 “Umbrella Movement,” and Hong Kong’s 2019 anti-extradition bill protests have reinforced these fears.³²

According to Mr. Blanchette, despite determined efforts to fend off these threats to its own rule, the CCP perceived in recent years that the economic development and collective leadership model† it had adopted during the reform and opening era had resulted in rampant corruption, flagging internal discipline, and a breakdown of elite-level cohesion in a Party “replete with competing factions and differing centers of authority.”³³ In particular, the events leading to the rise and eventual purge of Bo Xilai‡ represented “one of the most significant political schisms in the post-Mao period” and a powerful reminder of the potential for a return to that era’s instability or even for a breakdown in CCP rule.³⁴

*However, individuals with personal ties to General Secretary Xi are not exempt from investigations by Western governments. In July 2019, the *Wall Street Journal* reported Australian law enforcement and intelligence agencies are investigating the activities of Ming Chai—an Australian citizen and cousin of General Secretary Xi—in connection to broader probes of money laundering and organized crime. Philip Wen and Chun Han Wong, “Chinese President Xi Jinping’s Cousin Draws Scrutiny of Australian Authorities,” *Wall Street Journal*, July 30, 2019.

†The 2007 Party Congress Communiqué defines collective leadership as “a system with a division of responsibilities among the individual leaders in an effort to prevent arbitrary decision-making by a single top leader.” Cheng Li, *Chinese Politics in the Xi Jinping Era: Reassessing Collective Leadership*, Brookings Institution Press, 2016, 13.

‡Bo Xilai served as a member of the Politburo and as party secretary of Chongqing Municipality from 2007 to 2012. A rising political star known for initiating a high-profile campaign against organized crime and reviving Maoist ideals and rhetoric, Mr. Bo was removed from his party positions in April 2012 and found guilty of corruption, bribery, and abuse of power and sentenced to life in prison in September 2013. China’s top leadership was alarmed by Mr. Bo’s political maneuvering and efforts to grow a power base in Chongqing to support his national ambitions. *BBC*, “Bo Xilai Scandal: Timeline,” November 11, 2013; Andreas Fulda, “Bo Xilai’s Trial Is a Smoke Screen for the Benefit of China’s President,” *Guardian*, August 27, 2013; Jeremy Page, “China’s Xi Urges ‘Purity’ at the Top in Scandal’s Wake,” *Wall Street Journal*, March 16, 2012.

The CCP also judged itself to have ceded too much authority to the State Council in the post-Mao era, hurting its ability to lead domestically and navigate rapidly unfolding changes in the international environment.³⁵ To address this perceived challenge, the CCP has launched a sweeping effort to achieve the “Party-ification” of Chinese society and the Chinese state to—in the words of Vice President Wang Qishan—“fundamentally [change] the situation of a weakened Party leadership.”*³⁶ While attempting to combat what it viewed as powerful and unresponsive interests in China’s bureaucracy, the CCP’s efforts have effectively sidelined the State Council and weakened China’s government institutions, centralizing vast new bureaucratic powers in the hands of General Secretary Xi and the CCP.³⁷

A key component of the CCP’s centralization of power has been the expansion of the role of “leading small groups”—coordinating bodies covering important policy areas—and the elevation of some of these bodies into central commissions.³⁸ General Secretary Xi chairs many of these groups, which have assumed more of the government bureaucracy’s traditional policymaking role.³⁹ State Council ministries are increasingly relegated to implementing leading small group-decided policies.⁴⁰ For example, two CCP commissions (upgraded from leading small groups in 2018)—the Central Commission for Comprehensively Deepening Reforms and the Central Commission for Financial and Economic Affairs—have taken over top-level economic policy design and decision making from the State Council.⁴¹ Additionally, General Secretary Xi has weakened the role of Premier Li, who occupies what has long been China’s top economic policymaking position, and entrusted economic management to close allies.⁴²

The CCP’s concentration of power is creating new governance challenges as decision making becomes dependent on the personal direction of General Secretary Xi and the demands of CCP ideology. In a 1980 speech on reforming China’s leadership system, then Chinese top leader Deng Xiaoping warned that “overconcentration of power is liable to give rise to arbitrary rule by individuals at the expense of collective leadership.”⁴³ Deng—who had emerged as China’s paramount leader following the death of Mao Zedong—viewed the collective leadership system as key to preventing the return of Mao-style despotic rule.⁴⁴

In contrast, General Secretary Xi’s termination of presidential term limits suggests an intent to remain in power for life. Mr. Blanchette testified to the Commission that as General Secretary Xi prolongs his term in office, “China’s political system is becoming increasingly rigid, restrictive, and thus brittle,” further noting that “institutions governing China will atrophy as they grow increasingly dependent on the will of the top leader.”⁴⁵ He concluded that, with these changes, China was “moving ... toward a garbage in, garbage out model of governance” while increased CCP control over government administration would result “in more ideological policy.”⁴⁶

*For more information on China’s efforts to promote “Party-ification,” see U.S.-China Economic and Security Review Commission, Chapter 2, Section 1, “Year in Review: Security and Foreign Affairs,” in *2018 Annual Report to Congress*, November 2018.

Xi Jinping's Trusted Personnel

General Secretary Xi has surrounded himself with a group of loyalists who ensure his guidance is faithfully implemented and help guard against factional challenges. Although China's leadership structure is often opaque, it appears General Secretary Xi has improved his ability to control the country's top decision making bodies by stacking them with allies he has gathered throughout his career.⁴⁷ Those serving in the Politburo and its Standing Committee with longstanding personal loyalties to General Secretary Xi include the two vice chairmen of the Central Military Commission (CMC)—China's highest military decision making body—and the leaders of a number of consequential Party administration, propaganda, and discipline inspection organizations.* General Secretary Xi's key loyalists include:

- *Wang Qishan*: Wang is China's vice president and believed to be a close confidant of General Secretary Xi. From 2012 to 2017, Wang served on the Politburo Standing Committee and led the Central Commission for Discipline Inspection, where he was instrumental to implementing General Secretary Xi's anticorruption campaign. Wang briefly retired after reaching the CCP's informal retirement age in 2017, but was brought back by General Secretary Xi to serve as vice president. While the role of vice president has traditionally been a ceremonial one, Wang wields considerable power as General Secretary Xi's right-hand man. According to media reports, Wang and General Secretary Xi share a decades-long friendship, beginning when the two were "sent-down youths" during the Cultural Revolution.⁴⁸
- *Li Zhanshu*: Li is the party secretary of the National People's Congress, China's rubber stamp legislative body responsible for carrying out CCP policy. Li met General Secretary Xi when both served as county-level party secretaries in Hebei Province in central China in the early 1980s. He is ranked third in protocol order on the Politburo Standing Committee.⁴⁹
- *Wang Huning*: Wang leads the CCP's Secretariat and is in charge of Party ideology. A former academic and long-time Party ideologist, Wang is widely credited for developing the ideological platforms of General Secretary Xi as well as those of his two predecessors, Hu Jintao and Jiang Zemin.⁵⁰ While Wang does not appear to have close personal ties to

*The Politburo of the CCP is a group of China's 25 highest-ranked officials who oversee all decisions relating to the affairs of Party and state. The Politburo is managed by the Politburo Standing Committee, which consists of seven members and is effectively given standing authority to make all decisions on behalf of the Politburo. Of the 25 members on the Politburo, 14 were appointed by or had political ties to General Secretary Xi. Of the Politburo Standing Committee members under General Secretary Xi, only two, Li Keqiang and Wang Yang, lack clear connections to him. Li Keqiang, the premier, was promoted to the Standing Committee at the 17th Party Congress held in October 2007. Wang Yang, head of the Chinese People's Political Consultative Conference, was promoted to the Standing Committee during the 19th Party Congress, but lacks a clear prior connection to General Secretary Xi. Katsuji Nakazawa, "The Power Relationships that Govern China," *Nikkei Asian Review*, 2019; Cheng Li, "China's New Politburo and Politburo Standing Committee," *Brookings Institution*, October 26, 2017.

Xi Jinping's Trusted Personnel—Continued

Xi, the two are ideologically aligned, with Wang associated with crafting Xi's signature "China dream" ideology.⁵¹ He is ranked fifth on the Politburo Standing Committee and was elevated to the committee in 2017 as a reward for his efforts as a theoretician for the CCP.⁵²

- *Zhao Leji*: Zhao is secretary of the Central Commission for Discipline Inspection, China's top anticorruption body, and is responsible for enforcing internal CCP rules and combating corruption. He was the party secretary of Shaanxi Province from 2007 to 2012 where he developed ties with General Secretary Xi's family and friends. The two men's fathers were also reportedly close friends. Zhao is ranked sixth on the Politburo Standing Committee.⁵³
- *Han Zheng*: Han is the vice premier of China's State Council, which is responsible for developing and implementing policies that conform with CCP directives. Han was General Secretary Xi's deputy when the latter served as party secretary of Shanghai for seven months in 2007. He is ranked seventh on the Politburo Standing Committee.⁵⁴
- *Zhang Youxia*: General Zhang is a vice chairman of the CMC, and in 2017 became the first vice chairman directly appointed by General Secretary Xi. General Zhang and General Secretary Xi are childhood friends, and their fathers fought together during the Communist Revolution.⁵⁵
- *Xu Qiliang*: General Xu is a vice chairman of the CMC and the first CMC vice chairman and Politburo member from the PLA Air Force. He was the commander of the air force's Eighth Corps when General Secretary Xi was the party secretary of Fuzhou from 1990 to 1996, making Xu his direct subordinate for provincial mobilization and recruitment issues. Xu became a vice chairman of the CMC in October 2012 immediately prior to General Secretary Xi becoming CMC chairman in November 2012.⁵⁶
- *Chen Xi*: Chen is the head of the CCP's Organization Department, which is responsible for staffing key positions within the Party. Chen and General Secretary Xi were classmates at Tsinghua University from 1975 to 1979.⁵⁷
- *Huang Kunming*: Huang is the head of the CCP's Propaganda Department and is responsible for information dissemination and enforcing media censorship. Huang previously worked with General Secretary Xi when he was the deputy party secretary of Huzhou City in Zhejiang Province from 1999 to 2003 and Xi was the party secretary of Zhejiang Province from 2002 to 2007. Huang was also the party secretary in Yongding County, Fujian Province, between 1996 and 1998 when General Secretary Xi was the Fujian party secretary.⁵⁸

Concerns over PLA Loyalty

Another component of the CCP's campaign to tighten control over all levers of governmental power has been its redoubled efforts to ensure the absolute loyalty of China's security forces to the CCP's central leadership in general and General Secretary Xi in particular. Before General Secretary Xi's 2012 rise to power, longstanding concerns had heightened in Beijing that elements within the PLA and China's domestic security forces were resisting the authority of the CCP's central leadership, with some even being used as a tool by provincial leaders to pursue their own political ambitions without regard for central authorities. The reported support for Bo Xilai's bid for power in 2012 from key elements within the PLA and People's Armed Police, a key component of China's internal security system, raised serious concerns within the Party leadership about the reliability of China's security forces.*⁵⁹

The arrest of former Politburo Standing Committee member Zhou Yongkang, a key ally of Mr. Bo and the first member of the Standing Committee to be prosecuted † since the Cultural Revolution, was an additional example of the factionalism and unresponsiveness spurring these concerns.⁶⁰ Tim Heath, senior international defense researcher at the RAND Corporation, highlighted in testimony before the Commission that symptomatic of the concerns over the loyalty of Chinese security forces are “numerous media reports of unverified rumors of coup plots against [General Secretary] Xi—something virtually unheard of in either Jiang Zemin or Hu [Jintao]’s eras.”⁶¹ There have also been numerous incidents reported where corrupt local officials have used People's Armed Police units to collect debts, seize land, disrupt protests against misrule, and carry out political retribution.⁶²

Bureaucratic resistance by high-ranking PLA leaders further contributed to a loss of CCP confidence in the military top brass. In his testimony before the Commission, Mr. Heath pointed to the 2012 arrest of Gu Junshan, a senior general in the PLA's logistics headquarters, as “alarming evidence of the military's resistance to civilian oversight.”⁶³ According to Mr. Heath, then General Secretary Hu reportedly ordered an inquiry into corruption charges against Gu, and ultimately had to direct the military's top disciplinary inspection unit to carry out the inquiry after senior officers on the CMC ignored Hu's instructions.⁶⁴ This and other similar incidents underscored longstanding CCP concerns over the PLA becoming a “nationalized” force that viewed itself as a professional, national military rather than as an instrument of the Party.‡ In the view

* In February 2012, Bo Xilai sent the People's Armed Police after former Chongqing police chief Wang Lijun, who sought refuge in the U.S. consulate in Chengdu after the two men argued over the involvement of Bo's wife in the murder of a British businessman. Viola Zhou, “Why China's Armed Police Will Now Only Take Orders from Xi and His Generals,” *South China Morning Post*, December 28, 2017.

† In 2015, Zhou Yongkang was found guilty on charges of bribery, abuse of power, and disclosing national secrets and given a life sentence. *BBC News*, “China Corruption: Life Term for Ex-Security Chief Zhou,” June 11, 2015.

‡ Concerns among CCP leaders have grown over what they view as trends within the PLA toward becoming a fully professional, autonomous force outside the political control of the Party. A prominent example of this concern occurred during the mass protests leading up to the 1989 Tiananmen Square massacre, when some PLA units refused to obey orders to disperse the student protesters. Part of the blame for PLA units failing to comply with CCP orders was directed at then CCP General Secretary Zhao Ziyang, who some senior CCP leaders associated with support for a nationalized army and blamed for the weakening of Party control over the military. Phillip

of CCP leaders, this development would inevitably weaken Party control over the PLA, increase bureaucratic resistance to CCP oversight, and increase the chances that PLA leaders might refuse to follow Party directives to forcibly suppress dissent within China in the event of future large-scale unrest.⁶⁵

In part to address concerns over PLA loyalty, General Secretary Xi—who also serves as chairman of the CMC—has targeted a number of high-ranking generals in the anticorruption campaign, embarked on a propaganda campaign to reinvigorate PLA loyalty to the CCP, and pushed through major changes to the PLA command system.* According to Dr. Wedeman’s calculations, whereas only one PLA officer holding the rank of major general or above was convicted of corruption between 2000 and 2011, 78 officers at this rank were “either ... charged with corruption or were reportedly sidelined after allegation[s] of corruption were leveled against them” between 2012 and January 2019.⁶⁶ Included in this purge have been two sitting CMC members and the two CMC vice chairmen—the PLA’s two top-ranking military officers Guo Boxiong and Xu Caihou—who served under former General Secretary Hu. Since the prosecution of the latter two, the CCP has launched an extensive propaganda campaign to rebuild military discipline under the slogans of “eliminate the baneful influence of Guo Boxiong and Xu Caihou” and “scraping poison off the bone.”⁶⁷

In his CMC leadership role, General Secretary Xi has also taken a series of steps to tighten his personal control over the PLA and People’s Armed Police. In 2017, he reduced the number of positions on the CMC, and has taken a more active role in selecting senior military officers for promotion than his predecessor.†⁶⁸ Meanwhile, he has also replaced more top PLA and People’s Armed Police leaders than his predecessor and placed the People’s Armed Police directly under the command of the CMC, removing the force from the influence and control of provincial authorities.‡⁶⁹

A further step to ensure General Secretary Xi’s unquestioned authority over military affairs has been the resuscitation of the “CMC Chairman Responsibility System,” a formulation that aims to centralize decision making over all important military matters in the office of the CMC chairman and curtail the independence of uni-

C. Saunders and Joel Wuthnow, “Large and in Charge,” in Phillip Saunders et al., eds., *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms*, National Defense University, February 22, 2019, 529.

*For more on China’s military reorganization, see U.S.-China Economic and Security Review Commission, Chapter 2, Section 2, “China’s Military Reorganization and Modernization, Implications for the United States,” in *2018 Annual Report to Congress*, November 2018, 211.

†According to Phillip C. Saunders and Joel Wuthnow, Hu Jintao was not actively involved in the senior military officer selection and promotion process, effectively rubber-stamping decisions made by his two CMC vice chairmen. Conversely, General Secretary Xi has been much more personally engaged in the promotion process, reportedly even conducting personal interviews with candidates for senior positions. This level of personal involvement has allowed him to place supporters of his agenda in key positions and reward officers who display personal loyalty. Phillip C. Saunders and Joel Wuthnow, “Large and in Charge” in Phillip Saunders, ed., *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms*, National Defense University, February 22, 2019, 543–544.

‡General Secretary Xi replaced all CMC members except three during his first five-year term as CMC chairman. He also reduced membership on the CMC from 11 to seven seats. By contrast, Hu Jintao replaced only three CMC members during his eight years as CMC chairman. U.S. Department of Defense, *Directory of PRC Military Personalities*, March 2018, 8; U.S. Department of Defense, *Directory of PRC Military Personalities*, March 2013, 6; U.S. Department of Defense, *Directory of PRC Military Personalities*, October 2011, 5; U.S. Department of Defense, *Directory of PRC Military Personalities*, October 2016, 5.

formed PLA leaders.⁷⁰ An earlier arrangement instituted by Deng Xiaoping had delegated significant authority over administration of the PLA to the CMC vice chairmen in an attempt to improve the efficiency and professionalism of PLA management.

Beyond the inefficiencies that could attend an overcentralization of power in the hands of General Secretary Xi, according to Mr. Heath, the CCP's renewed focus on loyalty and political indoctrination could also "result in a military that prioritizes compliance and sloganeering over professional competence."⁷¹ This concentration of power could also create bottlenecks in military command decisions. In his testimony, Mr. Heath argued that "elevating too many decisions to elite supraministerial leading small groups raises the risks that important decisions will be delayed or grow unpredictable. The lack of institutionalization of authority between new and old command structures also causes friction and could cause problems with coordination, deconfliction, and decision making in a crisis."⁷²

China's Economic and Innovation Challenges

Beijing Strengthens State Control

In a speech commemorating the 40th anniversary of Deng Xiaoping's reform and opening in December 2018, General Secretary Xi declared 40 years of reform had demonstrated the need to maintain CCP leadership "over all tasks," but did not offer any new commitments to economic reform.⁷³ The speech indicated a continuation of General Secretary Xi's vision of "reform," which features limited market liberalization, reasserts government control over the economy, and favors the inefficient state sector at the expense of the private sector.⁷⁴ At the annual Central Economic Work Conference in December 2018, Chinese leaders acknowledged "new and worrisome developments" and a "complicated and severe" external environment—an oblique reference to trade tensions with the United States.⁷⁵

According to official Chinese statistics, China's gross domestic product (GDP) growth slowed to 6.3 percent in the first half of 2019—near 30-year low.*⁷⁶ General Secretary Xi continued to centralize economic governance to strengthen the state sector. In testimony before the Commission, Michael Hirson, China and Northeast Asia practice head at Eurasia Group, described CCP decision making bodies, such as leading small groups, supplanting technocrats and regulators to guide economic policy, and "a wave of party building" taking place across both state-owned enterprises (SOEs) and private firms.⁷⁷ (For a discussion of China's economic slowdown, including analysis of key growth drivers, see Chapter 1, Section 1, "Year in Review: Economics and Trade.")

In the face of economic headwinds, Chinese policymakers are leaning on stimulus measures to stabilize growth. Beijing understands that China's long-term economic stability is threatened by the resurgence of the state sector at the expense of the private sector,

*There are longstanding doubts about the reliability of China's official data. Of note, Xiang Songzuo, a professor at Renmin University's School of Finance and former chief economist of the Agricultural Bank of China, made a splash in December 2018 when he suggested the real rate of economic growth in 2018 could be 1.67 percent, or even lower. Chris Buckley and Steven Lee Myers, "China's Leader Says Party Must Control 'All Tasks,' and Asian Markets Slump," *New York Times*, December 18, 2018.

rising debt levels, and a rapidly-aging population, but its response has been constrained by overriding political objectives.

The State Advances

Since General Secretary Xi assumed power in 2012, China's state sector has become newly ascendant. Despite being significantly less productive than the private sector, SOEs receive the lion's share of bank credit: in 2016, SOEs received 83 percent of all new loans versus 11 percent for private companies.* As China's economic growth slows, SOEs have fared better than the private sector. According to Chinese statistics, SOEs' revenue grew by 10 percent and profits grew by 12.9 percent during 2018, compared to revenue growth of 13.6 percent and profit growth of 23.5 percent during 2017.⁷⁸ The decrease from 2017 suggests SOEs were impacted by the slowdown, but not nearly to the extent of the private sector. Revenue for private industrial enterprises decreased 29.6 percent year-on-year, while profit decreased 27.9 percent.[†]⁷⁹

Meanwhile, China's private sector, which contributes around 66 percent of China's GDP and 90 percent of new jobs, is under severe stress due to a credit crunch and the country's weakest economic expansion since 1990.⁸⁰ The Chinese government's ongoing efforts to reduce overall debt levels have choked off financing to the private sector to the benefit of the state sector. Previously, China's banks used off-balance-sheet channels to lend to private firms, which are regarded as more risky because they do not have implicit state support.⁸¹ The deleveraging campaign has forced banks to bring these loans back on their books, requiring them to set aside more capital to cover for potential losses and consequently lend at a higher rate to private borrowers.⁸²

Following the launch of the deleveraging campaign in 2016, financing costs decreased for SOEs, but jumped for private enterprises.⁸³ In 2018, bond defaults by private companies reached an all-time high‡ and a wave of de facto nationalizations hit the private sector as capital-starved private companies sold large stakes to SOEs.⁸⁴ With financing drying up, a growing number of Chinese companies are issuing commercial acceptance bills—essentially, documents promising payment in the future—to their suppliers. According to Chinese government data, companies owed \$211 billion in commer-

*By comparison, in 2013 SOEs received only 35 percent of all new loans and private companies received 57 percent. Nicholas Lardy, "The State Strikes Back: The End of Economic Reform in China?" *Peterson Institute for International Economics*, January 28, 2019.

†China's National Bureau of Statistics defines "industry" to encompass extraction industries, electricity and water provision, manufacturing, processing of agricultural products (e.g., leather making), and repair of industrial products. It does not encompass construction or energy. Statistics are compiled for "enterprises above a designated size," which China's National Bureau of Statistics defines as enterprises having revenues of at least \$2.9 million (20 million renminbi [RMB]) from primary business activities. China's National Bureau of Statistics, *Industry*, October 29, 2013. Translation; China's National Bureau of Statistics, *Profits for China's Industrial Enterprises above a Designated Size Grew 10.3 Percent in 2018* (2018年全国规模以上工业企业利润增长10.3%), January 28, 2019. Translation.

‡Private companies accounted for 45 of the 52 defaulting issuers in 2018. In 2017 and 2016, the numbers of defaulting issuers were about 20 and 35, respectively, and the majority of them were private. Many economists argue that the rise in corporate bond defaults is a positive sign of a maturing financial market after years of routine government bailouts, but the fact that private firms continue to account for the vast majority of defaults suggests SOEs are not held to the same standards. Edward White, "Chinese Corporate Bond Defaults Hit Record High, Fitch Says," *Financial Times*, January 20, 2019; Shen Hong, "Default Fears Add Fresh Stress to Chinese Private Sector," *Wall Street Journal*, January 11, 2019.

cial acceptance bills at the end of February 2019, an increase of more than a third from the previous year.⁸⁵

General Secretary Xi met with a group of China's top private executives in November 2018 to reassure them of the state's support, promising a range of measures including tax cuts, increased lending to private borrowers, and equal treatment for the private sector.⁸⁶ Nicholas Borst, director of China research at Seafarer Capital Partners, argued in his testimony to the Commission that while such policies might ease the pressure felt by private firms, "in order to truly level the playing field between private firms and SOEs, difficult reforms are needed. This includes ending the implicit guarantee of government support enjoyed by many SOEs that lower their credit risk relative to private firms."⁸⁷

Rising Debt Burden Threatens Long-Term Economic Stability

According to the Bank for International Settlements,[†] at the end of 2018 (the latest data available) China's total nonfinancial debt‡ reached \$33.2 trillion, or 254 percent of GDP, up from 142 percent at the end of 2008.⁸⁸ This is comparable to debt levels in advanced economies like the United States but high relative to emerging markets.§ Equally important as the absolute size of China's debt burden is its rapid growth, coupled with the increasing complexity and opacity of China's financial system, which makes accounting for exact levels of indebtedness problematic.

The size of China's total internally held debt increases further when local government borrowing is factored in, including credit guarantees by local government financing vehicles (LGFVs).¶ In an October 2018 report, S&P Global Ratings estimated China's local government debt could be as high as \$6 trillion—"a debt iceberg with titanic credit risks"—with most of these debts held by LGFVs.⁸⁹ The International Monetary Fund (IMF) assesses that while China's official budgetary government debt remains "low and sustainable," its "augmented" debt (e.g., off-budget liabilities borrowed by LGFVs) is "high and on an upward trajectory," suggesting "risks of debt stress."⁹⁰ (For further discussion of China's debt and deleveraging, see Chapter 1, Section 1, "Year in Review: Economics and Trade.")

*The presumption of government support creates a moral hazard by incentivizing SOEs to undertake riskier investments and accumulate debt in excess of their repayment capacity. Moral hazard is a situation where a party to an agreement engages in risky behavior because it knows the other party bears the consequence of that behavior.

†The Bank for International Settlements is an international financial institution owned by 60 central banks, representing countries from around the world. The bank's mission is "to serve central banks in their pursuit of monetary and financial stability, to foster international cooperation in those areas and to act as a bank for central banks." Bank for International Settlements, "About BIS—Overview." <https://www.bis.org/about/index.htm>.

‡Nonfinancial debt comprises the outstanding debt of the private nonfinancial sector (which is broken down into household and corporate debt) and the government. The largest category of nonfinancial debt is held by corporations, which account for about 60 percent of China's total debt, while government and households each hold another 20 percent. Bank for International Settlements, "Changes to the Data Set on Credit to the Non-Financial Sector."

§At the end of 2018, the United States' total nonfinancial debt reached 249 percent of GDP and the total nonfinancial debt of emerging economies averaged 183 percent of GDP. Bank for International Settlements, "Credit to the Non-Financial Sector," June 4, 2019.

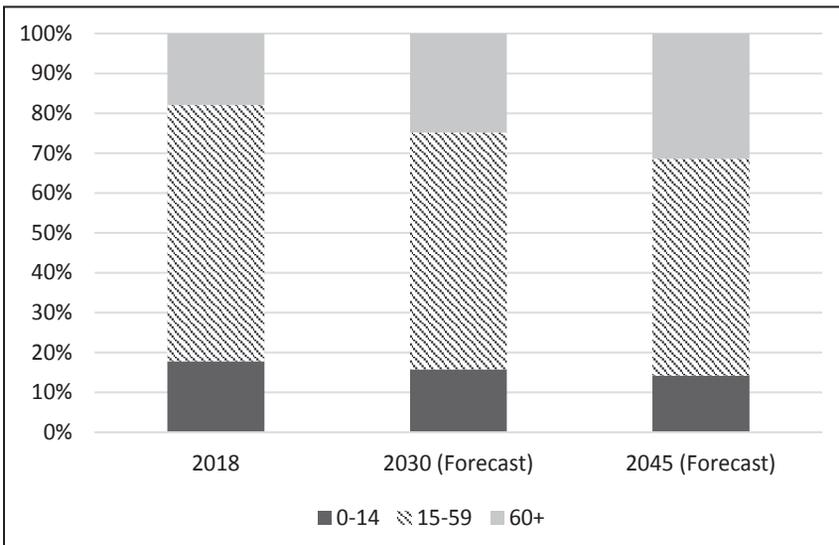
¶LGFVs are economic entities established by Chinese local governments to finance government-invested projects, typically infrastructure and real estate development projects. Because local governments are barred from borrowing directly from banks, they use LGFVs to borrow money to finance projects. These debts are not included in official Chinese debt statistics.

Aging Population Dims China's Future Prospects

China is experiencing major demographic challenges, including a shrinking workforce and a rapidly-aging population, which will impose an additional burden on its economy.⁹¹ In testimony to the Commission, Andrew Polk, cofounder of research firm Trivium China, argued that China's "demographic dynamics only further challenge China's ability to successfully move up the economic ladder over the longer term, not least because one of China's perennial economic advantages—a large, improving, and relatively cheap labor force—will increasingly dissipate."⁹²

In 2018, China's working age population—people between the ages of 16 and 59—accounted for 64.3 percent of China's total population, and people over 60 made up 17.9 percent of the population (see Figure 1).⁹³ According to UN forecasts, by 2045 China's working age population will drop to 54.4 percent of China's total population, while the country's population over 60 will grow to 31.4 percent of the total population.* China's declining labor force will detract an average of 0.3 percentage points from GDP growth annually for the next ten years, according to estimates from the Conference Board.⁹⁴

Figure 1: China's Population Distribution by Age Group



Source: China's National Bureau of Statistics, *National Economy Performed within a Reasonable Range in 2018* (2018年经济运行保持在合理区间 发展的主要预期目标较好完成), January 21, 2019. Translation; United Nations Population Division, "World Population Prospects 2019." <https://population.un.org/wpp/DataQuery/>.

In addition, China's aging population is straining its social insurance system, whose outlays exceeded payroll tax revenues by \$68 billion in 2017.⁹⁵ Chinese Academy of Social Sciences social insur-

*China's elderly-to-working age population ratio—currently at 15 percent—will almost reach Japan's current elderly-to-working age population ratio of 45.6 percent by 2045, according to UN forecasts. United Nations Population Division, "World Population Prospects 2019." <https://population.un.org/wpp/DataQuery/>; *Nikkei Asian Review*, "Ending China's Birth Controls Will Not Spark Baby Boom," October 24, 2018.

ance expert Bingwen Zheng remarked in November 2018 that the budget shortfall for pensions, administered by local governments, poses increasing fiscal risks.⁹⁶ China's public pension system is dependent on government subsidies to cover the shortfalls, but the country's slowing economic growth may limit Beijing's ability to bridge the gap.⁹⁷ An April 2019 Chinese Academy of Social Sciences report warned China's main state pension fund—the urban worker pension fund—could become insolvent by 2035.⁹⁸ Signs of stress have begun to emerge, with some provinces already struggling to make pension payments.*⁹⁹ The Chinese government has sought to address the pension shortfalls through measures such as creating a fund in July 2018 to shift funds from regions with pension surpluses to those with shortfalls.¹⁰⁰ However, in March 2019 Beijing announced cuts to the corporate contributions rate to help companies weather the economic slowdown, a move that will reduce contributions to government pension funds.¹⁰¹

China's Science and Technology Goals and Shortfalls

China seeks to acquire and develop advanced technologies to move up the value added chain and reduce its dependence on foreign-controlled technology, which it views as both an economic and security vulnerability. In support of this effort, the Chinese government has marshaled vast resources toward encouraging domestic innovation, financing industrial upgrading, and supporting the acquisition of foreign technology.¹⁰² The U.S. Department of Commerce's ban on U.S. companies selling technology and services to Chinese telecom equipment giant ZTE—imposed in April 2018 but subsequently lifted—and the Department of Commerce's May 2019 decision to add Huawei and its affiliates to its Entity List controlling U.S. technology exports are reminders of the continued dependency of many Chinese companies on foreign technology despite recent gains.¹⁰³

General Secretary Xi has been a vocal champion of China's indigenously innovation drive, repeatedly emphasizing the importance of mastering what he has termed "core technologies" and technological "self-reliance."[†] In an April 2016 speech, General Secretary Xi declared that "core technology is our biggest lifeline and the fact that core technology is controlled by others is our greatest hidden danger."¹⁰⁴ Although there is no official list of core technologies, technology experts believe they include advanced semiconductors, operating systems, cloud systems, and the hardware and algorithms behind artificial intelligence (AI) systems.¹⁰⁵ China's drive for technological self-reliance has taken on new urgency as U.S.-China trade tensions drag on. In May 2019, General Secretary Xi said, "Only if we own our own intellectual property and core technologies ... can we pro-

*The April 2019 report from the Chinese Academy of Social Sciences estimated that in 2019, as many as 16 out of China's 31 provincial-level regions face shortfalls in their pension funds. In 2016, pensions in seven provincial-level regions (Hebei, Liaoning, Jilin, Heilongjiang, Hubei, Qinghai, and Inner Mongolia) experienced a shortfall, even when factoring in central government subsidies. Yan Kunyi, "China's Urban Pension Funds Likely to Run Out by 2035: CASS Report," *Global Times*, April 11, 2019; Issaku Harada, "China's Social Security Shortfall Nears \$100 Billion," *Nikkei Asian Review*, February 8, 2018.

†For Beijing, technological self-reliance means developing technology free of foreign control or dependency and based on homegrown intellectual property. General Secretary Xi has invoked the phrase as a rallying cry in face of escalating trade tensions with the United States. Kinling Lo, "Xi Jinping Urges China to Go All In on Scientific Self-Reliance after ZTE Exposes Hi-Tech Gaps," *South China Morning Post*, May 28, 2019.

duce products with core competitiveness, and [we] won't be beaten in intensifying competition."¹⁰⁶

China's technology push under General Secretary Xi builds upon earlier efforts but differs in at least three key aspects: a greater emphasis on the strategic importance of reducing reliance on foreign core technologies, the critical role of private companies, and the mobilization of new funding channels.¹⁰⁷ According to Mr. Hirson, China's private technology companies* "rather than state-owned behemoths like China Telecom, represent China's 'national champions' in next generation areas."¹⁰⁸ China's major technology giants, including Baidu, Alibaba, and Tencent, have made large investments in AI and consumer internet and fintech industries.¹⁰⁹ Following the ZTE sanctions, Baidu, Alibaba, and Tencent each responded to Beijing's call for self-reliance by taking steps to support the development of the semiconductor industry in China.[†]¹¹⁰ In recent months, China's technology sector has faced stepped-up government scrutiny and increased pressure to align with Party edicts after years of thriving under light regulation‡—a trend some analysts caution may undermine Beijing's national strategy for innovation driven development.¹¹¹

Addressing Shortfalls in Defense Technology

Beijing is deeply concerned about its defense industry's capacity to independently innovate and develop the cutting-edge technologies it views as critical to what the CCP terms China's "core national power."¹¹² China has made great strides in key defense technologies related to cyber, space, advanced computing, and AI, and is a world leader in hypersonic weapons. Nevertheless, Beijing believes China is still lagging behind the United States, noting in its most recent defense white paper that China's military is "confronted by risks from technology surprise and a growing technological generation gap."¹¹³ General Secretary Xi has demonstrated particular concern over shortfalls in China's technological capabilities, which he has described as the "root cause of [China's] backwardness."¹¹⁴ China's defense industry continues to struggle to produce some high-end military components—such as advanced aircraft engines, guidance and control systems, and microprocessors—forcing Beijing to remain reliant on foreign technologies in these areas.¹¹⁵ China continues to rely in particular on foreign innovation systems from the United States and Japan for the core technologies and talent it views as necessary to its national security.¹¹⁶

*In China, direct ownership is not the primary determinant of the government's ability to control a company's decision making; in other words, private companies can also be directed to carry out government objectives. As described by Curtis J. Milhaupt and Wentong Zheng, "Large, successful [Chinese] firms—regardless of ownership—exhibit substantial similarities in areas commonly thought to distinguish SOEs from [private companies]: market dominance, receipt of state subsidies, proximity to state power, and execution of the state's policy objectives." Curtis J. Milhaupt and Wentong Zheng, "Beyond Ownership: State Capitalism and the Chinese Firm," *Georgetown Law Journal* 103 (2015): 665.

†For instance, in July 2018 Baidu unveiled its self-developed, high-end AI chip designed for autonomous vehicles and data centers. In September 2018, Alibaba established a semiconductor subsidiary to produce AI chips made for autonomous vehicles, smart cities, and smart logistics. Paul Triolo and Graham Webster, "China's Efforts to Build the Semiconductors at AI's Core," *New America*, December 7, 2018.

‡For example, in September 2019 Chinese state media reported that Hangzhou, a major technology hub in China, plans on assigning government officials to work with 100 local private companies, including Alibaba. Josh Horwitz, "China to Send State Officials to 100 Private Firms Including Alibaba," *Reuters*, September 23, 2019.

One of General Secretary Xi's top priorities is military-civil fusion, a strategy that seeks to enable transfers between the civilian and defense sectors to support defense-related science and technology advancements.¹¹⁷ Military-civil fusion is also a vehicle for creating cohesion in China's military and civilian research efforts, so that the entire system can be effectively mobilized to support the military and sustain economic growth.¹¹⁸ The strategy is intended to lessen China's dependence on foreign expertise while positioning China to become a global leader in key emerging technologies, which General Secretary Xi has identified as "a national heavy weapon."¹¹⁹

To this end, China has sought to penetrate innovation hubs in the United States like Silicon Valley and to develop research partnerships with U.S. and other foreign universities to facilitate the transfer of defense-related technology and knowledge.¹²⁰ In testimony before the Commission, Greg Levesque, then managing director at Pointe Bello, argued that this strategy is "critical to strategic competition and securing China's future as not only an economic, but also a military superpower."¹²¹ Jiang Luming, a leading expert on military-civil fusion at the PLA National Defense University, views the success of this strategy in similar terms. According to Major General Jiang, should China fail to fully implement military-civil fusion, its "national security development will lose its most central supporting power; if we are defeated in this particular competition, an entire era will be lost."¹²² (For more on military-civil fusion, see Chapter 3, Section 2, "Emerging Technologies and Military-Civil Fusion: Artificial Intelligence, New Materials, and New Energy.")

While General Secretary Xi has placed significant emphasis on military-civil fusion, there are areas where China's defense industries continue to fall well short of Beijing's expectations.¹²³ Continued shortfalls stem largely from the military-civil fusion system being still in the early stages of development and hampered by high barriers to entry in the defense industry and a lack of information-sharing between the PLA and civilian entities.¹²⁴ For example, Chinese defense conglomerates remain bloated, inefficient, and vertically integrated in contrast to the horizontal structure of many U.S. and other foreign enterprises capable of making quicker innovations.¹²⁵ Furthermore, China's defense sector is closed to outside entrants and is dominated by a limited number of state-owned defense corporations, resulting in contracts being awarded through single-sourcing mechanisms that limit competition and innovation.¹²⁶ There is also likely lingering corruption in China's research, design, and acquisition processes which could hamper China's ability to innovate.¹²⁷ Ultimately, China's embrace of military-civil fusion to tap into the technical skills that exist inside the civilian economy is a reflection of the ongoing capability shortfalls within the defense sector.¹²⁸

Resistance to Beijing's Ambitions Abroad: Economic, Military, and Political Challenges

Despite its growing ambition to shape the regional and even global order, Beijing faces a number of challenges to its economic statecraft, military modernization, and political influence efforts that may constrain its ability to achieve its foreign policy aims. While Beijing seeks to use economic statecraft in the areas of trade, currency, and infrastructure investment to shift Asia's center of gravity away from

the United States, it is running into challenges because of a lack of transparency and accountability in its approach as well as its inexperience. In the military domain, China has embarked on an ambitious modernization program to build what it terms a “world-class” military by the middle of the 21st century, but General Secretary Xi harbors serious reservations over China’s ability to prevail in a conflict against a highly capable adversary.¹²⁹ Beijing has used the PLA with increasing frequency in recent years to coerce and intimidate China’s neighbors into accepting the CCP’s expansive sovereignty claims and bid for leadership in the region.* Nevertheless, top leaders’ concerns over the PLA’s warfighting prowess may lessen their appetite to provoke a military conflict that could draw in the direct intervention of the United States, at least in the near term. (For more information on China’s military modernization efforts, see Chapter 4, Section 1, “Beijing’s ‘World-Class’ Military Goal.”)

Finally, as China has grown more assertive abroad, countries in the Indo-Pacific and outside the region have begun pushing back against what many view as Beijing’s unwarranted interference and intimidation efforts. Over the last several years, these countries have accelerated their own military modernization programs, enhanced security ties and intelligence-sharing with the United States and each other, and increased their military deployments in the region in an attempt to deter further Chinese adventurism.†¹³⁰

Challenges with Beijing’s Economic Statecraft

Beijing’s first external challenge stems from criticism of its economic statecraft efforts. During the 19th Party Congress, General Secretary Xi stated that China’s experience “offered a new option for countries that want to speed up their development while preserving their independence.”¹³¹ In Beijing’s view, China’s economic model combines a market economy’s efficient resource allocation with a state’s ability to provide macroeconomic stability and equitable socio-economic outcomes.¹³² In practice, China’s economic model promotes authoritarianism, resource misallocation, and global economic distortions.

In an article for the *Texas National Security Review*, China specialist Liza Tobin argues Beijing sees economic opening as a process of “integration with the global economy that is necessary for China’s rise—initially to acquire advanced technology and expertise and, later, to shape global norms, standards, and institutions in line with Chinese strategic requirements.”¹³³ Beijing seeks to reshape global economic governance

* Beijing has used the PLA, China Coast Guard, and maritime militia paramilitary forces to coerce or intimidate China’s neighbors with increasing frequency in recent years. In 2012, China deployed its coast guard to occupy the Philippine-claimed Scarborough Shoal, and has prevented Filipino fisherman from accessing the rich fishing waters around the shoal since that time. In 2014, Beijing deployed the PLA Navy and PLA Air Force to support China’s coast guard and maritime militia, preventing Vietnam from expelling a Chinese hydrocarbon rig from Vietnam’s claimed exclusive economic zone. In 2019, the PLA Air Force and PLA Navy continued Beijing’s multi-year campaign to intimidate Taipei by conducting exercises and other provocative activities near Taiwan. Martin Banks, “Taiwan Official Pledges Boost in Defense Capabilities Won’t Be Deterred by Chinese ‘Coercion,’” *Defense News*, May 3, 2019; Yimou Lee, “Taiwan President Says Chinese Drills a Threat but Not Intimidated,” *Reuters*, April 15, 2019; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People’s Republic of China 2014*, April 24, 2014, 3–4.

† A notable exception to the trend of increased intelligence-sharing among countries in the region is the friction between Japan and South Korea that recently led Seoul to announce its intention to terminate a key intelligence-sharing arrangement between the two countries. Choe Sang-Hun, Motoko Rich and Edward Wong, “South Korea Says It Will End Intelligence-Sharing Deal with Japan, Adding to Tensions,” *New York Times*, August 22, 2019.

through its participation in existing international institutions like the IMF and World Bank while at the same time creating and funding China-led regional organizations (e.g., the Asian Infrastructure Investment Bank and Forum on China-Africa Cooperation) that provide venues for Chinese leadership.¹³⁴ Beijing also wants a larger role for itself in setting global rules, particularly in “emerging domains such as cyberspace, deep seas, polar regions, and outer space.”*¹³⁵

Promotion of a “China Model” through BRI

China’s growing economic clout and assertive foreign policy is drawing increased attention to Beijing’s economic statecraft, of which BRI—General Secretary Xi’s signature economic and foreign policy project—is perhaps the most visible example.¹³⁶ In addition to seeking economic benefits,† Beijing views the project as a vehicle for revising the global political and economic order to better align with its interests.¹³⁷ Six years after BRI’s inception, the global response has been mixed. Many countries welcome BRI in light of China’s sizable financial commitments, but some are increasingly concerned about the transparency, debt sustainability, and environmental impacts of BRI projects, as well as the strategic implications of the initiative for their political, economic, and security interests. Notably, over the past year leaders in Malaysia, the Maldives, and Pakistan swept into power by capitalizing on public unease about Chinese-funded investment projects, and since taking office have suspended or canceled several high-profile BRI projects.¹³⁸ Nonetheless, these setbacks have not led to wholesale rejection of the initiative. In many cases, host countries are moving forward with projects that were suspended or even canceled after renegotiating deals with Beijing.¹³⁹

The United States, the EU, India, and Japan have also voiced their concerns about BRI.‡ For example, India’s main objections to BRI center on the China-Pakistan Economic Corridor, which runs through the disputed region of Kashmir. In a speech at the Shanghai Cooperation Summit held in June 2019, Indian President Narendra Modi said India only supported connectivity projects that are based on the “respect for sovereignty, regional integrity, good governance, transparency ... and reliability.”¹⁴⁰ German business newspaper *Handelsblatt* reported in April 2018 that 27 out of 28 EU ambassadors to Beijing signed an internal EU report stating BRI “runs counter to the EU agenda for liberalizing trade and pushes the balance of power in favor of subsidized Chinese companies.”§¹⁴¹

*For example, China’s 2017 strategy on international cyberspace cooperation declared “China will push for institutional reform of the UN Internet Governance Forum to enable it to play a greater role in Internet governance.” State Council Information Office of the People’s Republic of China, *International Strategy of Cooperation in Cyberspace*, March 2, 2017.

†Beyond expanding China’s export markets and promoting the use of the RMB as an international currency, BRI provides an opportunity for China to export some of the country’s massive industrial overcapacity. In a September 2019 interview, the director of strategic planning and technology at Baosteel, China’s largest steel producer, said, “For the steel industry, the Belt and Road Initiative will generate direct demand for steel products.” Nick Schifrin and Dan Sagalyn, “China’s Massive Belt and Road Initiative Builds Global Infrastructure—and Influence,” *PBS*, September 27, 2019.

‡For more on views and responses from the United States, Japan, and India, see U.S.-China Economic and Security Review Commission, Chapter 3, Section 1, “Belt and Road Initiative,” in *2018 Annual Report to Congress*, November 2018, 282–286.

§Only Hungary’s ambassador to Beijing did not sign the report. For more on China’s efforts to influence the policies of individual EU countries, see U.S.-China Economic and Security Review

An EU-wide policy response is emerging: in September 2018, the EU unveiled a new strategy to improve transport, energy, and digital links between Europe and Asia.¹⁴² While the EU's strategy seeks to distinguish its approach from BRI through its emphasis on sustainability and respect for the rules-based international system, it also preserves engagement with China by highlighting possible synergies between BRI and European connectivity projects, reflecting European countries' varying levels of support for BRI.¹⁴³

Concerns about China's growing international economic engagement extends beyond BRI. The EU's connectivity strategy comes on top of a separate push to adopt an EU framework for screening foreign investment in response to concerns surrounding Chinese investment in Europe's strategic sectors.*¹⁴⁴ In March 2019, the European Commission released a landmark paper on EU-China relations that declared China an "economic competitor in the pursuit of technological leadership" and a "systemic rival promoting alternative models of governance."¹⁴⁵ The paper called on European leaders to seek "a more balanced and reciprocal economic relationship" with China by taking a tougher stance in key areas of bilateral trade while noting potential areas of cooperation.¹⁴⁶

An area of emerging concern is the potential for BRI projects to saddle participating countries with unsustainable debt. Many countries receiving loans from China also receive concessional financing from the World Bank's International Development Association (IDA)† and some have received debt relief through the IMF and World Bank's Heavily Indebted Poor Country initiative and related Multilateral Debt Relief Initiative programs (see Table 1).‡ At the time debt relief was negotiated, concern was raised by IDA executive directors regarding the risk of "free riding," defined as "situations in which IDA's debt relief or grants could potentially cross-subsidize lenders that offer non-concessional loans to recipient countries," particularly in "resource-rich grant-recipient countries that could rely on non-concessional borrowing collateralized with future export receipts."¹⁴⁷ China's lack of transparency in its lending raises concerns regarding not only China's free riding on previous international debt relief efforts, but also the potential for increased risk of debt distress in low-income countries, compromising the impact and

Commission, Chapter 3, Section 2, "China's Relations with U.S. Allies and Partners," in *2018 Annual Report to Congress*, November 2018.

*In addition, Europe's three major powers—France, Germany, and the UK—have all recently taken steps to tighten their rules for screening Chinese investments. Erik Brattberg and Etienne Soula, "Is Europe Finally Pushing Back on Chinese Investments?" *Carnegie Endowment for International Peace*, September 14, 2018.

†IDA provides long-term low-interest loans and grants to the world's poorest countries which are eligible based on having a gross national income per capita below an established threshold (\$1,175 in fiscal year 2020) and are unable to borrow from private capital markets. Recipients with a high risk of debt distress receive 100 percent of their financial assistance in the form of grants and those with a medium risk of debt distress receive 50 percent in the form of grants. International Development Association, "Borrowing Countries." <http://ida.worldbank.org/about/borrowing-countries>; International Development Association, "Financing." <http://ida.worldbank.org/financing/ida-financing>.

‡The Heavily Indebted Poor Country initiative and related Multilateral Debt Relief Initiative programs were launched in 1996 and 2006, respectively, by the IMF, World Bank, and other multilateral, bilateral and commercial creditors to provide relief for heavily indebted poor countries. To date, debt reduction packages under the initiative have provided \$99 billion in debt service relief to 36 countries, 30 of them in Africa. World Bank, "Heavily Indebted Poor Country (HIPC) Initiative," January 11, 2018; Martin A. Weiss, "The Multilateral Debt Relief Initiative," *Congressional Research Service*, June 11, 2012.

contribution of IDA's concessional lending to meet poverty reduction and growth goals in the poorest nations.

Table 1: BRI Signatories: Debt Relief, Debt Sustainability, Chinese Investment, and Loans

World Bank IDA Countries That Received International Debt Relief	World Bank-IMF Debt Sustainability Analysis; Risk of External Debt Distress*	Total Chinese Foreign Direct Investment and Construction Contracts 2013–2018 (US\$ millions)	Total Chinese Loans 2013–2017 (US\$ millions) †
Afghanistan	High risk	\$210	No information
Burundi	High risk	No information	\$63
Cameroon	High risk	No information	\$3,110
Chad	High risk	\$550	\$35
Congo, Republic of	In debt distress	\$7,300	\$3,350
Cote D'Ivoire	Moderate risk	No information	\$2,379
Ethiopia	High risk	\$13,910	\$9,587
Gambia	In debt distress	No information	\$0
Ghana	High risk	\$5,500	\$1,447
Guinea	Moderate risk	\$7,500	\$264
Guyana	Moderate risk	\$930	No information
Liberia	Moderate risk	\$410	\$50
Madagascar	Low risk	\$1,430	\$365
Mali	Moderate risk	\$1,850	\$465
Mauritania	High risk	No information	\$34
Mozambique	In debt distress	\$7,680	\$843
Rwanda	Low risk	\$840	\$78
Senegal	Low risk	\$4,080	\$1,343
Sierra Leone	Moderate risk	\$3,640	\$173
Tanzania	Low risk	\$8,270	\$804
Togo	Moderate risk	No information	\$225
Uganda	Low risk	\$7,280	\$2,213
Zambia	High risk	\$12,240	\$4,191

Source: Various.¹⁴⁸

*The IMF and World Bank's debt sustainability framework for low-income countries includes four ratings for the risk of external debt distress reflecting a country's likelihood of repaying public sector loans: low risk, moderate risk, high risk, and in debt distress. International Monetary Fund, "Joint World Bank-IMF Debt Sustainability Framework for Low-Income Countries," March 19, 2019.

†The Chinese government does not publicly report its loans. With the exception of Afghanistan and Guyana, data on Chinese loans are from the John Hopkins University School of Advanced International Studies' China-Africa Research Initiative, which collects data on Chinese loans to Africa using open sources, supplemented with interviews with Chinese and African officials. China Africa Research Initiative, "Loan Database." <http://www.sais-cari.org/data>.

In response to pushback against BRI, Beijing has been rethinking how it selects and implements projects and presents BRI to overseas audiences.¹⁴⁹ China's economic slowdown, ongoing trade tensions with the United States, and the decline of its foreign reserves in recent years* are constraining Beijing's ability to finance BRI.¹⁵⁰ Beijing recognizes it cannot afford to continue to make investments that are financially nonviable and incur reputational costs. As a result, Beijing has begun an interagency review to take stock of the number and terms of BRI deals, according to media reports in June 2018.¹⁵¹

During the second Belt and Road Forum in April 2019, General Secretary Xi sought to rebuild BRI's tarnished global image in the wake of high-profile scandals† by promising “open, green, and clean” projects.¹⁵² Official pronouncements at the forum echoed the tone and fanfare of the first forum in 2017, but tailored the messaging and deliverables to address international concerns. The second forum announced multiple initiatives to improve environmental sustainability of BRI projects, including a program to train environmental officials in BRI countries, the creation of a debt sustainability assessment framework,‡ and seminars on anticorruption and business integrity.¹⁵³ Chinese agencies also signed a number of bilateral agreements to improve transparency, such as auditing cooperation between China's Ministry of Finance and regulators in Malaysia and Japan.¹⁵⁴

At the second BRI forum, People's Bank of China Governor Yi Gang sought to address concerns about the financial risks of BRI lending,§ saying China needs to “objectively assess developing countries' debt problems” and “consider a country's complete debt-servicing capabilities.”¹⁵⁵ Over the past year, Beijing has provided debt relief for some BRI countries, including debt write-offs, deferments, and refinancing.¹⁵⁶ Deborah Brautigam, director of the China-Afri-

* China's foreign exchange reserves are an important source of capital for China's policy banks, which—along with China's major state-owned commercial banks—have been the main financiers of BRI. When BRI was launched in 2013, China's foreign exchange reserves were valued at \$3.66 trillion, peaking at nearly \$4 trillion in June 2014. As of April 2019, China's foreign exchange reserves stood at \$3.1 trillion.

† Examples include Sri Lanka, where China Harbor Engineering Company allegedly gave \$7.6 million to former President Mahinda Rajapaksa's failed 2015 reelection bid, and Malaysia, where in 2016 senior Chinese officials allegedly offered to bail out a Malaysian government fund at the center of a multibillion-dollar corruption scandal in exchange for lucrative stakes in rail and pipeline projects for BRI. Tom Wright and Bradley Hope, “WSJ Investigation: China Offered to Bail Out Troubled Malaysian Fund in Return for Deals,” *Wall Street Journal*, January 7, 2019; *Reuters*, “China's Xi Offers Fresh \$295 Million Grant to Sri Lanka,” July 22, 2018.

‡ According to China's Ministry of Finance, the debt sustainability framework is a “non-mandatory policy tool” for BRI participants “to conduct debt sustainability analysis and manage debt risks according to the risk rating results, as an important reference for lending decisions.” The framework is largely modeled after the World Bank and IMF's debt sustainability framework for low-income countries governing lending operations for multilateral institutions; however, as a voluntary framework, China's debt sustainability framework is not binding on Chinese financial institutions. Scott Morris and Mark Plant, “China's New Debt Sustainability Framework Is Largely Borrowed from the World Bank and IMF. Here's Why That Could Be a Problem,” *Center for Global Development*, July 19, 2019; China's Ministry of Finance, *Debt Sustainability Framework for Participating Countries of the Belt and Road Initiative*, April 25, 2019.

§ A March 2018 study from the Center for Global Development examining the debt vulnerabilities of countries identified as potential BRI borrowers found that out of 23 countries determined to be significantly or highly vulnerable to debt distress, there are eight countries—Djibouti, Kyrgyzstan, Laos, Maldives, Mongolia, Montenegro, Pakistan, and Tajikistan—“where BRI appears to create the potential for debt sustainability problems, and where China is a dominant creditor in the key position to address those problems.” John Hurley, Scott Morris, and Gailyn Portelance, “Examining the Debt Implications of the Belt and Road Initiative from a Policy Perspective,” *Center for Global Development Policy Paper*, March 2018, 11.

ca Research Initiative at the Johns Hopkins University School of Advanced International Studies, notes that China's debt write-offs have been "limited to interest-free Chinese government loans maturing at the end of the year," which comprise a "relatively modest part of Chinese finance in Africa."¹⁵⁷ In January 2019, China agreed to waive \$78.4 million worth of interest-free debt owed to it by Cameroon.¹⁵⁸ In April 2019, the Ethiopian government announced China canceled interest-free loans that had matured at the end of 2018, without specifying the amount; the cancelation was on top of China agreeing in 2018 to extend the repayment period of Ethiopia's loans for a major railway project.¹⁵⁹

In an attempt to counter corruption in BRI projects, in July 2019 China's Central Commission for Discipline Inspection announced plans to embed its officers in countries with major BRI projects to monitor the activity of Chinese companies abroad.* This follows the rollout of notices from China's state-owned asset regulator in July 2018 and June 2019 requiring SOEs to increase supervision of overseas units and personnel.† It remains to be seen whether Chinese officials' new emphasis on transparency, debt sustainability, and environmental sustainability leads to a substantive course correction. Given its strategic interests in BRI, however, Beijing is unlikely to go beyond tactical adjustments to the initiative.¹⁶⁰

Myanmar Renegotiates BRI Project over Debt Concerns

Driven by concerns over excessive debt, in 2018 Myanmar renegotiated the cost and scope of the Kyaukpyu deep-water port—a major BRI project—from \$7.2 billion to \$1.3 billion.¹⁶¹ The initial plan for the project—approved under the previous military-backed government in 2015—consisted of a major deep-water port and industrial park.¹⁶² Under the new deal finalized in November 2018, Myanmar scaled down the size of the port and increased the stake held by the Myanmar government and local companies from 15 percent to 30 percent; a Chinese consortium led by state-owned investment company CITIC holds the remaining 70 percent stake.¹⁶³

For Myanmar officials, Sri Lanka's experience—where in 2017, the Sri Lankan government granted a Chinese company a 99-year lease to operate Hambantota port after struggling to repay Chinese loans—raised concerns that the Kyaukpyu port project could leave Myanmar heavily indebted to China.¹⁶⁴ In a July 2018 interview, Myanmar's Planning and Finance Minister Soe Win emphasized the importance of paying attention to "lessons that we learned from our neighboring countries, that overinvestment is not good sometimes."¹⁶⁵ Sean Turnell, an economic ad-

*The plans will build on a pilot program launched in Laos in 2017, where the Central Commission for Discipline Inspection embedded its officers in a railway project built by Chinese SOE China Railway Group and established a joint inspection team with its Laotian counterpart. Don Weiland, "China to Tackle Corruption in Belt and Road Projects," *Financial Times*, July 18, 2019; Deng Hao, "Belt and Road a Path to Clean Governance," *China Daily*, June 15, 2019.

†The July 2018 notice outlines standards and required responses for cases of illegal management and investment of state assets by SOEs. The June 2019 notice requires SOEs to develop plans for holding individual employees accountable for their involvement in business operations that violate rules or incur major losses. Bai Yujie and Mo Yelin, "China Urges State Firms to Punish Rule Violations in Overseas Operations," *Caixin*, June 15, 2019; *Xinhua*, "China Details Regulation on Central SOEs' Asset Management," July 30, 2018.

Myanmar Renegotiates BRI Project over Debt Concerns— *Continued*

visor to State Counsellor Aung San Suu Kyi, said the new deal “reduces the financial risk dramatically” and demonstrates that “concerns about indebtedness and sovereignty have been and can be addressed.... This really could become a constructive model for countries that don’t have much leverage over a giant like China.”¹⁶⁶

According to media reports, the U.S. Agency for International Development (USAID) provided a team of technical experts to assist Myanmar in renegotiating the deal, at the request of the Myanmar government.¹⁶⁷ USAID described the assistance as the “public investment planning” part of its broader economic growth programming for Myanmar, noting in a statement, “This is part of our consistent position to help governments throughout the region interested in developing the technical capacity to do the due diligence needed to assess possible investments and projects—regardless of the source of financing.”¹⁶⁸ Other Western countries, including the United Kingdom and Australia, reportedly provided Myanmar with similar assistance.¹⁶⁹

Limitations to Shaping Multilateral Trade Rules and Promoting the Renminbi

Beyond infrastructure investment, Beijing seeks to leverage its economic clout in the areas of trade, currency, and payments to challenge the primacy of U.S.-dominated financial systems. In the trade arena, Beijing has sought to shape multilateral trade rules, but other countries’ participation in multilateral fora has diluted China’s ability to establish its trade preferences. In his testimony to the Commission, Rush Doshi, director of the Brookings Institution’s China Strategy Initiative, described how the Regional Comprehensive Economic Partnership (RCEP)* illustrates “both ... Chinese-order building ambitions and ... Asian resistance, as well as ... how China’s agenda can stall when it is multilateralized.”¹⁷⁰ China’s “lofty leadership ambitions” for RCEP have run into obstacles from regional countries, particularly Australia, India, and Japan.¹⁷¹ For example, Japan is reportedly pushing for RCEP to incorporate Comprehensive and Progressive Agreement for Trans-Pacific Partnership† provisions on cross-border data flows and digital trade, something China is unlikely to agree to.¹⁷² Meanwhile, India has been reluctant to grant China the same import terms as Association of Southeast Asian Nations countries, fearing an influx of Chinese goods widening its already significant trade deficit with China.¹⁷³

*RCEP is a multilateral free trade agreement under negotiation between Australia, China, India, Japan, New Zealand, South Korea, and the ten member states of the Association of Southeast Asian Nations. RCEP represents half of the world’s population and 32 percent of global GDP. Takashi Terada, “RCEP Negotiations and the Implications for the United States,” *National Bureau of Asian Research*, December 20, 2018.

†The Comprehensive and Progressive Agreement for Trans-Pacific Partnership is a free trade agreement between Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, New Zealand, Peru, Singapore, and Vietnam signed in March 2018. Matthew Goodman, “From TPP to CPTPP,” *Center for Strategic and International Studies*, March 8, 2018.

The Chinese government continues to promote renminbi (RMB) internationalization to reduce its reliance on the U.S. dollar while enhancing its economic influence, but efforts to date have been limited by Beijing's unwillingness to liberalize the country's capital accounts. Despite becoming a world reserve currency in 2016, the RMB's international use remains limited; as of April 2019 the RMB accounted for less than 2 percent of all global payments,* according to global interbank communications network SWIFT.† Beijing has made greater inroads regionally—by 2017, 40 percent of payments between China and countries in the Asia Pacific were conducted using the RMB, up from just 7 percent in 2012.¹⁷⁴

China has sought to increase RMB internationalization through BRI, bilateral currency swaps, agreements with foreign central banks, and the use of Hong Kong as an RMB hub.¹⁷⁵ To facilitate RMB internationalization and create an alternative to SWIFT, in 2015 Beijing launched the Cross-Border International Payments System (CIPS), its own interbank messaging and payments system.¹⁷⁶ While CIPS transactions are growing rapidly (an 80 percent year-on-year increase to \$3.77 trillion for 2018), it is nowhere close to rivaling SWIFT, which processes \$5 trillion to \$6 trillion in settlements daily.¹⁷⁷ Nonetheless, Dr. Doshi assesses CIPS “not only insulates China from financial pressure but also increases its autonomy, giving the country control over all information that passes through its network, the power to help others bypass sanctions, and the ability to one day cut others off from the RMB-denominated system.”¹⁷⁸ CIPS has been attractive for banks in countries targeted by U.S. sanctions, such as Russia and Turkey, which have sought to reduce their reliance on the U.S. dollar.‡

Global 5G Backlash

Huawei is positioning itself as a global leader in 5G, the next generation of wireless communications.§ However, Huawei faces growing international scrutiny as some countries rethink their relationship with the company over the national security concerns posed by its close ties to the Chinese government. Huawei has largely been blocked from the U.S. telecommunications equipment market due to concerns the company could build backdoors in its products to provide the Chinese government access into U.S. networks.¹⁷⁹ At the same time, the U.S. government is trying to persuade its allies and partners not to allow Huawei

*In comparison, the U.S. dollar was used in about 41 percent of transactions processed during the same period. SWIFT, “RMB Tracker: Monthly Reporting and Statistics on Renminbi (RMB) Progress towards Becoming an International Currency,” May 29, 2019.

†SWIFT is a global financial messaging network used by banks and other financial institutions to securely send and receive information. SWIFT, “SWIFT History,” <https://www.swift.com/about-us/history>.

‡As of April 2019, Russia had the second-highest number of banks outside of China participating in CIPS at 23 banks, after Japan (at 30 banks), while Turkey had 11 banks participating in CIPS. Kazuhiro Kida, Masayuki Kubota, and Yusho Cho, “Rise of the Yuan: China-Based Payment Settlements Jump 80 Percent,” *Nikkei Asian Review*, May 20, 2019; Karen Yeung, “Why China and Russia Are Struggling to Abandon the U.S. Dollar and Forge a Yuan-Ruble Deal,” *South China Morning Post*, January 15, 2019.

§For more on China's pursuit of 5G development and implications for U.S. economic competitiveness and national security, see U.S.-China Economic and Security Review Commission, Chapter 4, Section 1, “Next Generation Connectivity,” in *2018 Annual Report to Congress*, November 2018, 441–468.

Global 5G Backlash—Continued

to build their 5G networks. In February 2019, U.S. Secretary of State Mike Pompeo warned the United States would not be able to partner with or share intelligence information with countries that use Huawei technology in their information technology systems, stating, “We’re not going to put American information at risk.”¹⁸⁰

U.S. allies and partners differ as to whether to impose a ban on the use of Huawei’s 5G equipment or work to mitigate the risks.¹⁸¹ Australia and Japan have effectively blocked Huawei from providing 5G technology, but other U.S. allies and partners, despite sharing U.S. concerns about Huawei’s security risks, believe they can mitigate the risks through rigorous security standards and testing.¹⁸² For example, in April 2019 Germany’s telecommunications regulator announced its position “is that no equipment supplier, including Huawei, should, or may, be specifically excluded.”¹⁸³ A spokesperson for Germany’s Federal Interior Ministry said in February 2019 that the ministry’s “focus is on adapting the necessary security requirements so that the security of these networks will be guaranteed even if there are potentially untrustworthy manufacturers on the market.”¹⁸⁴ Like Germany, France is against an outright ban on Huawei, preferring instead to focus on tightening the rules governing the security of its 5G network.¹⁸⁵ In July 2019, the French parliament passed a new law requiring telecommunications operators and service providers to obtain approval from the French prime minister for their 5G network projects; the prime minister can block such activities if they pose a “serious risk” to national defense and security.¹⁸⁶ A March 2019 report from the North Atlantic Treaty Organization Cooperative Cyber Defense Center of Excellence argues “the issue of Huawei 5G deployment must be assessed in a broader geopolitical context,” warning “the fear remains that adopting 5G technology from Huawei would introduce a reliance on equipment which can be controlled by the Chinese intelligence services and the military in both peacetime and crisis.”¹⁸⁷

For many countries, Huawei’s price and quality remain a significant draw.¹⁸⁸ In April 2019, Huawei won a contract to supply 5G equipment to the Netherlands’ leading wireless carrier by underbidding the existing vendor, Ericsson, by 60 percent.¹⁸⁹ South Korea is letting individual carriers make their own decisions on selecting network equipment vendors; LG Uplus, the smallest of South Korea’s three mobile carriers, uses Huawei equipment in its 5G network.¹⁹⁰

Fears of an Untested Military

A second major challenge Beijing faces in achieving its foreign policy aims stems from senior leaders’ concerns about the competency of China’s untested military. China has not engaged in large-scale military operations since its 1979 invasion of Vietnam, and Chinese leaders since that time have expressed concerns over the PLA’s ability to prevail against an adversary in a modern military

conflict.* Four decades of PLA modernization efforts have produced an impressive inventory of advanced ships, aircraft, missiles, and space and cyber capabilities that in some cases rival those of the United States.

Nevertheless, successive generations of Chinese leaders have noted a number of deficiencies in the PLA's operational abilities, many of which do not appear to have improved significantly relative to the United States or even China's regional competitors.¹⁹¹ General Secretary Xi has been the most critical of the PLA's warfighting competence of any recent Chinese leader, publicly excoriating military leaders for a range of shortcomings that undermine the PLA's ability to fight and win a modern war.¹⁹² While the PLA has appeared to redouble efforts to improve its capabilities and competence, after six years many of the same shortcomings remain, with some potentially exacerbated by General Secretary Xi's restructuring of the PLA. In particular, these problems center on weaknesses in the PLA's joint warfighting capabilities and ability to produce a competent officer corps through its military education and training system.

Concerns over PLA Competence

CCP leaders' concerns over the PLA's warfighting competence center on the force's lack of recent combat experience. In 2009, shortly before he was elevated to the CMC, now CMC Vice Chairman General Zhang Youxia—himself a veteran of China's Vietnam war—noted the PLA's lack of combat experience and the potential that it had fallen behind its competitors, warning that “the gap between the PLA and foreign militaries is growing day by day.”¹⁹³ In testimony before the Commission, Dennis Blasko, a former U.S. military attaché in Beijing, argued that in recent years the frequency of criticism of the PLA's lack of operational experience and combat mindset has increased. For instance, while the term “peace disease” was used in Chinese media as early as the late 1980s, references to this and related terms such as “peacetime [bad] habits” have spiked in recent years, with the terms appearing roughly 565 times in the *PLA Daily* from 2012 to mid-2018.¹⁹⁴ In 2018, likely in part to emphasize his seriousness in ridding the PLA of these practices, General Secretary Xi personally issued the PLA's annual order directing the start of that year's military training cycle—the first time since the founding of the People's Republic of China that a CMC chairman had done so directly.¹⁹⁵ Using similar language to his 2018 address, General Secretary Xi instructed the PLA in 2019 to “rectify ... peacetime malpractices” in its training efforts, indicating the persistent nature of the problems six years into his tenure as CMC chairman.¹⁹⁶

Beijing's concerns over the PLA's competence have also manifested in the scathing critiques General Secretary Xi and senior military leaders have leveled against the PLA's combat readiness and the command ability of its officer corps. Chinese leaders since Deng Xiaoping have criticized the PLA for its inadequate preparations to fight a modern war, with top leaders disapproving of the force's “Two

*The PLA's invasion of Vietnam in 1979 and the cross-border incursions that followed it into the mid to late-1980s were China's last experiences with large-scale combat operations. Many Chinese and foreign observers view the PLA's invasion as an operational failure that continues to cast a shadow over the PLA. Charlie Gao, “This Is the War That Made China's Military What It Is Today,” *National Interest*, November 14, 2018.

Inabilities,” which identify the PLA as having insufficient ability to fight and its officers as having insufficient ability to command a modern war.¹⁹⁷ Since General Secretary Xi assumed the CMC chairmanship, several new formulas have been used to augment earlier criticism of the PLA that question the PLA’s ability to fight and win a conflict against a capable, modern adversary.¹⁹⁸ Primary among these are the so-called “Five Incapables”—referring to the inability of too many PLA officers to effectively judge the military situation, understand their orders, make operational decisions, direct troops in combat, and handle unforeseen battlefield developments.¹⁹⁹

Dedicated efforts by the PLA to improve the content and realism of exercises and officer training do not appear to have resolved these issues. In the most recent version of its official training guidelines, issued in 2018, the PLA emphasized realistic combat and joint training across all warfare domains while highlighting the command shortcomings characterized by the “peace disease” and Five Incapables.²⁰⁰ Following the rollout of the new guidelines, each of the services held training events focused on overcoming these shortfalls and tested senior officers’ knowledge of missions, operational scenarios, and understanding superiors’ intentions.²⁰¹

Despite these efforts, according to calculations by Alastair Iain Johnston, professor of government at Harvard University, references to the Five Incapables in PLA press have spiked since they were first introduced in 2015, doubling from 40 mentions in the *PLA Daily* in 2016 to nearly 80 in 2018.²⁰² Overall mention of terms critiquing PLA capabilities jumped from less than 20 in 2012 to nearly 150 in 2018.²⁰³ According to Mr. Blasko, an important function of the PLA’s self-criticism is to identify problems as part of the force’s long-term modernization efforts. Nevertheless, he notes, the increasing scope and frequency of these critiques under General Secretary Xi effectively “casts doubt over the senior party and military leadership’s confidence in the PLA’s ability to prevail in battle against a modern enemy.”²⁰⁴

Shortfalls in the Military Education and Training System

Central to the shortfalls Chinese leaders perceive in the PLA’s operational and operational command capabilities is the longstanding and systemic failure of China’s military education system to produce a competent officer corps.* To resolve this issue, the PLA has overhauled its military academies and training standards in an attempt to improve the quality of joint and service-level education.²⁰⁵ However, educational reforms have yet to produce the quality military leaders sought by Beijing.²⁰⁶ In a September 2018 address, General Secretary Xi recognized the PLA’s educational system had seen some improvement, but concluded the present “system of personnel training ... does not match the mission of fulfilling the new era, and it does not match the new organizational form of [China’s] military.... [M]ilitary vocational education is still in the initial explo-

* In his testimony before the Commission, Mr. Blasko argued that the “shortcomings in today’s PLA commanders and staffs represent multiple systemic failures to execute Jiang Zemin’s guidance from two decades ago that ‘we must train qualified personnel first, for we would rather let qualified personnel wait for equipment than equip them wait for qualified personnel.’” U.S.-China Economic and Security Review Commission, *Hearing on What Keeps Xi Up at Night: Beijing’s Internal and External Challenges*, written testimony of Dennis J. Blasko, February 7, 2019, 14.

ration stage.”²⁰⁷ In 2019, he reiterated these concerns, stating that “the development of joint command officers is an urgent priority for addressing the shortage of qualified personnel.”²⁰⁸

Pushback against Chinese Interference Activities

A third challenge to China’s ambitions abroad comes from the growing international pushback against China’s influence and interference activities. In recent years, a number of countries from Asia to Europe and the Western Hemisphere have recognized the coercive nature of China’s influence operations and other “sharp power”^{*} efforts and have begun taking steps to counter what they perceive as the threatening elements of these activities.† EU and UN members have likewise taken steps to limit CCP efforts to change international norms on human rights, sovereignty, and freedom of expression. (For more information on Chinese influence operations in Oceania and Singapore, see Chapter 4, Section 4, “Changing Regional Dynamics: Oceania and Singapore.”)

Coordination Grows among U.S. Allies

In the last several years, U.S. allies and partners around the globe have taken significant steps to expose and counteract Chinese influence operations. Lindsey Ford, director of political-security affairs at the Asia Society Policy Institute, testified to the Commission that “democracies such as Australia and New Zealand have raised concerns that China has leveraged ties to elite policy, expert, and business communities to exert political pressure and shape domestic policy debates.”²⁰⁹ A major component of these countries’ response has been action by the Five Eyes intelligence-sharing countries—the United States, Australia, Canada, the United Kingdom, and New Zealand—to counter Chinese influence efforts through enhancing intelligence-sharing, improving communication with their citizens on the subject of Chinese influence activities, and expanding information-sharing with non-Five Eyes partners. In August 2018, in a reference clearly including China, Five Eyes countries issued a statement condemning “the coercive, deceptive, and clandestine activities of foreign governments, actors, and their proxies to sow discord, manipulate public discourse, bias the development of policy, or disrupt markets for the purpose of undermining our nations and our

^{*}The term “sharp power” describes how authoritarian regimes like China seek to undermine democratic institutions in other countries. Many of these activities rely on neither coercive nor persuasive power—hard and soft power, respectively—because they aim not to influence the policies of states directly but rather to “pierce, penetrate, or perforate” their information environments. This differs from soft power, which focuses specifically on a country’s “ability to affect others by attraction and persuasion rather than through the hard power of coercion and payment.” Some examples of the CCP using sharp power include encouraging self-censorship by Western academics, use of Chinese language media outlets abroad to shape narratives, and use of donations to gain political influence. For more on China’s application of sharp power see U.S.-China Economic and Security Review Commission, Chapter 3, Section 2, “China’s Relations with U.S. Allies and Partners” in *2018 Annual Report to Congress*, November 2018, 315; Juan Pablo Cardenal et al., “Sharp Power: Rising Authoritarian Influence,” National Endowment for Democracy, December 2017, 6.

†In addition to the United States, countries including Australia, Canada, France, Germany, Japan, New Zealand, Singapore, and the United Kingdom have publicly warned that China is engaging in influence operations that have interfered with and otherwise adversely affected their domestic politics, economy, and societal wellbeing. Larry Diamond et al., “Chinese Influence and American Interests: Promoting Constructive Vigilance,” *Hoover Institution*, November 2018, 163; Noah Barkin, “Exclusive: Five Eyes Intelligence Alliance Builds Coalition to Counter China,” *Reuters*, October 12, 2018.

allies.”²¹⁰ In early 2018, Five Eyes countries began sharing information about Chinese influence operations with Japan, Germany, and France to foster greater cooperation.²¹¹ EU countries have also begun to demonstrate their concerns over China’s efforts to suppress freedom of speech, encourage censorship in film and academia, and spread propaganda.²¹²

Pushback in the UN to Chinese Amendment Language

Resistance has also emerged within the UN to Chinese efforts to insert the CCP’s preferred language into UN documents to alter international norms. The CCP has sought to revise language and downplay the importance of human rights and development norms to better align with its emphasis on state sovereignty. For example, the CCP has tried to shift the UN’s focus on human rights from emphasizing “political and individual rights” of people to a focus on “economic and social rights.”²¹³

Although Beijing has had a few notable successes, such as inserting “Xi Jinping Thought” into a 2017 resolution that called for “promoting development over human rights,” many European governments—along with countries as diverse as Afghanistan, Australia, Japan, Mexico, Morocco, Peru, and Paraguay—have consistently opposed Chinese-sponsored resolutions and amendments at the UN Human Rights Council.²¹⁴ For example, in March 2016, Chinese efforts to water down internationally accepted language on “human rights defenders” was voted down, and a 2017 amendment that would weaken state obligations to cooperate with UN Human Rights Council mechanisms was similarly defeated.²¹⁵ In 2018, several amendments pushed by China dealing with civil society and territorial sovereignty, to include how nongovernmental organizations should operate and respect host country sovereignty, also failed to pass after meeting firm opposition.²¹⁶

Countering Hard Power

Finally, assertive Chinese military activities in the East and South China seas have prompted mounting regional pushback. Many Indo-Pacific countries have undertaken efforts to counter China’s activities in the region through enhanced partnership building, military modernization, and increased military cooperation with countries outside the Indo-Pacific.

Enhanced Partnership Building

In a November 2018 speech, Commander of U.S. Indo-Pacific Command Admiral Philip Davidson identified maritime partnership building as a way to ensure a free and open Indo-Pacific and help countries counter China’s malign activities and influence in the region.²¹⁷ Australia, Singapore, Japan, Vietnam, and India are a few of the countries in the region that have taken steps to expand partnerships and counterbalance China’s expanding presence. (For more information on pushback from Australia and Singapore on China’s growing regional influence, see Chapter 4, Section 4, “Changing Regional Dynamics: Oceania and Singapore.”)

- *Australia:* To counter China’s growing regional presence, particularly in Oceania, Australia has sought to strengthen its se-

curity relationships. In July 2019, Australia's Defense Minister Linda Reynolds indicated Canberra would accelerate its plans to counter Chinese influence in the region by creating a military unit that would strengthen capacity, resilience, and interoperability with Australia's Pacific Island partners. The unit will focus on conducting security operations, humanitarian assistance, disaster relief, and peacekeeping in the region.²¹⁸ In addition to creating this unit, Australia is also pursuing and maintaining security relationships with a number of its Pacific Island neighbors, including Vanuatu, Fiji, and the Solomon Islands.²¹⁹ Furthermore, Canberra has partnered with Washington to construct a naval base in Papua New Guinea in part as an effort to curb China's growing influence in the country and as a response to Beijing's pursuit of a base in Vanuatu.²²⁰

- *Singapore*: Singapore seeks stability in the South China Sea and supports the U.S. Free and Open Indo-Pacific strategy. While Singapore maintains a balanced relationship with China and has conducted training with the PLA, it allows the United States, Australia, and New Zealand to maintain a routine naval presence in the country.²²¹ Singapore also has a strong security relationship with India and supports Indian engagement in Southeast Asia, particularly concerning India's support for a Free and Open Indo-Pacific and its commitment to maintaining secure sea lines of communication between the Indian Ocean and the South China Sea.²²² Recent agreements between Singapore and India aimed at strengthening this relationship include the 2017 renewal of a five-year training pact allowing Singapore's air force to train in India, and a 2018 agreement concerning mutual naval coordination, logistics, and services support during port calls and military exercises.²²³
- *Japan*: While Japan maintains a strong alliance with the United States, Tokyo has also increased its regional influence by enhancing its outreach abroad through the provision of diplomatic, economic, and security assistance.²²⁴ Japan has sought in particular to strengthen its military ties with many Southeast Asian countries, donating patrol boats, maritime surveillance aircraft, and spare helicopter parts to the Philippines, patrol boats to Vietnam, and retired P-3 Orion anti-submarine aircraft to Malaysia.²²⁵
- *Vietnam*: While seeking to stabilize its relationship with Beijing, Hanoi is strengthening its partnerships with the United States, Australia, India, Japan, and New Zealand.²²⁶ In 2018, Vietnam and India pledged to continue defense collaboration to include senior dialogues, arms procurement, and port calls for navy and coast guard ships, and reaffirmed the importance of upholding freedom of navigation and overflight in the South China Sea.²²⁷ Also in 2018, Vietnam and the United States worked to strengthen security ties through a series of exchanges between their coast guards, the first port call by a U.S. aircraft carrier since the end of the Vietnam War, and Vietnam's participation in the U.S.-hosted biennial Rim of the Pacific exercise.²²⁸

- *India:* New Delhi's concerns over China's growing presence in the Indian Ocean region have spurred its interest in deepening security partnerships with Japan and the United States.²²⁹ India and the United States established a direct hotline and signed a Communications Compatibility and Security Agreement in 2018, allowing the two countries to quickly and securely exchange sensitive information.²³⁰ India and Japan continue to strengthen their economic and security relationship, with Japan becoming a permanent member of the annual U.S.-India Malabar naval exercise in 2015.²³¹ The two have also agreed to create a new Foreign and Defense Ministerial Dialogue to strengthen bilateral security cooperation and will conduct exercises in 2019 between their air and ground forces.²³² India has also increased its naval presence in the South China Sea, conducting several exercises in the area in 2019 that included its second bilateral naval exercise with Vietnam; a six-day exercise with the United States, Japan, and the Philippines; and a separate exercise with France.²³³

Regional Military Modernization as a Response to China's Growing Assertiveness

China's more than four-decades-long effort to modernize its military has spurred other regional countries to accelerate their own military modernization efforts. Japan has taken steps to acquire expeditionary capabilities it has not possessed since World War II, and Vietnam has acquired high-end Russian military equipment to develop its own anti-access deterrent in the South China Sea. Finally, India has stepped up efforts to build a military capable of fighting both Pakistan and China.

- *Japan's emerging expeditionary capabilities:* Japan is modernizing its military to counter increasing pressure from China in the air and maritime domains, as well as to improve the defensive capabilities of its southwest islands.²³⁴ Tokyo is specifically focused on establishing an amphibious rapid deployment brigade to improve the expeditionary capability of its Ground Self-Defense Force, acquiring large numbers of F-35B fighters, modifying its Izumo-class helicopter destroyer to support F-35B flight operations, and improving the defensive capabilities of its southwest islands by deploying shore-based antiship cruise missiles to several key locations in the Ryukyu island chain.²³⁵ Since legislation was passed in 2015 allowing Japan's military to participate in collective self-defense, Tokyo has deployed its ships to participate in escort operations of U.S. ships and aircraft in the East and South China seas, and has participated in bilateral exercises in the South China Sea.²³⁶ The administration of Prime Minister Shinzo Abe may seek to hold a vote in 2020 to amend "Article 9" of the Japanese constitution to allow for the development of offensive capabilities, despite having failed to retain enough support to pass the measure after the July 2019 Diet election.²³⁷

- *Vietnam building its own area denial capabilities:* To address its current disadvantages vis-à-vis Beijing in the maritime domain, Hanoi has sought to enhance its area denial capabilities by purchasing advanced military equipment from Russia, including 36 Su-30MKK attack aircraft, 6 KILo-class attack submarines, and two S-300 surface-to-air missile (SAM) systems.²³⁸ In 2019, Vietnam also registered its interest in purchasing Russia's advanced S-400 SAM systems.²³⁹
- *India recapitalizing air and maritime capabilities:* Since 2015, India's Defense Ministry has signed 188 defense acquisition contracts, including an October 2018 contract with Russia for S-400 SAM systems and a deal for advanced Israeli SAM systems to be installed on Indian warships.²⁴⁰ In 2019, India is scheduled to receive the first half of the 36 French-built fighter-bombers New Delhi ordered in 2015, and has already begun receiving the first of 22 AH-64E Apache attack helicopters and 15 Chinook heavy-lift helicopters built by Boeing.²⁴¹ The Indian Navy anticipates commissioning six new Scorpene-class submarines and a new indigenously-built aircraft carrier between 2020 and 2021.²⁴²

Global Powers Increasing Military Presence in the Indo-Pacific

A number of U.S. allies and partners, including European allies, have also demonstrated their willingness to more publicly broadcast their military presence in the Indo-Pacific as their willingness to stand up to Beijing has increased.²⁴³

- *International military presence increasing in the South China Sea:* Several countries have conducted patrols in the South China Sea in tandem with or in addition to U.S. freedom of navigation operations in the region—although no other country has yet joined the United States in navigating within 12 nautical miles of disputed features.²⁴⁴ Australia's navy regularly conducts presence patrols in the South China Sea, and in August 2018 the United Kingdom conducted a South China Sea transit with an amphibious assault ship near the Paracel Islands.²⁴⁵ Japan, France, and Canada have also increased their military activities in the South China Sea.²⁴⁶
- *Increasingly complex multilateral exercises:* In May 2019, the U.S. Navy, Japan Maritime Self-Defense Force, Philippines Navy, and Indian Navy conducted joint naval drills in the South China Sea for the first time in a four-day event demonstrating military presence and cooperation.²⁴⁷ Also in May 2019, the U.S. Navy dispatched a guided-missile destroyer to the Indian Ocean to participate in a large-scale exercise—alongside ships from France, Japan, and Australia—focused on live-fire and other combat drills.²⁴⁸ The U.S. Army has also announced plans to carry out in 2020 a new exercise known as Defender Pacific, focusing on a South China Sea scenario and including the Philippines, Thailand, Malaysia, Indonesia, and Brunei.²⁴⁹

Implications for the United States

In recent years, China has promoted itself abroad as an alternative, authoritarian-led model for other countries to emulate on an inexorable drive toward achieving regional and even global leadership. In reality, the prospects for Beijing's ability to achieve its goals are far more uncertain than they might appear. The CCP faces significant internal and external challenges that constrain its ability to sustain economic growth, project power, and spread its influence globally. China's leadership is acutely aware of these challenges and is making a concerted effort to overcome them. Ultimately, the extent to which Beijing can address these vulnerabilities—partially, successfully, or ineffectively—affects its ability to contest U.S. leadership and interests.

In the economic realm, Chinese policymakers credit their state-led economic model for the country's rapid growth and view it as critical to China's continued prosperity. Beijing's doubling down on its economic model likely will prolong U.S.-China trade frictions. As trade tensions drag on, U.S. companies may need to reassess their positions.

Moves by the United States and its allies and partners to block China's access to critical technologies may have the unintended effect of accelerating China's innovation drive, due to Beijing's assessment that technological self-reliance and dominance are fundamental to China's future economic and military competitiveness. China's military-civil fusion strategy, which blends military, civilian, and academic research and development, could put U.S. industries at risk. U.S. and foreign companies collaborating with Chinese entities may be participants in China's military-civil fusion system.²⁵⁰

While Beijing's economic statecraft has had limited success, China is learning and progressing along what Dr. Doshi has described as a "superpower learning curve."²⁵¹ Notably, amid criticism of BRI, Beijing is rethinking how it selects and implements projects and presents the initiative to overseas audiences. BRI's roster continues to grow because significant infrastructure gaps persist globally and Beijing faces few competitors in infrastructure financing. China's lack of transparency in its lending raises concerns regarding not only Beijing's free riding on previous international debt relief efforts, but also the potential for increased risks of debt distress in low-income countries. As a geopolitical strategy, BRI's breadth and ambiguity means it does not need to succeed everywhere to undermine the rules-based international order. BRI continues to make China a major creditor in regions that are strategically important to the United States, giving Beijing increased political influence.

Finally, China's frequent deployments of the PLA and paramilitary forces to support its regional sovereignty claims could reflect an increased willingness to employ military force—especially against a less-capable opponent in a limited conflict—if Beijing were confident Washington would not intervene. Nevertheless, Beijing's concerns over the PLA's warfighting capabilities may lessen senior Chinese leaders' willingness to initiate a conflict that could prompt the intervention of a modern, capable adversary such as the United States, at least in the near term. Instead, Beijing likely will continue to rely on coercive actions below the threshold of armed conflict by its

coast guard, maritime militia, and naval forces to avoid risking an outright military confrontation. Beijing's calculus regarding the use of force may change as the PLA continues its modernization drive. For the foreseeable future, however, the uncomfortable status quo of low-level Chinese coercion and its attendant risk of accidents and miscalculation may rank among the most pressing challenges for the United States and its allies.

ENDNOTES FOR CHAPTER 2

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CHAPTER 3

U.S.-CHINA COMPETITION

SECTION 1: U.S.-CHINA COMMERCIAL RELATIONS

Key Findings

- The nature of Chinese investment in the United States is changing. While Chinese foreign direct investment (FDI) in the United States fell in 2018, venture capital (VC) investment in cutting-edge sectors has remained more stable. Broad trends in FDI from China mask VC investment. While lower than FDI, VC investment from Chinese entities could have more impact as it has prioritized potentially sensitive areas, including early-stage advanced technologies. This sustained Chinese investment raises concern for U.S. policymakers, as Beijing has accelerated its comprehensive effort to acquire a range of technologies to advance military and economic goals.
- U.S. laws, regulations, and practices afford Chinese companies certain advantages that U.S. companies do not enjoy. Chinese firms that raise capital on U.S. stock markets are subject to lower disclosure requirements than U.S. counterparts, raising risks for U.S. investors. The Chinese government continues to block the Public Company Accounting Oversight Board from inspecting auditors' work papers in China despite years of negotiations. As of September 2019, 172 Chinese firms were listed on major U.S. exchanges, with a total market capitalization of more than \$1 trillion.
- China's laws, regulations, and practices disadvantage U.S. companies relative to Chinese companies. China's foreign investment regime has restricted and conditioned U.S. companies' participation in the Chinese market to serve industrial policy aims. In addition, recent reports by the American and EU Chambers of Commerce in China suggest technology transfer requests have continued unabated. Technology transfer requests continue to compromise U.S. firms' operations.
- Chinese firms' U.S. operations may pose competitive challenges if they receive below-cost financing or subsidies from the Chinese state or if they can import inputs at less than fair value. There are serious gaps in the data that prevent a full assessment of the U.S.-China economic relationship. Analysis of Chinese companies' participation in the U.S. economy is constrained by the absence of empirical data on companies' operations, corporate governance, and legal compliance.

Recommendations

The Commission recommends:

- Congress enact legislation to preclude Chinese companies from issuing securities on U.S. stock exchanges if:
 - The Public Company Accounting Oversight Board is denied timely access to the audit work papers relating to the company's operations in China;
 - The company disclosure procedures are not consistent with best practices on U.S. and European exchanges;
 - The company utilizes a variable interest entity (VIE) structure;
 - The company does not comply with *Regulation Fair Disclosure*, which requires material information to be released to all investors at the same time.
- Congress enact legislation requiring the following information to be disclosed in all issuer initial public offering prospectuses and annual reports as material information to U.S. investors:
 - Financial support provided by the Chinese government, including: direct subsidies, grants, loans, below-market loans, loan guarantees, tax concessions, government procurement policies, and other forms of government support.
 - Conditions under which that support is provided, including but not limited to: export performance, input purchases manufactured locally from specific producers or using local intellectual property, or the assignment of Chinese Communist Party (CCP) or government personnel in corporate positions.
 - CCP committees established within any company, including: the establishment of a company Party committee, the standing of that Party committee within the company, which corporate personnel form that committee, and what role those personnel play.
 - Current company officers and directors of Chinese companies and U.S. subsidiaries or joint ventures in China who currently hold or have formerly held positions as CCP officials and/or Chinese government officials (central and local), including the position and location.
- Congress enact legislation requiring the collection of data on U.S.-China economic relations. This legislation would:
 - Direct U.S. economic statistics-producing agencies, including the U.S. Census Bureau, the U.S. Department of Commerce's Bureau of Economic Analysis, and the U.S. International Trade Commission, to review methodologies for collecting and publishing not only gross trade flows data, but also detailed supply chain data to better document the country of origin for components of each imported good before it reaches U.S. consumers.

- Direct the U.S. Census Bureau to restart data releases in its *Current Industrial Reports* at the ten-digit industry level.
- Direct the U.S. Department of the Treasury to coordinate with the U.S. Census Bureau to match U.S. firm-level data with their U.S. employees' data.

Introduction

U.S. companies with operations in China, which have historically been supportive of deepening engagement, have grown increasingly pessimistic about their ability to expand and participate in the Chinese market. In describing this pessimism, U.S. companies often point to the heavy hand of the Chinese government, which is designed to favor Chinese companies via practices such as joint venture restrictions and technology transfer requirements. These practices and others are described in this section. Despite these reports, however, there are gaps in the data available to inform the policy decisions that impact U.S. companies' activities in China and Chinese companies' activities in the United States.

This section reviews the presence of Chinese companies in the United States and U.S. companies in China by describing aggregated investment flows, companies' stated motivations for their investments, and current challenges for U.S. policymakers' consideration. The section also examines Chinese government practices and concludes by discussing implications for the United States. This section is based on the Commission's February 2019 hearing on the topic, the Commission's May trip to the Indo-Pacific, unclassified statements by U.S. officials, and open source research and analysis.

U.S.-China Economic Ties: An Unbalanced Relationship

U.S. companies seeking to export to or operate in China inevitably come up against the apparatus of the Chinese government, which maintains broad control over the structure of the Chinese economy. The Chinese government uses a series of industrial plans and regulations to advance the development of Chinese companies and industries at the expense of their foreign competitors. It employs a variety of means to execute this strategy, including state-imposed market barriers; lack of regulatory transparency; government procurement standards that favor local producers; extensive industrial subsidies; and, in some cases, state-sponsored theft of intellectual property.¹

Consequently, U.S.-China trade and investment flows are heavily unbalanced. U.S. goods producers struggle to export to China, while Chinese companies face no similar restrictions. In services, where U.S. firms excel, the U.S. share of China's services market stands below the U.S. share of services globally.² Investment flows also reflect how the U.S.-China relationship has been shaped. As U.S. companies have sought to establish production in China, U.S. FDI has historically been dominated by greenfield investment (e.g., new facilities).³ Conversely, Chinese FDI in the United States has been skewed heavily toward acquisitions (e.g., the purchase of existing U.S. assets), to gain access to valuable technology among other reasons (see Table 1).⁴

Table 1: U.S.-China Bilateral Transactions in 2017
(US\$ billions)

	Exports		Outbound FDI	
	Goods	Services	Mergers and Acquisitions	Greenfield
United States	\$129.8	\$57.6	\$4.6	\$9.6
China	\$505.2	\$17.4	\$28.9	\$0.8

Note: Outbound FDI represents transactions that occurred in the year 2017, rather than cumulative FDI. Data from 2017 are used to maintain consistency with the most recent services trade data.

Source: Various.⁵

Chinese Companies in the United States

Chinese companies can participate in the U.S. economy in several ways, including through mergers and acquisitions, greenfield investment, VC investment, listing on U.S. stock exchanges, and research and development centers. According to estimates from the Internal Revenue Service, as of 2015 (latest available data), 7,360 companies in the United States were controlled by entities in mainland China (6.5 percent of all foreign-controlled companies), roughly similar to the number controlled by entities in Japan (7,471) and the United Kingdom (UK) (7,523) and less than half than those controlled by Canadian entities (15,411).⁶

Chinese Investment in the United States

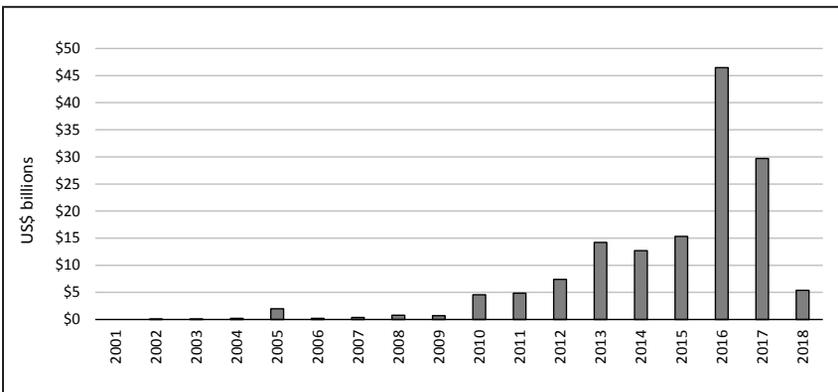
Chinese FDI only accounts for a small share of total U.S. inbound FDI. With the exception of Lenovo's \$1.75 billion purchase of IBM's personal computers division in 2005, annual Chinese FDI in the United States remained below \$1 billion until 2010.^{*7} Yet even at the peak of Chinese FDI inflows in 2016, Chinese affiliates' holding of U.S. assets remained well below that of other countries. U.S. Department of Commerce's Bureau of Economic Analysis data show Chinese corporate affiliates in the United States held \$216 billion in cumulative U.S. assets in the year 2016, only 1.6 percent of total foreign corporate affiliates' holdings and low relative to the corporate affiliates of French (7.9 percent), German (10.3 percent), Canadian (13.9 percent), and Japanese companies (15.8 percent).[†]

^{*}Data from Rhodium Group are used throughout unless comparing Chinese and non-Chinese FDI in the United States. Data-producing agencies and organizations do not share a standard methodology for collecting and producing FDI data, leading to high variation between different organizations' figures. In a 2013 report produced at the Commission's recommendation, the International Trade Administration (a bureau within the Department of Commerce) said that while Rhodium Group estimates showed \$6.5 billion of FDI flows from China to the United States in 2012, U.S. government estimates showed only \$219 million. The report noted that differing methodologies for compiling the data account for the differences in reported investment value. For more information, see the addendum on investment data at the end of this section. U.S. Department of Commerce International Trade Administration, *Report: Foreign Direct Investment (FDI) in the United States from the China and Hong Kong SAR*, July 17, 2013.

[†]These data do not include investment from Hong Kong or potential corporate intermediaries in the Cayman Islands, British Virgin Islands, or other locations. Yet even if investment from Hong Kong were included, the combined assets of mainland Chinese and Hong Kong affiliates in the United States would amount to less than 2 percent of the total in 2016. U.S. Department of Commerce Bureau of Economic Analysis, *Foreign Direct Investment in the U.S., Majority-Owned Bank and Nonbank U.S. Affiliates (Data for 2007 and Forward), Total Assets, by Country of Ultimate Beneficial Owner*, accessed June 11, 2019. <https://apps.bea.gov/iTable/iTable.cfm?ReqID=2&step=1>.

Recent changes in Chinese FDI flows to the United States have been driven by a small number of large transactions and reflect Chinese domestic policy decisions as much as the investment climate in the United States. Joy Dantong Ma, associate director at economic think tank MacroPolo, has argued the 2016 spike in Chinese FDI represented an exceptional year, in which the United States received 29 percent of total Chinese outbound FDI due to deregulation in China, outsized acquisitions by four large conglomerates,* and the sharp devaluation of the renminbi (RMB) in mid-2015.⁸ The subsequent drop in Chinese FDI to the United States in 2017 represented a “reversion” to the prior average as Chinese officials clamped down on capital outflows.⁹ Economic research firm Rhodium Group also concluded that while increased foreign investment scrutiny in the United States may have played some role, Beijing’s tightening of administrative controls on outbound capital flows have driven the decline in Chinese entities’ acquisitions since their peak in 2016 (see Figure 1).¹⁰ These outsized acquisitions were concentrated in real estate. Cumulatively, real estate and hospitality investments have dominated FDI from China (\$41.4 billion), followed by information and communication technologies (ICT) (\$17.2 billion); transport, construction, and infrastructure (\$16.7 billion); and energy (\$13.9 billion).¹¹

Figure 1: Chinese Annual FDI Flows to the United States, 2001–2018



Note: Figure 1 excludes all annual investment amounts below \$50 million. It begins in 2001 following China’s entrance into the World Trade Organization, which coincided with the beginning of China’s “Going Out” policy in 2000 promoting investment abroad.

Source: Rhodium Group and the National Committee on U.S.-China Relations, “The U.S.-China Investment Hub.” <https://www.us-china-investment.org/us-china-foreign-direct-investments/data>.

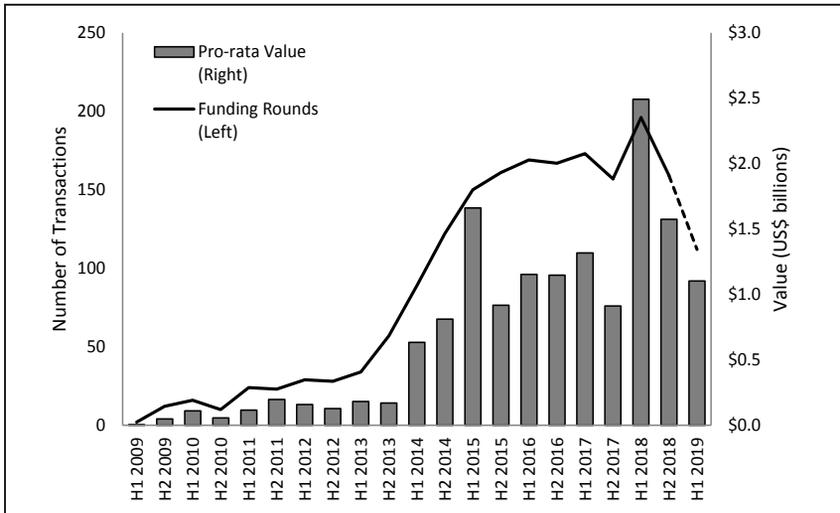
* Four high-profile conglomerates—Dalian Wanda Group, Anbang Insurance, HNA Group, and Oceanwide Holdings—accounted for more than 60 percent of Chinese FDI in the United States in 2016. After 2016, three conglomerates struggled to meet obligations as Chinese financial regulators cracked down on their acquisitions as well as broader shadow banking and capital outflows. In June 2017, Chinese financial regulators instructed large state-owned lenders not to lend to Dalian Wanda; it has since divested many of its assets. In February 2018, the China Insurance Regulatory Commission took control of Anbang to shore up the company after it struggled to repay investors; the former chairman, Wu Xiaohui, was sentenced to prison for fraud and embezzlement. In March 2018, the *Wall Street Journal* reported that HNA had received governmental support. Anjani Trivedi and Julie Steinberg, “Chinese Conglomerate HNA Gets Lifeline,” *Wall Street Journal*, March 2, 2018; Pan Che, “Anbang Taken Over by Insurance Regulator,” *Caixin*, February 23, 2018; Lingling Wei and Wayne Ma, “China Blocks Big Banks from Lending to Dalian Wanda,” *Wall Street Journal*, July 17, 2017.

China's outbound FDI has slowed elsewhere in the world within a broader environment of lower global FDI flows. Rhodium and the Mercator Institute for China Studies (MERICS) reported Chinese FDI flows to the EU also peaked in 2016, then dropped in 2017 and 2018.¹² Notably, Chinese FDI flows to the EU did not fall as much since 2016 as to the United States.¹³ In 2018, Chinese FDI flows to the United States only reached \$5.4 billion, their lowest amount since 2011, while Chinese FDI flows to the EU were comparatively higher at \$19.3 billion (€17.3 billion).^{*} Chinese conglomerates HNA, Dalian Wanda, and Anbang also sold off sizable assets in the EU and the United States.¹⁴ These divestitures occurred in a year of lower global FDI: the UN Conference on Trade and Development and the Organization for Economic Cooperation and Development (OECD) reported a fall in global FDI in 2018, which both institutions attributed to repatriations by U.S. multinational corporations following U.S. corporate tax reforms.¹⁵

Broad trends in FDI flows from China mask lower but more impactful levels of VC investment from Chinese entities in potentially sensitive areas, including U.S. biotechnology, energy storage, and other early-stage advanced technologies. Chinese VC investment has remained consistently above \$500 million since 2014 and did not drop as significantly as FDI in 2018. VC investment peaked in the first half of 2018 at over \$2 billion before dropping back to the \$1–\$1.5 billion range in the second half of 2018 and the first half of 2019 (see Figure 2).¹⁶ This decrease diverged from overall U.S. VC investment, which held steady at 2018 levels.¹⁷ Rhodium attributed the late 2018 and early 2019 reset to a pullback from Chinese state-owned VC investors, due in part to U.S. foreign investment screening's expanded role to review foreign VC investment, "with special scrutiny for state-related investors."¹⁸ U.S. policymakers remain concerned about VC investment that might be directed by the Chinese government, as access to early-stage technologies could put U.S. national security and economic competitiveness at risk.

^{*}These figures can be compared to 2016, when the United States received more FDI from China (about \$46 billion) than Europe received from China (about \$41 billion, or €37 billion). They do not include asset divestitures, which the dominant sources of global FDI data (the UN Conference on Trade and Development and the Organization for Economic Cooperation and Development) do. Thilo Hanemann et al., "Two-Way Street: 2019 Update on U.S.-China Investment Trends," *Rhodium Group and National Committee on U.S.-China Relations*, May 2019, 26; Thilo Hanemann, Mikko Huotari, and Agatha Kratz, "Chinese FDI in Europe: 2018 Trends and Impact of New Screening Policies," *Rhodium Group and Mercator Institute for China Studies*, March 2019, 9.

Figure 2: Completed Chinese VC Investment in the United States, January 2009–H1 2019



Note: Pro-rata value determined as the Chinese proportional share of each funding round's value based on the number of participating investors. Data from 1H 2019 are preliminary only. Source: Thilo Hanemann et al., "Sideline: U.S.-China Investment in 1H 2019," *Rhodium Group*, July 31, 2019, 9.

Chinese VC funding in the United States has tended to prioritize investments in health, pharmaceuticals, and biotechnology; financial and business services; and ICT. According to preliminary data, health, pharmaceuticals, and biotechnology received the highest level of Chinese VC investment in the first half of 2019 (estimated at \$330 million).¹⁹ These sectors also saw the highest number of transactions involving Chinese investor participation.²⁰ The United States has been the primary destination for Chinese outbound VC biotech investment. Between 2000 and 2017, Chinese VC investors participated in 153 biotech funding rounds internationally, of which 131 rounds had U.S. recipients.*

Analysis of Chinese companies' participation in the U.S. economy is constrained by an absence of empirical data on companies' operations, corporate governance, legal compliance, and impact on the broader U.S. economy. In *The Clash of Capitalisms? Chinese Corporations in the United States*, one of the few studies of Chinese companies in the United States, Rutgers University law professor Ji Li stated: "The extant literature [on China's global expansion] has largely neglected Chinese investment in developed countries, especially the United States."²¹

Chinese Companies on U.S. Stock Exchanges

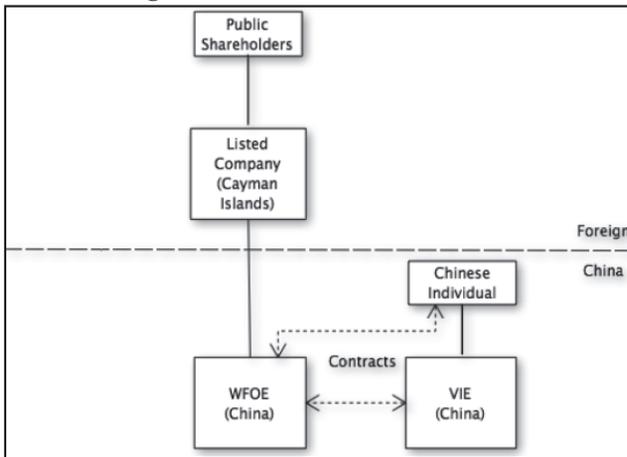
Beyond investing in the United States, many Chinese companies raise capital on U.S. financial markets. Chinese firms—like other foreign businesses—rely on U.S. financial markets to seek equity financing and establish a trading presence for their securities. Chi-

*Gryphon Scientific and Rhodium Group note that these funding rounds' target companies are engaged primarily in biotechnology, followed by the drug discovery and drug delivery markets of traditional pharmaceuticals. Gryphon Scientific and Rhodium Group, "China's Biotechnology Development: The Role of U.S. and Other Foreign Engagement" (prepared for the U.S.-China Economic and Security Review Commission), February 14, 2019, 61.

nese businesses have been attracted to U.S. financial markets due to their size and liquidity, the possibility of obtaining foreign currency, and the option to list using a dual-class structure.²² Dual-class structures allow certain shareholders—most often company founders and executives—to have a vote that carries more weight relative to other shareholders in corporate voting, permitting those shareholders to maintain greater control over a company’s management and firm decisions, such as mergers and acquisitions. As of September 2019, there were 172 Chinese companies listed on the three largest U.S. exchanges, the NASDAQ, the New York Stock Exchange (NYSE), and the NYSE American (formerly the American Stock Exchange, or AMEX), with a total market capitalization of more than \$1 trillion.*²³ In 2018 alone, Chinese companies raised more than \$8.5 billion through initial public offerings (IPOs) on U.S. exchanges.²⁴

The Chinese government restricts foreign investment in industries it defines as sensitive, such as the internet, media, and other areas of telecommunications.²⁵ To circumvent these restrictions and gain access to foreign capital, many Chinese corporations use an complex corporate structure called a variable interest entity (VIE) to list in the United States, requiring the participation of at least three affiliated firms (see Figure 3).†

Figure 3: A Common VIE Structure



Note: WFOE stands for “wholly foreign-owned enterprise.”

Source: Paul Gillis and Fredrik Oqvist, “Variable Interest Entities in China,” *GMT Research*, March 13, 2019, 3. <https://www.chinaaccountingblog.com/weblog/2019-03-vie-gillis.pdf>.

*The NASDAQ, NYSE, and NYSE American exchanges had a combined market capitalization of \$33.1 trillion at the end of 2018. To show Chinese companies’ participation over time, 130 Chinese companies were listed on these exchanges in 2017, with a total market capitalization of \$536 billion; in 2012, 188 Chinese companies were listed on these exchanges, with a total market capitalization of only \$119 billion. When AMEX was acquired by NYSE Euronext, the exchange’s name was changed to NYSE American. World Federation of Exchanges, “WFE Annual Statistics Guide (Volume 4),” May 1, 2019, Equities 1; U.S.-China Economic and Security Review Commission, Chapter 1, Section 2, “Chinese Investment in the United States,” in *2017 Annual Report*, November 2017, 91–92.

†According to Paul Gillis and Fredrik Oqvist, a variable interest entity is a company included in the consolidated financial statements of a second company. The second company controls the VIE through contracts rather than direct ownership. “The contracts attempt to mimic the control and economic interest of direct ownership.” Paul Gillis and Fredrik Oqvist, “Variable Interest Entities in China,” *GMT Research*, March 13, 2019. <https://www.chinaaccountingblog.com/weblog/2019-03-vie-gillis.pdf>.

In these U.S.-listed Chinese companies, select assets are held in China by a Chinese-owned VIE (bottom right) and a Chinese individual who owns the VIE.*²⁶ The Chinese-owned VIE and its owner maintain complex contractual arrangements with a wholly foreign-owned enterprise in China (WFOE, bottom left), which is a subsidiary of an offshore holding company (the listed company).²⁷ The offshore holding company can then list publicly and receive foreign capital from public shareholders (top). Paul Gillis, professor of practice at Peking University Guanghua School of Management, explained: “This allows the company to tell its story in two ways: to domestic [Chinese] regulators it claims to be locally owned and not subject to foreign investment restrictions, while foreign investors are led to believe that they own the entire business.”²⁸ In March 2019, Dr. Gillis estimated 69 percent of Chinese companies listed on the NYSE and the NASDAQ use the VIE structure.²⁹

Investments in U.S.-listed Chinese companies are inherently risky. China’s Supreme Court held the structure to be unenforceable in 2012, as a VIE’s contractual arrangements “concealed illegal intentions [of circumventing foreign investment restrictions] with a lawful form.”³⁰ As Steve Dickinson, then-partner at Harris & Moure, noted, “A contract written to avoid the requirements of Chinese law is void and the court [in China] will not enforce it.”³¹

In an effort to attract companies that might otherwise list on U.S. exchanges, in April 2018 the Hong Kong Stock Exchange (HKEX) announced new regulations that allow companies to list using a dual-class structure, which the NYSE and the NASDAQ already permit.³² The HKEX was the premier IPO destination by IPO value in the world by the end of 2018,[†] though the NYSE regained that position in the first half of 2019.[‡]³³ Mainland companies can access international capital on the HKEX. According to the Hong Kong Trade Development Council, as of year-end 2018, 1,146 mainland companies were listed in Hong Kong, with a total market capitalization of \$2.6 trillion (68 percent of the market total).³⁴ (For further discussion on the HKEX, see Chapter 6, “Hong Kong.”)

Selected Concerns regarding Chinese Economic Activity in the United States

Regulatory, Oversight, and Enforceability Challenges of U.S.-Listed Chinese Companies

The U.S. Securities and Exchange Commission (SEC) and the Public Company Accounting Oversight Board (PCAOB) § oversee dis-

*For more on the VIE structure, see Kevin Rosier, “The Risks of China’s Internet Companies on U.S. Stock Exchanges,” *U.S.-China Economic and Security Review Commission*, June 18, 2014.

†In the last ten years, HKEX has been the most popular IPO destination in 2015, 2016, and 2018. Wen Simin and Han Wei, “HKEx Ranks 3rd in Global IPOs as Trade War Weighs on Sentiment,” *Caixin*, June 20, 2019.

‡In mid-August 2019, Alibaba reportedly postponed its listing on the HKEX with no new timetable announced amid the anti-extradition bill protests. *Caixin* also reported three other companies delayed their Hong Kong initial public offerings in mid-July without specifying a cause. Michael J. de la Merced and Alexandra Stevenson, “Alibaba Postpones Hong Kong Listing as Protests Roil Markets,” *New York Times*, August 22, 2019; Julie Zhu and Greg Roumeliotis, “Exclusive: Alibaba Postpones Up to \$15 Billion Hong Kong Listing amid Protests,” *Reuters*, August 20, 2019; Wei Yiyang and Jason Tan, “Hong Kong Bourse’s Tough First Half Followed by Spate of IPO Cancellations,” *Caixin*, July 16, 2019.

§The PCAOB is a private nonprofit created by the Sarbanes-Oxley Act of 2002 to oversee the audits of public companies.

closures, reporting, and audits of publicly listed companies on U.S. exchanges.³⁵ These regulators encounter three types of challenges regarding U.S.-listed Chinese companies. First, regulatory gaps in U.S. law exempt U.S.-listed Chinese companies—like all foreign private issuers—from the standards required of U.S. domestic companies. Second, Chinese state security laws bar the PCAOB from reviewing the work papers from Chinese auditors, removing effective oversight over those auditors and the quality of work produced on Chinese firms and foreign affiliates’ operations in China. Third, due to the lack of U.S. jurisdiction over the locations where U.S.-listed Chinese companies are often domiciled, attempts to enforce contractual arrangements or seek redress often fail.

- *Regulatory challenges:* The SEC does not maintain country-specific disclosure requirements, but as foreign private issuers, U.S.-listed Chinese companies are subject to lower reporting and disclosure requirements than domestic U.S. companies. Specifically, U.S.-listed Chinese companies are exempted from *Regulation Fair Disclosure* (“Reg FD”), which requires U.S. public companies to disclose material information to all investors at the same time.³⁶ The SEC adopted Reg FD in 2000 to stop selective disclosure that led to insider trading, undermining investor confidence in the integrity of U.S. capital markets.³⁷ In addition, foreign companies are not required to file quarterly reports with an auditor’s review, release the same level of detail on executive compensation, or hold annual shareholder meetings.³⁸ Dr. Gillis testified that Baidu has not held a shareholder meeting in more than ten years.³⁹ Consequently, U.S.-listed Chinese companies are not required to maintain the high transparency demanded of U.S. market actors.
- *Oversight challenges:* Because Chinese regulatory authorities consider auditor inspections—the responsibility of the PCAOB—to impinge on China’s national security, the PCAOB has been unable to inspect the work and practices of accounting firms in China and Hong Kong that audit companies with significant operations in mainland China and which are listed on U.S. exchanges.⁴⁰ The PCAOB maintains the ability to inspect the audit work papers of U.S.-listed companies from every country except China and Belgium.⁴¹ This lack of cooperation is not only challenging for oversight of U.S.-listed Chinese firms: Chinese accounting affiliates contribute to the audits of U.S. companies with operations in China, though the PCAOB holds these companies’ main auditors accountable.⁴² As Dr. Gillis emphasized in testimony before the Commission, auditor inspection is arguably the most important function of the PCAOB.⁴³
- *Enforcement challenges:* Because U.S. shareholders typically own the VIE company indirectly through contracts with a Chinese subsidiary of an offshore entity, rather than through direct ownership of shares in the company, attempts to enforce these contracts often fail, causing U.S. investors to suffer losses.⁴⁴ The most notable case of shareholder losses occurred when Yahoo shareholders lost their stake in Alipay in 2010.⁴⁵ In attempting to gain the requisite Chinese license for third-party pay-

ment systems, then-CEO Jack Ma unwound the Alipay VIE and transferred ownership to himself, causing a dispute between Alibaba and two of its largest shareholders, Yahoo and Softbank Corp.⁴⁶ In 2011, the three parties settled on a payout with a \$6 billion cap.⁴⁷ However, in its most recent funding round in 2018, Alipay—now Ant Financial—was “the world’s largest unicorn ... valued at \$150 billion.”*⁴⁸ In other words, the payout received by the company’s former investors was 25 times smaller than the current value of the company.⁴⁹ U.S. investors often have little legal recourse for two reasons. First, holding companies are typically domiciled in tax havens (e.g., Cayman Islands, British Virgin Islands) and thus are also subject to lower corporate governance regulation, oversight, and enforcement action in their place of jurisdiction.† Lack of U.S. jurisdiction—and by extension, U.S. legal protection—exposes investors to potential misappropriation of company funds or assets by corporate insiders.⁵⁰ Since these firms remain beyond U.S. jurisdiction, lack of cooperation also obstructs SEC investigations.⁵¹ Second, court judgements in the United States and in tax havens where offshore holding companies are domiciled are not enforceable in China, where the VIE’s assets are held.⁵² U.S.-listed Chinese companies that use a VIE structure disclose this legal risk in their annual reports.‡

The lack of disclosure, oversight, and enforceability in listings of Chinese companies on U.S. stock exchanges opens the door to adverse activities, such as insider trading, accounting fraud, and other corporate governance concerns.⁵³ There is evidence that questionable financial statements and lack of disclosure in accounting have harmed investors and pensioners in U.S. markets.⁵⁴ One problem occurs when U.S.-listed Chinese companies are taken private and converted from publicly traded entities to private entities, as more than 60 Chinese companies have done since 2013.⁵⁵ Harvard Law professor Jesse Fried and portfolio manager Matthew Schoenfeld argue that as China’s tech companies have matured into market giants, U.S. investors have become “dispensable” and vulnerable to low buyouts from Chinese controlling shareholders.⁵⁶

In the case of offshore VIEs, the lack of U.S. jurisdiction may hinder shareholders’ attempts to challenge management actions they

*A unicorn is a private company with a valuation of over \$1 billion. *TechCrunch*, “The Crunchbase Unicorn Leaderboard.” <https://techcrunch.com/unicorn-leaderboard/>.

†For more information about how Chinese companies list in the United States, see U.S.-China Economic and Security Review Commission, Chapter 1, Section 2, “Chinese Investment in the United States,” in *2017 Annual Report to Congress*, November 2017, 95; and Kevin Rosier, “The Risks of China’s Internet Companies on U.S. Stock Exchanges,” *U.S.-China Economic and Security Review Commission*, September 12, 2014, 3.

‡For example, in its 2018 Form 20-F filing, Alibaba included the following disclosure: “In the opinion of Fangda Partners, our PRC counsel, the ownership structures of our material wholly-owned entities and our material variable interest entities in China do not and will not violate any applicable PRC law, regulation or rule currently in effect; and the contractual arrangements between our material wholly-owned entities, our material variable interest entities and their respective equity holders governed by PRC law are valid, binding and enforceable in accordance with their terms and applicable PRC laws and regulations currently in effect and will not violate any applicable PRC law, rule or regulation currently in effect. However, Fangda Partners has also advised us that there are substantial uncertainties regarding the interpretation and application of current PRC laws, rules and regulations. Accordingly, the possibility that the PRC regulatory authorities and PRC courts may in the future take a view that is contrary to the opinion of our PRC legal counsel cannot be ruled out.” Alibaba, “Form 20-F,” July 5, 2019, 38. <https://www.sec.gov/Archives/edgar/data/1577552/000104746919003492/a2238953z20-f.htm>.

view as adverse. For example, when Chinese internet security firm Qihoo 360 was taken private in July 2016, U.S. shareholders were paid \$77 per share, equivalent to a total value of \$9.3 billion.⁵⁷ In February 2018, Qihoo 360 relisted on the Shanghai Stock Exchange with a value above \$60 billion, a return of 550 percent to its private owners, including company founders.⁵⁸ As Qihoo 360 was incorporated in the Cayman Islands, which offers less regulatory protection for investors, the company was allowed to be taken private by controlling shareholders, although only 21 percent of minority shareholders approved going private.⁵⁹ Former Qihoo 360 shareholders filed two class action lawsuits against the company in January and March 2019, alleging they were misled about the company's intentions and value.⁶⁰ The March 2019 case continues in California's Central District Court.⁶¹

Since 2011, the SEC and PCAOB have engaged in ongoing negotiations with Chinese counterparts on the issue of cross-border auditor inspections with no success.⁶² In a 2018 joint statement with the SEC, the PCAOB said it could not conduct inspections of audit work of China-based companies listed on U.S. stock exchanges with auditors in mainland China and Hong Kong.⁶³ The SEC and PCAOB state they have "not yet made satisfactory progress," which they acknowledge raises investor protection issues such as "[allowing] bad actors to more effectively hide fraud."⁶⁴

"National Strategic Buyers" and Identifying Chinese Government Interference

China is conducting a comprehensive effort to acquire a range of technologies to advance military and economic goals.⁶⁵ As described in a report by the Defense Innovation Unit, the Chinese government is pursuing dominance in strategic technologies critical for future innovation and military prowess, including artificial intelligence, robotics, autonomous vehicles, and gene editing, among others.[†] In support of this effort, Chinese entities have pursued illicit (e.g., cyber theft and industrial espionage) as well as legal (e.g., talent recruitment and investment) avenues to access or acquire U.S. and other foreign technologies.⁶⁶ (For a discussion of China's pursuit of critical technologies, see Chapter 3, Section 2, "Emerging Technologies and Military-Civil Fusion: Artificial Intelligence, New Materials, and New Energy.")

Given the expansive control of the Chinese government over Chinese firms, this comprehensive effort raises concerns about the mo-

* Delaware, where many U.S. companies are incorporated, has more robust protections for minority shareholders, including a court review process that is triggered if the controlling entities stand to benefit from the transaction in a way that is not shared with other investors, presenting a conflict of interest, particularly if a minority of shareholders approves a deal to take a company private. Jesse M. Fried and Matthew Schoenfeld, "The Risky Business of Investing in Chinese Tech Firms," *Harvard Law School Forum on Corporate Governance and Financial Regulation*, February 4, 2019; Gail Weinstein et al., "Fried Frank Discusses Delaware Ruling that Corporate Recapitalization Required 'Entire Fairness' Review," *Columbia Law School Blue Sky Blog*, January 9, 2018; Gibson Dunn, "M&A Report—Determining the Likely Standard of Review Applicable to Board Decisions in Delaware M&A Transactions (April 2017 Update)," April 12, 2017.

† The U.S. Department of Defense established the Defense Innovation Unit in 2015 to lead outreach to commercial innovation hubs in the United States. Michael Brown and Pavneet Singh, "China's Technology Transfer Strategy: How Chinese Investments in Emerging Technology Enable a Strategic Competitor to Access the Crown Jewels of U.S. Innovation," *Defense Innovation Unit Experimental*, February 2017, 3; Defense Innovation Marketplace, "Defense Innovation Unit," August 17, 2019.

tives of Chinese companies in their foreign acquisitions or operations. Legal scholars Curtis Milhaupt of Stanford Law School and Jeffrey Gordon of Columbia Law School frame this as a “national strategic buyer” problem: decisions by Chinese companies—private or state-owned—may be guided by national security or industrial policy objectives beyond the economic return sought by private actors.⁶⁷

Despite the strengthening of U.S. investment screening processes under the Committee on Foreign Investment in the United States (CFIUS),* U.S. policymakers remain concerned about VC investment that might be directed by Chinese government entities, as access to early-stage technologies could put U.S. national security and economic competitiveness at risk. Chinese economic planners continue to exercise scrutiny over outbound FDI: National Development and Reform Commission (NDRC) regulations stipulated Chinese outbound FDI in “sensitive countries or regions” or “sensitive industries” must receive official approval through an opaque review process.⁶⁸

Subsidized Competition Invisible to U.S. Antitrust Law

Chinese government support has generated market distortions in a wide array of sectors and could enable the anticompetitive expansion of Chinese companies in the United States. Angela Zhang, competition law professor at the University of Hong Kong, stated that Chinese state-owned enterprises (SOEs), backed by below-market financing and state support, have become dominant players in China’s outbound investment.⁶⁹ For example, the state-owned China Railway Rolling Stock Corporation (CRRC), China’s largest railcar manufacturing company, reported that it received \$37.4 million (RMB 243 million) in government grants—including loans at below-market rates in the year 2017.† Globally, CRRC operates or has built 83 percent of all rail products.⁷⁰ In the United States, CRRC has won four out of five major U.S. contracts for new railcars in the cities of Chicago, Philadelphia, Boston, and Los Angeles since 2014.⁷¹ CRRC’s 2014 contract to produce 284 railcars for Boston’s orange and red lines totaled \$566 million, nearly half that of Bombardier’s competing \$1 billion bid.⁷² Jim Blaze, an independent rail economist, commented that CRRC’s bid “might have been a price-loss leader to establish [CRRC] in the [U.S. rail] business They can afford to do that, because they are a government-owned structure.”⁷³

*The 2018 National Defense Authorization Act Title XVII included provisions for the strengthening of the CFIUS and reestablishment of statutory authority for the export control regime, as well as the creation of a critical technology list. Title XVII Subtitle A, known as the Foreign Investment Risk Review Modernization Act of 2018 (or FIRRMA), extended CFIUS’ review authority to transactions of sensitive real estate, evasive transactions structured to circumvent CFIUS review, incremental foreign investments that establish foreign control, and non-controlling investments in critical technologies and emerging and foundational technologies. An interagency process will establish a list of emerging and foundational technologies on an ongoing basis. John S. McCain National Defense Authorization Act for Fiscal Year 2019 §1701—2003, Pub. L. No. 115–232, 2018. <https://www.congress.gov/bill/115th-congress/house-bill/5515/text>.

†CRRC specified that government loans received at below-market rates were also treated as government grants in the companies’ financial statements. As of December 2017, the RMB-to-dollar exchange rate stood at \$1 = RMB 6.5040. CRRC Corporation Limited, “CRRC Corporation Limited Annual Report 2018,” March 2019, 121; U.S. Department of the Treasury, *Treasury Reporting Rates of Exchange as of December 31, 2017*. <https://fiscal.treasury.gov/files/reports-statements/treasury-reporting-rates-exchange/itin-12-31-17.pdf>.

While under most circumstances the United States might welcome FDI, some companies attempt to circumvent antidumping and countervailing duties by investing in the United States. In testimony before the Commission, Elizabeth Drake, partner at Schagrin Associates, described the case of Tianjin Pipe Corporation (TPCO) where the value of such investment was unclear. As Ms. Drake detailed, once its pipe exports were affected by countervailing duties of 14 percent and antidumping duties of 49 percent in 2009, TPCO announced a \$1 billion pipe facility in Texas.⁷⁴ In the first phase of its operation in 2014, the facility imported plain-end pipe (“green pipe”) not subject to countervailing duties and completed finishing work on its ends. Though the company’s second phase, a rolling mill, is expected to produce plain-end pipe as well, it is not slated to be operational until later in 2019.⁷⁵ This case raises questions about whether TPCO’s initial investment allowed the company to effectively circumvent U.S. trade remedies and continue importing product produced below fair market value into the United States.⁷⁶

If subsidized companies circumvent countervailing duties by establishing operations in the United States, some experts argue that U.S. companies may have no means of seeking redress through the courts. As Ms. Drake noted, since U.S. antitrust law assumes all U.S.-based firms are profit maximizers, firm pricing is only deemed anticompetitive or predatory if the firm in question recoups its losses.⁷⁷ Consequently, firms that can undercut competitors’ prices by relying on government support—thereby never formally recouping the loss—cannot be challenged in U.S. courts for engaging in predatory or anticompetitive conduct. According to Ms. Drake, a subsidized Chinese company with U.S. operations may serve Chinese government political or industrial policy goals by continuing “to price its products below cost in order to take market share” from producers competing on market principles.⁷⁸ Consequently, Chinese companies that establish U.S. operations and benefit from government subsidies leave U.S. and foreign companies doing business in the U.S. market at an unfair disadvantage.⁷⁹

U.S. Companies in China

U.S. firms’ commercial engagement in China is restricted and shaped by Chinese state industrial policies. These industrial policies encourage the localization of production within China; protect local producers through ownership restrictions and regulation; identify, prioritize, and provide government resources to strategic and emerging technology sectors; and in those sectors, often maintain state-determined market share targets for the local and international market. As the Office of the U.S. Trade Representative stated in its 2018 annual review of China’s compliance with its World Trade Organization (WTO) obligations, Chinese industrial policies “[limit] market access for imported goods and services and [restrict] the ability of foreign manufacturers and service suppliers to do business in China.”⁸⁰

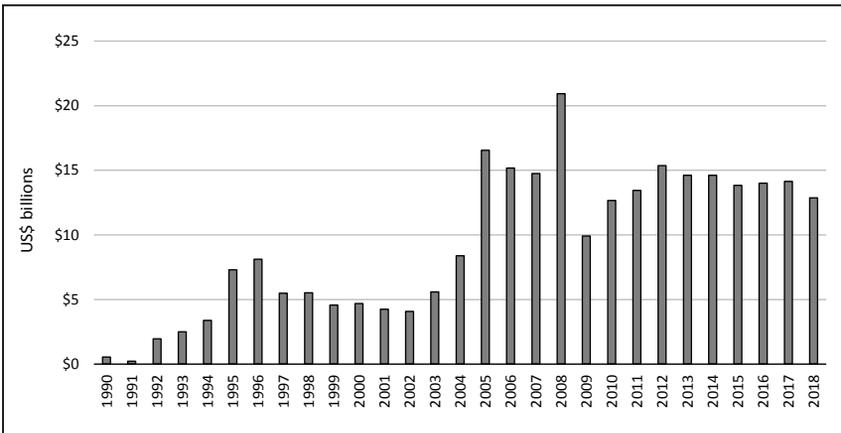
U.S. Investment in China

Unlike Chinese FDI in the United States, which primarily entails the acquisition of existing assets, U.S. FDI in China is predominantly greenfield investment. In 2018, U.S. firms invested about

\$13 billion in China, down from \$14.1 billion in 2017 (see Figure 4).⁸¹ Of the total, \$8.3 billion (64 percent) represented greenfield investment, and mergers and acquisitions stood at \$4.7 billion (36 percent).⁸² These figures do not include VC or passive investment.

In 2018, real estate and hospitality received the largest share of U.S. investment (\$4 billion), followed by information and communication technologies (ICT) investments (\$2.7 billion), media and entertainment (\$2 billion), and automotive and transportation (\$1.7 billion).⁸³ Rhodium highlighted that ICT investment dropped by a third from \$3 billion or more in the past four years due to business uncertainty, while the increase in real estate investment was driven by investments in distressed projects.⁸⁴ Of \$269.6 billion cumulative U.S. FDI in China, about \$177.5 billion (66 percent) represents a controlling investment of over 50 percent.⁸⁵

Figure 4: U.S. Annual FDI Flows to China, 1990–2018



Note: Figure 4 excludes all annual investment amounts below \$50 million.

Source: Rhodium Group and the National Committee on U.S.-China Relations, “The U.S.-China Investment Hub.” <https://www.us-china-investment.org/us-china-foreign-direct-investments/data>.

China’s FDI regime structure was updated in the first half of 2019. Before March 2019, three laws jointly governed China’s foreign investment law: the Law on Sino-Foreign Equity Joint Ventures, the Law on Sino-Foreign Cooperative Joint Ventures, and the Law on Wholly Foreign-Owned Enterprises. In March 2019, the National People’s Congress passed legislation replacing these three laws with an overarching Foreign Investment Law. In June 2019, the NDRC and the Ministry of Commerce released a new “negative list,” which classifies industries as encouraged, restricted, or prohibited to FDI.⁸⁶ (For more on the Foreign Investment Law and negative list revisions, see Chapter 1, Section 1, “Year in Review: Economics and Trade.”)

U.S. Companies’ Goals for Investing in China

U.S. multinationals establish operations in China for two primary reasons: (1) to sell into the Chinese market; and (2) to build or expand a center of production, from which firms can also export goods

to the United States and other destinations. Mary Lovely, professor of economics at Syracuse University, noted in testimony before the Commission that U.S. affiliates in China sold 83 percent of their total goods and services to buyers in the Chinese market in 2016.⁸⁷ This share is higher than the 59 percent average share of U.S. affiliates' in-country sales in all foreign countries.⁸⁸ In 2017, 57 percent of member firms surveyed by the American Chamber of Commerce (AmCham) in Shanghai reported their primary goal in China was to produce goods or services for the Chinese market.⁸⁹ In 2007, only 42 percent reported this motivation.* By contrast, in 2017, 11 percent of firms stated their primary goal in China was to produce goods or services for the U.S. market, down from 23 percent in 2007.†

According to data from the Bureau of Economic Analysis, U.S. majority-owned multinational affiliates employed more workers in China than in any other country in 2017 (1.7 million, or 12 percent of the 14.4 million workers employed by majority-owned U.S. affiliates overseas).‡ About 44 percent of U.S. affiliates' employees in China were in manufacturing.⁹⁰ As Dr. Lovely testified, according to Chinese customs data, foreign-invested enterprises in China—including but not limited to U.S. corporate affiliates—accounted for 60 percent of China's exports to the United States in 2014.⁹¹ Economists David Dollar and Zhi Wang have written that in computers and electronics, more than half of China's exports are produced by multinational firms with operations in China.⁹² In a review of offshoring to China, a 2017 U.S. International Trade Commission briefing identified corporate considerations such as lower labor and overhead costs, highly flexible production and benefits from economies of scale, decreased transportation costs, and proximity to global supply chains as additional incentives.⁹³ These incentives made China an attractive production site, and U.S. firms still export from operations in China.

Despite restrictions, U.S. firms continue to invest and establish operations in China. U.S. firms' profitability in China is challenging to gauge, as U.S. companies typically aggregate global earnings and do not disclose earnings from China specifically. Recent estimates can only provide a window into S&P 500 companies' share of sales in China. The financial data firm FactSet has attempted to approximate S&P 500 firms' revenues in China to predict their exposure to trade tensions and the Chinese economic slowdown. FactSet estimated in February 2019 that of all S&P 500 companies, about 33 percent have no sales in China, 33 percent have at least 3 percent of their global sales in China,

* AmCham Shanghai, a trade association, did not report its total membership. In 2018, 434 Shanghai member companies responded to its survey. In 2007, 267 companies responded to its survey. On its website, AmCham Shanghai currently boasts more than 3,000 members from about 1,500 companies. American Chamber of Commerce in Shanghai, "2018 China Business Report," 6; American Chamber of Commerce in Shanghai, "2012–2013 China Business Report," 17.

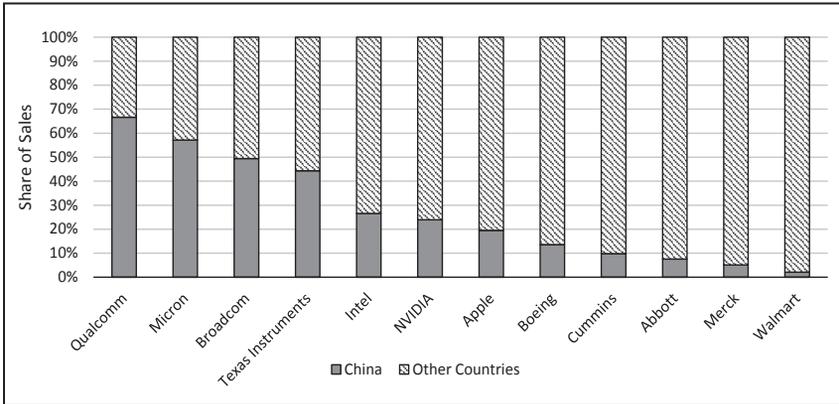
† According to the survey, another 6 percent responded their strategy was to produce or source goods and services for markets other than the U.S. and Chinese market, 9 percent reported their strategy was to import goods into China, and 18 percent responded "other." American Chamber of Commerce in Shanghai, "2018 China Business Report," 6.

‡ These figures reflect employment of workers at the end of 2017 in U.S. multinationals' majority-owned affiliates. U.S. Department of Commerce Bureau of Economic Analysis, *Series Data on Activities of Multinational Enterprises, U.S. Direct Investment Abroad, All Majority-Owned Foreign Affiliates (Data for 2009 and Forward), Employment, by Country Only (All Countries)*, released August 23, 2019, accessed September 13, 2019. <https://apps.bea.gov/iTable/iTable.cfm?ReqID=2&step=1>.

§ The S&P 500 is a stock market index composed of the 500 largest companies by market capitalization. It covers about 80 percent of U.S. market capitalization. S&P Dow Jones Indices, "S&P 500." <https://us.spindices.com/indices/equity/sp-500>.

and 12 percent have 10 percent or more of their global sales in China.⁹⁴ Of U.S. companies in the S&P 500 that specify net sales in China in their 2018 annual reports, chipmakers like Qualcomm, Micron, and NVIDIA showed a larger share of their global net sales in China relative to other companies (see Figure 5).⁹⁵

Figure 5: Selected S&P 500 Companies' Share of Global Net Sales Generated in China in 2018



Note: Per companies' 10-K filings, "sales generated in China" refers to net sales to customers' shipping locations. Some companies specified that sales from China also included Hong Kong, Macau, or Greater China.

Source: U.S. Securities and Exchange Commission; companies' Form 10-K filed in 2018.

As an alternative gauge of profitability, U.S. trade associations in China ask members to report on their performance in annual surveys. According to the most recent AmCham China survey, about 69 percent of member firms reported they were profitable in 2018, a slight decrease from 73 percent in 2017.⁹⁶ By industry, compared with 2017 earnings, 84 percent of resource and industrial members reported earnings increased or remained steady, while 88 percent of consumer-facing members reported their estimated earnings increased or remained steady.⁹⁷ Where earnings decreased from 2017, the most common explanations the companies cited were increasing costs; deteriorating industry conditions; slowing business growth; and, in the case of technology and research and development-intensive members, competition from private Chinese companies.⁹⁸ The survey reported that 68 percent of U.S. member companies expected to increase their investment in 2019, a decrease from 74 percent in 2018; by sector, 74 percent of consumer-facing members stated they planned to increase investment, compared with 64 percent of resource and industrial members.⁹⁹

Problems Facing U.S. Companies in China

U.S. Companies' Access Hinges on China's Industrial Policy-Driven FDI Regime

China maintains one of the most restrictive investment regimes in the world. In 2018, the OECD ranked China as the sixth most restrictive country behind Malaysia, Russia, Indonesia, Saudi Arabia, and the Philippines.¹⁰⁰ This foreign investment regime has limited

U.S. companies' investment and operations in China. This trend continues to this day as U.S. companies are still barred from expanding their assets or growing their operations in sectors like banking and finance, where U.S. firms are competitive. In its *2019 China Business Climate Survey Report*, AmCham China found 46 percent of survey respondents felt less welcome in 2019 than in previous years.¹⁰¹ For the fourth consecutive year, respondents reported inconsistent or unclear regulations as their top concern, despite Chinese government's promises to improve the business environment for foreign firms (see Table 2).*

Table 2: Top Five Business Challenges in China for U.S. Firms, 2015–2019

	2015	2016	2017	2018	2019
1.	Rising labor costs: 61%	Inconsistent regulatory interpretation and unclear laws: 57%	Inconsistent regulatory interpretation and unclear laws: 58%	Inconsistent regulatory interpretation and unclear laws: 60%	Inconsistent regulatory interpretation and unclear laws: 55%
2.	Inconsistent regulatory interpretation and unclear laws: 47%	Rising labor costs: 54%	Rising labor costs: 58%	Rising labor costs: 56%	Rising labor costs: 48%
3.	Shortage of qualified employees: 42%	Obtaining required licenses: 29%	Increasing Chinese protectionism: 32%	Regulatory compliance risks: 37%	Rising tensions in U.S.-China relations: 45%
4.	Shortage of qualified management: 32%	Shortage of qualified employees: 29%	Shortage of qualified management: 30%	Shortage of qualified employees: 32%	Increased competition from privately owned Chinese companies: 29%
5.	Increasing Chinese protectionism: 30%	Industry overcapacity: 29%	Obtaining required licenses: 29%	Increasing Chinese protectionism: 32%	Shortage of qualified employees: 28%

Source: American Chamber of Commerce in China, “2019 China Business Climate Survey Report,” February 2019, 39.

While China's inbound FDI regime has blocked entry into some segments of the Chinese market, it has served to condition the terms of entry in others, extracting technology and other concessions from U.S. and other foreign companies seeking to do business in China. As Dr. Lovely stated in her testimony to the Commission: “Foreign investment policy is closely linked to industrial policy, primarily on a case-by-case and non-transparent basis.”¹⁰² The main

*In 2019, AmCham China sent its annual survey to 771 AmCham company representatives, and 314 completed the majority of survey questions. American Chamber of Commerce in China, “2019 China Business Climate Survey Report,” February 2019, 37.

tool for aligning U.S. and other foreign FDI with industrial policy priorities is the Foreign Investment Catalogue, now encapsulated by the new “negative list,” which categorizes local industries into prohibited, restricted, or encouraged sectors in order to channel FDI toward industrial policy goals.¹⁰³

Across a variety of industries, Chinese industrial policy planners aim to anticipate the next generation of technologies, designing FDI and regulatory regimes to protect and advantage local firms. Dean Garfield, then president of the Information Technology Industry Council, summarized these trends in 2018 by saying the Chinese government “[puts] its thumb on the scale in favor of its local champions so they can corner the market on the frontier innovations of the future.”¹⁰⁴

Research conducted by Dr. Lovely and her colleagues found the best predictor of an industry’s movement into the “encouraged” investment category was its designation as a “high technology” sector by the Chinese government, marking it as an industrial policy priority.¹⁰⁵ Once the prioritized local industry has begun to develop, FDI restrictions and other regulatory barriers are imposed to exclude foreign firms from the market, allowing local firms to grow.¹⁰⁶ Those restrictions are removed only when local firms’ market dominance is assured and foreign firms no longer present a competitive threat.¹⁰⁷ Following this pattern, the foreign investment list published in June 2019 included high-priority industrial policy technologies (such as semiconductors, information and communication technologies, electric vehicles, and new materials) in its “encouraged” FDI list.¹⁰⁸

Several examples can illustrate how the Chinese government manipulates foreign companies’ access to maximize technology transfer and protect local companies:

- *Auto and auto parts manufacturing:* Having failed to develop a competitive combustion-engine car industry, China has provided enormous resources to the local electric vehicle (EV) industry and its value-added inputs. Though joint ventures (JVs) with foreign companies like GM and Ford are China’s current leading auto manufacturers, the top 15 EV models are produced by Chinese manufacturers, and the regulatory environment is designed to encourage EVs.¹⁰⁹ In addition to incentives to boost demand (e.g., consumer rebates), the Chinese government also uses subsidies and local production requirements for high-value EV inputs, especially the battery, which represents 40 percent of the car’s value.¹¹⁰ For example, in 2015 the Ministry of Industry and Information Technology (MIIT) issued a list of approved electric battery suppliers for which carmakers in China could receive subsidies.¹¹¹ When the ministry last updated this list of 57 firms in 2016, it did not include any foreign companies, despite the fact that large battery producers LG Chem and Samsung SDI have production in China.¹¹² In June 2019, MIIT announced it would scrap the list; by then, however, the top ten global electric battery manufacturers were Chinese producers.¹¹³
- *Cloud computing:* U.S. cloud providers are highly circumscribed in a market where they would otherwise be competitive. According to Amazon’s 10-K filings, Amazon Web Services, its cloud

computing segment is its most profitable and fastest-growing business segment.¹¹⁴ MIIT does not allow foreign companies to hold the internet data center and content provider licenses necessary to provide direct cloud services without a local partner.¹¹⁵ However, Chinese companies may provide cloud services directly to customers in the United States.¹¹⁶ Amazon's cloud services entered the market in August 2016 through a partnership with Beijing Sinnet Technology Co., Ltd.¹¹⁷ In 2017, to comply with cybersecurity regulations, Amazon sold part of its cloud computing units to its Chinese partner.¹¹⁸ Where Amazon might otherwise expect to hold a large share of the market, it trails protected local champions that have begun to expand abroad. In the first quarter of 2019, Alibaba was the dominant provider in China's public cloud infrastructure-as-a-service and platform-as-a-service market, holding 43 percent market share, while Amazon held 7 percent market share.¹¹⁹ In February 2019, Verizon included Alibaba Cloud as one of ten cloud providers in its Secure Cloud Interconnect service offering in Singapore and Hong Kong.¹²⁰

- *E-commerce*: The Department of Commerce estimated that over 50 percent of global e-commerce transactions originate from China. By 2020, the Chinese market will be larger than the United States, the UK, Japan, Germany, and France combined.¹²¹ Cross-border e-commerce has also experienced significant growth: in July 2019, the Department of Commerce predicted cross-border transactions in China could grow from \$122 billion to \$199 billion by 2022.¹²² In June 2015, MIIT loosened restrictions on foreign e-commerce to allow foreign wholly owned enterprises to operate in China where previously a JV was required.¹²³ However, by the time market barriers were lowered, major Chinese e-commerce companies had established highly integrated platforms and payment systems linked to local social media giants¹²⁴ and gained the loyalty of the Chinese customer base, making it nearly impossible for foreign companies to get a share of the market.

Technology Transfer and Economic Espionage Persist Unabated

In testimony before the Commission, Mark Wu, professor at Harvard Law School, argued China's economic structure allows the Chinese government to advance industrial policy aims by inducing technology transfer through a variety of informal mechanisms.¹²⁵ When it acceded to the WTO in 2001, the Chinese government committed to ensuring foreign entities' right to invest would not be conditioned on technology transfer.¹²⁶ Yet Chinese policymakers view technological advancement as an economic and strategic imperative; JV requirements, licensing policies, and other regulatory mechanisms have provided multiple sources of leverage to pressure and incentivize companies in this process.¹²⁷ In 2018, about one in five companies responding to the AmCham China survey—including 44 percent of aerospace firms and 41 percent of chemicals firms—reported pressure to transfer technology.¹²⁸ The European Union Chamber of Commerce in China stated a similar number of its survey respon-

dents “felt compelled to transfer technology in order to maintain market access” in 2018.¹²⁹

These requests are informal and often do not come directly from government entities. A 2017 U.S.-China Business Council survey reported that while 33 percent of these requests come directly from Chinese central government entities, 67 percent came from U.S. members’ Chinese corporate partners during negotiations, stating: “In many cases, the hand of the Chinese government is behind these requests.”¹³⁰ Moreover, despite ongoing negotiations, the trend continues. In an update to the Section 301 investigation into China’s unfair acts and practices in November 2018, the Office of the U.S. Trade Representative said: “China did not respond constructively and failed to take any substantive actions to address U.S. concerns.”¹³¹

Professor Wu used passenger aircraft—an industrial policy priority for the Chinese government—to illustrate how a combination of policies could induce technology transfer using competition between foreign firms as leverage.¹³² RAND Corporation noted in 2014 that supplier and joint venture partnerships with foreign companies have helped Chinese aircraft and aircraft parts manufacturers improve their technical capabilities.¹³³ To encourage foreign commercial aviation manufacturers to purchase Chinese-made components and establish JVs within China, the Chinese government uses regulatory approvals processes to influence purchase decisions.¹³⁴ These purchase decisions carry a lot of weight for global manufacturers, as the Chinese market accounted for about 20 percent of global demand for aircraft as of February 2019.¹³⁵

Only a handful of companies are capable of producing large passenger jets—Boeing, Airbus, Bombardier, and Sukhoi and Tupolev¹³⁶—pitting the two largest companies, Boeing and Airbus, against each other in the competition for Chinese aircraft sales.¹³⁷ This competition has affected their behavior. Airbus stated in June 2019 that commercial deliveries to China “represent nearly a quarter of Airbus’ global production.”¹³⁸ The company has maintained an assembly facility in Tianjin for over ten years and recently opened an innovation center in Shenzhen.¹³⁹ In January 2018, however, China’s airline regulator delayed approval of the planned acquisition of nearly 200 Airbus jets, reportedly due to “an extended wish list from Beijing” including the establishment of additional production in China.¹⁴⁰

Meanwhile, Boeing took a majority stake in a JV with Commercial Aircraft Corporation of China (COMAC)—one of China’s largest aircraft manufacturers—opening Boeing’s first 737 finishing plant in Zhoushan near Shanghai in December 2018.¹⁴¹ Boeing described its Zhoushan site as “the first such Boeing facility outside of the United States,” and the president of COMAC congratulated Boeing on deepening its footprint in China.¹⁴² Airbus and Boeing continue to establish production in China—sometimes jointly with COMAC, a potential competitor—knowing Chinese economic policymakers have identified aviation as an industrial policy priority.¹⁴³ As Professor Wu noted, “Both firms are betting they can manage to innovate at a faster pace and control the flow of technology transfer successfully to prevent [COMAC] from becoming a major competitor.”¹⁴⁴

Beyond technology transfers within China, U.S. and other foreign companies face economic espionage attempts at home. Since October 2018, the U.S. Department of Justice (DOJ) has made a series of indictments in alleged cases of economic espionage against U.S. entities. Some of these cases are alleged to have been conducted with the active assistance of China's Ministry of State Security, while others may ultimately benefit the Chinese government in other ways:

- October 2018: Yanjun Xu, an alleged deputy division director in the Jiangsu Department of China's Ministry of State Security, was indicted for recruiting aerospace employees from companies like GE Aviation to divulge trade secrets.¹⁴⁵ To recruit employees, he worked with Nanjing University of Aeronautics and Astronautics, a top engineering university, to invite U.S. aerospace experts to give lectures. After meeting one employee and establishing a relationship, he began soliciting small details regarding systems design and specifications and built up to requesting access to the employee's computer.¹⁴⁶
- October 2018: In a separate case, DOJ charged ten individuals—including two alleged personnel in the Jiangsu Department of China's Ministry of State Security—with conspiring to steal sensitive "commercial technological, aviation, and aerospace" data to develop jetliner turbofan engines.¹⁴⁷ These individuals gained unauthorized access to 13 unidentified companies, including six U.S. companies, most in the aerospace industry.¹⁴⁸
- December 2018: DOJ indicted two members of the APT10 hacking group, working in association with the Ministry of State Security's Tianjin State Security Bureau, on charges of economic espionage targeting U.S. government agencies and private companies across a broad array of industries for over a decade, including the NASA Goddard Space Center, the NASA Jet Propulsion Laboratory, and seven companies from the commercial aviation, space, and satellite industries.¹⁴⁹
- April 2019: DOJ charged a Chinese businessman and his partner, a U.S. engineer, of stealing turbine engine technology from GE Power, allegedly transferring it to their private companies in Liaoning Province and sharing it with Shenyang Aeroengine Research Institute, Huaihai Institute of Technology, and Shenyang Aerospace University—affiliated with the State Administration for Science, Technology and Industry for National Defense (SASTIND)—to receive government funding.¹⁵⁰

Beyond DOJ indictments, reports by private cybersecurity companies suggest that cyberespionage by Chinese actors increased in 2018 and 2019; CrowdStrike¹⁵¹ and FireEye¹⁵² recorded an uptick in activity.

Growing Chinese Communist Party Influence

The CCP seeks tighter control over the corporate sector and has become more active in encouraging the creation of CCP cells in private businesses, including foreign-invested private businesses. Little is known about the role and behavior of these Party cells. Chapter 5 of the CCP constitution requires all companies—including foreign

companies—to create a Party cell if they employ three or more Party members, though the function of these Party cells is less formalized in private companies than in SOEs.¹⁵³ In the 2018 AmCham Shanghai business sentiment survey, 19 percent of respondents confirmed the presence of a CCP cell within their company.¹⁵⁴ Party cells were most frequently reported in the tax and auditing sector (60 percent), while the aerospace and aviation sector had the second-largest number of cells (44 percent).¹⁵⁵ As Eurasia Group’s China Practice Head Michael Hirson testified before the Commission, private companies may advertise Party activities to display ideological correctness, particularly in the tech sector where companies have been punished for perceived morally or politically incorrect content in video games, streaming services, and other online content.¹⁵⁶

Party cells represent a growing concern. In November 2017, CCP Constitution Chapter 5 was amended to call for an expanded CCP leadership role and ensure implementation of CCP policy.¹⁵⁷ While many Party cells only organize social events or other functions, foreign companies fear demands for greater leadership will place CCP interests and politics ahead of the interests of the company.¹⁵⁸ James Zimmerman, former chairman of AmCham China, commented in January 2018: “The creeping intrusion by the party apparatus into the boardrooms of foreign-invested enterprises [in China] has not yet manifested itself on a large scale, but things are certainly going down that path.”¹⁵⁹

According to the U.S.-China Business Council, some U.S. companies in JVs with SOEs have reported requests to alter corporate articles of association to support Party cells and allow critical issues to be approved by Party cells before presenting them to the board.¹⁶⁰ In September 2019, the Hangzhou local government also assigned officials to serve in a hundred local companies, such as Alibaba and car manufacturer Geely, ostensibly to improve cooperation and communication with the government.¹⁶¹ As Professor Wu explained to the Commission, Party cells and other measures to co-opt private entities allow “the Party to retain some degree of oversight over private entities that it does not control.”¹⁶²

Implications for the United States

As Chinese companies increasingly participate in the U.S. economy and financial markets, U.S. companies have grown disillusioned with their highly circumscribed position in the Chinese economy. Pressured into JVs by ownership requirements, hounded by cyber and economic espionage, and barred from growth sectors, U.S. companies that once expressed optimism about the potential of the Chinese market have undergone a dramatic change in sentiment. AmCham China highlighted this change in its April 2019 statement: “The U.S. business community in China, so long an advocate of good bilateral relations, can no longer be relied upon to be a positive anchor.”¹⁶³

For U.S. policymakers, the core issue often lies in how to address these challenges—such as subsidized companies’ investments or informal technology transfer requests—when they may not be well defined or documented. As Professor Wu has stated, the present issues in U.S.-Chinese commercial relations arise not from an easily identi-

fiable set of actors (e.g., SOEs), but from “an ecosystem of corporate actors, both state-owned and private, as well as regulatory agencies that collectively implement industrial policy goals in line with the Party-state’s interest.”¹⁶⁴

Ensuring a Level Commercial Environment in the United States

The impact of subsidy-receiving Chinese companies on the competitive environment in U.S. markets is poorly tracked and may not be easily remedied. As U.S. antitrust law assumes all firms to be profit maximizers, companies may not be able to litigate instances where a subsidized competitor may price its products below cost without expecting to recoup its losses. Further, a company receiving Chinese government subsidies could use investment in the United States to circumvent trade remedies and continue selling goods at below-market rates in the United States.¹⁶⁵ As stated by the Office of the U.S. Trade Representative in its review of China’s compliance with its WTO obligations: “Companies in economies disciplined by the market cannot effectively compete with both Chinese companies and the Chinese state.”¹⁶⁶

Mitigating Nontransparent Risk for U.S. Investors

U.S.-listed Chinese companies present regulatory, oversight, and enforcement challenges that undermine transparency and confidence in U.S. markets. Some of these challenges expose gaps in U.S. regulation not unique to Chinese firms but true of all foreign private issuers located in tax havens. As the United States may not have jurisdiction in cases involving offshore entities, adverse actions against U.S. investors may be difficult to dispute, leaving U.S. investors with little recourse. Importantly, Chinese financial regulators continue to prevent the PCAOB from inspecting the audit work papers of companies with major operations in China, which could leave U.S. investors exposed to fraudulent activities.

These challenges affect not only direct investors but also passive investors including U.S. workers saving for retirement. Some of the largest U.S.-listed Chinese companies have been included in indices, such as those created by Morgan Stanley Capital International (MSCI), which track the performance of a group of companies. Low-cost investments commonly held in retirement accounts often “follow” or “track” an index, relying on that index to allocate funds across a diverse range of companies and locations. Indices can thus determine which companies receive a large volume of funds. For instance, as of April 2019, over \$1.9 trillion was tracking the MSCI Emerging Markets Index suite.¹⁶⁷

Demands for Technology Transfer Continue Unabated

Professor Wu contends U.S. policymakers’ concerns regarding technology transfer may not be resolved through commitments made by Chinese counterparts in negotiations, given the structural challenges posed by the government’s industrial policy and economic planning. Chinese policymakers regard the country’s movement up the economic value chain as a strategic and economic imperative. While China made multiple commitments in its WTO accession, keeping China to these commitments has achieved limited success given

“the long shadow that the Party-state casts over the Chinese economy.”¹⁶⁸ The Chinese government’s determination to advance in new and emerging industries indicates it will “deploy enormous resources while seeking to leverage its scale to attract foreign capital and know-how related [to] core technologies,” with informal mechanisms for technology transfer being particularly challenging to address.¹⁶⁹

Gaps in Data and Analysis to Support Current Deliberations

As U.S. policymakers address these economic challenges in high-stakes negotiations, they are often frustrated by the lack of data, analysis, and personnel available to conduct more detailed assessments of the U.S.-China trade and investment relationship. During the Commission hearing on U.S.-China commercial relations, panelists underscored a lack of granular information on U.S. services trade, nontariff barriers in China, the activities of U.S.-invested enterprises in China (e.g., their exports, the goods or services they provide to other foreign-invested enterprises), the amount of Chinese government support for specific industries and companies, and other data. Dr. Lovely stated, “Our understanding of our economic relationship with China is ... below where it needs to be to support the negotiations that we’re in today.”¹⁷⁰

Addendum I: Investment Data and Sources

Methodological differences exist between various organizations that track FDI flows between the United States and China. FDI figures can vary depending on each organization's underlying data collection method, the limitations by which each organization defines the scope of its investment data (which countries are tracked, which transactions are included, whether divestitures are also included), how institutions price transactions in a given year and adjust prices from historical years, and other criteria. National statistics compilers and many other organizations use the OECD's internationally accepted definition of FDI as a 10 percent or greater voting ownership in an enterprise located abroad.¹⁷¹ Due to these differences, even when similar definitions are employed, variation between FDI data sources is common.

There are two ways to classify the country of origin for a corporate investor: (1) the country where the corporation is domiciled and (2) the country of ultimate beneficial ownership (UBO), or the entity that ultimately owns or controls an enterprise.¹⁷² For example, a transaction by a Chinese-controlled company headquartered in Canada could count as either a Canadian entity's transaction or, using a UBO methodology, a Chinese entity's transaction. In the context of measuring Chinese investment, UBO methodologies are important to identify Chinese entities' investments in the United States when those entities are domiciled in Hong Kong or other locations.

Investment data can be presented in two ways: (1) FDI flows, which measure the volume of FDI over a given period of time;¹⁷³ and (2) cumulative FDI, which provides a snapshot of the total value of FDI at a single point in time, often at the end of a quarter or year.¹⁷⁴

Data sources on Chinese and U.S. FDI include official U.S. government statistics, the China Global Investment Tracker hosted by the American Enterprise Institute, and the U.S.-China Investment Hub compiled by Rhodium Group. To compare the differences between these sources, Table 3 provides 2018 data for U.S. FDI in China and Chinese FDI in the United States.

Table 3: Comparison of FDI Flows in 2018 by Data Source

	Official U.S. Government Statistics (Bureau of Economic Analysis)	China Global Investment Tracker (American Enterprise Institute)	U.S.-China Investment Hub (Rhodium Group)
Chinese Investment in the United States	-\$0.8 billion (from China only); \$2.7 billion (from China and Hong Kong) ¹⁷⁵	\$8.9 billion ¹⁷⁶	\$5.4 billion ¹⁷⁷
U.S. Investment in China	\$7.6 billion (to China only); \$8.8 billion (to China and Hong Kong) ¹⁷⁸	(not applicable)	\$13.0 billion ¹⁷⁹

- *Official U.S. government statistics:* Official U.S. FDI figures (outbound and inbound) are produced by the U.S. Department of Commerce Bureau of Economic Analysis (BEA). The BEA collects data via mandatory surveys of U.S. corporations, which are combined with the bureau's other datasets and published quarterly and annually. The BEA produces bilateral FDI and other investment-related statistics, including affiliates' financial transactions with their parent companies abroad, which are included in quarterly and annual investment flow data, and year-end data on the cumulative total value of outstanding FDI.¹⁸⁰ These data include divestitures as well as acquisitions and fund reinvestments, resulting in a negative number for Chinese FDI in the United States in 2018.¹⁸¹ The BEA does not combine flows from Hong Kong with flows from mainland China. The BEA does not calculate FDI flows using a UBO methodology, so a Chinese company is defined as a company domiciled in China, which excludes Chinese companies domiciled elsewhere.¹⁸² Separately, the BEA also publishes figures on the total assets, sales, and other data of U.S. affiliates abroad and foreign companies' affiliates in the United States.¹⁸³ Data from U.S. affiliates are available using a UBO methodology but are not adjusted for U.S. companies' share of ownership.
- *China Global Investment Tracker:* Housed by the American Enterprise Institute, the China Global Investment Tracker is a publicly available dataset updated biannually and limited to reviewing outbound Chinese FDI to 148 countries using a UBO methodology.¹⁸⁴ The tracker reports all Chinese outbound FDI transactions of \$100 million or greater regardless of the Chinese investor's ownership stake in the recipient entity.¹⁸⁵ The tracker also records transaction-specific details on investing and recipient entities, business sector, and amount invested. Because of its focus, the tracker cannot be used to compare Chinese outbound FDI with other countries' outbound FDI in the same country (e.g., Chinese FDI in the United States and Japanese FDI in the United States) and does not include information about Chinese inbound FDI (e.g., U.S. FDI in China). Due to the methodology the tracker employs, investment flows are recorded but cumulative value of overseas investments are not, and the tracker does not include divestitures.
- *U.S.-China Investment Hub:* Compiled by Rhodium Group, the U.S.-China Investment Hub tracks outbound and inbound investment exclusively between the U.S. and China on a quarterly basis. The U.S.-China Investment Hub records transactions of \$500,000 or greater resulting in 10 percent or more ownership.¹⁸⁶ The hub also records transaction-specific details on sector, investing and recipient entities, amount invested, and geographic location of investing and recipient entities by state or province. The hub identifies FDI transactions using a UBO methodology, and reports both FDI flows and cumulative FDI from 1990 onward.¹⁸⁷ The hub does not include FDI statistics beyond U.S.-China bilateral investment, it does not adjust historical FDI transactions for inflation, and it does not include divestitures.

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SECTION 2: EMERGING TECHNOLOGIES AND MILITARY-CIVIL FUSION: ARTIFICIAL INTELLIGENCE, NEW MATERIALS, AND NEW ENERGY

Key Findings

- China's government has implemented a whole-of-society strategy to attain leadership in artificial intelligence (AI), new and advanced materials, and new energy technologies (e.g., energy storage and nuclear power). It is prioritizing these areas because they underpin advances in many other technologies and could lead to substantial scientific breakthroughs, economic disruption, enduring economic benefits, and rapid changes in military capabilities and tactics.
- The Chinese government's military-civil fusion policy aims to spur innovation and economic growth through an array of policies and other government-supported mechanisms, including venture capital (VC) funds, while leveraging the fruits of civilian innovation for China's defense sector. The breadth and opacity of military-civil fusion increase the chances civilian academic collaboration and business partnerships between the United States and China could aid China's military development.
- China's robust manufacturing base and government support for translating research breakthroughs into applications allow it to commercialize new technologies more quickly than the United States and at a fraction of the cost. These advantages may enable China to outpace the United States in commercializing discoveries initially made in U.S. labs and funded by U.S. institutions for both mass market and military use.
- *Artificial intelligence:* Chinese firms and research institutes are advancing uses of AI that could undermine U.S. economic leadership and provide an asymmetrical advantage in warfare. Chinese military strategists see AI as a breakout technology that could enable China to rapidly modernize its military, surpassing overall U.S. capabilities and developing tactics that specifically target U.S. vulnerabilities.
- *New materials:* Chinese firms and universities are investing heavily in building up basic research capabilities and manufacturing capacity in new and advanced materials, including through acquisition of overseas firms, talent, and intellectual property. These efforts aim to close the technological gap with the United States and localize production of dual-use materials integral to high-value industries like aerospace. They could also enable China to surpass the United States in applying breakthrough discoveries to military hardware.

- *Energy storage:* China has quickly built up advanced production capacity in lithium-ion batteries and established control over a substantial portion of the global supply chain, exposing the United States to potential shortages in critical materials, battery components, and batteries. China's heavily subsidized expansion in lithium-ion batteries will likely lead to excess capacity and drive down global prices. If Chinese producers flood global markets with cheaper, technologically inferior batteries, it would jeopardize the economic viability of more innovative energy storage technologies currently under development in the United States.
- *Nuclear power:* China is positioning itself to become a leader in nuclear power through cultivating future nuclear export markets along the Belt and Road, particularly in sub-Saharan Africa, and attracting advanced nuclear reactor designers to build prototypes in China.

Recommendations

The Commission recommends:

- Congress direct the U.S. Department of Justice to reestablish a higher education advisory board under the Federal Bureau of Investigation. In concert with the U.S. Department of Commerce's Bureau of Industry and Security, U.S. Department of Homeland Security, and U.S. Department of State, the higher education advisory board would convene semiannual meetings between university representatives and relevant federal agencies to review the adequacy of protections for sensitive technologies and research, identify patterns and early warning signs in academic espionage, assess training needs for university faculty and staff to comply with export controls and prevent unauthorized transfer of information, and share other areas of concern in protecting national security interests related to academic research.
- Congress direct the U.S. Government Accountability Office to conduct an assessment on the risks posed by Beijing's efforts to co-opt foreign researchers or students at U.S. universities to unlawfully appropriate research and other knowledge for the benefit of the government, companies, or interests of the People's Republic of China. This report should:
 - Include the number of foreign students and researchers from China studying in science, technology, engineering, and mathematics fields; past and current affiliations; primary areas of research; duration of stay in the United States; and subsequent employment;
 - Identify whether federally funded university research related to emerging technologies may have been unlawfully appropriated by individuals acting on behalf of Chinese entities; and
 - Evaluate the efficacy and ability of the U.S. Department of State's visa screening mechanism to mitigate the risk of inappropriate technology transfer to China, including but not limited to: assessing the ability of that process to identify students, researchers, and research entities, through a visa disclosure requirement, that are receiving funding from the

government of China or an intermediary entity acting in support of China's government.

- Congress amend Internal Revenue Code Section 41 to extend the research and development tax credit to initial stages of deployment for new products, processes, computer software, techniques, formulae, or inventions that increase the production of final and intermediary goods manufactured primarily in the United States. The tax credit should also extend to precompetitive commercial development of basic and applied research performed in the United States, particularly in industrial sectors where the People's Republic of China threatens the technological leadership of the United States.
- Congress direct the U.S. Geological Survey, in coordination with the U.S. Department of Energy, U.S. Department of Commerce, U.S. Department of the Interior and U.S. International Trade Commission to develop and maintain a risk assessment framework that identifies materials used in manufacturing industries critical to both national security and commercial vitality. Such a framework should provide an early warning mechanism for any threats to the U.S. supply of these critical materials, including an increasing concentration of extraction and processing by another country or entity and acquisition of significant mining and processing facilities; increasing export restrictions by another country; large gaps between domestic prices for these materials in another country versus prices on international markets; sharp increases or volatility in price; and substantial control in supply of minerals used within the same industry or related minerals that serve as substitutes by another country.
- Congress direct the National Science Foundation, in coordination with other agencies, to conduct a study on the impact of the activities of Chinese government, state-sponsored organizations, or entities affiliated or supported by the state in international bodies engaged in developing and setting standards for emerging technologies. The study should examine whether standards are being designed to promote Chinese government interests to the exclusion of other participants.

Introduction

Emerging technologies like AI, new and advanced materials, and new energy* have the potential to advance new products, disrupt established patterns of commerce, and alter established methods of military confrontation and deterrence. China's government has indicated clear intent to achieve technological leadership by promoting domestic firms, absorbing foreign technology, and localizing and monopolizing entire supply chains to establish technological self-sufficiency and strategic advantage. The objective of these policies is also achieved through other licit and illicit activities, such as extensive government subsidies, guarantees of substantial domestic market

*"New energy" is often used synonymously with "alternative energy" or "clean energy technology" in Chinese policy discussion, and refers to nonfossil fuel energy sources, including nuclear energy and renewables like wind and solar power, as well as energy storage technologies like lithium-ion batteries.

share for Chinese firms, and intellectual property theft. While these objectives and approaches are not new, China's economic planners continually modify strategies to capitalize on successes and eliminate methods that fail to deliver results.

Under General Secretary of the Chinese Communist Party (CCP) Xi Jinping, industrial policies increasingly aim to leverage the capabilities of China's most dynamic private firms for state-directed objectives through military-civil fusion. Loss of U.S. leadership in these areas—not only in research breakthroughs but also in application—could impact the United States' economic vitality, ability to project military power, and influence in international standards-setting and governance for future generations of these technologies.

This section assesses China's current capabilities and policy objectives in AI, new materials, and new energy, and identifies challenges China poses to U.S. interests in these sectors. It also describes China's progress in military-civil fusion, focusing on its impact in these sectors. It draws from the Commission's June 2019 hearing on "Technology, Trade, and Military-Civil Fusion"; contracted research; consultations with government officials, industry experts, and academics; and open source research and analysis.

Military-Civil Fusion

Ideological Foundations and Evolution of Military-Civil Fusion under General Secretary Xi

As a national strategy, military-civil fusion traces roots to the Maoist idea of "people's warfare," which prescribed a "whole-of-society" approach to military mobilization, and builds on industrial policy to drive military modernization.¹ China's economic planners and military strategists also looked to the United States' Defense Advanced Research Projects Agency (DARPA) as a model for promoting military innovation by harnessing corporate research and development (R&D).²

Mass civilian mobilization and defense industrial planning were synthesized in "military-civil integration," which gained traction during the 2000s, but struggled to overcome monopoly interests, bureaucratic fragmentation, and outdated contracting administration within China's defense economy.³ The initiative made limited inroads in the electronics, information technology, high-technology, and automotive sectors, and precipitated removal of barriers to civilian participation in defense research, development, and acquisition, as well as private investment in naval and aerospace weapons systems development.⁴

From Military-Civil Integration to Military-Civil Fusion

China's program of military-civil integration was an earlier effort to foster ties between the civilian economy and China's defense industrial base. It primarily sought to address obstacles to military modernization and defense enterprise restructuring that arose from China's economic liberalization in the 1980s and 1990s in two stages: (1) retooling defense enterprises to produce consumer goods; and (2) encouraging advances in commercial technology to "spin on" into military application.⁵

From Military-Civil Integration to Military-Civil Fusion— *Continued*

- *Retooling defense enterprises to produce consumer goods:* During China’s “reform and opening up” period in the 1980s, China’s economic planners sought to revitalize the defense sector by encouraging firms to produce consumer goods like automobiles.⁶ This initiative had limited success, as Chinese defense firms remained closely linked to government administration and driven by procurement practices in the planned economy, whereas civilian enterprises benefitted from new management approaches and foreign partnerships.⁷ Successes in China’s shipbuilding and electronics industries were notable exceptions.⁸
- *Encouraging advances in commercial technology to “spin on” into military application:* By the late 1990s, much of the technological advancement occurring in China’s economy was driven by foreign-controlled production facilities and R&D centers located in China. China’s government hoped participation in commercial production would enable China’s defense manufacturers to acquire key dual-use technologies in fields like aerospace, microelectronics, new materials, and advanced manufacturing.⁹ To achieve this goal, the government encouraged defense firms, except those exclusively focused on military production, to devote more business units to civilian production and establish more foreign partnerships.¹⁰

In its current iteration, military-civil fusion continues these objectives but is distinct in breadth and implementation. While military-civil integration focused primarily on restructuring and improving the technological know-how of China’s defense sector, military-civil fusion is society-wide in scope, and extends much more deeply into China’s civilian research institutions, as well as its startup ecosystem, the latter of which did not exist when military-civil integration was first conceived.¹¹ In practice, execution has evolved with China’s industrial policy implementation to rely on a diverse pool of government-guided investment funds rather than top-down administrative decisions carried out by agencies and state-owned enterprises.¹²

Since taking power in 2012, General Secretary Xi has redoubled and refined this effort, placing it at the intersection of a broader military structure overhaul (see Chapter 4, Section 1, “Beijing’s ‘World-Class’ Military Goal”) and overarching industrial and innovation policy changes.¹³ Rebranded “military-civil fusion,” explicit efforts to foster ties between civilian enterprises and the military are contained within Made in China 2025,* the 13th Five-Year Plan,

*Made in China 2025 is an industrial policy and signature domestic economic policy of General Secretary Xi. Released in 2015, it outlines a ten-year plan to drastically increase domestic sources of essential components like semiconductors and achieve substantial progress in ten core industries through funding and policy support: (1) advanced information technology; (2) robotics and automated machine tools; (3) aircraft and aircraft components; (4) maritime vessels and marine engineering equipment; (5) advanced rail equipment; (6) new energy vehicles; (7) electrical generation and transmission equipment; (8) agricultural machinery and equipment; (9) new

and China's AI strategy. In 2017, General Secretary Xi created a special oversight body to facilitate interagency coordination, the Central Commission for Integrated Military and Civilian Development, which he chairs.¹⁴ General Secretary Xi's leadership of the commission signals military-civil fusion's intended centrality in defense industrial planning, but also underscores the need for strong authority to overcome bureaucratic hurdles in implementation.¹⁵

Military-Civil Fusion Policy Framework and Implementation

General Secretary Xi's vision of military-civil fusion, as articulated in numerous speeches, aims to fulfill three strategic objectives: (1) facilitate transfers between the defense and civilian sectors to improve the sophistication of China's military technology, particularly in sectors critical to informationized warfare;* (2) create cohesion in Chinese industry and academia working with and in support of military objectives, so that the entire system can be effectively mobilized to support the military in the future; and (3) drive technological innovation and economic growth.¹⁶ To realize military-civil fusion, China's government has encouraged agencies and provincial and local governments to launch hybrid state-backed and private funds to guide military-civil fusion implementation, designated specific industries or types of technology for cooperative development between the civilian and defense sectors, and streamlined regulatory frameworks to facilitate ease of information flows and coordination between sectors.¹⁷ These measures are in addition to significant government funding for other supporting efforts.

While China's government has pursued comprehensive tech plans in the past, military-civil fusion differs from preceding initiatives in blending private funding with state resources and leveraging existing capacity rather than attempting to build capabilities from scratch.¹⁸ Military-civil fusion implementation also benefits from China's evolving approach to industrial policy. Since 2006, Chinese economic planners have largely shifted from a narrow focus on production targets to multipronged approaches requiring coordination between different agencies.¹⁹ While the former often resulted in oversupply of inferior technology, newer policy frameworks attempt

materials; and (10) pharmaceuticals and advanced medical devices. After Made in China 2025 became a focus of the Office of U.S. Trade Representative's Section 301 investigation into China's trade practices, Chinese officials ordered state media to cease mention of Made in China 2025 and removed it from the 2019 Government Work Report. Through careful analysis of supplementary policies, pilot programs, and changes in rhetoric, a July 2019 study of Made in China 2025's implementation by the Mercator Institute for Chinese Studies (MERICS) concluded that the industrial policy's implementation has continued unabated and policymakers have no intention of abandoning the plan. Max J. Zenglein and Anna Holzmann, "Evolving Made in China 2025: China's Industrial Policy in the Quest for Global Tech Leadership," *Mercator Institute for Chinese Studies*, July 2, 2019, 8–9, 29–33, 73; Sidney Leng and Zheng Yangpeng, "Beijing Tries to Play Down 'Made in China 2025' as Donald Trump Escalates Trade Hostilities," *South China Morning Post*, June 26, 2018; Office of the U.S. Trade Representative, *Findings of the Investigation into China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation under Section 301 of the Trade Act of 1974*, March 22, 2018, 14–15; Zhu Minghao, "Becoming a Manufacturing Power Requires First Correcting a Deficiency in Core Components (实现制造强国须先弥补基础短板)," *China Industry Review*, August 3, 2015. Translation.

*"Informationized warfare" is a term used by the People's Liberation Army (PLA) to describe the incorporation of information technology into every facet of warfare. China's 2004 Defense White Paper emphasized the ubiquitous application of microelectronics and integration of information from various systems (e.g., logistics, intelligence collection, etc.). Where previous technological advances had shifted decisive force from quantity to quality of strike capabilities through improvements in precision, informationization changed the dynamic to a competition between "systems of systems." U.S.-China Economic and Security Review Commission, *Hearing on a "World-Class" Military*, written testimony of Dean Cheng, June 20, 2019, 2–3.

to foster market demand while establishing production capacity and lower prices through economies of scale and industry consolidation.²⁰ For instance, China's government has built a domestic new energy vehicle market through preferential procurement policies, consumer rebates, policy support for charging stations in major cities, higher industry standards to filter out small inefficient producers, and production quotas for auto manufacturers.²¹

The central government provided an overarching framework for military-civil fusion, and a small number of provincial and local governments have taken the lead in implementation, providing policy direction and funding. At the same time, an increasing number of universities and enterprises are reorienting to develop defense or dual-use technologies, often in partnership with military-affiliated research institutes.²² As of 2019, more than ten provincial-level governments are investing tens of billions of dollars in production facilities, research, and support for overseas acquisitions through "guidance funds," according to analysis from asset manager AVIC Securities.²³ Administered by government agencies, these financing vehicles pool state funding and private capital to make investments that fulfill policy objectives, such as early-stage investments in startups that can provide technology to the People's Liberation Army (PLA), while also pursuing market returns.²⁴

Local governments have also launched industry organizations or other initiatives that capitalize on their respective strengths or existing endowments. For instance, Zhongguancun, a tech hub in Beijing, created a Military-Civil Fusion Industry Alliance as early as 2014 that now counts 600 members.²⁵ In 2017, the alliance hosted a contest judged by 78 military experts to advance applications of AI, new materials, and new energy, among other fields.²⁶ Similarly, the northeastern port city of Tianjin, which leads China's supercomputer development, established an AI Military-Civil Fusion Innovation Center next to its National Supercomputer Center in coordination with the Academy of Military Science.²⁷ The city also has plans to establish partnerships with two other military institutes and is exploring providing cloud services for China's military.²⁸

Talent Recruitment and Knowledge Transfer in Military-Civil Fusion

General Secretary Xi has emphasized the centrality of cultivating and attracting talent to support innovation in dual-use technologies.²⁹ Through initiatives like the Thousand Talents Program,* Chinese institutions provide foreign scientists and engineers generous compensation (e.g., a onetime "signing bonus" of \$151,000 and research stipends ranging from \$453,000 to \$755,000 for established scientists over the age of 40), and equip them with cutting-edge

*The Thousand Talents program is a government effort launched in 2008 to recruit foreign talent. Initially, it targeted overseas Chinese, but quickly expanded to include all foreigners, and developed offshoots targeting up-and-coming researchers in addition to its initial focus on established professionals. Foreigners accepted into the Thousand Talents program must already have positions in China, and receive bonuses and research funding in addition to their compensation through Chinese institutions, as well as reduced administrative barriers to establishing residence in China. Hepeng Jia, "China's Plan to Recruit Talented Researchers," *Nature* 553: S8 (January 17, 2018), Zhai Lixin, "Give Play to the Talent Management Reform Pilot Zone's Pioneering Function and Accelerate the Construction of a Science and Technology Center with Global Influence (发挥人才管理改革试验区先行先试作用加快建设具有全球影响力的科技创新中心)," *Yearbook of Zhongguancun 2018*, 7–8. Translation.

facilities to conduct research in China.³⁰ In some cases, foreign scientists are permitted to maintain overseas affiliations and set up labs that mirror their U.S. facilities.³¹ As of September 2017, the Thousand Talents Program had recruited about 7,000 people, according to China's Ministry of Human Resources and Social Security.³² Zhongguancun's 2018 Yearbook claims 1,180 recruits from the Thousand Talents Program are associated with the Beijing tech hub alone, attributing this high volume to a network of ten overseas recruitment centers and programs to place foreign talent in Beijing.³³

China's Ministry of Science and Technology has sought to place recruiters within U.S. institutions under disguise as researchers. According to charges unsealed by the Department of Justice on September 16, 2019, since 2017 an official operating the New York office of the China Association for International Exchange of Personnel (an agency under China's Ministry of Science and Technology) conspired to fraudulently obtain visas for recruiters to pose as visiting academic researchers while seeking to attract U.S. talent back to China.³⁴

Chinese institutions have also tried to facilitate knowledge transfers by sending Chinese researchers to foreign universities, often disguising their military affiliations.³⁵ A report from the Australian Strategic Policy Institute (ASPI) details the extensive practice of creating "cover institutions" that exist only on paper, and through which PLA-affiliated researchers portrayed themselves as civilian academics to attend conferences or participate in exchanges overseas.³⁶ Of more than 2,500 military scientists and engineers who have gone abroad since 2007, the report found at least dozens have used false credentials to work in sensitive areas, such as hypersonic missiles and navigation.³⁷ In other cases, the rewards for economic espionage incentivize Chinese students in the United States to steal research to boost their chances of successful application to talent programs.³⁸

As part of military-civil fusion, Chinese firms obtain dual-use technologies through overseas acquisitions supported by government funding.³⁹ For instance, since its creation in 2008, state-owned defense conglomerate Aviation Industry Corporation of China (AVIC) has spent at least \$3.3 billion acquiring at least 20 aerospace, automotive, and engineering firms, mainly in the United States and Europe.⁴⁰ These acquisitions were supported by China Construction Bank and Tianjin Municipal Government.⁴¹ Government guidance funds with military-civil fusion investments are also funding R&D centers abroad, including Zhongguancun Capital's innovation centers in San Francisco, Boston, and Heidelberg.⁴²

Military-Civil Fusion Tied to Chinese Venture Capital Funds and R&D Centers Abroad

R&D centers and incubators* such as those tied to Zhongguancun Capital have complex and amorphous links to U.S. academ-

*Incubators and accelerators focus on seed stage investments, or providing startup founders nominal initial funding, work space, expertise, and other resources to prove an initial business concept. In contrast, VC firms typically invest in companies that have already launched operations to help them expand their product offerings and reach a broader market. Often incubators will try to connect successful projects with VC firms. Incubators and investment funds tied to China have encouraged projects launched in the United States to migrate to China for successive stages of product development and venture funding. Office of the U.S. Trade Representative,

Military-Civil Fusion Tied to Chinese Venture Capital Funds and R&D Centers Abroad—*Continued*

ic institutions and often have an explicit goal of helping firms license technology or attract joint ventures and talent to China.⁴³ First among such funds was Zhongguancun-Stanford New Technology Venture Investment Fund, established in 2013, which by 2017 had raised \$91.3 million to spin off projects started at Stanford and other U.S. institutions and provide assistance with market access in China.⁴⁴ A VC fund controlled by eastern city Hangzhou, home to Alibaba, similarly established an incubator in Redwood City, California, in 2014. Within less than three years, the fund attracted 41 projects and planned ventures to Hangzhou.⁴⁵ The range and scale of projects supported by Chinese government-funded R&D centers is substantial. For example, Zhongguancun Capital's Boston-based incubator Z-park and Silicon Valley R&D center claim to "collect nearly 4,000 projects in the [United States] annually" in biotechnology, artificial intelligence, information technology, and other fields into a database of possible investments.*⁴⁶

Chinese government VC funds and R&D centers support technologies and projects with clear national defense implications. Danhua Capital, backed by Zhongguancun Capital, has investments in Cohesity, a data management and security company that services the U.S. Department of Energy and U.S. Air Force, and also owns a minority stake in U.S. drone maker Flirtey, which was selected in May 2018 to work with the U.S. Department of Transportation to integrate drones into U.S. airspace.⁴⁷

The Chinese government has also promoted scientific collaboration as a key element of the Belt and Road Initiative (BRI) in ways that could further leverage civilian research to support military advancement.⁴⁸ The April 2019 Belt and Road Forum announced an international scientific alliance with 37 countries, numerous other agreements between state science organizations with both developed and developing countries, and programs to bring graduate students to China.⁴⁹ China's State Council† aims to use scientific and

*Findings of the Investigation into China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation Under Section 301 of the Trade Act of 1974," March 22, 2018, 147; Yang Fan, "ZDG Establishes First Overseas Technology Investment Fund," *China Daily*, June 8, 2013.

†Z-Park does not clarify how many of these applications it reviews, provides a workspace for, or funds. For comparison, *New York Times Magazine* reported Silicon Valley accelerator Y Combinator received around 2,633 for its semiannual cycle in the first half of 2013, of which it provided 47 with \$100,000 each in funding. Nathaniel Rich, "Silicon Valley's Start-Up Machine," *New York Times Magazine*, May 2, 2013.

‡China's State Council is a government body composed of China's 26 ministry-level bodies and other state agencies such as the Chinese Academy of Sciences and the State-owned Assets Supervision and Administration Commission, which oversees China's state-owned enterprises. It is overseen by ten State Councilors, all of whom are senior CCP members, and run by the premier of China. Among other functions, the State Council is generally responsible for day-to-day economic decision making, but under General Secretary Xi, Premier Li Keqiang and the State Council have largely been sidelined in determining the course of economic policymaking, in favor of leading small groups chaired by General Secretary Xi. U.S.-China Economic and Security Review Commission, *Hearing on What Keeps Xi Up at Night*, written testimony of Jude Blanchette, February 7, 2019, 1-3; State Council of the People's Republic of China, *State Council Organizational Structure* (国务院组织机构). Translation; State Council of the People's Republic of China, *State Council Leadership* (国务院领导). Translation.

technological cooperation through BRI to improve China's nuclear power and aerospace technology, and calls for increasing high-tech arms exports to BRI countries.⁵⁰ A 2017 article in *Red Flag Manuscript*, a publication associated with the CCP journal *Seeking Truth*, urges using BRI's talent exchange platforms to "serve military-civil fusion."⁵¹ The author, a political researcher at China's largest think tank, argues that an inter-agency plan for scientific collaboration along BRI could allow educational resources to support dual-use technology innovation and suggests establishing a system of policies for BRI to better serve military-civil fusion.⁵²

Artificial Intelligence

AI is an umbrella term for computing applications that involve machine perception or automating complex decision-making processes, typically through machine learning or recognizing patterns in data (see Addendum I).⁵³ As a general purpose technology, AI has been likened to electricity in its potential transformative impact: applications of AI will extend to many sectors of the economy; the underlying technology will continuously improve; and AI will enable many other innovations.⁵⁴ Technological advancement in AI relies on increases in computing power, sophistication of algorithms, and availability of data on which to train those algorithms.⁵⁵

China's Policy Objectives and Current Capabilities in AI

Policy Background

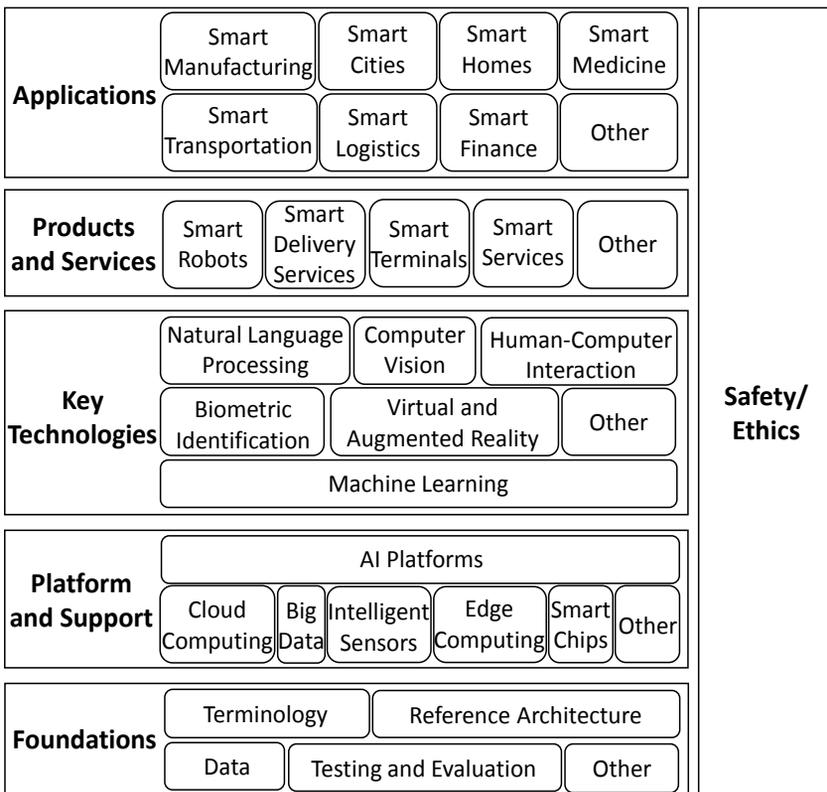
In 2017, the State Council released the Next Generation AI Development Plan, making AI a centerpiece of China's development strategy.⁵⁶ The Next Generation AI Development Plan sets ambitious milestones, calling for China to establish parity with other advanced economies in AI by 2020 and become a global leader in AI theory, technology, and applications by 2030. It also targets tenfold growth of AI industry gross output (including from AI applications) during those ten years, from \$150 billion in 2020 to \$1.5 trillion by 2030.⁵⁷ In testimony before the Commission, Jeffrey Ding, China lead at the Future of Humanity Institute's Center for AI Governance, noted that China's approach to AI rests on three principles: (1) central planning guides local implementation, and provincial and local governments have broad leeway to pursue various objectives within the overall framework provided in the plan; (2) setting international technical standards for AI is a priority, both to build more reliable AI-enabled systems and influence international norms to China's strategic and economic advantage (Figure 1 outlines China's approach to AI standards); and (3) recruiting and training top AI talent are dual objectives for guaranteeing China's long-term competitiveness.⁵⁸

The 2017 Next Generation AI Development Plan marked a shift in China's approach to AI, from pursuing specific applications to prioritizing AI as foundational to overall economic competitiveness. The "centrally guided, locally implemented" framework has allowed Chinese policies to absorb and build on previous industrial policies that provide a foundation for quickly applying AI solutions to existing initiatives, such as upgrading industrial robotics promoted in

Made in China 2025 to support machine vision and autonomous decision making.⁵⁹ Fifteen of 31 provincial-level governments released their own AI plans by the end of March 2018, targeting gross industry output of \$429 billion by 2020, or nearly three times the national target of \$150 billion for the same period.⁶⁰

China Electronic Standardization Institute, a standards-making body under the Ministry of Industry and Information Technology, also led over 30 institutions and companies in drafting a white paper to coordinate AI standards development, published in January 2018 (see Figure 1).⁶¹ The white paper frames an especially broad approach to AI standards-setting, extending beyond AI technologies like computer vision* or natural language processing to encompass foundational elements of computing that underpin AI, as well as products and services that incorporate AI applications.⁶²

Figure 1: China's Approach to AI Standards



Note: The Chinese government released an AI Standards White Paper in January 2018 outlining an especially broad approach to AI-standards setting aimed at integrating AI into existing fields.

Source: Adapted from Jeffrey Ding et al., "Chinese Interests Take a Big Seat at the AI Governance Table," *New America*, June 20, 2018.

*Computer vision is any computational process to identify patterns in images, such as facial recognition in surveillance system or smartphone locks, or object detection such as autonomous vehicles recognizing stop signs.

These plans and standards guidelines build on the progress of earlier policy initiatives to improve digital infrastructure. These initiatives have provided a technological foundation for quickly advancing AI subdomains.* For example, creating numerous cameras and sensors to monitor traffic conditions as part of China's smart cities development program now provides the data for urban management systems like Alibaba's City Brain in Hangzhou, which uses AI to monitor and redirect traffic to reduce congestion.⁶³

Industry Overview

China has emerged as a leader in several subdomains of AI, in particular computer vision, digital lifestyle products (e.g., ride hailing and delivery applications), robotics, and speech recognition.⁶⁴ China is ahead of or on par with the United States in technologies that are poised for transformational growth from the application of AI, such as commercial and military strike-capable drones incorporating autonomous navigation.⁶⁵ China trails the United States in autonomous vehicle (AV) technology but is rapidly catching up.⁶⁶

Many Chinese AI companies that appear most competitive vis-à-vis the United States are an outgrowth of the country's broad adoption of mobile internet and use of mobile applications,† which gives China's leading mobile platforms like Baidu, Alibaba, and Tencent unparalleled access to consumer data.⁶⁷ By contrast, China's advances in industrial robotics have been driven by extensive government support and overseas acquisitions,‡ as well as some spillover from major international robot manufacturers locating production facilities in China.⁶⁸

Computer vision falls somewhere in between, with private funding responding to a demand created by government policy. Chinese image recognition startups outperform and are far better funded than international peers, but China's Ministry of Public Security is a primary customer for facial recognition in surveillance systems and the National Development and Reform Commission, an economic planning agency, has issued policy encouraging use of AI in facial recognition.⁶⁹ China's widespread use of surveillance applications of

*For instance, the white paper includes an appendix of ten applications of AI by Chinese companies to provide a template for different AI standards, but these technologies were in many cases supported by earlier industrial policies. In intelligent manufacturing, the white paper champions Haier's COSMOplat, a customizable manufacturing execution and supply chain management system that was developed under Made in China 2025. Standards Administration of China and China Electronic Standardization Institute, *White Paper on Artificial Intelligence Standardization* (人工智能标准化白皮书), January 2018, 96–98. Translation.

†China's mobile internet ecosystem developed with minimal competition from foreign firms due to mandated government monopolies in telecommunications, the Golden Shield Project (popularly known as the "Great Firewall") which prohibits access to popular foreign sites like Google and Facebook from within mainland China's borders, strict licensing requirements for provision of content over the internet, including via mobile applications, and increasingly demanding regulations on management of user data. Hugo Butcher Piat, "Navigating the Internet in China: Top Concerns for Foreign Businesses," *China Briefing*, March 12, 2019; Ashwin Kaja and Eric Carlson, "China Issues New Rules for Mobile Apps," *Inside Piracy*, July 1, 2016.

‡Chinese state-owned enterprises have concluded several major acquisitions of robotics and automation firms since Made in China 2025 encouraged closing China's technological gap through acquiring foreign firms, including Chinese air conditioner and refrigerator manufacturer Midea Group's acquisition of a majority stake in German robot maker Kuka AG, the world's largest producer of robots used in auto factories. U.S.-China Economic and Security Review Commission, *Hearing on Technology, Trade, and Military-Civil Fusion*, written testimony of Dan Coughlin, June 7, 2019, 4; Sun Congying, "Midea, Kuka Chase Automation Dreams with \$1.6 Billion Park," *Caixin*, March 29, 2018; Sun Yuyao, "Overseas Mergers and Acquisitions: Chinese Manufacturing Integrates into the Global Industrial System (海外并购并喷 中国制造融入全球产业体系)," *Advanced Manufacturing Daily*, December 29, 2012.

AI is driven in large part by the absence of privacy protections and by government repression of ethnic groups.⁷⁰ For example, law enforcement agencies across China are deploying facial recognition to identify and track Uyghurs, a Muslim minority from northwestern Xinjiang Province.⁷¹

Both the government and private sector are substantial investors in China's AI. In their AI development plans, the municipal governments of Shanghai and Tianjin each pledge to invest \$15 billion in AI, close to Google's parent Alphabet's \$16.6 billion in global R&D expenditure during 2017.*⁷² However, China's government guidance funds do not always raise or spend the money as planned due to a shortage of investors, inability to recruit qualified personnel to manage the funds, and lack of investment targets that meet the funds' investment criteria, among other reasons.⁷³ Nonetheless, in start-up funding, technology market research firm CB Insights estimates that Chinese companies (including Hong Kong-based companies) received 48 percent of global AI equity investment in 2017, ahead of the United States' 38 percent and up from 11 percent in 2016.⁷⁴ A handful of large foreign VC groups like Japanese conglomerate SoftBank and U.S. VC firm Sequoia are active investors in China's AI market.⁷⁵

China's AI "National Team"

In November 2017, China's Ministry of Science and Technology selected Baidu, Alibaba, and Tencent, as well as voice recognition firm iFlytek, to form a "National Team" charged with developing AI in a range of subdomains.†⁷⁶ According to the government plan, Baidu is to focus on autonomous driving, Alibaba is to focus on cloud computing and smart cities, Tencent is to focus on AI-powered medical diagnosis, and iFlytek is to continue working on voice intelligence.⁷⁷ Hong Kong-based facial recognition start-up SenseTime was subsequently tapped to focus on intelligent vision.⁷⁸

In both design and execution, the national team approach differs from overt promotion of national champions.‡ None of the firms are state-owned and all had established capabilities in their assigned subdomains before being selected.⁷⁹ In some respects,

*Alphabet's financial disclosures do not distinguish investments in AI from other capabilities and products, but it is likely the world's largest corporate spender on AI. Alphabet Inc., *Form 10-K for the Fiscal Year Ended December 31, 2017*, February 5, 2018, 36; *Economist*, "Google Leads in the Race to Dominate Artificial Intelligence," December 7, 2017.

†Chinese agencies have occasionally designated a "national team" of companies with pre-existing capabilities to focus on building up capacity in a particular field, such as the Ministry of Commerce's 2010 policy to support well-established brick and mortar retailers in developing e-commerce operations. Companies in a national team do not receive anticompetitive policy support to the extent of national champions and have more autonomy to pursue business avenues other than those directed by the government. U.S.-China Economic and Security Review Commission, *Hearing on Technology, Trade and Military-Civil Fusion*, written testimony of Jeffrey Ding, June 7, 2019, 8. Tencent Technology, "China's Ministry of Commerce's Support for Three Large Companies in the 'E-commerce National Team' Revealed (商务部扶持电子商务 "国家队" 三大企业曝光)," *China Information Industry Network*, March 3, 2010. Translation.

‡National champions are large, often state-owned firms that advance state interests, whether to establish capacity in a new sector or become competitive internationally in a particular sector. Typically, they receive policy support to assist in advancing state objectives, including subsidies, tax credits, guaranteed market share or monopoly access in certain industries, and supportive regulation and financing to acquire or displace smaller competitors or vertically integrate within other functions of an industry.

China's AI "National Team"—*Continued*

they also compete with each other. For instance, Baidu, Alibaba, and Tencent are still developing computer vision capabilities despite SenseTime's designation as the intelligent vision leader.⁸⁰ At the same time, the national team approach clearly signals that these AI subdomains are policy priorities, reducing regulatory barriers to developing new technologies, improving access to funding, and possibly diminishing market vitality by privileging national team incumbents and posing challenges to industry late-comers.⁸¹

U.S.-China Competition in AI

While Chinese firms are excelling at many subdomains of AI, the United States is ahead in key inputs like talent and corporate R&D funding, and maintains a decisive lead in the foundational platform and support architectures that underpin many AI technologies and applications.*⁸² Taken together, these advantages place the United States ahead of China's overall AI capabilities, but China's market structure and government intervention may undermine the U.S. lead.

Multiple studies of international AI talent distribution place the United States firmly in the lead, particularly in experts capable of pushing the technological horizon forward.⁸³ To the extent that China is catching up, it is mostly training engineers and developers capable of using existing AI software packages, rather than breaking new ground.⁸⁴ The United States is also far ahead in corporate R&D expenditure, counting 12 out of the top-spending 20 software and computer services firms globally in 2018, versus three in China.† While Chinese researchers publish and patent more in total than U.S. researchers, far fewer Chinese articles are accepted into the most prestigious scientific journals and conferences or rank among the most highly cited papers, and a much lower proportion of Chinese AI patents are accepted at patent offices outside of China.⁸⁵

Beyond these basic indicators, U.S. institutions develop and maintain the majority of foundational platform and support architectures upon which AI technologies and applications are built. Analysis of 93 widely used open source AI software platforms by the Ministry of Industry and Information Technology (MIIT) finds 61 of the platforms were developed by organizations based in the United States, compared to only 12 developed by institutions or individuals based

*Architectures guide how computers process information, from chip architectures that control how software interfaces with hardware, to information architecture like metadata, which instruct computers on how to organize data. Platforms provide ready-made toolkits that allow AI application developers to deploy and tailor premade AI algorithms toward specific problems, rather than always having to write code from scratch. Rob Thomas, "The Road to AI Leads through Information Architecture," *Venture Beat*, January 12, 2018; Mike Williams, "5 of the Best AI platforms for Business," *TechRadar*, January 10, 2018; Mostafa Abd-El-Barr and Hesham El-Rewini, *Fundamentals of Computer Organization and Architecture*, Wiley-Interscience, 2005, 1–6.

†R&D expenditure at these firms extends beyond AI, but spending patterns by software and computer services firms are indicative of corporate investment in AI. U.S.-China Economic and Security Review Commission, *Hearing on Technology, Trade and Military-Civil Fusion*, written testimony of Jeffrey Ding, June 7, 2019, 3; Timothy W. Martin, "American Tech Firms Are Winning the R&D Spending Race with China," *Wall Street Journal*, October 30, 2018; *Economist*, "Google Leads in the Race to Dominate Artificial Intelligence," December 7, 2017.

in China.*⁸⁶ These architectures and open source platforms serve as de facto standards for global AI development, and extend the influence of U.S. firms in shaping how AI evolves.⁸⁷ The United States also leads in some of the most critical subdomains of AI, such as potentially lucrative AVs, as well as many business applications of AI.⁸⁸

While the development of these capabilities are mostly driven by the private sector, the U.S. government holds a convening role in bringing together industry, government, and academia in setting research priorities and balancing AI development with security. Following the February 2019 Executive Order on Maintaining American Leadership in Artificial Intelligence, the National Institute of Standards and Technology (NIST) is coordinating between federal agencies and the private sector to develop technical standards to ensure systems using AI are robust, secure, and reliable.⁸⁹

Despite the United States' strong positioning in AI, China's government intervention, market structure, and construction of AI-enabling infrastructure affords Chinese AI firms unfair advantages. China's selection of an AI National Team encourages some degree of competition, but also clearly designates and provides support for certain companies to become champions in particular AI subdomains.⁹⁰ Their reduced need to defend market share enables them to allocate greater resources to R&D.⁹¹ The sheer size of China's market and diversity of consumer exposure to digital platforms powered by major tech conglomerates also provide these firms with both greater breadth and depth of data than U.S. competitors.† For some subdomains of AI, such as healthcare applications, China's strict data transfer regulations limit or outright prohibit U.S. firms' access to Chinese data, while Chinese firms have broad access to U.S. data.⁹² Lastly, China may leapfrog the United States in applications of AI that require major infrastructure changes and strong national coordination. For instance, the smart city pilot Xiongan, just outside Beijing, will have a section that only allows AVs, creating an unprecedented testing ground.⁹³

The nature of global advances in AI also makes assessing national capabilities difficult, as both commercial and theoretical AI development are driven by exceptionally open publication and information-sharing norms. While the openness of the AI research community benefits latecomers like China because they do not need to spend their own capital to reach a minimum baseline for any technology, the research culture and de facto standards are still driven by the dominant institutions, which are almost exclusively located or headquartered in the United States. Talent is also drawn to the

*Widely adopted open source software can amount to de facto industry standards. For instance, in 2014 Google decided to make part of its proprietary machine learning library open source. Called TensorFlow, this library has evolved into a community—composed of AI developers and researchers—in which participants are highly incentivized to share findings and agree on definitions and standardized documentation. The library is now used by many major enterprises. U.S.-China Economic and Security Review Commission, *Hearing on Technology, Trade and Military-Civil Fusion*, written testimony of Helen Toner, June 7, 2019, 8; Rajat Monga, *Artificial Intelligence (AI) Podcast*, Podcast, June 3, 2019.

† For instance, Alibaba Group and its subsidiaries may serve as a consumer's primary means to shop online, pay for both digital and physical goods through other vendors, pay for utilities, invest short-term savings, and watch videos online. It has also invested in online healthcare services. Nicole Jao, "Briefing: Alibaba Health gets a \$290 million boost from Alibaba, Ant Financial," *Technode*, May 24, 2019; Ming Zeng, "Alibaba and the Future of Business," *Harvard Business Review*, September–October 2018.

environment created by dominant institutions because they serve as a platform to influence global AI development, whereas the Chinese AI environment is generally more focused on commercialization of existing techniques.⁹⁴ Nonetheless, China's government may compel firms to pursue its strategic priorities, effectively guiding the focus of AI application through policy incentives, or mandates. The government can also use less formal channels of influence such as leveraging CCP cells, which all firms are required to have, or assigning local officials to oversee ostensibly private companies.⁹⁵ It may also shape the evolution of AI by guaranteeing a market for new applications to overcome an initial lack of commercial interest.⁹⁶ By contrast, the U.S. government has fewer means and limited support for directing the activity of multinational firms headquartered in the United States.

Military-Civil Fusion and AI

Lieutenant General Liu Guozhi, director of the Science and Technology Commission within China's Central Military Commission, believes AI is a turning point at which China could catch up to and surpass the United States in the next generation of warfare.⁹⁷ China's strategists see AI as a force multiplier across systems, a potential asymmetric advantage against high-value conventional weapons systems, and even a harbinger of a new mode of combat, where superior algorithms prove operationally decisive.⁹⁸ Developing AI-enabled military systems dovetails with the PLA's push to improve coordination across domains through information networks—both priorities stressed by General Secretary Xi in his October 2017 report to the 19th Party Congress.*⁹⁹

New and Advanced Materials

New materials are synthetically derived materials that often have properties not found in nature (e.g., the ability to not reflect light) or greatly enhanced properties found in nature (e.g., conductivity, flexibility, and strength). In research labs, the descriptor “new” distinguishes new materials from traditional metals, plastics, and ceramics.¹⁰⁰ New materials' applications are virtually unlimited, from improving the strength and durability of pedestrian materials like concrete, to enabling biomedical breakthroughs like regrowth of damaged nervous tissue (see Addendum II).¹⁰¹

Unlike AI, where major advances with commercial impact have mostly occurred within the last decade, materials science has been fundamental to many industrial advances since it emerged in the 1950s (e.g., in fiberglass widely used in automobile bodies and interiors, or anticorrosive materials used to preserve steel in ship hulls).¹⁰² The field relies on expensive equipment and specialized knowledge to synthesize and manufacture new materials, and higher-value applications† like aerospace and automobile manufacturing

*PLA strategists refer to these systems as “intelligentized,” including systems that are partially or fully autonomous or in which AI augments human abilities, including enhancing or replacing human decision making in command and control. U.S.-China Economic and Security Review Commission, *Hearing on China's Advanced Weapons*, written testimony of Elsa Kania, February 23, 2017, 17, 19–20.

† In order of decreasing technological intensity (i.e., amount of scientific knowledge required to increase productivity), major industries include aerospace and defense, automotive, electronics, marine applications, construction, and sporting goods. U.S.-China Economic and Security Review

have coevolved with advances in computing, machine tooling, and industrial robotics to apply scientific breakthroughs in new materials on the factory floor at scale.¹⁰³

Longer history and accumulation of technical know-how, close linkages between science and manufacturing, and high equipment costs create a steep learning curve for late entrants in new materials, but Chinese policymakers and firms have prioritized overcoming these barriers since the mid-1980s. Their success was initially limited to lower-value products like sporting goods, but improvements in China's machine tooling and robotics industries, fueled largely by foreign joint ventures and acquisitions, have enabled China to become competitive in more sophisticated applications. The risks to the United States are twofold and urgent: (1) China's robust manufacturing base supports innovations on the factory floor that advance commercial applications more than scientific breakthroughs; and (2) while other countries may continue to lead breakthrough discoveries in materials science, the Chinese government is providing extensive support for a scientific and industrial infrastructure to commercialize these discoveries ahead of other countries.

China's Policy Objectives and Current Capabilities in New Materials

Developing capabilities in new materials has been a staple of China's industrial policies, but emphasis has expanded from catching up in materials essential in dual-use applications like aerospace to a strategy of accelerating new materials used in disruptive technologies to gain a general technological edge. This shift in focus has been accompanied by overseas acquisitions that improve Chinese firms' use of new materials in manufacturing and policy support for materials science research.

The Chinese government first designated new materials as a priority area in the 863 Plan, an industrial policy launched in 1986 to jumpstart China's science and technology development.¹⁰⁴ Subsequently it incorporated them in five-year plans and in the seven areas targeted as Strategic Emerging Industries under Hu Jintao.*¹⁰⁵ These plans tended to focus on improving domestic capabilities in producing high-performance composites and fibers. Made in China 2025 promoted new materials as one of the core ten industries central to upgrading China's overall manufacturing capabilities. The most recent roadmap for implementation of Made in China 2025 divides these efforts by "advanced foundational new materials" such as those used in infrastructure, "key strategic new materials" such as those used in high-tech equipment, and "frontier new materials" such as those used in additive manufacturing.¹⁰⁶ From the 1980s, Chinese economic planners sought to catch up in manufacturing processes that utilize new materials, either through developing capabilities locally or obtaining foreign technology through legal ac-

Commission, *Hearing on Technology, Trade, and Military-Civil Fusion*, supplemental written testimony of Dan Coughlin, June 7, 2019, 7.

*The seven areas in the Strategic Emerging Industries initiative are: (1) energy-saving environmental industry, (2) new information technology, (3) biology, (4) high-end equipment manufacturing, (5) new energy, (6) new materials, and (7) new energy automobiles. Tai Ming Cheung et al., "Planning for Innovation: Understanding China's Plans for Technological, Energy, Industrial, and Defense Development," *University of California Institute on Global Conflict and Cooperation* (prepared for the U.S.-China Economic and Security Review Commission), July 28, 2016, 36.

quisition or theft. China counted notable early successes after the launch of the 863 Plan in less advanced materials, like carbon fiber used in sporting goods (e.g., fishing rods), but struggled to achieve breakthroughs due to lack of investment in basic research.¹⁰⁷

As advanced industrialized countries located more factory assembly in China, domestic supply chains emerged for components used in electronics, consumer goods, and to some extent automotive and aerospace manufacturing. Integration into global supply chains and foreign joint ventures has enabled Chinese firms to steadily make inroads in materials used within these components. In other cases, Chinese economic policy prompted advances in materials used in wind mills and construction.¹⁰⁸

While the United States has retained leadership in the most advanced manufacturing processes for materials used in aerospace manufacturing,* China's state-owned enterprises have actively sought to build a domestic aviation industry. They have succeeded in establishing a robust supply chain for aerospace components with the help of foreign firms. U.S. and European aerospace manufacturers have provided Chinese joint venture partners with machine tools and production techniques for building civilian aircraft parts, while firms like U.S. structural composites maker Hexcel have supplied advanced composite materials used in molding these parts.¹⁰⁹ For example, in 1998 Boeing and Hexcel established a joint venture with Chinese state-owned defense and aerospace conglomerate AVIC to manufacture both structural (e.g., wings and fuselage) and interior (e.g., doors and linings) parts for commercial aircraft.¹¹⁰ Boeing bought Hexcel's stake in 2008, acquiring a majority in the joint venture and expanding production in 2011. The joint venture now produces parts for all of Boeing's commercial aircraft models, and also supplies local civil aviation firms.¹¹¹ Since 2015, Chinese firms have acquired several German aerospace materials companies, and ChemChina acquired German machining and tooling firm Krauss-Maffei.¹¹² AVIC has also sought to obtain licensing for advanced materials through overseas acquisitions.¹¹³

While these arrangements do not transfer high grade carbon fiber or advanced machine tools used in stealth aircraft, the cumulative knowledge and production techniques Chinese aerospace manufacturers have acquired through foreign partnerships and imports have equipped Chinese manufacturers both with the capability to synthesize high grade carbon fibers independently and build machine tools that compete with foreign producers. Chinese military contractors are now able to produce carbon fibers they would not be able to purchase from the United States because this type of material

*These advanced processes can be divided into three categories: (1) computer simulations of synthetic materials behavior at different atmospheric conditions before any manufacturing begins; (2) chemical and mechanical processes to synthesize and purify materials until they have desired properties (e.g., lightness, strength, resistance to heat), which are often closely guarded trade secrets; and (3) automated molding, casting, and other techniques to form materials into specific parts, which often use large robotics operating at precise temperatures and building to very exact specifications. Mary Jay Lou, "Rise of the Robots," *Composites Manufacturing*, September/October 2017, 24–28; *Aerospace Engineering*, "Composites Manufacturing," July 12, 2012; *Cincinnati Business Courier*, "MAG Sells First Composite Tape-laying System to China," February 15, 2012; Vicki McConnell, "The Making of Carbon Fiber," *Composites World*, December 19, 2008; Proceeding of the International SAMPE Symposium and Exhibition, "Advanced Technology Tape Laying for Affordable Manufacturing of Large Composite Structures," January 1, 2001.

is subject to export controls.¹¹⁴ Nonetheless, Chinese producers are still behind the highest strength fibers.¹¹⁵

For the past decade, China's government has also broadened focus from catching up in industrial applications of new materials to being at the forefront of scientific discoveries by building research laboratories; training and recruiting researchers; and fostering collaboration between academia, industry, and the military.¹¹⁶ State funding for materials science has quadrupled since 2008, and Chinese universities have been patenting research aggressively.¹¹⁷ Patterns in patenting trends suggest Chinese researchers are a few years behind the United States, but are establishing foundational capabilities on par with global counterparts.¹¹⁸ For instance, while graphene was first synthesized in the United Kingdom at the University of Manchester in 2004, China now accounts for 58 percent of global patents in graphene—with most of its patenting activity occurring in the last seven years.*¹¹⁹ Universities lead graphene patenting in China while corporations hold most graphene patents in the United States, suggesting patenting has been driven by state interests in China.¹²⁰

Unlike improvements in new materials widely used in manufacturing such as carbon fiber, scientific breakthroughs in materials like graphene hold more potential to lead to rapid and disruptive changes in technology. However, established applications hold much more market value currently—aerospace, which depends heavily on carbon fiber, is the United States' largest export.¹²¹ Moreover, the timeframe for commercializing applications of cutting-edge materials is uncertain. As a result, U.S. manufacturers tend to rely on materials already in mass market use. By comparison, the Chinese government is providing support for firms to synthesize and use new materials, creating risk that U.S. firms continue to use old technology.

U.S.-China Competition in New Materials

The most imminent threat posed to the United States by the Chinese government's policy approach in materials science is not loss of absolute technological leadership, but loss of industries and manufacturing processes dependent on advances in new materials. National economic and strategic competitiveness in new materials is often driven by meeting demand from the industries that rely most heavily on new materials and the ability of those industries to integrate basic research discoveries into commercial application. However, it is also dependent on a country's manufacturing capabilities, not just within individual companies but across supply chains that take materials from raw ingredients to purified materials to finished parts.¹²² Because many innovations in new materials are driven by adaptations in manufacturing processes rather than breakthroughs in laboratory research or design, countries with more manufacturing facilities are better positioned to commercialize advances in new materials.¹²³

Although the United States has long held leadership in the most technologically intensive industries that use new materials, respon-

* Graphene is single atomic layer of carbon, the element that has the strongest molecular bond. It has two forms: "lens," a single highly conductive and transparent atomic layer that has applications in electronics and optics; and "oxide," a powder of graphene crystals that can be used as a structural additive to strengthen other materials. U.S.-China Economic and Security Review Commission, *Hearing on Technology, Trade, and Military-Civil Fusion*, written testimony of Alan Hill, June 7, 2019, 1–2.

sibility for funding translational R&D falls principally on U.S. corporations,* which often prefer to conduct R&D in China due to its extensive manufacturing network and cheaper access to materials and components.¹²⁴ China's government, as well as governments of other advanced industrialized nations, are far more active in supporting R&D at this critical stage of commercialization than the United States.¹²⁵ Exact comparisons between Chinese and U.S. translational R&D spending are difficult due to differences in statistical categories and economic structure, but there are some representative examples.† In 2018, China's MIIT alone spent \$3.5 billion (renminbi [RMB] 24.9 billion)‡ on applied R&D, which dwarfs the U.S. government's total \$746 million on R&D related to industrial production and technology for the same year.§¹²⁶ The U.S. National Science Foundation reported that overall U.S. corporate spending on late stage R&D reached \$277.6 billion in 2016, the latest year available.¹²⁷

Notably, Chinese firms also leverage international cooperation to compensate for gaps in their capabilities, in particular benefiting from partnerships with German and South Korean firms.¶ The risk to U.S. competitiveness is particularly acute in emerging industries dependent on new materials that are poised for rapid development, like the urban air mobility market (e.g., delivery drones).¹²⁸ If the United States loses out on early stages of development, it could also cede influence in international standards setting, and may be forced to license technology from China or other countries.

*Translational research focuses on developing applications of basic research. In the context of manufacturing and new materials, this typically involves developing prototypes, demonstrating manufacturability, and identifying viable markets. Sridhar Kota and Thomas C. Mahoney, "Manufacturing Prosperity: A Bold Strategy for National Wealth and Security," *Alliance for Manufacturing Foresight*, June 2018, 2, 42.

†Because China's corporate R&D statistics include state-owned enterprises, whose R&D activities can be directed by the state, it is difficult to distinguish corporate from government R&D expenditure in China. In assessing the allocation of government R&D subsidies, a 2014 Center for European Economic Research study even found that China's government subsidized minority state-owned firms more than majority state-owned firms' R&D, likely as a tactic to have greater influence over their decision-making. Philipp Boeing, "China's R&D Subsidies—Allocation and Effectiveness," *Center for European Economic Research Discussion Paper* 14–103, November 2014, 2, 9–10.

‡Unless noted otherwise, this section uses the following exchange rate throughout: \$1 = RMB 7.06.

§China's Ministry of Industry and Information Technology regulates and plans industrial policy for much of China's manufacturing sector, telecommunications, and other sectors. "Industrial production and technology" includes R&D expenditure related to manufacturing; software publishing; computer programming, consultancy, and related activities; information service activities; telecommunications; and engineering activities, technical testing, and analysis. Eva Benages et al. "The 2018 PREDICT Dataset Methodology," *European Commission*, 2018, 173, 175, 179.

¶German partnerships range from well-established companies expanding operations in China to startups forming strategic partnerships to access China's consumer market. For instance, German chemical makers BASF and Henkel announced plans in 2016 and 2017, respectively, to expand operations in Shanghai focusing on new materials used in automobile manufacturing, while German fiber startup Composites GmbH launched a partnership with Chinese fiber startup GON Technology, based in the eastern port city of Qingdao, in 2017. South Korean firms have similarly launched facilities in China in exchange for market access, such as LG Chem's partnership with Geely in electric vehicle batteries. Nonetheless, both German and South Korea firms have expressed concerns about technology transfer to China. For instance, in 2018 a South Korean Court indicted nine Chinese individuals associated with Samsung's Chinese supplier Toptec Co., Ltd for leaking bendable display technology developed by Samsung. The stolen technology included a special lamination technique that took Samsung six years and \$13.4 million to develop. *Reuters*, "South Korea's LG Chem to Team up with China's Geely on EV Batteries," June 12, 2019; *Reuters*, "South Korea Indicts Group for Leaking Samsung Display Tech to Chinese Firm," November 29, 2018; Li Dandan, "This Chinese Professor Filled the Domestic Carbon Fiber Gaps for [Military Helicopter Models] Z-10 and A-19 (中国这位教授填补碳纤维国内空白用于制造直10直19)," *Aviation Manufacturing Technology*, July 11, 2018. Translation; Jean-François Tremblay, "For Chemical Makers, R&D in China Makes Sense," *Chemical and Engineering News*, February 19, 2018; *Composites World*, "Chinese Firm Invests in Advanced Preforming Technology," August 28, 2017.

The United States is vulnerable from lack of alternate sources for minerals and other naturally occurring materials that could become vital to synthesizing important new materials. In 2017, President Donald Trump issued an Executive Order requiring the Department of the Interior, in coordination with several other executive agencies, to establish a strategy for reducing U.S. reliance on critical minerals, as well as improving domestic exploration and licensing and accessing materials through alternative sources, such as recycling.¹²⁹ In implementing the Executive Order, the Department of the Interior's June 2019 assessment found the United States relies on imports for more than 50 percent of supply for 31 of 35 minerals critical to U.S. manufacturing.¹³⁰ According to U.S. Geological Survey data, China accounted for more than half of global production for 13 of these minerals in 2017.*¹³¹ Currently, North America produces less than 5 percent of the world's graphite and China produces 70 percent; exfoliating graphite is the primary method of synthesizing graphene.¹³² If graphene becomes essential in any of the many potential applications currently being developed, such as quantum computing chips, China may be positioned to develop components much less expensively than the United States.¹³³

U.S. Mineral Dependency and Supply Chain Control

China dominates global supply of numerous critical minerals and metals used in energy storage and other advanced technologies, creating supply risks for materials, components, and end products sourced from China. The Chinese government's approach to establishing dominance in global supply chains has been systematic, requiring coordination between industrial policy, domestic geological exploration, and commercial engagement in resource-rich developing countries, all supported by substantial state funding.

Chinese firms have built up economies of scale in extracting, separating, and processing critical materials, steadily increasing market share at the expense of other producers. In their natural form, many critical materials are mixed with other ores and minerals, some of which are radioactive, like thorium. Isolating these materials can be a highly polluting process that requires expensive technology to safely contain toxic byproducts, but China has enabled its domestic processing industry to undercut established international competitors by ignoring environmental costs and labor standards.¹³⁴ Chinese mining companies have also secured access to critical materials outside of China's borders, such as cobalt and lithium.¹³⁵ This ready supply of processed materials makes China a global price setter, and grants Chinese components manufacturers—the midstream segment of the supply chain—cheap and abundant access to these materials.¹³⁶

*These 13 minerals are: aluminum, for which China produced 54 percent of the global total in 2017; antimony (72 percent); arsenic (69 percent); bismuth (80 percent of refinery production, rather than mine production); fluor spar (62 percent); gallium (94 percent); germanium (56 percent, excluding U.S. production); graphite (70 percent); magnesium metal (89 percent); rare earths (80 percent); tellurium (62 percent); tungsten (82 percent); and vanadium (56 percent). U.S. Department of the Interior and U.S. Geological Survey, *Mineral Commodity Summaries 2019*, February 2019, 21, 23, 25, 35, 61, 63, 69, 73, 103, 133, 167, 179, 181. Richard Silbergliet et al., "Critical Materials: Present Danger to U.S. Manufacturing," *RAND Corporation*, 2013, xii, 3.

Military-Civil Fusion and New and Advanced Materials

Efforts to leverage advances in Chinese commercial materials production toward military applications have a decades-long history and focus especially on catching up in materials used in aviation. For example, in implementing the 863 Plan, Chinese firms had for years struggled to produce high-grade carbon fibers used in military applications because of their lightness and strength. In 2005, an 863 Plan review committee approved Chinese fishing tackle maker Weihai Guangwei to develop carbon fiber for the military; today it is one of the PLA's largest suppliers of high-grade carbon fiber, and is credited with ending China's dependence on foreign sources.¹³⁷

At the same time as China's military is closing the gap for high-performance materials used in aviation, it is also investing in emerging applications of new materials that may give its weapons systems an advantage over the United States. China has reportedly succeeded in using metamaterials to reduce the detectability of its military aircraft by radar.¹³⁸ Furthermore, China's patenting in metamaterials is highly concentrated in areas with dual-use potential, like antennae, suggesting a research focus on potential military advances. 41 percent of Chinese metamaterials patents through 2017 are in antennae versus 19 percent for the United States.¹³⁹

Energy Storage

China has pursued advances in harnessing and storing renewable energy sources (e.g., hydropower, solar, and wind energy), as well as development of nuclear power to reduce its dependence of fossil fuels (both for environmental and strategic reasons) and to build capacity in clean energy technology.¹⁴⁰ Environmental objectives were initially secondary to these goals, and economic planners encouraged the development of "green technology" as part of China's overall industrial growth—China's solar technology was developed almost purely for export, rather than domestic use.¹⁴¹ Through heavy subsidization and both licit and illicit technology transfers, China emerged as a testbed for applying innovations in renewables technology.¹⁴² It has established itself as a leading exporter in solar panels and wind energy, displacing market incumbents like Danish turbine manufacturer Vestas and General Electric.¹⁴³ China's concept of green technology extends to all non-fossil fuel sources, and the acquisition of foreign technologies and push to increase installed capacity of clean energy also helped it develop a strong domestic supply chain in nuclear reactor components.¹⁴⁴

Though Chinese firms succeeded in becoming globally dominant in wind and solar, industrial policies emphasizing top-down pursuit of quantitative targets led to substantial wasted investment and created overcapacity.¹⁴⁵ Part of China's success is owed to dumping this excess capacity on world markets, which drove down prices to the point that higher quality and more innovative products developed by U.S. firms were no longer competitive.¹⁴⁶ An investigation concluded in December 2014 by the U.S. Department of Commerce found that Chinese solar panels and panel components exported to the United States sold at between 21 and 62 percent below fair market price.¹⁴⁷ Though the United State imposed antidumping and countervailing duties in response, a 2018 follow up Section 201

Investigation by the Office of the U.S. Trade Representative found Chinese manufacturers evaded duties by locating production in other countries, prompting a 60 percent drop in price and 500 percent surge in imports that effectively rendered domestic U.S. production nonviable by 2017.¹⁴⁸ Currently, China is repeating many of the same industrial policies in growing its lithium-ion battery production capacity to serve its ambitions to become the leading new energy vehicle manufacturer.¹⁴⁹

China's Policy Objectives and Current Capabilities in Energy Storage

China's production capabilities in lithium-ion batteries grew out of the government's concerted effort to dominate new energy vehicle production, as China has yet to indigenously develop internal combustion autos that compete with foreign producers.¹⁵⁰ After new energy vehicles were selected as one of seven Strategic Emerging Industries by state planners in 2010, China's provincial and local governments quickly built up local battery production. However, without consistent standards for batteries and charging stations, this resulted in overcapacity and a fragmented national market.¹⁵¹ This accelerated investment in production capacity occurred with comparatively little investment in technology, locking factories into producing current lithium-ion technology, even if alternative forms prove more viable. Nonetheless, the market impact is clear: China increased global lithium-ion battery exports from \$4.8 billion in 2013 to \$8.0 billion in 2017.¹⁵²

Since 2016, the Chinese government has focused on consolidating the industry, implementing consistent standards across provinces and building a handful of national champions, including Shenzhen-based BYD, the world's largest manufacturer of cellphone batteries, and Contemporary Amperex Technology Co., Ltd., now the world's largest manufacturer of lithium-ion batteries.¹⁵³ In 2018, China accounted for 61 percent of global lithium-ion battery production capacity, according to the Paulson Institute.¹⁵⁴ The United States accounted for less than 10 percent, almost all of which was attributable to Tesla's Gigafactory* in Nevada.¹⁵⁵

Bloomberg Energy estimates China's total planned production of batteries would grow from 86.8 to 217.2 gigawatt hours (GWh) annually.¹⁵⁶ The national champions' plans focus on expansion of mega factories comparable to the Gigafactory, which would introduce scale economies that bring down the price per unit.¹⁵⁷

U.S.-China Competition in Energy Storage

The United States has lost many of its major battery manufacturers, including several to Chinese acquisitions.† Since 2015, the Unit-

*Tesla claims its factory is the world's largest, currently producing 20 GWh per annum, with plans to expand to 35. Kirsten Korosec, "Tesla, Panasonic Modify Expansion Plans for Gigafactory," *TechCrunch*, April 11, 2019; Damien Ma and Neil Thomas, "China Is Building the Batteries of the Future," *Foreign Policy*, April 2, 2019.

† Prominent examples include Massachusetts Institute of Technology spinoff A123 Systems and Aquion Technologies, both of which were acquired for low valuations after declaring bankruptcy. Chinese car parts maker Wanxiang Group acquired A123 Systems' automotive-battery unit, which accounted for the vast majority of the company, in 2012 for \$256.6 million, only three years after the firm received a \$249 million grant from the Department of Energy. In 2017 a subsidiary of China Titans Energy Technology Group acquired long duration energy storage firm Aquion for \$9.2 million, a small fraction of the \$190 million it had raised in VC funding. Christian Roselund,

ed States has sourced around 50 percent of imported lithium-ion batteries from China.¹⁵⁸ In 2018, the United States imported \$1.5 billion worth of lithium-ion batteries from China, accounting for 47 percent of total imports, and 36 percent more than the \$1.1 billion it produced domestically.¹⁵⁹ Imports from China also total more than imports from the United States' next biggest suppliers, Japan (\$520 million) and South Korea (\$744 million), combined.¹⁶⁰ Moreover, while Panasonic and LG Chem are still major players in rechargeable battery production, China's planned mega factories may lift it ahead of competitors, further increasingly global dependency on China.¹⁶¹ Batteries are heavy and expensive to ship, so China will likely use its strong market position to establish or acquire production facilities close to automakers in other countries.¹⁶²

In addition to accounting for 61 percent of global production, China also has substantial control of the supply chains for materials used in lithium-ion battery production. Upstream, it produces 77 percent of refined cobalt globally, a 10 percent increase in market share from 2012, and it produced 70 percent of the world's graphite in 2018.¹⁶³ Midstream, China accounts for a significant portion of the four main components used in assembling batteries: 45 percent of separators, 66 percent of anodes, 39 percent of cathodes, and 64 percent of electrolytes.¹⁶⁴

Military-Civil Fusion and Energy Storage

China's expanded capacity in new energy vehicle batteries will likely have spillover benefits in other applications that require lightweight batteries and batteries with increased storage capacity. Both these features could change military dynamics by increasing China's ability to project force without refueling.¹⁶⁵ Currently, China is reportedly developing lithium-ion batteries to power air-independent propulsion submarines, which can last underwater much longer than conventional diesel-powered submarines.¹⁶⁶ Advanced batteries can also be used to power unmanned aerial vehicles (UAVs) with strike capabilities or reconnaissance drones.¹⁶⁷

Aside from converting civilian capabilities to military use and vice-versa, military-civil fusion aims to strengthen the economic health of China's defense sector. Battery and fuel cell manufacturer China Shipbuilding Industry Group Power Co. is a textbook example: the Mao-era company was established to supply the PLA Navy and, after a series of state-directed mergers, it derives 20 percent of its revenue from defense sales, 20 percent from commercial marine products, and another 60 percent from other civilian products, such as supplying Mercedes, Audi, and BMW's conventional automobiles with batteries in the Chinese market.¹⁶⁸ The restructured state-owned enterprise is being showcased as an example of revitalizing China's defense industrial base through economic reforms.¹⁶⁹ At the same time, China Shipbuilding Industry Group Power Co. continues to pursue dual-use markets, such as nuclear marine propulsion and fuel cells.¹⁷⁰

¹⁵⁸"China Titans Swoops up Aquion for \$9.2 Million," *PV Magazine*, July 26, 2017; Patrick Fitzgerald, "Chinese Firm Wins Auction for U.S.-Backed Battery Maker," *Wall Street Journal*, December 9, 2012; A123, "Our Story, Leadership, and Locations – Overview."

Civil Nuclear Power

In addition to transport and digital infrastructure projects, China has used BRI to build future export markets for its nuclear reactors and raise its international profile. At present, China has only exported its indigenously developed Hualong One reactor to Pakistan and is negotiating construction of a reactor in Argentina.¹⁷¹ However, it has signed agreements to establish future cooperation with several sub-Saharan African countries, including Kenya, Sudan, and Uganda.¹⁷² These agreements either explicitly involve China exporting its Hualong One reactor, or lay the groundwork for China to become a major exporter of components and services like waste disposal and personnel training.¹⁷³ China General Nuclear Power Group (CGN) has also submitted a proposal to build a small plant in Namibia, where it also owns and operates the world's second-largest uranium mine.¹⁷⁴ China has also formed partnerships with advanced economies to gain know-how and increase its credibility as an exporter, most notably CGN partnering with Électricité de France to finance the Hinkley C Reactor in the UK.*¹⁷⁵

Influence in Fourth Generation of Reactors

Chinese nuclear companies are also keen to gain a foothold in the fourth generation of nuclear reactors,† and have sought out partnerships to develop advanced reactors and gain influence in international steering bodies.¹⁷⁶ Seattle-based reactor designer TerraPower was developing an advanced reactor with China National Nuclear Corporation, but shelved the project in response to October 2018 regulations from the U.S. Department of Energy on nuclear technology transfers to China. China National Nuclear Corporation is also developing two advanced reactors with CANDU, a subsidiary of the Canadian engineering firm SNC-Lavalin.¹⁷⁷

A latecomer to the Generation-IV International Forum, an international body working to identify six types of reactors for the next generation of nuclear technology, China is trying to increase its influence through investing heavily in domestic trials of the reactors under consideration.¹⁷⁸ Lower demonstration costs from Chinese nuclear power firms' readiness to fund R&D and China's robust domestic supply chain for reactor components make it an attractive destination to test new reactor designs.¹⁷⁹

U.S.-China Competition in Nuclear Power

Historically, the United States was a leading exporter of nuclear power technologies and exercised a dominant role in setting global nuclear governance norms through its own Nuclear Regulatory

*The planned reactor at Hinkley Point C has been met with fierce pushback from within the UK due to high costs, questions over safety, and concerns about a Chinese company owning a 33 percent stake in critical infrastructure, as well as alarm over GCN's 2016 espionage indictment for attempting to steal U.S. nuclear technology. The U.S. Department of Commerce added CGN to the Entity List in August 2019, and the Department of Energy introduced a presumption of denial for exports to CGN in October 2018, citing concerns that civilian technology was being diverted to military use. Christian Shepherd, "US Blacklists Chinese Nuclear Company Over Theft of Military Tech," *Financial Times*, August 15, 2019; Holly Watt, "Hinkley Point: the 'Dreadful Deal' Behind the World's Most Expensive Power Plant," *Guardian*, December 21, 2017.

†The third generation of nuclear power included Westinghouse's AP-1000. The international body overseeing the third generation, the Multinational Design Evaluation Program, was launched by the U.S. Nuclear Regulatory Agency and France's Nuclear Safety Authority. *World Nuclear Association*, "Generation IV Nuclear Reactors," April 2019.

Commission and multilateral bodies like the International Atomic Energy Agency.¹⁸⁰ While the United States retains leadership in advanced reactor design, the decline of the United States' reactor components production and lack of domestic demand make it likely that advanced reactor demonstration will occur in other markets.¹⁸¹ Between decreased exports and low domestic appetite for R&D of advanced reactors, the United States is in danger of losing technological leadership and its influence in international rule setting for nuclear safety and security.¹⁸² Additionally, because of the high costs of installation and long lifecycle of reactors, if the United States does not participate in the next wave of global reactor installation, it will likely be cut off from reentering lost markets for decades.¹⁸³

Implications for the United States

U.S. technological leadership and the U.S. approach to innovation are under threat in areas that will likely underpin the next generation of technology advancement. At present, the United States retains leadership at the beginning and end of the supply chain for many advanced technologies, which tend to capture the most value.* It produces a substantial portion of foundational research that precipitates technological breakthroughs, and develops many of the most innovative components to advance niche applications, which often set the direction for and trickle down into mass market use. Despite these advantages, U.S. economic competitiveness and national security are at risk from China's far more aggressive efforts to translate basic research to commercial application, systematic approach to controlling supply chains, attempts to influence international standards setting, and other technology acquisition strategies.

Loss of U.S. production to China limits gains from innovation in manufacturing processes, while China's dominance of global supply chains for critical materials and components creates further risks to U.S. economic and national security.¹⁸⁴ Cheaper access to raw materials and components compounds market distortions from Chinese industrial overcapacity that undermine returns on innovation, deterring U.S. firms from developing more advanced technologies. In seeking to build an economic order that benefits Chinese firms, the Chinese government is also promoting its own version of standards and using commercial diplomacy to further its influence in international governance. The confluence of these threats is most acute in emerging technologies like AI, for which the Chinese government is pursuing a systematic plan to achieve economic and military superiority.

Valley of Death

While the U.S. government funds some basic research and offers incentives like the R&D tax credit to spur innovation, the Chinese government uses prescriptive and interventionist methods to build supply, generate demand, and guarantee a market for nascent in-

*The founder of Taiwan electronics maker Acer, Stan Shih, described the profitability of each step of a global value chain as forming a "smiling curve," because upstream activities like R&D and downstream activities like marketing and aftersales service have the most value added, while manufacturing, in the middle, has the least value added. *United Nations Conference on Trade and Development*, "Tracing the Value Added in Global Value Chains: Product-Level Case Studies in China," 2015, 2.

dustries. China's approach helps new technologies overcome obstacles to commercialization, often referred to as "the valley of death."* For instance, China jump-started its new energy vehicle industry through heavy purchase subsidies offered only for domestic vehicles, top-down industry consolidation, and building out urban charging infrastructure.

Coupled with China's extensive domestic supply chains for components, similar policies lower the costs of innovation, incentivizing firms to prototype and demonstrate new technologies, like advanced nuclear reactors, in China. Due to this supportive policy environment, China is positioned to be a primary destination for research collaboration and to leverage its strong manufacturing capabilities to gain access to new markets. As China moves into new subdomains of AI such as AVs, it may be able to catch up to the United States or more successfully commercialize an inferior technology, due to its ability to prototype cheaply and rapidly and its willingness to provide policy support for emerging industries.

Spillover from advances in other technologies can present further risk to the United States. For example, China's existing advantages in commercial drone manufacturing will improve as Chinese battery manufacturers develop cheaper, lighter, and longer-lasting lithium-ion batteries. This positions China to dominate in production of UAVs for industrial and service applications like fertilizing drones or delivering drones, even if the United States has more sophisticated AI to drive UAVs.

Home Alone Effect

Once the critical parts of the U.S. manufacturing ecosystem move overseas, it is difficult to maintain leadership at the high end of the value chain because the United States will no longer benefit from innovation that happens on the shop floor. For instance, most of the advances enabling China to become a leader in lithium-ion battery production are improvements in the manufacturing process, rather than advances in the underlying technology. In fact, the foundations of China's lithium-ion battery industry stem partially from acquisitions of U.S. companies that struggled to maintain profitability in the United States.

China's efforts to localize supply chains deepen this trend. For example, ChemChina's acquisition of German machine tooling firm KraussMaffei will help China improve its engineering of composite materials and reduce dependence on foreign providers. Loss of leadership in commercializing materials research would leave major U.S. export industries like aerospace and automotive especially vulnerable to competition, both from the loss of a key export market in China and with Chinese firms in third country markets.

*The "valley of death" refers to the period when basic research has established the potential viability of a new technology, but lack of funding to take the technology from the laboratory to early stages of commercialization prevents further development of that technology. Timothy M. Persons et al., "Nanomanufacturing: Emergence and Implications for U.S. Competitiveness, the Environment, and Human Health," *U.S. Government Accountability Office*, GAO-14-181SP, January 2014, 25–27.

China's Growing Influence in International Standards Setting

Influencing global standards-setting bodies in favor of Chinese firms and priorities is a key part of China's technonationalist strategy. The 2018 revision of China's Standardization Law includes provisions aiming to strengthen the role of Chinese standards in international bodies and promote Chinese standards through BRI.¹⁸⁵ Establishing influence in the global standards-making process is central to China's plans to become a world leader in AI. Similarly, China's nuclear power development focuses on hosting prototypes for the next generation of reactors and positioning itself to become a leading exporter, both of which would allow it increased say in multilateral governance organizations. Chinese institutions are also expanding their participation in international standards-making bodies like the Institute of Electrical and Electronics Engineers and International Standards Organization, and may wield their influence to develop standards that favor Chinese technologies foundational to developing AI subdomains.¹⁸⁶

China's government has been especially active in international standards setting for technologies that will support application of AI, such as the Internet of Things and 5G, aggressively seeking to place Chinese nationals or companies in leadership positions within the International Telecommunication Union and other bodies focused on connected technologies and coordinating between firms to ensure their participation in international processes is unified.¹⁸⁷ These efforts could undermine the United States' ability to set international norms for the application of sensitive technologies and control their proliferation. In conjunction with commercial diplomacy aimed at fostering export markets and science and technology collaboration through BRI, Chinese standards-making bodies could wield expanded international influence to promote alternative technology standards that exclude U.S. firms.

Strategic Threat from Military-Civil Fusion

China's military-civil fusion effort to make the military and civilian sectors mutually supportive poses a range of threats to U.S. national security and economic competitiveness. Increased collaboration between China's military and civilian sectors and the PLA's adoption of next-generation systems stand in contrast to the United States' dependence on legacy platforms and weapons.¹⁸⁸ As commercial, rather than military, applications increasingly define the technological frontier, the United States is at risk that advances in AI, new materials, and new energy provide absolute or asymmetric advantages in warfare. Although China's current capabilities do not appear to indicate any immediate substantial threat, the intent of China's industrial policy and military strategy is clear.

China's broad-based efforts to harness civilian technology for military use have focused especially on AVs, including unmanned vessels and drones. For example, Chinese firms and research institutions have achieved some drone swarm capabilities that surpass the United States.* Militarized application of commercial AI developments

*Drones swarms use AI to provide an asymmetric advantage against high-value targets like aircraft carriers or submarines, as drones are cheap to produce and maintain, and have high survivability in swarms. Chinese aerospace research firm China Electric Technology Corporation

could also enable greater autonomy in other advanced weapons systems, such as hypersonic glide missiles, and allow the PLA to deploy intelligent logistics and virtual reality combat simulations.¹⁸⁹ Facial recognition, voice recognition, and other biometric data analysis are key enabling technologies within China's surveillance state, and in the future the PLA may leverage big data and AI to enhance propaganda and psychological operations.¹⁹⁰

On a national scale, the sheer breadth of China's technology demonstration platforms and local initiatives under the umbrella of military-civil fusion allows the PLA to identify which civilian enterprises or research institutes have produced the most promising technologies for militarization. The extensive and opaque network of connections between civilian entities and China's military sharply increases the risk that U.S. universities and corporations become partners in military-civil fusion, as research and collaboration ostensibly conducted by the civilian sector can be made freely deployable by China's military.¹⁹¹ The decades-long pattern of Chinese research partnerships, acquisitions, and economic espionage focused on sensitive technologies makes clear that obtaining scientific knowledge to close gaps in military capabilities is an unwavering priority, and the influence of military institutions extends far into China's civilian sector.

also holds the record for largest fixed-wing aerial drone swarm, at 119. Unmanned vessel manufacturer Yunzhou Tech has reportedly tested underwater "shark swarms." U.S.-China Economic and Security Review Commission, *Hearing on Technology, Trade, and Military-Civil Fusion*, written testimony of Elsa Kania, June 7, 2019, 25; Elsa Kania, "Swarms at War: Chinese Advances in Swarm Intelligence," *China Brief* 17: 9, July 6, 2017.

Addendum I: China's Development of AI Technologies

AI Technology	Applications	Key Industrial Policies	China's Current Capabilities	Key Companies
Machine Learning, which includes Deep Learning	Foundational for other areas of AI	Cultivating talent in advanced machine learning and leading in machine learning theory are cornerstones of China's Strategy to dominate in global AI by 2030, unveiled in 2017. The National Development and Reform Commission has also tapped search engine giant Baidu to lead a nationwide online deep learning lab in coordination with Tsinghua and Beihang universities.	Chinese researchers have closed the gap with the United States in publication volume, but China lacks talent in the top echelon. Engineers focus mostly on commercial gains, not fundamental breakthroughs. China's advances in sheer volume of data are curtailed by its ability to label and analyze this data. China also lags in producing chips optimized for machine learning.	General: Alibaba, Tencent, Baidu; Chips: Cambricon (used in Huawei phones), Horizon Robotics
Natural Language Processing (NLP)	Speech/voice recognition, information retrieval/extraction, query answering, sentiment analysis	NLP is listed as one of eight "key common technologies" to be developed in China's AI strategy. Chinese universities are partnering with companies to develop NLP applications, and several Chinese industry associations have launched respected conferences.	In research, China has been second behind the United States for five years. In industry, China is leading in chatbots and is developing machine translation for Chinese to languages in BRI countries. iFlytek is a leader in speech recognition for spoken Chinese.	Baidu, iFlytek; Microsoft, Research Asia is a major player for machine translation and chatbots.
Computer Vision and Biometrics	Facial and other image recognition, machine vision (analyzing images for inspection and process control)	China's smart cities initiative promotes surveillance technology, and many companies have contracts with public security bureaus. Computer vision accounted for 35 percent of China's AI market in 2017.	Numerous facial recognition companies, including many startups, are powering China's surveillance state. In turn, internet giants like Huawei are integrating this tech into—and exporting—"Safe City" systems.	SenseTime, Yitu, Megvii (Face++), Xloong, Zoloz, DeepGlint, Huawei

Addendum I: China's Development of AI Technologies—Continued

AI Technology	Applications	Key Industrial Policies	China's Current Capabilities	Key Companies
Robotics	Industrial robots, commercial service robots, and personal service robots	China's Intelligent Manufacturing Plan, a supplement to Made in China 2025, called for extensive investment in industrial robots; numerous provincial funds have been set up to upgrade China's manufacturing capabilities.	China's domestic sales of industrial robots have increased significantly, but it remains heavily dependent on the United States, Europe, and Japan for robotics components. It has formed joint ventures with several EU-based firms.	Siasun, GSK CNC Equipment, Effort, Estun, Wuhan Huazhong
AVs and other Unmanned Autonomous Systems	Passenger vehicles, delivery vehicles, UAVs like drones	AVs: China legalized AV testing in 2017 and launched a national strategy in December 2018 emphasizing research funding and special test zones. It may also pursue protectionist measures. Drones: Policy supports developing industrial application (e.g., in agriculture).	AVs: China is three to five years behind global leadership in algorithms that enable successful driving, but likely to catch up. It is farther behind in sensors, computing platforms, and systems integration. Drones: DJI controls 70 percent of the global consumer market.	AVs: Baidu, PonyAI, SAIC; Drones: China Electronics Technology Group Corporation, DJI

Note: Other notable applications of AR technologies include virtual and augmented reality, healthcare, and finance. Underlying these applications are chips optimized for AI and sensors.

Source: Various.¹⁹²

Addendum II: Select New Materials and Applications

New Material Category	Applications
<p>Metamaterials: Artificial composites with electromagnetic properties that do not occur in natural materials, such as the ability to absorb rather than reflect light or view microscopic phenomena with fidelity not possible from natural lenses.</p>	<p>China's stealth aircraft uses metamaterials, likely to enhance its antennas and jamming capabilities, and China is also reportedly using metamaterials to experiment with changing how its nonstealth fighters appear on radar. Nonmilitary uses of metamaterials may someday include superlenses used to observe viruses or DNA.</p>
<p>Nanomaterials: Materials with an external dimension or internal structure on a nanoscale (less than 100 nanometers), generally refined from naturally occurring materials. Well-known examples include graphene and carbon nanotubes.</p>	<p>Current mass market applications include filtration, textiles, cosmetics, environmental protection, and food packaging. Many more potential applications are in development. Graphene lens, a single atomic layer of carbon atoms, is especially useful in electronic applications due to its high conductivity, as well as in touchscreens or for other optical applications due to its transparency. Small amounts of graphene oxide, a powder of graphene crystals, can be mixed into many materials to increase their strength or absorption.</p>
<p>Electrical Materials: Organic semiconductors, polymer-based electronics, and materials used in quantum computation, high-density energy storage, and low power displays.</p>	<p>Fabrication of quantum computers and other advances in electronic computing can break through the storage and speed limitations of silicon semiconductors. Researchers are pursuing manipulation of carbon nanotubes, exploitation of flaws in conventional semiconductors, or materials that send signals via trapped ions or manipulation of light particles (photonics).</p>
<p>Biomaterials: Any material engineered to interact with a living system, either for a therapeutic function (e.g., tissue regeneration, treating an illness), or to monitor a system and inform diagnosis.</p>	<p>For treatment, application of nanomaterials to replacement and transplant surgery has enabled 3D printing of implants to integrate with the body's systems, and highly conductive biomaterials have also been used to reconnect severed nerves. For diagnosis, biosensors like neural implants can gather medical data to tailor treatment to individual patients or model medical experiments computationally with AI.</p>

Note: Electrical and Biomaterials are categories unified by application, rather than chemical composition, and may include nanomaterials. Graphene, for instance, has extensive electronic applications, some of which also have medical applications.
Source: Various.¹⁹³

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SECTION 3: GROWING U.S. RELIANCE ON CHINA'S BIOTECH AND PHARMACEUTICAL PRODUCTS

Key Findings

- China is the world's largest producer of active pharmaceutical ingredients (APIs). The United States is heavily dependent on drugs that are either sourced from China or include APIs sourced from China. This is especially true for generic drugs, which comprise most prescriptions filled in the United States. Drug companies are not required to list the API country of origin on their product labels; therefore, U.S. consumers may be unknowingly accepting risks associated with drugs originating from China.
- The Chinese government has designated biotechnology as a priority industry as a part of its 13th Five-Year Plan and the Made in China 2025 initiative. The development of China's pharmaceutical industry follows a pattern seen in some of its other industries, such as chemicals and telecommunications, where state support promotes domestic companies at the expense of foreign competitors.
- China's pharmaceutical industry is not effectively regulated by the Chinese government. China's regulatory apparatus is inadequately resourced to oversee thousands of Chinese drug manufacturers, even if Beijing made such oversight a greater priority. This has resulted in significant drug safety scandals.
- The U.S. Food and Drug Administration (FDA) struggles to guarantee the safety of drugs imported from China because of the small number of FDA inspectors in country, the large number of producers, the limited cooperation from Beijing, and the fraudulent tactics of many Chinese manufacturers. Because of U.S. dependency on China as a source of many critical drugs, banning certain imports due to contamination risks creating drug shortages in the United States.
- As a result of U.S. dependence on Chinese supply and the lack of effective health and safety regulation of Chinese producers, the American public, including its armed forces, are at risk of exposure to contaminated and dangerous medicines. Should Beijing opt to use U.S. dependence on China as an economic weapon and cut supplies of critical drugs, it would have a serious effect on the health of U.S. consumers.
- Lack of data integrity in China presents challenges for U.S. and Chinese health regulators. In 2016, the China Food and Drug Administration investigated 1,622 drug clinical trial pro-

grams and canceled 80 percent of these drug applications after it found evidence of fraudulent data reporting and submissions of incomplete data, among other problems.

- China places great emphasis on genomic and other health-related data to enhance its biotech industry. Domestically, China established national and regional centers focused on big data in health and medicine. Investment and collaborations in the U.S. biotech sector give Chinese companies access to large volumes of U.S. medical and genomic data, but U.S. companies do not get reciprocal access.
- Foreign firms continue to face obstacles in China's health market. These obstacles include drug regulatory approval delays, drug pricing limitations, reimbursement controls, and intellectual property (IP) theft. U.S. companies must also compete with Chinese drug companies that introduce generic products or counterfeit drugs to the Chinese market shortly after a foreign patented drug is introduced.
- China is the largest source of fentanyl, a powerful synthetic opioid, in the United States. Although the Chinese government made multiple commitments to curtail the flow of illicit fentanyl to the United States, it has failed to carry out those commitments.

Recommendations

The Commission recommends:

- Congress hold hearings assessing the productive capacity of the U.S. pharmaceutical industry, U.S. dependence on Chinese pharmaceuticals and active pharmaceutical ingredients (APIs), and the ability of the U.S. Food and Drug Administration (FDA) to guarantee the safety of such imports from China, with a view toward enacting legislation that would:
 - Require the FDA to compile a list of all brand name and generic drugs and corresponding APIs that: (1) are not produced in the United States; (2) are deemed critical to the health and safety of U.S. consumers; and (3) are exclusively produced—or utilize APIs and ingredients produced—in China.
 - Require Medicare, Medicaid, the U.S. Department of Veterans Affairs, the U.S. Department of Defense, and other federally funded health systems to purchase their pharmaceuticals only from U.S. production facilities or from facilities that have been certified by the FDA to be in compliance with U.S. health and safety standards and that actively monitor, test, and assure the quality of the APIs and other components used in their drugs, unless the FDA finds the specific drug is unavailable in sufficient quantities from other sources.
 - Require the FDA, within six months, to investigate and certify to Congress whether the Chinese pharmaceutical industry is being regulated for safety, either by Chinese authorities or the FDA, to substantially the same degree as U.S. drug manufacturers and, if the FDA cannot so certify, forward to Congress a plan for protecting the American people from unsafe or contaminated drugs manufactured in China.

- Congress direct the U.S. Government Accountability Office to update its 2016 report, *Drug Safety: FDA Has Improved Its Foreign Drug Inspection Program, but Needs to Assess the Effectiveness and Staffing of Its Foreign Offices*. The updated report should focus on the U.S. Food and Drug Administration's ability to conduct inspections of Chinese drug manufacturing facilities.
- Congress consider legislation requiring generic drug manufacturers that sell medicines to the U.S. Department of Defense and U.S. Department of Veteran Affairs to disclose which essential drugs are at risk of shortage or supply disruption because the relevant products, active pharmaceutical ingredients, chemical intermediates, and raw materials contained in them are sourced from China.
- Congress enact legislation requiring drug companies to list active pharmaceutical ingredients and their countries of origin on labels of imported and domestically produced finished drug products.
- Congress enact legislation creating a risk-based system making importers of active pharmaceutical ingredients (APIs) and finished products liable for any health risks incurred by consumers in the event the product is proven unsafe due to contamination, mislabeling, or other defects. Special attention should be paid to finished drug products imported from China or containing APIs sourced from China.

Introduction

China is a global source of critical generic drugs and pharmaceutical ingredients, as well as health-related products like dietary supplements, biotechnology products, and medical devices. It is also the main source of APIs globally. Even India—the world's leading supplier of generic drugs—relies on China for 80 percent of its APIs.¹ The United States sources 80 percent of its APIs from overseas,² and a substantial portion of U.S. generic drug imports come either directly from China or from third countries like India that use APIs sourced from China.³ Drug companies are not required to list the API country of origin on their product labels; therefore, U.S. consumers may be unknowingly accepting risks associated with drugs originating from China.

China's government has invested significant resources into the development of biotechnology products and genomics research, but has not allocated the same resources toward developing necessary regulatory oversight. As a part of this effort, the Chinese government and affiliated companies and institutions have used licit and illicit means to accumulate personal and medical data on millions of U.S. persons in the process. China's government also encourages investments—including mergers and acquisitions, as well as venture capital (VC) investments—in U.S. biotech and health firms, leading to technology transfer that has enabled the rapid development of China's domestic industry.

U.S. health and biotech firms in China, meanwhile, continue to face regulatory and other market barriers that limit their ability to compete with Chinese firms. The Chinese government has taken steps in recent years to streamline regulatory procedures and allow

foreign medical products to enter the market more quickly. However, concerns remain over China's commitment to protecting IP rights and its continued favoritism of domestic providers of health products.

This section explores China's role in global health industries and the risks and opportunities posed for U.S. public health and national security. It also examines the activities of Chinese health and biotech firms in the United States and the ability of U.S. health and biotech firms to operate in China. Finally, the section discusses U.S.-China global health cooperation and analyzes remaining challenges in the relationship that have the potential to impede further cooperation. The section draws from the Commission's hearing on "Exploring the Growing U.S. Reliance on China's Biotech and Pharmaceutical Products," consultations with global health, pharmaceutical, and biotech industry experts, and open source research and analysis.

Definition of Key Terms

This section uses several key terms in the pharmaceutical production process. Pharmaceutical products can generally be broken down into:

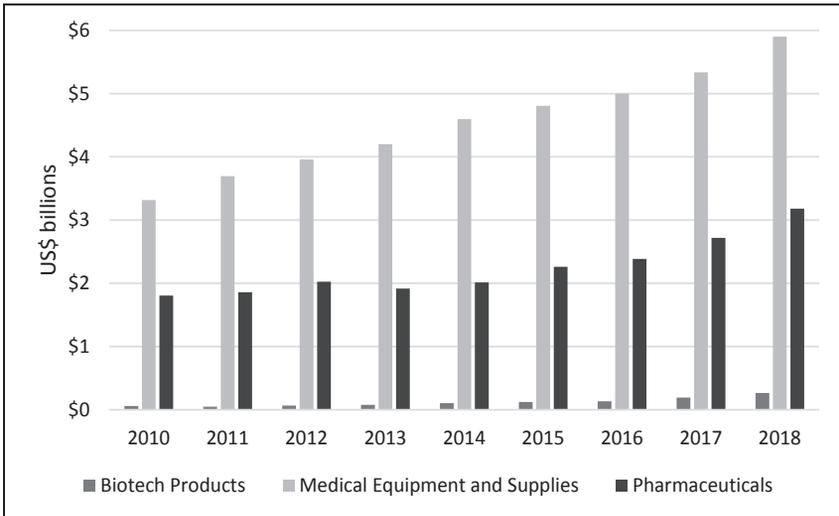
- **APIs:** The FDA defines an active ingredient as "any component that provides pharmacological activity or other direct effect in the diagnosis, cure, mitigation, treatment, or prevention of disease, or to affect the structure or any function of the body of man or animals."⁴
- **Finished dosage forms:** Finished dosage forms (FDF) are pills, capsules, and other finished products ready for sale and use. Finished dosage drug facilities produce drugs in their finished forms (e.g., tablets or capsules). The finished dosage of a drug usually contains some kind of API and inactive ingredients. Finished dosage forms can be brand name or generic drugs.
- **Biologics:** Biologics (also referred to as biological drugs or biopharmaceuticals) are products created using living organisms and can range from vaccines and tissues used in transplants to cell and gene therapies. Biologics are produced using biotechnology.
- **Biosimilars:** According to the FDA, biosimilars are biological products that are "highly similar to and have no clinically meaningful differences from" a biologic that has already been approved by health regulators.⁵

U.S. Reliance on Chinese Pharmaceutical and Medical Products

China's share of U.S.-bound exports of biotech products, medical equipment and supplies, and pharmaceuticals has been on a steady increase (see Figure 1). In 2018, U.S. imports of Chinese biotech products were \$266 million, up from \$194 million in 2017.⁶ U.S. imports of Chinese medical equipment have also increased significantly over the past decade. In 2018, for example, they increased to \$5.9

billion, up 78 percent since 2010.⁷ U.S. imports of pharmaceuticals directly from China increased to \$3.1 billion in 2018, up 17 percent year-on-year, and 76 percent since 2010.⁸

Figure 1: U.S. Imports of Health Products from China, 2010–2018



Source: U.S. Census Bureau, USA Trade Online, June 17, 2019. <https://ustrade.census.gov/data/Perspective60/View/dispvew.aspx>; U.S. Census Bureau, U.S. Trade with China in Advanced Technology Products, December 2018. <https://census.gov/foreign-trade/statistics/product/atp/2018/12/ctryatp/atp5700.htm>.

According to the FDA, in fiscal year 2018, 13.4 percent of all U.S. drug imports, by import line,* originated directly from China.† This makes China the second-largest exporter of drugs and biologics to the United States behind Canada.‡ However, the FDA acknowledges these figures understate U.S. dependence on Chinese pharmaceuticals because China is also the primary supplier of APIs for producers located in other countries.⁹ Given China's dominance of the global market for APIs, it is highly likely that most generic drugs imported into the United States contain active ingredients sourced from China.

China as a Global Source of Generic Drugs and APIs

China's pharmaceutical industry consists of more than 4,000 drug manufacturers, which in 2017 recorded revenues of \$127.8 bil-

*Import lines are products listed as separate items on entry documentation that an importer submits to U.S. Customs and Border Protection. U.S. Customs and Border Protection transmits this information to the FDA for those products that are FDA regulated. Federal Register, *Submission of Food and Drug Administration Import Data in the Automated Commercial Environment*, July 1, 2016. <https://www.federalregister.gov/documents/2016/07/01/2016-15684/submission-of-food-and-drug-administration-import-data-in-the-automated-commercial-environment>.

†According to the FDA, approximately 83 percent of drug imports from China are FDF drugs, 7.5 percent are APIs sourced directly from China, and 10 percent are animal drugs and medicated animal feed. See U.S.-China Economic and Security Review Commission, *Hearing on Exploring the Growing U.S. Reliance on China's Biotech and Pharmaceutical Products*, written testimony of Mark Abdo, July 31, 2019, 1.

‡In fiscal year 2018, 19.4 percent of all imported drugs to the United States, by import line, came from Canada. U.S. Food and Drug Administration, interview with Commission staff, October 3, 2019.

lion.¹⁰ Its national pharmaceutical market is the second-largest in the world by domestic health expenditures (behind only the United States), and is expected to expand to \$145–\$175 billion by 2022.¹¹ Unlike the United States, which produces costly, high-value compounds, China’s pharmaceutical industry primarily produces inexpensive generic drugs and pharmaceutical ingredients.¹²

Government subsidies, a robust chemical industry, IP theft, lax environmental protections, and regulations favoring domestic companies contributed to China’s emergence as the world’s largest producer of APIs. In 2008, the Chinese government designated pharmaceutical production as a “high-value-added industry” and bolstered the industry through subsidies and export tax rebates to encourage pharmaceutical companies to export their products.¹³ In 2017, China earmarked approximately \$13.2 billion for pharmaceutical research and development (R&D), and its investment in this area is expected to reach \$29.2 billion by 2021.¹⁴

China’s drug industry is built on the foundations of its robust chemical industry—which accounts for 40 percent of global chemical industry revenue—the world’s largest.¹⁵ China’s chemical companies have the capacity to produce a range of products, from fertilizer to drug ingredients, with relatively little regulatory oversight.¹⁶ Lack of robust environmental and labor protections, coupled with poor enforcement of IP laws, have also fueled the growth of China’s pharmaceutical industry.¹⁷

With the growth of China’s chemical industry and its subsequent dominance in API manufacturing, the world is becoming increasingly dependent on China as the single source for life-saving drugs. The U.S. generic drug industry can no longer produce certain critical medicines such as penicillin and doxycycline, and the APIs needed to make these antibiotics are sourced from China.¹⁸ The vastness of the global medicine supply chain and the lack of sourcing transparency for key drug ingredients can obscure early indicators of supply chain problems.¹⁹

Rosemary Gibson, senior advisor at the Hastings Center and author of *China RX*, noted in her testimony before the Commission that the United States is losing its ability to produce generic drugs because Chinese drug companies dumped low-price products into the global market, which in turn pushed U.S., European, and Indian producers out of the generic drug manufacturing business.²⁰ According to Ms. Gibson, China is seeking to disrupt, dominate, and displace U.S. pharmaceutical and other medical companies, and in doing so limit the United States’ ability to produce its own medicines, including critical antibiotics such as penicillin and even generic aspirin.²¹ She believes the United States could see its generic drug industry made uncompetitive within five to ten years due to the Chinese government’s policies (including subsidies and export incentives) that allow Chinese pharmaceutical firms to undercut prices and drive U.S. firms out of business.²²

Dependency on China Creates Supply Chain Disruption Risks

Approximately 40 percent of the generic drugs sold in the United States have just one manufacturer each, and a supply chain disruption could cause a serious drug shortage.²³ The American Medical

Association has called on the federal government to address the potential for critical drug shortages as a national security concern and offer incentives to boost domestic production of these drugs.*²⁴ The American Medical Association suggests mitigating drug shortages would require drug manufacturers to increase transparency in the global pharmaceutical supply chain by sharing information about the location of drug production sites and the causes and duration of drug shortages.²⁵ The American Medical Association also called on the U.S. government to include important drug production sites in critical infrastructure planning.²⁶

U.S. dependence on drugs from China—or drugs that use APIs from China—raises the likelihood of drug shortages should the Chinese supply be disrupted. For example, in 2017 an explosion at a Chinese factory producing APIs for the antibiotic piperacillin/tazobactam, a drug given to patients with severe infections, led to a global shortage.²⁷ Occurrences of adulteration or supply disruption not only highlight the risks of relying on China as the only source of important pharmaceutical ingredients, but also raise concerns that these drugs and other medical products could lead to adverse health impacts in the United States and elsewhere around the world. U.S. policymakers have also expressed strong concern about the impact of substandard health products on U.S. public health, and the national security implications of relying on China as a “single supplier for such lifesaving goods.”²⁸

In the past decade, U.S. consumers have been exposed to adulterated drug products made by Chinese manufacturers who employ dangerous manufacturing practices to save on cost. Last year, the FDA announced that a probable carcinogen once used in the production of rocket fuel was found in valsartan²⁹ and two other blood pressure medicines used in 30 countries by millions of people, including in the United States.†³⁰ The companies selling the contaminated medicine sourced APIs from one of China’s leading generic drug companies, Zhejiang Huahai Pharmaceutical Co., where employees ignored signs that the company’s manufacturing practice resulted in contaminated product.³¹ (For more information, see Addendum I, “FDA Letter to Zhejiang Huahai Pharmaceutical.”)

U.S. Armed Forces Vulnerable to Drug Shortages

China’s dominance as a global API producer and the United States’ growing reliance on Chinese pharmaceutical products puts U.S. consumers—including active service members and veterans—at risk if China cuts off drug supplies or hikes the cost of a given medicine during heightened geopolitical tensions. Christopher Priest, principal deputy to the deputy assistant director of healthcare operations of the Defense Health Agency, stated, “The national security risks of increased Chinese dominance of the global API market cannot be overstated . . . Should China decide to limit or restrict the delivery of APIs to the U.S. it would have a debilitating effect on U.S. domestic

*U.S. drug production involves a broad array of international players, including top international generic drug companies such as Fresenius Kabi, Apotex, and Cipla.

†As of September 2019, 140 lawsuits have been filed against Zhejiang Huahai Pharmaceutical Co., other drug manufacturers whose products were recalled, and pharmacies that filled prescriptions for valsartan. See Anna Edney et al., “Carcinogens Have Infiltrated the Generic Drug Supply in the U.S.,” *Bloomberg*, September 12, 2019.

production and could result in severe shortages of pharmaceuticals for both domestic and military uses.”³² Many of these products may be critical to life-saving or disease management regimens.

Supply shortages could significantly delay the delivery of critical medicines to the battlefield. Mr. Priest emphasized the importance of bolstering U.S. domestic manufacturing capability to provide an alternate source for critical medicines. U.S. dependence on drugs that contain APIs sourced from China can affect the availability of remedies needed to respond to a public health crisis, including incidents involving a chemical, biological, or radiological/nuclear threat.³³ For example, in 2001 the U.S. government purchased 20 million doses of doxycycline, an antibiotic used to treat individuals exposed to anthrax, from a European manufacturer that sourced the API in its drug product from China.³⁴

The Department of Defense (DOD) is responsible for purchasing pharmaceuticals and medical devices used by U.S. military hospitals both in the United States and overseas. All pharmaceuticals purchased for use in military hospitals are required to be manufactured in countries that have signed on to the Trade Agreements Act (TAA)* of 1979, to which China is not a signatory.³⁵

Although China is a non-TAA country—and is not eligible to directly receive U.S. government contracts—in the absence of other suppliers, drugs and ingredients from China may receive exemptions. The U.S. Defense Logistics Agency, which operates under DOD, estimates 25 percent of pharmaceutical ingredients used in U.S. military hospitals originate from China, even if the drugs themselves are manufactured elsewhere.³⁶ This occurs because companies in TAA signatory countries like India rely on APIs from China. In some cases, pharmaceutical companies with DOD contracts may even be manufacturing products in China, despite the company being headquartered in a TAA signatory country.† DOD contracts require that pharmaceutical suppliers disclose where they manufacture their drugs and where they source their APIs. However, since there is no national registry for API sources, Defense Logistics Agency has no means to independently determine the origin of APIs.³⁷

Mr. Priest expressed concern about supply chain disruptions and the potential for drug shortages as a result of China’s control over critical APIs.³⁸ Of the approximately 6,800 drugs DOD purchases annually, 147 are sourced from non-TAA countries.³⁹ According to Mr. Priest, the Trump Administration is in the process of identifying which of these drugs are most vulnerable to risks associated with the U.S. reliance on Chinese drug and medical products.⁴⁰

*The TAA requires products used by the U.S. government to be manufactured in the United States or in a designated country with which the United States has a free trade agreement or special trade-related arrangement. The U.S. government is able to source non-TAA-compliant products when TAA-compliant products are not available.

†The TAA requires the end product being delivered to the U.S. government to be “substantially transformed” in the United States or a “designated country identified in the Federal Acquisition Regulation (FAR).” Therefore, the location where a finished drug product is manufactured, rather than the origin of the drug’s APIs, determines whether a drug product is TAA compliant. U.S.-China Economic and Security Review Commission, *Hearing on Exploring the Growing U.S. Reliance on China’s Biotech and Pharmaceutical Products*, oral testimony of Christopher Priest, July 31, 2019, 21.

Illicit Fentanyl Flows from China

According to the U.S. Department of Justice, China is the largest source of illicit fentanyl and fentanyl-like substances in the United States.⁴¹ Fentanyl is a synthetic painkiller about 50 times more potent than heroin and 100 times stronger than morphine.⁴² Fentanyl has legitimate medical uses,⁴³ but has also become one of the most frequently abused drugs. Synthetic-opioid-related deaths in the United States rose from approximately 3,000 in 2013 to more than 30,000 in 2018, and fentanyl is now the cause of twice as many deaths as heroin.⁴⁴

As a result of ongoing U.S.-China counternarcotic negotiations, the Chinese government implemented new comprehensive measures to control “all fentanyl-like substances” in May 2019.* In September 2019, the Chinese government released a statement on fentanyl, saying that it has broadly defined “fentanyl-like substances” in order to prevent drug producers from creating new fentanyl substances not covered by the ban.⁴⁵ The statement claims that the ban has been a success thus far: “Thanks to earliest implementation of various measures, significant progress has been achieved. China’s law enforcement authorities have obtained information about 91 key enterprises and 234 key individuals involved with fentanyl-like substances across the county, and put all of them under strict supervision.”⁴⁶

The Chinese government’s decision to control all fentanyl-type substances is an important step in U.S.-China counternarcotic efforts. However, concerns remain about the Chinese government’s willingness and commitment to effectively curtail the flow of illicit fentanyl to the United States.⁴⁷ Although the Chinese government made multiple promises to the United States to address the fentanyl problem, three troubling trends speak to its failure to carry through on those commitments:

- First is a recent resurgence in fentanyl flows into the United States. In fiscal year 2019 through August, the U.S. Customs and Border Protection Office of Field Operations seized 2,350 pounds of fentanyl, a 32 percent increase over seizures in fiscal year 2018.⁴⁸
- Second is the Chinese government’s failure to arrest individuals indicted for illicit fentanyl production and trafficking. Between 2017 and 2018, the U.S. Justice Department indicted eight individuals from China for crimes related to fentanyl production, trafficking, and financing.⁴⁹ As of September 2019, all of the individuals charged remain free.⁵⁰

*According to a Chinese government announcement: “Fentanyl-type substance” means a substance having one or more of the following chemical structures compared to fentanyl: (1) the use of other acyl groups in place of propionyl groups; (2) the use of any substituted or unsubstituted monocyclic aromatic groups; a group replacing a phenyl group directly bonded to a nitrogen atom; and a substituent such as an alkyl group, an alkenyl group, an alkoxy group, an ester group, an ether group, a hydroxyl group, a halogen group, a halogenated alkyl group, an amino group, and a nitro group; (3) the use of any other group (except hydrogen atoms) instead of phenethyl. See *People’s Daily*, “Three Departments Make Joint Announcement: Regulations on Fentanyl-Type Substances to Go Into Effect May 1st,” (三部门发布公告5月1日起对芬太尼类物质实施整类管制(权威发布)) April 2, 2019. Translation. http://paper.people.com.cn/rmrb/html/2019-04/02/nw.D110000renmrb_20190402_4-02.htm.

Illicit Fentanyl Flows from China—Continued

- Third, the Chinese government continues to provide value-added tax (VAT) rebates and other incentives to chemical producers, including fentanyl manufacturers.⁵¹ As of September 2019, China’s State Administration of Taxation’s website shows fentanyl receives a 10 percent VAT rebate and several other fentanyl-related products receive a 13 percent VAT rebate.⁵²

U.S. Government Oversight of Health Imports from China

Both Chinese and U.S. health regulators face challenges in inspecting Chinese drug manufacturing facilities for quality and adherence to manufacturing standards. The sheer size of China’s pharmaceutical industry, further enlarged by the integration of China’s pharmaceutical and chemical industries, impacts regulatory capacity. Corruption and fraud persist in China’s drug industry due to poor regulatory oversight, leading to the production of adulterated and ineffective medicine. These regulatory issues have directly impacted the health of consumers.

In bilateral forums, such as the now discontinued U.S.-China Strategic and Economic Dialogue (S&ED),* China has acknowledged the need to work toward improving the quality of its generic drug and API exports. During the sixth meeting of the S&ED in 2014, the United States and China agreed to “advance the shared goal of ensuring access to safe and high-quality medicines for patients and protect supply chain integrity ... and to fight against illegal actions to manufacture, distribute, and export counterfeit and substandard active pharmaceutical ingredients.”⁵³ Although China has committed to better oversight of its drug industry, poor manufacturing practices, corruption, and product contamination persist five years later.

Chinese Health Regulators Struggle with Oversight

As China’s pharmaceutical industry expanded rapidly over the years, its regulatory framework struggled to maintain strong oversight. Understaffing and retention issues have impacted the ability of China’s Food and Drug Administration (renamed China’s National Medical Products Administration in 2018), the government entity responsible for oversight of food and drug imports and products, to regulate effectively. Furthermore, the fragmented nature of China’s regulatory framework itself has caused difficulties with intergovernmental coordination and created unclear jurisdictions for oversight responsibilities.⁵⁴

Corruption, fraud, poor product quality, or contamination have occurred due to weak oversight capacity. In her testimony before the Commission, Katherine Eban, investigative journalist and author of *Bottle of Lies: The Inside Story of the Generic Drug Boom*, cited data that show Chinese drug manufacturers received more

*The S&ED, established during the Obama Administration, was a bilateral forum for the United States and China to discuss issues within U.S.-China relations. The dialogue was held annually from 2009 to 2016.

warning letters* from the FDA over the past decade than any other country.⁵⁵

One of the most notorious scandals occurred in 2007, when the former head of China's then State Food and Drug Administration, Zheng Xiaoyu, confessed to accepting bribes from drug companies to approve hundreds of untested medicines.⁵⁶ A number of food and drug quality scandals have arisen since then, including a vaccine scare in 2018 after health regulators discovered that Changsheng Biotechnology Co. and a separate company in Wuhan falsified data to obtain approval for a diphtheria, pertussis, and tetanus (DPT) vaccine, affecting over 250,000 dosages and 400,000 injections, respectively.⁵⁷ The incident stirred up public distrust in China toward Chinese drugs, especially after faulty vaccines led to the hospitalization of hundreds of children and some deaths in China in 2010 and 2013.⁵⁸

The Chinese government has made efforts to crack down on corruption and consolidate its food and drug regulatory regime to improve drug quality and bolster China's image as a global producer of pharmaceuticals. In 2016, China's Food and Drug Administration investigated 1,622 clinical trial programs of drugs that were pending production approval and canceled 80 percent of these drug applications after it found evidence of fraudulent data reporting and submissions of incomplete data, among other issues.⁵⁹ The following year, Chinese courts determined that penalties should be strengthened for researchers who submit faulty data to obtain drug approvals, which could include the death penalty for instances where a drug causes harm to consumers.⁶⁰ The Chinese government is increasing oversight of its pharmaceutical industry by requiring generic drugs approved for production prior to 2008 to be evaluated for quality and revoking licenses or denying government tendering for products that fail to pass the evaluation. This effort could close smaller manufacturers that produce low-quality drugs out of the market.⁶¹

In 2018, the 13th National People's Congress approved a plan to form the State Market Regulatory Administration in order to strengthen China's regulatory system. The restructuring involved consolidating China's Food and Drug Administration; the General Administration of Quality Supervision, Inspection and Quarantine; the State Administration of Industry and Commerce; and subdivisions of other agencies into one ministry called the State Administration of Market Regulations.⁶²

FDA Faces Impeded Access in China

The FDA is the primary U.S. government agency tasked with ensuring commercial pharmaceutical and health products meet U.S. health and safety standards. The FDA maintains one field office (with 16 FDA officials) in Beijing to train local Chinese regulators

*The FDA issues a warning letter to manufacturers when they have "significantly violated FDA regulations." The letter documents the nature of the violation, which can include but is not limited to "poor manufacturing practices, problems with claims for what a product can do, or incorrect directions for use." A company that is issued a warning letter must respond with how it will remedy the issue and provide a timeline for next steps. The FDA then verifies whether the corrections were made. See U.S. Food and Drug Administration, "About Warning and Close-Out Letters." <https://www.fda.gov/inspections-compliance-enforcement-and-criminal-investigations/warning-letters/about-warning-and-close-out-letters>.

and share information with Chinese counterparts.* FDA officials have had difficulty securing visas for new inspectors deploying to China and have also faced obstacles conducting unannounced factory inspections, which are routine in the United States.⁶³

In 2016, a U.S. Government Accountability Office (GAO) investigation found the FDA may have never inspected approximately 1,000 overseas drug manufacturing facilities, 243 of which were located in China.⁶⁴ The GAO report states these facilities lacked an inspection history due to FDA data management issues, and the FDA was in the process of inspecting all facilities in its catalog with no prior inspection history.⁶⁵ The GAO report also states,

*FDA does not know whether or for how long these establishments have or may have supplied drugs to the U.S. market, and has little other information about them. While the agency has made progress in reducing this knowledge gap, it is important to note that the overall number of foreign establishments with no surveillance inspection history ... remains large.*⁶⁶

Since 2015, there have been 87 cases involving Chinese firms that have either refused FDA inspections or caused a delay in inspections.⁶⁷ Denial of inspection by a foreign facility may cause the FDA to deem a drug product adulterated and place the drug on import alert, which “allows FDA to refuse admission of future shipments of an imported drug product.”⁶⁸ There are currently 51 Chinese companies that export to the United States medical devices, dietary supplements, and drug products placed on import alert due to inspection refusal or poor manufacturing practices.†

Beginning in 2012, the FDA established a team responsible for reporting on and assessing drug shortages for high-risk pharmaceutical and medical products.⁶⁹ By ensuring potential shortages are detected and addressed immediately, the FDA has additional time to work with manufacturers and other stakeholders to identify ways to maintain treatment options and prevent a shortage.⁷⁰ As of October 2019, the FDA has determined 113 drugs were in shortage in the United States.⁷¹ There is insufficient information to determine which of these 113 drugs are sourced from China either in their finished form or as active ingredients. The risks of these shortages have been exacerbated by a growing reliance on China as the source of U.S. generic pharmaceuticals.

FDA Inspection Regime

The FDA follows the same protocols for domestic and overseas inspections, including drug preapproval review processes, premarket inspections, and surveillance inspections.

Drug preapproval review process and premarket inspections: The FDA can examine the process and technology used to manufacture generic and/or brand name drugs before the drug is

*In the past, the FDA also had offices in Shanghai and Guangzhou; however, these offices closed in 2014. U.S. Food and Drug Administration, interview with Commission staff, July 22, 2019.

†For a full list of companies, see U.S. Department of Health and Human Services, *Import Alert 99-32*, September 30, 2019. https://www.accessdata.fda.gov/cms_ia/importalert_521.html.

FDA Inspection Regime—Continued

approved and introduced to the market. This preapproval review process allows the FDA to assess the quality of the manufacturing process as well as the quality of the product itself.⁷²

The FDA can also conduct premarket inspections, which involves assessing whether a drug manufacturing facility is in compliance with regulations.⁷³ The FDA additionally requires drug producers to provide notification of changes to their manufacturing process or facilities before or after the drug is introduced to the market.⁷⁴ After market introduction, the FDA tests selected finished drug products and APIs to ensure the “potency, quality, and consistency of generic medicines meets the standards established for the specific drug.”⁷⁵

Current Good Manufacturing Practice (CGMP) surveillance inspections: FDA officials conduct surveillance inspections of foreign drug manufacturing facilities using a risk-based site selection model that maximizes resources by prioritizing inspections of sites that “pose the greatest potential risk for problems that could harm patients.”⁷⁶ Sites that produce inactive ingredients or drugs only for clinical trials are not prioritized unless deemed necessary. If a quality issue is suspected, there are a number of ways the FDA can respond, including: making an unannounced visit to the facility for further inspection, placing companies on import alert, seizing products from warehouses or facilities, or testing imports at points of entry, among other actions.⁷⁷

According to Ms. Eban, the FDA and other regulators have struggled to properly inspect the manufacturing and export of Chinese pharmaceutical and medical products brought to the United States.⁷⁸ Around 90 percent of U.S. dietary supplement products, for example, are imported from China.⁷⁹ However, because its jurisdiction does not extend to pre-inspection of dietary supplements, the FDA does not approve their safety before they enter the U.S. market, potentially exposing U.S. consumers to products that are unsafe or do not contain the proper ingredients.*

In her book, Ms. Eban documents FDA officials in China frustrated by pharmaceutical companies’ efforts to manipulate or obscure their operations.⁸⁰ Chinese pharmaceutical firms sometimes invest in “show” factories, or factories that are open to inspectors but are not the true source of the company’s products.⁸¹

The FDA has the authority to inspect Chinese pharmaceutical facilities and withhold import licenses from Chinese companies that do not comply with U.S. regulatory standards. However, Ms. Eban’s research demonstrates that when the FDA does find safety violations in Chinese plants, it sometimes does not sanction them for fear of creating drug shortages in the United States.⁸² For example,

*The FDA regulates dietary supplements under a different set of regulations than those covering drug products. Firms are responsible for evaluating the safety and labeling of their dietary supplement products before they reach the market, but the FDA is responsible “for taking action against any adulterated or misbranded dietary supplement product after it reaches the market.” See U.S. Food and Drug Administration, *Dietary Supplements*, August 16, 2019. <https://www.fda.gov/media/104838/download>.

Ms. Eban reports that in May 2017, an FDA inspector determined that Chinese drug manufacturer Zhejiang Hisun was hiding the results from pretests of its drug samples.⁸³ The FDA initially restricted imports of 30 Zhejiang Hisun products, but lifted the restriction on half of the drugs because those particular drugs, used in cancer treatments, were in short supply in the United States.⁸⁴

China's Pharmaceutical and Biotech Activities in the United States

China maintains a comprehensive, long-term strategy to become a leader in biotechnology, seeking to create globally competitive domestic biotech firms and incentivize biotechnology manufacturing, design, and operations to move to China. The Chinese government designated biotechnology as a Strategic Emerging Industry in 2010, and prioritizes state support for this industry in state plans such as Made in China 2025 and the Precision Medicine Initiative.⁸⁵ As part of the goals set out in the Made in China 2025 plan, the Chinese government identified the kinds of medicines and technology it aims to develop (e.g., new vaccines and antibody drugs), and plans to increase the domestic market share for biopharmaceutical core components to 70 percent by 2020.⁸⁶ Through the Precision Medicine Initiative, the Chinese government is investing \$9.3 billion in various genome sequencing and clinical data acquisition projects over a 15-year period.⁸⁷

In biotechnology as in other high-tech industries, the Chinese government wants to move away from reliance on foreign companies and imports for both economic and national security reasons. Although the United States is currently the world's leading developer of biotech products, China is an increasingly important player in this space. According to a Gryphon Scientific report prepared for the Commission in 2019, China's biologics market revenue in 2016 was between \$4.7 billion and \$6.2 billion, while its agricultural biotech market revenue was around \$8.1 billion, compared to U.S. biologics and agricultural biotech markets at \$118 billion and \$110 billion, respectively.⁸⁸ China's government prioritized biotechnology as a Strategic Emerging Industry for two overlapping reasons. First, there is a high demand for biopharmaceuticals in the Chinese health market because noncommunicable diseases are a major public health concern with roughly 85 percent of deaths linked to noncommunicable diseases such as cancer, cardiovascular diseases, and respiratory diseases.⁸⁹ Second, biotechnology is a high-tech, high-value industry, with potentially significant long-term economic benefits.

China's biotechnology development is focused on three areas: (1) creating biopharmaceuticals to treat chronic diseases; (2) implementing contract research and manufacturing; and (3) conducting DNA sequencing.⁹⁰ A number of biologics used in China are imported, and Chinese companies aim to increase domestic market share.⁹¹ Many of these drugs are not innovative, but rather are biosimilars.⁹² Drug companies in China often rely on contracted research organizations* to navigate China's regulatory framework and provide preclinical

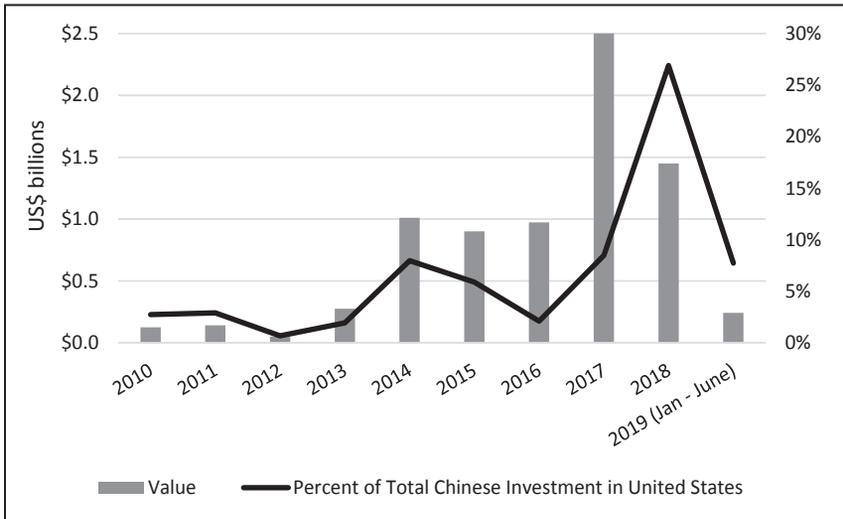
*A contract research organization is a company that provides support to the pharmaceutical, biotechnology, and medical device industries in the form of research services outsourced on a contract basis.

and clinical drug testing services for drug candidates.⁹³ According to research by Gryphon Scientific, of the 1,100 contracted research organizations worldwide in 2017, 400 were based in China.⁹⁴ Several key DNA sequencing companies are also based in China, including BGI, the third-largest DNA sequencing company in the world, ranking behind U.S. companies Illumina and Thermo Fisher.⁹⁵

Chinese Investment Flows to U.S. Health and Biotech Industries

Chinese investment and trade ties in U.S. medical and biotech industries have increased steadily in recent years. According to the economic consultancy Rhodium Group, Chinese foreign direct investment (FDI) flows to U.S. health and biotech industries increased from \$125 million in 2010—2.7 percent of China’s total investments in the United States that year—to \$2.5 billion in 2017, 8.5 percent of total Chinese investment in the United States (see Figure 2).⁹⁶ In 2018, Chinese investments in U.S. health and biotech industries totaled \$1.45 billion, 27 percent of China’s total investments in the United States.⁹⁷

Figure 2: Chinese FDI in U.S. Health, Pharmaceuticals, and Biotechnology Industry, 2010–H1 2019



Source: Rhodium Group, “China Investment Monitor,” August 16, 2019.

The U.S. Committee on Foreign Investment in the United States (CFIUS) has been stepping up its scrutiny of Chinese investments, especially in high-tech sectors. In 2019, for example, CFIUS forced the Chinese tech firm iCarbonX to divest from its 2017 stake in U.S. health firm PatientsLikeMe after security concerns were raised about the deal.⁹⁸ In an effort to avoid CFIUS scrutiny, Chinese investors in U.S. health, pharmaceuticals, and biotechnology companies are increasingly routing their investments through VC funds.⁹⁹ Health, pharmaceutical, and biotech were the industries Chinese VC investors targeted most frequently in 2018, along with infor-

mation and communications technology firms.¹⁰⁰ The enactment of the Foreign Investment Risk Review Modernization Act (FIRRMA) in 2018 expanded the authority of CFIUS to review VC investments that may threaten U.S. national security interests.*¹⁰¹ The possibility of increased CFIUS scrutiny of VC investments has prompted a drop in the overall Chinese VC investments in the United States.¹⁰² In the first nine months of 2019, Chinese VC investment fell to approximately \$4 billion, a \$5 billion decrease from the same period in 2017.¹⁰³ This fall notwithstanding, health, pharmaceuticals, and biotechnology received the highest level of Chinese VC investment in the United States the first half of 2019 (about \$330 million).¹⁰⁴ These sectors also saw the highest number of transactions involving Chinese investor participation.

Chinese Biotech Firms' Collaboration with U.S. Companies and Universities

Decades-long collaboration with U.S. firms and research institutions has been critical to China's biotech development. Chinese investments and research partnerships with U.S. institutions not only provide Chinese biotechnology companies with technologies crucial to advancement in the field, but also allow them to amass large collections of clinical and genetic data on U.S. residents.¹⁰⁵ These partnerships are typically focused on developing expertise in cancer therapeutics or precision medicine.¹⁰⁶

Gryphon Scientific's research shows six of the top ten ranking U.S. research institutions† have established "at least one life science biotechnology partnership with Chinese institutes."¹⁰⁷ Chinese biotech companies access U.S. assets through a variety of channels, including investment, corporate and academic partnerships, and recruitment of U.S.-trained researchers. In his testimony, Mark Kazmierczak, expert at Gryphon Scientific, noted that some Chinese biotechnology firms have opened R&D facilities and incubators in strategic biotech hubs such as Boston, San Francisco, and North Carolina's Research Triangle region, which gives these companies access to "advanced technology and expertise [and] a well-educated workforce."¹⁰⁸

Chinese Companies' Access to U.S. Healthcare Data Raises Concerns

The acquisition of U.S. personal and health data by the Chinese government and companies presents national security risks. China's access to U.S. health data provides China with the tools to exploit Americans' personal health records and displace U.S. leadership in biotechnology and other fields. Protecting U.S. health data is a serious concern, particularly due to the Chinese government-linked

*The U.S. Department of the Treasury published proposed regulations to implement FIRRMA on September 17, 2019. The final regulations will become effective no later than February 13, 2020. U.S. Department of the Treasury, *The Committee on Foreign Investment in the United States (CFIUS)*. <https://home.treasury.gov/policy-issues/international/the-committee-on-foreign-investment-in-the-united-states-cfius>; U.S. Department of the Treasury Office of Public Affairs, *Fact Sheet: Proposed CFIUS Regulations to Implement FIRRMA*, September 17, 2019. <https://home.treasury.gov/system/files/206/Proposed-FIRRMA-Regulations-FACT-SHEET.pdf>.

†The top U.S. research institutions with at least one biotechnology partnership with a Chinese institution are: Harvard University, Massachusetts Institute of Technology, University of California Berkeley, University of Michigan, University of California at Los Angeles, and Yale University.

cyberespionage and hacking campaigns aimed at obtaining sensitive U.S. personally identifiable information, including personal health data and clinical trial data. The 2015 hacking of Anthem Inc. by Chinese nationals serves as an example: the cyberattack on the health insurance giant allowed hackers to gain access to up to 80 million patient records, not simply personally identifiable information.¹⁰⁹

The Chinese government and companies also carry out a vast personal and health data collection through legal means. Chinese biotech companies gain access to U.S. healthcare and genomic data through investments and partnerships with health companies and research institutes. For example, the *Wall Street Journal* reported in June 2019 that Twist Bioscience Corp., a synthetic DNA manufacturer that had received \$5 million in funding from DOD, partnered with a Chinese company and planned to expand its manufacturing in China.¹¹⁰ Policymakers expressed concern that the potential partnership could lead to the transfer of valuable IP and data on synthetic DNA production.¹¹¹ By acquiring large datasets of health information, Chinese companies can make their drug discovery and clinical trials more reliable and cost efficient, putting them at an advantage against U.S. health and biotech firms.¹¹²

In his testimony before the Commission, Benjamin Shobert, director of strategy for health business strategy at Microsoft, argued asymmetric data-sharing policies between the United States and China weaken the U.S. competitive advantage in medicine innovation and artificial intelligence.¹¹³ Investment and collaborations in the U.S. biotech sector give Chinese companies access to large volumes of U.S. medical and genomic data, but U.S. companies do not get reciprocal access.¹¹⁴ Mr. Shobert believes “protocols specific to de-identification and bilateral cross-border data sharing [are needed] ... to ensure the pace of progress in healthcare continues to accelerate.”¹¹⁵ The Chinese government is also formulating policies to support the acquisition and use of large healthcare genomic and other personal health data sets.¹¹⁶

The Chinese government places great emphasis on collecting domestic genomic and other health-related data for purposes beyond developing its biotechnology sector. In many cases, the Chinese government has taken data from its citizens without informed consent* in order to enhance surveillance of targeted groups. For example, in 2016 local authorities in Xinjiang began implementing a program called “Physicals for All,” which involved conducting free annual health exams for residents with the stated purpose of improving healthcare services and creating digital health records for participants.¹¹⁷ Although official documents describing this health program did not state DNA would be collected, health authorities collected DNA samples from approximately 36 million people in

*The “Personal Information Security Specification,” China’s law on personal data governance, took effect in May 2018, and provides guidelines for consent and the collection and use of personal data, including biometric data. The law’s consent principle states that compliance requires “obtain[ing] authorized consent from the PI [personal information] subject after expressly providing the PI subject with information including the purpose, method, scope, and rules of the processing.” Despite the drafting and adoption of guidelines for consumer data collection and use, misuse of data by Chinese law enforcement and government entities remains a concern. Mingli Shi et al., “Translation: China’s Personal Information Security Specification,” *New America*, February 8, 2019; Human Rights Watch, “China: Big Data Fuels Crackdown in Minority Region,” August 25, 2017.

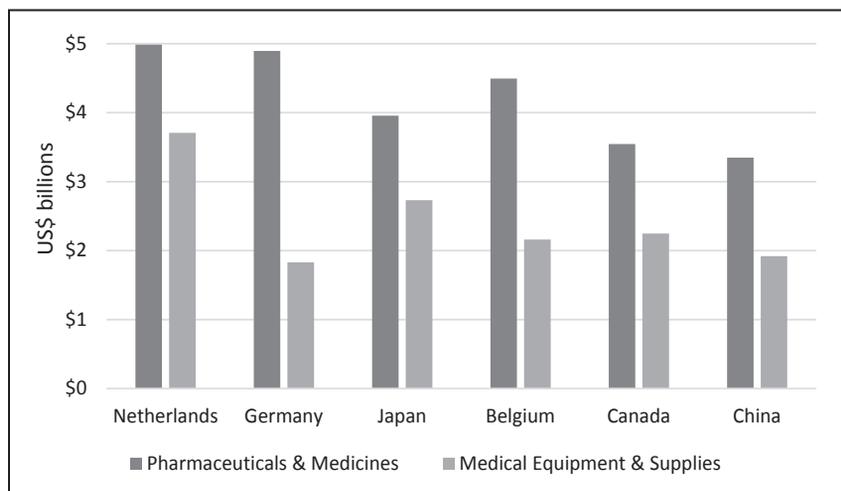
2016–2017.¹¹⁸ Despite Chinese media reports stating the program was voluntary, members of the Uyghur community claimed police and local officials coerced them into participating in these medical checkups, and they were not aware of how their biometric data would be used or even able to access the results of their medical tests.¹¹⁹

U.S.-made equipment and research conducted by U.S. scientists have been used to advance the Chinese government's mass biometric data collection campaign and bolster surveillance and control of vulnerable populations, including the Uyghur community.¹²⁰ In 2017, human rights activists discovered that Xinjiang law enforcement used genetic sequencing equipment manufactured by U.S.-based company Thermo Fisher to collect biometric data from Uyghurs.¹²¹ The *New York Times* reported that a visiting scholar from China working on a research project at Yale University accessed DNA samples that were later used to enhance China's Ministry of Public Security's ability to sort DNA samples based on ethnicity.¹²² These DNA samples were used by authorities with the purpose of identifying and tracking individuals.¹²³

U.S. Companies' Access to Health Industries and Market Opportunities in China

China is the world's second-largest market for pharmaceuticals and the fourth-largest for medical equipment in terms of domestic sales.¹²⁴ U.S. exports of pharmaceuticals to China reached approximately \$3.3 billion in 2018 (see Figure 3).¹²⁵ As China's health and medicine demand has grown, U.S. exports of biotech products, medical equipment and supplies, and pharmaceuticals have also increased (see Figure 4). However, the vast potential of China's healthcare market remains out of reach for U.S. and other foreign companies.

Figure 3: Major Destinations of U.S. Pharmaceutical and Medical Equipment Exports, 2018

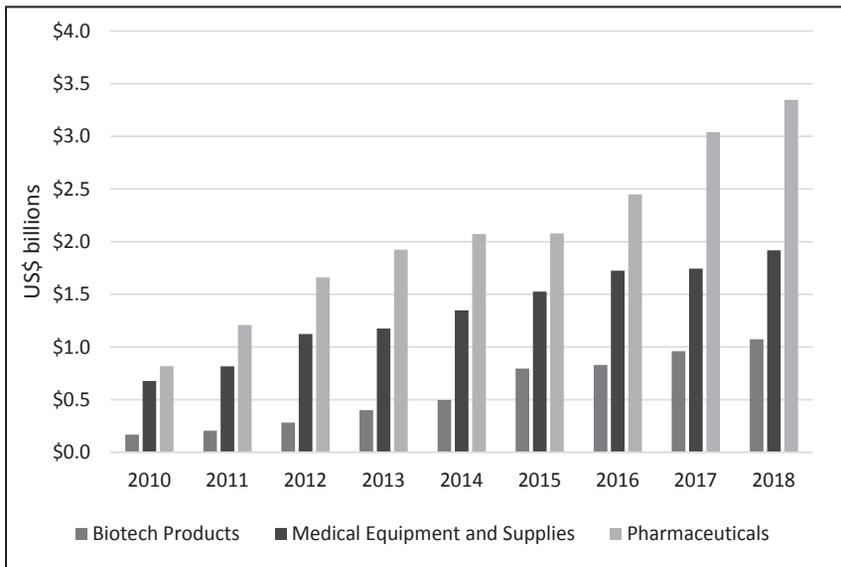


Source: U.S. Census Bureau, *USA Trade Online*, September 17, 2019.

In 2018, China made up only 5 percent of the United States' global biotech exports, 7.1 percent of medical equipment exports, and 6.7 percent of pharmaceuticals exports.¹²⁶ Government policies favoring domestic producers give China's generic drug manufacturers a competitive edge over foreign drug companies.¹²⁷ As a result, U.S. drug companies struggle to gain a large market share in China.¹²⁸ However, the United States is a leading source among Chinese imports of medical products, especially at the higher end of the market. U.S. exports of biotech products* reached \$1.1 billion in 2018, an increase of 11.4 percent year-on-year.¹²⁹

U.S. medical equipment and supply exports to China in 2018, meanwhile, increased 10 percent year-on-year to \$1.9 billion, while U.S. pharmaceutical exports to China increased 10.1 percent year-on-year in 2018 to \$3.3 billion (see Figure 4).¹³⁰

Figure 4: U.S. Exports of Health Products to China, 2010–2018



Source: U.S. Census Bureau, USA Trade Online, June 17, 2019; U.S. Census Bureau, U.S. Trade with China in Advanced Technology Products, December 2018.

The Chinese government is making substantial investments to expand the country's health infrastructure, which could create new opportunities for foreign health and pharmaceutical providers. It is also providing incentives for multinational corporations to operate in China.[†] The reforms aim to achieve nearly universal health insur-

*Biotechnology product exports include products with medical and industrial applications in genetics for the creation of new drugs, hormones, and other items for agricultural and human use.

[†]Pfizer opened a global headquarters for Pfizer Upjohn, one of its divisions, in Shanghai in 2019, making it the first multinational drug company with a main office in China (the headquarters of Pfizer, the parent company, remain in the United States). Thermo Fisher, a leading U.S. biotechnology company, is also setting up a new production base in China. See Teng Jing Xuan, "Pfizer Upjohn Becomes First Multinational Drug Company to Open HQ in China," *CX Tech*, May 30, 2019; *Xinhua*, "U.S. Leading Biotech Provider to Set Up Production Base in China," August 22, 2019. http://www.xinhuanet.com/english/2019-08/22/c_133829967.htm.

ance coverage,* promote more equal access to public health services, and lower costs for innovative drugs.¹³¹ As part of these efforts, the Chinese government has taken several steps to ease the approval processes for foreign firms looking to get their drugs to market in China, which has reduced the time it takes for foreign medicines to become accessible to Chinese patients.

According to Yanzhong Huang, senior fellow for global health at the Council on Foreign Relations, key reform efforts undertaken in recent years include:

- *Updating the national reimbursement drug list:* In 2017, the Chinese government updated the list of pharmaceuticals eligible for government reimbursement to include more innovative foreign medicines. The national reimbursement drug list was introduced in 2004 and last updated in 2009. The 2017 update increased the number of medicines (excluding traditional Chinese medicine) eligible for reimbursement in China by 11 percent to 1,297 drugs.¹³² It was supplemented by a new Essential Drug List, a shorter compendium of generic drugs to be sold by local clinics at government-controlled prices.¹³³ Prior to the national reimbursement drug list being updated, 1,164 medications (excluding traditional Chinese medicine) could be reimbursed.¹³⁴ The list was further updated in August 2019, with 47 new medications added to the list and 150 medications removed due to being determined of low clinical value of inferior to other products from the list.¹³⁵ China has laid out plans to require bi-annual updates to the reimbursement list.¹³⁶
- *Establishing a drug price negotiation mechanism:* The system, introduced nationally in 2017, allows Chinese patients to access over 50 medicines—including cancer drugs and other innovative medicines manufactured overseas—at dramatically reduced prices.¹³⁷ The negotiations are led by an arm of the Chinese government, which negotiates with pharmaceutical companies for lower prices and in return includes the drugs on the national reimbursement drug list so more patients can afford them.¹³⁸ The price negotiation mechanism has helped to reduce drug prices by more than 75 percent for those patients covered by the plan; however, only 44,600 people had benefited from the policy by the end of 2018.¹³⁹
- *Joining the International Council on Harmonization:* In 2017, China joined the International Council for Harmonization of Technical Requirements for Pharmaceuticals for Human Use (ICH), an international organization tasked with bringing together global regulatory authorities to ensure efficient and effective procedures for developing and registering new medicines.¹⁴⁰ In 2018, China became an ICH management committee member, signaling Beijing’s desire to harmonize its drug and medical equipment approval processes to match that of other large pharmaceutical markets around the world.¹⁴¹

*Although a significant portion of China’s population has health insurance, out-of-pocket costs for medical care remain high and access to critical drugs and hospital treatment limited, especially for patients living in rural areas. See World Bank and World Health Organization, “Healthy China: Deeping Health Reform in China,” 2019, 40–42. <https://openknowledge.worldbank.org/bitstream/handle/10986/31458/9781464812637.pdf?deliveryName=DM11894>.

- *Accepting foreign clinical trial data:* In October 2017, Chinese regulators began accepting overseas clinical trial data when evaluating and approving new imported innovative drugs and medical devices for use in China.¹⁴² Previously, medicines and health equipment were required to undergo clinical testing in China before Beijing would approve the product for use, slowing the approval process for foreign drugs seeking to enter the Chinese market.¹⁴³ This change contributed to the approval of 30 innovative foreign drugs through the first nine months of 2018, up from just three approvals for foreign drugs in all of 2016.¹⁴⁴

Regulatory Challenges and Market Barriers Remain

While the Chinese government is changing regulations to allow for more innovative drugs to enter its market, barriers remain for foreign drug companies in China. IP transfer, both legal and illegal, has become a regular cost of doing business in China's pharmaceutical and medical industries. There have been notable cases of Chinese pharmaceutical companies conspiring to steal foreign medical firms' IP. In 2018, two former scientists at the pharmaceutical firm GlaxoSmithKline pleaded guilty to stealing the company's biopharmaceutical data and research to benefit a rival Chinese pharmaceutical company.¹⁴⁵ In its 2018 midyear report on cyberintrusion trends, the cybersecurity firm CrowdStrike also noted they had observed an uptick in Chinese cyberintrusion attempts against foreign pharmaceutical firms.¹⁴⁶

In addition, Beijing has proposed several new policies that, if implemented, would undermine U.S. pharmaceutical companies' IP rights. Most notably, China has proposed measures that would expand and enhance patent protections only for foreign drug firms that go to market concurrently in China and another country (e.g., the United States, Japan, and the EU). If the proposal is implemented, companies must submit applications for market approval of new products in China and a second country; otherwise, they will not qualify for patent term extension.¹⁴⁷ This law would apply to those drug companies that experienced a delay in the drug approval process; a patent term extension of up to five years would be granted to these companies under the condition that the patent term could not exceed 14 years after the drug is approved.¹⁴⁸

Finally, asymmetric data access policies between the United States and China negatively impact U.S. competitiveness in medicine and biotech. U.S. researchers and companies do not have the ability to work with Chinese data assets in the same way their Chinese counterparts do in the United States. The Chinese government restricts cross-border data sharing through regulations including its 2017 cybersecurity law, which requires companies that are designated "critical information infrastructure" to store certain data on servers in China.¹⁴⁹ The data must be assessed before being transferred overseas, and the government can deny transfers if deemed a threat to national security or public interest. The United States does not prioritize curating health data sets or protecting health data.¹⁵⁰ In addition, to date the United States has not enacted laws that outline trade protocols for big data and health data sharing.¹⁵¹

U.S.-China Global Health Cooperation

Over the past 50 years, China has participated in international health initiatives and infrastructure development in several small but growing areas. In the past, most Chinese assistance took the form of building health infrastructure in foreign countries using Chinese firms and workers.¹⁵² Some of China's global health projects, and particularly hospital construction, are tied to the Belt and Road Initiative (BRI).¹⁵³ In the last two decades, however, China has worked more closely with the United States to address global health crises.¹⁵⁴

Important examples of U.S.-China global health collaboration include developing a coordinated response to the HIV pandemic in the early 2000s, and establishing a research partnership between the U.S. National Institutes of Health and China's National Science Foundation in 2010.¹⁵⁵ The U.S. and Chinese governments continue to work together on medical research and projects in developing countries (primarily in Africa and Asia). The FDA and U.S. Centers for Disease Control collaborate with their counterparts in China to prevent and detect infectious diseases and build more robust regulatory systems for food and drug safety.¹⁵⁶ However, issues such as China's treatment of healthcare data as a national security tool can limit opportunities for information sharing and make bilateral cooperation with the United States more difficult.

According to Jennifer Bouey, Tang Chair in China policy studies at the RAND Corporation, the Chinese government is seeking to expand its role in overseas health markets for three reasons. First, Beijing wants to ensure that pandemics and health-related mass migration do not spread into China and threaten the health and security of the Chinese people.¹⁵⁷ Second, Beijing wants to protect its investments in countries hosting BRI projects. If BRI host countries experience a public health crisis, it could endanger the Chinese nationals living and working in the country and threaten the economic viability of the investment.¹⁵⁸ Finally, Beijing wants to play a larger role in international governance and sees global health issues as one area where it can assert itself as a major player.¹⁵⁹

As development aid from the United States and other high-income countries plateaued in recent years,¹⁶⁰ multilateral organizations are looking to China as a new funder for health initiatives.¹⁶¹ In 2017, China and the World Health Organization (WHO) signed a memorandum of understanding to partner on health projects vis-à-vis BRI, naming the partnership the "Health Silk Road."¹⁶² In 2018, WHO's director general lauded China for the BRI and global health investments, calling China "a model for universal health coverage, a bulwark against health emergencies, and a reminder that transformations can be far-reaching."¹⁶³

Implications for the United States

Nurtured by subsidies and protected from foreign competition, China's pharmaceutical companies have emerged as preeminent manufacturers of pharmaceuticals and their ingredients. This presents a direct threat to U.S. economic competitiveness and national security in a number of ways. First, China's lax regulations put every U.S. consumer taking medicine imported from China, or made with

Chinese APIs, at risk. Over the past decade, the U.S. market has been rocked by high-profile recalls of Chinese drug products, such as the FDA's recall of contaminated heparin, a blood thinner commonly used in U.S. hospitals, which has been linked to 246 deaths in the United States.¹⁶⁴ The 2018 valsartan recall serves as another cautionary tale with global implications, considering the widespread use of the drug.¹⁶⁵ As China's health market continues to grow, bolstering Chinese regulatory capacity will become ever more critical in order to address poor manufacturing practices and the production and export of illicit drugs.

Second, U.S. dependence on drugs from China exacerbates the risk of drug shortages, especially because the Chinese government has not effectively regulated the high volume of drugs, APIs, and other medical products the country produces. U.S. reliance on China for critical drug products presents a dilemma for U.S. health regulators, who have to weigh the consequences of a shortage against the ramifications of allowing U.S. consumers to use a substandard product. For example, in 2015 the FDA banned imports of 29 pharmaceutical products from a manufacturer in China after it received 61 complaints about impurities in the company's products.¹⁶⁶ However, 14 of those pharmaceutical products were exempted from the import ban due to concerns about drug shortages.¹⁶⁷ Although DOD maintains stockpiles of some drugs critical for national security, these drugs only include finished pharmaceuticals, not the ingredients needed to make them. If China were to cut off its supply of drugs or APIs to the United States, it could lead to a public health crisis.¹⁶⁸

Finally, although China's large, rapidly aging population is an attractive market for U.S. health companies, market barriers continue to deny U.S. products a level playing field.¹⁶⁹ Meanwhile, China's biotechnology sector has reaped tremendous benefits from collaboration with U.S. firms and research institutions by accessing U.S. technology and biometric data. U.S. companies' ability to use Chinese biometric data is restricted by China's stringent data regulations. In other words, Chinese companies profit from collaboration while U.S. companies do not get reciprocal advantages. There are risks that data on U.S. patients and drug trials could fall into the hands of the Chinese state or companies that will seek to exploit it for economic or strategic gains. There is a dark side to China's advancements in cutting-edge biotechnology. In Xinjiang and other parts of China, the Chinese government is using U.S. technology and biometric research not only for economic gain, but also to monitor and control Uyghurs and other Turkic Muslim minorities without their consent.

Addendum I: FDA Letter to Zhejiang Huahai Pharmaceutical**Via UPS****Warning Letter: 320-19-04****Return Receipt Requested**

November 29, 2018

Mr. Jun Du
Executive Vice President
Zhejiang Huahai Pharmaceutical Co., Ltd.
Coastal Industrial Zone, Chuannan No. 1 Branch No. 9
Donghai Fifth Avenue, Linhai, Taizhou Zhejiang 317016
CHINA

Dear Mr. Du:

The U.S. Food and Drug Administration (FDA) inspected your drug manufacturing facility, Zhejiang Huahai Pharmaceutical Co., Ltd., located at Coastal Industrial Zone, Chuannan No. 1 Branch No. 9, Donghai Fifth Avenue, Linhai, Taizhou Zhejiang, from July 23 to August 3, 2018.

This warning letter summarizes significant deviations from current good manufacturing practice (CGMP) for active pharmaceutical ingredients (API).

Because your methods, facilities, or controls for manufacturing, processing, packing, or holding do not conform to CGMP, your API are adulterated within the meaning of section 501(a)(2)(B) of the Federal Food, Drug, and Cosmetic Act (FD&C Act), 21 U.S.C. 351(a)(2)(B).

We reviewed your August 26, 2018, response in detail and acknowledge receipt of your subsequent correspondence.

During our inspection, our investigators observed specific deviations including, but not limited to, the following.

1. Failure of your quality unit to ensure that quality-related complaints are investigated and resolved.*Valsartan API*

Your firm received a complaint from a customer on June 6, 2018, after an unknown peak was detected during residual solvents testing for valsartan API manufactured at your facility. The unknown peak was identified as the probable human carcinogen N-nitrosodimethylamine (NDMA). Your investigation (DCE-18001) determined that the presence of NDMA was caused by the convergence of three process-related factors, one factor being the use of the solvent (b)(4). Your investigation concluded that only one valsartan manufacturing process (referred to as the (b)(4) process in your investigation) was impacted by the presence of NDMA.

However, FDA analyses of samples of your API, and finished drug product manufactured with your API, identified NDMA in multiple batches manufactured with a different process, namely the (b)(4) process, which did not use the solvent (b)(4). These data demonstrate that your investigation was inadequate and failed to resolve the control and presence of NDMA in valsartan API distributed to customers. Your investigation also failed:

- To include other factors that may have contributed to the presence of NDMA. For example, your investigation lacked a comprehensive evaluation of all raw materials used during manufacturing, including (b)(4).
- To assess factors that could put your API at risk for NDMA cross-contamination, including batch blending, solvent recovery and re-use, shared production lines, and cleaning procedures.
- To evaluate the potential for other mutagenic impurities to form in your products.

Our investigators also noted other examples of your firm's inadequate investigation of unknown peaks observed in chromatograms. For example, valsartan intermediates (b)(4) and (b)(4) failed testing for an unknown impurity (specification \leq (b)(4)%) with results of (b)(4)% for both batches. Your action plan indicated that the impurity would be identified as part of the investigation; however, you failed to do this. In addition, no root cause was determined for the presence of the unknown impurity. You stated that you reprocessed the batches and released them for further production.

Addendum I: FDA Letter to Zhejiang Huahai Pharmaceutical—Continued

Your response states that NDMA was difficult to detect. However, if you had investigated further, you may have found indicators in your residual solvent chromatograms alerting you to the presence of NDMA. For example, you told our investigators you were aware of a peak that eluted after the (b)(4) peak in valsartan API residual solvent chromatograms where the presence of NDMA was suspected to elute. At the time of testing, you considered this unidentified peak to be noise and investigated no further. Additionally, residual solvent chromatograms for valsartan API validation batches manufactured using your (b)(4) process, with (b)(4) in 2012 ((b)(4), and (b)(4)) show at least one unidentified peak eluting after the (b)(4) peak in the area where the presence of NDMA was suspected to elute.

Your response also states that you were not the only firm to identify NDMA in valsartan API. In your case, FDA analyses of samples identified amounts of NDMA in valsartan API manufactured at your firm that were significantly higher than the NDMA levels in valsartan API manufactured by other firms. FDA has grave concerns about the potential presence of mutagenic impurities in all intermediates and API manufactured at your facility, both because of the data indicating the presence of impurities in API manufactured by multiple processes, and because of the significant inadequacies in your investigation.

In response to this letter:

- Submit risk assessments for all APIs and intermediates manufactured at your facility for the potential presence of mutagenic impurities.
- Provide an update on investigations and CAPA plans initiated to address the presence of NDMA and other potential mutagenic impurities in all APIs manufactured at your firm.
- Provide a thorough, independent assessment of your overall system for investigating deviations, discrepancies, out-of-specification (OOS) results, complaints, and other failures. In addition, provide a retrospective review of all distributed batches within expiry to determine if your firm released batches that did not conform to established specifications or appropriate manufacturing standards.
- Provide test results for all (b)(4) and intermediates for the presence of NDMA, N-Nitrosodiethylamine (NDEA), and other potentially mutagenic impurities.

(b)(4) API

Your firm received a customer complaint on September 13, 2016, concerning (b)(4) API batches ((b)(4) and (b)(4)) that exceeded the specification for (b)(4) (\leq (b)(4) ppm). (b)(4) has been classified as a probable human carcinogen. Your customer's test results conflicted with your (b)(4) test results, which showed the two batches meeting the specification upon release. Your complaint investigation (CC-16008) identified no clear laboratory error, and no anomalies were detected during the production of the batches. Your investigation failed to evaluate other (b)(4) API batches to determine if the presence of excess (b)(4) was an adverse trend. For example, (b)(4) batches (b)(4), and (b)(4) were OOS for (b)(4) because of production errors; however, they were not discussed in your complaint investigation.

Your response states that (b)(4) API batches (b)(4) and (b)(4) were returned, reprocessed, and released to customers in non-U.S. markets.

Your response also states that in August 2017 you implemented a new (b)(4) test method that uses a (b)(4) LC-MS/MS method, to replace the (b)(4) LC-MS method that was prone to erroneous OOS results. You failed to verify the reliability of the (b)(4) results for all (b)(4) API batches (including (b)(4) batch (b)(4)) originally released using your (b)(4) LC-MS method, which you indicated was inferior to your updated method.

In response to this letter, provide:

- A risk assessment for all (b)(4) API batches manufactured within expiry.
- A revised complaint handling procedure and details of any further controls your facility has implemented to ensure that all complaints are adequately documented and thoroughly investigated.
- Procedures for accepting and reprocessing returned drugs.
- Results of (b)(4) testing of all (b)(4) API batches released to the U.S. market using your updated (b)(4) LC-MS/MS (b)(4) test method.

Addendum I: FDA Letter to Zhejiang Huahai Pharmaceutical—Continued**2. Failure to evaluate the potential effect that changes in the manufacturing process may have on the quality of your API.**

In November 2011 you approved a valsartan API process change (PCRC - 11025) that included the use of the solvent (b)(4). Your intention was to improve the manufacturing process, increase product yield, and lower production costs. However, you failed to adequately assess the potential formation of mutagenic impurities when you implemented the new process. Specifically, you did not consider the potential for mutagenic or other toxic impurities to form from (b)(4) degradants, including the primary (b)(4) degradant, (b)(4). According to your ongoing investigation, (b)(4) is required for the probable human carcinogen NDMA to form during the valsartan API manufacturing process. NDMA was identified in valsartan API manufactured at your facility.

You also failed to evaluate the need for additional analytical methods to ensure that unanticipated impurities were appropriately detected and controlled in your valsartan API before you approved the process change. You are responsible for developing and using suitable methods to detect impurities when developing, and making changes to, your manufacturing processes. If new or higher levels of impurities are detected, you should fully evaluate the impurities and take action to ensure the drug is safe for patients.

Your response states that predicting NDMA formation during the valsartan manufacturing process required an extra dimension over current industry practice, and that that your process development study was adequate. We disagree. We remind you that common industry practice may not always be consistent with CGMP requirements and that you are responsible for the quality of drugs you produce.

Your response does not describe sufficient corrective actions to ensure that your firm has adequate change management procedures in place: (1) to thoroughly evaluate your API manufacturing processes, including changes to those processes; and (2) to detect any unsafe impurities, including potentially mutagenic impurities. For FDA's current thinking on control of potentially mutagenic impurities, see FDA's guidance document M7(R1) Assessment and Control of DNA Reactive (Mutagenic) Impurities in Pharmaceuticals To Limit Potential Carcinogenic Risk for approaches that FDA considers appropriate for evaluating mutagenic impurities, at <https://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/UCM347725.pdf>.

In response to this letter, provide:

Detailed revised change management procedures describing how your firm will assess and control all impurities, including mutagenic impurities, in API and intermediates manufactured at your facility.

Detailed procedures describing how your firm establishes impurity profiles for products manufactured at your firm. These procedures should contain instructions for comparing at appropriate intervals against the impurity profile in the regulatory submission, or for comparing against historical data, to detect changes to the API resulting from modifications in raw materials, equipment operating parameters, or the production process.

A retrospective analysis of other API and intermediates manufactured at your firm to determine if they were adequately evaluated for anticipated and unanticipated impurities, including potentially mutagenic impurities.

CGMP consultant recommended

Based upon the nature of the deviations we identified at your firm, we strongly recommend engaging a consultant qualified to evaluate your operations and assist your firm in meeting CGMP requirements. Your use of a consultant does not relieve your firm's obligation to comply with CGMP. Your firm's executive management remains responsible for fully resolving all deficiencies and ensuring ongoing CGMP compliance.

Quality Systems Guidance

Your firm's quality systems are inadequate. For guidance on establishing and following CGMP compliant quality systems, see FDA's guidances: *Q8(R2) Pharmaceutical Development*, at <https://www.fda.gov/downloads/drugs/guidances/ucm073507.pdf>; *Q9 Quality Risk Management*, at <https://www.fda.gov/downloads/Drugs/Guidances/ucm073511.pdf>; and *Q10 Pharmaceutical Quality System*, at <https://www.fda.gov/downloads/drugs/guidances/ucm073517.pdf>.

Addendum I: FDA Letter to Zhejiang Huahai Pharmaceutical—Continued**Additional API CGMP guidance**

FDA considers the expectations outlined in ICH Q7 in determining whether API are manufactured in conformance with CGMP. See FDA's guidance document *Q7 Good Manufacturing Practice Guidance for Active Pharmaceutical Ingredients* for guidance regarding CGMP for the manufacture of API, at <https://www.fda.gov/downloads/Drugs/.../Guidances/ucm073497.pdf>.

Conclusion

Deviations cited in this letter are not intended as an all-inclusive list. You are responsible for investigating these deviations, for determining the causes, for preventing their recurrence, and for preventing other deviations.

If you are considering an action that is likely to lead to a disruption in the supply of drugs produced at your facility, FDA requests that you contact CDER's Drug Shortages Staff immediately, at drugshortages@fda.hhs.gov, so that FDA can work with you on the most effective way to bring your operations into compliance with the law. Contacting the Drug Shortages Staff also allows you to meet any obligations you may have to report discontinuances or interruptions in your drug manufacture under 21 U.S.C. 356C(b) and allows FDA to consider, as soon as possible, what actions, if any, may be needed to avoid shortages and protect the health of patients who depend on your products.

FDA placed your firm on Import Alert 66-40 on September 28, 2018.

Until you correct all deviations completely and we confirm your compliance with CGMP, FDA may withhold approval of any new applications or supplements listing your firm as a drug manufacturer.

Failure to correct these deviations may also result in FDA continuing to refuse admission of articles manufactured at Zhejiang Huahai Pharmaceutical Co., Ltd., located at Coastal Industrial Zone, Chuannan No. 1 Branch No. 9, Donghai Fifth Avenue, Linhai, Taizhou Zhejiang, into the United States under section 801(a)(3) of the FD&C Act, 21 U.S.C. 381(a)(3). Under the same authority, articles may be subject to refusal of admission, in that the methods and controls used in their manufacture do not appear to conform to CGMP within the meaning of section 501(a)(2)(B) of the FD&C Act, 21 U.S.C. 351(a)(2)(B).

After you receive this letter, respond to this office in writing within 15 working days. Specify what you have done since our inspection to correct your deviations and to prevent their recurrence. If you cannot complete corrective actions within 15 working days, state your reasons for delay and your schedule for completion.

Send your electronic reply to CDER-OC-OMQ-Communications@fda.hhs.gov or mail your reply to:

Rory K. Geyer
Compliance Officer
U.S. Food and Drug Administration
White Oak Building 51, Room 4235
10903 New Hampshire Avenue
Silver Spring, MD 20993
USA

Please identify your response with FEI 3003885745.

Sincerely,

/S/

Francis Godwin
Acting Director
Office of Manufacturing Quality
Office of Compliance
Center for Drug Evaluation and Research

ENDNOTES FOR SECTION 3

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CHAPTER 4

CHINA'S GLOBAL AMBITIONS

SECTION 1: BEIJING'S "WORLD-CLASS" MILITARY GOAL

Key Findings

- In 2017, Beijing announced its goal to build the People's Liberation Army (PLA) into a "world-class" military, overcoming remaining shortfalls in the force's capabilities to establish China firmly among the ranks of the world's leading military powers. This objective is guided by Chinese Communist Party (CCP) leaders' view that China is approaching the "world's center stage" and represents the military component of a multifaceted goal to establish China's leading global position in every important element of national power.
- Beijing views a world-class PLA as achieving parity in strength and prestige with the world's other leading militaries, especially with the U.S. armed forces, and being capable of preventing other countries from resisting China's pursuit of its national goals. Deterring outside intervention will be especially important in the Indo-Pacific region, where China aims to resolve territorial disputes with a number of important U.S. allies and partners—including through the use of military force if necessary—but will also extend to China's overseas interests.
- Once focused on territorial defense, China's military strategy has evolved in recent years to encompass a concept PLA strategists refer to as "forward defense," which would create greater strategic depth by extending China's defensive perimeter as far as possible from its own shores. China is developing key capabilities necessary for force projection centered on a sophisticated blue-water navy that Chinese naval leadership plans to use to combat the U.S. Navy in the far seas.
- To support this strategy, Beijing is expanding its military presence inside and beyond the Indo-Pacific, including by building a network of overseas "strategic strongpoints" consisting of military bases and commercial ports that can support military operations. China established its first permanent overseas military presence in Djibouti in 2017 and Argentina in 2018, and reportedly has reached an agreement for the PLA to operate from a naval base in Cambodia. The PLA is increasingly training and fielding capabilities for expeditionary operations, including by developing a third aircraft carrier and improving its amphibious assault capabilities.

- The PLA continues to prioritize the modernization of its maritime, air, information warfare, and long-range missile forces, and is developing or has fielded cutting-edge capabilities in space, cyberspace, hypersonics, electronic warfare, and artificial intelligence (AI). Beijing is attempting to establish a leading position in the next global “revolution in military affairs” and is employing its “military-civil fusion” strategy to gain advantage in key emerging technologies. U.S. companies that partner with Chinese technology firms may be participants in this process.
- Notwithstanding its long-held policy of maintaining a “minimal nuclear deterrent,” Beijing is growing, modernizing, and diversifying its nuclear arsenal and delivery systems. China doubled the size of its nuclear arsenal over the last decade and U.S. officials estimate it will double it again in the next decade, while Beijing has increased the readiness and improved the accuracy of its nuclear forces.
- China continues to devote ample financial resources to its military modernization, with its officially-reported defense budget ranking second only to the United States since 2002. China’s overall defense spending has seen a nearly eight-fold increase over the past two decades, dwarfing the size and growth rate of other countries in the Indo-Pacific.

Recommendations

The Commission recommends:

- Congress direct the U.S. Department of Defense to incorporate an assessment in its *Annual Report on Military and Security Developments Involving the People’s Republic of China* of China’s progress toward achieving its goal to build a “world-class” military. The report should also include an explanation of how the department defines this term.
- Congress direct a classified assessment identifying where China has undertaken activities that may be aimed at establishing a military presence, operating location, or storage depot. This assessment would include Chinese state-owned enterprises or other commercial interests tied to the Chinese government investing in strategic assets, such as ports and airfields, and should suggest options that could be employed to dissuade host countries from agreeing to host a Chinese military presence.
- Congress direct the U.S. Government Accountability Office to conduct an assessment of the U.S. government’s ability to hire and retain Chinese-language-capable employees. The study would examine U.S. government agencies’ processes for determining Chinese-language-designated positions and hiring and clearing employees, assess the extent to which the agencies are meeting their language proficiency requirements for these positions, measure the effects of language proficiency and gaps on the agencies’ ability to perform their missions, and develop recommendations to address identified shortfalls.

- Congress direct the Office of the Director of National Intelligence to restore the unclassified Open Source Enterprise website to all of its original functions for U.S. government employees. Access to the Open Source Enterprise should also be expanded by making appropriate materials available to U.S. academic and research institutions.

Introduction

In remarks delivered before the CCP's 19th National Congress in October 2017, General Secretary of the CCP Xi Jinping pledged to build the PLA into a "world-class" force by the middle of the 21st century. He added that the PLA would become a fully mechanized force with a substantial increase in "strategic capabilities" by 2020 and a "basically modern" military by 2035.¹ Taken together, these milestones establish a timeline for and help define the goal of General Secretary Xi's sweeping ambition for growing China's military power—what he declared shortly after assuming power in 2012 as China's "Strong Military Dream."²

Chinese leaders have not yet provided concrete details of what exactly a world-class military would comprise, but the basic contours of this force are already discernible. Most fundamentally, a world-class military would fulfill Beijing's ambition to establish itself as a global leader in every important domain of national power and influence. It would be able to match in strength and deter the United States and other leading military powers while coercing its neighbors into accepting Beijing's expansive sovereignty claims and leadership position in the Indo-Pacific region. While remaining primarily focused on achieving China's regional goals, at least in the near term, the force would also be increasingly equipped to defend China's interests beyond the region and to expand Beijing's defensive perimeter far from China's shores. In short, the capabilities of a world-class PLA would support CCP leaders' efforts to place China at the center of world affairs as it completes its multidecade task of achieving "national rejuvenation."

This section explores the drivers and ambitions behind China's world-class military goal, the PLA's development of capabilities supporting this directive, and Beijing's strategy for employing this force to achieve its regional objectives and defend its global interests. It concludes by examining the implications of the PLA's continued modernization for the United States and its allies and partners both within and beyond the Indo-Pacific region. The section is based on the Commission's June 2019 hearing on the topic, the Commission's May 2019 trip to the Indo-Pacific, consultations with experts on the PLA and China's geopolitical ambitions, and open source research and analysis.

A Military to Match Beijing's Ambitions

A World-Class Military and Achieving Global Power Status

Since his assumption of power in 2012, General Secretary Xi has closely linked his efforts to increase China's military power to the CCP's broader ambition to restore what it perceives as China's historical and rightful role as a leading global power. This latter goal, what General Secretary Xi has declared to be "the China dream of

the great rejuvenation of the Chinese nation,” has since its inception contained an inseparable military component—China’s Strong Military Dream. The CCP has since further defined and clarified this military component of its overarching national goal.

At the CCP’s 19th National Congress, General Secretary Xi declared it to be China’s official policy to build a “world-class military” by 2049, a date he has also set as the deadline for achieving China’s national rejuvenation.³ General Secretary Xi, however, did not confine his use of this term to the PLA alone. In his 19th Party Congress address, he also outlined his desire to establish “world-class” Chinese enterprises, advanced manufacturing capabilities, universities, and scientists and technology.⁴ He framed these goals as the logical extension of China approaching the “world’s center stage”—a term repeated in China’s most recent defense white paper, released in July 2019.⁵ As such, a world-class PLA represents the military component of a multifaceted goal to establish China’s leading global position in every important element of national power.⁶

Defining a World-Class Military

Although Chinese leaders have not yet provided concrete details concerning the composition of a world-class military, the PLA’s leading strategists and academic institutions are already working to define the implications and requirements of this goal. At its core, according to these sources, a world-class military will be able to achieve parity in strength, sophistication, and prestige with the world’s other leading militaries. As described by one professor at the PLA’s National Defense University, such a force would have “the powerful strength and deterrent force to match the militaries of world powers”; according to another observer at the PLA Academy of Military Science, a world-class military would be able to “compete with world-class adversaries.”⁷

Other sources describe the capabilities of world-class militaries. Cao Yimin, chief of staff of the ground forces for the PLA’s Western Theater Command, assesses a world-class military must possess “world-class operational theories, personnel, weapons and equipment ... combat power, and innovation abilities.”⁸ Other commentators agree with this assessment, contending such a force would possess “world-class military theories, military systems, weapons and equipment, personnel, and training levels.”⁹ Moreover, it would have deepened “military-civil fusion”—a process that seeks to break down all barriers between the civilian sector and China’s defense industrial base—and achieved the “composite development of mechanization, informationization, and intelligentization,” referring to the central importance of information technology and AI to achieving this goal.¹⁰

No other country features as prominently in China’s vision for its military modernization as the United States. Although PLA sources cite Russia, and to a lesser extent France and the United Kingdom, as other examples of countries possessing world-class military forces, they overwhelmingly recognize the United States as the premier example of a world-class military as well as the one most threatening to China’s own military ambitions.¹¹ In a typical example, the 2013 *Science of Military Strategy*—an authoritative book published by the

PLA's Academy of Military Science*—details at length a number of U.S. military capabilities, including those in the nuclear, space, and cyber warfare domains, that the PLA must develop itself in an era of “increasingly fierce international military struggle.”¹² As M. Taylor Fravel, professor of political science at the Massachusetts Institute of Technology, noted in his testimony to the Commission, for the PLA, “the implication of becoming world-class is clear: China would be in a position to match and deter the United States.”¹³ China's 2019 defense white paper reinforces this view of the United States as both the global military pacesetter and predominant military threat to Beijing. Expressing alarm at what it alleges is Washington's “technological and institutional innovation in pursuit of absolute military superiority,” it cites the United States as leading new global efforts to “seize the strategic commanding heights in military competition.”¹⁴

Central to Beijing's new military modernization goal is the view of top civilian and military leaders that the PLA continues to lag behind the United States and other leading militaries in many elements of military power. Put simply by Dr. Fravel, “Implicit and often explicit in these discussion [sic] of benchmarks is the assessment that the PLA currently falls short of what might constitute a world-class military.”¹⁵ This assessment is also reflected in China's 2019 defense white paper, which notes that although China has made “great progress” in improving its military capabilities, the PLA has yet to fully complete the modernization tasks assigned to it by the CCP and “still lags far behind the world's leading militaries.”¹⁶ A group of experts at the Academy of Military Science further illustrate some of these shortfalls, arguing, “Compared with the world's first-class militaries, our military is still in the historical stage of the composite development of mechanization and informationization and many ‘shortcomings’ for development exist.”¹⁷

Therefore, while the PLA's size and the quality of many of its combat systems confer it a significant advantage in fighting a regional conflict—especially should it prove successful in isolating its neighbors from U.S. support—it appears clear that top Chinese leaders continue to view the PLA as requiring further progress before it can qualitatively match its counterparts in the United States and other leading military powers. (For further discussion of senior Chinese leaders' perceptions of PLA shortcomings, see Chapter 2, “Beijing's Internal and External Challenges.”)

A Dominant Force in the Indo-Pacific and Global Military Challenger

Although Beijing has instructed the PLA to remain primarily focused on East Asia, it has increasingly set the force's sights on defending China's interests throughout the Indo-Pacific region and even farther overseas. Currently, the PLA's “main strategic direction” remains focused on China's east, requiring the force to focus

*In 2015, the PLA's National Defense University published its own version of the *Science of Military Strategy*, which is also an authoritative document on matters of PLA strategy and doctrine. Like the 2013 version published by the Academy of Military Science, the 2015 volume includes language that makes clear the PLA views the United States as the global military pacesetter. For example, it describes the United States as the “leader” of the air forces of developed countries, and notes the superiority of U.S. unmanned weapon systems. Xiao Tianliang, ed., *The Science of Military Strategy* (战略学), National Defense University Press, 2015, 370, 375.

its preparations for war on military contingencies directed at Taiwan.*¹⁸ The CCP has also instructed the PLA to increase preparations for conflicts elsewhere around China's periphery, including with the United States, Japan, India, and other countries in the region should a war break out over Taiwan or another Chinese territorial claim, a scenario referred to in *Science of Military Strategy* as a "chain reaction."¹⁹ In recent years, Beijing has used the PLA to assert China's claims in regional sovereignty disputes, even in the face of opposition from the United States and other regional actors. Moreover, Beijing is increasingly confident that most regional states are acquiescing to the Chinese position that "Asia-Pacific countries ... are members of a community with shared destiny"—CCP phraseology for an eventual Sino-centric order.²⁰

In the view of Chinese leaders, building the PLA into a world-class force would further strengthen Beijing's position in these disputes. Confronted with the prospect of facing a world-class adversary, countries in the Indo-Pacific would be compelled to submit to China's overwhelming military pressure. Meanwhile, the United States would be effectively deterred from intervening in a regional conflict it had little chance of winning, further diminishing the willingness of regional countries to confront Beijing.

At the same time, Beijing has given the PLA unambiguous guidance to increase its operations beyond the Indo-Pacific region. One goal of this strategy is to increase the difficulty the United States would face in intervening in a regional conflict. To this end, Chinese military leaders have spoken of a world-class PLA Navy "challenging and exchanging blows" with a "powerful enemy"—a term referring to the United States—in the far seas.²¹ Another goal is to defend China's overseas interests, which Beijing described in its 2019 defense white paper as of "crucial" importance and in recent years has elevated to a similar level of importance as defending its own territory.²² China has also argued that its national defense policy is of "global significance" and instructed the PLA to "actively participate in the reform of the global security governance system."²³ Taken together, these statements make clear that China views a world-class military as not only allowing it to achieve its regional goals but also supporting its global interests and ambitions.²⁴

Building a World-Class Military

Winning the Next Global "Revolution in Military Affairs"

In order to meet the requirements and missions the CCP has given it, the PLA has continued its decades-long military modernization drive. Beijing is focused on developing capabilities to advance its regional objectives, including deterring and denying U.S. military access to the region in a conflict, but has also in-

*The PLA's focus on East Asia has been reinforced by Beijing's last four military strategic guidelines, issued between 1988 and 2014. The military strategic guidelines constitute the PLA's instructions for preparing for war, and are seen as a way to delineate China's national military strategy. For more on the military strategic guidelines, see M. Taylor Fravel, *Active Defense: China's Military Strategy since 1949*, Princeton University Press, 2019; and David M. Finkelstein, "China's National Military Strategy: An Overview of the 'Military Strategic Guidelines,'" *Right Sizing the People's Liberation Army: Exploring the Contours of China's Military*, Strategic Studies Institute, 2007.

creased its efforts to develop expeditionary capabilities in support of its emerging mission to project force outside the region. Central to the PLA's modernization efforts is achieving a leading position in the next "revolution in military affairs," a transformation of warfare through the introduction of new technologies, doctrines, strategies, and tactics. The 2013 *Science of Military Strategy* notes that successful world powers are adjusting their strategies and capabilities to reflect the growing importance of new technology in the next global revolution in military affairs.²⁵ In this context, although many features of the PLA modernization program seek to emulate or match capabilities possessed by the U.S. military, Beijing is also attempting to offset U.S. advantages by developing advantages in its long-range missile, cyber, space, and electronic warfare capabilities. In addition, Beijing seeks to leapfrog the United States in a number of next-generation defense technologies, including hypersonic, directed energy, electromagnetic railgun, counterspace, and unmanned and AI-equipped weapon systems.²⁶

The CCP's determination to enhance its technological capabilities stems from its view that technological backwardness has been at the root of much of China's military weakness in the modern era.* As Christopher A. Ford, Assistant Secretary of State for International Security and Nonproliferation, noted in testimony to the Commission, China recognizes it may have lost the last revolution in military affairs, "but it is determined to *lead* the next one" [emphasis original].²⁷ Dean Cheng, senior research fellow at the Heritage Foundation, noted in his testimony before the Commission that to this end, the PLA is focused on AI, big data, and cloud computing.²⁸ According to China's 2019 defense white paper, the rapid application of these and similar technologies—such as quantum technology and the Internet of Things—to militaries is contributing to military competition "undergoing historic changes."²⁹

In particular, the PLA views AI as critical in the evolution from informationized to intelligentized † warfare—which would leverage AI and its applications in combat—and has devoted considerable focus to this area.³⁰ China is seeking to become the world leader in AI application to traditional defense sectors such as aviation, aerospace, nuclear, shipbuilding, and ground systems, and also aims to set international norms for certain enabling technologies—including 5G and the Internet of Things—that will be critical to future AI-enabled warfare.³¹

*In the CCP's telling, China suffered at the hands of foreign powers—owing in large part to its ignorance of prior revolutions in military affairs—roughly from the Opium Wars in the mid-1800s through Japanese occupation and the Second World War until the founding of the People's Republic of China in 1949.

†According to Liu Guozhi, director of the Science and Technology Commission under China's Central Military Commission, "Artificial intelligence will speed up the process of military transformation, and it will bring about changes to force organization, operation modes, equipment systems, combat effectiveness models, etc." Wang Liang et al., "Lieutenant General Liu Guozhi, Deputy to the NPC and Director of the Science and Technology Commission at the Central Military Commission: Artificial Intelligence Will Accelerate the Process of Military Transformation" (人大代表、军委科技委主任刘国治中将：人工智能将加速军事变革进程), *China National Radio Military*, March 7, 2017. Translation. http://military.cnr.cn/ztc/h/ppc/yw/20170307/120170307_523641999.html.

Military-Civil Fusion Powering World-Class Ambitions

Beijing has allocated significant resources to develop the cutting-edge military technology it views as essential for realizing its world-class military goal, often through its strategy of military-civil fusion. Although Chinese leaders have long promoted integration between China's civilian and military sectors, General Secretary Xi in late 2013 elevated the military-civil fusion concept to a national strategy and expanded it beyond the defense industry to include all areas of the economy.³² China's pursuit of cutting-edge military technologies has also been supported by a booming defense industry. In 2019, six of the world's top 15 defense firms were Chinese.*³³

Assistant Secretary Ford stated in his written testimony to the Commission that military-civil fusion is central to China's strategy to modernize the PLA. He argued that Chinese universities are particularly important to this strategy and, citing the state-run *Xinhua* news agency, stated that the Chinese university system is the "front line" of military-civil fusion.³⁴ The Chinese government certifies universities to conduct classified research and development on military contracts and to participate in weapons production; to date, 80 Chinese universities have already been certified to undertake such research.³⁵ Assistant Secretary Ford also noted that state-owned defense enterprises often fund the education and living stipends for students in return for a service commitment to these enterprises, turning the students into de facto employees of the defense industry.³⁶

Foreign companies and universities that partner with Chinese technology firms could be contributing to military-civil fusion. As Assistant Secretary Ford noted, "China has focused relentlessly not just upon developing technology indigenously but also upon acquiring it abroad, by means both fair and foul, tilting the playing field in its favor at the expense of U.S. and global companies."³⁷ Several U.S. companies have contributed to or planned to contribute to the development of technology that could be used by the CCP to control information or police its citizens, and the same may occur with technology with military applications. For instance, Microsoft has collaborated with China's National University of Defense Technology—one of the PLA's premier defense research institutions—on AI research that may have military applications.³⁸ Similarly, California-based Teledyne Technologies, Inc. has partnered with Yunzhou Tech, a Chinese firm that has developed missile-equipped unmanned ships and has partnered with universities tied to the PLA.³⁹ In August 2019, one of Teledyne's subsidiaries was awarded a defense contract by the U.S.

*The Chinese firms that made the top 15 list are as follows: Aviation Industry Corporation of China (#5), China North Industries Group Corporation Limited (#8), China Aerospace Science and Industry Corporation (#10), China South Industries Group Corporation (#11), China Electronics Technology Group (#12), and China Shipbuilding Industry Corporation (#14). In the year prior, not a single Chinese company appeared on the top 100 list. It is possible that past rankings suffered from insufficient data—a common problem when analyzing Chinese companies. Ryan Pickrell, "China's Defense Industry Is Exploding onto the Scene As Its Top Arms Makers Push Past Western Powerhouses," *Business Insider*, July 23, 2019; "Top 100 for 2019," *Defense News*, 2019.

Military-Civil Fusion Powering World-Class Ambitions— *Continued*

Naval Undersea Warfare Center to develop autonomous underwater vehicles.⁴⁰

(See Chapter 3, Section 2, “Emerging Technologies and Military-Civil Fusion: Artificial Intelligence, New Materials, and New Energy,” for further discussion of military-civil fusion.)

Achieving Information Dominance

Guiding the PLA’s modernization efforts is the CCP’s directive for the PLA to prepare to fight “informationized local wars”—conflicts where dominance over the information domain is decisive to victory.⁴¹ Daniel K. Taylor, Acting Defense Intelligence Officer for East Asia at the Defense Intelligence Agency, noted in his testimony before the Commission that the PLA has long believed “dominance in the information domain is the first priority in modern conflict.”⁴² China’s 2019 defense white paper stresses, “War is evolving in form towards informationized warfare,” and the 2013 *Science of Military Strategy* states informationization “is the core of the world’s new military transformation.”⁴³ To this end, achieving information dominance would include “several key lines of operations, including electronic warfare, network warfare, and space warfare,” according to Mr. Cheng.⁴⁴

For the PLA, achieving information dominance in a modern conflict requires the development of offensive capabilities in the information domain. As Mr. Cheng testified, information dominance cannot be achieved by purely defensive measures. From the perspective of Chinese military strategists, offensive capabilities in the information domain are essential to protecting one’s networks and systems.⁴⁵ Indeed, according to an authoritative study guide commissioned by the Academy of Military Science, “it is more important to emphasize the offensive with regards to the information domain than it is in the traditional land, sea, and air domains.”⁴⁶

The PLA Strategic Support Force—created as a result of the PLA reorganization in 2016—is at the forefront of Beijing’s efforts to achieve information dominance.⁴⁷ Beijing’s goal is to build the Strategic Support Force into a force that can contest space, cyberspace, and the electromagnetic spectrum, while also supporting warfighting by other forces through the use of these domains to achieve the PLA’s operational objectives.⁴⁸ Beijing’s 2019 defense white paper singles out cyber capabilities as being of particular importance, stating China will “build cyber defense capabilities consistent with China’s international standing and its status as a major cyber country.”⁴⁹ The document goes on to highlight the Strategic Support Force as a “new type of combat force for safeguarding national security and an important driver for the growth of new combat capabilities.”⁵⁰ General Gao Jin, the former commander of the Strategic Support Force, has said that the force provides vital “support for safeguarding and raising up an ‘information umbrella’ for the military system, which will be integrated with the actions of our land, sea, and air forces and rocket forces throughout an entire operation, [and] will be the key force for victory in war.”⁵¹ The Strategic Sup-

port Force already has sophisticated capabilities, and according to U.S. analysts it is said “to field assets that cover the entirety of the ‘information chain,’ including space-based surveillance, satellite relay and communications, and telemetry, tracking, and navigation.”⁵²

An Emphasis on Naval and Air Power

General Secretary Xi has also placed a significant emphasis on the maritime and air domains, which CCP leaders have prioritized since at least the early 2000s. The PLA Army was traditionally considered China’s most important military service, but has received less attention in recent years. Beijing has increased its spending on the PLA Navy, PLA Air Force, and PLA Rocket Force at the expense of the PLA Army, furthering General Secretary Xi’s emphasis on winning modern wars in the maritime and air domains.⁵³

The transformation of the PLA Navy into a modern, blue water force is foundational to the larger goal of building a world-class military. According to an April 2019 article authored by Shen Jinlong and Qin Shengxiang, the commander and political commissar of the PLA Navy, respectively, “A modern, powerful navy is an important symbol of a world-class military.”⁵⁴ The article also repeated a phrase that General Secretary Xi used in a mid-2013 speech to the CCP Politburo: “The strongest nations are victorious at sea; those in decline are weak.”⁵⁵ Underscoring this emphasis, China’s 2015 defense white paper stated that the entire PLA is to focus on “maritime military struggle,” reflecting a new element of China’s military strategy.⁵⁶

To this end, the PLA Navy has prioritized the development of aircraft carriers and modernization of its submarine force, multimission surface forces, and amphibious assault capabilities. It deployed its aircraft carrier task group to the Western Pacific on multiple occasions beginning in 2016.⁵⁷ Another area of focus for the PLA Navy is subsurface operations. The PLA Navy has researched and developed advanced unmanned underwater vehicles that could potentially “swarm” submarines and launch stealth attacks. According to an October 2018 report in the *PLA Daily*, “Underwater offensive and defense operations constitute a major battle domain for the seizure of sea supremacy, and represent a major means of winning superiority in maritime operations.”⁵⁸ As China continues its rapid buildup of the PLA Navy, it will result in a blue water force projection capability as early as 2025, well ahead of the larger PLA modernization mandate to be completed by 2035, as the Commission has previously assessed.⁵⁹

The modernization priorities of the PLA Air Force and PLA Rocket Force also reflect Beijing’s emphasis on preparing for a conflict that could involve the United States. The PLA Air Force seeks to become a “strategic air force”—a force capable of projecting air power at a longer range—and continues to develop, acquire, and deploy increasingly advanced aircraft to project force into the Western Pacific.⁶⁰ The PLA Rocket Force is developing and testing new variants of missiles, such as hypersonic weapons with global strike capabilities and directed energy weapons, and is developing methods to counter ballistic missile defenses.⁶¹ During China’s celebration of its National Day in Beijing on October 1, the PLA showcased a number of advanced aerospace weapon systems including the hyper-

sonic DF-17 missile, DF-41 intercontinental ballistic missile, CJ-100 cruise missile, as well as stealth and supersonic unmanned aerial vehicles.⁶² Finally, the PLA Army also remains critical to missions such as defending China's borders and spearheading an invasion of Taiwan. It has focused in recent years on developing a "new-type army," which is smaller, more mobile, and suited for deployments abroad to protect China's global interests. The army could be deployed in conjunction with the PLA Navy Marines, who are also tasked with expeditionary operations.⁶³

Pushing the Bounds of a "Minimal Nuclear Deterrent"

China is taking steps that push the bounds of its long-held policy of maintaining a "minimal nuclear deterrent" by growing, modernizing, and diversifying its nuclear arsenal and delivery systems. U.S. Strategic Command estimates that China doubled its number of warheads in the last decade, and officials such as Defense Intelligence Agency director Lieutenant General Robert Ashley, Jr. and U.S. Strategic Command head of intelligence Rear Admiral Michael Brooks assess that China is on track to double its stockpile again over the next decade.⁶⁴ Lieutenant General Ashley further characterized this buildup as "the most rapid expansion and diversification of its nuclear arsenal in China's history."⁶⁵ David Santoro, director and senior fellow for nuclear policy at the Pacific Forum, noted in his testimony to the Commission that China now possesses an arsenal more capable of striking the U.S. homeland than ever before and has been making significant enhancements in its capabilities.⁶⁶

These enhancements include developing the road-mobile DF-41, equipping existing missiles with multiple-independently targetable-reentry vehicles, and testing hypersonic glide vehicle technology that would enable nuclear missiles to better evade an adversary's missile defenses.⁶⁷ The PLA may also be developing a nuclear-capable strategic bomber that would create a nuclear triad by adding an air-launched capability to China's existing land- and sea-based nuclear launch systems.⁶⁸ China does not release official data on its nuclear forces, but the U.S. government and other sources have consistently estimated in recent years that China possesses several hundred nuclear warheads, up from a Defense Intelligence Agency estimate of more than 100 in the late 1990s.⁶⁹

Significant changes also may occur in China's nuclear policy and posture, due to the expansion of China's nuclear arsenal, the potential creation of a nuclear triad, and the elevation of the then-PLA Second Artillery Force from a branch to a service.⁷⁰ As China's 2019 defense white paper notes, China's nuclear forces are increasing their readiness posture to enhance the country's deterrence capabilities to "protect national strategic security and maintain international strategic stability."⁷¹ Dr. Santoro said that while Chinese

*Government and non-government entities have frequently diverged in the past over their estimates of China's total number of nuclear warheads. Estimates by the Federation of American Scientists, for example, have generally been lower than most U.S. government agencies. As of 2019, however, there appears to be a consensus between the Federation of American Scientists and the Defense Intelligence Agency that China's nuclear stockpile is in the low hundreds. U.S.-China Economic and Security Review Commission, *Hearing on A 'World-Class' Military: Assessing China's Global Military Ambitions*, oral testimony of Daniel K. Taylor, June 20, 2019, 35; Hans M. Kristensen, "DIA Estimates for Chinese Nuclear Weapons," *Federation of American Scientists*, May 31, 2019.

nuclear strategy continues to be focused on deterrence, it will entail “a more integrated deterrence posture,” possibly involving collaboration with the Strategic Support Force, which would be charged with supporting the nuclear forces with deterrence operations in the information, space, and cyber domains.⁷² General Secretary Xi has stated that the PLA Rocket Force needs to be prepared to conduct “comprehensive deterrence and warfighting,” which could imply that the force—including its nuclear component—will not be limited to strict deterrence functions, and could instead take on a more active posture.⁷³ Beijing could also change its posture for nuclear counter-attack by adopting a “launch-on-warning” posture; improvements to the PLA’s information and space-based early-warning system would make such a posture possible.⁷⁴ All of these developments could increase the chances of inadvertent escalation with the United States.

Although the term “world-class” has not been applied to China’s nuclear forces specifically, General Secretary Xi has emphasized the importance to China of possessing a strong nuclear capability. He has said the PLA Rocket Force will be “a strategic pillar for our country’s great power status, and an important cornerstone in protecting our national security.”⁷⁵ Beijing does not appear to be seeking quantitative parity with the United States for its nuclear force. Nevertheless, as Mr. Taylor testified before the Commission, due to the improvement in Beijing’s nuclear capabilities—including more precision strike-capable systems, the development of a nuclear triad, and growth in number of warheads—the CCP “will have more options in the nuclear realm” in the future.⁷⁶

Defense Budget Continues to Eclipse Neighbors

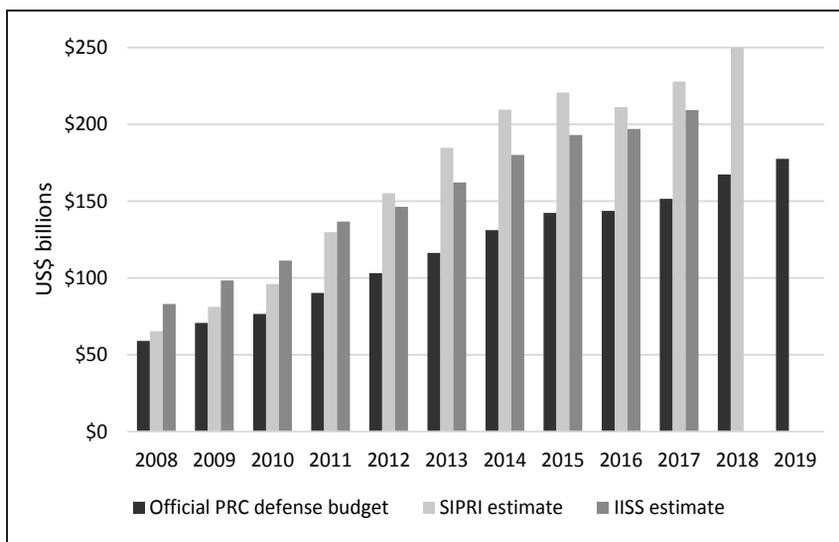
China has spent more on its military than any other country outside the United States since 2002, and its defense budget dwarfs those of its neighbors in the region. As the Center for Strategic and International Studies noted in a 2019 study, “China’s defense spending has seen a nearly eight-fold increase over the past two decades.”⁷⁷ China’s official 2019 defense budget amounted to \$177.61 billion, more than the combined official budgets of India, Japan, and South Korea.* The disparity in defense spending between China and its neighbors is also growing, with China’s 2019 defense budget representing an increase of 7.5 percent over 2018, while India and Japan’s 2019 defense budgets increased by 6.87 and 1.3 percent, respectively.†⁷⁸ Analysts also note the peculiarity of China’s military buildup—the most massive in absolute terms since World War II—at a time when its borders are secure and there is increasing demand for domestic spending.⁷⁹

*The 2019 budgets for select regional countries were as follows: India (\$49.7 billion), Japan (\$47 billion), South Korea (\$41.35 billion), and the Philippines (\$3.4 billion). Vivek Raghuvanshi, “India’s New Defense Budget Falls Way Short for Modernization Plans,” *Defense News*, February 5, 2019; Kim Minseok and Bradley Perret, “South Korean 2019 Defense Budget Up 8.2%,” *Aerospace Daily*, December 12, 2018; Jon Grevatt and Craig Caffrey, “Philippines Outlines 34% Defense Budget Increase,” *Jane’s Defense Weekly*, October 24, 2018.

†The gap in regional defense spending as a percentage of gross domestic product is also substantial. Since 1999, China’s annual overall defense expenditures have been steady at around 2 percent of gross domestic product. Japan and the Philippines, in comparison, spend about 1 percent of their gross domestic product on defense. India, by comparison, spent about 2.4 percent of its gross domestic product on defense in 2018, but this is from a much lower base than China. These percentages are estimated by the Stockholm International Peace Research Institute. Stockholm International Peace Research Institute, “SIPRI Military Expenditure Database.”

China's official budget is not transparent. Authoritative observers note that one cannot accept China's official figures at face value due to Beijing's provision of only top-line numbers and omission of major defense-related expenditures, such as research and development and foreign arms purchases.⁸⁰ For these reasons, Phillip C. Saunders, director of the National Defense University's Center for the Study of Chinese Military Affairs, estimated in testimony to the Commission that the actual budget is likely \$30 billion to \$50 billion more than officially reported.⁸¹ The Department of Defense added an additional 25 percent to China's official budget numbers from 2012 to 2017 in its report to Congress on China's military, and well-regarded think tanks have estimated China's military budget to be a full 40 to 50 percent larger than what the central government officially reports.⁸² According to the Stockholm International Peace Research Institute, China's estimated overall defense expenditure in 2018 was \$250 billion, larger than the combined sums of Saudi Arabia, India, and France (the world's third, fourth, and fifth top spenders, respectively).⁸³ This figure amounted to 1.9 percent of China's gross domestic product and 5.5 percent of government spending that year.⁸⁴

Figure 1: Official and Estimated Actual Chinese Defense Spending, 2008–2019



Source: Center for Strategic and International Studies China Power Project, “What Does China Really Spend on Its Military?” 2019; Members of Center for Strategic and International Studies China Power Project, interview with Commission staff, October 15, 2019.

Note: All values in nominal U.S. dollars. SIPRI stands for Stockholm International Peace Research Institute. IISS stands for International Institute for Strategic Studies. Estimated figures from IISS for 2018 and 2019 and from SIPRI for 2019 are not available.

Even accepting its official numbers, the growth of China's defense spending for 2019 will exceed its 2019 announced economic growth rate target of 6 to 6.5 percent—a figure some observers believe is itself overstated.⁸⁵ Whether calculated by official or estimated growth rates, China's defense spending has outpaced overall economic growth most years since General Secretary Xi assumed power—a

remarkable fact reflecting the high priority Beijing assigns to its military in the face of other demands on government resources.*⁸⁶ Dr. Saunders noted to the Commission that there already exists a competition between China's military services for resources; if the Chinese economy slows down further, it would exacerbate inter-service competition and could delay the production or fielding of high-end assets.⁸⁷

A World-Class Military in Its Region and Beyond

Expanding the Battlespace beyond China's Borders

In recent years, China's military strategy, once focused on territorial defense, has matched the evolving ambition of Beijing's geopolitical goals to increase its focus on expanding the battlespace as far beyond China's borders as possible. Authoritative PLA writings now refer to a concept described as "forward defense," which seeks to extend the PLA's operational reach beyond China's periphery in order to defend China's overseas interests.⁸⁸ According to the 2013 *Science of Military Strategy*, a key PLA goal is to realize the "expansion from home territory defense to forward defense," extending China's defensive perimeter to form an "arc-shaped strategic zone that covers the Western Pacific Ocean and the northern Indian Ocean."⁸⁹ It also discusses the imperative to "strike the enemy from as far range as possible" and to develop the capability to conduct "relatively large-scale joint operations beyond the first island chain" in order to achieve its objectives regarding its territorial disputes.⁹⁰

To this end, the CCP has tasked the PLA Navy to shift its focus from "offshore waters defense" to a combination of "offshore waters defense" and "open seas protection."⁹¹ This has included "speeding up the transition of [the PLA Navy's] tasks from defense on the near seas to protection missions on the far seas," a directive first given in China's 2015 defense white paper and described with greater urgency in its 2019 defense white paper.⁹² Notably, Chinese military leaders' discussion of the need for the PLA Navy to prepare for "challenging and exchanging blows" with the United States in the far seas suggests this new directive comprises both peacetime escort tasks as well as combat missions in a wartime environment.⁹³

Global Interests and Overseas Bases

The expansion of China's interests around the world is a key driver of the CCP's goal to build the PLA into a world-class military. China's 2015 defense white paper explains that "with the ceaseless expansion of China's national interests, its national security is more vulnerable to international and regional turmoil," adding that protecting the security of overseas interests such as energy and resources; sea lines of communication; and other institutions, personnel, and assets abroad has become an "imminent issue."⁹⁴ The 2019 white paper expands on this idea, stating that China's overseas interests are endangered by a variety of threats such as terrorism and "international and regional turmoil," and that the

*Analysts use different methods to assess how Beijing prioritizes military spending. For example, others believe that defense expenditure as a percentage of gross domestic product is a more significant metric than the relative rate of growth of defense spending as it reflects the overall priority a country places on defense issues compared to other national concerns.

PLA must protect them.⁹⁵ An earlier expression of this sentiment is found in the 2013 *Science of Military Strategy*, which states that China's interests are no longer confined to its territory but are "extending toward global public domains, including oceans, space, and electromagnetic space."⁹⁶

In recent years, China has made initial steps to establish a permanent military presence in locations around the world to anchor its expanding defensive perimeter and sustain its overseas operations. In 2019, Beijing signaled it intended to expand this presence, stating that as a matter of national policy the PLA "builds far seas forces and develops overseas logistical facilities ... to address deficiencies in overseas operations and support."⁹⁷ In 2017, the PLA opened its first permanent overseas base in Djibouti,^{*} despite having said in its 1998 defense white paper that "China does not station any troops or set up any military bases in any foreign country."[†]⁹⁸ Shortly thereafter, the PLA opened a satellite and space mission control station in the Patagonia region of Argentina, establishing its first permanent presence in the Western Hemisphere.[‡]⁹⁹ Beijing has a 50-year lease on the land, and experts assess that the facility, which is operated by the Strategic Support Force, could be used to collect intelligence on U.S. and other foreign satellites, missile launches, and drone movements. It could also interfere with or compromise communications, electronic networks, and electromagnetic systems in the Western Hemisphere.¹⁰⁰ In March 2018, then-commander of U.S. Africa Command General Thomas D. Waldhauser testified before the House Armed Services Committee that "the port in Djibouti is not the last port that China will build [in Africa]."¹⁰¹ In February 2019, he reiterated the possibility of more Chinese bases being stood up on the continent during a question and answer session before the Senate Armed Services Committee.¹⁰² Some analysts have pointed to Walvis Bay in Namibia as an example of a potential future PLA base in Africa.¹⁰³

China has also begun expanding its military presence outside its borders in the Indo-Pacific region. According to media reports, the Chinese People's Armed Police, a paramilitary force under the PLA's command, has operated from outposts in Tajikistan for at least three years. The troops, which are based about 10 miles from the border with Afghanistan, are ostensibly on a counterterrorism mission, although Beijing denies reports of their presence outside China's borders.¹⁰⁴ Most recently, according to U.S. officials, Beijing has reached an agreement for the PLA to operate from a naval base in Cambodia. Phnom Penh reportedly would allow China to use the base for 30 years—with automatic renewals every 10 years after

^{*}The PLA refers to its Djibouti installation as a "support facility" rather than a "military installation," likely for political reasons.

[†]This language was repeated in China's 2000 defense white paper but taken out of defense white papers beginning in 2002. China's State Council Information Office, *China's 2002 National Defense*, December 2002; China's State Council Information Office, *China's National Defense*, July 1998.

[‡]The Chinese government operates a number of other overseas facilities, including some linked to the PLA, which it could use for military purposes. For instance, China operates satellite stations in Chile, Namibia, and Sweden. Stephen Chen, "China Launches Its First Fully Owned Overseas Satellite Ground Station Near North Pole," *South China Morning Post*, June 12, 2017; Brook Larmer, "Is China the World's New Colonial Power?" *New York Times*, May 2, 2017; Jeremy Page, "China, U.S. Use Same Tracking Base," *Wall Street Journal*, November 17, 2011; *Globalsecurity.org*, "Swakopmund, Namibia."

that—where it would be authorized to post military personnel, store weapons, and berth warships.¹⁰⁵

China has also reportedly sought to establish a military presence in Vanuatu—which has endorsed the Belt and Road Initiative (BRI)—and many analysts believe China plans a second naval base near Gwadar Port in Pakistan, although the Chinese government denies having intentions to do so.¹⁰⁶ China also is currently building its fifth facility in Antarctica, which will feature China's first permanent airfield on the continent.¹⁰⁷ There is no evidence of Chinese military presence or military involvement in these facilities to date, but it is possible they could support missile tracking and targeting or be used as cover for a clandestine military or intelligence collection presence.¹⁰⁸

The Potential Militarization of the Belt and Road Initiative

China's BRI has emerged as the clearest organizing concept behind the PLA's expanding overseas presence, although the PLA's exact role in providing security for BRI is not yet known.¹⁰⁹ In January 2019, General Secretary Xi called for China to build a “system of security guarantees” for BRI, echoing language used in 2018 by Chinese Minister of Defense Wei Fenghe announcing the PLA's interest in working with Pakistan to provide a security guarantee for BRI projects.¹¹⁰

In publications in military journals, the PLA has described BRI as an effort to expand China's strategic depth, which has generated new requirements and options for Beijing to use and station military forces overseas.¹¹¹ In an article by several PLA Air Force officers, for example, the authors reveal the existence of a military “going global” strategy that requires the PLA to routinize military activities outside China's borders while encouraging the use of BRI investments—especially in ports, airports, and railways—to support overseas power projection.¹¹² In an article published in 2018, a high-ranking PLA Navy officer similarly described BRI as a justification for China to increase its overseas military presence and expand its strategic depth, including by establishing additional overseas military bases.¹¹³ Also in 2018, the PLA Navy South Sea Fleet's commander stated that the force must “closely coordinate with BRI ... and ensure that strategic capabilities can extend and radiate wherever China's interests develop.”¹¹⁴ More recently, in 2019 at a China-hosted forum for the heads of the militaries of Caribbean and South Pacific countries, Minister Wei repeated the idea that BRI serves as a useful platform for military cooperation, calling for military “exchanges and cooperation under the framework of the BRI.”¹¹⁵ According to a PLA journal article published in May 2019, the frequency and scope of PLA overseas operations “must inevitably increase” to protect China's overseas interests, especially BRI projects.¹¹⁶

Protecting China's interests associated with BRI could require further deployments of PLA capabilities overseas, although in the meantime Beijing could rely on private and host nation security forces to fill in the gaps.¹¹⁷ Chinese companies abroad are increasingly procuring security services from Chinese private security contractors rather than U.S. or European counterparts. An estimated

20 Chinese private security companies—often staffed by former PLA officers with close ties to Beijing—now operate overseas and employ 3,200 security personnel in countries such as Iraq, Pakistan, and Sudan.¹¹⁸ Given Chinese laws allowing the CCP to exert a significant degree of control over Chinese enterprises for national security purposes, it seems likely Beijing could use these forces as a tool of national policy in peacetime or during a crisis.¹¹⁹

Over the past decade, in part through BRI, China's investment in overseas commercial ports has increased dramatically, which has raised concerns that Beijing could convert economic stakes into bases or other strategic outposts.¹²⁰ As of 2019, Chinese state-owned enterprises either owned equity in or had an operating lease at approximately 70 ports outside of China.¹²¹ Reservations about Chinese intentions grew when Beijing converted outstanding debt into a controlling equity stake and a 99-year lease for Hambantota port in Sri Lanka in 2017.¹²² Analysts from the U.S.-based Center for Advanced Defense Studies studied Chinese port investments and authoritative Chinese publications discussing the rationales for these investments, finding that they “are generating political leverage, increasing Beijing's military presence, and reshaping the strategic operating environment in China's favor—often at the expense of the recipient country.”¹²³

Ports Chinese firms invest in can also have dual-use military functions; for example, the requirements in China's 2017 National Defense Transportation Law to “embed military in civilian” suggest commercial ports could be utilized by military personnel if Beijing were to decide it was in its interests to do so.¹²⁴ Beijing has also reached agreements for the PLA Navy to use commercial ports in which Chinese enterprises have no commercial stake, including at the Port of Salalah in Oman, for a range of support functions to military operations including refueling and liberty calls.¹²⁵ Accordingly, Isaac B. Kardon, assistant professor at the U.S. Naval War College, noted in testimony to the Commission that although China may not focus exclusively on establishing additional formal military basing agreements—such as those with a status of forces agreement—the “PLA will avail itself of a network of commercial facilities without any formal or overt agreements for military use.”¹²⁶ Such agreements will likely be secured due to the fact that Chinese state-owned enterprises are among the world's leading port operators globally.¹²⁷

Another important concept guiding the growth of the PLA's overseas presence is what Beijing calls its “strategic strongpoint” model. According to this model, Chinese-invested or controlled ports, which range from commercial ports in which Chinese state-owned firms own a controlling stake to outright military bases, such as the one in Djibouti, would be mutually-supporting and facilitate the PLA's overseas operations, including through replenishment and other support services.¹²⁸ The 2013 *Science of Military Strategy* explains that strategic strongpoints will move the PLA in the “direction of the two oceans” (the Pacific and the Indian oceans), act as forward operating bases or otherwise support military operations, and exert influence in the surrounding region.¹²⁹ According to Dr. Kardon, Chinese strategists consider China's naval base in Djibouti as well as the ports at the artificial islands Beijing has built in the South

China Sea to be strategic strongpoints and part of an effort to develop a “large-area maritime defense system.”¹³⁰

Of the two oceans discussed in the *Science of Military Strategy*, Conor Kennedy of the U.S. Naval War College asserts that Beijing is currently prioritizing the Indian Ocean—which links Djibouti and the South China Sea—for the further development of strategic strongpoints as it is the most important passageway for China’s oil imports and other seaborne trade.¹³¹ At the same time, Chinese strategists discuss the potential for establishing strategic strongpoints in the Pacific Ocean, and Beijing’s expanding security cooperation with Pacific Island countries and reported attempts to establish a military presence in the region, such as in Vanuatu, could support this effort.¹³² According to Dr. Kardon, “The addition of a single, more capable ‘base’ in the central Indian Ocean (say at Hambantota, where much speculation abounds about Chinese intentions), on the west coast of Africa, and in the South Pacific, would shorten supply intervals such that the [PLA Navy] could sustain certain expeditionary operations throughout the Indian Ocean region, the South Atlantic, and the Western Pacific, respectively.”¹³³

PLA Expeditionary Capabilities Improving

The PLA has made substantial progress in developing and fielding capabilities for force projection overseas.¹³⁴ The PLA Navy is developing its third aircraft carrier, but its most significant development of force projection capability has been its steady commissioning of amphibious assault ships. Christopher D. Yung, then-Donald Bren Chair of Non-Western Strategic Thought at the Marine Corps University, testified to the Commission that it was the procurement of new amphibious ships that “truly heralded the arrival of China’s naval expeditionary capability.”¹³⁵ These ships include large amphibious transport docks, hovercraft-style landing craft, and a new, larger class of ship that reportedly can carry more than 25 helicopters.¹³⁶ The first ship of the latter class was officially launched in September 2019, though *Jane’s Defense Weekly* assesses that sea trials may not commence for a year.¹³⁷

In addition, China has doubled the size of its marine corps, which is under the command of the PLA Navy, from a force of 20,000 to an estimated 40,000 marines.¹³⁸ The missions of the PLA Navy Marines are also expanding. While the primary mission of the PLA Navy Marines has traditionally been to seize and hold Taiwan’s offshore islands and islands and reefs in the East and South China seas, it is now being described as a “new-type combat force” capable of operating from land, air, and sea and conducting operations in maritime, urban, jungle, tropical, desert, and cold environments.¹³⁹ In the PLA Air Force, China’s new Y-20 strategic heavy-lift aircraft entered service in 2016 and its AN-225 strategic heavy-lift aircraft is in production, both of which will enhance the PLA’s expeditionary capabilities.¹⁴⁰ The PLA Army is also seeking to enhance its suitability for expeditionary operations beyond China’s territorial boundaries, including by strengthening special operations, helicopter, and light mechanized capabilities.¹⁴¹

The PLA’s development of expeditionary capabilities could increase China’s confidence in using force outside its borders. Dr. Yung

assessed the PLA's first out-of-area combat operation will likely be as part of a coalition of countries in the Shanghai Cooperation Organization (SCO), of which China is a founding member, responding to a security crisis such as a terrorist attack or insurgency in a member country.¹⁴² The PLA has been preparing for such an operation through regular combined exercises focused on counterterrorism and internal security threats it has conducted with other SCO militaries since the mid-2000s, which include Russia and the Central Asian states.¹⁴³ Both Dr. Yung and Dr. Kardon assessed the PLA has the transport capability to deploy troops for such an operation and that Beijing, which is sensitive to concerns among foreign countries about its overseas military presence, might feel such an operation would be seen as legitimate due to its being under the auspices of an international organization.¹⁴⁴ Dr. Kardon argued that Beijing might view such an operation as enjoying greater legal justification due to legal provisions in the SCO's agreement governing military exercises among member states, which some Chinese scholars cite as providing a model for future overseas bases.¹⁴⁵

The PLA's deployment of new naval expeditionary capabilities could further alter regional or even global security dynamics. According to Dr. Yung, it is "inevitable" that within 10 to 15 years China will deploy an amphibious ready group—a group of warships that carries a landing force equipped for amphibious operations—beyond its periphery, potentially commencing regular patrols in the Indian Ocean or elsewhere in the region.¹⁴⁶ He argued that such deployments would allow China to quickly respond to an emerging crisis or achieve other geopolitical objectives.¹⁴⁷ The deployment of this type of force could also provide Beijing a significant new tool to increase military coercion of its neighbors, presenting Japan, Taiwan, the Philippines, and others with the prospect of up to thousands of Chinese marines ready to rapidly seize disputed territory in the East and South China seas.

PLA Increasing Overseas Deployments

In recent years, the PLA has increased the frequency and complexity of its overseas operations in peacetime, allowing it to gain valuable operational experience for a potential future overseas military crisis.¹⁴⁸ Most significantly, the antipiracy task groups the PLA Navy has sent to the Gulf of Aden for more than ten years have come to constitute a near-constant PLA presence in the Indian Ocean.¹⁴⁹ These task groups have included submarines since 2013, providing the PLA with opportunities to improve its undersea warfare capabilities far from China's shores, and have been viewed with alarm by regional states such as India.¹⁵⁰ Since 2012, the PLA has also participated in over 100 international joint exercises with multiple different countries and organizations.¹⁵¹

Other key PLA deployments overseas have been for humanitarian assistance and disaster relief (HA/DR) operations and UN peacekeeping operations (PKO). Since 2013, the PLA has conducted ten HA/DR operations abroad and is currently involved in seven PKOs, which have provided the PLA the opportunity to deploy throughout the Indo-Pacific and in Africa and the Middle East.*¹⁵² While the

*This number does not include goodwill visits by the PLA's *Peace Ark* hospital ship.

PLA has significantly improved its ability to deliver relief supplies abroad and deploy more capabilities and personnel on these missions over the past 15 years, these deployments have also allowed the PLA to gain useful experience that could support future overseas deployment of combat troops.¹⁵³ For instance, HA/DR missions provide the PLA with opportunities to practice and improve operational capabilities such as command and control, small unit leadership, engineering, helicopter operations, and the logistics necessary to project and sustain forces abroad (especially strategic lift, medical aid, and long-range supply and sustainment), though offering no real experience in the demands of combat itself.¹⁵⁴ The PLA has used UN PKOs to gain similar experience; in December 2017, for example, a PLA Army helicopter unit deployed to Sudan to support a UN PKO, marking the PLA's first sustained operational overseas deployment of its army aviation capabilities.¹⁵⁵

Routine deployments of Chinese naval and air forces abroad also help improve these services' ability to operate overseas. The PLA Navy regularly makes port calls and conducts exercises with other navies far afield, including in the Mediterranean Sea, Baltic Sea, Gulf of Aden, and the waters off Australia. The PLA's port calls and participation in exercises with other militaries in the Western Hemisphere in recent years, most recently deploying a hospital ship to Venezuela as part of a goodwill visit in September 2018, further demonstrate the PLA Navy's growing global presence.¹⁵⁶ The PLA Air Force has also gained experience with overseas deployments in recent years, sending H-6K strategic bombers and Y-9 transport aircraft to participate in the International Army Games competition in Russia in 2018, marking the first time Beijing had deployed these key power projection aircraft overseas.¹⁵⁷ More recently, a H-6K bomber deployed again to Russia, this time to participate in the "Aviadarts 2019" competition, indicating these deployments may become routine.¹⁵⁸ (See Chapter 4, Section 2, "An Uneasy Entente: China-Russia Relations in a New Era of Strategic Competition with the United States," for further discussion of China-Russia relations.)

Still, significant weaknesses remain in the PLA's expeditionary capabilities, as the force lacks a fully-developed doctrine, robust command and control and logistics, and the forward-deployed medical, maintenance, and repair capabilities required for sustained expeditionary operations beyond China's periphery.¹⁵⁹ Nevertheless, Dr. Yung told the Commission that lessons learned from the overseas operations the PLA has already conducted, in particular its antipiracy operations, have led to improvements in the PLA's ability to conduct and sustain expeditionary operations.¹⁶⁰ The PLA also derived important lessons on overseas operations from its previous experiences evacuating Chinese citizens from unstable countries, including from Libya in 2011 and Yemen in 2015.¹⁶¹ These operations are not combat, nor are they a near substitute for combat, but they do provide the PLA with opportunities to practice and improve capabilities that could be applied to a range of future missions, including combat operations.

Implications for the United States

Beijing's ambition to build the PLA into a world-class military will create challenges for the interests of the United States and its allies and partners in the Indo-Pacific region and beyond. The development of a force that is truly world-class in technology, training, and personnel would likely allow Beijing to prevail in a military conflict with any regional adversary and could increase the willingness of Chinese leaders to employ the PLA to coerce China's neighbors into forfeiting their territorial claims and other sovereign interests. The PLA is already engaged in routine coercion of its neighbors below the threshold of military conflict, which increases the likelihood Beijing would use a more capable PLA even more assertively.

Possessing a world-class PLA would increase Beijing's confidence in its ability to decisively resolve its sovereignty disputes in the region through the use of force. China has major territorial disputes with two U.S. treaty allies in Japan and the Philippines, and views Taiwan, a key U.S. security partner, as a renegade province. Beijing could decide to initiate a military conflict even if it calculated the United States would intervene due to its confidence it would be able to effectively deter or defeat intervening U.S. military forces.

A Chinese military presence outside the Indo-Pacific would present an additional challenge to U.S. intervention as the PLA could use its network of overseas strongpoints to delay or otherwise frustrate the arrival of U.S. forces to the primary regional battlefield. Should the PLA prove able to rapidly achieve its battlefield objectives—not an unlikely prospect given the probable limited scope of a conflict over sovereignty disputes—the United States could be presented with a military *fait accompli*. As Elbridge Colby, then-director of the defense program at the Center for a New American Security, argued in his statement for the Commission's June 2019 hearing, "The foremost danger we face is that China has a *world-class* military that it can put to regional uses, not a global one [emphasis original]."¹⁶²

Advances in the application of AI by the PLA may also lower barriers to military conflict. Derek Grossman, senior defense analyst with the RAND Corporation, wrote in a statement for the Commission's 2019 hearing, "As it begins to rely on autonomous vehicles within a system-of-systems approach to warfare, Beijing is likely to perceive the risk of escalation to decline. In other words, attacking unmanned drones or the computer systems they rely upon will not pose an immediate risk to human life, and thus will be contextualized simply as robotic warfare."¹⁶³ Mr. Grossman also asserts that with the PLA's increased reliance on AI, "the human factor—common sense, emotion, morality, and ethics—might be replaced by cold mathematical computations—increasing the likelihood for miscalculation and war escalation."¹⁶⁴

U.S. commercial or academic collaboration with China on developing cutting-edge technology could make the United States an accomplice to the PLA's efforts to become a world-class force. Military-to-military cooperation that improves the PLA's operational capabilities and officer training could likewise contribute to this outcome. While many U.S.-China military-to-military exchanges serve to stabilize the broader relationship, others are used by the PLA as

opportunities to improve its operational skills and officer training and personnel management programs.

Even without armed conflict between China and the United States, Beijing could use its overseas military presence to influence policies or events in countries outside the Indo-Pacific. Abraham M. Denmark, director of the Asia program at the Woodrow Wilson International Center for Scholars, testified to the Commission, “For countries less concerned about China’s strategic ambitions, China is seen as a potential partner for providing humanitarian assistance and disaster relief, military assistance, and potentially domestic security support.”¹⁶⁵ The CCP already provides support to a number of countries around the world that pursue policies injurious to U.S. interests; a more robust overseas military presence would provide Beijing additional tools to enable the regimes behind these actions. A world-class PLA almost certainly will be an even more appealing security partner for many countries, increasing Beijing’s influence in more corners of the world, even where it cannot project force and sustain combat operations.

Today, the PLA’s capabilities and increasing global presence already pose challenges to the U.S. government and military, and these challenges will only increase as the PLA progresses toward becoming a truly world-class fighting force. As Thomas G. Mahnken, president and CEO of the Center for Strategic and Budgetary Assessments, stated in his testimony to the Commission, China no longer poses a challenge only in its own region. Now, “China poses a challenge—political, economic, and military—that crosses the boundaries of the Defense Department’s geographic combatant commands and the State Department’s regional bureaus.”¹⁶⁶

ENDNOTES FOR SECTION 1

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SECTION 2: AN UNEASY ENTENTE: CHINA-RUSSIA RELATIONS IN A NEW ERA OF STRATEGIC COMPETITION WITH THE UNITED STATES

Key Findings

- China and Russia both object to the current international order and the interests it promotes, including human rights, democracy, and a rules-based economic system that imposes on them obligations they wish to evade. Both countries see the values of that order as a threat to their authoritarian models and view the United States as the leader and primary defender, along with its alliance networks, of that order. Based on that common perception and their mutual interest in opposing the United States and its allies, an entente between China and Russia has emerged in recent years as the two have increased their diplomatic, military, and economic cooperation.
- China and Russia perceive threats to their regime security emanating from democracy movements—which they allege are “color revolutions” instigated by the United States—and from the free, open internet. Both countries seek to combat these challenges by interfering in democratic countries’ political processes and jointly championing the idea that the internet should be subject to sovereign states’ control. The two countries have also coordinated efforts to act as a counterweight to the United States by supporting rogue or authoritarian regimes and opposing U.S.-led votes in the UN Security Council. More broadly, China and Russia’s promotion of norms conducive to authoritarianism aims to subvert key elements of the international order.
- Beijing and Moscow’s view that the United States and its allies are in decline has emboldened both countries to take more assertive action in their regions in ways inimical to U.S. interests. These actions include military and paramilitary activities pursued separately by China and Russia that threaten the sovereignty of their neighbors as well as coordinated activity that creates new challenges for the United States and its allies in responding to combined Sino-Russian military operations.
- China and Russia’s trade in oil and gas is an important avenue by which both countries circumvent U.S. tariffs and international sanctions. Russia is China’s top source of imported oil, and is poised to become a major provider to China of natural gas over the next decade. Major energy deals and high-level contacts serve to soften the blow of sanctions and tariffs on both countries’ products, while signaling that China and Russia can rely on each other if alienated by the United States and other countries.

- Nonetheless, the China-Russia relationship remains scarred by historical enmity and constrained by Moscow's concerns over its increasingly subordinate role in the partnership. Divergence in key national interests, such as different stances on territorial disputes and support for regional rivals, further limits bilateral cooperation. Each country also harbors concerns over the potential military and geopolitical threat posed by the other. Moreover, China's growing influence in regions Russia perceives as its traditional sphere of influence—such as Central Asia and the Arctic—complicates the creation of a formal alliance.

Recommendations

The Commission recommends:

- Congress direct the Office of the Director for National Intelligence to prepare a National Intelligence Estimate of China's and Russia's approaches to competition with the United States and revision of the international order. The assessment would consider the influence of both countries' ideologies on their foreign policies, including areas both of overlap and divergence; potential "wedge issues" the United States might exploit; and the implications for the North Atlantic Treaty Organization of a two-front conflict involving both China and Russia.
- Members of Congress promote U.S. interests in the Arctic by participating in congressional delegations to Arctic Council member states and attending the biennial Conference of Parliamentarians of the Arctic Region to discuss economic and security concerns regarding China and Russia.

Introduction

China-Russia relations have strengthened considerably over the last decade in the face of what both countries perceive to be an increasingly threatening external environment. Beijing and Moscow view the United States as posing a threat to their regime survival and national security. They also believe the United States and other democracies are in decline and see an opportunity to expand their geopolitical influence at the expense of Washington and its allies. International sanctions and the isolation of Russia following its annexation of Crimea in 2014 have accelerated the closer alignment between the two, particularly in the defense domain, despite Moscow's reluctance to align itself too closely with an increasingly stronger Beijing.

Both countries currently portray their relationship as unprecedentedly close. A growing power asymmetry, divergent national interests, historic distrust, and lack of cultural symbiosis, however, fundamentally limit the potential for the two to deepen relations to the level of a formal alliance. Still, China and Russia's deep-seated resentment of the United States and key elements of the international order—combined with the possibility for the two countries to coordinate action to advance their national interests—poses significant challenges to the interests of the United States and its allies and partners.

This section examines key areas and drivers of Sino-Russian cooperation as well as the factors limiting that cooperation. It then explores the combination of cooperation and competition between

China and Russia in three key regions: Central Asia and Afghanistan, the Middle East, and the Arctic. The section concludes with an assessment of the implications of the China-Russia relationship for the United States and its allies and partners. It is based on findings from the Commission's March 2019 hearing on China-Russia relations, consultations with U.S. and foreign government officials and nongovernmental experts, and open source research and analysis.

A Deepening Entente

China and Russia are deepening bilateral ties across virtually every aspect of their relationship, including the geopolitical, military, and energy spheres. During their June 2019 summit in Moscow, General Secretary of the Chinese Communist Party Xi Jinping and Russian President Vladimir Putin agreed to upgrade the Sino-Russian relationship to what they termed a “comprehensive strategic partnership of coordination for a new era.”¹ China's July 2019 defense white paper affirmed the importance of this relationship, framing China-Russia cooperation as crucial to “maintaining global strategic stability.”² Russian analysts Dmitri Trenin and Alexander Gabuev have characterized the Sino-Russian relationship as an “entente,” which Mr. Trenin specifically defines as a relationship marked by common interests and agreement over the organizing principles of a desired world order.³ In testimony before Congress in January 2019, then-U.S. Director of National Intelligence Daniel R. Coats highlighted this synergy in Sino-Russian ties, assessing that “China and Russia are more aligned than at any point since the mid-1950s.”⁴

Unlike the United States' relationships with its allies, China-Russia ties are not based on a formal treaty document with a collective self-defense provision. Sino-Russian relations are governed by the 2001 “Treaty of Good-Neighborliness and Friendly Cooperation,” a 20-year pact that contains provisions promising not to engage in military action against the other, requiring consultation in the face of emergent threats, and mandating increased cooperation in spheres such as military know-how.⁵ Russian analyst Alexander Korolev argues that the 2001 treaty falls “short of being a straightforward defense pact [but] squarely qualifies as a nonaggression pact and a consultation pact.”⁶ While the treaty technically expires in 2021, it contains language authorizing an automatic renewal every five years provided neither party objects.⁷ According to Richard Weitz, senior fellow at the Hudson Institute, the treaty could eventually contain collective defense provisions.⁸

A Convergence of Geopolitical Interests

Similar Ideology and Views of World Order

Perhaps the strongest drivers of China and Russia's growing alignment are their similar governing philosophies and desire to revise the international order. Both countries are governed by authoritarian and aggressive regimes which exploit the global economy and use both hard and “sharp” power* to disrupt and oppress

*The term “sharp power” describes how authoritarian regimes like China seek to undermine democratic institutions in other countries. Many of these activities rely on neither coercive nor persuasive power—hard and soft power, respectively—because they aim not to influence the pol-

their neighbors. The two countries' leaders believe that Western countries—particularly the United States—unfairly stigmatize their political and economic systems, threatening their domestic stability and interests.⁹ China and Russia disdain an international order that promotes human rights, democracy, and good governance norms. Both desire to create a new world order in which they have greater influence and standing.¹⁰

Both countries view each other's support as advantageous. Russia views its partnership with China as an important enabler of its great power claims. According to prominent China-Russia relations scholar Bobo Lo, "It is only in tandem with China that Russia can hope to subvert the geopolitical primacy of the United States and normative dominance of the West, and advance its core aim of building a post-Western world order in which it stands as an independent and 'equal' power."¹¹ China also views cooperation with Russia as an effective way to reduce the United States' influence over the international system.¹² China welcomes Russia's pushback against the United States, while Russia views China's activities testing U.S. commitment in Asia as serving its interests.¹³

General Secretary Xi's rise to power and President Putin's return to office in 2012 have strengthened coordination between their countries because the two leaders see each other as ideologically compatible and have developed close personal ties. Before the June 2019 summit, General Secretary Xi remarked to Russian media that he had met with President Putin nearly 30 times since 2013, had closer interactions with him than any other foreign leader, and called him his "best and bosom friend." He went on to note that they "share similar views on the international landscape and approaches to national governance."¹⁴ For his part, during the summit President Putin called General Secretary Xi "a dear friend" and said China and Russia's "stances on key global issues are similar or coincide."¹⁵

Aggrieved by U.S. sanctions and scrutiny of Chinese technology companies, the two countries' leaders used the 2019 summit to send a clear signal of opposition to the United States. General Secretary Xi and President Putin signed an agreement pledging to move away from the U.S. dollar to the renminbi and ruble in bilateral trade, denounced "unilateral economic sanctions," and publicized Huawei's receipt of a 5G contract in Russia.¹⁶ A long statement released after the summit pledged to expand bilateral cooperation in various areas—including cybersecurity, finance, and technology—and to increase communication between General Secretary Xi and President Putin through a "unique channel" linking their offices.¹⁷ The apparent personal rapport between the top Chinese and Russian leaders allows for more direct coordination and management of differences, suggesting that the foundations of Sino-Russian cooperation may be sounder than is widely supposed.¹⁸

icies of states directly but rather to "pierce, penetrate, or perforate" their information environments. This differs from soft power, which focuses specifically on a country's "ability to affect others by attraction and persuasion rather than through the hard power of coercion and payment." Some examples of the Chinese Communist Party using sharp power include encouraging self-censorship by Western academics, use of Chinese language media outlets abroad to shape narratives, and use of donations to gain political influence. For more on China's application of sharp power see U.S.-China Economic and Security Review Commission, Chapter 3, Section 2, "China's Relations with U.S. Allies and Partners" in *2018 Annual Report to Congress*, November 2018, 315.

Furthermore, China and Russia have broadened their cooperation through international bodies, especially within the UN system, to reshape global norms and standards in pursuit of their shared interests.¹⁹ China and Russia frequently jointly oppose U.S.-supported measures at the UN, including actions aimed at unseating the Assad regime in Syria or censuring authoritarian regimes in Venezuela and North Korea.²⁰ Then-Director of National Intelligence Coats assessed that China and Russia likely “will use the UN as a platform to emphasize sovereignty narratives that reflect their interests and redirect discussions away from human rights, democracy, and good governance.”²¹

China and Russia work together in space and cyberspace in ways that run counter to stated U.S. interests. Recognizing the importance of space-based capabilities for U.S. joint military operations, both countries promote international norms that would restrict military activities in space even as they develop and test their own ground-based anti-satellite weapons and a range of other counter-space capabilities.²² Since its initial proposal in 2008, Beijing and Moscow have continued to endorse the “Treaty on Prevention of the Placement of Weapons in Outer Space and of the Threat or Use of Force against Outer Space Objects,” which does not cover many antisatellite weapons and lacks verification mechanisms (for more, see Chapter 4, Section 3, “China’s Ambitions in Space: Contesting the Final Frontier”).²³ In contrast to the vision of a free and open internet championed by the United States, China and Russia promote “internet sovereignty,” or the idea that the internet should be subject to sovereign states’ control.²⁴ Touted by Chinese officials as an approach that maximizes economic efficiency while minimizing social instability, the concept of internet sovereignty legitimizes state restrictions on the domestic use of the internet and freedom of expression.²⁵

China and Russia promote models of internet governance and censorship conducive to authoritarianism during visits to each other’s countries, at international fora like the UN General Assembly, and in third party countries.²⁶ The June 2019 joint statement released during General Secretary Xi’s visit to Russia noted measures to protect both countries’ critical information infrastructure and the joint aspiration to build a global order encompassing information and cyberspace governance.²⁷ The next month, officials from the Cyberspace Administration of China met with officials at Russia’s state communications watchdog to discuss future cooperation on cybersecurity and information issues.²⁸ Chinese officials also made stops at the offices of cybersecurity firm Kaspersky Labs and online search engine Yandex during the trip.²⁹ In addition to promoting authoritarianism, China and Russia export surveillance tools that facilitate the implementation of a controlled internet. Chinese firms have exported internet filtering technology to Latin America, Africa, and the Middle East, while Russian companies have exported similar technologies to Central Asia.³⁰

Finally, China and Russia both employ influence and interference operations to alter the political processes of other countries in ways amenable to their interests. While differing in their targets and approaches, Chinese and Russian influence operations increasingly draw

upon similar tools (e.g., social media, state media, and co-opting media outlets in target countries) to induce instability in democratic societies.³¹ Russia, for example, aggressively promoted disinformation to undermine Ukraine's government after conflict broke out in 2014, and released stolen files to influence the result of the 2017 French presidential election.³² China has historically focused its efforts on Taiwan, where it has acquired local media outlets, spread disinformation, and sought to build grass-roots support for unification.³³ Recently, China's activities have spread to other democracies, such as Australia and New Zealand (for more on these operations, see Chapter 4, Section 4, "Changing Regional Dynamics: Oceania and Singapore").³⁴

Conclusive proof of formal Sino-Russian collaboration on influence operations has yet to emerge. However, media reports indicate that China and Russia have shared intelligence in recent years to uproot U.S. intelligence networks operating in their respective countries and manage threats emanating from the Islamic State.³⁵ The two countries' common desire to alter the U.S.-led liberal international order and growing willingness to cooperate raise the question of whether China and Russia could coordinate on influence operations in the future.

Shared Threat Perceptions and Vulnerabilities

China and Russia's alignment stems from a mutual belief that both countries' respective national interests are better served by closer cooperation in the face of what they perceive to be an increasingly threatening external environment. In particular, both countries believe that the United States poses a growing threat to their national security and regime survival, and therefore serves as the primary obstacle to each country's efforts to shape its own favorable security environment. This is due to what they describe as the United States' promotion of democracy and fomenting of "color revolutions," its alliance network, and inclination toward unilateralism.* As General Secretary Xi and President Putin took office, unrest in Tibet, Xinjiang, Russia, and the Arab world heightened fears of Western ideas and U.S.-instigated color revolutions.³⁶

China and Russia also perceive the U.S. global alliance network as a means to contain and limit their respective power.³⁷ Both countries feel threatened by the growing U.S.-allied missile defense network, which they claim limits their strategic deterrent capabilities. For example, China and Russia have repeatedly declared their joint opposition to the 2017 deployment of the Terminal High Altitude Area Defense (THAAD) missile defense system in South Korea, on the grounds that it supposedly diminishes their ability to respond to a U.S. missile attack.³⁸

*"Color revolutions" is a term referring to the series of peaceful uprisings by citizens against authoritarian leaders that occurred in countries of the former Soviet Union and the Balkans in the early- to mid-2000s. Among the most prominent examples of these were uprisings in Georgia, Ukraine, and Kyrgyzstan. According to Anthony Cordesman, a researcher at the Center for International and Strategic Studies, Russian officials often invoke the term "color revolution" in connection with the ongoing conflict in Ukraine to describe what they allege is a "new U.S. and European approach to warfare that focuses on creating destabilizing revolutions in other states as a means of serving their security interests at low cost and with minimal casualties." Chinese officials also use the term as a shorthand for destabilizing unrest supported by actors abroad. For more, see Anthony Cordesman, "Russia and the 'Color Revolution,'" *Center for International and Strategic Studies*, May 28, 2014; Jeanne Wilson, "Colored Revolutions: The View from Moscow and Beijing," *Journal of Communist Studies and Transition Politics* 25:2-3 (2009): 369-395.

The 2008 global financial crisis created a strategic opportunity for China and Russia by exposing what they perceived to be the flaws of Western-led financial institutions, liberal democratic values, and U.S. power. The crisis fostered the conditions for increased bilateral economic cooperation, highlighting the complementarity between China's rising energy import requirements and Russia's need to secure new demand to supplement its primary European export markets.³⁹ Unlike their Western counterparts, Chinese banks were willing to bail out major Russian energy firms in financial trouble.⁴⁰

However, it was not until Western sanctions on Russia in 2014 that the Beijing-Moscow entente clearly emerged. Prior to 2014, Russia was hesitant to embrace China due in part to Moscow's focus on the EU market, its desire to safeguard key strategic resources and defense technologies, and its determination not to become the junior partner in the relationship.⁴¹ According to Alexander Gabuev, a senior fellow at the Carnegie Endowment for International Peace, the sanctions led Moscow to undertake an interagency review, which resulted in the revised perception of a rising threat from the United States and a reduced threat from China.⁴²

In the last several years, U.S. policy actions sanctioning China and Russia have reinforced their perceived common interests and pushed the two countries closer together. Robert Sutter, professor at George Washington University, testified to the Commission that this dynamic has resulted from "stronger pressures on [the two] associated with the [Trump Administration's] National Security and National Defense strategies, and the hardening of U.S. government security, economic, and political pressures on both countries."⁴³ Two of the most recent examples of U.S. actions the two countries perceived as hostile are U.S. sanctions in 2018 against Russia for its election interference campaign and sanctions against China's Central Military Commission Equipment Development Department—and its director, People's Liberation Army (PLA) Lieutenant General Li Shangfu—for buying advanced weapon systems from Russia.⁴⁴ China's Foreign Ministry spokesperson expressed this common grievance in a June 2019 press conference when he pointedly noted that "China and Russia both oppose unilateralism, protectionism and bullying practices."⁴⁵

Defense Ties Signal Washington and Improve Combat Abilities

Defense relations are perhaps the most strategically significant pillar of the Sino-Russian partnership.* Sino-Russian defense ties have strengthened markedly since 2014—the year that Russia annexed the Crimean peninsula—and military-to-military relations are now at their highest level since the 1950s.⁴⁶ A Russian government decree in July 2019 indicated that a new military cooper-

*The two countries established a framework for military cooperation in 1993 in a short agreement outlining mutual assistance in servicing weapons and military equipment, personnel training, information exchange, joint research, and commemorative military events. The 1993 agreement, which remains in effect, has since been complemented by additional agreements and the introduction of regular joint military exercises. For more on China-Russia defense ties, see TASS, "Russia and China Mull Military Cooperation Deal Renewal," December 20, 2017; Ethan Meick, "China-Russia Military-to-Military Relations: Moving toward a Higher Level of Cooperation," *U.S.-China Economic and Security Review Commission*, March 20, 2017, 3; Paul Schwartz, "Russia-China Defense Cooperation: New Developments," *Asan Forum*, February 9, 2017.

ation agreement is being drafted, a plan some analysts believe will formalize existing aspects of military cooperation and even include new forms, such as strategic missile defense cooperation and aircraft patrol missions.⁴⁷

While it appears China gains more from defense cooperation through its purchase of advanced weapons systems and its opportunities to learn from Russia's recent combat experience, Russia also benefits from arms sales revenues and sending a political signal to the United States. Through high-level exchanges, arms sales, and military exercises, China and Russia are able to use their defense relationship to send a powerful deterrent signal to the United States and its allies and partners and improve their military capabilities.⁴⁸

Deterrence and Political Messaging

Operational coordination, military exercises, and high-level exchanges are intended to demonstrate to third parties—especially the United States—the strength of Sino-Russian defense ties, to serve mutual interests, and to have a deterrent effect.

China and Russia are increasing formal and informal coordination on the operational level. The most prominent example came in July 2019, when the PLA Air Force and the Russian Air Force conducted their first ever combined strategic bomber patrol flight in the Indo-Pacific region.⁴⁹ The Russian Ministry of Defense indicated that the combined air patrol was intended to “strengthen global strategic stability” in accordance with a military cooperation plan for 2019, while China's Defense Ministry spokesman said the patrol's purpose was to upgrade “joint capacity.”⁵⁰ The patrol occurred the same day that then-U.S. National Security Advisor John Bolton landed in Seoul for talks with South Korean officials, timing that was likely meant to serve as a signal to Washington.⁵¹ Meanwhile, Russian aircraft penetrated airspace over the Liancourt Rocks claimed by Japan and South Korea (known by the two as Takeshima and Dokdo, respectively).⁵² Japan and South Korea both scrambled fighter jets to intercept the patrol and South Korea fired 360 machine gun rounds and 20 flares as warning shots when the Russian A-50 aircraft flew in the vicinity of the Liancourt Rocks.⁵³ Dmitri Trenin, director of the Carnegie Moscow Center, predicted that Russian-Chinese combined air patrols in the region would become common under the forthcoming military cooperation agreement.⁵⁴

In addition to the bomber patrol, 2019 saw an uptick in the reported coordination of Sino-Russian regional military operations. According to the Commander of U.S. Indo-Pacific Command Admiral Phillip Davidson, Russia flew two bombers around Taiwan for the first time ever in June 2019.⁵⁵ “The fact that the Chinese did not challenge those flights suggests that they had the tacit approval of Beijing,” Admiral Davidson said.⁵⁶ Japan Air Self-Defense Force fighter jets intercepted two Russian maritime reconnaissance and anti-submarine warfare aircraft conducting a long-range patrol in

⁴⁷Two Russian Tu-95 strategic bombers and two Chinese H-6K bombers flew together with two support aircraft, a Russian A-50 airborne early warning and control plane and a Chinese equivalent, the KJ-2000, over the Sea of Japan and the East China Sea. Franz Stefan Gady, “China, Russia Conduct First Ever Joint Strategic Bomber Patrol Flights in Indo-Pacific Region,” *Diplomat*, July 23, 2019; Andrew Osborne and Joyce Lee, “First Russian-Chinese Air Patrol in Asia-Pacific Draws Shots from South Korea,” *Reuters*, July 22, 2019.

the Sea of Japan and East China Sea in May 2019, which may have been on their way to join the Sino-Russian Joint Sea-2019 exercises.⁵⁷ The Japanese Ministry of Defense also investigated the possibility of China-Russia military coordination after a Chinese navy ship and three Russian ships entered waters close to the disputed Senkaku Islands in June 2016.⁵⁸

China and Russia also use high-level defense contacts to signal their solidarity to the outside world. In September 2019, Vice Chairman of the Central Military Commission Zhang Youxia met with Russian Defense Minister Sergei Shoigu in Moscow and told him that China and Russia faced a concerted containment effort by the United States, its allies and partners. “The United States and other Western countries are compulsively implementing the politics of hegemony and resorting to harassment, pursuing a containment policy against Russia, China, and other countries and exerting strategic pressure on them,” he said.⁵⁹ In another prominent example of the messaging involved in such meetings, Chinese Defense Minister Wei Fenghe declared during a visit to Russia in April 2018 that “the Chinese side has come [to Moscow] to show Americans the close ties between the armed forces of China and Russia ... We’ve come to support you.”⁶⁰ Sino-Russian defense contacts occur through a number of institutionalized bilateral and multilateral dialogues, providing opportunities for defense officials and military officers to facilitate arms packages, prepare exercises, and discuss regional and global security concerns.⁶¹

The expanding geographic scope and nature of bilateral exercises also indicate that China and Russia are more openly signaling support for each other’s security interests.⁶² Recent examples include the following:

- In September 2019, Russia invited China to join its Tsentr-2019 (Center-2019) strategic-level exercise, which followed the PLA’s involvement in Russia’s similarly large-scale Vostok exercise in 2018.* For the first time, the exercise included participation by member countries from both the China-dominated Shanghai Cooperation Organization (SCO)† and the Russian-led Collective Security Treaty Organization (CSTO)‡ within the context of a large-scale Russian strategic exercise. The exercise’s main operations occurred across multiple training ranges in Russia and involved 128,000 military personnel, according to official estimates.⁶³ The Russian Armed Forces said the exercise focused on

*Tsentr-2019 included forces from Russia, China, India, Pakistan, Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan. Of these participants, Russia, China, Kazakhstan, Kyrgyzstan, and Tajikistan belong to both the SCO and the CSTO.

†The SCO was established in 2001 by China, Russia, Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan (and now includes India and Pakistan, which were admitted as members in 2017). Currently there are four SCO observers (Afghanistan, Belarus, Iran, and Mongolia), six dialogue partners (Armenia, Azerbaijan, Cambodia, Nepal, Sri Lanka, and Turkey), and three “guests” (the Association of Southeast Asian Nations, the Commonwealth of Independent States, and Turkmenistan). Zamir Ahmed Awan, “Success of 18th Summit of SCO,” *China Daily*, June 12, 2018; Shanghai Cooperation Organization, “The Shanghai Cooperation Organization,” January 9, 2017. http://eng.sectsc.org/about_sco/.

‡The CSTO was established in 1992 as a collective treaty organization and became a formal military alliance in 2002. Members of the alliance include Russia, Armenia, Belarus, Kazakhstan, Kyrgyzstan, and Tajikistan (Uzbekistan was a member from 2006–2012), while the two observers are Afghanistan and Serbia (since 2013). Richard Weitz, “Assessing the Collective Security Treaty Organization: Capabilities and Vulnerabilities,” *Strategic Studies Institute*, October 2018, xi, 1–12, 58–59.

cooperation among participants in Central Asia and the defense of Russian assets in the Arctic.⁶⁴ China's Ministry of National Defense spokesperson credited the exercise with consolidating China and Russia's "comprehensive strategic partnership of coordination for a new era" and increasing the level of strategic cooperation between the two militaries.⁶⁵

- The Joint Sea-2019 combined naval exercise held from late April to early May 2019 in waters near Qingdao, China, included the two countries' first ever combined live-fire missile defense drills. These drills appeared to reflect China and Russia's shared perceived threats from the U.S.-allied missile defense architecture.⁶⁶ Since the first Joint Sea exercise in 2012, China and Russia have held these training events in strategically important areas including the Baltic Sea (2017), the South China Sea (2016), and the Mediterranean Sea and the Sea of Japan (2015).⁶⁷ According to one analyst, China's participation in the naval exercise held in the Baltic Sea "caused consternation in northern Europe, and generated speculations about whether [China] is seeking to insert itself into an already on-edge region."⁶⁸ The 2016 exercise appeared designed to signal Sino-Russian unity in opposition to the arbitral tribunal ruling by the Permanent Court of Arbitration located at The Hague invalidating major elements of China's sovereignty claims in the South China Sea.⁶⁹
- In September 2018, Chinese media suggested China's participation in Vostok-2018—one of Russia's annual large-scale strategic exercises and its largest exercise of any type since 1981—was in part a response to "hegemonic powers [that] target China and Russia ... severely threaten[ing] regional and even global peace and stability"—an indirect reference to the United States.⁷⁰ U.S.-based Russia analysts assessed the exercise was meant to signal to the United States and NATO that China and Russia do not perceive each other as threats.⁷¹ Additionally, the exercise served a confidence-building function, allowing Moscow to message Beijing that Russia considers China an important partner and is taking note of Chinese defense concerns.⁷²
- Beijing and Moscow's decision to hold their first computer-simulated missile defense exercise, Aerospace Security-2016, appeared to be a direct response to U.S.-South Korean discussions in 2016 about the then-pending THAAD battery deployment in South Korea.⁷³ At the start of the 2017 missile defense exercise, just months after the initial deployment of the THAAD battery, the Chinese side said that Beijing and Moscow oppose the development of missile defense systems, implicitly referring to THAAD.⁷⁴ According to Mr. Gabuev, a third exercise will be held in 2019.⁷⁵

Arms Sales and Defense Cooperation Improve Military Capability

Russian arms sales to China, defense industrial cooperation, and Sino-Russian military exercises help both countries modernize their militaries and improve their military capability. China uses Russian-made advanced systems and operational experi-

ence to improve its air defense and fighter capabilities, among other areas, while Russia receives much-needed hard currency and defense research and development funding. After a period of stagnation in arms sales—due largely to Moscow’s concerns with Chinese reverse engineering of its major systems and the Chinese military threat to Russia—Russia decided to reverse its long-held unwillingness to transfer advanced weapon systems to China (for more, see the following section on “Mistrust and Power Asymmetry Limit Ties”).⁷⁶ Major advanced systems Russia has recently sold China include:

- *S-400 surface-to-air missile (SAM) defense system*: China is in the process of standing up two S-400 regiments (four battalions) purchased from Russia in 2014 for an estimated \$3 billion, which will improve its air defense capabilities and could expand its air superiority over Taiwan. China was the first foreign country that Russia approved to buy its most advanced SAM system available for export. The S-400 fills an important gap for China, extending the maximum range of its air defense to around 380 kilometers (236 miles).⁷⁷ China received its first regimental set of the S-400 in May 2018, and delivery of the second set began in July 2019.⁷⁸
- *Su-35 fighter jet*: China was the first foreign customer of the Su-35, one of Russia’s most advanced fighters, which provides the PLA improved counterair and strike capabilities with its high-end avionics and radar.⁷⁹ In April 2018, China declared the fighter had entered service with the PLA Air Force.⁸⁰ In April 2019, Russia reportedly completed the delivery of 24 Su-35 fighters purchased by China in 2015 for an estimated \$2.5 billion.⁸¹ Russia’s arms export agency announced in June 2019 that it had made a new offer to sell China an additional batch of the fighters.⁸²

Energized defense industrial cooperation since 2014 has benefited both sides, providing opportunities for joint production of next-generation systems and defense research and development. Russia has superior military technology in certain areas, which can help China’s defense industry absorb know-how and technologies to fill key gaps in areas such as air defense and high-performance fighter aircraft. Russian arms sales to China may also have helped the PLA develop submarine-quieting technology. For example, China’s Type 039A YUAN-class diesel-electric attack submarine has an air-independent propulsion system that may have incorporated quieting technology from the Russian-designed Type 636 KILO-class diesel-electric attack submarine.⁸³ The YUAN-class submarine could pose significant challenges for U.S. and Taiwan forces seeking to detect its movements in the shallow Taiwan Strait.⁸⁴

Meanwhile, Beijing can provide Moscow with critical funding for joint research and development projects.⁸⁵ In August 2019, media reports indicated that the two had signed a commercial contract worth approximately \$20 billion for the joint production of 200 heavy-lift helicopters after more than four years of negotiations.⁸⁶ For China, the helicopters—which are scheduled to be

delivered by 2032—will fill a critical gap in combat logistics and lift capabilities.⁸⁷

Sino-Russian military exercises enable the PLA to gain useful experience that can be applied to unfamiliar environments as well as future joint operations.⁸⁸ In particular, such exercises give China an opportunity to deploy large forces in an expeditionary capacity beyond its borders and gain knowledge from recent Russian operational combat experience. In September 2018 at Vostok-2018, PLA participants reportedly learned about the Russian Armed Forces' experiences in the Syrian war from their Russian counterparts.⁸⁹ Dr. Weitz described such insights as including "how to deploy [integrated] brigade-sized forces ... as well as issues related to expeditionary logistics and protecting bases in foreign countries."⁹⁰

Even forms of defense engagement not reaching the level of exercises can generate useful learning opportunities. According to the U.S. Defense Intelligence Agency, the PLA has participated in the Aviadarts air-to-ground competition of the Russian-organized International Army Games since its inception in 2015 precisely because the competition provides valuable exposure to foreign operational concepts and tactics.⁹¹ China has sent advanced combat systems to the International Army Games and a joint team from the PLA's Naval Aviation and Air Force participated for the first time in several related aviation events under Aviadart's auspices in August 2019.⁹²

Growing Energy Ties

For many years energy cooperation lagged behind other areas of Sino-Russian ties, but since 2014 both countries' converging interests have helped it become an important strategic component of the relationship. China's and Russia's complementary energy strategies pulled each side together in the wake of the global financial crisis and annexation of Crimea—events which took a financial toll on Russia's major energy firms. Russia's energy companies needed loans to stay afloat and Moscow sought to diversify from European markets, while Beijing needed to address its growing energy security requirements and reduce its reliance on maritime chokepoints, including the Strait of Hormuz and Strait of Malacca.⁹³ Despite these and other diversification efforts, Columbia University senior research scholar Erica Downs estimates that China will remain reliant on seaborne oil imports for over 80 percent of its imported oil for at least the next two decades.⁹⁴

Russian pipelines play a key role in China's diversification efforts. Russia has become China's top source of imported oil since 2016 and is poised to become a major natural gas supplier for China over the next decade, serving both countries' interests.⁹⁵ Dr. Downs testified to the Commission that Russian oil exports to China in 2018 reached a high of 1.4 million barrels per day—comprising 15 percent of Chinese oil imports and more than six times the amount it imported from Russia a decade ago.⁹⁶ Russia's East Siberia Pacific Ocean pipeline, which stretches from East Siberia to the Russian Pacific coast, and its branches to China are the key contributor to this development with the capacity to transport 600,000 barrels per

day.⁹⁷ Russia will likely become a large supplier of natural gas to China in the near future as existing projects are ramped up and gradually come online.⁹⁸

The most consequential project is the Power of Siberia pipeline, the agreement for which was concluded in 2014 after a decade of contentious negotiations between China and Russia as Moscow scrambled to replace lost foreign investment due to sanctions over its actions in Crimea.⁹⁹ Scheduled to begin natural gas deliveries in December 2019, the pipeline will supply natural gas to China for 30 years, gradually ramping up to 38 billion cubic meters (28 million tons per year).¹⁰⁰ Dr. Downs estimates that in 2023, when the pipeline is due to operate at full capacity, Russian natural gas will equal about one quarter of the total amount of natural gas that the International Energy Agency projects China will import that year.¹⁰¹

Both countries use major energy deals and high-level contacts to overcome U.S. trade barriers and Western sanctions, sending a signal to the world that neither Russia nor China can be isolated. Dr. Downs argues that in the aftermath of U.S. and EU sanctions against Russia for its annexation of Crimea, Russia's Power of Siberia pipeline and Yamal liquefied natural gas (LNG) project in the Arctic would not have secured financing and political backing were it not for China's aid.¹⁰² She also notes senior Chinese and Russian officials at the China-Russia Energy Business Forum in November 2018 discussed the importance of energy cooperation in response to the ongoing U.S.-China trade tensions.¹⁰³ Chinese Vice Premier Han Zheng stressed the importance of bilateral energy cooperation "amid the rise in unilateralism and trade protectionism," while Russian oil giant Rosneft's CEO Igor Sechin decried "certain political conditions in the world" as incentives to deepen energy ties.¹⁰⁴

Mistrust and Power Asymmetry Limit Ties

While China and Russia are in close alignment in the geopolitical, military, and energy spheres, friction and mistrust may prevent the two from becoming formal allies. The most fundamental impediment to the positive development of the Sino-Russian relationship is each country's view of the long-term geopolitical threat posed by the other, manifested primarily in the growing power asymmetry between the two, divergent national interests, and a perception of mutual military vulnerability.

A Growing Power Asymmetry

Perhaps the most significant obstacle to the continued growth of the Sino-Russian partnership is the rapidly widening chasm between the two countries' economies. Moscow is now widely viewed by many observers, including Russian officials, as the "junior partner" in the

*While China did not levy its own sanctions on Russia after the annexation of Crimea and condemned the U.S. and European sanctions, its biggest financial institutions de facto complied with the sanctions by refusing to provide Russia financing after July 2014. Nonetheless, Russia and China have sought to circumvent the sanctions through increased Chinese investment and currency swaps, which allowed Russian energy companies such as Gazprom to avoid U.S. sanctions on dollar-denominated transactions by trading commodities in rubles and renminbi. See Fatima Tlis, "Updated: Did China Join Sanctions against Russia?" *Polygraph*, May 1, 2019; Emma Ashford, "Not-So-Smart Sanctions: The Failure of Western Restrictions against Russia," *Foreign Affairs*, January/February 2016; Gary J. Schmitt, "Why China Won't Condemn Russia over Crimea," *American Enterprise Institute*, September 29, 2014.

bilateral relationship—an outcome unacceptable to Moscow over the long term.¹⁰⁵ China—whose economy is eight times larger than Russia’s—dominates the bilateral trade relationship.¹⁰⁶ Total trade has consistently fallen below the \$200 billion target for 2020 set by Russian officials in 2016, and Chinese officials recently appeared to revise this date to 2024.¹⁰⁷ Total bilateral trade in goods exceeded \$100 billion for the first time only at the end of 2018, after having reached \$86.9 billion in 2017 and \$66.1 billion in 2016.¹⁰⁸ Moreover, Moscow is increasingly dependent on Chinese imports, export markets, and investment. As Dr. Lo notes, “Russia’s need for China is far greater than the other way round, as a primary trading partner, a vital source of investment, and an expansion market for energy exports.”¹⁰⁹ Although energy sales are large by volume, low prices keep growth in trade value depressed.¹¹⁰

Notably, neither country ranks as the other’s largest trading partner, and overall bilateral investment is insignificant, with the key exception of Chinese investment in Russia’s energy sector. For Russia, China is its second-largest trading partner after the EU, while Russia is China’s 11th largest export destination, 10th largest import source, and does not rank in the top 10 in total trade with China.¹¹¹ The structure of their bilateral trade relationship is equally skewed. China largely exports finished goods to Russia. In contrast, over 90 percent of Russian exports to China consist of raw materials, 59 percent of which is fuel.¹¹² Anxieties about the relationship’s imbalance loomed over the 2019 St. Petersburg International Economic Forum, where Russian billionaire Viktor Vekselberg began a panel on Sino-Russian economic cooperation by asking what could be done to broaden bilateral economic relations beyond energy.¹¹³ Mr. Gabuev observed that the large number of Chinese delegates at the forum was a deceptive indicator of the robustness of economic ties because Russia accounts for just 2 percent of China’s total outbound foreign direct investment since 2014, and most of that 2 percent comes from state-owned enterprises and state-run financial institutions rather than private businesses.¹¹⁴

China’s trade relationship with Russia—which prioritizes natural resources—effectively mirrors the dynamics of China’s commercial dealings with resource-rich African and Latin American countries, as Beijing seeks to keep pace with rising domestic energy demand.¹¹⁵ Jeanne Wilson, professor at Wheaton College, testified to the Commission that the trade imbalance between the two is so extreme that Russia is “in danger of becoming a raw materials appendage of China in the manner of an underdeveloped country.”¹¹⁶ Some Russian officials perceive Beijing as taking advantage of depressed commodity prices and Russia’s financial difficulties with the West to secure excessively favorable terms on bilateral energy deals.¹¹⁷ Outside of the energy sector, Chinese foreign direct investment in Russia is insignificant and does not compensate for Moscow’s loss of investment from the United States and Europe.¹¹⁸ Some in Moscow perceive Beijing as dragging its feet on investments in Russia and on providing credit financing to Russian companies.¹¹⁹

A Legacy of Distrust

A long history of geopolitical antagonism—and even outright military confrontation—compounds the difficulties China and Russia face in forging a deeper partnership. Mutual distrust continues to pervade the relationship. Dr. Lo observes that “at virtually no point in their history have the two countries enjoyed a comfortable relationship.”¹²⁰ In the 19th century, Russia joined other imperial powers in securing territorial concessions and additional privileges from China’s Qing Dynasty, contributing to the Chinese “century of humiliation” that still scars China’s national consciousness.¹²¹ Though China and Russia settled their longstanding border disputes in 2008, according to Asian history scholar S.C.M. Paine, Russia’s role in this history was particularly painful for China, noting, “For the Chinese people, their present northern border is an incarnation and potent symbol of China’s failure and humiliation at the hands of foreigners in general, and of the Russians in particular.”¹²² From the mid-19th to early 20th century, Russia succeeded in wresting approximately 1.4 million square miles of territory from the decaying Qing Empire, a piece of land slightly larger than modern-day India.¹²³ Russia secured the critical port of Vladivostok, supported Mongolian independence from Chinese rule, and cut away vast swathes of China’s western Xinjiang region.¹²⁴

A lack of cultural commonality may also limit Sino-Russian cooperation, though both countries have made concerted efforts in recent years to foster cultural affinity through people-to-people exchanges. Dr. Wilson notes that “despite the current bonhomie that characterizes the relationship, China and Russia lack any significant degree of cultural symbiosis.”¹²⁵ She argues that Russian political elites have traditionally identified with Europe rather than Asia, producing “a sort of identity crisis in the context of deepening ties with China.”¹²⁶ A 2019 report from the Russian International Affairs Council, a government-affiliated think tank, admitted the two countries’ lack of cultural affinity presents an obstacle to closer ties. “In relations between the two peoples there remain insufficient levels of mutual understanding, stereotypical perceptions and mistaken assessments that have formed due to the complex history of bilateral ties and significant differences in the cultures and mentalities of Russians and Chinese,” the report said.¹²⁷

Nevertheless, other Russian scholars and political elites have framed Russia’s political identity in terms of its relationship to the East.¹²⁸ Russian leaders sometimes invoke this side of the identity debate to justify Russia’s expanding activities in Asia and self-conception as an Asian power.¹²⁹ In September 2019, President Putin reinforced that Russia has a rightful place in the Asia-Pacific in a speech at the 5th Eastern Economic Forum in Vladivostok, where he noted that the forum brought together heads of “major Asia Pacific states.”¹³⁰ More broadly, Russia arguably derives political benefits from highlighting its Asian identity. Dr. Lo observes that “identifying with ‘Asian’ traditions ... is attractive [to Moscow] above all because it reinforces the idea of an alternative legitimacy and moral consensus to the West.”¹³¹

Cold War History: From Alliance to Conflict (1947–1991)

Beijing and Moscow share a complicated history that saw an extended period of open conflict between former allies during the Cold War (1947–1991).¹³² In the years following the establishment of the People's Republic of China in 1949, China and the Soviet Union maintained an alliance based on communist ideology and a shared threat perception of the United States and the non-communist West. However, between 1956 and 1962 the Sino-Soviet alliance deteriorated due to political and ideological differences, including intense competition for leadership over the worldwide Communist movement and sharply divergent approaches toward relations with the United States and other democratic countries.¹³³

The deterioration of Sino-Soviet relations in the 1950s, dubbed the “Sino-Soviet split,” had significant strategic implications. It not only caused China and the Soviet Union to view each other—rather than the United States—as the primary threat, but also established the foundation for an eventual Sino-American rapprochement. Tensions between China and the Soviet Union resulted in a series of armed skirmishes along their shared border throughout the late 1960s, which in 1969 culminated in hundreds of deaths and a serious risk of nuclear war.¹³⁴ It was not until 2008 that China and Russia reached an agreement to settle their long-standing border dispute, signing a treaty to demarcate their 2,700-mile-long border for the first time.¹³⁵

Fears of a Growing Chinese Presence in the Russian Far East

Chinese investment in Russia's Far East has stoked Russian fears of China regaining its historical influence in the region. Russia seeks to develop its resource-rich Far East, but is hobbled by a lack of capital and labor resources.¹³⁶ China's influence on the Russian Far East's economy is significant, but Russia is seeking to diversify inbound investment and workers into the region, including from Japan and South Korea.¹³⁷ As early as 2012, Russian Prime Minister Dimitri Medvedev warned that the Russian Far East could become dependent on China as a result of China's “excessive expansion” into the region, articulating a worry about the imbalanced bilateral relationship that persists to this day.¹³⁸

Exacerbating Russian fears, the demographic imbalance on the two sides of the border is significant. Only 6.3 million people live in the Russian Far Eastern Federal District, the administrative region constituting Russia's Far Eastern territory. By contrast, 110 million people live on the other side of the border in the three provinces in China's northeast. This disparity fans Russian fears that Chinese immigrants and business activities will effectively dominate the Russian Far East in the near future.¹³⁹

In addition to permanent settlement, Chinese tourism to the Russian Far East has aggravated local concerns about China's dominance. In 2018, Chinese tourist visits increased 37 percent from 2017, totaling 186,200 out of more than 1.6 million (mostly Russians).¹⁴⁰ Particular Russian grievances include the pollution asso-

ciated with high tourist flows, tax avoidance, the flouting of local construction regulations by Chinese businesses catering to tourists, and Chinese tourists' tendency to patronize Chinese-owned establishments instead of local businesses.¹⁴¹ Russian media reported that local citizens were angered when a group of Chinese tourists visiting Lake Baikal sported T-shirts with Chinese characters reading "The lake is ours."¹⁴²

China's exploitation of Russian natural resources and Russian concerns about Chinese acquisition of strategic assets in the Russian Far East have also worried local citizens, media, and political elites.¹⁴³ According to U.S. Eurasia specialist Paul Goble, local media in the region already see "Chinese occupation" as a fact because of this visible natural resource exploitation.¹⁴⁴ For example, China's plans to bottle water from Russia's Lake Baikal* and build a water pipeline back to China were viewed by local Russian citizens as "a direct attack on [their] survival" in light of the lake's perception as part of the "national patrimony."¹⁴⁵ Russian media reports note that Chinese businesses consider Lake Baikal a "Chinese" lake, a notion which relies on Chinese historical claims that are dubious at best.[†]¹⁴⁶ Such media reports have angered Russian citizens across the country.¹⁴⁷

Even Russian officials have at times openly expressed displeasure with Chinese business activities. Russian Minister of Natural Resources and Environment Dmitry Kobylykin complained in August 2019 that Chinese loggers were buying illegally produced timber and warned that Russia could ban timber exports if China did not take steps to resolve the issue.¹⁴⁸ Moreover, the Russian government is unenthusiastic about the prospect of Chinese companies investing in strategic assets, such as ports. "This is one of the reasons why Chinese companies are not rushing to invest in the Primorye-1 and Primorye-2 transport corridors although they could give northeast China direct access to the Sea of Japan," Russian analyst Artyom Lukin observes.¹⁴⁹

Divergence on National Interests

There are a number of areas where Beijing's and Moscow's national interests do not align, such as territorial claims and partnerships with countries that Russia or China consider regional rivals. At the UN Security Council, China abstained from several UN resolutions involving Russia rather than siding with Russia outright, including

* In March 2019, a Russian district court in Irkutsk ruled that Russian officials illegally granted a permit in 2017 for a China-backed project to construct a bottling plant at Lake Baikal. The court ruled that the permit was issued based on a positive environmental impact study, which was also illegal. The case remains under appeal. *Agence France-Presse*, "Russia Rules China-Backed Baikal Bottling Plant 'Illegal,'" March 27, 2019.

† According to Nicholas Breyfogle, associate professor of history at The Ohio State University, Lake Baikal became Russian territory after it was discovered and claimed by Russian explorer Kurbat Ivanov in 1643. The geographic feature was not previously recognized as Chinese territory. Indeed, archival work has shown that Lake Baikal was considered Russian territory by the Russian empire and Qing Dynasty both before and after the 1689 Treaty of Nerchinsk, under which the Qing ceded large swaths of Siberia to Russia. Those who argue that China possesses historical claims to Lake Baikal generally assert the lake was part of the ancient Xiongnu confederation and became connected to China under the Han Dynasty during the Han–Xiongnu War (133 BCE to 89 CE). However, the Han Dynasty did not remain in the area or exercise administrative control over the lake for any appreciable period of time after this victory. Staff interview with Dr. Nicholas Breyfogle, associate professor of history at The Ohio State University, October 25, 2019. For more, see V.S. Frank, "The Territorial Terms of the Sino-Russian Treaty of Nerchinsk, 1689," *Pacific Historical Review* 16:3 (1947): 265–270.

a 2014 resolution condemning the Russian annexation of Crimea.¹⁵⁰ Similarly, Russia has changed positions on several important disputes involving China. After the Permanent Court of Arbitration's 2016 ruling invalidating major elements of China's South China Sea claims, Moscow initially responded by expressing its support for the legal authority of the UN Convention on the Law of the Sea and the use of diplomacy to resolve maritime disputes.¹⁵¹ Jeremy Maxie, an associate at the geopolitical risk consulting firm Strategika Group, observed at the time that Russia's seemingly neutral response may have stemmed from concern that support for Beijing's territorial claims might upset Russian partners in the region who are also claimant states.¹⁵² Just two months later, however, President Putin voiced Russia's support for Beijing's position at a news conference during the G20.¹⁵³ Russia remained neutral during the China-India 2017 border dispute at Doklam, and took the side of India in August 2019 after the Indian government angered Pakistan and China by altering the legal status of the disputed region of Jammu and Kashmir.¹⁵⁴

Russia's strong ties with China's competitors in the Indo-Pacific, most notably India and Vietnam, are also important areas of divergence.¹⁵⁵ Russia supplies around 60 percent of India's military equipment by value.*¹⁵⁶ In October 2018, Moscow agreed to sell its advanced S-400 SAM system to India, which became only the second importer of the platform after China.¹⁵⁷ Russia's robust relations with Vietnam also have a significant arms sales component but include other areas. Russia is Vietnam's top arms supplier—in September 2018 alone, Vietnam agreed to import over \$1 billion worth of undisclosed Russian defense equipment and services.¹⁵⁸ In the past, Russia has exported to Vietnam six advanced KILo-class submarines, Su-30MK fighter jets, and antiship missiles.¹⁵⁹ The Chinese government has criticized Russian and Vietnamese state oil companies' joint gas and oil development projects in disputed waters in the South China Sea falling within China's nine-dash line sovereignty claim.†¹⁶⁰

Despite deepening ties, many analysts believe the China-Russia defense relationship may never evolve into a mutual defense agreement because they have divergent security interests.¹⁶¹ According to Dr. Weitz, neither China nor Russia wishes to be dragged into a third party conflict as a result of their bilateral defense ties.¹⁶² Vasily Kashin, a prominent Russian expert on China-Russia defense ties, assesses "there are no observable scenarios" under which the two

*China shares a decades-long border dispute with India and has long viewed it as a rival. As a counterbalance to India, Beijing maintains close ties with India's longstanding adversary Pakistan. China's and Russia's support for Pakistan and India, respectively, could create a notable source of bilateral tension in the future. For example, Russia condemned the deadly February 2019 attack by Pakistan-supported terrorist organization Jaish e-Mohammed (JeM) in the disputed region of Kashmir and has suggested that the SCO counterterrorism process serve as a possible means for countering JeM. China has been reluctant to directly condemn the group for fear of upsetting Pakistan and even sought to block UN Security Council moves to sanction JeM leader Masood Azhar before ultimately reversing itself. For more, see U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2019*, May 2, 2019, 7–8, 14; Jacob Stokes and Jennifer Staats, "India-Pakistan Tensions Test China's Relationships, Crisis Management Role," *U.S. Institute of Peace*, March 7, 2019; *Hindustan Times*, "Russia, Pakistan, U.S., Others Condemn Kashmir Attack," February 15, 2019.

†The so-called "nine-dash line" or "cow's tongue" encompasses the extent of China's territorial claims in the South China Sea—about 90 percent of its area—based on China's alleged "historical rights" that have been found not to have any legal basis in international law. U.S.-China Economic and Security Review Commission, *2017 Annual Report to Congress*, November 2017, 158.

sides might intervene together in a conflict.¹⁶³ For example, China, unlike Russia, is careful not to side with any individual country or group of countries in the Middle East, while Moscow prefers to avoid involvement in Beijing's security interests in the East and South China seas and Taiwan, according to Dr. Kashin.¹⁶⁴ However, the July 2019 joint strategic bomber patrol over the East China Sea and involvement of both China and Russia in supporting the regime of Bashar al-Assad in Syria suggest the likelihood of joint intervention in a conflict may not be quite so remote. China and Russia may have security interests that drive cooperative military action inimical to U.S. interests without requiring or seeking a formal mutual defense treaty.

Perceptions of Mutual Military Vulnerability

Sino-Russian relations are also fundamentally constrained by each country's perception of the other as a potential military threat. This perception is particularly acute in Moscow, with some analysts asserting Moscow fears the PLA could one day become an enemy—a concern significantly heightened by China's rapid military modernization.¹⁶⁵ Indeed, both China and Russia conducted large-scale military exercises that appeared to prepare for contingencies against each other as recently as 2009–2010. In 2009, the PLA's Kuayue-2009 (Stride-2009) trans-regional exercise involved about 50,000 ground and air force troops from four divisions in four different Military Regions, which caused some Russian military observers to fear that China was building capabilities that could be used to launch a ground attack on the Russian Far East.¹⁶⁶ The following year, the Russian Armed Forces conducted Vostok-2010, which simulated nuclear strikes on the PLA.¹⁶⁷ Some analysts noted that Russia's large-scale Vostok-2018 exercise, while clearly intended to show outside observers the close ties between Beijing and Moscow, was also designed in part to demonstrate to the PLA the capability of the Russian Armed Forces and the security importance Moscow attaches to its Far East.¹⁶⁸

In the defense industrial sector, burgeoning cooperation is limited by the potential for the PLA to become a future Russian adversary and competitor in the international arms market. While Moscow has loosened its restrictions on selling Beijing advanced weapons systems, it retains its policy of not transferring its most current generation of major weapons platforms.¹⁶⁹ In addition to concerns over these systems potentially being used against Russia in the future, Moscow continues to exhibit mistrust of the Chinese defense industry due to its history of reverse engineering Russian fighter jets and other equipment. In the mid-2000s, Russia paused its major arms sales to China following an egregious case of Chinese reverse engineering in 2007 when Chinese defense firm Shenyang Aircraft Corporation produced an indigenous copy of the Russian Su-27SK fighter, the J-11B. Prior to the J-11B's release, China had been producing the Su-27SK fighter under a licensing agreement with Russia until Beijing abruptly canceled the deal with half of the Su-27SKs on order already made.¹⁷⁰ Additionally, as China's defense industrial base continues to develop, it is likely that Chinese arms imports from Russia will decrease and focus more on components

than full weapon systems, which could place further strains on defense ties.¹⁷¹ Moreover, Moscow fears Beijing will increasingly compete with Russia in the international arms market, which is critical for the health of the Russian defense economy.¹⁷²

China's and Russia's vastly different approaches to arms control also create tensions in the defense relationship. Moscow's nuclear force posture has always been guided by competition with the United States, while Beijing has historically been reluctant to participate in arms control agreements that it perceives as unfairly disadvantaging China given the comparatively small size of its nuclear forces.¹⁷³ In May 2019 at the Hudson Institute, U.S. Defense Intelligence Agency Director Lieutenant General Robert P. Ashley, Jr. assessed Russia will add new capabilities to existing tactical-range systems intended to deter and defeat China in a conflict, and is allegedly developing new warhead designs for strategic systems that could penetrate Chinese command and control facilities.¹⁷⁴

Moreover, Russia continues to harbor concerns about China's military build-up in general and growing arsenal of advanced missiles in particular. The countries' divergence over the Intermediate-Range Nuclear Forces (INF) Treaty, to which China had consistently refused to accede, is reflective of this concern.*¹⁷⁵ When INF talks began, U.S. and Soviet negotiators considered making the treaty applicable only to the European theater, a proposal which provoked opposition from China as well as U.S. allies Japan and South Korea.¹⁷⁶ Indeed, Samuel Charap, a senior political scientist at the RAND Corporation, notes that the issue of INF missiles in Asia "became a central stumbling block" in talks throughout the 1980s because Sino-Soviet relations were highly adversarial and thus "the Soviets remained profoundly reluctant to agree to any reductions in their Asian forces."¹⁷⁷

Russian concerns about China's nuclear capability survived the Cold War. Russian leaders such as President Putin have long voiced concerns about China's refusal to join the treaty, threatening to leave the pact unless China was included in its provisions.¹⁷⁸ "We need other international participants to assume the same obligations [as the United States and Russia]," President Putin said as early as 2007. "If we are unable to attain such a goal ... it will be difficult for us to keep [our obligations] in a situation where other countries do develop such weapons systems, and among those are countries in our near vicinity."¹⁷⁹ A senior Russian parliamentarian reiterated this concern in October 2018 before the United States' 2019 decision to withdraw from the treaty a few months later.¹⁸⁰

China and Russia both opposed the United States' 2019 decision to withdraw from the treaty, but arguably neither actually wanted to be subject to its restrictions. Indeed, some well-regarded Russian analysts have framed the collapse of the INF Treaty as a positive

*The INF Treaty—designed to prevent a destabilizing arms race between nuclear powers—requires the destruction of ground-launched ballistic and cruise missiles with ranges of between 500 and 5,500 kilometers (310 and 3,410 miles), their launchers, associated support structures, and equipment. The United States entered the INF Treaty with the Soviet Union in 1987. In February 2019, the Trump Administration announced the U.S. suspension of its obligations under the INF Treaty with Russia and beginning of the formal treaty withdrawal process. The treaty formally expired in July 2019. For more, see Jacob Stokes and Alec C. Blivas, "China's Missile Program and U.S. Withdrawal from the Intermediate-Range Nuclear Forces (INF) Treaty," *U.S.-China Economic and Security Review Commission*, February 4, 2019, 2.

development for Russia in light of the Chinese nuclear threat. Institute for Political and Military Analysis deputy director Alexander Khramchikin, whose Moscow-based organization conducts research on military issues for the Russian government, claimed that a significant percentage of China's nuclear potential was directed at Russia, not the United States, and that failing to take the future nuclear threat from China into account was "unacceptable."¹⁸¹ Russian military expert Vladimir Popov also emphasized the need to consider the Chinese nuclear threat.¹⁸² "Moscow has a reason to listen to the Americans in some way ... in particular, to more actively involve China in international negotiations on nuclear arms control," he said.¹⁸³

The deployment of advanced Russian military assets close to the Chinese border suggests that Russian military planners remain wary of a potential contingency with China. According to retired Australian Defense Force official and independent analyst Martin Andrew, Russian defense planners are especially concerned by China's deployment of Dongfeng series short-, medium-, and intermediate-range ballistic missiles as well as the CJ-10 land-attack cruise missile.¹⁸⁴ As of 2017, all four of Russia's missile brigades located close to the Russia-China border in its Eastern Military District had been recently upgraded with nuclear-capable Iskander-M surface-to-surface ballistic missile systems with a range of about 500 kilometers (310 miles), bolstering conventional and nuclear deterrence against China.¹⁸⁵ Pranay Vaddi, fellow at the Carnegie Endowment for International Peace, noted in his March 2019 testimony to the Commission that Russia could field intermediate-range missiles close to China's borders after the INF Treaty's termination, although there is no evidence of this happening to date.¹⁸⁶ Whether or not such missiles are deployed, Dr. Charap argues that "Russia's qualitative and quantitative nuclear predominance over China is seen as a strategic necessity in Moscow, particularly given China's growing conventional military advantages."¹⁸⁷

Central Asia and Afghanistan, the Middle East, and the Arctic

Tenuous Russian Accommodation of Chinese Inroads into Central Asia

Moscow considers Central Asia (see Figure 1) to be a part of the Russian sphere of influence, and has watched China's increasing inroads in the region with a mixture of acceptance and alarm.¹⁸⁸ China's emergence in recent years as the region's dominant economic power and preferred investment partner is threatening to erode Russia's regional standing. China is now the leading trade partner with Kyrgyzstan, Turkmenistan, and Uzbekistan, while Russia remains the largest trading partner of Kazakhstan and Tajikistan.¹⁸⁹ Central Asia has embraced China's infrastructure investment through its Belt and Road Initiative (BRI).¹⁹⁰ Russia has largely accommodated China, due mostly to Moscow's inability to adequately counter China's economic heft, but it has also attempted to counterbalance Chinese influence, including by advancing its preferred regional in-

tegration structure under the Eurasian Economic Union (EEU).¹⁹¹ According to former Kyrgyzstani official and energy expert Raul Umbetaliev, “There is a big hidden fight going on between Russia and China for influence in Central Asia.” For example, Moscow has more support from a Russian-speaking Kyrgyz population, but as Mr. Umbetaliev notes, “the Russians don’t have any money.”¹⁹²

Figure 1: Map of Central Asia



Source: Created for the U.S.-China Economic and Security Review Commission.

Beijing has tried to assuage Russian concerns over its growing influence by primarily engaging with Central Asian states on economic issues and limiting its overt political and security presence. Still, the strategic implications of this influence are almost certainly not lost on Moscow.¹⁹³ Many of China’s regional goals—fostering economic growth, spurring infrastructure development, and mitigating threats from extremist organizations—are shared by Russia.¹⁹⁴ Publicly, China and Russia have projected their relationship in Central Asia as a “division of labor” in which Russia is Central Asia’s caretaker, maintaining security and political order, while China focuses on investment and regional development.¹⁹⁵ However, Alexander Cooley, a Russia and Eurasia expert at Colombia University,

*The EEU was initially composed of Russia, Belarus, and Kazakhstan (later joined by Armenia and Kyrgyzstan), and promotes economic integration and Moscow’s influence in member countries. Bruno S. Sergi, “Putin’s and Russian-led Eurasian Economic Union: A Hybrid Half-Economic and Half-Political ‘Janus Bifrons,’” *Journal of Eurasian Studies* 9 (2018): 52–53.

argues that the Russia-China relationship in Central Asia is more akin to “public cooperation and private rivalry.”¹⁹⁶

Despite China’s growing influence in the region, it remains far behind Russia’s cultural influence and soft power. Russia has a strong linguistic connection with Central Asia, as Russian remains the most widely spoken language, and much of the television programming is comprised of broadcasts from Moscow.¹⁹⁷ Further, Marlene Laruelle, professor at George Washington University, testified to the Commission that “Sinophobia has been on the rise in Central Asia. The recent Chinese strategy of interning Uyghurs in camps has been creating some popular reaction, especially in Kazakhstan.”¹⁹⁸

The Belt and Road Initiative and Eurasian Economic Union

An important component of the Sino-Russian relationship in Central Asia is the interaction between the two countries’ signature development initiatives. Launched in 2013 in Kazakhstan, China’s BRI has offered Central Asian countries multi-billion dollar investments in energy and infrastructure projects.* Such investments have also increased Chinese export flows and expanded China’s influence in the region.¹⁹⁹ The EEU, by contrast, was established in January 2015 and is Russia’s primary vehicle for economic engagement in Central Asia.²⁰⁰

Despite repeated pledges by Beijing and Moscow to coordinate BRI and EEU activities in Central Asia, there has been little cooperation between the two. Russian government officials initially viewed BRI’s route through Central Asia as threatening Russia’s traditional influence in the region and expressed their displeasure in interviews with academics.²⁰¹ In May 2015, however, Beijing and Moscow announced a merger of BRI and the EEU, which appeared driven by Russia’s need to lean more heavily on China after the imposition of Crimea-related sanctions. The merger also served as a signal that the two countries share a common approach to Central Asian development.²⁰² Yet the lack of tangible coordination between the two projects since 2015 suggests that the merger may be designed largely for signaling purposes and to defuse tensions on both sides.²⁰³ According to Dr. Laruelle, Russia’s EEU “was just a way for Russia to try to mimic [BRI] ... to say they are in coordination.”²⁰⁴

Tensions in the Shanghai Cooperation Organization

Tense interactions between China and Russia in the SCO, which the two established in 2001 with Central Asian countries, are emblematic of their broader divergences in regional priorities and goals. While Beijing prefers the SCO as the primary organization for ordering economic and security engagement in the region due to its leading role in the body, Moscow prefers the Russian-led CSTO in the security sphere and the EEU in the economic and legal spheres.²⁰⁵ Since the SCO’s establishment, Russia has opposed Chinese moves to use the SCO as an economic vehicle, fearing that Beijing could use the platform to expand its economic inroads in Central Asia.²⁰⁶

* For an in-depth assessment of China’s engagement in Central Asia, see U.S. China Economic and Security Review Commission, Chapter 3, Section 1, “China and Central Asia,” in *2015 Annual Report to Congress*, November 2015.

The SCO has achieved some success in fostering regional security cooperation, for example by creating a regional legal framework and multilateral military exercises, but the organization has been unable to develop major initiatives beyond these.²⁰⁷ Further, Dr. Wilson noted to the Commission that Russia supported India's entry into the SCO, which Chinese media questioned as being potentially motivated by seeking to counterbalance China (Pakistan became an SCO member at the same time as India in 2017).²⁰⁸ In addition, China and Russia have also disagreed on statements at SCO summits, largely due to Beijing's stated principle of noninterference. China snubbed Russian proposals at the 2008 summit to recognize the independence of breakaway Georgian territories and at the 2014 summit to endorse Russia's actions in Crimea.²⁰⁹ To date, China has neither recognized the independence of Abkhazia and South Ossetia nor departed from its ambiguously neutral position on Russia's annexation of Crimea.²¹⁰

General Alignment on Afghanistan

As the United States seeks to draw down its military presence in Afghanistan and reach a peace agreement to end the 18 year-long war, both China and Russia are generally aligned in their views on the situation. In particular, both countries perceive an opportunity to expand their influence in Afghanistan and to bolster their international standing.²¹¹ Although Afghanistan is not a primary focus of either Beijing's or Moscow's regional engagement, they both benefit from stability to support their interests in Central Asia and to counter the threat of terrorism and other potential risks to their national security.²¹² Dr. Laruelle testified to the Commission that the two countries are ready to accept a Taliban-shared government in Kabul as long as "it does not try to spread instability ... beyond Afghanistan's borders toward Central Asia or Xinjiang."²¹³

Beijing has the added objective of protecting billions of dollars' worth of investments in Afghanistan through BRI.²¹⁴ China and Russia have attempted to influence the final outcome in the Afghan conflict by negotiating together directly with the Afghan government and the Taliban. In September 2019, for example, China's special representative for Afghanistan hosted a Taliban delegation in Beijing to discuss the group's peace talks with the United States shortly after President Trump called off plans to host the Taliban at Camp David for negotiations.²¹⁵ In addition, China and Russia have engaged in broader dialogues with their respective regional partners, Pakistan and Iran.²¹⁶

In April 2019, the United States reached consensus with China and Russia on key components of an Afghan peace agreement. That consensus included the recognition of the Taliban's commitment to cut ties with Al-Qaeda and fight ISIS, among other terrorist groups, and a call for the "responsible withdrawal" of foreign troops from Afghanistan.²¹⁷ Beijing has been cautious about increasing its involvement, fearing it could stumble into a long-term commitment, but has been slowly changing its approach since at least 2015 when it first engaged in talks with the United States and Afghanistan on peace negotiations.²¹⁸ Seeking to protect its economic and security interests in the country, China has since 2016 reportedly operated a

military outpost consisting of about two dozen buildings and towers in Tajikistan looking out onto Afghanistan, which could support up to hundreds of PLA soldiers as well as regular patrols.²¹⁹ It has also been reported that China is funding and building a training camp for Afghan troops in Afghanistan's Wakhan Corridor, which extends from the northern Afghan province of Badakhshan to China's Xinjiang region.²²⁰ China's Ministry of Foreign Affairs has denied the reports, and the Afghan embassy in Beijing said "there will be no Chinese military personnel of any kind on Afghan soil at any time."²²¹

Similar Approaches and Compatible Goals in the Middle East

Like in other regions, Chinese and Russian engagement with the Middle East is characterized by a mix of complementary and competitive behaviors. While Beijing has focused on securing oil, gas, and other raw materials, Moscow has sought to bolster its regional military presence and political influence.²²² However, the two countries increasingly pursue similar approaches to key international issues such as the promotion of authoritarian norms of governance, diplomatic initiatives, counterterrorism, and arms sales. These activities cumulatively reduce U.S. influence in the region and demonstrate Chinese and Russian global power. Left unchecked, deepening Sino-Russian cooperation in the Middle East will complicate U.S. efforts to promote its own interests.

China and Russia pursue a variety of strategies to promote authoritarian norms in the Middle East, providing political support and investment to Middle Eastern countries regardless of their domestic regime and compliance with good governance standards. Andrea Kendall-Taylor, a fellow at the Center for a New American Security, testified to the Commission that some Middle Eastern governments see China and Russia as successful examples of the "strongman authoritarian model," creating a political affinity that may serve as the basis for future political cooperation.²²³ Chinese and Russian activities in the Middle East undermine U.S. efforts to improve regional adherence to norms of democracy, human rights, and good governance.

China and Russia also coordinate diplomatic positions in response to shared concerns about regional security issues and work to deepen relations with key U.S. allies in the Middle East. Both countries have developed ties with Iran, participated in the 2015 Joint Comprehensive Plan of Action that restricted Iran's nuclear program, evaded U.S. sanctions on Iran, and worked to move away from U.S. dollar-denominated currencies to alternatives in trading with Tehran.²²⁴ China and Russia have also expressed support for the Assad regime, provided military assistance to the Syrian government, and vetoed multiple UN Security Council resolutions on the Syrian civil war.²²⁵ Further, the two countries have pursued closer ties with key U.S. partners such as Israel, Saudi Arabia, Egypt, and Turkey.²²⁶

Both China and Russia are concerned about the potential return home of up to thousands of Chinese and Russian citizens who fought on behalf of terrorist organizations in Syria.²²⁷ The prospect of radicalization among members of the Muslim Uyghur minority in Xinjiang is of particular concern to the Chinese government because the region is a crucial hub for BRI.²²⁸ Syria's ambassador to China

claimed in May 2017 that up to 5,000 Uyghurs were fighting in various militant groups in Syria.²²⁹ President Putin expressed similar concerns in February 2017, when he cited Russian security service statistics that about 4,000 Russians and 5,000 Central Asians had gone to fight for the Islamic State in Syria.²³⁰ However, Mathieu Duchâtel, director of the Asia program at the French think tank Institut Montaigne, estimates that the actual number of Uyghurs fighting in Syria may be as low as a few hundred.²³¹ China and Russia have signed several cooperation agreements on counterterrorism and the repatriation of persons who have committed crimes overseas but robust counterterrorism cooperation has yet to materialize.²³²

Finally, both countries seek a larger piece of the growing Middle East arms market, responding to rising demand from countries like Saudi Arabia, the United Arab Emirates (UAE), Qatar, and Iran.²³³ Russia, the world's second largest arms exporter, sold 11 percent of its total arms exports to the region from 2013–2017,²³⁴ while China exported only 2 percent of its total arms exports to the region over the same period.²³⁵ The UAE, to take a recent example, has bought missile systems from Russia.²³⁶ Both the UAE and Saudi Arabia have also purchased drones from China, an area of the arms market in which China has developed a niche.²³⁷

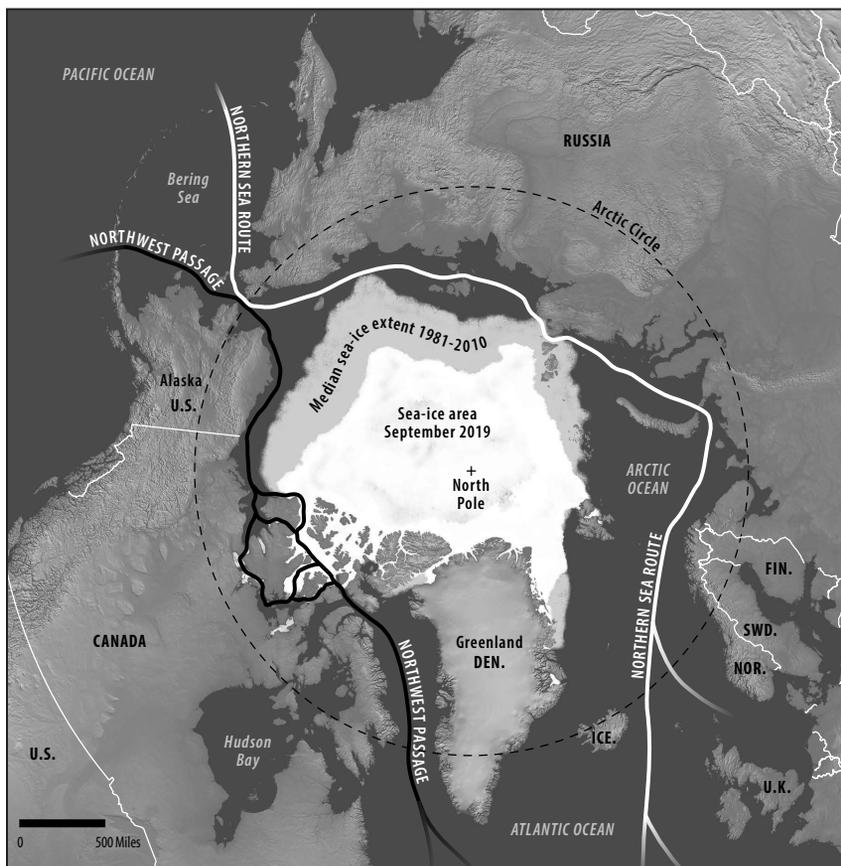
Moreover, while growing Chinese and Russian arms sales to the Middle East may stimulate competition for regional customers, the sales also pose a potential challenge to long-standing U.S. and European dominance in the regional arms market by providing customers with incompatible hardware.²³⁸ U.S. Department of Defense officials are reportedly concerned that Chinese and Russian arms sales to U.S. allies in the Middle East may enable the two countries to acquire information about U.S. military and commercial technologies because their technicians may be able to access such information in the process of installing newly-purchased systems.²³⁹

Chinese and Russian activities in the Middle East further the two countries' efforts to reduce U.S. influence in the region and demonstrate Chinese and Russian global power. In the future, growing Sino-Russian cooperation in the Middle East may further undermine U.S. interests, such as the maintenance of traditional security relationships with Middle Eastern partners and the promotion of the liberal international order.

Russia Chafes at Chinese Arctic Presence

Russia has long viewed itself as the dominant power in the Arctic (see Figure 2) and is hesitant to welcome a broader Chinese presence that could encroach on its interests. At the same time, China, which declared itself a "near-Arctic State" in 2018, seeks to expand its influence in the Arctic and gain access to the region's plentiful resources.²⁴⁰ Moscow has proved willing to accommodate some of China's demands for a greater role in Arctic affairs, particularly after the 2014 post-Crimea sanctions, for the sake of generating crucial investment and sustaining the broader Sino-Russian partnership.²⁴¹ Nevertheless, Rebecca Pincus, assistant professor at the U.S. Naval War College, testified to the Commission that "Russia will not be the junior partner in the Arctic."²⁴²

Figure 2: Map of the Arctic



Note: This map depicts the Arctic, including the two primary routes used by coast guards, naval forces, and commercial shipping entities. The Northwest Passage runs along the U.S. and Canadian coasts, while the Northern Sea Route runs primarily along the Russian coast. The map also illustrates the melting of the North Pole from 1981 to 2010 and the remaining extent of the sea ice as of September 2019. As the sea ice melts, the Arctic will become easier to navigate, inviting greater involvement by countries previously unable to access the region due to their lack of ice-breakers. It will also reduce other countries' dependence on Russia for access to the Northern Sea Route, which Russia currently controls.

Source: Adapted from Dan Lamothe, "The New Arctic Frontier," *Washington Post*, November 21, 2018.

Chinese and Russian interests currently overlap rather than align in the Arctic. Moscow possesses the largest Arctic territory in the world and has significant civilian and military assets in the region.²⁴³ According to Russia's 2008 and 2013 Arctic strategy documents, the Arctic's future development is crucial to the country's military security, shipping lanes such as the Northern Sea Route,* and access to natural resources.²⁴⁴ China, which is not an Arctic littoral state, did not significantly expand its reach into the Arctic until 2013, though its interest

*The Northern Sea Route is the shipping lane that traverses Russia's northern coast and connects northeast Asian ports with northern ports in North America and Europe. It is currently the most-trafficked shipping route in the Arctic. For more, see U.S.-China Economic and Security Review Commission, *Hearing on an Emerging China-Russia Axis? Implications for the United States in an Era of Strategic Competition*, written testimony of Rebecca Pincus, March 21, 2019, 3.

in the region dates back to the 1990s.²⁴⁵ Russia was long reluctant to allow China to join the Arctic Council (the dominant regional organization) as an observer, due in part to its fear of China gaining influence at its expense.²⁴⁶ Nonetheless, Russia finally relented in its opposition, and China became an observer to the Council in 2013.²⁴⁷

Sino-Russian cooperation in the Arctic is based on mutual interests. For Russia, China can provide the capital, technical expertise, and markets needed to develop its natural resources.²⁴⁸ For China, Russia furthers Chinese economic goals in the region—particularly through the development of natural resources and use of shipping routes controlled by Russia—while addressing its growing domestic energy demand, significantly reducing shipping times and costs to Europe, and reducing its dependence on importing energy through the Suez Canal and Straits of Malacca.*²⁴⁹

The most prominent example of Sino-Russian cooperation in the Arctic to date is the joint development of the Yamal LNG project, for which Beijing has provided approximately \$13 billion in financing.²⁵⁰ The joint development project created a “win-win” situation for both countries, enabling Russian firms experiencing financial strain related to the Crimea sanctions to secure funding, while Beijing acquired a new source of LNG and shipping route.²⁵¹ Other notable examples of cooperation include the 2018 announcement incorporating Russia’s Northern Sea Route into China’s BRI and combined Sino-Russian investment to upgrade the Russian port of Zarubino.²⁵²

Despite these much-touted cooperative projects, significant obstacles remain to deepened Sino-Russian cooperation in the Arctic. China’s efforts to build its influence in the region, particularly by offering funding for resource development projects with Arctic Council members, gives Russia reason to question Beijing’s long-term ambitions.²⁵³ Both countries have made little progress in the joint development of oil and gas projects, while implementation of the Northern Sea Route’s development has stalled due partly to Chinese concerns about the lack of infrastructure facilities and the expense of Russian-provided navigation and ice-breaking services.²⁵⁴ Russian legislation further restricted access to the Northern Sea Route in March 2019 by requiring foreign ships to request permission 45 days in advance of transiting the route and to take a Russian pilot on board.²⁵⁵ Dr. Pincus observes that bilateral cooperation in the Arctic “may hinge on the question of control and trust.” Thus far, mismatched expectations and the Russian side wanting to maintain total management control over development projects have been key roadblocks.²⁵⁶

*Chinese firms are especially interested in securing opportunities to mine and extract uranium as well as rare earth elements in the Arctic. In Greenland, for example, Chinese firms have pursued multiple joint mining ventures to acquire uranium, neodymium, dysprosium, yttrium, and zinc. China’s growing investment in Arctic resources has worried other countries; in 2012, European Union Vice President Antonio Tajani engaged in what he called “raw mineral diplomacy” by offering hundreds of millions of dollars in development aid in exchange for a guarantee that Greenland would not allow China exclusive access to rare earth metals. For more see Marc Lanteigne and Mingming Shi, “China Steps Up Its Mining Interests in Greenland,” *Diplomat*, February 12, 2019; Ed Struzik, “China Signals Hunger for Arctic’s Mineral Riches,” *Guardian*, June 4, 2013.

Implications for the United States

Moscow and Beijing work independently and together to counter the United States and erode the values underpinning U.S. global leadership. The two countries frame their relationship as a “comprehensive strategic partnership of coordination for a new era,” insisting that it is not an alliance.²⁵⁷ In key respects, this claim is true: the Sino-Russian partnership, as articulated in the two countries’ June 2019 joint statement, fails to meet most of the criteria for a formal alliance—most notably, specific legal requirements for collective self-defense.* Yet China and Russia’s mutual expectation of diplomatic support in a dispute, combined with their shared antipathy to U.S. values, opposition to U.S. alliances and observable patterns of cooperation, suggest a high degree of geopolitical alignment that has already begun to challenge U.S. interests and values.

China and Russia’s high-level defense technology cooperation, military exercises, and military-to-military coordination raise the potential security threat to the United States and its allies and partners. Moreover, coordinated Sino-Russian military activity has created new challenges for the United States and its allies to respond to simultaneous Sino-Russian military operations. Russian sales of Su-35 fighters, S-400 SAM systems, and other advanced military technology to China bolster PLA capabilities, significantly improving the PLA’s ability to contest air superiority in the region. Combined exercises have yet to demonstrate interoperability, but it is not inconceivable that both countries could operate together in a future military conflict.

The crucial challenge for the United States and its allies lies in the question of how to respond if China and Russia were to launch military operations in different theaters at the same time. It is also possible that China and Russia might choose to act more assertively in concert if they perceive the U.S. response to their separate actions as weak, a calculation arguably reflected in each country’s respective approach to Syria, Ukraine, and the South China Sea. In these cases, it appears that one country’s success in pursuing its interests in opposition to the United States may have emboldened the other to take similar actions, a dynamic that Oriana Skylar Mastro, assistant professor of security studies at Georgetown University, described in testimony before the Commission as “strategic echoing.”²⁵⁸

China and Russia employ a host of strategies to promote authoritarian values and illiberal norms that undermine the basis of the U.S.-led international order. Both countries use military force in violation of international law and support rogue, anti-U.S. regimes. At the UN Security Council, China’s and Russia’s moves to block U.S. initiatives and protect rogue regimes from official censure hinder the UN’s ability to uphold global norms. The two countries’ promotion of “internet sovereignty” erodes the principles underpinning the free flow of information and an open internet. Likewise, their common vision of space that restricts U.S. freedom of action while allowing

*According to political scientist Glenn Snyder, alliances are characterized by their “solemnity, specificity, legal and normative obligations and ... public visibility.” For more see Glenn H. Snyder, “Alliance Theory: A Neo-realist First Cut,” *Journal of International Affairs* 44:1 (Spring/Summer 1990): 103–123.

for their own development of counterspace technologies is detrimental to the preservation of a peaceful commons in outer space. Finally, China and Russia's use of influence operations, cyberwarfare, and disinformation have the potential to destabilize the United States and democracies around the world.

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SECTION 3: CHINA'S AMBITIONS IN SPACE: CONTESTING THE FINAL FRONTIER

Key Findings

- China's goal to establish a leading position in the economic and military use of outer space, or what Beijing calls its "space dream," is a core component of its aim to realize the "great rejuvenation of the Chinese nation." In pursuit of this goal, China has dedicated high-level attention and ample funding to catch up to and eventually surpass other spacefaring countries in terms of space-related industry, technology, diplomacy, and military power. If plans hold to launch its first long-term space station module in 2020, it will have matched the United States' nearly 40-year progression from first human spaceflight to first space station module in less than 20 years.
- China views space as critical to its future security and economic interests due to its vast strategic and economic potential. Moreover, Beijing has specific plans not merely to explore space, but to industrially dominate the space within the moon's orbit of Earth. China has invested significant resources in exploring the national security and economic value of this area, including its potential for space-based manufacturing, resource extraction, and power generation, although experts differ on the feasibility of some of these activities.
- Beijing uses its space program to advance its terrestrial geopolitical objectives, including cultivating customers for the Belt and Road Initiative (BRI), while also using diplomatic ties to advance its goals in space, such as by establishing an expanding network of overseas space ground stations. China's promotion of launch services, satellites, and the Beidou global navigation system under its "Space Silk Road" is deepening participants' reliance on China for space-based services.
- China is taking steps to establish a commanding position in the commercial launch and satellite sectors relying in part on aggressive state-backed financing that foreign market-driven companies cannot match. China has already succeeded in undercutting some U.S. and other foreign launch and satellite providers in the international market, threatening to hollow out these countries' space industrial bases.
- The emergence of China's indigenous space sector has been an early and notable success of Beijing's military-civil fusion strategy. The aggressive pursuit of foreign technology and talent gained through joint research and other means, especially from the United States and its allies and partners, continues to be central to this strategy and to China's space development goals in general.

- The Chinese government and military use Hong Kong-based companies to exploit legal loopholes and uneven enforcement in U.S. export controls to gain access to space capabilities which U.S. law prohibits Beijing from purchasing outright. Collaboration with foreign universities, including in the United States, is another important avenue in China's drive to acquire space technology. Chinese students enrolled in foreign science, technology, engineering, and mathematics programs are treated like employees of China's defense industrial base, with defense enterprises regularly funding their studies in return for service commitments following graduation.
- China views space as a critical U.S. military and economic vulnerability, and has fielded an array of direct-ascent, cyber, electromagnetic, and co-orbital counterspace weapons capable of targeting nearly every class of U.S. space asset. The People's Liberation Army (PLA) has also developed doctrinal concepts for the use of these weapons encouraging escalatory attacks against an adversary's space systems early in a conflict, threatening to destabilize the space domain. It may be difficult for the United States to deter Beijing from using these weapons due to China's belief the United States has a greater vulnerability in space.

Recommendations

- Congress direct the National Space Council to develop a strategy to ensure the United States remains the preeminent space power in the face of growing competition from China and Russia, including the production of an unclassified report with a classified annex including the following:
 - A long-term economic space resource policy strategy, including an assessment of the viability of extraction of space-based precious minerals, onsite exploitation of space-based natural resources, and space-based solar power. It would also include a comparative assessment of China's programs related to these issues.
 - An assessment of U.S. strategic interests in or relating to cislunar space.
 - An assessment of the U.S. Department of Defense's current ability to guarantee the protection of commercial communications and navigation in space from China's growing counterspace capabilities, and any actions required to improve this capability.
 - A plan to create a space commodities exchange to ensure the United States drives the creation of international standards for interoperable commercial space capabilities.
 - A plan to streamline and strengthen U.S. cooperation with allies and partners in space.
 - An interagency strategy to defend U.S. supply chains and manufacturing capacity critical to competitiveness in space.

- Congress direct the U.S. Department of Defense to take the following steps to ensure it is prepared to counter China’s and Russia’s destabilizing approach to military operations in space:
 - Ensure U.S. Space Command and any future space-oriented service are responsible for protecting freedom of navigation and keeping lines of communication open, safe, and secure in the space domain, as the U.S. Navy does for U.S. interests in the maritime commons.
 - Strengthen the credibility of U.S. deterrence in space by fully integrating the space domain into policy, training, and exercises.
 - Ensure that programs designed to increase survivability, redundancy, reusability, resilience, rapid replacement, and disaggregation of critical U.S. space assets receive continued support, including those programs ordered in the National Defense Authorization Act for 2019 Title XVI, Subtitle A.
- Congress urge the Administration to actively participate in international space governance institutions to shape their development in a way that suits the interests of the United States and its allies and partners and to strengthen U.S. engagement with key coalitional allies and partners in the space domain.

Introduction

At the highest levels of policy, the Chinese government is determined to meet ambitious goals for space leadership, and it has connected its space program with its broader ambitions to become a terrestrial leader in political, economic, and military power. Beijing aims to establish a leading position in the future space-based economy and capture important sectors of the global commercial space industry through the use of subsidies to undercut foreign competitors, including promoting its space industry through partnerships under what it has termed the “Space Silk Road.” Some of these initiatives are already challenging the U.S. space industry and U.S. leadership on international space cooperation.

Beijing has also positioned itself to take advantage of the unclear legal regimes concerning the exploitation of space-based resources, while making statements linking its space exploration program to its sovereignty claims on Earth. Despite its insistence that it opposes the militarization of space, Beijing has fielded an array of counterspace capabilities enabling it to hold both civilian and military space assets at risk. The PLA has developed doctrinal concepts for the use of these weapons early in a conflict, threatening to destabilize the space domain. Although the strategic value of some elements of China’s space program is not yet proven, Beijing is clearly of the view that the country that leads in space may also be economically and militarily dominant on Earth.

This section examines Beijing’s plans for economic and industrial expansion into space; its use of international space cooperation to promote its geopolitical interests; the application of military-civil fusion to China’s nascent commercial space sector; and China’s counterspace activities, capabilities, and doctrine. It draws from the Commission’s April 2019 hearing on China’s space ambitions, open source research and analysis, and consultations with outside experts.

National Rejuvenation and a “Space Dream”

China views establishing a leading position in the economic and military use of outer space as a core component of its goal to realize the “great rejuvenation of the Chinese nation,” or the “China dream”—an ambitious vision to restore what Beijing views as its historical leadership role in world affairs. According to General Secretary of the Chinese Communist Party Xi Jinping, China’s “space dream” is to “explore the vast universe, develop aerospace enterprises, and build a strong aerospace country.”¹ To achieve these goals and become what it has termed a “space power in all respects,” China has made focused efforts to catch up to and eventually surpass other spacefaring countries in terms of space-related industry, technology, diplomacy, and military power.²

Beijing consistently invests high levels of funding and political will to its space program, with both the civilian government and military involved in formulating and executing policy at the highest level.³ China’s program is deeply connected to the “levers of power,” meaning its goals often draw support from top leaders and are interconnected with the overall priorities of China’s industrial and foreign policies.⁴ Furthermore, many officials with backgrounds in the state defense complex have moved to senior government positions. While not all of these officials have backgrounds in space specifically, the result of these moves has been that senior Chinese political leaders often have a stronger technical understanding of the space sector than their foreign counterparts (see Addendum I on page 385 listing key Chinese officials with aerospace sector backgrounds). Beijing has set ambitious goals for its space program and demonstrated its ability to achieve an increasingly sophisticated set of milestones.⁵ For example, if plans hold to launch its first long-term space station module in 2020, China will have matched the United States’ nearly 40-year progression from first human spaceflight to first space station module in less than 20 years.⁶

A Commanding Position in Cislunar Space and the Future Space Economy

Central to China’s economic and strategic goals in space is establishing a commanding position in cislunar space—the space within the moon’s orbit of Earth*—to reap the benefits of what Beijing views as its strategic value and the vast potential of the future space-based economy. According to Lieutenant General Zhang Yulin, deputy director of the PLA’s Equipment Development Department, cislunar space is “strategically important for the great rejuvenation of the Chinese nation” due to its potential for facilitating solar power and resource exploitation.⁷ General James Cartwright, former Vice Chairman of the Joint Chiefs of Staff, also attested to cislunar

*Cislunar space is the sphere comprising all the volume between Earth and the moon. This space includes commonly used orbits such as low-Earth orbit (up to approximately 2,000 km above the Earth), geosynchronous orbit (approximately 3,400–3,800 km), and medium-Earth orbit (between low-Earth and geosynchronous orbits), as well as the much vaster space beyond; geosynchronous orbit is only about a tenth of the distance to the moon. In this section, “cislunar space” generally refers to the space above altitudes currently useful for security and economic purposes. *GIS Geography*, “Geosynchronous vs Geostationary Orbits,” February 23, 2018; Marianne R. Bobskill and Mark L. Lupisella, “The Role of Cis-Lunar Space in Future Global Space Exploration,” Global Space Exploration Conference, Washington, DC, May 2012, 1; Inter-Agency Space Debris Coordination Committee, “IADC Space Debris Mitigation Guidelines,” September 2007, 5.

space's importance, testifying at the Commission's April 25 hearing that it should be viewed as the strategic "hill over the valley" controlling access to space from Earth.⁸

Beijing envisions the cislunar domain as the foundation for this long-term presence in space and jumping-off point for deep space exploration missions.⁹ This foundation for long-term presence will potentially include a transport hub orbiting Earth with permanently docked nuclear-powered shuttles for space missions, accessible from Earth via reusable rockets.*¹⁰ Independent analyst Namrata Goswami testified to the Commission that the goal of China's space program is not merely exploration but rather "industrial and economic dominance of the cislunar system."¹¹ China's 2019 defense white paper stresses the importance of the capacity "to safely enter, exit, and openly use outer space."¹²

Experts disagree on whether humans will be able to exploit cislunar space at scale for economic and strategic purposes anytime soon, largely because much of the technology required to exploit this space has not been developed yet. Although the space economy may reach one to three trillion dollars by 2040, according to some estimates—a figure that does not include the vast potential value of mining space-based minerals—the steps required to fully harness this potential remain undetermined.¹³ According to Todd Harrison, a senior space expert at the Center for Strategic and International Studies, in cislunar space there is "nothing really to dominate, at least not yet," because it is so high above the altitudes at which space is currently useful for either commercial or national security purposes.¹⁴ According to a May 2019 joint report by the U.S. Air Force Research Laboratory and the Defense Innovation Unit, however, cislunar space will become an important domain for the United States in the next five years and beyond due to the need to place national security space assets beyond low-Earth orbit (LEO) and geosynchronous orbit (GEO) to limit their vulnerability and enhance their utility, and because this domain will be crucial for establishing infrastructure to enable a long-term U.S. presence on the moon and beyond.¹⁵

Despite these uncertainties, China has devoted considerable resources to developing technology, especially through its human spaceflight program, to reap the long-term benefits of a sustained presence in cislunar space. China's space station program and planned crewed moon and Mars missions are not ends unto themselves, but rather steps in a long-term plan to develop and maintain presence in this important area.¹⁶ For instance, since early in the Shenzhou spacecraft program—which saw its first launches in the late 1990s—the goal of China's human spaceflight project has been to establish a long-term crewed space station which would serve as a stepping stone to further exploration of cislunar space and beyond.¹⁷ China's increasingly advanced lunar probes, intended to demonstrate all prerequisites for a crewed lunar mission (i.e., launch and orbit,

*The planned nuclear shuttle fleet is beyond China's current technology, since Beijing has not yet mastered even conventional launch vehicles, but it is a key project planned for completion by about 2040 that if successful will enable large-scale exploration and resource exploitation in space. Stephen Chen, "China's Nuclear Spaceships Will Be 'Mining Asteroids and Flying Tourists' as It Aims to Overtake U.S. in Space Race," *South China Morning Post*, November 17, 2017; *Xinhua*, "China to Achieve 'Major Breakthrough' in Nuclear-Powered Space Shuttle around 2040: Report," November 16, 2017.

soft landing, and sample return), provide a technological basis for the ability to land future modules in the same area to be assembled into a lunar surface station, according to Sun Zezhou, chief designer of Chang'e-4, China's latest and most advanced probe.¹⁸ In 2016, Lieutenant General Zhang, who is also deputy director of China's human spaceflight program, said preliminary work had already commenced to begin exploitation of cislunar space after China completes its first long-term crewed space station in 2020.¹⁹

A key component of China's plan to support its activity in cislunar space and beyond is the establishment of permanent facilities on the moon. Zhao Xiaojin, Party Secretary of the China Academy of Space Technology (CAST), a state-owned aerospace research institution, said in March 2018 China hopes to begin construction of a lunar research station around 2025 prior to visits by taikonauts* in the mid-2030s.²⁰ China also plans to establish a lunar research and development base around 2050 that will be primarily robotic. The official newspaper of the Ministry of Science and Technology, *Science and Technology Daily*, suggested the far side of the moon—on which China landed Chang'e-4 in January 2019—may be ideal for such a base, likening it to the “holy grail” of locations because it is shielded from terrestrial electromagnetic interference.²¹ The value of the moon as a location for national security infrastructure focusing on Earth, however, is debatable. According to Mr. Harrison, communication at that distance is very inefficient, optical sensors would operate at very low resolution, and a projectile traveling from the moon to Earth would require about three days to make the journey.[†]²²

Cislunar space will also play an important role in China's plans for space-based solar power, a futuristic power source that China aims to fully deploy by 2050, which may have the potential to provide virtually unlimited power to the whole world.²³ The technology is currently in its initial phases, but the underlying concept for one method of transmitting energy via microwaves has been successfully demonstrated by U.S. and Japanese researchers at short ranges on Earth as recently as 2015.²⁴ U.S. space-based solar power expert John Mankins argued in 2017 there are no “technological showstoppers” preventing the development of this new power source, but it will be important to demonstrate the systems can work at the necessary distances and from space-based platforms.²⁵

China has demonstrated its seriousness in pursuing this concept by establishing an experimental space-based solar power ground station in Chongqing in early 2019.²⁶ According to Dr. Goswami,

*The terms astronaut (U.S. usage), taikonaut (Chinese usage), and cosmonaut (Russian usage) all refer to trained professionals who travel into space and operate spacecraft. More specifically, the terms each refer to people trained and certified by different space agencies, each of which has different operational philosophies, knowledge areas, and skill sets, and thus they are effectively distinct job titles. Robert Frost, “What Are the Differences between an Astronaut and a Cosmonaut?” *Forbes*, May 11, 2017.

†This is an approximation; transit times vary based on trajectory and the amount of propellant used. The Apollo 11 mission in 1969 took just short of 22 days and 23 hours to return from the Moon—the fastest-ever transit for a crewed craft. The Soviet satellite Luna 1 in 1959 reached the Moon in 34 hours, one of the fastest trips on record. Even a hypersonic missile traveling from the moon at Mach 15 would require approximately 22 hours to reach Earth. Todd Harrison, Director of Defense Budget Analysis and Aerospace Security Project, Center for Strategic and International Studies, interview with Commission staff, June 26, 2019; R. Jeffrey Smith, “Hypersonic Missiles Are Unstoppable. And They're Starting a New Global Arms Race,” *New York Times*, June 19, 2019; Tim Sharp, “How Far is the Moon?” *Space*, October 27, 2017; Matt Williams, “How Long Does It Take to Get to the Moon?” *Universe Today*, January 10, 2016.

Beijing's space-based solar power plans would involve satellites exceeding 10,000 tons—the construction of which will only be possible by using lunar resources to build and then launch them onsite at an automated lunar base*—to convert solar power into microwaves and beam energy directly from space to Earth, generating solar power much more reliably and efficiently than terrestrial solar panels.²⁷ China's project would proceed by using high-altitude stratospheric balloons to test the system in the first half of the 2020s, followed by megawatt-class satellites by 2030 and gigawatt-class satellites by 2050.²⁸ The projects have received significant funding and policy attention, including through CAST's establishment in 2011 of the Qian Xuesen† Laboratory of Space Technology, which studies space mining and manufacturing, including onsite additive manufacturing.²⁹

Chinese scientists and officials and experts from other countries do not all agree space-based solar power will become technologically viable, however. Its success depends on the perfection of both the transmission method and the automated lunar industrial-scale production and launch of large satellites, neither of which has been proven to be feasible at scale. According to an expert quoted in August 2019 in the *Guangming Daily*, a central news portal focusing on the academic and intellectual community, China has in recent years made important advancements in crucial technology associated with wireless energy transmission necessary for space-based solar power.³⁰

China has set plans for other technologically ambitious milestones, such as mining of near-earth asteroids, which if successful could generate both significant national prestige and wealth.³¹ For example, based on 1997 estimates by U.S. planetary scientist John Lewis that one known near-earth asteroid could contain precious metals worth approximately \$20 trillion, Li Mingtao, a scientist at the National Space Center under the Chinese Academy of Sciences, has asserted capturing asteroids and sending them to Earth to be mined may become “a new engine for the global economy.”³² Tech-

* Onsite use of lunar water—estimated at up to 100 million metric tons in the form of ice—and rock should not be confused with mining for precious resources, which is another potential Chinese project. The former type of mining is proposed to enable long-term presence on the moon and the ability to travel elsewhere from the moon by creating rocket fuel, drinking water, and building materials from lunar resources, while the latter type would bring precious minerals to Earth. Lior Rubanenko, Jaahnavee Venkatraman, and David A. Paige, “Thick Ice Deposits in Shallow Simple Craters on the Moon and Mercury,” *Nature Geoscience*, 2019; U.S.-China Economic and Security Review Commission, *Hearing on China in Space: A Strategic Competition?* oral testimony of Brian Weeden, April 25, 2019, 120; National Aeronautics and Space Administration, *Lunar South Pole*, September 27, 2010.

† Qian Xuesen, often thought of as the father of China's space program, was born in China but worked in the United States for decades on rocket programs. Qian helped found NASA's Jet Propulsion Laboratory and attained the rank of colonel in the U.S. Army Air Force before being deported to China in 1955 after being accused of harboring Communist sympathies. Qian was then instrumental in establishing China's Long March rocket program and eventually served on the Chinese Communist Party Central Committee. He was the most prominent of several notable Chinese engineers who studied in the United States and returned to China to contribute to its high-tech programs. Zhang Zhihao, “Top Rocket Scientist Dies, Age 102,” *China Daily*, February 14, 2017; Michael Wines, “Qian Xuesen, Father of China's Space Program, Dies at 98,” *New York Times*, November 3, 2009; *Chinese Academy of Sciences*, “China's Notable Space Scientist Liang Shoupan Died,” September 9, 2009; Evan Feigenbaum, *China's Techno-Warriors: National Security and Strategic Competition from the Nuclear to the Information Age*, Stanford University Press, 2003, 62; Select Committee on U.S. National Security and Military/Commercial Concerns with the People's Republic of China, *Report of the Select Committee on U.S. National Security and Military/Commercial Concerns with the People's Republic of China: PRC Missile and Space Forces*, January 2, 1999, 178.

nology to make this type of mining possible does not yet exist, according to testimony from two witnesses at the Commission's April 25 hearing, and it would be extremely difficult to implement. Two U.S. companies have already gone out of business after failing to create a sustainable business model around this concept.³³ Nevertheless, given Li Mingtao's dual affiliation both with the Chinese Academy of Sciences and as part of a specialized team at the Qian Xuesen Laboratory working on a plan to detect, capture, and mine very small near-earth asteroids, Beijing appears to be serious about trying to overcome these technical challenges.³⁴

Seeking to Shape Space Governance Norms

China has fought to contest existing norms and sought to promote its leadership role in international space governance institutions to shape global space norms and practices in ways that benefit its economic and other national interests. Contrary to international norms governing the exploration and commercial exploitation of space, statements from senior Chinese officials signal Beijing's belief in its right to claim use of space-based resources in the absence of a clear legal framework specifically regulating mining in space. Reflecting a sense of urgency in establishing its national interests in space, in 2015 Ye Peijian, the head of China's lunar exploration program, likened the moon and Mars to the Senkaku Islands and the Spratly Islands, respectively, and warned not exploring them may result in the usurpation of China's "space rights and interests" by others.³⁵ Echoing the language of General Secretary Xi's "community of common human destiny," in June 2019, Shi Zhongjun, China's ambassador to the UN, called for the strengthening of outer space governance in order to build a "shared future."³⁶ Liza Tobin, a U.S. government China specialist, contended in her personal capacity that the underlying meaning of this slogan is "Beijing's long-term vision for transforming the international environment" to be more beneficial to its interests and more receptive to its governance system.³⁷

In her testimony before the Commission, Dr. Goswami warned of the consequences of Beijing extending its vision of governance and sovereignty to outer space. In particular, she argued that China's activities in Antarctica and the South China Sea—where it has on paper committed to nonescalatory behavior while incrementally advancing its territorial claims by force—present a "clear systematic pattern" China may one day repeat. To consolidate control over space, China may first develop capacity to be present, then establish this presence, and finally develop claims to justify its presence, she concluded.³⁸

Current international space law does not include a legal mechanism to clearly adjudicate ownership of space-based resources, leaving room for interpretation based on the dictates of a country's national interests.³⁹ The foundational Outer Space Treaty of 1967, to which both the United States and China are parties, specifies that celestial bodies are not subject to national appropriation but is vague on the legal status of resources extracted from those bodies.⁴⁰ While most countries believe the extraction of space-based resources is not incompatible with the ban on sovereignty over these bodies, there is no agreement on what the framework for such activities should be.⁴¹

Both Washington and Beijing have taken steps to secure private commercial interests in space mining. The United States passed a commercial space law in 2015, and in 2018 China signed a memorandum of understanding with Luxembourg—the first European country to develop a legal framework for space mining—to codify law granting companies the rights to materials they mine in space.⁴² In 2018, Wu Weiren, chief of the Chang’e project, identified 29 other spacefaring countries that have introduced space laws and pointed out that China is currently the only space power without a space law, claiming China’s system of space laws and regulations is not adequately developed.⁴³ Officials at the China National Space Administration (CNSA), China’s public-facing space agency that serves mostly to raise the profile of China’s space program, announced in 2014 the CNSA was expecting a comprehensive domestic space law to be introduced by 2020.⁴⁴ Although the CNSA asserted China will “always abide by international space law,” Beijing’s commitment in practice will depend on how comprehensive its own space law is because the international treaties are not self-executing.⁴⁵

To advance its interests in space, China has generally followed norms outlined by existing space governance treaties. Because the multilateral fora established by these treaties are relatively weak, however, China has viewed them as useful venues for demonstrating its adherence to some internationally-accepted protocols while also advancing its own initiatives, a number of which do not align with U.S. interests. For example, according to Brian Weeden, a space expert who has observed China’s participation in space governance fora, China played a constructive role in 2018 along with the United States and Russia in helping members of the UN Committee on the Peaceful Uses of Outer Space reach consensus on guidelines to multilaterally address challenges such as space debris, crowded orbits, and traffic management.⁴⁶

In other cases, China has advocated for causes not in line with U.S. interests. Instead of an EU-proposed Code of Conduct in Space, which seeks to enhance safety in space operations through transparency mechanisms and confidence-building measures, China—along with Russia—has supported a draft treaty banning weapons in space and a proposal for a second treaty banning the first placement of such weapons, despite programs in China that appear to be preparations to weaponize space.⁴⁷ The United States opposes the Treaty on the Prevention of the Placement of Weapons in Outer Space because it does not define what constitutes a space weapon, include a verification mechanism for treaty adherence, or restrict development or stockpiling of ground-based antisatellite (ASAT) weapons, all of which would allow Beijing to continue placing U.S. and other foreign space assets at risk with its growing arsenal of ground-based counterspace weapons.⁴⁸ Then Acting Secretary of Defense Patrick Shanahan said in April 2019 that China would field a new ground-based directed-energy counterspace system by 2020, underlining the main reason for U.S. skepticism of the proposed treaty, which is that terrestrial ASAT capabilities are the most pressing threat to space systems.⁴⁹

Space Program Supports Geopolitical and Economic Goals

China Cultivates Clients for the New Space Economy

China has established plans to dominate the space economy of the future, but it also views its space goals as intrinsically linked with its geopolitical ambitions on Earth. In particular, Beijing views its space program as key to elevating its leadership profile in international space cooperation, including through BRI, and establishing a dominant position in the commercial space industry. In 2008, China founded the Asia-Pacific Space Cooperation Organization (APSCO), its primary vehicle for international space cooperation, in which it offers to share its space expertise with less advanced members.⁵⁰ Dues-paying APSCO member are granted access to Chinese space training, ground stations, and satellite development projects.⁵¹ In return, China gains international prestige, promotes the export of its technology and services, and gains access to supplementary data and geographic coverage for its space situational awareness.⁵² China also seeks to cooperate with advanced spacefaring countries and market its expertise by selling its technology to less-advanced countries.⁵³

As of April 2018, China claimed it had signed 121 space cooperation agreements with 37 countries and four international organizations, which it uses to help promote BRI and develop China's space leadership in the Indo-Pacific.⁵⁴ According to a 2016 address by then CNSA Administrator Xu Dazhe, all APSCO members had "reached broad consensus" on BRI's role as a framework for helping facilitate space capacity-building in the Indo-Pacific region, highlighting the degree to which China has linked space initiatives with its broader foreign policy.⁵⁵ In his testimony, Mr. Harrison cited China's ability to leverage participation in its civil space program to strengthen its terrestrial partnerships; for instance, some countries may be willing to support China's political priorities in exchange for a chance to carry out low-gravity research in the future China Space Station.⁵⁶ In September 2019, China and Russia announced their intent to cooperate in developing Russia's future Luna-26 lunar orbiter, China's Chang'e-7 lunar polar lander, and a joint lunar and deep space data center with a hub in each country, demonstrating the extension of the two countries' cooperation to space research and exploration (for more on China-Russia relations, see Chapter 4, Section 2: An Uneasy Entente: China-Russia Relations in a New Era of Strategic Competition with the United States).⁵⁷

The China Space Station positions Beijing to leverage its presence in space into diplomatic and scientific gains.⁵⁸ Mr. Harrison

*APSCO members include Bangladesh, China, Iran, Mongolia, Pakistan, Peru, Thailand, and Turkey. The Chinese government has not made publicly available a full list detailing all of these agreements or identifying partnering countries. A selection of bilateral agreements it has publicized include an Outline of China-Russia Space Cooperation from 2013 to 2017 through the mechanism of a bilateral Space Cooperation Subcommittee; an Outline of China-European Space Agency Space Cooperation from 2015 to 2020 within the framework of the China-Europe Joint Commission on Space Cooperation; and the China-Brazil Earth Resources Satellite program. Multilateral agreements include a memorandum of understanding signed between CNSA and the UN on Earth Observation Data and Technical Support; support to the activities of the Beijing office of the UN Platform for Space-based Information for Disaster Management and Emergency Response; and participation in the APSCO Joint Small Multi-mission Satellite Constellation Program. Asia-Pacific Space Cooperation Organization, "Member States," February 20, 2019; State Council Information Office, *China's Space Activities in 2016*, December 27, 2016.

contended that China might offer other countries the opportunity to conduct crewed missions to the China Space Station and later to the moon or even Mars as incentives to cooperate with China's priorities on Earth.⁵⁹ According to Bleddyn Bowen, a space expert at the University of Leicester, opening the China Space Station to international participants is part of China's effort to establish itself as a U.S. rival in space and to demonstrate that countries can stimulate their space technology sectors without relying on the United States.⁶⁰ In June 2019, the UN Office of Outer Space Affairs and the China Manned Space Agency announced six experiments from institutions in 17 countries had received approval for inclusion on the China Space Station and three others had received conditional approval, and the two organizations confirmed they would invite applications for a second group of experiments.*⁶¹ If the International Space Station—which carries experiments selected by each participating country's space agency⁶²—is not extended beyond 2024, and a planned small U.S.-built station in lunar orbit is delayed, China may be the only country to have an active space station.† Citing the planned retirement of the International Space Station, Charles Bolden, former administrator of the National Aeronautics and Space Administration (NASA), told the Commission that even if China's intent is not to replace the United States, Beijing is slowly doing it by default.⁶³

The Beidou global navigation satellite system is another vital component of China's space diplomacy, figuring prominently in BRI as part of the so-called Space Silk Road.⁶⁴ Although Beidou is free to users, similar to the U.S.-built Global Positioning System (GPS), China has used it as a tool of geopolitical and diplomatic competition which would deepen users' reliance on China for space-based services, potentially at the expense of U.S. influence. After Thailand, a U.S. treaty ally, was granted access to Beidou in 2013, for instance, a Beidou expert from Wuhan University who participated in the negotiations with the Thai government claimed Beijing's goal was to show that Beidou "can do anything GPS does [and] in some areas it can do even better. If Thailand can embrace Beidou, other countries may follow, and the [United States'] ... power in the region will be reduced."‡⁶⁵

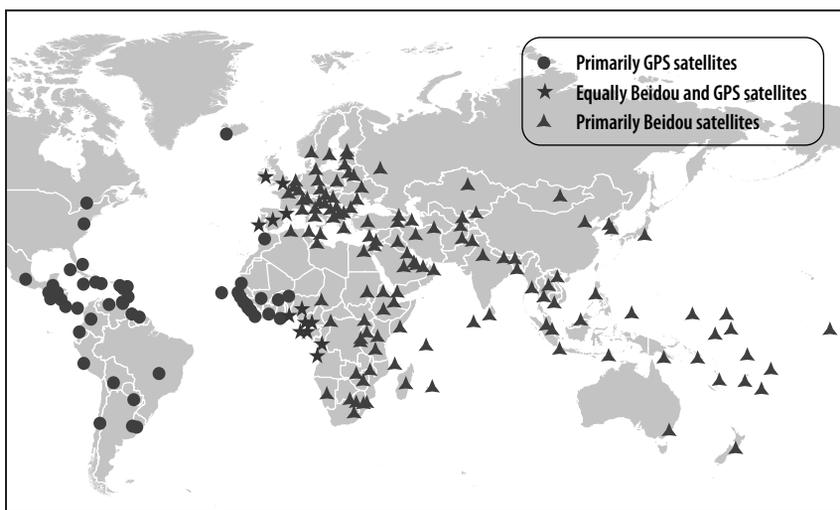
*The 17 countries are Belgium, China, France, Germany, India, Italy, Japan, Kenya, the Netherlands, Norway, Mexico, Poland, Peru, Russia, Saudi Arabia, Spain, and Switzerland. The approved experiments cover astronomy, microgravity fluid physics, microgravity combustion, space medicine, and the conditionally approved experiments cover Earth observation and space technology. UN Office for Outer Space Affairs, "United Nations/China Cooperation on the Utilization of the China Space Station (CSS)," June 12, 2019, 1–6.

†The United States and Russia produced each of the foundational segments of the International Space Station. The United States provides roughly three quarters of the funding to manage the U.S. Orbital Segment, with the rest provided by the Japan Aerospace Exploration Agency (12.8 percent), the European Space Agency (8.3 percent), and the Canadian Space Agency (2.3 percent), while Russia entirely funds the Russian Orbital Segment; the U.S. segment hosts rotations of three to four astronauts from NASA and its three partners, compared to the Russian segment's complement of two to three cosmonauts. Without continued funding from the United States or the introduction of new funding from the private sector, continued operations of the U.S. Segment would likely no longer be feasible. National Aeronautics and Space Administration Office of Inspector General, *NASA's Management and Utilization of the International Space Station*, July 30, 2018, 2, 5–6.

‡The agreement with Thailand included establishing three continuously operating reference stations in Thailand for Beidou, which are ground-based components to improve the network's accuracy. *Xinhua*, "China's BeiDou System to Expand Cooperation to SE Asia," April 1, 2017.

Following a 2013 agreement, Pakistan was the first partner country to be granted access to Beidou's restricted high-precision signal for military use, a model for Beidou's expansion which the *New York Times* reported China could extend to other BRI participants.⁶⁶ Chinese state media have praised the Arab world's progress in adopting Beidou, which has included the Arab League's and Chinese government's joint establishment of a center of excellence in Tunis to promote the system.⁶⁷ China has also promoted a plan to use existing satellites with a tailor-made data-sharing network to contribute to the development of BRICS countries (Brazil, Russia India, China, and South Africa), and in January 2019 China established a new remote sensing satellite data center in Fuzhou, Fujian Province, that it has billed as part of its Maritime Silk Road, the maritime component of BRI.⁶⁸ The *Nikkei Asian Review* reported in August 2019 that as of late June not only had the Beidou constellation exceeded that of GPS in size, but Beidou satellites were more frequently observable than GPS satellites in 130 of 195 UN member countries and also more frequently visible in more than 100 of the 137 BRI participant countries.⁶⁹

Figure 1: National Capitals Where Positioning Satellites Can Be Observed



Note: As of June 28, 2019. Adapted from Kazuhiro Kida and Shinichi Hashimoto, "China's Version of GPS Now Has More Satellites than US Original," *Nikkei Asian Review*, August 19, 2019.

Beijing has also linked its space program with its ambitions to lead terrestrial digital connectivity. The powerful State Administration for Science, Technology and Industry for National Defense (SASTIND) and the National Development and Reform Commission have issued plans to use communications, remote sensing, and navigation satellites to complete the construction of a BRI Space Information Corridor—another name for the Space Silk Road—by the late 2020s.⁷⁰ A 2016 guiding opinion issued by the two agencies found that China's space cooperation agreements had established strong governmental and commercial mechanisms with dozens of countries

participating in BRI but that China's satellite technology still required improvement—a shortcoming the construction of the BRI Space Information Corridor now aims to resolve.⁷¹ The project is further intended to improve China's industrial high-tech cooperation with BRI countries, accelerate the “going out” of China's space industry and increase the competitiveness of Chinese space firms, promote the image of China as a responsible big country by facilitating humanitarian assistance and disaster relief,* and increase the level of marketization and internationalization of China's space information industry.⁷² A future space-based solar power network might also become part of the Space Silk Road, which has the potential to “dramatically deepen” China's influence over participants, according to Australian Strategic Policy Institute expert Malcolm Davis.⁷³

Expanding Global Network of Ground Stations

Beijing has had some success expanding its space tracking and observation capabilities through partnerships established through its space-related diplomacy, which it has used to advance both its space capabilities and geopolitical influence. In recent years, China has also used these partnerships to extend its overseas military presence. Whereas China largely was forced to rely on deploying expensive communications ships to track spacecraft in orbits not visible from Chinese territory in the 1970s, beginning in 1997 it began efforts to emulate a U.S.-style network of overseas tracking stations by opening its first overseas ground station on a Kiribati-owned atoll in the Pacific Islands.⁷⁴ In 2001, China and Sweden signed an agreement for mutual access to each other's tracking networks. Beijing dismantled its facility after Kiribati switched recognition to Taiwan in 2003 but currently operates satellite tracking stations in Chile, Sweden, Australia, Namibia, Pakistan, and Kenya.⁷⁵ In 2015, Beijing secured a deal for a much larger and more capable satellite and space mission control center in Patagonia, Argentina.⁷⁶

The space control center in Argentina, which Beijing gained approval to construct and operate at a time when Argentina was deeply indebted to China, represents a significant expansion of China's ability to track and control space assets via a global network of ground stations and may represent a new model for Chinese overseas basing.⁷⁷ In 2015, it was reported that China planned to allow Argentina to use up to ten percent of the station's antenna time and grant it access to imagery from China's surveillance satellites.⁷⁸ Former Argentine foreign minister Susanna Malcorra, however, claimed in 2019 Argentina has no “physical oversight” of the station, though Argentine officials have sought—so far without success—to gain more insight into its operations.⁷⁹

China maintains the purpose of the base, which it began constructing in 2013 before Argentina granted official approval and which became operational in early 2018, is to support deep space exploration and other civilian space activities, including during the December 2018 landing of the Chang'e-4 probe on the far side of the

*For more on China's humanitarian assistance and disaster relief operations, see Matthew Southerland, “The Chinese Military's Role in Overseas Humanitarian Assistance and Disaster Relief: Contributions and Concerns,” *U.S.-China Economic and Security Review Commission*, July 11, 2019.

moon.⁸⁰ However, as a result of the merger of the former China Satellite Launch and Tracking Control General with other space-related military organizations in 2015, the base is operated by the Space Systems Department of the Strategic Support Force—the part of the PLA responsible for telemetry, tracking, and command of Chinese military space missions as well as counterspace activities.⁸¹ Experts assert the facility operates with virtually no transparency and could be used to collect intelligence on satellites, missile launches, and drone movements, and to interfere with or compromise communications, electronic networks, and electromagnetic systems in the Western Hemisphere.⁸²

China Making Inroads to Command the Global Commercial Space Sector

China is determined to grow its market share in commercial launch and satellite sectors relying in part on aggressive state-backed financing that foreign firms cannot match, seeking in some cases to displace U.S. and other foreign launch and satellite providers.⁸³ China seeks to expand its market share in part by catering to developing countries and by building strong relationships both with its traditional partners and with established satellite operators such as U.S.-based Global Eagle or France-based Eutelsat.⁸⁴ At the heart of this program is the PLA contractor China Great Wall Industry Corporation (CGWIC), China's sole provider of commercial satellite and launch services for international clients. CGWIC offers as much as 70 percent financing for satellite construction to international clients, with funds available immediately upon signing instead of the usual delay of six months to a year. In some cases it has also provided ground control systems, training, and insurance.⁸⁵ CGWIC provided China's first full in-orbit satellite delivery for a foreign client—comprising financing, construction, launch, testing, ground stations, and personnel training—in its NigComSat-1 deal with Nigeria in 2007.⁸⁶

Due to the generous financing terms China provides, it is unclear whether China can generate a profit at all from these arrangements, indicating profit may not be a driver in these deals.⁸⁷ Mike Gold, a senior U.S. commercial space industry executive, testified to the Commission that due to the aggressive financing offered by CGWIC, the company he represents did not even bother to bid in 2016 for an Indonesian government contract for a high-throughput satellite because it simply could not compete.⁸⁸ This tactic is indicative of what Mr. Gold called China's broader strategy "to capture a majority share of the global communications satellite and launch market."⁸⁹ Even if Chinese satellites are not as high-quality as those made by the United States, they are in some cases more readily available and their quality is adequate, making them more attractive options, especially at a time when the telecommunications satellite industry is moving to smaller, less expensive constellations in LEO.*⁹⁰ Beijing is capitalizing on current market conditions to grow its mar-

*Cutting-edge satellites designed by CAST currently have a throughput capacity of 20 gigabits per second, compared to those made by U.S. companies Boeing, SSL, and Orbital ATK, which are capable of throughput speeds of 260, 220, and 100 gigabits per second, respectively. Brian Spegele and Kate O'Keefe, "China Exploits Fleet of U.S. Satellites to Strengthen Police and Military Power," *Wall Street Journal*, April 23, 2019.

ket share, according to Mr. Gold, threatening to hollow out the U.S. space industrial base.⁹¹

China's aggressive and well-coordinated export finance practices are forcing other countries' export credit agencies to defensively change their policies and practices simply to maintain their access to large global markets, let alone expand their share.⁹² According to a June 2019 report from the U.S. Export-Import Bank, China's export financing system, which comprised \$39 billion in total official export credits in 2018, was larger than the next three countries' official export credit agencies combined. It has led foreign buyers for large projects to view the availability of government-backed financing as a "core component" of their evaluation of bids.⁹³ For example, ExPace, a subsidiary of one of China's main space contractors, plans to price satellite payloads at less than half market rates, and some Chinese companies have offered free launches, providing these companies a significant advantage over foreign competitors (see table below for a list of recent Chinese satellite launches for foreign customers and the financing source for these deals).⁹⁴ According to Mr. Gold, this change in market share, and the resulting decreases in orders for U.S.-made satellites, risks causing the long-term loss of U.S. secondary and tertiary space component suppliers and associated critical workforce skills.⁹⁵ CGWIC has branched out from launching mainly Chinese-made satellites for foreign customers to more recently contracting with foreign entities to provide launch services for their own products. In most cases, China Export-Import (EXIM) Bank has provided funding.

Table 1: Satellites Launched for Foreign Customers by China, 2007–2018

Country	Satellite	Builder	Launch	Bus	Cost	Funding
Nigeria	NigComSat-1	CGWIC	May 2007	DFH-4	\$300 million	China EXIM Bank
Venezuela	VeneSat-1/ Simon Bolivar	CGWIC	Oct. 2008	DFH-4	\$241 million	China
Pakistan	PakSat-1R	CGWIC	Aug. 2011	DFH-4	\$222 million	China EXIM Bank
Nigeria	NigCom-Sat-1R	CGWIC	Dec. 2011	DFH-4	\$300 million	Insurance from Nig-ComSat-1
Venezuela	VRSS-1	CAST	Sep. 2012	CAST-2000	Unknown	Unknown
Sri Lanka	Supreme-Sat-1/China-Sat 12	Thales Alenia Space	Nov. 2012	SB4000	\$100 million (leased transponders)	Unknown
Bolivia	Túpac Katari-1	CGWIC	Dec. 2013	DFH-4	\$302 million	85 percent financed by China Development Bank

Table 1: Satellites Launched for Foreign Customers by China, 2007–2018—Continued

Country	Satellite	Builder	Launch	Bus	Cost	Funding
Laos	Laosat-1	CGWIC	Nov. 2015	DFH-4	\$259 million	China EXIM Bank
Belarus	Belintersat-1	CGWIC	Jan. 2016	DFH-4 bus with Thales transponders	\$280.9 million	China EXIM Bank
Venezuela	VRSS-2	CAST	Oct. 2017	CAST-2000	Unknown	Unknown
Algeria	Alcomsat-1	CAST	Dec. 2017	DFH-4	\$250–300 million	Algerian Space Agency
Pakistan	PRSS-1	DFH Satellite Co. Ltd.	Jul. 2018	CAST-2000	\$200 million	70 percent financed by loan from China
Pakistan	PakTES-1A	Pakistan Space and Upper Atmosphere Research Commission (SUPARCO)	Jul. 2018	Unknown	Unknown	Unknown
France	CFOSAT	CAST and French National Centre for Space Studies	Oct. 2018	CAST-2000	Unknown	Unknown
Saudi Arabia	SaudiSat 5A & SaudiSat 5B	King Abdulaziz City for Science and Technology	Dec. 2018	Unknown	Unknown	Unknown
Thailand	High-throughput satellite	CGWIC	Late 2019 (est.)	DFH-4	\$208 million	Unknown
Argentina	90 microsats (multiple launch agreement)	Satellogic	Late 2019 (est. first launch, then quarterly)	Unknown	Unknown	Unknown
Indonesia	Palapa-N1/Nusantara Satu-2	CGWIC	2020 (est.)	DFH-4	\$220 million	Unknown
Nigeria	NigCom-Sat-2, NigcomSat-3	CGWIC	2021 (est.)	Unknown	\$700 million	China EXIM Bank
Indonesia	PSN-7 (nonbinding agreement)	CGWIC	2022 (est.)	DFH-4	Unknown	Unknown

Source: Various.⁹⁶

Jumpstarting the Space Industry with Military-Civil Fusion

As China seeks to increase its share in the international commercial space market, it has aggressively sought to leverage military-civil fusion to commercialize its existing space technology in part by granting new space companies access to some formerly restricted intellectual property.⁹⁷ Lorand Laskai, visiting researcher at the Georgetown Center for Security and Emerging Technology, testified to the Commission that China's emerging private space sector has been "a notable priority and early success" in General Secretary Xi's military-civil fusion campaign (for more on military-civil fusion, see Chapter 3, Section 2, "Emerging Technologies and Military-Civil Fusion: Artificial Intelligence, New Materials, and New Energy").⁹⁸

China's strategy to build up its domestic space industry, according to the May 2019 joint report by the Air Force Research Laboratory and Defense Innovation Unit, includes intellectual property theft, direct integration of state-owned entities and their technology with commercial startups, using front companies to invest in U.S. space companies, gaining vertical control of supply chains, and predatory pricing.⁹⁹ For example, according to the report, germanium wafer production, solar cell production, and commercial launch services are especially sensitive markets China seeks to dominate. Refined germanium wafers are the basis for nearly all specialized satellite solar panels, and as a result of aggressive stockpiling of and export taxes on germanium, China now accounts for over 70 percent of global germanium mining, refining, and production, meaning that production of these critical panels is effectively impossible without China's raw materials.¹⁰⁰ Unlike rare earth elements, germanium is produced primarily by refining zinc nitrates, but since only three zinc mines and one zinc smelter are in operation in the United States, U.S. capacity to produce germanium domestically is currently limited.*¹⁰¹

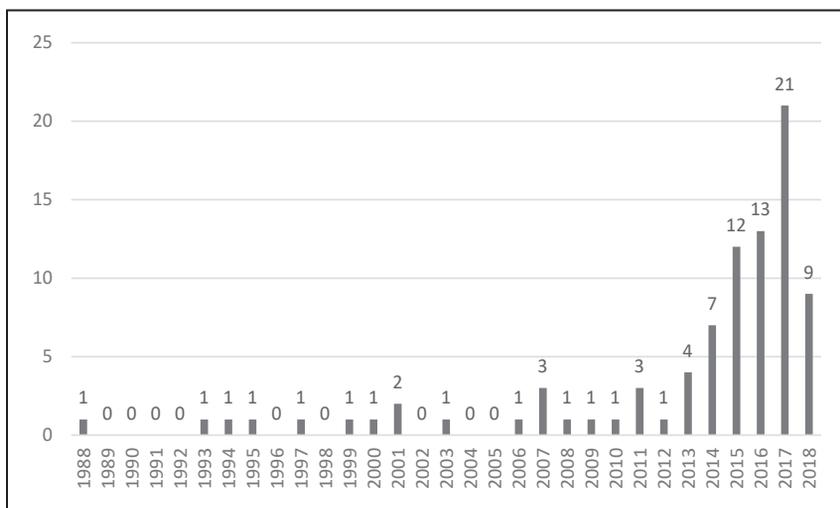
The goal of military-civil fusion in China's space sector is not primarily to develop cutting-edge technology but to produce existing technology that meets most customers' needs at lower cost and at greater commercial scale and efficiency.¹⁰² In 2014, Beijing opened the space industry to the non-state-owned sector, allowing these companies to build and launch satellites for the first time, although the PLA still retains a monopoly on approving launches. Most of these new companies are in fact connected in some way to the Chinese military, defense industrial base, or state-owned research and development institutions.¹⁰³ As of June 2019, according to analyst Jean Deville, the burgeoning Chinese space sector (not counting large state-owned space industry contractors) comprised 87 private space startups, state-sponsored space startups, and large private corporations that had diversified into space in some way, with two thirds founded since 2015.†¹⁰⁴

*A Canadian company, Teck Resources, owns two of the mines, and a Belgian company, Nyrstar, owns the third mine and the smelter. From 2014 to 2017, 58 percent of U.S. germanium stockpiles were imported from China and 26 percent from Belgium. Amy Tolcin, Assistant Chief, Mineral Commodities Section, National Minerals Information Section, U.S. Geological Survey, interview with Commission staff, July 26, 2019; U.S. Geological Survey, "Germanium," February 2019, 1; U.S. Geological Survey, "Mineral Commodities Survey 2019," February 2019, 68–69; Nyrstar, "Clarksville Smelter."

†Of these companies, roughly one third appear to have private investors, another third are identifiable as having received state funding, and the ownership and financing of the remaining

The Chinese government has also begun subsidizing launches by these companies at its Jiuquan launch facility in the Gobi desert.¹⁰⁵ In June 2019, SASTIND released new regulations outlining guidelines for commercial launch vehicle development under military-civil fusion, mandating among other things that companies obtain official governmental permission before engaging in research and development or testing of launch vehicles.¹⁰⁶ In July 2019, Beijing-based iSpace, a new firm that received early-stage funding from SASTIND, achieved the first orbital satellite launch by a Chinese startup, marking a major success of China's military-civil fusion space drive.¹⁰⁷

Figure 2: New Chinese Space Companies Founded per Year



Source: Jean Deville, “A Large Scale Update of the China Aerospace Blog NewSpace Mapping (June 2019 Edition),” *China Aerospace Blog*, June 10, 2019.

Leveraging Foreign Technology to Achieve Space Goals

The pursuit of foreign technology and talent, especially from the United States, continues to be central to military-civil fusion and China's space development modernization goals.¹⁰⁸ Under military-civil fusion, so-called “guidance funds” pool state-owned and private capital together for investments, allowing the state to steer ostensibly private capital toward investments in nascent dual-use sectors it deems strategically important—a tool China has consistently applied to the development of its space sector.¹⁰⁹ Assistant Secretary of State for International Security and Nonproliferation Christopher A. Ford testified to the Commission that universities are the “front line” of military-civil fusion, and students enrolled in foreign science, technology, engineering, and mathematics programs are treated like employees of China's defense industrial base. Defense enterprises regularly provide living stipends during their studies in return for service commitments.¹¹⁰ Chinese universities that contribute to China's defense modernization goals also aggressively

companies is unclear and requires further investigation.

pursue research partnerships with prominent U.S. and other foreign universities, especially in aerospace research, raising concerns about export controls since the research resulting from these partnerships may ultimately contribute to China's military.¹¹¹

Several notable Chinese universities are especially active in carrying out international academic cooperation to advance China's space development.¹¹² For example, Beijing University of Aeronautics and Astronautics, also known as Beihang University, describes itself as the "leader and backbone" of China's national defense and aerospace industry.¹¹³ Beihang, which conducts research supporting China's planned lunar research station and space-based solar power, among other things, has collaborated on space-related science and technology with a number of U.S. universities despite being on the Entity List maintained by the U.S. Department of Commerce's Bureau of Industry and Security—a list comprising persons subject to specific license requirements under U.S. export controls—since 2005.¹¹⁴ In November 2012, Chinese Communist Party mouthpiece *People's Daily* praised Beihang for its long contribution to the modernization of China's national defense and military.¹¹⁵ *People's Daily* cited the 2005 establishment of a joint Beihang engineering institute with the French Central Polytechnic University Group as aiming to "cultivate high-end, world-class, and top-notch innovative talent" by combining international standards with China's national conditions.¹¹⁶ According to *China Daily*, Beihang has links with 152 universities in 40 countries, including in the United States, and at least some of them—such as with The Ohio State University College of Engineering and Arizona State University*—have been verified.¹¹⁷ However, not all of Beihang's claims are accurate. A spokesperson for the University of California, Los Angeles, for example, flatly denied the existence of a joint laboratory that Beihang claimed to have established with the university.¹¹⁸

Chongqing University, which claims to have established cooperation with 115 universities in over 20 countries, including the United States, Canada, and other countries with advanced science and technology, is another notable elite Chinese institution active in promoting aerospace cooperation.¹¹⁹ China University of Science and Technology, Shanghai Jiaotong University, the Harbin Institute of Technology, and others have also established dual-degree and student exchange programs focusing on science and technology innovation with U.S. universities.†

*In August 2019, nine Chinese undergraduate students at Arizona State University were detained by U.S. Customs and Border Protection officials in Los Angeles and then denied permission to re-enter the United States to continue their studies. Customs and Border Protection deemed them inadmissible and sent them back to China, citing unspecified information discovered during the inspection process. Rachel Leingang, "9 Chinese ASU Students Detained at Los Angeles Airport, Denied Admission to U.S.," *Arizona Republic*, August 30, 2019.

†U.S. universities that have established these dual-degree programs with the University of Chongqing include the University of Cincinnati; the University of North Carolina at Wilmington; Tulane University; Michigan Technological University; and University of Arkansas, Fayetteville. The Chinese universities mentioned above signed a cooperation agreement with the Strategic Support Force in 2017 under which the military would, among other things, "[promote] exchanges between experts and scholars." For more details, see U.S.-China Economic and Security Review Commission, *Hearing on China in Space: A Strategic Competition?* written testimony of Namrata Goswami, April 25, 2019, 249–251; *Xinhua*, "Strategic Support Force Cooperates with Nine Local Units to Cultivate High-End Human Talent in New-Type Combat Forces" (战略支援部队与地方9个单位合作培养新型作战力量高端人才), July 13, 2017. Translation.

Beijing Exploits Loopholes to Access Controlled Satellite Technology

Kevin Wolf, former Assistant Secretary of Commerce for Export Administration, testified to the Commission that U.S. export controls of military, dual-use, and commercial space-related technologies concerning China effectively amount to “a complete embargo.”¹²⁰ These controls have been strengthened by the addition to the Department of Commerce’s export controls of a strict rule mandating that any spacecraft or space asset containing a U.S.-origin component, regardless of the component’s value or end use, will always remain subject to U.S. jurisdiction, no matter where it is in the world.¹²¹ Furthermore, then Assistant Secretary Wolf implemented a rule in January 2017 imposing additional requirements for exports and re-exports to Hong Kong—which enjoys special customs status under the U.S.-Hong Kong Policy Act of 1992—by leveraging the Export Administration Regulations to compel Hong Kong authorities to provide proof of compliance with Hong Kong law.¹²²

Despite these strong regulations, Chinese entities have nonetheless been able to acquire stakes in U.S. space companies due to legal loopholes, especially those relating to Hong Kong.¹²³ For instance, the *Wall Street Journal* reported in December 2018 that a Los Angeles-based startup, Global IP, had received about \$200 million in funding originating from a Chinese state-owned financial firm, China Orient Asset Management Co., to buy a Boeing-constructed satellite.¹²⁴ A Chinese businessman, Charles Yiu Hoi Ying, set up a cut-out company for China Orient in the British Virgin Islands to conceal the money’s connection to the Chinese government. Because he held a Hong Kong passport and was thus able to take advantage of the region’s special export control status, he was then able to invest China Orient’s money in Global IP. The deal ultimately was canceled due to nonpayment.¹²⁵ Other Chinese companies with Hong Kong subsidiaries have pursued similar investments. In December 2018, Cloud Constellation Corporation, a U.S. startup focusing on establishing a network of cloud computing servers based in LEO, received a \$100 million funding commitment from HCH Group, a Hong Kong-based subsidiary of Haier Group, a major Chinese electronics and appliance giant with suspected ties to the Chinese government.¹²⁶

An additional loophole allows Chinese entities barred from investing in or acquiring U.S. satellites to leverage U.S. satellite capabilities by renting their bandwidth—a problem U.S. export controls were not originally designed to address. A notable example is the Hong Kong-based satellite operator AsiaSat, which has Chinese government and military end users despite operating satellites with controlled U.S. technology. According to an April 2019 *Wall Street Journal* report, the Chinese state-owned firm Citic Group, which co-owns AsiaSat alongside the U.S.-based Carlyle Group, rents satellite bandwidth to Chinese state-owned telecommunications companies, which then parcel out their rented bandwidth to Chinese military and intelligence entities. Four U.S. administrations, most recently in 2017, have approved this ar-

Beijing Exploits Loopholes to Access Controlled Satellite Technology—*Continued*

rangement.¹²⁷ AsiaSat does not regulate the content its satellites carry, and the Chinese government has used these satellites, for example, to maintain government communications during police crackdowns in Xinjiang and Tibet in 2008 and 2009 and to provide internet access to China's military bases in disputed regions of the South China Sea in 2016.¹²⁸

Another Hong Kong-based company, CMMB Vision—which enjoys high-level Chinese government support and whose work the National Development and Reform Commission has designated a “key national development project”¹²⁹—contracted Boeing in 2015 to construct an advanced satellite.¹³⁰ According to the *Wall Street Journal*, the satellite is being built on behalf of CMMB Vision's New York-based partner company, which will then lease the satellite's capacity back to the Hong Kong company for use in promoting the Space Silk Road and improving the accuracy of Beidou.¹³¹ The National Defense Authorization Act for 2019 contains a provision that would allow the U.S. government to close this bandwidth-leasing loophole, but it has yet to be implemented.¹³²

Space as the “Commanding Heights” of Future Military Conflict

Beijing's first priority in a modern conflict is to seize dominance in the “information domain,” a combination of space, cyberspace, and the electromagnetic spectrum, in accordance with China's identification of the cyber and space domains as “new commanding heights in strategic competition.”¹³³ Chinese sources describe space superiority, which they identify as the goal of military space operations, as the means to ensure Beijing's ability to fully use space while simultaneously constraining and destroying enemy forces in space—a concept not unlike the traditional maritime function of sea control.*¹³⁴ An article published by the PLA Academy of Military Science argued the only way for China to achieve parity with the United States is to hold U.S. space assets at risk by increasing its asymmetric capabilities.¹³⁵

The PLA has reorganized its structure, including through the establishment of the new Strategic Support Force, and fielded a broad array of counterspace weapons to be capable of achieving these goals.¹³⁶ The formation of the Strategic Support Force in late 2015 is the organizational result of China's conclusion from observing the Gulf War that it must be able to gain battlefield advantage through attacks in the space, cyber, and electromagnetic domains.†¹³⁷ Although the PLA began applying these foundational concepts to its organization, training, and research and development in the late

*The U.S. Department of Defense defines space superiority as “the degree of control in space of one force over any others that permits the conduct of its operations at a given time and place without prohibitive interference from terrestrial or space-based threats.” Chairman of the Joint Chiefs of Staff, *Joint Publication 3-14, Space Operations*, April 10, 2018, GL-6.

†For more on the background of the Strategic Support Force, see U.S.-China Economic and Security Review Commission, *2018 Annual Report to Congress*, November 2018, 237–239.

1990s, their unification in the new functional command embodied in the Strategic Support Force will significantly improve the PLA's ability to carry out strategic-level operations in these domains.¹³⁸ According to testimony presented to the Commission by Mark Stokes, Executive Director of the think tank Project 2049 Institute, the new organizational construct represented by the Strategic Support Force is "central to China's ability to compete in space."¹³⁹

As a result of the PLA's reorganization, the Strategic Support Force's Space Systems Department is now responsible for PLA operations in space, including space attack and defense; space launch, including from operationally-responsive mobile launchers; telemetry, tracking, and control; and information, surveillance, and reconnaissance operations.¹⁴⁰ The Strategic Support Force also took over China's space-related research programs.¹⁴¹ Dr. Goswami testified to the Commission that the Strategic Support Force's establishment represents an innovation in China's ability "to develop futuristic doctrines, training and capabilities" to suit new mission requirements for space operations and will play a role in establishing China's presence in cislunar space while helping deny this space to the United States.¹⁴² In a role complementary to the Space Systems Department's, the Strategic Support Force Network Systems Department oversees China's cyberforces in carrying out computer network exploitation, cyber surveillance, computer network attack, and computer network defense missions. The Network Systems Department is also "central" to the counterspace mission, according to Mr. Stokes, since it oversees the PLA's nonkinetic counterspace mission, comprising electronic countermeasures, space surveillance, technical reconnaissance, and possibly directed energy attacks.¹⁴³

A Destabilizing Approach to Space Warfare

China views space as a critical U.S. military vulnerability, and its counterspace capabilities are designed to threaten space as an enabler of U.S. operations, including nearly every class of U.S. space asset.¹⁴⁴ According to the 2013 edition of *Science of Military Strategy*, an authoritative book published by the Academy of Military Science, space systems are "easy to attack and difficult to defend," and "critical node targets of the enemy space systems" are especially valuable targets.¹⁴⁵ Another Academy of Military Science text, *Textbook for the Study of Space Operations*, argues command and control systems are "crucial" targets and space information systems are "the crucial of the crucial."¹⁴⁶

Moreover, authoritative PLA writings on military operations in the space domain contain a number of principles almost entirely absent from U.S. and other foreign military doctrine that would encourage a highly escalatory approach to space warfare. In particular, these would allow for attacks against an adversary's space assets early in a conflict to deter an opponent from decisively intervening in or continuing a military confrontation.¹⁴⁷ William Roper, Assistant Secretary of the Air Force for Acquisition, Technology, and Logistics, testified to the Commission that Beijing is well aware of the extent to which U.S. sea, air, and land operations rely on space-based assets for communication, navigation, and precision fires and has thus concluded it is much more feasible to threaten these assets in space

than the terrestrial capabilities they enable.¹⁴⁸ China's development of offensive space capabilities may now be outstripping the United States' ability to defend against them, increasing the possibility that U.S. vulnerability combined with a lack of a credible deterrence posture could invite Chinese aggression.¹⁴⁹ According to Mr. Harrison, China is "developing, testing, and operationalizing counterspace weapons at a faster pace than [the United States is] making progress protecting [its] space systems against these threats."¹⁵⁰

China's counterspace doctrine is intended to deter the United States from entering a conflict and provide options for rapid escalation once conflict has begun, representing an approach to space warfare which risks destabilizing the space environment. Kevin Pollpeter, senior research scientist at CNA, testified to the Commission that China's counterspace architecture is intended "to deter the United States at the nation-state level [and] achieve operational goals should deterrence fail."¹⁵¹ According to *Science of Military Strategy*, space deterrence requires "developing space capability, displaying an asymmetric operational posture, and when necessary firmly resolving to conduct space counter-preemption operations ... to achieve the deterrence goals."¹⁵²

Beijing views space and cyberspace as domains to dominate and to throw to its adversaries, and it would likely seek to accomplish this in part by deploying cyberattacks or electromagnetic attacks against space-based assets, including commercial or civilian assets, both in steady state* and early in any conflict.¹⁵³ Jonathan Ray, Research Director of the Special Programs Division at SOS International, testified to the Commission that Chinese strategists see the United States as so reliant on satellites for critical military functions that threatening to degrade or destroy these crucial systems may be enough to force the United States to stand down in a conflict.¹⁵⁴ *Science of Military Strategy* supports this conclusion, recommending conducting "limited space operational activities with warning and punishment as goals to stop the adversary from willfully escalating the intensity of a space confrontation."¹⁵⁵ Mr. Ray noted further that PLA strategists appear to view "soft" cyberattacks as less escalatory than kinetic strikes, which may make them more tempting, especially since the adversary may either not be able to immediately determine what has happened or be willing to retaliate.†¹⁵⁶

China has been implicated or suspected in cyberattacks against U.S. space systems at least four times since 2007 (see Addendum II of known Chinese counterspace or dual-use weapons tests, including cyberattacks on U.S. space systems, on page 386), though Chinese officials consistently deny Beijing's involvement.¹⁵⁷ According to Mr. Pollpeter, Chinese strategists apparently have also not discussed how individual tactical actions in space may unintentionally result

*Multiple witnesses argued China is already in a state of constant competition or seeking to actively undermine the United States, so the juxtaposition of "peace" and "conflict" is not appropriate. Mr. Ray suggested "steady state" to describe a sub-kinetic but persistent state of competition. U.S.-China Economic and Security Review Commission, *Hearing on China in Space: A Strategic Competition?* oral testimony of Mark Stokes, April 25, 2019, 242; U.S.-China Economic and Security Review Commission, *Hearing on China in Space: A Strategic Competition?* oral testimony of Jonathan Ray, April 25, 2019, 242.

†Cyberattacks can cause lasting damage to space systems, such as by expending propellant, damaging sensors or electronics, or shutting down communications. Todd Harrison et al., "Space Threat Assessment 2019," *Center for Strategic and International Studies*, April 2019, 5.

in escalation.¹⁵⁸ Moreover, despite extensive discussion of prioritizing attacks on vulnerable U.S. space assets, Chinese strategists have not seemed to openly recognize that Beijing may be developing the same or similar weaknesses as it expands its own reliance on space.¹⁵⁹

China's space doctrine suggests it may be difficult to deter the PLA from targeting important U.S. space assets. According to several witnesses at the Commission's hearing, the near-term emergence of a "mutually assured destruction" doctrine in space is unlikely. Mr. Pollpeter contended that the PLA's temptation to target U.S. space assets will add "a layer of instability to any conflict with China."¹⁶⁰ One problem with such a tacit understanding is the fact that while the United States has many singularly valuable space systems, China does not have comparable individual platforms it values as much.¹⁶¹ Thus, according to Dr. Weeden, the cost-benefit analysis of "I'll kill yours if you kill mine" cannot reliably deter China from making a first strike.¹⁶²

China's Counterspace and Dual-Use Weapons Tests Threaten U.S. Assets

China has made substantial investments for over a decade in developing a full array of direct-ascent, cyber, electromagnetic, and co-orbital counterspace weapons and demonstrated the credibility of these systems.¹⁶³ Although China has not shot down a satellite since its 2007 test that destroyed a defunct weather satellite with a direct-ascent missile, which created a great deal of dangerous debris, it has continued to test kinetic counterspace systems nearly every year, sometimes disguised as midcourse ballistic missile intercept tests.¹⁶⁴ General John Raymond, U.S. Air Force, nominee for Commander of U.S. Space Command, said in 2015 that China's investment in ASAT research would soon allow it to threaten "every satellite in every orbit."¹⁶⁵ The new Strategic Support Force has reportedly already carried out training with direct-ascent ASAT weapons capable of striking targets in LEO, according to the National Air and Space Intelligence Center.¹⁶⁶ In April 2019, then Acting Secretary of Defense Patrick Shanahan stated the PLA would likely field a ground-based laser system targeting LEO systems by 2020.¹⁶⁷ Taken together, the fielding of these capabilities demonstrates the increasing vulnerability of U.S. space assets, especially in LEO.

China has engaged in dual-use activities such as rendezvous and proximity operations (RPO)—which demonstrate co-orbital capabilities—that, while not prohibited, create problems for U.S. national security. These capabilities can be used for peaceful purposes, such as removing harmful orbital debris and repairing other satellites, but also for counterspace activities, such as disabling other satellites, though there is no evidence China has used co-orbital capabilities for destructive purposes.¹⁶⁸ According to Dr. Weeden, China's testing of RPOs has been similar to past U.S. tests, and no country has criticized RPOs carried out by China as illegal or violating any norm.¹⁶⁹ China's RPO activities have been consistent with the use of technologies for nonmilitary satellite service, inspection, and situational awareness, such as activities the United States has carried

out, including U.S. inspections of satellites in LEO in 2005 and 2006 and of satellites in GEO since 2016.¹⁷⁰

Still, given the PLA's involvement in China's space program, there is a distinct possibility that platforms with dual-use capabilities could be used for offensive purposes when needed.¹⁷¹ For example, the Chinese satellite Aolong-1 has robotic arms for grappling other satellites to inspect or service them, and although these capabilities have peaceful uses, they would be easy to weaponize.¹⁷² Some analysts have also been especially concerned by the RPO activities in GEO of the Chinese satellite SJ-17, reportedly a testbed for new propulsion, surveillance, and solar panel technology.¹⁷³ SJ-17 has transited the geostationary belt, and its movements suggest it has a significant maneuverability, including the ability to change its orbit.¹⁷⁴

Implications for the United States

The United States retains many advantages over China in space, including the organization and technical expertise of its space program, its vibrant commercial space sector, and its long history of space leadership and many international partnerships. Indeed, as posited to the Commission by former NASA Administrator Bolden, much of what China is attempting to do in space is based on its view that the United States has already established these same goals—and is well ahead of China in achieving them. Some areas of cooperation may be beneficial to the United States. For example, according to former Administrator Bolden, NASA shared the International Docking System Standard with China to ensure U.S. and Chinese spacecraft airlocks would be compatible in emergencies, and the countries' space agencies have collaborated in observing China's moon landings.¹⁷⁵

Still, China's single-minded focus and national-level commitment to establishing itself as a global space leader harms other U.S. interests and threatens to undermine many of the advantages the United States has worked so long to establish. In his testimony to the Commission, General Cartwright attributed China's relative advances in space capabilities in part to the fact that the United States under-prioritized strategic concerns in space for six to eight years, providing an opportunity for competitors to narrow the gap.¹⁷⁶ China's strategy to capture the global launch and satellite markets using aggressive financing and subsidies that U.S. market-driven firms cannot match is only one of the challenges posed to the United States by Beijing's drive for space leadership.¹⁷⁷ Like the international solar panel and telecommunications industries before it, the commercial space sector now risks being hollowed out by China's plans to attain leadership in key technologies.

Beijing's promotion of the China Space Station as a future venue for international cooperation, for instance, provides China an opening to capitalize on a diplomatic opportunity created by the U.S. government potentially ending support for the International Space Station as early as 2025. China may replace the United States by default as the most important country for international civil space cooperation.¹⁷⁸ In the face of determined attempts by China to gain access to controlled U.S. technologies, witnesses at the Commission's

hearing stressed the importance of ensuring U.S. export controls are both up to date and implemented on a multilateral basis while also avoiding unintentionally harming U.S. companies.¹⁷⁹ General Cartwright and Assistant Secretary Roper testified to the Commission that U.S. deterrence strategy does not yet adequately incorporate the space domain, with both warning that Beijing may be tempted to extend a conflict into space as long as it perceives the benefits as outweighing the costs.¹⁸⁰

The emergence of what the 2017 U.S. National Security Strategy calls the “democratization of space,” a new paradigm of space access built on small, low-cost systems and commercial rather than government leadership, will extend the “critical economic veins” of the United States into space where they will become increasingly vulnerable to disruption.¹⁸¹ With space no longer a benign domain in which the United States can assume it will retain its historical advantage, it may be even more important for the U.S. national security architecture to extend into space to guarantee the security of U.S. economic interests, which historically has been the case with maritime commerce.¹⁸² In particular, the cislunar domain and the space beyond may play a key role in the United States’ future security and economic interests due to its value for space-based communication, transport, and security—characteristics of critical sea lines of communication that must remain unimpeded.¹⁸³

If and when technology necessary to realize the economic potential some experts attribute to space becomes mature, China appears to be well positioned to compete with the United States in establishing a commanding position in the resulting new economy. For these reasons, concluded Dr. Goswami in her testimony to the Commission, the historical U.S. “flags and footprints” model characterized by exploration without building capacity for a long-term presence may no longer suffice.¹⁸⁴

Addendum I: Key Chinese Officials with Aerospace Sector Backgrounds

Name	Birthdate	Current Position	Former Aerospace Position
Zhang Qingwei (张庆伟)	Nov. 1961	Central Committee full member (16th–19th Party Congresses) Heilongjiang Party Secretary	SASTIND Director CASC General Manager COMAC Chairman
Chen Qiufa (陈求发)	Dec. 1954	Central Committee full member (19th Party Congress) Liaoning Party Secretary	SASTIND Director CNSA Director MIIT Vice-Minister
Jin Zhuanglong (金壮龙)	Mar. 1964	Central Committee full member (19th Party Congress) Central Commission on Military and Civilian Integrated Development Executive Vice-Director	SASTIND Deputy Director CASC Deputy General Manager COMAC General Manager CNSA Deputy Director
Ma Xingrui (马兴瑞)	Oct. 1959	Central Committee full member (18th–19th Party Congresses) Guangdong Governor	MIIT Vice-Minister SASTIND Director CASC General Manager CAST Vice-Dean
Xu Dazhe (许达哲)	Sep. 1956	Central Committee full member (18th–19th Party Congresses) Hunan Governor	SASTIND Director CNSA Director MIIT Vice-Minister CASC President and Party Secretary CASIC General Manager
Yuan Jiajun (袁家军)	Sep. 1962	Central Committee full member (19th Party Congress) Zhejiang Governor	CAST President and Vice-Chairman Shenzhou Program Chief Commander
Tang Dengjie (唐登杰)	Jun. 1964	Central Committee alternate member (19th Party Congress) Fujian Governor	SASTIND Director CNSA Director
Huang Qiang (黄强)	Apr. 1963	Gansu Vice-Governor	SASTIND Deputy Director SASTIND Director-General AVIC First Aircraft Research Institute Director

Note: Acronyms in order, top to bottom: State Administration for Science, Technology, and Industry for National Defense (SASTIND); China Aerospace Science and Technology Corporation (CASC); Commercial Aircraft Corporation of China (COMAC); China National Space Administration (CNSA); Ministry of Industry and Information Technology (MIIT); China Aerospace Science and Industry Corporation (CASIC); Aviation Industry Corporation of China (AVIC).

Source: Various.¹⁸⁵

Addendum II: China's Counterspace or Dual-Use Weapons Tests 2005–2019

Type	Year	Description	Comments
Direct Ascent			
	2005	Kinetic kill vehicle (KKV) rocket test	Rocket test for SC-19 direct-ascent missile.
	2006	KKV test	Failed intercept and destruction of an orbital target.
	2007	KKV test	Successful intercept and destruction of an orbital target. Created debris.
	2010	Midcourse ballistic missile defense test	Successful intercept and destruction of a suborbital target.
	2013	Midcourse ballistic missile defense test	Successful intercept and destruction of a suborbital target.
	2013	KKV test	Test of DN-2 rocket. China called it a “high-altitude science mission.” The test indicated an attempt to develop the capability to target satellites in medium-Earth orbit, highly-elliptical Earth orbit, and GEO.
	2014	KKV test	China called it a ballistic missile defense test; United States assessed it was an ASAT test.
	2015	Unknown test	
	2017	Unknown test	
	2018	Midcourse ballistic missile defense test	
Co-orbital			
	Sep. 2008	SZ-7, BX-1	Shenzhou-7 spacecraft deployed the BX-1, a miniature imaging satellite, which then positioned itself into an orbit around the spacecraft. BX-1 may have been designed to test in-orbit ejection of “companion” satellites, dual-use on-orbit inspection capabilities, and use of attitude control and propulsion systems for formation flying.
	Jun.–Aug. 2010	SJ-06F, SJ-12	At 570–600 km and 97.6°, SJ-12 maneuvered to rendezvous with SJ-06F. The satellites may have bumped into each other.

Addendum II: China's Counterspace or Dual-Use Weapons Tests 2005–2019—Continued

Type	Year	Description	Comments
	Jul. 2013–May 2016	SY-7, CX-3, SJ-15	At approximately 670 km and 98°, SY-7 released an additional object with which it performed maneuvers and which may have had a telerobotic arm. CX-3 performed optical surveillance of other in-space objects. SJ-15 demonstrated altitude and inclination changes to approach other satellites.
	2016	Aolong-1	Tested robotic arm to remove space debris.
	Nov. 2016–Feb. 2018	SJ-17, YZ-2 upper stage	At 35,600 km and 0°, YZ-2 upper stage failed to burn to the graveyard orbit and stayed near GEO. SJ-17 demonstrated maneuverability around the GEO belt and circumnavigated Chinasat 5A.
	Jan. 2019	TJS-3, TJS-3 AGM	At 35,600 km and 0°, TJS-3 AKM separated from the TJS-3 in the GEO belt and both performed small maneuvers to maintain relatively close orbital slots.
Cyber			
	Oct. 2007–Jul. 2008	NASA and U.S. Geological Service satellite Landsat-7 experienced 12 or more minutes of interference on two occasions.	The responsible party did not achieve all steps necessary to issue commands. The attack was consistent with techniques described in authoritative Chinese military writings.
	Jun. 2008–Oct. 2008	NASA earth observation satellite AM-1 experienced two or more and then nine or more minutes of interference.	The responsible party achieved all steps necessary to issue commands but did not issue any. The attack was consistent with techniques described in authoritative Chinese military writings.
	2012	Computer network attack against NASA Jet Propulsion Laboratory.	Allowed “full functional control” over networks.
	2014	Computer network attack against National Oceanic and Atmospheric Administration.	

Addendum II: China's Counterspace or Dual-Use Weapons Tests 2005–2019—Continued

Type	Year	Description	Comments
	2017	Computer network attack against Indian satellite communications.	
	2018	Computer network attack against satellite operators, defense contractors, and telecommunication companies.	
Directed Energy			
	2006	China reportedly dazzled U.S. reconnaissance satellites.	
Electromagnetic			
	2005	China reportedly conducted satellite jamming tests.	

Source: Various.¹⁸⁶

ENDNOTES FOR SECTION 3

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172. U.S.-China Economic and Security Review Commission, *Hearing on China in Space: A Strategic Competition?* written testimony of Todd Harrison, April 25, 2019, 49; U.S.-China Economic and Security Review Commission, *Hearing on China in Space: A Strategic Competition?* written testimony of Todd Harrison, April 25, 2019, 49; U.S.-China Economic and Security Review Commission, *Hearing on China in Space: A Strategic Competition?* written testimony of Namrata Goswami, April 25, 2019, 99; Stephen Chen, “Is China Militarizing Space? Experts Say New Junk Collector Could Be Used as Anti-satellite Weapon,” *South China Morning Post*, June 28, 2016.

173. U.S.-China Economic and Security Review Commission, *Hearing on China in Space: A Strategic Competition?* written testimony of Todd Harrison, April 25, 2019, 49.

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175. Charles Bolden, Former Administrator, National Aeronautics and Space Administration, meeting with Commission, June 21, 2019; U.S.-China Economic and Security Review Commission, *Hearing on China in Space: A Strategic Competition?* oral testimony of Todd Harrison, April 25, 2019, 109; Mike Wall, “NASA Probe Spots China’s Chang’e 4 Lander on Far Side of the Moon (Photo),” *Space*, February 6, 2019.

176. U.S.-China Economic and Security Review Commission, *Hearing on China in Space: A Strategic Competition?* oral testimony of James Cartwright, April 25, 2019, 22.

177. U.S.-China Economic and Security Review Commission, *Hearing on China in Space: A Strategic Competition?* written testimony of Mike Gold, April 25, 2019, 145.

178. Charles Bolden, Former Administrator, National Aeronautics and Space Administration, meeting with Commission, June 21, 2019; Jeff Foust, “Senate Bill Seeks Extension of the Space Station,” *Space News*, February 27, 2019.

179. U.S.-China Economic and Security Review Commission, *Hearing on China in Space: A Strategic Competition?* written testimony of Mike Gold, April 25, 2019, 149; U.S.-China Economic and Security Review Commission, *Hearing on China in Space: A Strategic Competition?* written testimony of Kevin Wolf, April 25, 2019, 158–159.

180. U.S.-China Economic and Security Review Commission, *Hearing on China in Space: A Strategic Competition?* oral testimony of James Cartwright, April 25, 2019, 13; U.S.-China Economic and Security Review Commission, *Hearing on China in Space: A Strategic Competition?* oral testimony of William Roper, April 25, 2019, 34.

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183. Thomas Cooley, Eric Felt, and Steven J. Butow, “State of the Space Industrial Base: Threats, Challenges and Actions,” May 30, 2019, 7; U.S.-China Economic and Security Review Commission, *Hearing on China in Space: A Strategic Competition?* written testimony of James Cartwright, April 25, 2019, 18; U.S.-China Economic and Security Review Commission, *Hearing on China in Space: A Strategic Competition?* oral testimony of James Cartwright, April 25, 2019, 20; U.S.-China Economic and Security Review Commission, *Hearing on China in Space: A Strategic Competition?* oral testimony of Namrata Goswami, April 25, 2019, 111.

184. U.S.-China Economic and Security Review Commission, *Hearing on China in Space: A Strategic Competition?* oral testimony of Namrata Goswami, April 25, 2019, 111; *Xinhua*, “Exploiting Earth-Moon Space: China’s Ambition after Space Station,” March 7, 2016, accessed via Internet Archive WayBack Machine. https://web.archive.org/web/20180406171529/http://www.xinhuanet.com/english/2016-03/07/c_135164574.htm.

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186. U.S.-China Economic and Security Review Commission, *Hearing on China in Space: A Strategic Competition?* written testimonies of Brian Weeden and Kevin Pollpeter, April 25, 2019, 75, 193–194; U.S.-China Economic and Security Review Commission, *2015 Annual Report to Congress*, November 2015, 293–295; U.S.-China Economic and Security Review Commission, *2011 Annual Report to Congress*, November 2011, 213, 216–217; *Earth Observation Portal*, “BX-1 (BanXing-1 Companion Microsatellite of the Shenzhou-7 Mission).”

SECTION 4: CHANGING REGIONAL DYNAMICS: OCEANIA AND SINGAPORE

Key Findings

- Beijing has used economic coercion, acquired strategically-significant assets, and interfered in the domestic politics of neighboring countries to advance its interests in the Indo-Pacific region. China seeks closer engagement with its neighbors not only for economic gain but also to gain influence over their decision making to eventually achieve regional dominance and replace the United States as a vital economic partner and preeminent regional security guarantor.
- Some targeted countries are becoming increasingly aware of these risks and are taking steps to respond to China's political interference and growing military strength. Still, countries have struggled to formulate comprehensive and effective responses.
- Australia wants to maintain positive economic ties with China, but is also wary of Beijing's increasing regional assertiveness and outright interference in Australia's political affairs. Its steps to mitigate the risks of engagement with China, including tightening foreign investment restrictions and cracking down on political interference, have had mixed success. The Australian business community still favors greater economic engagement with China while downplaying national security concerns.
- To address the growing military threat posed by China, Australia has launched its largest military modernization effort since the Cold War. Central to this effort are large-scale investments in new warships, submarines, and fighter aircraft. Australia is also standing up a new military unit dedicated to improving military coordination with Pacific Island countries and is working with the United States and Papua New Guinea to develop a naval base in the latter's territory, which will complement the already substantial U.S. military presence in Australia.
- China seeks engagement with the Pacific Islands to establish military access to the region, gain the benefit of these countries' voting power in the UN, undermine regional diplomatic support for Taiwan, and gain access to natural resources, among other goals. Pacific Island countries view China as a vital economic partner and source of infrastructure investment and aid, but some Pacific Island officials have expressed reservations about Beijing's increasing influence and presence in the region, particularly over growing indebtedness to China. As a result of China's growing inroads in the Pacific Islands, Australia has also increased its engagement in the region, though its efforts have also encountered some pushback.

- As a small country and regional economic hub, Singapore continues to work to maintain the balance between its relationships with the United States and China amid heightening U.S.-China tensions. Singapore is also concerned about China's attempts to undermine ASEAN's unity and its own ability to play a leading role in Southeast Asia. While Singapore remains a dedicated security partner of the United States, it also has close economic ties to China, including serving as an increasingly important financial and legal intermediary for Belt and Road Initiative (BRI) projects.

Recommendations

The Commission recommends:

- Congress direct the Administration to assess the viability and impact of establishing new military training centers hosted by Indo-Pacific allies and partners to increase connectivity, interoperability, and shared professional military education among countries throughout the region.
- Congress support the implementation of the Indo-Pacific Stability Initiative to align U.S. budgetary commitments with national security objectives and build the confidence of allies concerning U.S. commitment to security in the Indo-Pacific region.
- Congress direct the U.S. Department of State to reinstate Peace Corps programs in Palau and the Federated States of Micronesia and consider expanding their presence in other Pacific Island countries to promote U.S. values while counteracting the spread of China's authoritarian influence in the Pacific Islands.

Introduction

Despite remarks by China's foreign minister Wang Yi that China "has no intention ... to seek to replace the [United States] in its world role," China's actions show it aims to supplant the United States as a leading security and economic power in the Indo-Pacific region.¹ China's growing regional influence creates unsettling dilemmas for its neighbors. China's substantial economic clout offers significant new export opportunities as well as access to inexpensive and increasingly high-quality goods and services. For developing countries, China is an attractive source of funding for much-needed infrastructure. However, China's engagement comes with a troubling cost. In recent years, countries in the region have experienced increasingly brazen attempts by Beijing to influence and even interfere with their political, diplomatic, and military choices. These attempts can take the form of economic coercion or political interference and are backstopped by China's increasingly credible military capability. Whatever the method, they present serious threats to the sovereignty of China's neighbors. Moreover, they threaten to change the trajectory of many of these countries' longstanding relationships with the United States.

China's relationships with Australia, New Zealand, the Pacific Islands, and Singapore present important case studies illustrating the opportunities and risks created by China's growing regional influence and assertiveness in the key sub-regions of Oceania and South-

east Asia. Despite these countries' differing economic backgrounds and historical relationships with China, they are all balancing economic opportunities and security risks. Australia and New Zealand have struggled to formulate effective and coherent policies toward China, pulled in different directions by the business and education communities on the one hand, and the national security establishment and civil society groups on the other.

Meanwhile, Beijing has increasingly directed attention to another, long-neglected part of Oceania: the Pacific Islands. These countries' small sizes and populations belie their strategic importance to China, which has quickly increased its influence, particularly through economic ties and foreign aid, in order to leverage the region's access to important waterways, natural resources, and outsize voting power in the UN.

Finally, Singapore's growing role as a conduit for financing for China's BRI, as well as its large ethnic Chinese population, makes closer ties an important goal for Beijing. China has also sought to deepen its security ties with Singapore as it has moved to establish a leading position in the region's security architecture.

In examining China's increased engagement with Australia, New Zealand, the Pacific Islands, and Singapore, this section considers how each is responding to the opportunities and risks presented by China's greater presence and the implications of these dynamics for the United States. It is based on the Commission's May 2019 fact-finding trip to the Indo-Pacific, consultations with regional experts, and open source research and analysis.

Australia

Australia is both interested in maintaining economic ties with China and newly wary of Beijing's growing authoritarianism and regional assertiveness.² According to Australian National University scholar Rory Medcalf, over the past two years Australia has experienced a "reality check" as it grappled with Chinese Communist Party (CCP) interference and the realization that China under the CCP would not liberalize as many had hoped.³ According to a 2019 poll conducted by the Lowy Institute, an Australian think tank, only 32 percent of Australians said they trust China to act responsibly either a great deal or somewhat, an all-time low.⁴ Respondents' favorable "feelings" on a scale of 0 to 100 degrees toward China fell to only 49 degrees, a nine-degree drop since 2018 and the biggest drop recorded for any country since 2007.*⁵ According to John Lee, former national security adviser to then Australian Foreign Minister Julie Bishop, "Being co-opted to lobby on [China's] behalf is no longer seen as socially acceptable."⁶

However, sections of both the Australian business community and the Australian government have not yet responded to this shift, continuing to prioritize economic ties over national security concerns. For instance, after Andrew Hastie, chair of Australia's Parliamentary Joint Committee on Intelligence and Security, argued Australia had failed to recognize the scale of the CCP's ambitions, Australian

*The poll recorded a nine-degree drop in warm feelings for Iran, from 43 to 34, in 2007. Lowy Institute, "Lowy Institute Poll 2019."

business community leaders criticized his comments as endangering a continued “positive relationship” with China.⁷ Similarly, after Australian intelligence agencies concluded China was responsible for a cyberattack on Australia’s parliament and three largest political parties in the lead-up to the country’s general election in May 2019, *Reuters* reported that a secret government report recommended not disclosing these findings to avoid harming trade relations with China.⁸

Canberra has not yet decisively outlined its priorities vis-à-vis China, but there is a growing recognition of the strong connections between security and economic considerations inherent in dealing with China, and the comprehensive challenges that linkage creates.⁹ Reflecting these difficulties, Prime Minister Scott Morrison stated in November 2018 that Australia would not choose sides between the United States and China. Since securing a surprise re-election in May 2019, however, he has been more critical of Beijing on both economic and security matters.¹⁰

For Beijing, Australia is an important strategic priority due to its key role in the U.S.-led alliance system and its significance as a yardstick for the effect of what the CCP calls “discursive power,” or Beijing’s ability to promote its own views over what it perceives as an international narrative that is unfairly biased against China.* According to Dr. Medcalf, Beijing’s main goals in its engagement with Australia are to weaken the U.S.-Australian alliance; obtain sensitive military, intelligence, and technological secrets; prevent Australia from inspiring other countries to oppose Beijing’s priorities; and ensure Australia’s large Chinese community at minimum refrains from criticizing the CCP and ideally openly advocates on its behalf.¹¹

Influencing overseas Chinese communities remains a key policy goal for Beijing and an important pillar of its United Front strategy for “controlling, mobilizing, and utilizing non-Communist masses” to co-opt and neutralize potential critics of the CCP while advancing its goals.† Australia, as a large democratic country on China’s geographic periphery, is a major bellwether in this regard. More than 1.2 million people of Chinese ancestry (about 40 percent of whom were born in China) live in Australia, comprising 5.6 percent of the total population of 24.6 million.¹² As student demonstrations in the summer of 2019 flared throughout Australia criticizing or defending pro-democracy Hong Kong protesters, pro-Beijing blocs harassed and assaulted students showing solidarity with Hong Kong, demonstrating the extent of Beijing’s ability to influence members of the overseas Chinese community to advocate for its interests. “If dissenting

*Discursive power, according to China’s State Council Information Office, is a form of power to be wielded in pursuit of strategic aims just like military or economic strength. China argues strong discursive power enables countries to claim the moral high ground or promote their own concepts and shape global norms and standards, an important tool against an international narrative portraying the West as strong and China as weak. Kristin Shi-Kupfer and Mareike Ohlberg, “China’s Digital Rise: Challenges for Europe,” *Mercator Institute for China Studies*, August 4, 2019; State Council Information Office of the People’s Republic of China, *Several Great Fundamental Theoretical Questions in the Construction of International Discourse Power* (国际话语权建设中几大基础性理论问题), February 27, 2017. Translation. <http://www.scio.gov.cn/zhzc/10/document/1543300/1543300.htm>.

†The CCP uses what it calls “United Front” work to co-opt and neutralize sources of potential opposition to its policies and authority. For more on the background and implications of this strategy, see Alexander Bowe, “China’s Overseas United Front Work: Background and Implications for the United States,” *U.S.-China Economic and Security Review Commission*, August 24, 2018.

Chinese voices [that are critical of Beijing] can be silenced in Australia,” Dr. Medcalf contends, “they can be silenced anywhere.”¹³

Responding to China’s Interference, Australia’s Progress Uncertain

Since 2016, following revelations of Australia’s vulnerability to CCP interference, Canberra has passed several new laws to counter foreign interference.* These new laws, which began to enter into force in 2018, target foreign interference in politics, economic espionage, and theft of trade secrets; establish a public register of foreign lobbyists; and require notification of political donations from those on the register or who disburse funds on behalf of a foreign principal.¹⁴ Canberra has also formed a new Department of Home Affairs to integrate certain intelligence, law enforcement, and policy responsibilities across the government and ordered the most significant review of its intelligence agencies in 40 years, which is still ongoing.¹⁵

Huang Xiangmo, a former Australian permanent resident and prolific political donor accused of acting as a proxy for Beijing, has been a primary focus of much of the public debate surrounding CCP interference in Australia.¹⁶ From 2014 to 2017, Mr. Huang was the president of the Australian Council for the Promotion of Peaceful Reunification of China, a political advocacy organization that frequently disguises the nature of its relationship to the Chinese government but is in fact directly subordinate to the CCP’s United Front Work Department.¹⁷ He received scrutiny for his donations to both major Australian political parties totaling \$1.5 million (AUD 2 million) since 2012, and he was accused of being a CCP “agent of influence” by an Australian senator who resigned due to public disclosure of his collaboration with Mr. Huang.†¹⁸ In February 2019, the Australian government revoked Mr. Huang’s permanent residency and denied his application for citizenship, citing concerns about his character.¹⁹

Australia’s new Foreign Influence Transparency Scheme, passed in 2018 and based on the U.S. Foreign Agents Registration Act, was intended to introduce transparency into foreign lobbying in Canberra, but registration and enforcement have so far been lackluster. Canberra has yet to prosecute any United Front-connected entities, such as Confucius Institutes and most Chinese state media, for not registering, despite the fact United Front activities were a primary focus of the law.²⁰ As of July 2019, only 18 Chinese foreign principals had registered, mostly comprising mineral, energy, and investment companies, as well as China Radio International and China Telecom, state-owned media and telecommunications companies, respectively.‡²¹ Only three former Cabinet ministers or designat-

*For more on the events leading to the passage of Australia’s new counter-foreign interference laws, see U.S.-China Economic and Security Review Commission, Chapter 3, Section 2, “China’s Relations with U.S. Allies and Partners,” in *2018 Annual Report to Congress*, November 2018, 304–339.

†Unless noted otherwise, this section uses the following exchange rate throughout: AUD 1 = \$0.68.

‡The United States Studies Center at the University of Sydney, which has an arrangement with the U.S. Department of State for “general political lobbying,” has registered. Australian Government Attorney-General’s Department, *United States Studies Center Foreign Influence Transparency Scheme Register Registration Record*, September 28, 2018.

ed position holders—a key type of lobbyist intended to be captured by the law—had registered as lobbyists for Chinese foreign principals by July 2019.*²² Notably, some of the most prominent former officials who became lobbyists for Beijing after their government service, such as former Minister of Trade and Investment Andrew Robb, former Foreign Minister Bob Carr, and former Premier of Victoria State John Brumby, left their lobbying positions before the law took effect, demonstrating some desire not to be perceived as working for Beijing.²³

Australia Struggles with Disinformation and Censorship in Chinese-Language Media

Disinformation is a serious concern for Australian media, particularly given the outsize influence of Chinese platforms, which are an important tool in Beijing's influence operations targeting the Chinese diaspora.²⁴ There are dozens of Chinese-language media outlets in Australia, and nearly all of them have been brought under the influence of Beijing to some degree. Over roughly the last ten years, the Chinese embassy and consulates in Australia have used coercion and threats to get these media to increasingly parrot the CCP's line.²⁵ For example, the Chinese consulate in Sydney repeatedly warned a local government† with a large ethnic Chinese population not to engage with one of the few remaining independent Australian Chinese-language media outlets, *Vision China Times*, including forcing its council to ban the paper from sponsoring a Lunar New Year celebration.²⁶ Beijing has long sought to pressure or coerce this newspaper into changing its coverage. *Vision China Times* general manager Maree Ma said in April 2019 that Chinese officials "don't like any media outlets that they cannot ... control."²⁷

Most Australian Mandarin-speakers access news through WeChat, a social media app now indispensable among many Chinese communities for communication and other purposes, raising concerns about Beijing's ability to target them with disinformation spread over the platform.‡²⁸ The use of the platform has spread beyond the Chinese Australian community, with about 3 million Australians using WeChat by 2017, according to Australia's Special Broadcast

* Designated position holders include Ministers, Members of Parliament, some Parliamentary staff, Agency heads and deputy heads (and equivalent offices), and Ambassadors or High Commissioners stationed outside Australia. As of July 2019, designated position holders registered under the Scheme included former Australian Senator Richard Allston, working on behalf of China Telecom (Australia); former Senator Nick Bolkus, working on behalf of Jiujiang Mining Australia; and former Ambassador to China Geoffrey Raby, working on behalf of Yancoal. Australian Government Attorney-General's Department, *Transparency Register: China*; U.S.-China Economic and Security Review Commission, *2018 Annual Report to Congress*, November 2018, 325.

† A local government is the third tier of government in Australia, below the state or territory level and the federal level. Its governing body is referred to as a council. Nick McKenzie, "China Pressured Sydney Council into Banning Media Company Critical of Communist Party," *Four Corners*, April 9, 2019; *Australian Collaboration*, "Democracy in Australia—Australia's Political System," May 3, 2013, via the Internet Archive Wayback Machine. <https://web.archive.org/web/20140127041502/http://www.australiancollaboration.com.au/pdf/Democracy/Australias-political-system.pdf>.

‡ Based on WeChat penetration in mainland China, which reaches 93 percent in tier 1 cities, media researcher Wanning Sun estimated almost the entire Mandarin-speaking community in Australia—approximately 597,000 people as of 2016, or 2 percent of Australia's population—used WeChat. Wanning Sun, "How Australia's Mandarin Speakers Get Their News," *Conversation*, November 22, 2018; Lucy Lv, "Who Are the Australians That Are Using China's WeChat?" *Special Broadcasting System*, November 3, 2017; Australia's Bureau of Statistics, *Census Reveals a Fast Changing, Culturally Diverse Nation*, June 27, 2017; Wanning Sun, "Chinese-Language Media in Australia: Developments, Challenges, and Opportunities," *Australia-China Relations Institute*, 2016, 45–46.

Service.²⁹ A 2018 survey by media researcher Wanning Sun found about 60 percent of Australian Mandarin-speakers get news primarily from WeChat.³⁰ Content disseminated through prominent WeChat channels tends to mirror official Chinese news, ensuring the Chinese government is able to distract and divert readers from sensitive events in China.³¹ Tom Uren, senior cybersecurity analyst at the Australian Strategic Policy Institute (ASPI), said in January 2019 that through its control of WeChat Beijing can “promote particular issues [as] a way of controlling public debate.”³²

According to one November 2018 report comparing the stories published by the Australian public Special Broadcasting Service and those published by leading WeChat public accounts between January 2016 and August 2017, almost 3 percent of all Special Broadcasting Service articles concerned Chinese politics and foreign affairs, while less than a tenth that amount of stories published on WeChat channels did.³³ These WeChat channels did not post a single article on Chinese politics from March 2017 to the end of the study’s data collection period, and before they stopped covering Chinese politics, 32 out of 37 articles on this topic were similar to reports from Chinese state-run news agencies.³⁴ As Australian politicians have increasingly turned to WeChat to engage with the Chinese Australian community, campaigns have noted its negative influence on Australia’s media environment. In Australia’s May 2019 election, fake news on WeChat was such a problem that Australia’s Labor Party contacted WeChat owner Tencent to express frustration about posts spreading disinformation regarding Labor’s federal election campaign.³⁵

Australian Defamation Laws Chill Reporting on CCP Influence

Dedicated reporting in Australian news media over the last decade has driven increased public understanding of the challenges posed by CCP interference, but defamation lawsuits risk undermining further progress.³⁶ Australia’s “oppressive and notoriously complex” defamation laws make it “the defamation capital of the world,” according to former *National Public Radio* and *British Broadcasting Corporation* correspondent Louisa Lim.³⁷ Prior to about five years ago it was very difficult to publish anything critical of China in Australia, according to John Lee. Despite the growing debate over CCP influence in recent years, some setbacks have raised concerns over Australia’s ability to allow free and open discussion of these issues.³⁸

In February 2019, Chau Chak-wing—a United Front-connected, China-born Australian citizen who gained notoriety for his high-profile political contributions and influence over the Australian media landscape³⁹—won a complex defamation case against Fairfax Media concerning a 2015 article reporting his alleged involvement with bribing former UN General Assembly President John Ashe.⁴⁰ In a related defamation case filed by Mr. Chau against Fairfax and the Australian Broadcasting Corporation regarding an article they had published, an Australian judge rejected the defendants’ argument that their reporting did not constitute defamation because the content of their reporting was

Australian Defamation Laws Chill Reporting on CCP Influence—Continued

true (this concept is known as a “truth defense”). The reporting in question cited statements Mr. Hastie made under protection of Parliamentary privilege, which ensures members of Parliament cannot be sued or prosecuted for anything they say during Parliamentary debate. However, the judge found Australian law does not allow statements protected by this privilege to be used to support a defense of truth.⁴¹ Furthermore, the judge found that even if Mr. Hastie had made the comments outside of Parliament, they would still have been hearsay.⁴² Mr. Hastie expressed concern over the effect of the country’s defamation laws on “responsible journalism ... about important national security issues.”⁴³

Australia Creates a New University Foreign Interference Task Force

In August 2019, Canberra announced the creation of a new University Foreign Interference Task Force to coordinate between universities and the government to address growing concerns regarding freedom of speech, technology transfer, cyber intrusions, and other matters.⁴⁴ In response to university protests that had occurred throughout the summer, the new Task Force listed “suppression of [dissident] ideas ... and promotion of narratives which support [foreign actors’] strategic goals” among tools of foreign interference in universities.⁴⁵

When students at the University of Queensland held a demonstration expressing solidarity with the ongoing protests against Hong Kong’s extradition bill and calling for the university to sever financial ties with China, hundreds of pro-Beijing students tore down the pro-democracy students’ signs, repeatedly vandalized their “Lennon Wall,”* and even assaulted some students.⁴⁶ According to *New York Times* Sydney bureau chief Damien Cave, some of the pro-Beijing demonstrators appeared to be much older than the average student, and the Hong Kong students did not recognize them, suggesting the former were not students.⁴⁷ The Chinese consulate in Brisbane then issued a statement supporting the “spontaneous patriotic behavior” of Chinese students against “anti-China separatist activities,” prompting Australian Foreign Minister Marise Payne to warn that foreign diplomats must respect free speech in Australia.⁴⁸ One Queensland protester said authorities visited his family in China to warn them about engaging in “anti-China rhetoric,” indicating Beijing was working to identify and intimidate the protesters.⁴⁹ After similar protests at the University of Tasmania, the Chinese Students and Scholars Association there released a social media post including a statement saying it “resolutely opposed any comment or act [aimed at] splitting China,” echoing CCP rhetoric.[†]⁵⁰

*Inspired by the original “John Lennon Wall” established in Prague in the 1980s upon the artist’s death, Hong Kong prodemocracy protesters first created their version of a “Lennon Wall” during the 2014 Occupy protests to share messages of support and encouragement for the movement. Joyce Zhou and John Ruwitch, “Imagine All the Post-Its: Hong Kong Protesters Come Together with ‘Lennon Walls,’” *Reuters*, July 11, 2019.

†Such ties to the Chinese embassy and consulates are not new, though the recent incidents are especially high-profile. According to the *Sydney Morning Herald*, a former executive of the Chi-

Many Australian universities have become financially dependent on students from China, who account for more than 40 percent of all international students enrolled in campuses located in Australia and 10 percent of university students overall, while providing between 13 and 23 percent of total revenues at Australia's top universities, according to a recent study.⁵¹ At a roundtable with the Commission hosted by ASPI in Canberra, participants said Australian universities have "sold out" to China and claim not to see any alternative to the current dependency on Chinese students.⁵² Australian universities are trying to diversify by recruiting more students from India, Southeast Asia, Latin America, the United States, and Canada, among others. They have not yet been very successful in doing so, however, and remain vulnerable to a sudden decrease in Chinese student enrollment.⁵³

Academic ties to the Chinese government have raised questions about the extent to which Australia's new counter-foreign interference laws should apply to universities. For example, some observers expressed concern over the University of Queensland's unpublicized hiring of Xu Jie, Chinese consul-general in Brisbane, as a visiting professor, shortly before the demonstrations in Hong Kong took place. The university said this was a common practice, however, and that such appointments were not normally publicized.⁵⁴ At the time of writing, Dr. Xu was still employed by the university. The Queensland demonstrations took place, in part, at the university's Confucius Institute, highlighting the program's central role in Beijing's activities on Australian university campuses.

In July 2019, Australia announced it would investigate whether some Confucius Institute agreements violated Australia's new counter-foreign interference laws after reports in July said some universities had agreed to accept Beijing-approved teaching standards at their centers.⁵⁵ In August 2019, New South Wales, Australia's most populous state, announced it would replace all 13 of its secondary school-level Beijing-funded Confucius Classrooms with New South Wales state-funded programs due to concerns about factors that could cause "the perception that the Confucius Institute is or could be facilitating inappropriate foreign influence."⁵⁶ The state government also announced it would terminate its agreement with the Confucius Institute, including removing associated personnel from its department of education—an arrangement not found in any other school system in the world—at the end of the 2019 school year.⁵⁷

New Zealand Pushes Back amid Bilateral Tensions

Like Australia, New Zealand has taken a series of recent steps to counter China's interference. New Zealand's most recent Strategic Defense Policy Statement in July 2018 criticized China's regional assertiveness and did not refer to Beijing as an "important strategic partner" as past versions did. In a move that reportedly shocked Beijing, New Zealand decided in November 2018 to ban

nese Students and Scholars Association at an Australian university claimed in 2016 the Chinese embassy regularly pays to fly in executives from universities all around the country to attend conferences with Chinese officials where they discuss the latest CCP doctrine and collaboration with embassy staff. Alex Joske and Philip Wen, "The 'Patriotic Education' of Chinese Students at Australian Universities," *Sydney Morning Herald*, October 7, 2016.

New Zealand Pushes Back amid Bilateral Tensions— *Continued*

Huawei 5G products.⁵⁸ Prime Minister Jacinda Ardern went to China on a state visit for the first time in April 2019, during which she and General Secretary of the CCP Xi Jinping pledged to improve bilateral ties.⁵⁹

Beijing attempts to interfere in New Zealand through Chinese diaspora organizations and threats from its diplomatic representatives. New Zealand universities also dealt with dueling protests over Hong Kong in August 2019, prompting firm statements from Wellington about the importance of freedom of speech. Just as at the University of Queensland, pro-Beijing students scuffled with pro-democracy supporters and vandalized pro-Hong Kong Lennon Walls, while the Chinese consulate in Auckland praised the pro-Beijing students for their patriotism.⁶⁰

Earlier, according to email records, Chinese consulate officials successfully pressured the Auckland University of Technology to cancel a campus event in June commemorating the 30th anniversary of the Tiananmen Square massacre. Xiao Yiwen, Chinese vice-consul general in Auckland, reportedly met personally with the university's vice-chancellor to demand the cancellation of the event.⁶¹ In response, Prime Minister Ardern reiterated her government's support for freedom of speech and said her Ministry of Foreign Affairs had met with Chinese counterparts to stress the same. Minister of Foreign Affairs Winston Peters said Wellington "expect[s] every country, no matter how big or small, to ... understand" the importance of this right.⁶²

Research Collaboration Risks Benefiting Chinese Government

Australian universities continue to struggle with how best to address their vulnerability to technology transfer to China. An October 2018 ASPI report found that since 2007, the People's Liberation Army (PLA) had sponsored more than 2,500 military scientists and engineers to study abroad, with Australia the biggest destination per capita by far, with approximately 300 PLA scientists studying in Australia—six times the number per capita of scientists sent to the United States.⁶³ As a result, some Australian government-funded laboratories effectively "only train people who go back to China," and ultimately contribute to its technological development, according to Alex Joske, the study's author.⁶⁴

The study further found some of the researchers had concealed their military affiliations or claimed affiliation with nonexistent institutions while working in fields such as hypersonic missiles, navigation technology, and cloud computing.⁶⁵ Other researchers focused in specialized fields such as antisatellite weapons, scramjets, and submarine-related technology.⁶⁶ Evidence also suggested academic collaboration with Australia may have contributed to China's nuclear weapons program. For example, a nuclear weapons and supercomputer expert at the University of New South Wales co-authored research with PLA officials connected to China's nuclear weapons program and supervised at least nine doctoral students

from a key PLA research institution.⁶⁷ The ASPI report concluded that this overseas collaboration was a core component of China’s “military-civil fusion” strategy.⁶⁸ (For more on military-civil fusion, see Chapter 3, Section 2, “Emerging Technologies and Military-Civil Fusion: Artificial Intelligence, New Materials, and New Energy.”)

In February 2019, an independent review of export controls by a former Australian inspector-general of intelligence and security found Australia’s export controls were inadequate regarding “emerging and sensitive military and dual-use technology.”⁶⁹ The Australian coalition government agreed with all of the review’s recommendations, which aimed to close gaps in Australia’s export controls, and engaged the report’s author to lead consultations with government, academia, and industry on steps to implement the report’s recommendations. These included improving monitoring and investigation of compliance with export controls and ensuring researchers are aware of their obligations under export control laws.⁷⁰

Australian universities’ collaboration with China also raises concerns regarding the risk of helping China violate human rights by working with entities connected to the Chinese state. In July 2019, the Australian news program *Four Corners* revealed University of Technology Sydney and Curtin University had launched internal reviews into artificial intelligence (AI) and facial recognition research partnerships with entities connected to the Chinese state, both of which could contribute to pervasive surveillance of Uyghurs.⁷¹ In 2017, University of Technology Sydney established a \$6.8 million (AUD 10 million) partnership to research AI and surveillance with China Electronic Technology Group Corporation, a leading Chinese state-owned defense electronics firm responsible for developing the AI program undergirding the pervasive surveillance in Xinjiang.⁷²

A University of Queensland professor and Thousand Talents scholar, Heng Tao Shen, founded an AI-driven surveillance company in China—in part using funds from the Australian Research Council—that operates a joint lab with China’s Ministry of Public Security. Dr. Heng reportedly recruited scholars currently working in Australian and Singaporean universities to work with him.⁷³ To avoid exacerbating human rights abuses in Xinjiang and elsewhere in China, experts have called on Australia to more closely scrutinize the role its universities and government funding may have in this research, and even to sever any links they might have with the CCP.⁷⁴

The Role of Economics in Australia-China Relations

Australia is currently in its 28th year of uninterrupted economic expansion, a period longer than in any other advanced economy—a fact that carries significant weight in Australian political decisions and debates.⁷⁵ Observers within and outside Australia have credited China’s decades-long economic growth, and its concomitant demand for Australian exports, particularly commodities, as a key source of Australia’s economic prosperity.⁷⁶ Indeed, the share of Australian goods exports sent to China has expanded from under 5 percent in 2001 to over 35 percent at the end of 2018 (see Figure 1). As of June 2019, this share had risen to over 40 percent.⁷⁷ China is by far Australia’s largest export

market: in 2018, Australian exports to China totaled \$92.5 billion (AUD 136 billion), a 17.5 percent increase over 2017, and more than twice the amount of Australian exports to the next-biggest market, Japan.⁷⁸ Trade with China accounted for 25.2 percent of Australia’s global trade in 2018, larger than the combined share of Japan, the United States, and South Korea—Australia’s three next biggest trading partners.⁷⁹ Peter Jennings, ASPI’s executive director, has called on the Australian government to recognize that Australia “has built an unhealthy economic dependency on China” and take steps to diversify its economic partners.⁸⁰ A 2019 survey by the United States Center at the University of Sydney and analytics firm YouGov found almost two-thirds of Australians agree or strongly agree that Australia is too economically dependent on China.⁸¹

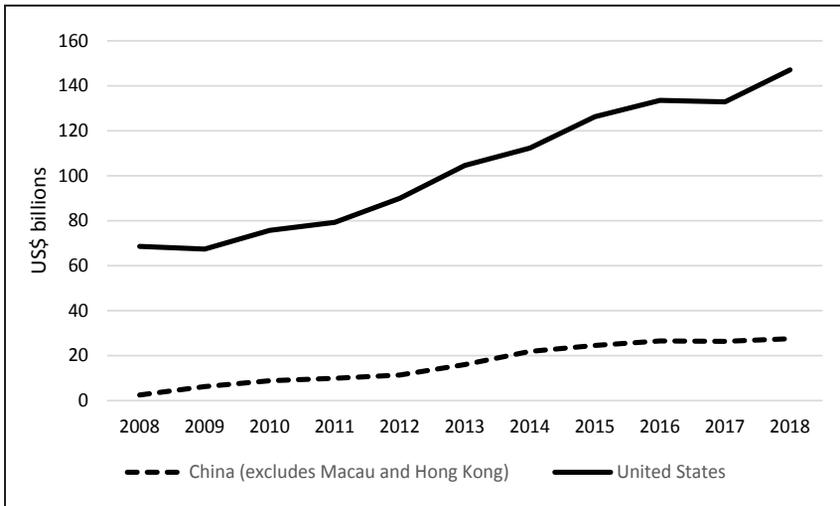
Commodities are the most significant Australian export to China, with iron ores and other concentrates leading, followed by coal.⁸² However, services form a growing part of Australia’s exports to China, led by education and travel.⁸³ China is also Australia’s largest source of imports, totaling over \$53 billion (AUD 78 billion) in 2018.⁸⁴ The most significant Chinese exports to Australia were telecommunications equipment and parts, followed by computers.⁸⁵

Figure 1: China’s Share of Australia’s Goods Exports, 2001–2018



Source: Australian Bureau of Statistics, “International Trade in Goods and Services, Australia: Merchandise Exports, Country and Country Groups, FOB Value,” September 2019.

In contrast to trade, Chinese investment plays a relatively small role in Australia’s economy, despite significant growth over the past decade. In 2018, China was the fifth largest source of foreign direct investment (FDI) in Australia, with cumulative investment amounting to \$27.3 billion (AUD 40.1 billion), or roughly 4.1 percent of total FDI in Australia (see Figure 2). The United States ranked first, with cumulative investment totaling \$145.7 billion (AUD 214.3 billion), or 22.1 percent of total foreign investment in Australia.⁸⁶

Figure 2: U.S. and Chinese FDI in Australia (Cumulative), 2008–2018

Source: Australian Bureau of Statistics, “Foreign Investment in Australia: Level of Investment by Country and Country Groups by Type of Investment and Year,” May 2019.

China’s Economic Leverage and Coercion

China’s importance as Australia’s economic partner gives the Chinese government significant leverage in the bilateral relationship. To a large extent, Beijing wields this leverage without the need to engage in or even threaten economic retaliation. As Clive Hamilton of Charles Sturt University noted in a 2018 *Foreign Affairs* article, “Australia’s economic dependence on China has also created an influential group of Australian business executives, politicians, academics, and commentators who are sympathetic to Chinese interests.”⁸⁷ The lobbying by some Australian business groups against the 2018 counter-foreign interference laws illustrated this dynamic.⁸⁸

While China’s implied economic leverage has reduced the need to engage in active coercive measures, as the Australian government ramped up its pushback against China’s political influence, Beijing started retaliating against Australian businesses. For example, in May 2018, while the Australian government was debating passage of its counter-foreign interference laws, some Australian wine exporters reported that their products were being held up in Chinese ports due to new customs rules apparently aimed at Australian wines.^{*89} Following the restrictions, winemakers urged then Prime Minister Malcolm Turnbull to visit Beijing to resolve the diplomatic dispute.⁹⁰ During the same time period, Australian beef and citrus exporters also expressed fears their imports were being held up because of this conflict.⁹¹

Following the Australian government’s ban on Huawei and ZTE providing 5G networks in Australia in 2018, Beijing retaliated against coal, Australia’s second-largest export to China. In October

*China is Australia’s largest wine export market, with exports totaling more than \$775 million (AUD 1.14 billion) in 2018. *Wine Australia*, “2018: An Impressive Year for Australian Wine Exports,” January 22, 2019.

2018, customs clearance times for Australian coal in Chinese ports grew to at least 40 days, up from typical clearance times of five to 20 days.⁹² Soon after, China's port in Dalian announced it had banned Australian coal imports altogether.⁹³ The restrictions on Australian coal at the Dalian port demonstrate Beijing's desire to carry out retaliation at limited cost to itself. Since less than 10 percent of Australia's coal exports to China transit through Dalian, China's overall supply of coal was relatively unharmed.⁹⁴

In addition, in April 2018, the Civil Aviation Administration of China sent a letter to 36 airlines, including Australian airline Qantas, demanding any language referring to Taiwan be changed to reflect China's position that Taiwan is a Chinese province. Although Australia's Department of Foreign Affairs and Trade Secretary Frances Adamson referred to the letter as "economic coercion," Qantas later agreed to change its website to refer to Taiwan as a part of China.*⁹⁵

Concerns over Chinese Investment in Critical Infrastructure

Chinese investment in Australian infrastructure, both physical and technological, has been of particular concern to Australian officials in recent years. In one especially controversial example, in October 2015 Australia's Northern Territory government announced a 99-year lease of Port Darwin to Landbridge Group, a Chinese company, for over \$344 million (AUD 506 million).⁹⁶ Landbridge Group has extensive connections to the CCP and PLA, and its owner, Ye Cheng, had reportedly been named by the Shandong Government as one of the "top 10 individuals caring about the development of national defense" in 2013.⁹⁷ In a 2016 interview, Mr. Ye also said the Port Darwin investment served BRI, though Australia is not a signatory to the pact.⁹⁸

The deal created an immediate national backlash and raised questions of why the lease had been finalized without a review from Australia's Department of Defense or Foreign Investment Review Board (FIRB), the governmental body responsible for oversight of proposed foreign investment in Australia.†⁹⁹ The United States, which has maintained Marine Corps personnel in Darwin since 2012, also expressed concern over the deal.‡¹⁰⁰ A 2016 report by the Australian Senate found the FIRB review process of critical infrastructure was ad hoc and opaque,¹⁰¹ highlighting the Port Darwin lease as an example of the system's shortcomings.¹⁰² For example, when the Port Darwin lease was completed in 2015, Australian law did not require FIRB approval of the deal because it involved a lease of property owned by a territorial government. The report also raised concerns over the lease of Transgrid, the electricity network of New South Wales, to private investors, as well as the planned sale of S. Kidman and Co. Ltd., one of Australia's largest beef producers.¹⁰³ Transgrid

* Following this letter, several U.S. airlines also dropped references to Taiwan on their sites, though they did not refer to Taipei as part of China. Sui-Lee Wee, "Giving In to China, U.S. Airlines Drop Taiwan (in Name at Least)," *New York Times*, July 25, 2018.

† The Australian treasurer has the authority to approve or reject foreign investment proposals, as well as to order the unwinding of already-completed deals. The Foreign Investment Review Board, an advisory board established in 1976, examines proposed deals and advises the treasurer on the national interest implications thereof.

‡ The complement reached 2,500 Marines in 2019, up from the initial rotation of 200 Marines in 2012. United States Force Posture Initiatives, *Marine Rotational Force—Darwin*, 2019.

was ultimately leased to an Australian-led consortium over other bidders, including State Grid, a Chinese state-owned enterprise, and then Treasurer Scott Morrison blocked the planned sale of S. Kidman and Co. Ltd., for which two Chinese companies were reportedly the major bidders.* Nevertheless, the Australian Senate report concluded the approval process behind these transactions had not adequately considered national security factors and had demonstrated the same deficiencies in the foreign investment review process as the Port Darwin lease.¹⁰⁴

In light of these concerns, the Australian government has strengthened its foreign investment review process for critical infrastructure. In 2016, the Australian government promulgated regulations that brought sales of infrastructure by territorial governments under FIRB jurisdiction, closing the loophole that had allowed the Port Darwin deal to proceed without approval by the Australian Treasury.¹⁰⁵ In 2017, the Australian government established the Critical Infrastructure Center to advise the FIRB on proposed foreign investment in critical infrastructure.†¹⁰⁶ In November 2018, based on consultation with the Critical Infrastructure Center and the FIRB, Australian Treasurer Josh Frydenberg blocked the Hong Kong-based CK Group's proposed purchase of Australia's largest gas line company. Although the Australia Competition and Consumer Commission had cleared the purchase earlier, Mr. Frydenberg blocked it on grounds that ownership of the business by a single foreign company would be "contrary to the national interest."¹⁰⁷ Significantly, in a Commission meeting with Australian government officials, one participant noted the rejection was based on a finding of economic sovereignty, showing that the Treasury can deny deals for reasons other than security.¹⁰⁸

The Australian government also passed the Security of Critical Infrastructure Act of 2018. This law increased government oversight of certain types of infrastructure by calling for a national registry of critical infrastructure assets, empowering the government to seek more detailed information on these assets, and giving the government the ability to direct the owner or operator of the critical infrastructure to take (or refrain from taking) certain actions in order to mitigate a national security risk.¹⁰⁹

Telecommunications Infrastructure and 5G Bans

In 2017, the Australian government passed Telecommunications Sector Security Reforms, which established that Australian carriers and telecommunications services providers have a duty to do their best to protect their networks from unauthorized access or interference and required such entities to inform the government of potential changes to their systems that could undermine this obli-

*In 2016, then Treasurer Morrison approved of the sale of S. Kidman and Co. Ltd. to an Australian-Chinese joint venture (in which the Chinese company held a 33 percent stake). The approval was premised on the excision of certain portions of land from the sale. Scott Morrison, *Approval of S. Kidman & Co. Limited Sale to Increase Australian Ownership*, December 9, 2016.

†Australia's commonwealth, state, and territory governments define critical infrastructure as "those physical facilities, supply chains, information technologies and communication networks which, if destroyed, degraded or rendered unavailable for an extended period, would significantly impact the social or economic wellbeing of the nation or affect Australia's ability to conduct national defense and ensure national security." Australia's Critical Infrastructure Center, *Safeguarding Critical Infrastructure*.

gation.¹¹⁰ While the law did not mention Huawei, it became known as the “anti-Huawei bill” due to concerns Huawei and other Chinese companies like ZTE could be compelled to share data with the Chinese government pursuant to China’s 2017 National Intelligence Law, which requires Chinese persons both to cooperate with intelligence investigations and keep this cooperation secret.¹¹¹

In August 2018, several weeks before the Telecommunications Sector Security Reforms took effect, the Australian government banned Huawei and ZTE from supplying equipment for Australia’s 5G network in guidance related to the then forthcoming law. While the Australian government did not specifically call out any companies, the guidance mentioned concern over vendors “who are likely to be subject to extrajudicial directions from a foreign government that conflict with Australian law.”¹¹² Huawei later confirmed that the Australian government had banned Huawei and ZTE from providing 5G equipment to Australia.¹¹³ (For more on other countries’ positions on the use of Huawei technology in their 5G networks, see Chapter 2, “Beijing’s Internal and External Challenges.”)

Australia Undertakes Largest Military Modernization since Cold War

Beginning in 2016, Australia launched its largest military modernization campaign since the Cold War, chiefly to address the growing military threat posed by China. This modernization shows it is determined not to cede influence to China in the Indo-Pacific, which Canberra called “our region” in a summary of its 2016 defense white paper.¹¹⁴ Canberra has been alarmed by China’s growing economic influence and efforts to establish military bases in Southeast Asia and the Pacific Islands, the latter of which Canberra regards as an area of particular national security significance for Australia. This modernization rests on a defense budget growth planned to reach 2 percent of gross domestic product (GDP) by 2020–2021, totaling \$26 billion (AUD 38.7 billion)—the first time Australia’s defense spending has reached this level since 1995.¹¹⁵ Canberra’s total defense expenditures out to 2022–2023 will reach \$118 billion (AUD 175.8 billion).¹¹⁶ Most significantly, these planned expenditures will be decoupled from GDP growth, so they will proceed as planned even if Australia’s economy contracts.¹¹⁷

Major military modernization programs include \$136 billion (AUD 200 billion) to be spent by the mid-2020s on new ships including 12 diesel-electric attack submarines, three anti-air destroyers, nine anti-submarine frigates, 12 patrol ships, and 21 smaller patrol boats. These new craft will mostly be delivered from the early 2020s through the 2030s.¹¹⁸ The Royal Australian Air Force has ordered 72 F-35A joint strike fighters and may order 28 more jets throughout the 2020s, with its fleet expected to reach initial operating capability by 2020 and full operating capability by 2023.¹¹⁹ Australia had received four F-35As for permanent basing as of April 2019, in addition to eight temporarily training with the U.S. Air Force’s 61st Fighter Squadron in Arizona, and it will have received a total of 33 aircraft by the end of 2020.¹²⁰ Finally, Canberra is improving government and military cybersecurity with an estimated total

2019–2020 budget of \$627 million (AUD 922 million) for the Australian Signals Directorate, Australia’s leading cybersecurity agency. It also strengthened the Australia Security Intelligence Organization’s focus on cybersecurity by appointing Mike Burgess, who was then head of the Signals Directorate, as its new director in August 2019.¹²¹

Australia is also expanding its regional presence by increasing its engagement with regional partners. Most significantly, in late 2018 Australia announced it would work with Papua New Guinea, the largest and most centrally-located Pacific Island country, to modernize the neglected World War II-era Lombrum naval base on Manus Island, and the United States soon announced it would also participate.¹²² Australia has committed \$2.5 million (AUD 3.6 million) to this base and \$19.7 million (AUD 29 million) to defense projects in Papua New Guinea overall. The Lombrum enhancements will likely be intended mainly to accommodate four small *Guardian*-class Pacific patrol boats Australia is donating.¹²³ Potentially limiting the use of the naval base, China’s state-owned China Harbor Engineering Company won a bid in 2016 to develop the airfield near Lombrum, although at the time of this Report’s publication it was unclear what the status of the project was since the naval base agreement was signed.¹²⁴ Separately, in 2018, Australia expanded an agreement for Singapore to base military helicopters for training in Australia. According to the Australian Department of Defense, the agreement demonstrated the deepening relationship between the two countries and offered opportunities for further defense cooperation.*¹²⁵

In July 2019, Australia announced it would create a new military unit, the Pacific Support Force, dedicated to training and assisting allies in the Pacific.¹²⁶ According to Australian Defense Minister Linda Reynolds, the new force—likely to begin operations by the end of 2019—would “employ a mobile training team approach to strengthen [regional] capacity, resilience, and interoperability ... in areas such as security operations, humanitarian assistance, disaster relief, and peacekeeping.”¹²⁷ Emphasizing the underlying strategic aim of bolstering Australia’s regional role as a security partner in the face of a concerted push by China to consolidate its influence in the Pacific Islands, Defense Minister Reynolds announced the new initiative during a visit by James Marape, Prime Minister of Papua New Guinea. The force will focus on Papua New Guinea, Fiji, and Vanuatu.¹²⁸ The force will be based in Brisbane as part of the Australian Army’s First Division, its main formation of regular forces, and Canberra is considering designating a specific naval ship to support increased cooperation with regional navies by carrying out exercises and other operations to increase interoperability.¹²⁹ The new force and the accompanying strategy are designed to ensure the Pacific region is “strategically secure, economically stable, and politically sovereign,” according to Defense Minister Reynolds.¹³⁰

*Under the Oakey Treaty, the Royal Singaporean Air Force has maintained a detachment of Super Puma utility helicopters in Oakey, Australia since 1996. The new agreement allows Singapore to base its Chinook heavy-lift helicopters in Australia. Mike Yeo, “Here’s Why Singapore Is Handing off Its Chinooks to Australia,” *Defense News*, June 25, 2018.

Pacific Islands

The Pacific Islands comprise 14 independent and freely associated countries, U.S. territories (American Samoa, the Commonwealth of the Northern Mariana Islands, and Guam), and territories of other countries (see Figure 3).^{*} Commonly divided into the geographic and cultural subregions of Micronesia, Melanesia, and Polynesia, the Pacific Islands occupy a combined land mass about the size of Spain (with a combined population of just over 10.4 million people), but their total exclusive economic zones (EEZs)[†] extend across more than 7.7 million square miles of ocean.¹³¹ Given their extensive EEZs and control over important fisheries, the Pacific Islands are more consequential than their land mass might indicate.¹³² Historically, the United States has enjoyed significant influence in the region, particularly among the Freely Associated States—the Federated States of Micronesia, the Marshall Islands, and Palau—which have signed compacts of free association with the United States.[‡] In August 2019, Secretary of State Mike Pompeo announced that the United States had begun negotiations with these states to renew their compacts of free association.¹³³

Since General Secretary Xi took office in 2012, he has emphasized the importance of greater engagement with Pacific Island countries.¹³⁴ From China's perspective, greater engagement with the Pacific Islands aims to fulfill three primary goals:

- *Addressing diplomatic and strategic priorities:* The Chinese government fears encirclement by the “second island chain,” which could prevent China from operating freely in the Western Pacific.[§] Greater Chinese engagement in the region could mit-

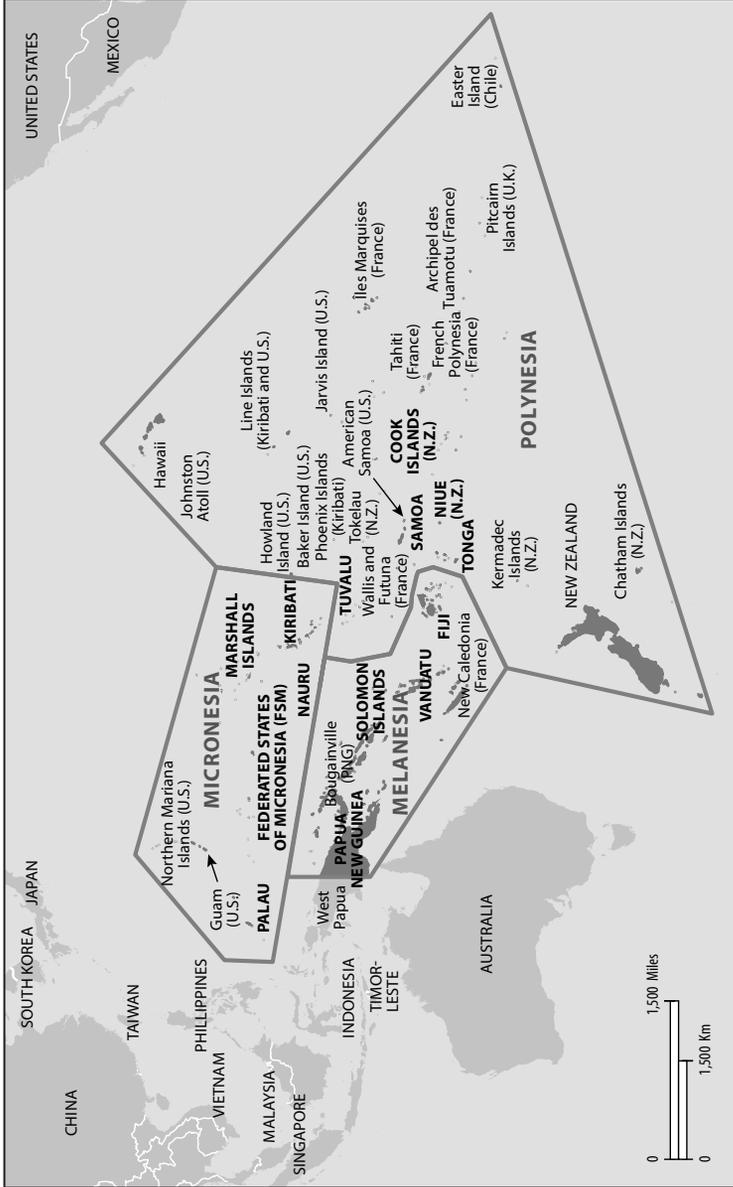
^{*}Varying names and groupings of countries and territories are used to identify the region, including the Pacific Islands, South Pacific, and Southwest Pacific. Unless otherwise stated, the term Pacific Islands is defined as including the 14 countries (excluding Australia and New Zealand), three U.S. territories, and several observer and associate member states (excluding Timor-Leste) of the Pacific Islands Forum, the dominant regional organization: American Samoa (U.S. territory and associate member), Cook Islands (freely associated with New Zealand), the Federated States of Micronesia, Fiji, French Polynesia (territory of France), Guam (U.S. territory and observer), Kiribati, Nauru, New Caledonia (territory of France), Niue (freely associated with New Zealand), Commonwealth of the Northern Mariana Islands (U.S. territory and observer), Palau (freely associated with the United States), Papua New Guinea, the Republic of the Marshall Islands (freely associated with the United States), Samoa, Solomon Islands, Tokelau (New Zealand territory and associate member), Tonga, Tuvalu, Vanuatu, and Wallis and Futuna (French territory and observer). This section on the Pacific Islands provides a condensed and updated version of the findings in the Commission's 2018 staff report, “China's Engagement in the Pacific Islands: Implications for the United States.” For more on this topic, see Ethan Meick, Michelle Ker, and Han May Chan, “China's Engagement in the Pacific Islands: Implications for the United States,” *U.S. China Economic and Security Review Commission*, June 14, 2018.

[†]An EEZ is a 200-nautical mile zone extending from a country's coastline, within which that country can exercise exclusive sovereign rights to explore for and exploit natural resources, but over which it does not have full sovereignty. UN Convention on the Law of the Sea, “Part 5: Exclusive Economic Zone,” 43–53.

[‡]The Compact of Free Association agreements the United States has signed with the Marshall Islands (1982), the Federated States of Micronesia (1982), and Palau (1983) grant each country full independence; permission to freely travel, work, or study in the United States; financial assistance; and U.S. commitment to provide for defense. In exchange, the agreements allow the United States sole military access to the lands, waterways, and airspace of the Freely Associated States. Under the terms of the agreements, direct U.S. financial assistance to the Marshall Islands and Federated States of Micronesia will continue through fiscal year 2023. Direct U.S. financial assistance to Palau will continue through fiscal year 2024, at which point a mandatory review of the agreement will take place. Derek Grossman et al., “America's Pacific Island Allies: The Freely Associated States and Chinese Influence,” *RAND Corporation*, 2019, x–xi; U.S. Senate Committee on Energy and Natural Resources, *Hearing on the United States' Interests in the Freely Associated States*, oral testimony of Douglas Domenech, July 23, 2019.

[§]The first island chain refers to a line of islands running through the Kuril Islands (Russia), Japan and the Ryukyu Islands, Taiwan, the Philippines, Borneo, and Natuna Besar (Indonesia).

Figure 3: The Pacific Islands Region



Note: Names in bold indicate the independent and freely associated countries in the region.
 Source: Adapted from Thomas Lum and Bruce Vaughn, "The Pacific Islands: Policy Issues," Congressional Research Service, February 2, 2017.

igate this constraint. China has already begun monitoring regional maritime activity, including placing acoustic sensors in the Mariana Trench near Guam and the island of Yap in the Federated States of Micronesia that, according to some assessments, could be used to monitor U.S. submarine activity in the region.¹³⁵ Moreover, Pacific Island countries have the same voting power as the world's largest economies in the UN General Assembly. They also wield a disproportionate amount of influence relative to their size on matters related to fisheries and climate change, given the importance of fisheries in their economies and their vulnerability to the effects of climate change.¹³⁶

- *Reducing Taiwan's international space:* Four of the 15 countries that still have diplomatic ties with Taiwan are in the Pacific Islands.* Since the election of Tsai Ing-wen of the independence-leaning Democratic Progressive Party in 2016, China has begun a campaign to convert Taiwan's remaining diplomatic partners, successfully establishing ties with seven of these countries.†¹³⁷ In September 2019, the Solomon Islands cut diplomatic ties with Taiwan in favor of China.‡¹³⁸ Later that month, Kiribati also announced that it was switching diplomatic recognition from Taipei to Beijing.¹³⁹
- *Accessing raw materials and natural resources:* The Pacific Islands are home to sizable quantities of natural resources and raw materials, including timber, minerals, and fish. Beijing's trade and investment in the region is focused mostly on Papua New Guinea, the region's largest economy and home to rich gold and nickel mines, liquefied natural gas, and timber.¹⁴⁰

China Increases Comprehensive Engagement with Pacific Island Countries

Over the last decade, China's total trade with Pacific Island countries has grown by a factor of four.¹⁴¹ Today, China is the largest trading partner of Pacific Islands Forum member countries (excluding Australia and New Zealand). In 2018, China's total goods trade with these countries reached \$8.6 billion, well ahead of Australia (\$5.4 billion), South Korea (\$3.5 billion), and the United States (\$1.4

The second island chain is farther east, running through Japan, the Bonin Islands (Japan), the Mariana Islands, Guam, and Palau. PLA strategists and academics have long asserted the United States relies primarily on the first island chain and the second island chain to "encircle" or "contain" China and prevent the PLA Navy from operating freely in the Western Pacific. Bernard D. Cole, *The Great Wall at Sea*, 2nd ed., Naval Institute Press, 2010, 174–176; Yu Changsen, "The Pacific Islands in China's Geo-Strategic Thinking" in Michael Powles, ed., *China and the South Pacific: The View from Oceania*, Victoria University Press, 2016, 89, 92; You Ji, "China's Emerging Indo-Pacific Naval Strategy," *Asia Policy* 22 (July 2016): 11–19.

*The four Pacific Island countries that recognize Taiwan diplomatically are the Marshall Islands, Nauru, Palau, and Tuvalu.

†China requires its diplomatic partners to accept its "One China principle" and cut off formal relations with the Taiwan government. This forces Taipei to compete against Beijing in order to retain diplomatic recognition by any country, as the third party is forced by Beijing to choose one or the other.

‡The other five countries that have switched diplomatic recognition since 2016 are São Tomé and Príncipe, Panama, Burkina Faso, the Dominican Republic, and El Salvador. In 2004, Vanuatu switched diplomatic recognition to Taiwan for one week before switching back to China.

billion).^{*142} China's investment in the region[†] has also increased greatly over the past several years, from \$462 million in 2009 to \$3.1 billion in 2017.¹⁴³ However, 68 percent of this investment was concentrated in Papua New Guinea.¹⁴⁴

In recent years, China has increased its development assistance to the Pacific Islands, which remains one of the most aid-dependent regions in the world.[‡] Between 2006 and June 2016, China provided its diplomatic partners in the region with \$1.7 billion in aid, second behind Australia (\$6.9 billion).[§] More recently, China leapfrogged other countries in pledged development assistance. According to data from the Lowy Institute, in 2017 China pledged \$4.8 billion in development assistance to the Pacific Islands, \$4.1 billion of which is a concessional loan to improve transportation infrastructure in Papua New Guinea.[¶] In contrast, Australia pledged \$1 billion in aid in 2017.¹⁴⁵ Nevertheless, Australia still outpaces China in actual spending. In 2017, the most recent year for which comparative data exist, Australia spent \$855 million in the region, far more than China's \$172 million.¹⁴⁶ Moreover, China has not yet disbursed any of the \$4.1 billion it promised for the infrastructure project in Papua New Guinea.¹⁴⁷ Still, China's increased pledges unquestionably signal greater involvement in the region. Moreover, some Pacific Island leaders prefer Chinese assistance because, unlike the United States and other international donors, China does not attach to aid explicit governance conditions such as meeting democracy, transparency, and human rights standards.¹⁴⁸

Beijing has demonstrated willingness to use economic coercion against Pacific Island countries, most notably against countries that recognize Taiwan diplomatically. For instance, between 2008 and 2015, the number of annual tourist arrivals from China to Palau—one of Taiwan's remaining diplomatic partners in the region—climbed from 634 to more than 91,000.¹⁴⁹ In November 2017, however, China reportedly told tour operators to stop selling package tours to the country. According to one Chinese businessman based in Palau, the term "Palau" had been blocked on China's internet.¹⁵⁰ Since the ban, the number of Chinese tourists to Palau has dropped significantly. To date, Palau has not succumbed to China's pressure.¹⁵¹

While China's engagement with Pacific Island countries has been largely economic, Beijing has also raised its regional military pro-

*Trade data for Niue were unavailable.

†China's government data included outgoing investments to the Federated States of Micronesia, Fiji, Palau, Papua New Guinea, the Republic of the Marshall Islands, Samoa, Solomon Islands, Tonga, and Vanuatu.

‡On a per capita basis, official development assistance is higher in the Pacific Islands than in any other region in the world. Matthew Dornan and Jonathan Pryke, "Foreign Aid to the Pacific: Trends and Developments in the Twenty-First Century," *Asia and the Pacific Policy Studies*, 4:3 (September 2017): 386–404.

§The Lowy Institute's data on Chinese development assistance includes only projects that are being implemented or are completed; projects that have been announced but not implemented are not included. The database does not include military aid, support for regional organizations, scholarships and human resources training, or donations through the China Red Cross. Data for other donor countries covers 2006–2014. Lowy Institute, "Chinese Aid in the Pacific," 2019.

¶The Lowy Institute report tracks aid to the Cook Islands, Fiji, Kiribati, the Marshall Islands, the Federated States of Micronesia, Nauru, Niue, Palau, Papua New Guinea, Samoa, the Solomon Islands, Tonga, Tuvalu, and Vanuatu. Commitments of aid are disbursed over an unspecified period of time. Moreover, large commitments are often paid back over time, resulting in negative flows, meaning that commitments often overstate a donor's footprint in the region. Lowy Institute, "About Pacific Aid Map."

file.* The PLA provides training for Pacific Island military officers in China and, under General Secretary Xi, senior PLA officers have held bilateral meetings with their counterparts from the three Pacific Island countries that have militaries.† More recently, at a July 2019 defense summit between China and Caribbean and Pacific Island countries, Chinese Defense Minister Wei Fenghe expressed willingness to deepen military exchanges and cooperation with Pacific Island and Caribbean countries as part of BRI.¹⁵²

China has also reportedly sought to establish a permanent military presence in the Pacific Islands. As early as 2014, China sent a request to the Tongan government to establish a Chinese naval base in Tonga, according to press reports.¹⁵³ More recently, in April 2018, reports emerged that officials from China and Vanuatu had held preliminary talks concerning a potential Chinese military base in Vanuatu's Luganville Wharf, funded by a \$54 million Chinese government loan and completed in August 2017 by Chinese state-owned enterprise Shanghai Construction Group.¹⁵⁴ A military base in Vanuatu would allow the PLA to station warships less than 1,250 miles from Australia's coast.¹⁵⁵ Officials in both countries denied the talks occurred.¹⁵⁶

Pacific Island Reactions to Chinese Engagement Is Mixed

China's increased presence in the Pacific Islands has led to mixed reactions among citizens of these countries. Many political leaders and the business community are enthusiastic about the economic benefits that can come from greater engagement with China. In April 2018, the mayor of the Rongelap Atoll, part of the Republic of the Marshall Islands, publicized a proposal developed jointly with a businessman from China to establish a special administrative region to attract foreign investment. The extent of Beijing's support for the proposal is unknown. Significantly, the Rongelap Atoll is located near the U.S. Ronald Reagan Missile Defense Testing Site at the Kwajalein Atoll.¹⁵⁷

Increased Chinese engagement has also translated to increased political support for Beijing, in some cases creating challenges for U.S. interests. For instance, Grant Newsham, former U.S. State Department diplomat, writes that in the Northern Mariana Islands, some of the political class favors China's presence, and among them "anything that threatens to upset that relationship, such as U.S. military bases, is viewed as a problem."¹⁵⁸

Nevertheless, the surge of Chinese activity in the small island countries has also led to concerns that China could overwhelm these countries and has in some cases created a backlash. The proposed special administrative region on the Rongelap Atoll caused an immediate controversy due to concerns the arrangement could lead to

*Due in part to China's recent military engagement in the Pacific Islands, the United States has also increased its regional military diplomacy. In December 2018, the U.S. government held discussions with the Federated States of Micronesia about opening new naval facilities, expanding an existing airport runway, and launching joint military exercises. Ben Kesling, "U.S. Military Refocuses on Pacific to Counter Chinese Ambitions," *Wall Street Journal*, April 3, 2019.

†Papua New Guinea, Fiji, and Tonga have militaries. Vanuatu has a police force and a paramilitary wing with an internal security mission. Kenneth Allen, Phillip C. Saunders, and John Chen, "Chinese Military Diplomacy, 2003–2016: Trends and Implications," *National Defense University*, July 17, 2017, 62–66; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2019*, May 2, 2019, 24.

an influx of illegal activities such as money laundering. The Attorney General of the Republic of the Marshall Islands later declared this transaction unconstitutional.¹⁵⁹ Some Pacific Island countries have also voiced concerns Chinese loans could result in a “debt trap,” similar to other countries involved in BRI. Tonga, which borrowed \$114 million from Beijing between 2008 and 2010, now has debt obligations to China equivalent to 43 percent of its GDP.¹⁶⁰ (For more on BRI-related debt concerns, see Chapter 2, “Beijing’s Internal and External Challenges.”)

Pacific Island leaders have recently stood up to perceived bullying behavior by Chinese diplomats. In September 2018, the president of Nauru demanded that Chinese diplomats apologize for their “arrogant” behavior at the Pacific Islands Forum held that month, saying, “They’re not our friends. They just need us for their own purposes.”¹⁶¹ Later, at the Asia-Pacific Economic Cooperation (APEC) Summit held in Papua New Guinea in November 2018, Papua New Guinea officials reportedly called the police after Chinese diplomats stormed into the office of the Papua New Guinea foreign minister to demand unilateral changes to the draft APEC communique. In a first, no communique was issued at the summit as a result of the Chinese diplomats’ refusal to agree to the language, particularly language agreeing to fight protectionism and unfair trade practices.¹⁶²

Australia Seeks to Compete with China’s Pacific Islands Outreach

Australia has traditionally viewed itself as the leader of Oceania and has been the largest aid donor to the region, but some observers have criticized Australia for paying inconsistent attention to the Pacific Islands.¹⁶³ In response to the inroads China had made into the Pacific Islands, the Australian government released a foreign policy white paper in 2017 that called for “stepping up” engagement in the Pacific Islands with long-term investment, economic integration, and responses to security challenges.¹⁶⁴ Since the release of the policy, Australia has announced several new economic, military, and diplomatic commitments to the region. In addition to its pledge to redevelop the Manus Island naval base in Papua New Guinea, Australia demonstrated its deepening diplomatic ties with the region in 2018 when it announced it would open diplomatic posts in the Cook Islands, Niue, French Polynesia, Palau, and the Republic of the Marshall Islands, thereby establishing a diplomatic presence in every Pacific Island country.¹⁶⁵ Finally, the Australian government’s 2019 foreign aid budget allocated a record \$952 million (AUD 1.4 billion) to the Pacific Islands, representing 35 percent of Australia’s total foreign aid budget.¹⁶⁶

Australia’s efforts have netted mixed results. In 2016, the Solomon Islands announced that it would choose Huawei to construct an undersea telecommunications cable to the island, despite earlier choosing an Australian company as part of an open bidding process. In 2018, after Australia raised concerns about the project and announced that it would fund two-thirds of the project itself, the Solomon Islands dropped Huawei in favor of an Australian supplier.¹⁶⁷

Still, Australia's pledges of assistance have not been uniformly successful in advancing its diplomatic objectives. At the Pacific Islands Forum held in August 2019, leaders of several Pacific Island countries criticized Australia for its perceived lack of commitment to addressing climate change and apparent "red lines" for the meeting's communique.* Following the meeting, the Prime Minister of Tuvalu, Enele Sopoaga, said that Australia did not understand the Pacific Islands and questioned whether Australia should continue to have membership in the Pacific Islands Forum.¹⁶⁸

Singapore

As a self-described small country that is highly reliant on international trade, Singapore has pursued close relationships with both the United States and China while prioritizing multilateralism in international affairs.¹⁶⁹ Singapore has a longstanding and deep security relationship with the United States, and is a key U.S. security partner in Southeast Asia.¹⁷⁰ Singapore also maintains close economic ties with the United States. At the same time, Singapore has extensive trading and financial ties with China. Prime Minister Lee Hsien Loong acknowledged at the May 2019 Shangri-La Forum that Singapore "can do little to influence the big powers but [is] not entirely without agency," reflecting its strategy of protecting its autonomy in foreign affairs where it can rather than siding exclusively with either the United States or China.¹⁷¹ In an August 2019 speech at Singapore's National Day rally, he described the United States as Singapore's "major security partner" as well as an important economic partner and source of investment. Expressing a desire to remain "good friends" with both the United States and China, he also highlighted China's role as Singapore's largest export market and Singapore's ethnic ties to China.¹⁷²

In recent years, Singapore's hedging approach has grown more complex in the face of determined attempts by Beijing to increase its influence in the country. China's attempts to leverage ethnic ties between the two countries to further its interests risk undermining Singapore's multi-ethnic identity and present a unique challenge to the country's decision-making autonomy.¹⁷³ Amid these concerns, the Singaporean government announced in February 2019 that it was considering the passage of counter-foreign interference legislation inspired by Australia's 2018 laws (like Australia, the Singaporean government has stressed that it does not target a particular country).¹⁷⁴

At the same time, China is a critical economic partner for Singapore. In recent years, Singapore has pursued deeper economic integration with China, particularly regarding BRI, seeking to position itself as a financial and dispute-resolution hub for the initiative. Finally, China is trying to increase its security engagement with Singapore, though it will likely be difficult to accomplish this at the expense of Singapore's longstanding security partnership with the United States.

* According to Vanuatu's Foreign Minister Ralph Regenvanu, Australia's red lines included any references to coal, announcing a target of limiting global warming to 1.5 degrees Celsius, and declaring a goal of zero emissions by 2050. Kate Lyons, "Revealed: 'Fierce' Pacific Forum Meeting Almost Collapsed over Climate Crisis," *Guardian*, August 15, 2019.

China Attempts to Leverage Ethnic and Business Ties

Beijing has long sought to leverage Singapore's large ethnic Chinese population to impose a "greater China" identity on the city-state.¹⁷⁵ In May 2019, General Secretary Xi argued overseas Chinese communities should be "bridges" promoting relations between China and other countries and building the "Chinese dream," which should be "the common dream of the sons and daughters of the Chinese nation at home and abroad."¹⁷⁶ Bilahari Kausikan, a former senior Singaporean diplomat, told the Commission China has merged the concepts of overseas and domestic Chinese and—despite Singapore's multi-ethnic identity—views Singapore as a "Chinese country" because its population of about 5.6 million is majority ethnic Chinese.*¹⁷⁷ Immigration to Singapore from China began to steadily increase in 1990. A study by China's Overseas Chinese Research Institute—a think tank directly subordinate to the United Front Work Department—found in 2014 that about a tenth of Singapore's population comprised recent migrants from China.¹⁷⁸ In announcing its consideration of counter-foreign interference legislation in February 2019, Edwin Tong, Senior Minister of State for Law and Health, cited the threat of "online falsehoods and also state-sponsored [disinformation] campaigns."¹⁷⁹ Senior Minister Tong acknowledged Singapore is a diverse, young country especially vulnerable to disinformation campaigns due to its "sensitive fault lines that foreign actors can exploit to foment distrust ... among [its] communities."¹⁸⁰

Many Singaporean ethnic Chinese business associations maintain close ties with China, which enables them to expand commercial activities between Singapore and China and serve as a point of contact between the Chinese government and ordinary businesspeople.¹⁸¹ In a November 2018 speech in Singapore, Chinese Premier Li Keqiang praised the Singapore Chinese Chamber of Commerce and Industry and the Singapore Business Federation for their "unique role" in "encourag[ing] ... Singaporean companies to go to China for business opportunities."¹⁸²

Singapore's business links to China also create vulnerabilities. For example, according to Russell Hsiao, executive director of the Washington, DC think tank Global Taiwan Institute, through business associations Beijing can influence businesspeople by making it harder for them to obtain contracts, licenses, or permits to do business in China, especially in the real estate sector.¹⁸³ At a July 2017 dialogue with Prime Minister Lee, a senior executive of Singaporean sovereign wealth fund Temasek lamented that Singaporean businesspeople are the first "to come under some pressure or tension whenever there is some pressure on the diplomatic front," and on matters regarding China in particular, indicating an awareness of this vulnerability.†¹⁸⁴

*As of the end of June 2019, Singapore's resident population was 74.4 percent majority ethnic Chinese. The remainder of Singapore's population is mostly Malay (13.4 percent) and Indian (9 percent). Singapore's Department of Statistics, *Population Trends 2019*, 2019, 5.

†Singapore-based CapitalLand, Asia's largest real estate firm, is a prominent example of a commercial interest group closely linked with the Singaporean government and with substantial interests in China. As of December 2018, CapitalLand had assets in 62 Chinese cities worth \$16.9 billion, equaling 36 percent of the company's entire portfolio. Blurring the lines between the interests of the Singaporean state and one of its largest corporations, Temasek became majority shareholder of CapitalLand in June 2019, an investment estimated at about \$4.4 billion, or almost 2 percent of Temasek's \$226 billion portfolio. Temasek's investments in China constitute 26 percent

Economics and Trade

For a small island city-state, Singapore wields outside economic clout.¹⁸⁵ As a highly developed economy with multiple engines of growth, including globally competitive high-tech manufacturing clusters, Singapore is one of the world's leading financial and transportation hubs.*¹⁸⁶ With a small domestic market presenting limits to growth, Singapore has pursued an externally-focused economic strategy.¹⁸⁷ The country's economy is largely driven by value-added manufacturing, particularly in the electronics and precision engineering sectors, and the services sector, particularly in the finance and insurance sector and the information and communications sector.¹⁸⁸

Singapore's open, trade-dependent economy† has made it particularly vulnerable to U.S.-China trade tensions—which have disrupted supply chains across Asia—and weakened global demand.¹⁸⁹ Singapore's GDP growth is expected to decline sharply in 2019 as a result, with the Singaporean government forecasting a range of 0 percent to 1 percent for full-year GDP growth, down from 3.2 percent in 2018.¹⁹⁰ In June 2019, Singapore's non-oil exports‡ experienced their largest decline in more than six years, led by a steep drop in electronics exports.¹⁹¹

China-Singapore Trade and Investment

China is Singapore's top trading partner and FDI destination. While the two countries have close economic ties, Singapore's diverse trade and investment relations make it less dependent on any one country.§ China-Singapore goods trade was \$100 billion in 2018, accounting for 13 percent of Singapore's total goods trade (see Figure 4).¶ In 2018, Singapore's top goods exports to China

of its portfolio—as much as Temasek's investments in Singapore itself. CapitaLand, "Financial Year 2018 Results," February 2019, 38; CapitaLand, "Global Presence Map," 2019; CapitaLand, "CapitaLand Property Portfolio Integrated Developments," December 31, 2018; Temasek, "Portfolio Performance," 2019; CapitaLand, "Ownership Summary," June 30, 2019; Anshuman Daga and Aradhana Aravindan, "CapitaLand Bets on New Markets With \$4.4 Billion Temasek Real Estate Deal," *Reuters*, January 13, 2019.

*According to the Global Financial Center Index, Singapore is the fourth-leading global financial center, after New York, London, and Hong Kong. China Development Institute and Z/Yen Group, "The Global Financial Centers Index 23," March 2019.

†Singapore is one of the most export-reliant economies in the world, with trade equivalent to 326 percent of GDP in 2018. In comparison, trade accounts for 38 percent of GDP in China, 27 percent of GDP in the United States, and 86 percent of GDP in the EU. World Bank, "Trade (% of GDP)."

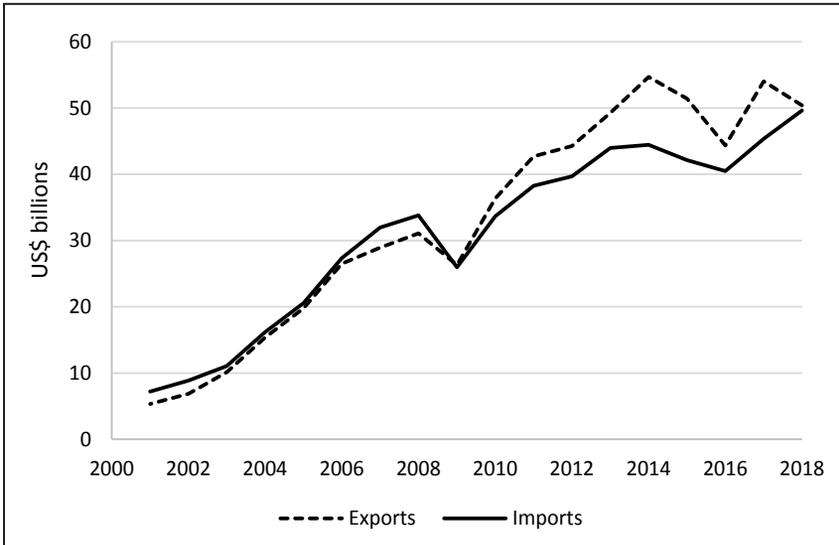
‡Singapore reports non-oil domestic exports separately from its total exports because they are a better gauge for assessing the overall health of Singapore's export-reliant economy. Oil exports are separated out because while they are a top export category for Singapore, the prices of refined oil products are volatile. Singapore lacks domestic oil reserves, but is one of the world's top oil trading and refining centers. Additionally, as a regional trading hub, the vast volume of Singapore's exports are re-exports, which do not undergo any value-added processes. As a result, top-line trade data (comprising domestic exports and re-exports) are less useful a gauge for Singapore's economy. *Nikkei Asian Review*, "Singapore Non-Oil Domestic Exports Stage Surprise Rebound," March 18, 2019; U.S. Energy Information Administration, "Singapore," July 2016; *Business Times*, "Singapore's Economic Indicators," April 10, 2015; Moody's Analytics, "Singapore: Foreign Trade."

§After China, Singapore's top trading partners in 2018 were Malaysia (accounting for 11.3 percent of Singapore's total goods trade), the EU (10.9 percent), the United States (9.3 percent), Hong Kong (6.7 percent), and Taiwan (6.2 percent). In 2017 (the latest year for which data are available), Singapore's top sources of FDI were the United States, Cayman Islands, British Virgin Islands, Netherlands, and Japan. Singapore's Department of Statistics, *Singapore's International Trade*. <https://www.singstat.gov.sg/modules/infographics/singapore-international-trade>; Singapore's Department of Statistics, *Singapore Direct Investment*, March 2019.

¶In comparison, U.S. goods trade with Singapore totaled \$60.4 billion in 2018. Office of the U.S. Trade Representative, "Singapore." <https://ustr.gov/countries-regions/southeast-asia-pacific/singapore>.

were electrical and electronic equipment (\$15.7 billion); nuclear reactors, boilers, and machinery (\$6.1 billion); plastics (\$5.7 billion); mineral fuels (\$4.7 billion); and organic chemicals (\$3.6 billion).¹⁹² Singapore's top imports from China were electrical and electronic equipment (\$20.8 billion); nuclear reactors, boilers, and machinery (\$10.4 billion); mineral fuels (\$6.3 billion); and optical and medical instruments (\$1.1 billion).¹⁹³

Figure 4: Singapore's Goods Trade with China, 2001–2018



Source: UN Comtrade.

Singapore is China's largest foreign investor.¹⁹⁴ According to Singapore government statistics, at the end of 2017 (latest data available) Singapore invested \$101.4 billion (SGD 140 billion, cumulative) in China, comprising 16 percent of Singapore's total outbound investment, up from \$99.3 billion (SGD 137 billion) in 2016.*¹⁹⁵ Singapore's FDI in China includes major government-linked development projects as well as commercial investments.¹⁹⁶ Manufacturing made up the largest share of Singapore's FDI in China in 2017 at 44 percent, followed by real estate (23 percent), wholesale and retail trade (14 percent), and financial and insurance services (10 percent).¹⁹⁷ Singapore's FDI flows to China have risen dramatically from \$11.4 billion (SGD 15.7 billion) in 2001, when China joined the World Trade Organization.¹⁹⁸ In turn, China was Singapore's 12th largest source of FDI at the end of 2017 at \$26.3 billion (SGD 36.3 billion, cumulative), up from \$17.3 billion (SGD 23.9 billion) in 2016, led by investment in financial and insurance services (\$12.8 billion [SGD 17.6 billion]) and wholesale and retail trade (\$9.9 billion [SGD 13.7 billion]).¹⁹⁹ Nonetheless, the United States remains Singapore's largest source of FDI, with U.S. FDI in Singapore (cumulative) reaching \$274.3 billion in 2017.²⁰⁰

*Unless noted otherwise, this section uses the following exchange rate throughout: \$1 = Singapore Dollar 1.38.

Singapore's close economic ties to China can also be seen in recent agreements. In November 2018, Singapore and China signed an updated free trade agreement, and the two countries have signed memoranda of understanding (MOUs) on trade promotion, financial technology cooperation, and technology parks.²⁰¹ Bilateral economic cooperation also centers on government-to-government projects, such as the Guangzhou Knowledge City project.²⁰² Originally a business-led initiative to build a smart industry park near Guangzhou to attract high-tech industries, Guangzhou Knowledge City was upgraded to a state-level bilateral cooperation project in November 2018.* Singaporean companies will be able to access opportunities in China's Greater Bay Area through Guangzhou.²⁰³ (For further details on the Greater Bay Area, see Chapter 6, "Hong Kong.")

Singapore Becoming a Key Hub in China's BRI

Singaporean officials, seeking to maintain the city's role as a regional economic hub, have expressed support for BRI while calling for the initiative to become more inclusive and transparent.²⁰⁴ In recent years, Singapore's standing as a financial and legal intermediary for BRI projects has grown.†²⁰⁵ It is a key conduit for BRI-related foreign direct investment. About a quarter of China's total investments in BRI countries and 83 percent of BRI countries' investments in China transit through Singapore.²⁰⁶

Singapore is also positioning itself as a dispute resolution hub for BRI, leveraging its reputation as a neutral jurisdiction with strong rule of law. In January 2019, the China Council for the Promotion of International Trade—a state body responsible for developing business cooperation with other countries—and the Singapore International Mediation Center signed an MOU to establish an international mediation panel to resolve BRI-related commercial disputes comprising mediators from China, Singapore, and other BRI countries.²⁰⁷ According to Singapore's Senior Minister of State for Law and Health Edwin Tong, the panel would reflect "a new way of settling cross-border commercial disputes that better reflect Asian values and is also tailored to Asia's needs."²⁰⁸ This collaboration is part of broader efforts by China and Singapore to promote mediation—a more consensus-driven approach to dispute resolution—as a complement or alternative to arbitration and litigation in the context of BRI-related disputes.²⁰⁹

Singapore also participates in BRI through the Chongqing Strategic Connectivity Initiative, an intergovernmental project launched in 2015 aimed at improving transport, financial, and digital links between China's less developed western regions and the rest of the country, and between China and the Association of Southeast Asian

*The project is a joint venture between Singaporean real estate development firm Ascendas-Singbridge and Chinese SOEs under the Guangzhou Development District Administrative Committee. Center for Livable Cities, "Sino-Singapore Guangzhou Knowledge City: A New Paradigm in Collaboration," 2017, 16–21.

†Singapore competes with Hong Kong as an international hub for financing and dispute resolution, but has a few advantages over Hong Kong. Singapore is considered neutral ground as trade tensions between China and the United States escalate. The 2019 anti-extradition bill protests in Hong Kong have further enhanced Singapore's attractiveness as a secure regional hub. *Straits Times*, "Tale of Two Cities: Hong Kong Turmoil May Boost Singapore's Financial Hub Status," June 20, 2019.

Nations (ASEAN).²¹⁰ Additionally, Singapore and China have signed MOUs to promote cooperation between Singaporean and Chinese companies in other BRI countries.²¹¹ Examples of cooperation in third-party markets include:

- In April 2019, Singaporean state-owned infrastructure consultancy Surbana Jurong and China's state-owned Silk Road Fund signed an agreement to establish a \$500 million co-investment platform to finance infrastructure projects in Southeast Asia.²¹²
- In April 2018, Singaporean supply chain management company YCH Group and Chinese e-commerce logistics services firm Forchn Holdings signed an agreement to launch a \$150 million private equity fund to acquire logistics assets in China and Southeast Asia.²¹³
- Singaporean water purification and wastewater treatment company Darco Water Technologies has partnered with China State Construction Engineering Corporation on waste management projects in China and ASEAN countries.²¹⁴

Singapore Deepens Security Ties with the United States amid Increasing Chinese Engagement

While increasing its security engagement with China, Singapore is also drawing closer to the United States. The United States provides Singapore with key defense technology and space for military training, and more than 1,000 Singaporean military personnel currently train in the United States.²¹⁵ Singapore cooperates with the United States on matters such as counterterrorism and maritime security and provides the United States the use of important military facilities in the country, hosting a key U.S. Navy logistics unit and a rotation of littoral combat ships.²¹⁶ Singapore is further tied to the United States via \$7.34 billion in ongoing arms sales, including F-16 upgrades and pilot training, Apache attack helicopters, and various munitions.²¹⁷

According to Bilahari Kausikan, to demonstrate the value of continued U.S. presence in Southeast Asia as opposed to China's presence, the United States simply needs to continue to "show up" and demonstrate consistent interest in the region.²¹⁸ An example of that commitment came in the first U.S.-ASEAN Maritime Exercise, held in September 2019, where the ships and aircraft involved worked together in a combined task force structure as they would in a real-world scenario.²¹⁹ Singapore hosted an ashore support team for the exercise, and its Information Fusion Center at Changi Naval Base provided additional support.²²⁰

Deepening U.S.-Singapore defense relations have built off a long history of bilateral defense agreements. The first MOU between the two countries, which was signed in 1990 and allowed the United States use of Singapore's defense facilities,* was controversial at the time, according to Mr. Kausikan, likely be-

*Under the terms of this MOU, the United States has rotated fighter jets for exercises, refueling, and maintenance, as well as littoral combat ships and P-8 Poseidon maritime surveillance aircraft. Singapore's Ministry of Defense, *Singapore and U.S. to Renew Defense Memorandum of Understanding*, September 24, 2019.

cause it “went against the grain of regional sentiment,” as one Brookings Institution scholar argues.²²¹ Mr. Kausikan told the Commission its renewal in 2010 did not raise concerns, however, possibly due to the evolving threat perceptions of China among the Singaporean public and elite.²²² In 1998, Singapore and the United States signed an addendum to the original agreement allowing U.S. aircraft carriers to dock at Changi Naval Base, the only naval facility in Southeast Asia constructed specifically for U.S. aircraft carriers.*²²³ In 2015, then U.S. Secretary of Defense Ash Carter and Singaporean Minister for Defense Ng Eng Hen signed an upgraded Defense Cooperation Agreement enhancing bilateral ties in the military, policy, strategic, and technology spheres, as well as in non-conventional security cooperation.²²⁴ In 2019, President Donald Trump and Prime Minister Lee formally extended the MOU through at least 2035. During the signing ceremony, Prime Minister Lee said he hoped the agreement would be “a means for the [United States] to deepen its engagement in Southeast Asia and in the Asia-Pacific region.”²²⁵

China aspires to play a leadership role in Asia’s security architecture and likely views increased engagement with Singapore as critical to realizing this ambition. Beijing and Singapore have explored deepening their defense relationship through military exercises, such as the first China-ASEAN military exercise which occurred in October 2018 while Singapore was chair of ASEAN.²²⁶ In late May 2019, they announced they would revise their formal defense agreement from 2008, known as the Agreement on Defense Exchanges and Security Cooperation, to include more high-level dialogues, new arrangements for service-to-service cooperation, academic and think tank exchanges, and larger-scale military exercises. It is currently unclear how much the revised agreement will affect cooperation in practical terms.²²⁷

One factor that could inhibit China’s ability to deepen security relations with Singapore is the latter’s continuing relationship with Taiwan. Singapore maintains good relations with Taiwan and holds regular exchanges and visits, though the latter publicizes these visits via social media posts rather than press releases on government websites.²²⁸ Singapore met with Taiwan at the APEC summit in November 2018 despite pressure from China not to do so.²²⁹ According to Bernard Loo, Senior Fellow at the S. Rajaratnam School of International Studies, Singapore has informally ceased the large-scale combined arms exercises it historically conducted in Taiwan due to diplomatic pressure from Beijing, though it has defied Beijing’s attempts to persuade it to cut ties with Taiwan completely and has continued lower-level military training on the island.²³⁰ In a meeting with the Commission, a senior Southeast Asian official said Singapore does not want its ongoing relations with Taiwan to be politicized, and Singapore-Taiwan military training remains an “open secret.”²³¹

*Changi Naval Base is open to all international partners, but it was built specifically to be compatible with U.S. aircraft carriers. It also has a new runway built specifically for U.S. heavy aircraft. Bernard Loo, Senior Fellow, S. Rajaratnam School of International Studies, meeting with Commission, Singapore, May 17, 2019; Lynn Kuok, “The U.S.-Singapore Partnership: A Critical Element of U.S. Engagement and Stability in the Asia-Pacific,” *Brookings Institution*, July 2016, 5; *Federation of American Scientists*, “Singapore Changi Naval Base,” September 5, 1999.

Singapore's Concerns over Chinese Influence in ASEAN

Singapore has been concerned by Beijing's efforts to divide ASEAN countries over critical regional issues and views these efforts as potentially fatally undermining the bloc's unity and ability to play a leading role in Southeast Asia. China's interests have been most visible in the South China Sea, where it has asserted expansive territorial claims, impinging on the territorial claims of several key ASEAN members.

As ASEAN operates on a consensus basis, the objection of one member country is sufficient to block ASEAN decisions or statements. In 2012 and 2016, Cambodia blocked joint ASEAN resolutions containing language critical of China's activity in the South China Sea, reportedly at Beijing's behest.²³² 2012 marked the first time in ASEAN's history that it failed to issue a joint communique, leading Singapore's then foreign minister K. Shanmugam to opine, "Building a strong, cohesive and autonomous ASEAN remains a key goal of our foreign policy.... If we cannot address major issues affecting or happening in our region, ASEAN centrality will be seen as a slogan without a substance. Our ability to shape regional developments will diminish."²³³

In April 2016, Chinese Foreign Minister Wang Yi announced China had reached a consensus with Brunei, Cambodia, and Laos on the South China Sea, including that territorial disputes in the South China Sea were "not an issue between China and ASEAN as a whole."²³⁴ Singapore's Ambassador-at-Large Ong Keng Yong said the announcement amounted to "interfering in the domestic affairs of ASEAN."²³⁵ Bilahari Kausikan argued the "so-called consensus" could be "interpreted as a means to divide ASEAN."²³⁶

Implications for the United States

China's ties with Australia, New Zealand, the Pacific Islands, and Singapore are reflective of its broader effort to replace the United States as the preferred strategic partner for countries in the Indo-Pacific region. In all of these cases, Beijing is attempting to neutralize opposition to its strategic goals and interests while gaining support for its ambition to play the dominant regional leadership role. As these countries respond, they are struggling to balance economic ties with their interests in maintaining their sovereignty, security, and continued existence in a free and open regional order.

U.S. and Australian officials have both stressed that the U.S.-Australian alliance remains vital and unbreakable, the considerable impact of the U.S.-China relationship on the alliance notwithstanding.²³⁷ Australian ambassador to the United States Joe Hockey has explicitly compared the U.S.-Australian "mateship" to the bond between the two countries' soldiers in World War I, in which U.S. troops "earned the right to be called [Australians'] mates." The U.S. ambassador to Australia has described the alliance with equal gravity, calling it "solemn, unshakable, and unbreakable."²³⁸ These remarks are consistent with Australia's most recent defense white paper (issued in 2016), which described its alliance with the United States as at the "core of [its] security and defense planning."²³⁹ The

alliance remains popular among the Australian public as well. According to an annual poll conducted by the Lowy Institute, Australians have “consistently expressed support” for the alliance, largely due to shared values and the belief the United States would come to Australia’s aid if it was under threat.²⁴⁰

Canberra hesitates to intrude on its critical economic interests in China. Popular perceptions understate Australia’s economic ties to the United States. According to a participant at an American Chamber of Commerce in Australia Governors’ meeting with the Commission, U.S. investment in Australia often flies under the radar: U.S. companies are household names, but they are not recognized as FDI.²⁴¹ In contrast, Australians are well aware China is Australia’s largest trading partner, and new Chinese investment continues to attract significant media attention.²⁴²

Beijing’s growing engagement with the Pacific Islands could threaten the United States’ military presence and power projection capabilities in the Indo-Pacific. Under the Compact of Free Association, the United States enjoys exclusive military access to Palau, the Federated States of Micronesia, and the Republic of the Marshall Islands, which also host critical U.S. military installations. Beijing’s economic leverage over Pacific Island countries could undermine the region’s longstanding support for U.S. positions in international organizations as well as flip Taiwan’s remaining diplomatic partners in the Indo-Pacific.

Singapore continues to balance a desire for continued strong economic ties with China with its enduring security partnership with the United States, but China is making concerted efforts to increase its engagement with Singapore. Singapore’s key role as a financial hub for BRI and increased security cooperation with China are the most recent reflections of its challenge in maintaining this balance.²⁴³ In addition, the United States faces a challenge in Singapore similar to that in Australia: a perception that China is a more important economic partner, even though U.S. investment in Singapore was 10 times that from China over the past decade.²⁴⁴

Australia, the Pacific Islands, and Singapore are committed to their relationships with the United States, particularly as China steps up economic coercion, military deployments, and political influence efforts threatening these countries. However, China’s economic heft and increasing willingness to punish countries defying its goals, combined with perennial questions over the durability of the U.S. commitment to the region, will continue to chip away at U.S. influence absent a coordinated, robust response.

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CHAPTER 5

TAIWAN

Key Findings

- In 2019, General Secretary Xi Jinping made clear his increasingly uncompromising stance toward Taiwan's independent status and sense of urgency regarding unification. Beijing intensified its multipronged campaign to coerce and isolate Taiwan, including by supporting Taiwan politicians Beijing finds palatable, while opposing and seeking to discredit those it does not, particularly Taiwan's elected government headed by President Tsai Ing-wen. Guided by this policy, Beijing redoubled its efforts to bypass Taiwan's central government by conducting negotiations with unelected political parties, groups, and individuals.
- The deliberate crossing of the Taiwan Strait median line by Chinese fighter aircraft in March 2019 was the first such crossing in 20 years and marked a sharp escalation in the military pressure Beijing has increasingly applied against Taipei since General Secretary Xi assumed power in 2012. China signaled that its intensifying campaign of military coercion had become official policy in a key policy document released in July 2019, while the continued growth of the Chinese People's Liberation Army's (PLA) capabilities and budget threatened to overturn any remaining semblance of cross-Strait military balance.
- As Beijing escalated diplomatic, economic, cultural, and political warfare against Taiwan, evidence emerged that it sought to influence Taiwan's November 2018 local elections, including through traditional Taiwan media and disinformation spread through social media to exacerbate social divisions and undermine public confidence in the ruling Democratic Progressive Party (DPP) government. Allegations that Beijing intervened on behalf of Taiwan presidential challenger Han Kuo-yu of the Nationalist Party (Kuomintang, or KMT) in his 2018 Kaohsiung mayoral campaign raised questions over whether it may be doing so again in the lead-up to Taiwan's presidential election in January 2020.
- The Chinese Communist Party (CCP) adopted new tactics to leverage Taiwan media in support of its political goals, with evidence building that Beijing has shaped coverage of cross-Strait relations and potentially Taiwan's presidential election through direct partnerships with some major Taiwan media outlets. These partnerships have included China's Taiwan Affairs Office commissioning stories and giving instructions to editorial managers.

- Concerns in Taiwan over Beijing’s desired “one country, two systems” unification model for Taiwan were amplified by 2019’s massive protest movement in Hong Kong, which is governed by the same model and has seen the autonomy the model promises steadily erode. Presidential contenders from both major political parties in Taiwan assailed the “one country, two systems” model as unacceptable for any future sovereign agreement between the two sides.
- Taiwan took a series of steps to enhance its military capabilities and implement its new Overall Defense Concept. These measures included the island’s largest increase in its defense budget in more than a decade, breaking ground on the facility that will build Taiwan’s indigenous submarines, allocating funding for the procurement of 60 new small fast-attack missile boats, and expediting production of new missile defense systems and mobile land-based antiship missile platforms.
- U.S.-Taiwan cooperation expanded into new areas as the United States took significant steps to support Taiwan, including the Trump Administration’s approval of a landmark arms sale of new fighter aircraft to Taiwan, the first meeting between U.S. and Taiwan national security advisors since 1979, and a more assertive approach to U.S. Navy transits of the Taiwan Strait. However, talks under the Trade and Investment Framework Agreement have stalled since October 2016.

Recommendations

The Commission recommends:

- Congress direct the U.S. secretary of state to submit to Congress a report on actions that have been and will be taken by the United States to counter Beijing’s attempts to isolate Taiwan’s democratically-elected leaders and to strengthen support for Taiwan’s engagement with the international community, including actions the Administration will take should Beijing increase its coercion against Taiwan. The report should:
 - List measures the U.S. government has taken and will take to expand interactions between U.S. and Taiwan government officials in accordance with the Taiwan Travel Act.
 - Formulate a strategy to expand development aid and security assistance to countries that maintain diplomatic ties with Taiwan.
 - Detail steps to expand multilateral collaboration involving Taiwan and other democracies to address global challenges, such as the Global Cooperation and Training Framework’s workshops on epidemics, cybersecurity, and media literacy.
- Congress direct the Office of the Director of National Intelligence to conduct a study on the impact of a Taiwan Strait contingency on the supply of high-technology products to the United States from Taiwan, China, Japan, and South Korea.
- Congress direct the U.S. Department of Defense to prepare a classified study on how PLA modernization targets to be met by

2035 will impact the ability of the United States to uphold its obligation established in the Taiwan Relations Act to maintain the ability to resist any resort to force that would jeopardize the security of Taiwan. This study would be briefed to all relevant committees of jurisdiction and provide the basis for a 15-year plan of action aimed at deterring Beijing from making a military attempt to unify Taiwan with China.

- Congress enact legislation to enhance U.S.-Taiwan security cooperation. Such legislation should contain provisions to:
 - Clarify that direct interactions between uniformed members of the armed forces of the United States and Taiwan in support of Taiwan's self-defense capability are fully consistent with the Taiwan Relations Act and the U.S. position of maintaining relations with the people of Taiwan.
 - Direct the Administration to increase military exchanges and training with Taiwan, including but not limited to humanitarian assistance and disaster relief, search and rescue, and any other skills supporting regional peace and security.
 - Direct the Administration to permit active-duty Taiwan military officers to wear their uniforms during visits to the United States.
 - Direct the Administration to permit active-duty U.S. military officers to wear their uniforms during visits to Taiwan.
- Congress raise the threshold of congressional notification on sales of defense articles and services to Taiwan to the highest tier set for U.S. allies and partners. Congress also terminate any requirement to provide prior notification of maintenance and sustainment of military equipment and capabilities previously sold to Taiwan.

Introduction

April 2019 marked the 40th anniversary of the signing into law of the Taiwan Relations Act (TRA) of 1979, which set the foundation for continued ties between the United States and Taiwan following the United States' severing of diplomatic ties with the Republic of China (Taiwan) in 1978. In the 40 years since the TRA's signing, Taiwan has moved away from martial law and become a thriving multi-party democracy. Taiwan has a robust civil society and rule of law that protects universal human rights, open public discourse, and a free and independent media. The vibrancy of Taiwan's democratic system is on display in the ongoing campaigns for the 2020 presidential and legislative elections, as it was in its November 2018 municipal and county elections.

In addition to being a model of a successful democracy for the Indo-Pacific region, Taiwan has become an increasingly important economic and geostrategic partner for the United States. While Washington stopped recognizing Taipei as the government of China in 1979, it never accepted Beijing's position—that Taiwan was part of the People's Republic of China (PRC)—as its own policy. Congress and each successive U.S. administration have reiterated the U.S. commitment to maintaining separate relations with Tai-

wan until its final status is settled by peaceful means acceptable to the people of Taiwan. Until that happens, the U.S. government has committed to make available to Taiwan the defense articles and services necessary to enable it to maintain a sufficient self-defense capability.

Meanwhile, throughout 2019 Beijing adopted a more coercive approach, seeking to isolate and intimidate Taiwan into unification on Beijing's terms. In January 2019, General Secretary of the CCP Xi Jinping delivered a major speech on Beijing's Taiwan policy in which he claimed that Taiwan's unification with the PRC was inevitable and indicated that the "one country, two systems" model was the only acceptable arrangement for unification. That model, which has steadily eroded in Hong Kong, has been roundly rejected by the Taiwan public and multiple Taiwan presidential administrations. Beijing also increased its military coercion of Taiwan, releasing a defense white paper articulating a forceful approach to cross-Strait policy and carrying out a set of military intimidation measures against the island not seen in 20 years.

In the political sphere, Beijing wielded a range of diplomatic, economic, military, and political warfare tools as part of a multipronged coercion campaign to shape Taiwan's cross-Strait policies to its liking and isolate Taipei from the international community. These tools include promises of greater international space and economic benefit for Taiwan politicians whose policies are more palatable to Beijing. As Beijing continues its policy to reduce contact with and attempt to isolate President Tsai's administration, it has stepped up outreach to opposition politicians at the party and local government levels.

Other tools in Beijing's coercion campaign include efforts to influence and shape Taiwan's media environment. Evidence has grown that Beijing intervened on Han Kuo-yu's behalf in his successful campaign for mayor of Kaohsiung City in 2018 and that it may be doing so again as he runs for president in Taiwan's upcoming January 2020 election.¹ The election could have a major impact on Taiwan's cross-Strait policy, with Mayor Han stating that he supports the "1992 Consensus"—a controversial framework for cross-Strait relations that President Tsai has refused to endorse.² His campaign pledges to deepen Taiwan's economic ties with China, and his meetings with senior Chinese officials in Hong Kong and mainland China in early 2019 prompted opposition from the ruling DPP and some Taiwan civil society groups that are skeptical of a closer cross-Strait economic relationship.³

In response to Beijing's increased pressure on Taiwan, President Tsai continued her efforts to boost economic growth, find new markets and develop new trade partnerships, support new innovative and job-creating industries, and strengthen Taiwan's self-defense capabilities. Simultaneously, Taiwan took new steps to enhance cooperation with the United States and other like-minded countries in a range of areas, including global health, disaster relief, and security.

This section explores developments in cross-Strait military and security issues, Taiwan's external relations, trade and economic policy, and U.S.-Taiwan relations. It is based on the Commission's September 4 hearing on U.S.-China relations in 2019, consultations

with experts on Taiwan and cross-Strait relations, and open source research and analysis.

Cross-Strait Military and Security Issues

In 2019, Beijing adopted a number of stronger measures to militarily pressure Taiwan and new evidence emerged of Beijing's political warfare efforts to influence and interfere with Taiwan's democratic process. The PLA carried out a series of provocative operations in the waters and airspace near Taiwan not seen in 20 years while Beijing enshrined a more forceful stance toward Taiwan in its new defense white paper issued in July 2019. Meanwhile, the cross-Strait military balance continued to shift in Beijing's favor. While Taipei took new measures to respond to these threats, including through increasing collaboration with Washington, it remains unclear whether these efforts will prove sufficient to ensure Taiwan's security and restore stability to the cross-Strait balance.

Beijing Escalates Military Pressure against Taiwan

On March 31, Beijing sharply escalated its military pressure tactics against Taiwan when two Chinese fighter aircraft crossed the median line of the Taiwan Strait, an informal demarcation last crossed intentionally by PLA aircraft in 1999.⁴ Taiwan media reported the fighters took off from southeastern China, flew south before flying across the middle of the Strait, and then flew almost 50 miles into Taiwan's side of the median line, staying there for 12 minutes.⁵ In response to the crossing, the Taiwan Air Force immediately dispatched its own fighter aircraft, which ordered the PLA aircraft by radio to leave the area.*⁶

The median line crossing represented a significant change to the cross-Strait status quo and introduced a serious new challenge to maintaining cross-Strait stability. Both sides' military aircraft have generally respected the median line since it was drawn in the 1950s. Furthermore, prior to the median line crossing incident, Beijing had taken other actions to exert pressure on Taiwan's airspace, including conducting circumnavigation flights around Taiwan by PLA aircraft, presenting Taipei with a new, multidirectional military threat. Beijing's unwillingness to abide by these longstanding tacit agreements suggests it may choose to further alter the status quo with additional median line crossings. President Tsai ordered the Taiwan military to conduct a "forcible expulsion" of any PLA aircraft that cross the median line in the future.⁷ In responding to Beijing, Taipei also could take reciprocal action by sending military aircraft across the mainland side of the median line, which could further test stability in the Strait.

*In the decades following the drawing of the Taiwan Strait median line in 1955 by General Benjamin O. Davis, then commander of the U.S. Air Force's Taiwan-based 13th Air Force, Taiwan's military superiority made it too dangerous for PLA aircraft to cross the line. In fact, the Taiwan military never publicly acknowledged the median line until 1999, when the PLA's previous deliberate crossing occurred, because it could control the airspace over the entire Taiwan Strait. With the shift in the cross-Strait military balance in China's favor over the last two decades, this is no longer the case. You Kaixiang, "Taiwan Strait Median Line Reflects Shift in Cross-Strait Military Power" (台灣海峽中線 反映兩岸軍力消長), *Central News Agency*, April 2, 2019. Translation; *Taiwan Today*, "Median Line Issue Raises Questions over Beijing's Agenda," July 17, 2009.

The March 2019 median line crossing was followed by a series of significant PLA training events, including exercises on a scale not seen since the mid-1990s.⁸ A few weeks after the crossing, the PLA trained for what PLA press called a “joint firepower assault” near Taiwan involving bomber aircraft, naval surface combatants, amphibious ships, and helicopters.⁹ Then, in late July and early August, the PLA conducted two large-scale exercises in waters near the Taiwan Strait area, including an amphibious “beach raid.” According to the *South China Morning Post*, this was the first time the PLA had conducted simultaneous exercises in two locations near Taiwan since the Taiwan Strait Crisis of 1995–1996, a major crisis prior to Taipei’s first direct presidential election during which the PLA carried out live-fire missile tests landing in the waters near Taiwan.¹⁰

The median line crossing is part of a trend of increased PLA activity near Taiwan in recent years, which has substantially raised the risk of miscalculation or an accident occurring between Chinese and Taiwan aircraft and ships. This activity has included regular transits of the Taiwan Strait by China’s first aircraft carrier. While the carrier has stayed on China’s side of the median line, its movements through the Strait have been viewed by Taipei as further destabilizing the cross-Strait status quo.¹¹

Beijing has also increased pressure on Taiwan through flights by PLA aircraft near and around Taiwan, although publicly reported flights dropped by half in the first nine months of 2019 compared to all of 2018, including a decrease in circumnavigation flights from four to one.¹² However, the decrease in flights near the island was almost certainly a temporary modulation in pressure, potentially aimed at lessening more openly provocative intimidation measures during the lead-up to Taiwan’s presidential election.* China’s latest defense white paper indicated that PLA naval operations and flights encircling Taiwan had become an important tool of official policy, claiming these activities “send a stern warning to the ‘Taiwan independence’ separatist forces.”¹³

Underscoring the risk of miscalculation or accident, in August 2019 a PLA Navy ship and a Taiwan commercial freighter collided at night on the PRC side of the Taiwan Strait near the Taiwan-controlled island of Kinmen.¹⁴ Following the collision, the PLA Navy ship demanded the Taiwan freighter sail with it to the Chinese port of Xiamen, a demand the Taiwan ship rejected. Taiwan media later reported that the collision knocked a piece of sensitive PLA military equipment onto the Taiwan ship, possibly explaining the PLA’s request.¹⁵

Defense Acquisitions and New Policy Document Further Increase Threat Perceptions

Meanwhile, large increases in China’s defense spending continue to fuel a massive expansion of the PLA, which remains primarily focused on preparing for a conflict against Taiwan.¹⁶ Beijing’s modernization of its naval, air, missile, space, and cyber

*The PLA also temporarily ceased flying near Taiwan during the six months prior to Taiwan’s November 2018 elections before resuming them in December 2018. *Liberty Times*, “Why Have Circumnavigations of Taiwan ‘Become Quieter’ since the Nine-in-One? An Expert Provides Analysis” (為何九合一後共軍繞台「變安靜」? 專家提分析 ...), January 28, 2019. Translation.

forces has resulted in a PLA that is currently capable of conducting a range of punitive military campaigns against Taiwan. Acquisitions in 2019, such as the delivery of the remaining 24 Su-35 fighter aircraft China purchased from Russia and delivery of the second batch of Russian S-400 surface-to-air missiles, will further bolster the PLA's capabilities.¹⁷

The U.S. Department of Defense (DOD) continues to assess that the PLA is capable of carrying out a range of operations against Taiwan, including an air and maritime blockade of Taiwan and air and missile strikes against targets across the island. Despite the PLA's modernization efforts, DOD assesses it is not yet capable of carrying out a full invasion of Taiwan.¹⁸ Nevertheless, the PLA is improving its capabilities to conduct such an operation. In recent years, it has commissioned several classes of advanced amphibious ships and is developing other capabilities that could be used for an invasion of Taiwan, including aerial insertion and the transport of military vehicles using civilian ships. (See Chapter 4, Section 1, "Beijing's 'World-Class' Military Goal," and Chapter 2, "Beijing's Internal and External Challenges" for further discussion of the PLA's modernization and continued capability shortfalls, respectively.)

Beijing's increasing military pressure on Taiwan was also reflected in the forceful tone its latest defense white paper adopted toward cross-Straits relations. The document used more strident language regarding Taiwan than China's previous defense white paper, released in 2015, which included only a few lines on Taiwan and presented a largely positive assessment of the trajectory of cross-Straits relations. In contrast, the 2019 white paper devoted several paragraphs to Taiwan and included a number of forceful statements not seen in its 2015 white paper, including Beijing's refusal to renounce its right to use force to resolve its disputes with Taipei.¹⁹ For example, it declared, "The PLA will resolutely defeat anyone attempting to separate Taiwan from China and safeguard national unity at all costs."²⁰ The new white paper also restated General Secretary Xi's formulation from his 19th Party Congress speech and January 2019 address on Taiwan policy that China "will never allow the secession of any part of its territory by anyone, any organization or any political party by any means at any time."²¹

Overall, the document reflected Beijing's choice to isolate and otherwise pressure the Tsai Administration due to its view that President Tsai and the DPP are "separatists." Among Beijing's many criticisms of the Tsai Administration expressed in the white paper is its claim that Taipei is pursuing "gradual" independence as well as formal independence, the first time Beijing has registered concern over measures Taipei has taken to emphasize Taiwan's distinct identity in an authoritative document of this level.*²²

*"Gradual independence" refers to the Chinese government's suspicion that certain developments in Taiwan, such as changes to history textbooks and other actions to emphasize Taiwan's uniqueness, may strengthen the view of people in Taiwan that they are historically and culturally distinct from China. Beijing also used this term to describe the actions of Taiwan's previous DPP administration (2000–2008). Central People's Government of the People's Republic of China, *The Origin of "Gradual Taiwan Independence"* ("渐进式台独"的由来), April 26, 2006. Translation.

U.S. Government Taiwan Policy Framework

U.S. government policy toward Taiwan is based on the 1979 Taiwan Relations Act (Pub. L. No. 96-8), the three U.S.-PRC joint communiques, and the “Six Assurances” to Taiwan.

Taiwan Relations Act: The Taiwan Relations Act (TRA) laid the legal foundation for continued ties between the United States and Taiwan after Washington established diplomatic relations with Beijing in 1979. In addition to creating a nonprofit corporation called the American Institute in Taiwan (AIT) to be the entity through which U.S.-Taiwan relations are conducted, the TRA contains a list of statements of U.S. policy regarding Taiwan, including that it is U.S. policy to:

- “consider any effort to determine the future of Taiwan by other than peaceful means, including by boycotts or embargoes, a threat to the peace and security of the Western Pacific area and of grave concern to the United States.”
- “make available to Taiwan such defense articles and defense services in such quantity as may be necessary to enable Taiwan to maintain a sufficient self-defense capability.”
- “maintain the capacity ... to resist any resort to force or other forms of coercion that would jeopardize the security, or the social or economic system, of the people on Taiwan.”

In addition, the TRA directs the president to promptly inform Congress of any threat to Taiwan’s security or social or economic system and any related danger to U.S. interests. It further states, “The President and the Congress shall determine, in accordance with constitutional processes, appropriate action by the United States in response to any such danger.”²³

Three Joint Communiques: The 1972, 1978, and 1982 U.S.-PRC joint communiques normalized relations between the United States and the PRC and sought to address the differences between Washington and Beijing regarding Taiwan. In the communiques, the U.S. government stated that the United States will “maintain cultural, commercial, and other” relations with the people of Taiwan and acknowledged Beijing’s position that “there is but one China and Taiwan is part of China.” In the 1982 communique, the United States appeared to commit to “reduce gradually its sales of arms to Taiwan,” but predicated that on China’s commitment to a “peaceful solution of the Taiwan question.”²⁴ Then Assistant Secretary of State for East Asian and Pacific Affairs John Holdridge, who participated in negotiations on the communique, testified to Congress, saying, “Any adjustments in our arms sales to Taiwan had to be premised on a continuation of China’s peaceful policy” regarding the resolution of the cross-Strait sovereignty dispute. Assistant Secretary Holdridge attested, “We refused [to commit to an end to U.S. arms sales] because the level of our arms sales must be determined by the needs of Taiwan.” He further noted, “China’s peaceful policy bore directly on the defense needs of Taiwan,” arguing that if China pursued a peaceful resolution, “the threat to Taiwan would be diminished.”²⁵ Successive administra-

U.S. Government Taiwan Policy Framework—Continued

tions have held that China has failed to reduce, and at times has even increased, the threat to Taiwan, requiring continued arms sales under U.S. commitment in the TRA.

“Six Assurances”: In 1982, during the negotiations on the final U.S.-PRC communique, the then head of AIT James Lilley orally communicated “six assurances” from President Ronald Reagan to Taiwan President Chiang Ching-kuo. The assurances, which different U.S. administrations have embraced to varying degrees, consisted of the following:^{*} the United States (1) “has not set a date for ending arms sales to Taiwan”; (2) “has not agreed to consult with the PRC on arms sales to Taiwan”; (3) “will not play any mediation role between Taipei and Beijing”; (4) “has not agreed to revise the Taiwan Relations Act”; (5) “has not altered its position regarding sovereignty over Taiwan”; and (6) “will not exert pressure on Taiwan to enter into negotiations with the PRC.”²⁶

Evidence of Growing Interference by Beijing in Taiwan’s Democratic Process

Taiwan government officials have warned of a campaign by Beijing to try to influence Taiwan’s 2020 presidential and legislative elections.²⁷ In a report to the Taiwan legislature, Taiwan’s National Security Bureau assessed that Beijing may use traditional and social media to undermine confidence in the Tsai Administration and co-opt Taiwan internet influencers to shape public opinion in the lead-up to the elections.²⁸ Since 2016, Beijing has increasingly used online tools, such as content farms, bots, messaging applications, and other methods to spread disinformation and otherwise undermine Taiwan’s democracy.²⁹ Beijing’s objective is to push the Taiwan people to elect a leader who is more willing to engage with China on the terms it demands.

Amid intensifying political warfare targeting Taiwan in recent years, significant evidence tied Beijing to large-scale efforts to influence Taiwan’s 2018 local elections. It is unclear to what extent these alleged efforts played a decisive role in the elections and the KMT’s dominant victory. In July 2019, *Foreign Policy* published an article that revealed a professional cybergroup likely based in China created an unofficial Facebook fan page for Han Kuo-yu, then KMT candidate for mayor of Kaohsiung City. The page, which had more than 60,000 members by election day, became a hub for distributing content in support of Mr. Han, who later won the election and is now the KMT’s candidate for president.†

^{*}Different versions of the assurances exist. The Reagan Administration notified the Taiwan Ministry of Foreign Affairs at the time of the 1982 U.S.-PRC joint communique that it could make public the version cited in text. Alan D. Romberg, “Rein-In at the Brink of the Precipice,” *Henry L. Stimson Center*, 2003, 134; Shirley A. Kan, “China/Taiwan: Evolution of the “One China” Policy—Key Statements from Washington, Beijing, and Taipei,” *Congressional Research Service*, October 10, 2014, 43–44; Cai Surong, “The Taiwan Relations Act and Three Communiques. Understanding the United States’ One China Policy” (台灣關係法與三公報 讀懂美國一中政策), *Central News Agency*, April 5, 2017. Translation.

† In July 2019, Mayor Han won the KMT’s primary, defeating second-place candidate Terry Gou by more than 15 percent. Mayor Han entered the presidential race riding the wave of support that led him to victory in the November 2018 mayoral election as well as national-level popularity. His appeal to voters has stemmed from his emphasis on economic policy, his unconventional

A psychological operations officer with Taiwan's Ministry of National Defense who was interviewed for the article assessed the cybergroup that created the Facebook page was likely contracted by a Chinese company in an operation orchestrated by the Chinese government.³⁰ Later, overwhelmingly positive coverage of Mayor Han during the lead-up to the KMT primary by a television station alleged to receive direction from the Chinese government suggested that Beijing intended to similarly influence or interfere with Taiwan's presidential election.³¹

Taiwan officials also alleged that Beijing paid for community leaders to visit China during local election campaigns in exchange for them pledging support for candidates more inclined toward Beijing's preferred policies and extended support to KMT rural grassroots organizations in Taiwan. A month before the elections, the director of Taiwan's Ministry of Justice Investigation Bureau said law enforcement had raided two underground money exchanges used to channel money originating in China to influence Taiwan's elections.³² Disinformation painting the Tsai Administration and the DPP in a negative light, some of it linked to an IP address in China, also flooded Facebook, traditional media, the streaming and widely-used messaging application LINE, and a popular Taiwan online bulletin board during the lead-up to the elections.³³ In its report to the legislature, Taiwan's National Security Bureau stated that Beijing used disinformation prior to the elections in an attempt to exacerbate divisions within Taiwan over controversial issues.³⁴

Beijing Seeks to Shape Taiwan Media Environment

Beijing also has sought to co-opt media in Taiwan to advance cross-strait unification on the CCP's terms and to undermine trust in Taiwan's democracy and in the United States' commitment to Taiwan. In May 2019, Wang Yang, a member of the Standing Committee of the Politburo of the CCP, told participants at a high-level media forum in Beijing, including senior media professionals from Taiwan, that realizing cross-strait unification under "one country, two systems" would rely on the efforts of the media. Wang also cast doubt on the United States' support for Taiwan, telling participants, "[The Americans] are just using Taiwan as a pawn. Will they go to war with China for Taiwan? I'm guessing they won't. If we really go to war, will the Americans win? I'm guessing not."³⁵

Evidence has built that Beijing uses partnerships with Taiwan media to spread divisive content and shape reporting on China and cross-strait relations. A May 2019 report prepared for the Taiwan legislature by the National Security Bureau and the political warfare bureau of Taiwan's Ministry of National Defense stated that in some cases the Chinese government uses "partnered media outlets" in Taiwan to disseminate media content intended to divide Taiwan society. Deputy Director-General of the National Security Bureau

style, many voters' disillusionment with traditional elite politicians they perceive as out of touch, and voters' disapproval of the DPP's economic performance and handling of pension reform and cross-strait relations. Lawrence Chung, "Kaohsiung Mayor Han Kuo-Yu Wins KMT Ticket to Challenge Tsai Ing-Wen for Taiwan Presidency," *South China Morning Post*, July 15, 2019; Li Zongxian, "Taiwan Presidential Election: Who Are Presidential Candidate Han Kuo-yu's Supporters?" (台灣大選：總統參選人韓國瑜的支持者是誰), *BBC*, June 11, 2019. Translation.

Chen Wen-fan told Taiwan's legislature that partnering outlets include print and online media as well as internet celebrities.³⁶

In July, the *Financial Times* reported that according to journalists with Taiwan's *China Times* and Chung T'ien Television (CTiTV), China's Taiwan Affairs Office gives instructions to their editorial managers and contacts these editors daily. According to one *China Times* journalist, "[China does not] meddle in everything, mainly topics related to cross-Straits relations and to China. They have a say in the angle of the story, and whether it goes on the front page." The *Financial Times* also reported that Chinese government officials assign stories and editorial positions to China-based journalists from multiple Taiwan media outlets.³⁷ In August, *Reuters* reported that the Taiwan Affairs Office had paid select Taiwan media outlets to publish stories, including two recent features about the benefits of a Chinese government program to incentivize Taiwan entrepreneurs to work in China. According to one source, the CCP's Publicity Department even chose the people to be interviewed in the story and the Taiwan Affairs Office edited it.³⁸

Beijing may also be using media partnerships to shape coverage in Taiwan of the 2020 presidential election. Although the articles by the *Financial Times* and *Reuters* did not report that Beijing has provided direction or commissioned stories on Taiwan's presidential election, the *Financial Times* did cite a CTiTV journalist as saying that the network's editorial department has a task force dedicated to boosting Mayor Han to the presidency.³⁹ In an audit of Taiwan's television news networks, Taiwan's National Communications Commission found that 70 percent of CTiTV's total broadcasting in May, two months before the KMT's primary, was focused on Mayor Han. This was far more than the coverage accorded other high-profile candidates for the primary and President Tsai.⁴⁰ In one notable example, the *Financial Times* reported that on the day of Mayor Han's primary victory in July 2019, the station neglected to cover President Tsai's extended transit through the United States and visit to Taiwan's diplomatic partners in the Caribbean and instead focused exclusively on national news related to Mayor Han.⁴¹

Taipei Takes New Steps to Address Security Challenges

In 2019, Taipei continued to work to counter Beijing's military threat to Taiwan, its espionage against Taiwan, and political warfare with new measures. It remains unclear whether these efforts, while significant, will prove sufficient to ensure Taiwan's security in the face of the increasing scale, scope, and sophistication of Beijing's activities.

- *Increasing defense spending:* In August 2019, the Tsai Administration submitted a budget to the Legislative Yuan that would increase Taiwan's defense spending in 2020 by 8.3 percent, the largest annual increase in more than a decade.⁴² While Taipei cannot compete with Beijing in total defense spending, for many years observers have noted that Taiwan needs to invest more in defense. Taiwan's defense budget had been roughly flat in real numbers until the past few years, while Beijing's defense spending grew rapidly, often by double digits, during the same timeframe.⁴³

- *Continuing to implement Overall Defense Concept:* To further implement Taiwan's Overall Defense Concept, which was unveiled in 2017, Taiwan allocated funding for 60 small fast-attack missile craft, expedited production of new missile defense systems and mobile land-based antiship missile platforms, and began construction of four rapid mine-laying ships.⁴⁴ The Overall Defense Concept emphasizes the development of asymmetric capabilities and tactics to capitalize on Taiwan's defensive advantages, enhance resilience, and exploit the PLA's weaknesses.⁴⁵
- *Increasing conventional capabilities:* While continuing to focus on the asymmetric and unconventional aspects of the Overall Defense Concept, Taiwan is also increasing investments in its conventional air, sea, and land capabilities for much-needed modernization, including the acquisition of new F-16V fighter aircraft and M1A2 main battle tanks from the United States (see "Expanded U.S. Efforts to Support Taiwan's Security" below).
 - *Submarine program makes progress:* Taiwan completed the design of its first indigenous submarine, and in May 2019 broke ground on the facility in which its inaugural submarine will be built.⁴⁶ The Taiwan Navy aims to conduct the first operational deployment of the submarine in 2026.⁴⁷
 - *First F-16 upgrade successes:* In March 2019, after several program delays, the Taiwan Air Force took delivery of the first four of its 144 F-16A/B fighter aircraft to be upgraded by Lockheed Martin Corporation to the new F-16V configuration.⁴⁸ The upgrade includes the installation of advanced radars made by Northrop Grumman, derived from those used by the U.S. F-22 and F-35 fighters, which will enable Taiwan's F-16s to detect China's advanced combat aircraft at a greater range.⁴⁹
- *Instituting harsher penalties for espionage:* In May, Taiwan's legislature amended anti-espionage legislation, which stipulates that espionage can result in life in prison or the death penalty, to include both Taiwan citizens and Chinese citizens who engage in espionage in Taiwan. It also raised the range of sentencing for individuals who leak secrets to a hostile government to three to ten years, up from one to seven years.⁵⁰ Taiwan faces a major challenge from Beijing's aggressive intelligence activities, which led to more than 40 espionage and espionage-related prosecutions for crimes involving China between 2006 and 2016.⁵¹ In July, Taiwan's legislature passed new legislation aimed at defending against the CCP's United Front work targeting retired Taiwan generals. Under the provisions of the new law, retired officials and military officers at and above the level of deputy minister and major general who participate in political activities in China would face penalties that could include rescinding their pensions.⁵²
- *Countering efforts to intimidate and weaken morale:* Taiwan's Ministry of National Defense announced in March 2019 that it had established a new team devoted to producing media con-

tent to counter PRC attempts to weaken morale in the Taiwan military and was allocating more resources to improve such content.⁵³ In a recent example of China's efforts, individuals working for the Chinese government in 2017 spread misleading and negative information about Taiwan's Han Kuang military exercises through online fora.⁵⁴

Expanded U.S. Efforts to Support Taiwan's Security

The U.S. government took significant steps to demonstrate support for and expand cooperation with Taiwan in the areas of defense and security in 2019. The measures prompted angry responses from the Chinese government, which criticized Taipei for "borrowing the strength of foreign influence."⁵⁵

- *United States approves sale of new F-16V fighters and Abrams tanks:* In August, the Trump Administration notified Congress of the potential sale of 66 new F-16V fighter aircraft to Taiwan. This would be the United States' first sale of new fighter aircraft to Taiwan since 1992 and at approximately \$8 billion would constitute the largest ever single sale of U.S. military equipment to Taiwan.⁵⁶ It follows the Administration notifying Congress of the potential sale to Taiwan of 108 M1A2 Abrams tanks and 250 anti-aircraft missiles in July.⁵⁷ Taken together, the sales of the F-16Vs and Abrams tanks represent a change from the past nine years, during which Washington had not approved the sale of new major weapons platforms to Taipei, instead selling refurbished platforms, upgraded technology for Taiwan's existing platforms, and munitions.* Three of the five arms sales proposed by the Trump Administration have involved the sale of a single class of weapon system, indicating a policy shift from the practice used by multiple U.S. administrations of "bundling" several notifications of potential arms sales to Taiwan to be considered and announced as a single "arms package" decision. The practice of bundling has been criticized as delaying needed sales and complicating Taiwan's defense budget planning cycles.⁵⁸
- *Meeting of national security advisors:* U.S. National Security Advisor John Bolton met Secretary General David Lee, head of Taiwan's National Security Council, in May, the first meeting between the U.S. and Taiwan national security advisors since 1979. The meeting occurred during Secretary General Lee's visit to the United States.⁵⁹
- *Taiwan Strait transits and flights:* The U.S. Navy increased the number of and regularly publicized transits of the Taiwan Strait in 2019, while U.S. military aircraft also made two rare flights through the Taiwan Strait. The naval transits, which previously were seldom publicized, doubled from four in 2018 to eight during the first nine months of 2019 alone.⁶⁰ The class of ships making the transits has also been notable, with the

* Previously, the executive branch notified Congress of the potential sale of the Patriot missile defense system to Taiwan in 2010. U.S. Defense Security Cooperation Agency, *Taipei Economic and Cultural Representative Office in the United States—PATRIOT Advanced Capability-3 (PAC-3) Firing Units, Training Unit, and Missiles*, January 29, 2010.

Green Bay, a large amphibious ship, passing through the Strait in August 2019. During another 2019 transit, a U.S. Navy ship was joined by a U.S. Coast Guard cutter operating under U.S. Navy command.⁶¹ In addition, a U.S. maritime patrol aircraft flew through the Taiwan Strait in June, and special operations transport aircraft conducted similar flights in August and September.⁶²

- *Continued port calls in Taiwan by U.S. Navy research vessels:* In August 2019, a U.S. Navy research ship, the *Sally Ride*, docked in Taiwan as part of oceanographic collaboration with Taiwan university researchers. The ship's visit to Taiwan followed four visits by another U.S. Navy research ship for resupply in 2018.⁶³ *Sally Ride* and other auxiliary general oceanographic research-class ships are owned by the U.S. Navy but operated by universities and research organizations.
- *U.S. law enforcement, military co-host conference in Taiwan:* The Taiwan Ministry of Justice Investigation Bureau, the U.S. Federal Bureau of Investigation (FBI), and U.S. Indo-Pacific Command co-hosted a conference on combatting organized crime in Taiwan in May. Associate Deputy Director Paul Abbate led the FBI delegation and Taiwan media reported that the Indo-Pacific Command delegation was led by an unnamed major general. Taiwan media also reported that 100 U.S. officials attended the event.⁶⁴

Taiwan's External Relations

Beijing Takes New Steps to Pressure Taiwan

Beijing's increased military pressure and political interference targeting Taiwan reflected its uncompromising stance and greater sense of urgency regarding cross-Strait relations. In a January 2019 speech on the 40th anniversary of a message to the Taiwan people by China's National People's Congress, General Secretary Xi stated that political differences between Taiwan and the PRC "must not be passed down from generation to generation," repeating an expression he used only once before in 2013.⁶⁵ The speech marked a shift from General Secretary Xi's predecessors' focus on deterring Taiwan from seeking *de jure* independence and a relatively patient stance toward unification to an even greater emphasis on achieving progress toward unification.⁶⁶ Chinese Premier Li Keqiang subsequently directed delegates to the National People's Congress in March to "fully implement" this policy guidance.⁶⁷ This guidance, which is now official policy, confirms General Secretary Xi feels personal responsibility to make significant headway toward bringing Taiwan under the PRC's control.

Where previous Chinese leaders grudgingly tolerated the two sides of the Taiwan Strait holding different interpretations of "one China," General Secretary Xi implied that different interpretations are no longer acceptable. He did so by declaring that to have positive relations with Beijing, Taipei must not only endorse the "1992 Consensus" and the position it contains that there is "one China," but that Taipei also must share Beijing's goal of unification. In his speech, he also indicated that the "one country, two systems" model,

in which Taipei would have to subordinate itself to the PRC, was the only acceptable arrangement for unification.⁶⁸ “One country, two systems” has been Beijing’s model for cross-Strait unification since the 1980s, but only now has Beijing implied that making progress toward unification under that model is a prerequisite for positive cross-Strait relations.

The One-China Principle and the “1992 Consensus”

The “1992 Consensus” refers to a tacit understanding that the KMT and Beijing say was reached between representatives of Taiwan and China in 1992. Beijing insists that cross-Strait communication and talks be based on the “1992 Consensus,” which Taipei and Beijing endorsed during the administration of President Tsai’s predecessor, Ma Ying-jeou of the KMT.

The consensus was not a formal agreement, joint statement, or communique, and was only described as a consensus beginning in 2000. This lack of a historical document contributes to the challenge of defining and proving the existence of the “1992 Consensus.” The term “1992 Consensus” itself was coined in 2000 by Su Chi, a former chairman of Taiwan’s Mainland Affairs Council (1999–2000), in what he claims was an effort to preserve an ambiguity regarding “one China” that could be acceptable to both Beijing and the DPP, which had recently won the presidency and was preparing to take power.*

Both the KMT, which held the presidency in 1992, and the Chinese government assert the existence of a consensus, but their public definitions of this consensus differ. The KMT defines the consensus as “one China, respective interpretations,” defining its interpretation of “one China” as the Republic of China.⁶⁹ In contrast, Beijing accepts only the definition embodied in its “one China” principle—that mainland China and Taiwan are part of one and the same China, the PRC, of which Taiwan is a sub-national region. Although in official documents and statements Beijing has never acknowledged that the consensus allows different interpretations of “one China,” in practice it has at times officially ignored, but grudgingly tolerated, the KMT’s definition of the consensus.⁷⁰

In contrast, the DPP, and thus the current Taiwan administration, does not recognize the “1992 Consensus” or the “one China” principle. The DPP rejects Beijing’s insistence on the “1992 Consensus” as a precondition for cross-Strait communication.⁷¹ President Tsai said General Secretary Xi’s January 2019 speech on Beijing’s Taiwan policy confirmed her concern that Beijing views the “1992 Consensus” as equating to “one country, two systems” and Beijing’s more restrictive “one China” principle.⁷²

In his January address, General Secretary Xi proposed Beijing redouble its efforts to sideline Taiwan’s elected government and engage directly with Taiwan political parties, such as the New Party and China Unification Promotion Party, which advocate for cross-

*Dr. Su explained the origin of the term in 2006. Shih Hsiu-chuan, “Su Chi Admits the ‘1992 Consensus’ Was Made Up,” *Taipei Times*, February 22, 2006.

Strait unification, and other sympathetic groups and individuals. Known as “democratic consultation,” these efforts aim to build public support in Taiwan for political negotiations between Taipei and Beijing.⁷³ Beijing has deployed a similar strategy to varying degrees during three successive Taiwan administrations—both DPP and KMT—when Taipei has not pursued Beijing’s preferred policies. A deputy minister of Taiwan’s Mainland Affairs Council said in March 2019 that the ministry had observed organizations in Taiwan inviting Taiwan students and businesspeople to attend symposiums in China following General Secretary Xi’s speech.⁷⁴

Taiwan Rebukes CCP’s Cross-Strait Policy

The Tsai Administration, both major political parties, and the Taiwan public responded forcefully to General Secretary Xi’s speech by rejecting “one country, two systems” and insisting cross-Strait political negotiations occur between the two governments or government-authorized organizations alone. The vast majority of Taiwan citizens are opposed to “one country, two systems” for Taiwan—opposition that President Tsai described in her response to the speech as a “Taiwan consensus.”⁷⁵ Indeed, in a poll of Taiwan citizens conducted in March, 79 percent of respondents opposed the model.⁷⁶

President Tsai went on to reject General Secretary Xi’s proposal of “democratic consultation” and said, “Any political consultations that are not authorized and monitored by the people cannot be called ‘democratic consultations.’ This is Taiwan’s position, a democratic position.”⁷⁷ She also responded to General Secretary Xi’s insistence that Taipei endorse the “1992 Consensus” as a prerequisite for positive cross-Strait relations by laying out her own requirements for the development of cross-Strait relations, including that Beijing accept the existence of the Republic of China and cease its use of intimidation, disinformation and influence operations, and economic inducements to achieve its objectives. To General Secretary Xi’s call for the development of a “spiritual union” between Taiwan and China, President Tsai said Beijing will fail to achieve this goal if it continues its coercion campaign against Taiwan.⁷⁸ Her strong response to General Secretary Xi’s speech and the extradition bill in Hong Kong resulted in an increase in support for her among the Taiwan public and likely helped her to win the DPP primary for the 2020 presidential election.⁷⁹

KMT candidates for president also spoke out strongly against “one country, two systems,” with Mayor Han declaring during a June 2019 rally that the only way that arrangement would be implemented in Taiwan if he became president would be “over my dead body.”⁸⁰ That same month, during a discussion of the Hong Kong anti-extradition bill protests, then KMT candidate Terry Gou stated the model had failed in Hong Kong.⁸¹ Bonnie Glaser, the director of the China Power Project at the Center for Strategic and International Studies, said in testimony to the Commission, “The protests in Hong Kong have had a major impact on Taiwan and, depending on how the differences between the protesters and the Hong Kong government play out, may be a factor in Taiwan’s election.”⁸² (See Chapter 6, “Hong Kong,” for more information on the Hong Kong extradition bill.)

Driven in part by General Secretary Xi's speech, in June 2019 Taiwan's legislature passed legislation to strengthen its oversight of the executive branch's ability to enter into political negotiations with Beijing and any subsequent agreement. The legislation requires the executive branch to receive approval from 75 percent of legislators to enter into negotiations and, if it meets this requirement, any agreement the two sides reach must then be approved by a popular referendum.⁸³ This legislation, which was supported by more than 65 percent of legislators who voted, will make it exceedingly difficult for the Taiwan government to enter into political negotiations with Beijing and especially to reach agreement.⁸⁴

Taiwan Responds with Solidarity to Demonstrations in Hong Kong

Facing Beijing's insistence on cross-Strait unification under the "one country, two systems" framework, Taiwan citizens and the Taiwan government expressed their solidarity with the anti-extradition bill protest movement in Hong Kong and demonstrators' concern about the Hong Kong government's handling of the protests. President Tsai repeatedly expressed her support for the demonstrators, beginning with a tweet on June 9, the first day of protests against the extradition bill, stating, "We stand with all freedom-loving people of #Hong Kong."⁸⁵ In mid-June 2019, Taiwan civil society organizations, Taiwan students, and Hong Kong nationals living in Taiwan held multiple rallies in Taiwan against the extradition bill; organizers estimated that one of the June rallies included 10,000 people.⁸⁶ After protesters in Hong Kong created walls of colorful sticky notes with messages of encouragement and protest, college students in Taiwan created similar walls in solidarity.*⁸⁷ While speaking in July about Taiwan and Hong Kong, Taiwan's Minister of Foreign Affairs Joseph Wu declared, "These two outposts of democracy share the same values, and our paths and destinies are closely linked.... We both stand on the front line against the expansion of authoritarianism."⁸⁸

Struggle Continues over Taiwan's International Space

Beijing continued its efforts to suppress Taiwan's participation in the international community with the aim of isolating Taiwan and promoting a narrative of Beijing's sovereignty over Taiwan. In September 2019, the Solomon Islands and Kiribati—two of Taiwan's 17 remaining official diplomatic partners—broke ties with Taipei in favor of Beijing. The Solomon Islands' switch was followed by reporting that Beijing had offered the country a large aid package, and a statement from China's Ministry of Foreign Affairs that the switch "will surely bring unprecedented development opportunities."⁸⁹ In response to Kiribati's termination of diplomatic ties, Minister Wu said, "According to information obtained by Taiwan, the Chinese

* Inspired by the original "John Lennon Wall" established in Prague in the 1980s upon the artist's death, over 100 "Lennon Walls" have materialized around Hong Kong from subway stations to pedestrian walkways displaying messages of support for the anti-extradition bill movement and its demands. Joyce Zhou and John Ruwitch, "Imagine All the Post-Its: Hong Kong Protesters Come Together with 'Lennon Walls,'" *Reuters*, July 11, 2019.

government has already promised to provide full funds for the procurement of several airplanes and commercial ferries, thus luring Kiribati into switching diplomatic relations.”⁹⁰

China also continued to prevent Taiwan from engaging in international and regional fora. For the third year in a row, Beijing prevented the Taiwan government from participating as an observer in the UN World Health Assembly; previously, Taipei received an invitation each year between 2009 and 2016.⁹¹ Beijing also targeted regional fora in the regions with most of Taiwan’s remaining diplomatic partners—the Pacific Islands and Central America. For example, although China is not a full member of the Central American Bank for Economic Integration (and Taiwan is), Beijing lobbied bank members to block a potential bid by Taiwan to host the bank’s 2020 board meeting, and Taipei ultimately did not submit a bid.⁹²

In another example of Beijing’s attempts to undermine Taiwan’s sovereignty, Taiwan citizens living abroad who were suspected of committing telecommunications fraud against people in China were extradited to China at Beijing’s demand rather than being repatriated to Taiwan. In June 2019, Spain deported 94 suspects to China, bringing the total deported from third countries to China to 650 since 2016, when the first of this series of deportations began. A number of countries, including Cambodia, Kenya, Malaysia, and Vietnam, have agreed to Beijing’s demands since this time.⁹³ This practice has constituted a break from the pattern of cross-Strait law enforcement cooperation between 2011 and 2016 by which Beijing facilitated the repatriation to Taiwan of Taiwan citizens accused of crimes in countries with which Taipei does not have diplomatic relations.⁹⁴

At the same time as it tried to shore up relations with its diplomatic partners, Taipei achieved some success in further deepening its nondiplomatic ties with influential like-minded countries. For example, in December 2018 Taiwan and India signed new agreements on bilateral investment and expedited customs clearance for Taiwan and Indian companies.⁹⁵

In addition, governments and organizations are increasingly pushing back on Beijing’s pressure on Taiwan and speaking out in support of Taiwan. In May 2019, after it was confirmed that Taipei would not receive an invitation to the UN World Health Assembly, Japan’s Foreign Minister Taro Kono joined the United States in expressing support for Taiwan’s participation in the forum as an observer, the first time the Japanese government had publicly done so.⁹⁶ The Australian, German, and UK governments also made public statements, with Berlin stating that it “strongly opposes the politicization of global health issues.”⁹⁷

More broadly, in recent years, countries in addition to the United States have sailed military ships through maritime areas that Beijing currently deems sensitive, such as the Taiwan Strait and waters near China’s outposts in the South China Sea, with greater frequency than in the past. In April, French naval ships sailed through the Taiwan Strait, and Canadian naval ships transited the Strait in June and September.⁹⁸ A Chinese Defense Ministry spokesperson called the French transit illegal, and the Chinese government rescinded its invitation to participate in a naval parade lat-

er in 2019.⁹⁹ Prior to the Canadian ships entering the Taiwan Strait in June, Chinese naval ships demanded they chart another course and then sailed alongside the Canadian ships during the transit.¹⁰⁰

Washington Supports Taipei's Efforts to Expand International Space

The U.S. government continued to take significant steps to demonstrate support for Taiwan and enhance bilateral relations. Among these steps, high-level U.S. government officials visited Taiwan, and Washington expanded its efforts to support Taiwan's ties with its diplomatic partners and facilitate unofficial ties with other countries.*

- *New annual ministerial dialogue:* In March 2019, AIT and Taiwan's Ministry of Foreign Affairs announced the establishment of the U.S.-Taiwan Consultations on Democratic Governance in the Indo-Pacific Region. This was the first time an AIT director had held a joint press conference at the Ministry of Foreign Affairs headquarters.¹⁰¹ The dialogue aims to discuss ways in which the United States and Taiwan can cooperate to address governance challenges in the region.¹⁰² The first meeting was held in September, but the countries with which the United States and Taiwan will partner have not been announced yet.¹⁰³
- *Overseas Private Investment Corporation (OPIC) director visits Taiwan:* David Bohigian, Acting President and Chief Executive Officer of OPIC, a U.S. government development finance institution, visited Taiwan in June 2019 to meet with President Tsai, Taiwan's Ministry of Foreign Affairs, and Taiwan's International Cooperation and Development Fund (ICDF).¹⁰⁴ The visit further developed a new initiative by which OPIC and Taiwan's ICDF are working together to provide development finance for projects in countries that have diplomatic relations with Taiwan. In 2019, OPIC and the ICDF collaborated for the first time by supporting a bank in Paraguay with an investment to enable it to lend to underserved clients.¹⁰⁵

Economics and Trade

President Tsai continues to pursue the dual goals of accelerating Taiwan's economic growth while reducing the economy's reliance on China and expanding economic ties with countries in South and Southeast Asia. In 2018, Taiwan's gross domestic product (GDP) increased 2.63 percent year-on-year, down from 3.08 percent in 2017.¹⁰⁶ 2018 marked the third consecutive year—all coming under the Tsai Administration—that Taiwan posted an annual GDP growth rate greater than 1 percent.¹⁰⁷ In the first half of 2019, Taiwan's GDP expanded 2.1 percent year-on-year, with official government estimates forecasting 2.5 percent year-end growth.¹⁰⁸

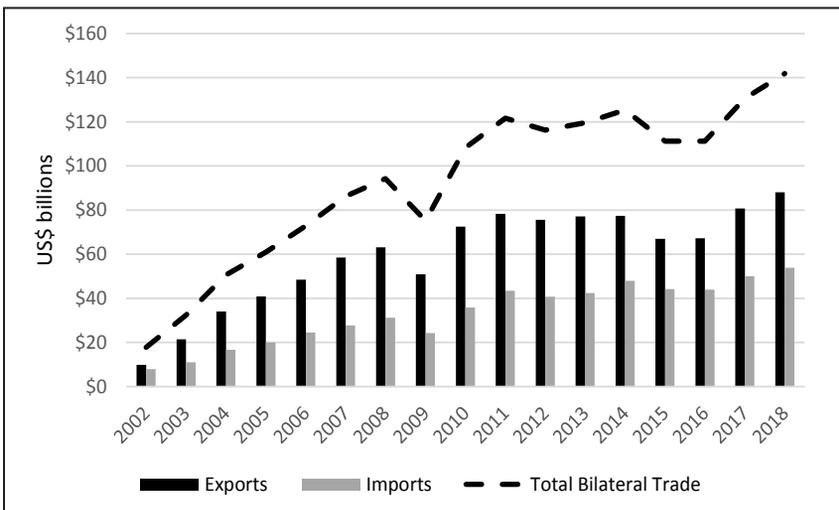
*The House passed the Taiwan Assurance Act in May 2019. This bill, introduced by Representative Michael McCaul (R-TX), calls on the secretary of state to review the U.S. Department of State's guidelines on relations with Taiwan and submit a report on the review's results as well as on the implementation of the Taiwan Travel Act (Pub. L. No. 115-135). Since the Taiwan Travel Act became law in March 2018, there has yet to be a cabinet secretary to visit Taiwan. Taiwan Assurance Act of 2019, H.R. 2002, May 8, 2019. <https://www.congress.gov/bill/116th-congress/house-bill/2002/text>; Taiwan Assurance Act of 2019, S. 878, March 26, 2019. <https://www.govtrack.us/congress/bills/116/s878>.

Taiwan's continued economic growth has also supported improvements in wages and helped keep unemployment stable. From January to July 2019, Taiwan's unemployment rate averaged 3.7 percent, the same as in 2018 and the lowest in a decade.¹⁰⁹ Unemployment among younger workers—although high—is also stable. In the first seven months of 2019, unemployment among workers between the ages of 20 and 24 was 12 percent, the same as 2018's average.¹¹⁰ Non-overtime employee earnings, meanwhile, continue to increase, growing 2.3 percent year-on-year in the first seven months of 2019 after increasing 2.6 percent year-on-year in 2018 (the biggest single-year increase since 2000).¹¹¹

Cross-Strait Trade and Investment

Despite Taipei's efforts to diversify its trade ties away from Beijing, China remained Taiwan's largest trading partner, export market, and source of imports in 2018 for the fifth consecutive year (2013 marked the last year Japan was Taiwan's largest source of imports).¹¹² Cross-Strait goods trade totaled \$141.9 billion in 2018 (23.9 percent of Taiwan's total global trade), an 8.5 percent increase year-on-year (see Figure 1).¹¹³ Through the first seven months of 2019, Taiwan exported \$45.2 billion worth of goods to China (a decrease of 8 percent compared to the same period in 2018) and imported \$32 billion (an increase of 4.2 percent over the same period in 2018).¹¹⁴ Taiwan's other top trade partners include the United States, Japan, Hong Kong, and South Korea.¹¹⁵

Figure 1: Taiwan's Trade with China, 2002–2018



Source: Taiwan's Bureau of Foreign Trade, *Trade Statistics*.

Taiwan's reliance on trade with China has left its economy exposed to the escalating U.S.-China trade dispute. The island may become collateral damage if the next round of proposed U.S. tariffs—set to take effect on December 15—disrupts consumer-electronics supply chains in which Taiwan companies play an important role.¹¹⁶ Apple,

Hewlett-Packard, and Dell's notebook PC business lines, for example, are 90 percent reliant on Taiwan suppliers that have large-scale operations in China.¹¹⁷ While Taiwan companies are expanding productive capacity outside China, the consumer-electronics industry's longstanding cross-Strait linkages make doing so challenging and expensive.¹¹⁸

The composition of Taiwan's China-bound exports is also indicative of the island's vulnerability to the tariff conflict between its two largest trading partners.¹¹⁹ In 2018, equipment and intermediate goods used in semiconductor and other electronics manufacturing accounted for more than half of Taiwan's exports to China.¹²⁰ If the United States levies tariffs on consumer electronics exported from China, the effects will be passed through the supply chain to Taiwan-based manufacturers.

Taiwan's trade with China consists primarily of integrated circuit products and other electrical devices. In 2018, Taiwan's largest exports to China were integrated circuits (\$27.7 billion), liquid crystal display devices (\$5.6 billion), and video camera parts (\$2.9 billion).¹²¹ Taiwan's top imports from China consisted of integrated circuits (\$11.4 billion), telephones (\$3.7 billion), and machine parts (\$2.6 billion).¹²² In 2019, Taiwan's trade with China in electrical products will likely be hit by the May 2019 decision by Chungwa Telecom and Taiwan Mobile, two of Taiwan's major wireless companies, not to sell Huawei devices.¹²³ The decision came after the United States placed restrictions on U.S. firms selling Huawei technology. (See Chapter 1, Section 1, "Year in Review: Economics and Trade," for more information on the implications of the United States' restrictions on Huawei technology.)

Although China remains Taiwan's top destination for foreign direct investment (FDI), investment flows have declined dramatically from their peak in 2010 (see Table 1).¹²⁴ The main reason for this fall is increased operational costs in China due to rising wages and stricter environmental regulations; more recently, escalating U.S.-China trade tensions have also contributed to the decline.¹²⁵ Before U.S.-China trade tensions began, President Tsai had already sought to encourage Taiwan investors to diversify away from China by strengthening economic ties with Southeast Asia through the New Southbound Policy and offering Taiwan companies incentives to re-shore some of their manufacturing back to Taiwan.¹²⁶

Table 1: Taiwan-China Bilateral FDI, 2010–2018

Year	Taiwan FDI in China (US\$ billions)	China FDI in Taiwan (US\$ millions)
2010	14.6	94.3
2012	12.8	331.5
2014	10.3	334.6
2016	9.7	247.7
2018	8.5	231.2

Source: Taiwan's Ministry of Economic Affairs, Investment Commission, *Monthly Report*, June 2019.

In 2018, investment flows from Taiwan to China totaled \$8.5 billion (37.2 percent of Taiwan's global outbound investments), down 22.5 percent from 2015 levels.¹²⁷ Manufacturing made up the largest share (70.3 percent) of Taiwan's approved FDI in China in 2018, while wholesale and retail trade (14 percent) and financial and insurance (6.9 percent) accounted for the second- and third-largest shares, respectively.¹²⁸ From January to July 2019, Taiwan invested \$2.3 billion in China, 55.4 percent less than the \$5.2 billion invested over the same period in 2018.¹²⁹

The drop-off in investment was most pronounced in electronics and electrical equipment manufacturing, which accounted for 34.2 percent of Taiwan's FDI flows to China in 2018, but only 17.1 percent in the first seven months of 2019.¹³⁰ Chemical materials manufacturing was the only industry that saw an increase in FDI flows—growing 878 percent year-on-year in the first seven months of 2019 due to a few large investment projects.¹³¹ Meanwhile, Chinese FDI in Taiwan decreased from \$265.7 million in 2017 to \$231.2 million in 2018.¹³² Through the first seven months of 2019, Chinese FDI in Taiwan reached only \$60.4 million, a decline of 59 percent compared to the same period in 2018.¹³³ The majority of this investment was in the wholesale and retail industry (28.2 percent), electronic parts manufacturing (12.6 percent), and banking (9 percent).¹³⁴

Chinese Economic Coercion

Since the election of President Tsai, the Chinese government has employed a consistent policy of political and economic coercion toward Taiwan. The economic element has manifested in a number of ways, including Beijing effectively blocking Taiwan from joining international trading arrangements* and pressuring multinational companies to treat Taiwan as a part of China when offering their goods and services.† Such tactics have constrained Taiwan's ability to conduct independent economic relations with other countries, but Beijing also seeks to achieve its preferred political outcomes within Taiwan itself. To this end, China has stepped up pressure on Taipei in two areas where it has the ability to exert more direct economic leverage over Taiwan: flows of Chinese tourists and recruitment of highly-skilled Taiwan workers.

Curtailing Tourism Flows to Taiwan: In 2016, China changed its travel laws to require special licenses for Taiwan-bound tour groups, and reduced the number of student permits for studying

*During the period of cross-strait détente under President Ma Ying-jeou, Taiwan concluded free trade agreements with New Zealand and Singapore. Since President Tsai was elected in 2016, however, Beijing has opposed Taiwan's accession to the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (the successor agreement to the earlier Trans-Pacific Partnership negotiated during the administration of President Barack Obama). See Michael Mazza, "The Coming Crisis in the Taiwan Strait," *American Interest*, June 28, 2019; Finbarr Bermingham, "China, Fukushima and Inflatable Poop: How Taiwan Got Frozen out of Asia's Biggest Trade Deal," *South China Morning Post*, January 19, 2019; *Taipei Times*, "Interview: Taiwan Preparing for Strong Bid to Join CPTPP, Lai Says," August 24, 2019.

†From April to July 2018, for example, China successfully pressured several major foreign airlines to change the way they referred to Taiwan on their websites. In August 2019, luxury global fashion brands came under fire from Chinese netizens for referring to Taiwan as a separate country. See Bruce Einhorn and Wendy Hu, "China's Online Army Shows Foreign Brands Who's in Charge," *Bloomberg*, August 14, 2019; Michael Thim, "China's Predictable Squeezing of Taiwan Hasn't Had the Desired Effect, and It May Be Time for Beijing to Rethink Its Strategy as US Backlash Gathers Pace," *South China Morning Post*, August 29, 2018; Sui-Lee Wee, "Giving in to China, U.S. Airlines Drop Taiwan (in Name at Least)," *New York Times*, July 25, 2019.

in Taiwan.¹³⁵ This resulted in a 22 percent year-on-year decline in the number of Chinese visitors to Taiwan in 2017 and a 1.4 percent drop in 2018.¹³⁶

Although the number of tourists visiting from China has declined, Taiwan's tourism industry continues to expand due to increased tourism ties with countries in South and Southeast Asia. In 2018, visitor arrivals in Taiwan totaled more than 11 million—up 3 percent from 2017 levels—due to increased numbers of tourists visiting from countries like India (an increase of 9.8 percent year-on-year), Australia (an increase of 12.8 percent), and the Philippines (an increase of 44.1 percent).¹³⁷

Despite this uptick in overall tourism to Taiwan, profits in Taiwan's tourism industry took a downturn because South and Southeast Asian tourists do not spend as much on average as their Chinese counterparts. In 2017, Chinese tourists in Taiwan spent an average of \$184 per day (the third-highest daily expenditure behind tourists from Japan and South Korea), down from an average of \$228 and \$198 per day, respectively, in 2015 and 2016.¹³⁸ This resulted in a 7.9 percent decline in Taiwan's total tourism revenues in 2017.¹³⁹

In July 2019, China's Ministry of Culture and Tourism further announced the temporary suspension of a program allowing individual tourists from 47 Chinese cities to visit Taiwan, effectively limiting Chinese tourism to organized tour groups.¹⁴⁰ The announcement cited the state of cross-Strait relations as the reason for the decision, though an editorial in the state-run *China Daily* the same day indicated the move was aimed at influencing the outcome of Taiwan's January 2020 presidential election.¹⁴¹ The editorial asserted the restriction could "prompt the Taiwan people to think about whether it is worthwhile to continue to be bound with a secessionist 'leader' on the same ghost ship for another four years."¹⁴² A week later, the China Film Administration announced a decision to ban mainland movies and performers from participating in Taiwan's 2019 Golden Horse Awards.¹⁴³

Attracting Workers from Taiwan: In February 2018, the Chinese government unveiled a package of 31 "incentives" to attract workers and students from Taiwan, including offering tax breaks and subsidies for high-tech companies, providing research grants for scholars, and promising to allow Taiwan companies to bid for government infrastructure projects.¹⁴⁴ According to Taiwan's Mainland Affairs Council, these measures had "no obvious effect" on Taiwan's ability to retain talent and businesses.¹⁴⁵ However, China's efforts to attract Taiwan businesses and workers appear to be successful in some areas, such as the semiconductor industry, which the Chinese government has designated for special promotion.¹⁴⁶ In the first nine months of 2018, more than 300 senior engineers working at semiconductor companies in Taiwan moved to China.¹⁴⁷ In total, more than 1,300 Taiwan engineers have relocated to China since 2014 in search of higher paying jobs and subsidized living expenses.¹⁴⁸

Taiwan's Economic Growth Initiatives

Taipei continues to implement economic initiatives to promote domestic innovation and business growth while reducing the economy's reliance on China. To date, these programs have limited but not ended Beijing's economic influence, although in some areas—

such as increased investment ties with India—these policies are beginning to bear fruit diversifying Taiwan’s economic ties.

Incentivizing Domestic Investment: In January 2019, Taipei began a three-year program incentivizing Taiwan firms to increase their domestic investment. The incentives include preferential land acquisition and use policies, easy hiring of foreign workers for projects above a designated scale, low-interest loans, and assistance in ensuring stable water and electricity supplies.¹⁴⁹ The program also allows certain investments to proceed before being filed with and approved by Taiwan’s government.¹⁵⁰ In June 2019, Taiwan’s Executive Yuan extended additional benefits to small and medium enterprises as well as companies without a history of investing in China.¹⁵¹ In the first half of 2019, Taiwan companies with operations overseas pledged \$16.1 billion in investments on the island, which Taipei hopes will create about 44,000 jobs.*¹⁵² It will take time, however, for these investments to be realized, and companies like Foxconn that have a large established Chinese customer base will probably maintain their cross-Strait investments.¹⁵³

“5+2” Innovative Industries Program: Taiwan is seeking to support the creation of new high-value-added, innovative businesses to increase employment through the “5+2” Innovative Industries program, launched in 2017.†¹⁵⁴ The machinery and industrial equipment industry is a key building block of “5+2” and Taipei has played up production growth in this sector.¹⁵⁵ Machinery exports, which account for the majority of the industry’s output, grew 7.2 percent to \$27.2 billion in 2018, up from \$25.3 billion the previous year.¹⁵⁶

Forward-Looking Infrastructure Program: Unveiled in July 2017, the program is aimed at improving Taiwan’s infrastructure over the next 30 years. The first phase of the program ran from September 2017 to December 2018, and included \$3.6 billion allocated toward urban and rural infrastructure development, among other infrastructure needs.¹⁵⁷ The second phase of the program, which runs from 2019 to 2020, includes more than \$7.2 billion for infrastructure development.¹⁵⁸ The program seeks to enhance the efficiency of resource allocation, spur innovation, and create a more competitive business environment.¹⁵⁹

New Southbound Policy: Launched in 2016, the New Southbound Policy seeks to reduce Taiwan’s reliance on China by expanding economic, educational, and cultural ties with Association of Southeast Asian Nations (ASEAN) countries, Australia, New Zealand, and six South Asian countries (India, Pakistan, Bangladesh, Nepal, Sri Lanka, and Bhutan).¹⁶⁰ To date, the policy has had a mixed record of success. Taiwan’s total trade with ASEAN countries, for example, reached \$89.5 billion in 2018, up from \$86.1 billion in 2017.¹⁶¹ However, over that period the share of Taiwan’s trade with ASEAN fell from 15.6 percent of Taiwan’s global trade in 2017 to 15.1 percent in 2018.¹⁶² Moreover, although Taiwan’s investments in Indonesia

* Exchange rates in this chapter are calculated using annual averages for the relevant year(s) in each reference.

† The “5+2” Innovative Industries program seeks to develop five pillar industries: green energy, defense, Internet of Things, biotechnology, and smart precision machinery, as well as two auxiliary industries (high-value agriculture and the “circular economy”). For more on Taiwan’s “5+2” program, see U.S.-China Economic and Security Review Commission, Chapter 3, Section 3, “China and Taiwan,” in *2018 Annual Report to Congress*, November 2018, 356–357.

(\$134.6 million in 2018, up 10.1 percent year-on-year), Vietnam (\$901.4 million, up 32 percent year-on-year), and India (\$361.2 million, up nearly 11-fold from 2017) all increased in 2018, its investments in Malaysia (\$54 million, down 82.7 percent year-on-year), the Philippines (\$149.7 million, down 33.7 percent year-on-year), and Thailand (\$146.4 million, down 73.8 percent year-on-year) all declined relative to 2017 levels.¹⁶³

U.S.-Taiwan Economic and Trade Relations

Bilateral goods trade between the United States and Taiwan totaled \$76.3 billion in 2018—an increase of 12 percent year-on-year—making Taiwan the United States’ 11th-largest trading partner.¹⁶⁴ In 2018, U.S. goods exports to Taiwan increased to \$30.6 billion (up 18.7 percent from 2017 levels) and U.S. imports from Taiwan increased 7.9 percent year-on-year to \$45.8 billion.¹⁶⁵ The leading U.S. exports to Taiwan were semiconductors (\$3.6 billion), crude petroleum (\$3.3 billion), and semiconductor machinery (\$2.8 billion).¹⁶⁶ In September 2018, Taiwan also agreed to purchase more than \$1.5 billion worth of U.S. soybeans over the next two years—a decision that comes after China imposed tariffs on U.S. soy and other agriculture products.¹⁶⁷ U.S. goods imports from Taiwan in 2018 were led by semiconductors (\$4.8 billion), telecommunications equipment (\$2.8 billion), and computer equipment (\$2 billion).¹⁶⁸

In a reflection of Taipei’s policy priorities in 2019, for the second time in a row Taiwan sent the largest foreign delegation to the U.S. government’s annual SelectUSA Investment Summit promoting increased foreign investment in the United States. Attendees from Taiwan consisted of 112 representatives from industries such as biotechnology, telecommunications, and steel.¹⁶⁹

The Trade and Investment Framework Agreement (TIFA)* remains the primary avenue by which the United States and Taiwan discuss bilateral economic issues.¹⁷⁰ However, progress on certain issues discussed in TIFA talks between the United States and Taiwan has been stalled for many years.¹⁷¹ The latest TIFA talks were held in October 2016, and there are no indications a new round of talks has been scheduled.¹⁷²

Unresolved issues include U.S. concerns over Taiwan’s weak intellectual property rights protection and trade and investment barriers, as well as a decade-long dispute over U.S. pork and beef imports.¹⁷³ Intellectual property concerns center on online copyright infringement in Taiwan, where pirated content remains prevalent amid an inadequate legal framework for prosecuting copyright infringers.¹⁷⁴ Disputes over beef and pork, meanwhile, center on Taiwan’s unwillingness to fully open its pork and beef market to U.S. producers due to some U.S. farmers’ use of ractopamine (a feed additive that produces leaner meat products).¹⁷⁵ Taiwan, along with the EU and China, continues to ban the use of ractopamine due to health and food safety concerns.¹⁷⁶

*TIFA, signed in 1994, is an annual dialogue that serves as the main channel for trade and investment promotion as well as a dispute resolution mechanism. Apart from a five-year period from 2008 to 2012 when the talks were suspended over disagreements over U.S. beef exports, the United States and Taiwan held TIFA talks every year until 2017. See U.S. Department of State, *2019 Investment Climate Statements: Taiwan*, July 11, 2019. <https://www.state.gov/reports/2019-investment-climate-statements/taiwan/>.

Implications for the United States

By unilaterally changing the status quo in the Taiwan Strait, Beijing is increasingly challenging many of the core elements of U.S. policy, attempting to undermine U.S. commitments in the TRA, and calling into question the U.S. security commitment to Taiwan—and the broader region—established in that law. Beijing's actions heighten the possibility of miscalculation escalating into a military conflict in the Taiwan Strait that could prompt the United States to exercise its commitment to defend Taiwan in light of the TRA's provisions. The United States has long been invested in Taiwan's multiparty democracy, and shared values have further deepened ties between the two sides.¹⁷⁷ The credibility of U.S. foreign policy and security commitments to allies and partners, as well as its willingness to uphold democratic values, is tied in part to U.S. support for Taiwan.

The cross-Strait military balance has decidedly shifted in China's favor in recent years. This change presents a major challenge both to Taiwan's ability to defend itself and to the United States' ability to intervene effectively in a cross-Strait conflict. The altered military balance has led China to act toward Taiwan with growing impunity, increasing the incidence of aggressive acts such as the March 2019 median line crossing. This could result in an accident or miscalculation leading to unintended conflict, or even see Beijing seek an outright military confrontation to press for resolution of its political differences with Taipei. Chinese war plans for various contingencies involving Taiwan almost certainly include measures that would target the United States and its forces in the region in an attempt to deter, deny, and delay U.S. military intervention.

The military strategies of the PRC, the United States, and Japan underscore Taiwan's strategic importance. Beijing is developing an expeditionary armed force and is projecting air and naval power through the straits in the First Island Chain (extending from Japan and the Ryukyu Islands through Taiwan and the Philippines), using these straits for training and operational sorties that encircle Taiwan and extend into the Western Pacific and beyond. Taiwan is a critical part of this island chain. Were Beijing to occupy Taiwan, the PLA would be able to operate uncontested in and around Taiwan-controlled waters and airspace, significantly altering the regional balance. The PLA would have unfettered access to the Western Pacific and an improved strategic position to interdict any U.S. or allied forces operating in the area. Meanwhile, its ability to control the South China Sea and threaten U.S. allies in the region such as the Philippines and Japan would increase substantially.¹⁷⁸ In response to the threat posed by the PRC to the peace and stability of the Western Pacific, the United States and Japan have developed new operational methods for the defense of the archipelagos and straits along the First Island Chain.

Taiwan's position as a major U.S. trading partner and its key role in the global high-tech supply chain make it significant for U.S. economic interests. Taiwan companies are leaders in the global semiconductor industry and their need for advanced U.S. technology has made semiconductors and semiconductor machinery among the top U.S. exports to Taiwan. But Taiwan's continued economic reliance on China as a source of trade and investment constrains the scope

of U.S. engagement with Taiwan and creates vulnerabilities for U.S. and Taiwan supply chains. The Tsai Administration's recent efforts to encourage supply chain diversification intersect with and have significant implications for U.S. policy. As Washington seeks to restructure its economic relationship with China, its supply chains and economic relationships with Taiwan will also need to evolve.

Taiwan is a beacon of democracy, human rights, and the rule of law in a region where those values and institutions are under increasing attack. As Secretary of State Mike Pompeo stated after Taiwan's November 2018 elections, its "hard-earned constitutional democracy is an example for the entire Indo-Pacific."¹⁷⁹ The accomplishments of Taiwan's democratic system are put into starker relief by the events in Hong Kong, where millions of people are fighting for their civil liberties against an unbending authoritarian regime. At the same time that Beijing has eroded the freedoms it promised Hong Kong under "one country, two systems," it is attempting to undermine Taiwan's democracy while pushing it toward a similar unification arrangement. Should Taiwan be coerced into submitting to such an agreement, it would not only cause grave harm to U.S. national security interests, but also would deal a crippling blow to the progress of democratic values and institutions in the region.

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CHAPTER 6

HONG KONG

Key Findings

- The Hong Kong government's proposal of a bill that would allow for extraditions to mainland China sparked the territory's worst political crisis since its 1997 handover to the Mainland from the United Kingdom. China's encroachment on Hong Kong's autonomy and its suppression of prodemocracy voices in recent years have fueled opposition, with many protesters now seeing the current demonstrations as Hong Kong's last stand to preserve its freedoms. Protesters voiced five demands: (1) formal withdrawal of the bill; (2) establishing an independent inquiry into police brutality; (3) removing the designation of the protests as "riots;" (4) releasing all those arrested during the movement; and (5) instituting universal suffrage.
- After unprecedented protests against the extradition bill, Hong Kong Chief Executive Carrie Lam suspended the measure in June 2019, dealing a blow to Beijing which had backed the legislation and crippling her political agenda. Her promise in September to formally withdraw the bill came after months of protests and escalation by the Hong Kong police seeking to quell demonstrations. The Hong Kong police used increasingly aggressive tactics against protesters, resulting in calls for an independent inquiry into police abuses.
- Despite millions of demonstrators—spanning ages, religions, and professions—taking to the streets in largely peaceful protest, the Lam Administration continues to align itself with Beijing and only conceded to one of the five protester demands. In an attempt to conflate the bolder actions of a few with the largely peaceful protests, Chinese officials have compared the movement to "terrorism" and a "color revolution," and have implicitly threatened to deploy its security forces from outside Hong Kong to suppress the demonstrations.
- In 2019, assessment of press freedom fell to its lowest point since the handover, while other civil liberties protected by the Basic Law (Hong Kong's mini constitution), including freedom of expression and assembly, faced increasing challenges.
- Throughout 2019, the Chinese Communist Party (CCP) stepped up its efforts to intervene in Hong Kong's affairs, using an array of tools to increase its influence in the territory, most clearly by co-opting local media, political parties, and prominent individuals. Beijing also used overt and covert means to intervene in Hong Kong's affairs, such as conducting a disinformation cam-

paign and using economic coercion in an attempt to discredit and intimidate the protest movement. These efforts included alleging without evidence that U.S. and other foreign “black hands” were fomenting the protests; directing and organizing pro-Beijing legislators, businesses, media, and other influential individuals against the movement; allegedly encouraging local gangs and mainland community groups to physically attack protesters and prodemocracy figures; and conducting apparent cyberattacks against Hong Kong protesters’ communications and a prodemocracy media outlet.

- Hong Kong has a unique role as a conduit between Chinese companies and global financial markets. As Chinese companies are increasingly represented in key benchmark indices, analysts anticipate greater capital flows from the United States and other countries into Chinese companies through the stock and bond Connect platforms between mainland exchanges and Hong Kong. However, due to diminished confidence resulting from the extradition bill proposal and subsequent fallout, some foreign businesses are reportedly considering moving their operations away from Hong Kong.
- Hong Kong’s status as a separate customs territory, distinct from mainland China, is under pressure. U.S. and Hong Kong officials cooperate on enforcing U.S. export controls of dual-use technologies, though U.S. officials continue to raise concerns about diversion of controlled items. Beijing’s more assertive imposition of sovereign control over Hong Kong undermines the “high degree of autonomy” that underwrites trust in the Hong Kong government’s ability to restrict sensitive U.S. technologies from being diverted to mainland China.

Recommendations

The Commission recommends:

- Congress amend the U.S.-Hong Kong Policy Act of 1992 to direct the U.S. Department of State to develop a series of specific benchmarks for measuring Hong Kong’s maintenance of a “high degree of autonomy” from Beijing. Such benchmarks should employ both qualitative and quantitative measurements to evaluate the state of Hong Kong’s autonomy in the State Department’s annual *Hong Kong Policy Act Report*.
- Congress enact legislation stating that all provisions and the special status of Hong Kong included in the U.S.-Hong Kong Policy Act of 1992 will be suspended in the event that China’s government deploys People’s Liberation Army or People’s Armed Police forces to engage in armed intervention in Hong Kong.
- Congress enact legislation directing the U.S. Department of Commerce’s Bureau of Industry and Security to extend export control measures currently in place for mainland China to subsidiaries of Chinese companies established or operating in Hong Kong.
- Congress hold hearings examining technologies subject to export controls for mainland China, but not controlled for Hong

Kong. These hearings should request that the U.S. Department of Commerce's Bureau of Industry and Security and the U.S. Consulate General in Hong Kong assess the effectiveness of current export controls in preventing unauthorized transshipment to the Mainland or other destinations.

- Members of Congress participate in congressional delegations to Hong Kong and meet with Hong Kong officials, legislators, civil society, and business representatives in the territory and when they visit the United States. They should also continue to express support for freedom of expression and rule of law in Hong Kong.

Introduction

In 2019, Hong Kong Chief Executive Carrie Lam directed her administration to propose an extradition bill which would allow for legal renditions to mainland China of any individual in Hong Kong instead of relying on existing procedures governed by Hong Kong's independent legal system and legislature. The bill reenergized the territory's democracy movement and galvanized millions of Hong Kong citizens* against it and in defense of the territory's autonomy from the Mainland. Chief Executive Lam ultimately announced the withdrawal of the legislation with support and close oversight from Beijing. This move, however, only addressed one of the protest movement's five demands, which had expanded to include universal suffrage guaranteed in the Basic Law,† Hong Kong's mini constitution. Instead of delivering on the other protester demands, the Hong Kong government continued to focus on integration with mainland China. Meanwhile, Hong Kong's "high degree of autonomy" and freedom of expression—promised under Beijing's "one country, two systems" policy and enshrined in the 1984 Sino-British Joint Declaration‡—continued to decline.

*Some estimates put the largest mass protest at 2 million, accounting for nearly two in seven of Hong Kong's entire population. In this chapter, all references to the number of protesters participating in a demonstration refer to those most commonly used in media reporting unless noted otherwise. Reported police estimates are noticeably lower than those of the protest organizers, but the actual number is probably somewhere in the middle. Addendum I lists major protests to date, including both police-reported and organizer-reported numbers.

†According to the Basic Law, the "ultimate aim" for elections is the selection of the chief executive "upon nomination by a broadly representative nominating committee in accordance with democratic procedures" and selection of all members of the legislature by universal suffrage. Hong Kong currently chooses its chief executive by a committee representing only 0.03 percent of eligible Hong Kong voters. In the most recent 2017 chief executive election, a 1,194-member Election Committee mostly composed of pro-Beijing elites with strong business and political ties to mainland China voted overwhelmingly for Carrie Lam, who received 777 votes. Ultimately, Beijing must appoint the selected chief executive candidate before they can take office. Hong Kong's legislature is composed of 40 seats elected directly by popular vote (35 in the geographic constituency and 5 through the District Council) and 30 functional constituency seats picked by electors composed of mostly pro-Beijing business groups and elites in various sectors. Alan Wong, "Carrie Lam Wins Vote to Become Hong Kong's Next Leader," *New York Times*, March 26, 2017; The Basic Law of the Hong Kong Special Administrative Region of the People's Republic of China, Chapter IV: Political Structure, Article 45, Annex I: Method for the Selection of the Chief Executive of the Hong Kong Special Administrative Region (Adopted at the Third Session of the Seventh National People's Congress on April 4, 1990).

‡According to the 1984 Sino-British Joint Declaration—which dictated the terms of the 1997 handover of Hong Kong to mainland China from the United Kingdom—Hong Kong "will enjoy a high degree of autonomy, except in foreign and defense affairs," and retain its democratic freedoms as is included in China's "one country, two systems" framework. The Joint Declaration states that Hong Kong's autonomy and freedoms "will remain unchanged for 50 years" (effective as of the 1997 handover). The document is registered at the UN as a legally-binding treaty. These commitments by mainland China are included in Hong Kong's Basic Law, adopted by China's National People's Congress in 1990 and adopted following the 1997 handover. Basic Law, Chapter

As a global financial center renowned for strong institutions and rule of law, Hong Kong is a key hub for international commerce and a conduit for China's financial integration with the rest of the world. The territory's economic openness, transparent regulatory environment, good governance, and commitment to rule of law and freedom of expression have historically made it attractive to businesses around the world. Hong Kong's Stock Connect and Bond Connect platforms support foreign investments in mainland securities under the territory's legal framework.

In addition to these unique characteristics, Hong Kong's proximity to mainland China has long been viewed by the international community as advantageous for accessing the China market and by Beijing as critical for Chinese companies for reaching the global economy. Hong Kong's guarantee of civil liberties is an important factor for many choosing to work, study, travel, or conduct business there, including U.S. citizens. Nonetheless, all of these characteristics depend on a well-functioning "one country, two systems" framework, which is now under significant strain. As Beijing disregards its commitments and the Hong Kong government struggles to resolve the ongoing political crisis, skepticism about Hong Kong's future is starting to emerge. At the time of writing (October 1, 2019), it is uncertain how the protest movement and the Hong Kong government's response will evolve.

This chapter begins with an examination of Hong Kong's controversial extradition bill and the subsequent protest movement, China's increasing encroachment in Hong Kong's affairs, and the growing erosion of Hong Kong's freedoms. Next, it explores Beijing's economic relationship with Hong Kong. Finally, the chapter considers the implications of these recent developments for the United States, including the continued viability of Hong Kong's special status under U.S. law. It is based on findings from the Commission's May 2019 trip to Hong Kong and September 4 hearing, consultations with U.S. and foreign government officials and nongovernmental experts, and open source research and analysis.

Proposed Extradition Bill Galvanizes Calls for Democracy

The Lam Administration's controversial bill to amend existing extradition laws sparked a historic protest movement opposing the legislation as well as mainland China's growing encroachment on the territory's autonomy. In February 2019, the Hong Kong government proposed changes to the territory's extradition laws to allow ad hoc extraditions to over 100 countries and jurisdictions, which did not have mutual extradition arrangements with Hong Kong, including Taiwan and mainland China.* The

I: General Principles; United Kingdom, *Sino-British Joint Declaration on the Question of Hong Kong*, 1984.

*The proposal transferred authority over extradition requests from Hong Kong's legislature, the Legislative Council (LegCo), to the de facto CCP-selected chief executive of Hong Kong. It further proposed allowing mutual legal assistance in criminal matters with mainland China, which would provide Beijing broad authority to request that Hong Kong courts freeze and confiscate assets related to extradition cases. Under the proposed arrangement, the courts would have a limited role ensuring the Hong Kong government had complied with requirements under the extradition laws, and would have no authority to assess whether the Mainland guaranteed a fair trial and human rights protections. Progressive Lawyers Group, "A Brief of the Extradition Bill in Hong Kong (the 'Bill')," June 11, 2019. <https://drive.google.com/file/d/1dk56wRnVvUpwW2uLhLSKxOM3H6WgjAl/view>; Hong Kong Bar Association, "Observations of the Hong Kong Bar

Hong Kong authorities argued the bill would close loopholes in its statutory extradition mechanism, citing a February 2018 case involving a Hong Kong resident accused of murdering his girlfriend in Taiwan. In that case Hong Kong lacked the legal basis to conclude an arrangement for surrendering the suspect to Taiwan for prosecution.¹ The potential that the bill would permit extradition to mainland China drew widespread alarm from Hong Kong democracy supporters and the international community, and rare opposition from business interests in Hong Kong.*

The proposed bill would have amended laws in force since the 1997 handover, which explicitly prohibited extradition arrangements with mainland China due to Hong Kong's concerns over Beijing's opaque legal system and lack of human rights protections.² Critics of the bill expressed two primary concerns: (1) that Hong Kong and foreign citizens could be extradited to mainland China for political or commercial reasons; and (2) that China's legal system lacks guarantees for a fair trial.³ In 2015 and 2017, mainland agents abducted, respectively, Hong Kong sellers of political gossip books banned in mainland China and a Chinese-born Canadian billionaire, demonstrating Beijing's disregard for rule of law in Hong Kong.⁴ Lam Wing-kee, one of the booksellers who escaped Chinese custody, moved to Taiwan in April 2019 due to worries of being extradited to the Mainland.⁵ Activists feared the extradition bill would serve to regularize and legalize such extrajudicial abductions by Beijing.⁶

After months of largely peaceful demonstrations, Chief Executive Lam in September 2019 announced the formal withdrawal of the legislation, which appeared to be a reversal in Beijing's tactics to weaken support for the protest movement among moderate Hong Kong citizens.⁷ This move, however, only satisfied one of the movement's five demands, which had expanded since July to include renewed calls for true universal suffrage in Hong Kong elections—the goal of the 2014 Occupy Central prodemocracy protests.† The inclusion of universal suffrage as a key demand suggests that these unresolved political reforms remain a major concern among Hong Kong citizens. Protesters came to view the longstanding unresolved promise of credible democratic elections as the only guarantee of a truly representative government. The other unmet demands, which have been consistent since mid-June 2019, include the establishment of an independent investigation into claims of excessive force

Association on the Security Bureau's Proposal to Amend the Mutual Legal Assistance in Criminal Matters Ordinance, Cap. 525 and the Fugitive Offenders Ordinance, Cap. 503," March 4, 2019, 10–13; Hong Kong Security Bureau, *Legislative Council Panel on Security Cooperation between Hong Kong and Other Places on Juridical Assistance in Criminal Matters*, February 15, 2019.

* For more information about the extradition bill and widespread opposition to the bill among local observers and foreign governments, see Ethan Meick, "Hong Kong's Proposed Extradition Bill Could Extend Beijing's Coercive Reach: Risks for the United States," *U.S.-China Economic and Security Review Commission*, May 7, 2019.

† The Occupy movement (also referred to as Occupy Central with Love and Peace, the "Umbrella Movement," or the "Umbrella Revolution") advocated for true universal suffrage according to international standards in future Hong Kong elections. The largely nonviolent protests occupying some of the city's major thoroughfares lasted 79 days and concluded in December 2014, but the prodemocracy activists' proposals were rebuffed. For more information on the 2014 prodemocracy protests and the subsequent decisions by the Hong Kong and mainland governments on electoral reform, see U.S.-China Economic and Security Review Commission, *2014 Annual Report to Congress*, November 2014, 523–527; U.S.-China Economic and Security Review Commission, *2015 Annual Report to Congress*, November 2015, 534–536.

used by police; dropping of the “riot” designation of protests;* and freeing all those arrested.⁸ Growing worries across Hong Kong society, especially among young people, about their future in the face of rising living costs and diminished job opportunities have added to widespread discontent.⁹ Notably, these grievances have not become formal protest demands.

As demonstrations continued through the summer of 2019, the political crisis in Hong Kong deepened with no clear end in sight. In August 2019, China’s Hong Kong and Macau Affairs Office director Zhang Xiaoming said the territory was facing “[its] most severe situation” since the 1997 handover from the United Kingdom to China.¹⁰ According to Hong Kong Public Opinion Research Institute polling, Chief Executive Lam’s approval rating that month fell to 17 percent—an all-time low among chief executives—down from 54 percent in 2017.¹¹ The demonstrations paralyzed the Legislative Council (LegCo), Hong Kong’s legislature, and postponed consideration of the controversial Beijing-supported National Anthem Bill † and other legislation until at least October 2019, when LegCo’s next session was provisionally scheduled to begin.¹² As of the writing of this Report, it is unclear how the movement will evolve, but it has already had significant implications for the territory’s future.

The protests united prodemocracy activists and supporters across a wide spectrum in response to Beijing’s increasing intrusions into Hong Kong’s autonomy. Previously, democracy supporters were dismayed and divided over the failure of the groundbreaking 2014 Occupy protests to achieve true universal suffrage, the loss of a prodemocracy majority of geographical constituency seats in LegCo in 2017 due to Beijing’s intervention,‡ and the emergence of more radical political parties causing disagreement over political priori-

*On June 12, as LegCo was scheduled to resume consideration of the extradition bill, unions and hundreds of businesses called for a workers’ strike, while tens of thousands of protesters occupied the roads around the Hong Kong government headquarters and LegCo, preventing it from considering the legislation. Hong Kong authorities labeled the protest a “riot” and made dozens of arrests in its aftermath. The Hong Kong police commissioner later said only those who engaged in violent actions targeted at police during the June 12 protest would face “rioting” charges. Tony Cheung, Victor Ting, and Jeffie Lam, “Hong Kong Police Chief Stephen Lo Steps Back from Riot Label as Carrie Lam Keeps Low Profile,” *South China Morning Post*, June 18, 2019; Christopher Bodeen, “Hong Kong Protesters Vow to Keep Fighting Extradition Law,” *Associated Press*, June 12, 2019; Shawna Kwan and David Tweed, “Hong Kong Protesters Gather Before Extradition Bill Debate,” *Bloomberg*, June 11, 2019.

†In 2017, China’s National People’s Congress Standing Committee passed a National Anthem Law, allowing authorities to detain individuals up to 15 days or hold them criminally liable for disrespecting China’s national anthem. The same year, the lawmaking body increased the maximum punishment to three years imprisonment and changed the Basic Law, requiring Hong Kong to pass its own local legislation. Kevin Carrico, “Legal Malware: Hong Kong’s National Anthem Ordinance,” *Hong Kong Watch*, March 28, 2019; Government of the Hong Kong Special Administrative Region Gazette, *National Anthem Bill*, January 11, 2019; Stuart Lau, Kimmy Chung, and Catherine Wong, “China Imposes National Anthem Law on Hong Kong, Raising Specter of Prison Terms for Abuse of Song,” *South China Morning Post*, November 4, 2017; The Basic Law of the Hong Kong Special Administrative Region of the People’s Republic of China, *Annex III: National Laws to be Applied in the Hong Kong Special Administrative Region* (Adopted by the National People’s Congress Standing Committee on November 4, 2017).

‡In November 2018, the pro-Beijing (or pro-establishment) camp expanded its majority in the geographical constituency over the prodemocracy camp (or pandemocrats)—increasing its total seats to 18 versus the 16 held by pandemocrats—when pro-Beijing candidate Chan Hoi-yan won the LegCo Kowloon West by-election following the disqualification of prodemocracy lawmaker Lau Siu-lai over the 2016 oath controversy. Prior to the by-election, Ms. Lau attempted to run for her vacated seat, denouncing her past political views of Hong Kong self-determination, but the Hong Kong government barred her from running, insisting her views had not changed. Sum Lok-kei, Su Xinqi, and Ng Kang-chung, “Hong Kong Pro-Establishment Candidate Chan Hoi-yan Wins Kowloon West By-Election,” *South China Morning Post*, November 25, 2018.

ties. The current protest movement also appeared to reflect a growing sense of Hong Kong identity. According to a June 2019 poll, 53 percent of respondents identified as “Hongkongers,” while only 11 percent identified as “Chinese,” the highest and lowest percentages, respectively, since the 1997 handover.¹³

Hong Kong’s Special Status under the U.S.-Hong Kong Policy Act of 1992

Congress passed the United States-Hong Kong Policy Act of 1992 to institutionalize U.S. treatment of Hong Kong for the period starting from the British handover of Hong Kong to China in 1997 until at least Hong Kong’s formal reintegration with China in 2047. This act was predicated on the assumption that following Hong Kong’s handover and for at least 50 years thereafter, the Hong Kong Special Administrative Region would still “enjoy a high degree of autonomy on all matters other than defense and foreign affairs” under China’s “one country, two systems” framework (which also applies to Macau).¹⁴ Beijing’s commitments under the framework are included in Hong Kong’s Basic Law, adopted by China’s National People’s Congress in 1990 and introduced following the handover.¹⁵

The act recognizes Hong Kong’s important role in the regional and global economy and states that Hong Kong’s strong economic and cultural ties with the United States underpin U.S. interests in the “continued vitality, prosperity, and stability of Hong Kong.”¹⁶ It also states that all parts of the act will remain in force unless the U.S. president makes a determination that Hong Kong “is not sufficiently autonomous to justify treatment under a particular law of the United States ... different from that accorded the People’s Republic of China,” but could also be subsequently reinstated if the president determined Hong Kong had regained sufficient autonomy.¹⁷

The agreement allows for special treatment of Hong Kong in a variety of arenas, including:

(1) Support for Hong Kong’s participation in multilateral fora where Hong Kong is eligible;

(2) Separate treatment for Hong Kong in regard to economic and trade matters, including import quotas, nondiscriminatory trade treatment, sustained operation of U.S. businesses, and access to sensitive technologies controlled under the multilateral Coordinating Committee for Multilateral Export Controls (replaced by the Wassenaar Arrangement)¹⁸ for as long as the United States “is satisfied that such technologies are protected from improper use or export”;¹⁹

(3) Recognition of Hong Kong’s ships, airplanes, transport licenses, and the negotiation of new transport service agreements; and

(4) Continued cultural and educational exchange, including through the Fulbright Academic Exchange Program and other exchanges of culture, education, science, and academic research.

The United States’ separate treatment afforded to Hong Kong has led to more than a dozen bilateral U.S.-Hong Kong agree-

Hong Kong's Special Status under the U.S.-Hong Kong Policy Act of 1992—Continued

ments,* including one on mutual extraditions, the Surrender of Fugitive Offenders Agreement.²⁰ This treaty, which went into force in January 1998, was ratified by the U.S. Senate with the understanding that no third-party transfers to other jurisdictions within the People's Republic of China (PRC) would be allowed without U.S. consent and that Hong Kong courts would have the final adjudication authority as guaranteed under the 1984 Sino-British Joint Declaration.²¹ Although the Hong Kong government said its proposed extradition bill would not impact its existing extradition treaties—including arrangements with the United States—and promised no third-party transfers would be allowed, the question remained open concerning Beijing's interpretation of the bill.²²

While Chief Executive Lam announced in September 2019 the formal withdrawal of the bill from consideration in LegCo, a similar bill could be proposed again in the future. One potential rationale for reintroducing comparable legislation stems from Beijing's concerns that corrupt mainland officials and other fugitives are living in Hong Kong.²³ Chen Zhimin, former deputy minister of China's Ministry of Public Security said in March 2019 that more than 300 "important criminals" have fled to Hong Kong from the Mainland.²⁴

Historic Protests Prompt Withdrawal of Bill and Escalating Political Crisis

Demonstrations initially targeting the extradition bill that began in early June 2019 grew into an unprecedented mass movement. Its momentum forced Chief Executive Lam to suspend the bill on June 15 and to promise on September 4 to formally withdraw the legislation from consideration, dealing a major blow to Beijing which backed the bill. Simultaneously, it raised questions about Chief Executive Lam's political future and the viability of her Administration's agenda.²⁵ Some Hong Kong analysts judged her initial attempt to push through the bill was a political calculation to please Beijing and improve her chances of securing a second term in office.²⁶ Many activists and prodemocracy supporters viewed the movement as the Hong Kong people's last stand to preserve their already vulnerable freedoms from Beijing, and judged that the bill's withdrawal was not sufficient to guarantee an end to Beijing's encroachment.²⁷

The movement, which does not have clearly-identified leaders like the 2014 Occupy protests, has involved record-setting numbers of demonstrators and brought together people of all ages and socio-economic backgrounds, including diverse sectors of Hong Kong

*These include the following: mutual legal assistance, surrender of fugitive offenders, the transfer of sentenced persons, double taxation avoidance, tax information exchange, consular affairs, and air services, among others. Hong Kong Special Administrative Region Department of Justice, "Treaties and International Agreements." <https://www.doj.gov.hk/eng/laws/treaties.html>; U.S. Department of State, *The Hong Kong Policy Act Report*, June 30, 2007. <https://2001-2009.state.gov/p/eap/rls/rpt/2007/87648.htm>; U.S. Department of State, *United States-Hong Kong Policy Act Report*, as of March 31, 1997, April 14, 1997. https://1997-2001.state.gov/regions/eap/970331_us-hk_pol_act_rpt.html#ID.

civil society, government employees, and many who previously considered themselves apolitical.²⁸ Hong Kong writer and activist Kong Tsung-gan judges at least 30–45 percent of Hong Kong’s 7.4 million residents have joined in the protests (see Addendum I for a list of select protests to date).²⁹ More than 150 “Lennon Walls”^{*} materialized around the territory from subway stations to pedestrian walkways displaying messages of support for the movement and its demands.³⁰

Hong Kong Government Rebuffs Mounting Protester Demands as Beijing Tightens Its Control

Since its inception, the movement has evolved in its demands and protest tactics in response to the uncompromising stance of the Hong Kong government and increasingly harsh rhetoric and tactics employed by Beijing toward the demonstrations. Largely peaceful protests against the bill, including the largest march in the territory’s history on June 16 reportedly involving 2 million people—more than a quarter of Hong Kong’s population—did not immediately result in the bill’s complete withdrawal.³¹ Days after she suspended the extradition bill, Chief Executive Lam issued written and oral apologies for not adequately explaining the bill and taking into account all views across Hong Kong society. At the press conference announcing the bill’s suspension, she defended initially raising the measure, did not accept sole responsibility for its introduction, and refused to resign from office.³²

In the televised address announcing the bill’s withdrawal—after nearly three months of escalating protests—Chief Executive Lam argued that the government had responded to all of the protesters’ demands and insisted dialogue could address any remaining differences. The demonstrators’ overwhelming response, however, was that the concession was “too little, too late,” and that all of their demands must be met.³³ Many do not trust the Lam Administration’s overtures for dialogue given the arrest of protest leaders, including those who met with Hong Kong senior officials during the 2014 Occupy protests.³⁴ Furthermore, some judged the concession on withdrawing the bill may have been designed to justify a future crackdown.³⁵

Beijing appears to be fully in control of the Hong Kong government’s moves to try to resolve the situation, having reportedly rejected Chief Executive Lam’s attempts to resign from office and grant several protester demands. According to *Reuters*, Beijing rejected her plan earlier in the summer to appease demonstrators by withdrawing the bill and establishing an independent probe to examine police abuse.³⁶ *Reuters* leaked Chief Executive Lam’s private conversation with Hong Kong businesspeople in late August 2019, where she said, “If I have a choice, the first thing is to quit.” She also said that in having to “serve two masters [Beijing and the Hong Kong people], [the] political room for maneuvering is very, very, very

^{*}Inspired by the original “John Lennon Wall” established in Prague in the 1980s upon the artist’s death, Hong Kong prodemocracy protesters first created their version of a “Lennon Wall” during the 2014 Occupy protests to share messages of support and encouragement for the movement. Pro-Beijing individuals have frequently vandalized the Lennon Walls but activists have quickly rebuilt them. Joyce Zhou and John Ruwitch, “Imagine All the Post-Its: Hong Kong Protesters Come Together with ‘Lennon Walls,’” *Reuters*, July 11, 2019.

limited.”³⁷ According to prominent activists and participants in the protest movement, Chief Executive Lam’s actions to date have been largely focused on serving Beijing and not honestly engaging with all Hong Kong civic groups.³⁸

As the Hong Kong government rebuffed protester demands, some have also resorted to bolder tactics. According to a series of surveys conducted by Hong Kong researchers in June–August 2019, a majority of demonstrators believed peaceful, nonviolent protests such as those used during the 2014 Occupy movement were no longer useful in capturing the attention of the Hong Kong government.³⁹ The intensified tactics have involved occupying major roads and transportation hubs as well as targeting symbols of Beijing’s sovereignty over Hong Kong, such as the storming of LegCo, the defilement of Beijing’s Liaison Office emblem and exterior, removing (and in some cases damaging) PRC flags, and vandalizing China-owned and pro-Beijing businesses.⁴⁰ Other tactics have included city-wide strikes, the occupation of Hong Kong’s international airport, the targeting of subway stations, and boycotts of university and school classes.⁴¹

Hong Kong Police Escalate Arrests and Violence in Response to Protests

As protests have evolved, Hong Kong police have increasingly arrested and used violence against demonstrators. As of October 1, 2019, at least 2,022 protesters aged 12 to 83 have been arrested and 324 charged—174 protesters were charged with “rioting,” which carries a maximum ten-year jail sentence under Hong Kong law.⁴² Several thousand protesters are estimated to have suffered injuries, some severe (police have reportedly had over 200 injuries).⁴³ Illustrating the growing desperation and willingness of some to risk injury and even death for the movement, at least eight young activists have reportedly committed suicide protesting the bill. Many view these activists and others who have suffered serious injuries as martyrs for the cause.⁴⁴

The Hong Kong Police Force has escalated its use of force against demonstrators, employing record numbers of crowd control munitions, many of which are exported from the United States (see text-box later in this section). Numerous cases have been reported where the dangerous usage of these items led to serious injury, including among bystanders such as journalists who were also targeted by the police.⁴⁵ From June 9 to September 20, 2019, police said they fired 3,100 rounds of tear gas, 590 rubber bullets, and 290 sponge grenades.⁴⁶ By comparison, police fired 87 rounds of tear gas during the two-month 2014 Occupy protests.⁴⁷ On October 1, 2019—as hundreds of thousands participated in protests throughout Hong Kong, disrupting China’s celebration of the 70th anniversary of its founding—police significantly escalated their use of force, reportedly firing record numbers of munitions, including 1,400 tear gas canisters, 900 rubber bullets, and 230 sponge grenades.⁴⁸ For the first time, that day a police officer also used live ammunition to shoot a protester, an 18-year-old student, at point blank range. As of this writing, the student was in stable condition.⁴⁹

Violating commonly accepted policing standards, police have fired tear gas without warning from buildings onto demonstrators below, from inside subway stations (along with rubber bullets), and appeared to aim directly at individual protesters and journalists.⁵⁰ The UN High Commissioner for Human Rights office in mid-August said the Hong Kong police were defying “international norms and standards” and fired tear gas canisters in ways that created “a considerable risk of death or serious injury.”⁵¹

In addition to using munitions, the police have used pepper spray improperly and beat protesters and bystanders with batons in many cases where there is no resistance of arrest.⁵² On August 31, police entered a subway station beating people with batons and firing pepper spray inside the station and on trains, causing severe injuries and arresting 53 people.⁵³ Since at least August 11, police have also dressed as protesters to make violent arrests without disclosing they are police—contradicting Hong Kong policing regulations—which has raised fear among demonstrators.⁵⁴

Many involved in the protest movement have criticized the Hong Kong police for targeting protesters and arresting bystanders near demonstrations but arresting few violent thugs responsible for attacks on Hong Kong citizens.⁵⁵ In a September report, Amnesty International documented multiple cases of police denying or delaying access to lawyers and medical care for detainees, as well as evidence of protesters experiencing torture and other cruel treatment in custody.⁵⁶ In some cases, these police actions appeared to be in retaliation for the demonstrations or retribution for being uncooperative.⁵⁷ As police have adopted more aggressive tactics, Beijing has barred mainland online retailers from selling protective equipment used by protesters, such as gas masks and hard hats, to Hong Kong.⁵⁸

The Hong Kong Police Force’s ties with mainland law enforcement may have contributed to Hong Kong police adopting crowd control methods used in mainland China.⁵⁹ Some observers suspect a number of mainland police officers have been stationed in the territory working alongside Hong Kong police, though the latter have denied the allegations.⁶⁰ In December 2018, members of Hong Kong’s newly-established Interdepartmental Counterterrorism Unit visited China’s Xinjiang region, where China has imprisoned up to 2 million Uyghurs and members of other Muslim groups in prison camps, to “exchange views on counterterrorism-related areas.”⁶¹

Hong Kong Police using U.S.-Made Crowd Control Munitions and Equipment

Given Hong Kong’s special status regarding export controls under U.S. law, U.S. businesses are allowed to export police crowd control-related items to the territory upon receiving a license from the U.S. Department of Commerce or U.S. Department of State. According to media reports, at least seven types of U.S.-manufactured munitions and equipment have been used against demonstrators, though the total sales and volume of such exports are unclear.⁶² In Fiscal Year 2017, the U.S. Department of State authorized \$81,000 worth of toxicological agents, which could include tear gas, and 291 non-automatic and semi-automatic firearms for

Hong Kong Police using U.S.-Made Crowd Control Munitions and Equipment—*Continued*

export to Hong Kong.⁶³ Amnesty International found that Hong Kong police have used U.S.-made pepper spray, batons, rubber bullets, and two different types of projectile launchers during the ongoing protests.⁶⁴ Independent Hong Kong news outlet *Hong Kong Free Press* reported that tear gas and sponge grenades used by police are also sourced from the United States.⁶⁵

Protesters' Targeting of Beijing Draws China's Ire and Growing Involvement

The escalation of the protest movement's demands and targeting of symbols of the PRC's rule over Hong Kong angered Beijing and prompted it to take an increasingly heavy-handed approach toward the movement. On July 1, the anniversary of the 1997 handover and the date of an annual prodemocracy march, demonstrators defaced several prominent symbols of Beijing's authority over the territory. Before the official flag-raising ceremony marking the anniversary of the handover, protesters removed the PRC flag flying in front of the LegCo office complex, replaced it with the upside-down black and white Hong Kong flag used throughout the protest movement, and lowered it and the Hong Kong flag on an adjacent pole to half-staff.⁶⁶

The same day, hundreds of young protesters took the unprecedented action of storming LegCo, breaking windows and doors to enter the building, which they occupied for several hours and covered in graffiti targeting the Hong Kong government and Beijing. In moves of significant symbolism, protesters tore up copies of the Basic Law, spray painted the Hong Kong emblem including the PRC emblem above the LegCo chamber black, and hung the Hong Kong flag used during the territory's colonial era above the LegCo president's podium.⁶⁷ Following a peaceful march of hundreds of thousands on July 21 protesting continued inaction by the Hong Kong government in addressing the protest movement's demands, thousands of protesters gathered outside Beijing's Liaison Office in the territory and a mass of demonstrators defiled the exterior of the building in a move that further angered Beijing. Some demonstrators threw paint balloons at the Liaison Office's PRC emblem, wrote anti-China and anti-extradition graffiti on the building, covered exterior lettering and security cameras with black spray paint, and threw eggs at the building.⁶⁸

Beijing Steps Up Condemnations and Threatens Use of Force

In response to these incidents, Beijing significantly increased its messaging efforts concerning the protests. Following the vandalism of the Liaison Office on July 21, China's Ministry of Foreign Affairs spokespeople used the harshest rhetoric since the start of the protest movement, stating that the "[behavior] of some radical protesters have crossed the bottom line of the 'one country, two systems' principle."⁶⁹ They also said "China will not tolerate any foreign forces intervening in Hong Kong affairs" and "[China advises] the United States to take back their black hands from Hong Kong as soon as possible."⁷⁰ While mainland China previously minimized coverage

of the demonstrations and censored all online discussion, Beijing started broadcasting selected images and video of the protest, publishing high-profile editorials condemning it, and encouraging public condemnation of the protests on Chinese social media.⁷¹ Offering no evidence, in August 2019 at its first press conferences on Hong Kong since the 1997 handover, China's Hong Kong and Macau Affairs Office described the evolving protests as "showing signs of terrorism" and displaying the "characteristics of a color revolution."⁷² It also repeatedly accused "foreign forces" of influencing the protests and portrayed the demonstrations as a violent minority undermining the stability of Hong Kong, disinformation that mainland and pro-Beijing Hong Kong media echoed.⁷³

Beijing has also used the People's Liberation Army (PLA) and People's Armed Police as messaging tools to try to deter demonstrations and signal its willingness to carry out armed intervention to suppress the protest movement. Chinese officials and others have noted the PRC's legal authority to intervene militarily in Hong Kong. On July 24, China's Ministry of National Defense spokesperson said the Hong Kong government could request the central government to allow the PLA Garrison in Hong Kong to "maintain social order" if needed according to the Law of the PRC on the Garrisoning of Hong Kong, a provision other commentators noted is in the Basic Law.⁷⁴

Implicit threats of PLA and People's Armed Police direct intervention in Hong Kong have underlined Beijing's messaging campaign. In late July, the PLA's 74th Group Army—based less than 60 miles (100 kilometers) from Hong Kong—announced on social media that several of its brigades were holding an exercise focusing on quelling large-scale unrest in an urban environment.⁷⁵ On August 1, the anniversary of the PLA's founding, the PLA Garrison in Hong Kong released a propaganda video showing the garrison's soldiers participating in an antiriot exercise.⁷⁶ Later in the month, People's Armed Police and Ministry of Public Security units participated in three antiriot exercises in Shenzhen, a major city just over the border from Hong Kong, which involved more than 12,000 police, armored personnel carriers, and other equipment, confronting mock protesters wearing black shirts and hard hats closely resembling the Hong Kong demonstrators.⁷⁷

On August 29, the PLA Hong Kong Garrison completed its annual rotation of troops, which it has held each year since the 1997 handover.⁷⁸ However, *Reuters* cited a number of foreign diplomats residing in Hong Kong as saying they did not observe any sizable forces leaving the territory before or after the rotation. Several of the diplomats assessed the number of military personnel in the territory now stood at between 10,000 and 12,000, more than doubling the number of forces stationed in Hong Kong prior to the August 29 troop movement. The diplomats further noted the contingent had assembled a record quantity of anti-riot equipment.⁷⁹

Disinformation Campaign and Violence Seek to Undermine Movement

Beijing has also engaged in a large-scale disinformation campaign and used a range of other tools to attempt to discredit the movement and boost national sentiment supporting the Hong Kong gov-

ernment and the CCP's uncompromising response to the protests. On August 19, Twitter and Facebook took the unprecedented step of publicly disclosing an ongoing disinformation operation conducted by a foreign state actor and suspended state-backed accounts. They announced separately that Chinese state actors were involved in a coordinated campaign to leverage both platforms to control the global narrative on the movement and support Beijing's portrayal of the protests.⁸⁰ Twitter initially suspended 936 accounts originating from mainland China assessed to be the most active part of the campaign, and then proactively suspended a larger, less active network of 200,000 accounts thought to be linked to the PRC, while Facebook removed a number of accounts and groups tied to the campaign.⁸¹ Updating its ad policy the same day it disclosed the suspended accounts, Twitter said it would no longer sell ad space to Chinese state media or other state-controlled media sources.⁸² Several days later, Google disabled 210 YouTube channels that exhibited coordinated behavior that appeared linked to the Chinese state-sponsored campaign attempting to spread disinformation about the protests.⁸³

The CCP has combined disinformation efforts with its apparent encouragement of local gangs and mainland community groups to attack protesters,* as pro-Beijing thugs armed with sticks and other makeshift weapons have assaulted demonstrators and bystanders.⁸⁴ In one notable attack in July 2019, a mob of suspected gang members targeted protesters and bystanders—including journalists, Hong Kong prodemocracy lawmaker Lam Cheuk-ting, and a pregnant woman—in the Hong Kong satellite town of Yuen Long near the mainland border, injuring 45 people.⁸⁵ As of a month after the incident, 30 of the alleged perpetrators have been arrested and 4 have been charged with rioting.⁸⁶

The Yuen Long incident prompted accusations that the Hong Kong police were purposefully not protecting activists, which appeared to be supported by footage obtained by public broadcaster Radio Television Hong Kong.⁸⁷ A week before the incident, director of the CCP Liaison Office's New Territories branch Li Jiye gave a speech to community leaders in Yuen Long denouncing the protesters and urging residents to keep them away from the town.⁸⁸ There have also been numerous attacks on prominent Hong Kong prodemocracy leaders and supporters: lawmaker Roy Kwong was assaulted by a group of masked men; Civil Human Rights Front convener Jimmy Sham was attacked by a pair of masked perpetrators wielding a knife and baseball bat; and the home of Next Media Group chairman Jimmy Lai was firebombed by two masked men.⁸⁹

More worrisome examples of Beijing's escalating disinformation campaign have appeared. The pro-Beijing Hong Kong newspaper *Ta Kung Pao* published personal details about a political officer serving in the U.S. Consulate General in Hong Kong who in the course of her normal duties had a meeting with Hong Kong prodemocracy activists.⁹⁰ The article, which PRC media reposted, asserted the meeting was ev-

*The CCP has used organized crime in the past in both Hong Kong and Taiwan as a tool to threaten and assault democracy activists and journalists. During the 2014 Occupy protests, as many as 200 gang members attacked demonstrators and tried to stir up violence to discredit them. Gerry Shih, "China's Backers and 'Triad' Gangs Have a History of Common Foes. Hong Kong Protesters Fear They Are Next," *Washington Post*, July 23, 2019; J. Michael Cole, "Nice Democracy You've Got There. Be a Shame if Something Happened to It." *Foreign Policy*, June 18, 2018.

idence of the U.S. “black hand” in Hong Kong and listed the names of her immediate family members.⁹¹ In a separate example, since August 2019, the popular short-video app TikTok, whose parent company is Beijing-based ByteDance, appeared to be censoring content on the U.S. version of its app relating to the Hong Kong protests and other topics deemed sensitive by Beijing. In 2018, TikTok was the fourth most downloaded app worldwide on the iOS App Store and Google Play and has remained among the most popular apps globally.⁹²

There have been instances of Hong Kong police impersonating protesters; there are also allegations of PRC officers posing as Hong Kong police.⁹³ Growing concern of such agent provocateurs among demonstrators was evidenced after their peaceful occupation on August 13 of the Hong Kong International Airport, which resulted in the cancelation of at least 120 flights.⁹⁴ Inside the airport, some protesters detained and assaulted a suspected mainland police officer as well as a journalist from the PRC state-run tabloid *Global Times*, although neither suffered serious injury.⁹⁵ China’s Hong Kong and Macau Office spokesperson called the incidents “conduct close to terrorism,” invoking a term that could potentially justify additional punitive measures from Beijing.⁹⁶

Protests Show Continued Momentum amid Looming Threats of Crackdown

As Hong Kong students returned to school in September 2019, many observers predicted the protest movement would wane, but it has shown continued momentum and focused on building international support. University and elementary school students participated in a two-week class strike at the start of the month, holding rallies on university campuses and organizing demonstrations.⁹⁷ Many students at schools and universities across Hong Kong formed human chains, continuing a protest tactic used during the late August “Hong Kong Way” human chain demonstration which spanned 37 miles throughout Hong Kong and involved some 210,000 people. The Hong Kong Way was formed on the 30th anniversary of the “Baltic Way” human chain across Baltic countries in 1989 calling for independence from the Soviet Union.⁹⁸ In late August, an anonymous author wrote a song called “Glory to Hong Kong” that has become the anthem of the movement. The song, whose lyrics include protest slogans and invoke the movement’s democratic aspirations, reflects a growing sense of Hong Kong identity with many viewing it as the new national anthem of Hong Kong.⁹⁹ Meanwhile, the movement’s participants have sought to attract international attention as demonstrations have focused on foreign government policy actions and protester delegations have taken their message to the international community.¹⁰⁰

*In August 2019, the protest movement held sit-ins at the airport and a general strike that included airline workers, which led to the cancelation of at least 500 flights. The Hong Kong Airport Authority reported a 12.4 percent drop in passengers in August, the largest monthly fall in a decade. Danny Lee, “Hong Kong International Airport Posts Biggest Monthly Drop in Travelers Since 2009, with 851,000 Fewer Passengers in August Amid Anti-Government Protest Crisis,” *South China Morning Post*, September 15, 2019; Jessie Yeung et al., “Flights Canceled, Major Roads Blocked as Hong Kong Protests Escalate,” *CNN*, August 19, 2019; *Associated Press*, “Hong Kong’s Business Reputation Takes Hit with Second Day of Airport Chaos,” August 13, 2019; Austin Ramzy and Gerry Mullany, “Over 150 Flights Canceled as Hong Kong Airport Is Flooded by Protesters,” *New York Times*, August 12, 2019.

As protests have continued, Chief Executive Lam and her administration left open the possibility of implementing the Emergency Regulations Ordinance, while Beijing and pro-Beijing figures in Hong Kong have raised alternative legal tools that could be used to halt the demonstrations. The ordinance is a colonial-era law that allows for the granting of emergency powers, such as censoring the press, adopting new laws without any legislative checks, or even controlling access to the internet.¹⁰¹ Hong Kong Secretary for Commerce and Economic Development Edward Yau said he thought the international community would understand the use of the measure and that trade would not be impacted.¹⁰² Critics have argued this move would have dangerous consequences. According to Martin Lee, founder of Hong Kong's Democratic Party and a former legislator, implementing the ordinance would violate the Basic Law and destroy Hong Kong.¹⁰³ During a September 3, 2019 press conference, the Hong Kong and Macau Affairs Office spokesperson said Article 18 of the Basic Law stipulates China could unilaterally declare a state of emergency and implement national laws in Hong Kong.¹⁰⁴ Some prominent pro-Beijing figures in Hong Kong have advocated for the use of this measure to put an end to the movement.¹⁰⁵

Taiwan's Solidarity with Protests Marks Rejection of "One Country, Two Systems"

The protest movement in Hong Kong helped deepen solidarity between Taiwan and Hong Kong democracy supporters and increase opposition in Taiwan to Beijing's preferred "one country, two systems" model for a future unification arrangement. Taiwan President Tsai Ing-wen and senior Taiwan officials repeatedly expressed their support for the Hong Kong protesters and denounced Beijing's growing encroachment on Hong Kong's autonomy. On June 9, the same day as one of the first mass protests against the extradition bill in Hong Kong, President Tsai said that during her presidency "one country, two systems will never be an option."¹⁰⁶ According to Taiwan Foreign Minister Joseph Wu, "These two outposts of democracy share the same values, and our paths and destinies are closely linked. [Taiwan and Hong Kong] both stand on the front line against the expansion of authoritarianism."¹⁰⁷ The Tsai Administration has also offered to help at least 30 Hong Kong protesters seeking asylum in Taiwan.¹⁰⁸ In the run-up to Taiwan's 2020 election, Kuomintang presidential candidate Han Kuo-yu (whose party's policies Beijing usually views more favorably) also publicly ruled out "one country, two systems," pointing to the Hong Kong protests.¹⁰⁹ Finally, the Taiwan people engaged in solidarity protests with the Hong Kong people, organizing the largest overseas solidarity protest as of September 2019, which according to organizers involved 100,000 participants.¹¹⁰ (Developments in Taiwan are discussed in further detail in Chapter 5, "Taiwan.")

Hong Kong's Autonomy under Continued Attack

Even before the introduction of the extradition bill, Hong Kong's autonomy and freedoms guaranteed to the territory's citizens under

the Basic Law—including rule of law and freedom of expression, assembly, and the press—faced continued challenges in 2019. Primary among these were the Lam Administration’s growing curbs on Hong Kong’s civil society and prodemocracy voices, which have restricted the space to criticize the Hong Kong authorities and the CCP. Meanwhile, Beijing has stepped up its direct intrusions into Hong Kong’s autonomy through CCP influence operations and cyberattacks. Some of the key incidents illustrating these recent developments include the manipulation of Hong Kong’s legal system, enforcement of PRC law by mainland police in part of one of Hong Kong’s rail hubs, and the CCP’s more overt hand in Hong Kong’s affairs.

Rule of Law and Freedom of Expression under Growing Stress

In 2019, the Hong Kong government, encouraged by Beijing, attempted to manipulate the legal system in ways beyond the introduction of the extradition bill by appearing to liberally use prosecutions to target prodemocracy activists. Most international and Hong Kong observers view Hong Kong’s legal system as a truly independent, well-respected institution, but the extradition bill and a series of other decisions and legal actions have caused some to question the integrity of the territory’s rule of law.¹¹¹

Many in the legal community viewed the extradition bill as an inflection point in the city’s legal system, as key legal professional associations, lawyers, and even judges spoke out in public opposition to the proposed measure and prosecutions of demonstrators involved in the ongoing protest movement.* In a rare public comment, three senior judges and 12 leading commercial and criminal lawyers spoke about the bill to *Reuters*, describing it as one of the starkest challenges to Hong Kong’s legal system.¹¹²

In early June 2019, Hong Kong lawyers participated in a silent march in protest against the extradition bill, only the fifth such march since the 1997 handover. Notably, it also marked the first time the legal community had marched concerning a matter unrelated to a judicial decision or Beijing’s interpretation of the Basic Law. Organizers said the march had a record 3,000 participants.¹¹³ Two months later, Hong Kong lawyers held a second silent march urging the Hong Kong authorities to stop political prosecutions of protesters involved in the movement. The march, which also involved a reported 3,000 participants, was held in the aftermath of the arrest of 44 demonstrators on rioting charges.¹¹⁴

Suspected Politically Motivated Arrests during Protests

As the Hong Kong authorities ramped up efforts to quell the protest movement, they appear to be conducting targeted, politically motivated arrests. Protesters planned a mass demonstration for August 31 to mark the anniversary of Beijing’s 2014 decision on the implementation of universal suffrage that led to the 2014 Occupy protests. During the lead up to this demonstration, eight

*The Hong Kong Bar Association, the professional regulatory body for barristers in Hong Kong, and the Progressive Lawyers’ Group, a prodemocracy advocacy group of lawyers promoting democracy and human rights, have issued numerous position papers and statements arguing that the extradition bill lacks safeguards and would damage rule of law. Progressive Lawyers Group, “A Brief of the Extradition Bill in Hong Kong,” June 11, 2019; Hong Kong Bar Association, “Observations of the Hong Kong Bar Association (HKBA) on the Fugitive Offenders and Mutual Legal Assistance in Criminal Matters Legislation (Amendment) Bill 2019,” April 2, 2019.

prominent prodemocracy figures were arrested for their involvement in protests throughout the movement.*¹¹⁵ Those arrested included three prodemocracy LegCo members, Au Nok-hin, Jeremy Tam, and Cheng Chung-tai,† as well as District Council member Rick Hui, Demosistō secretary-general and prominent leader of the Occupy protests Joshua Wong and his fellow Demosistō colleague Agnes Chow, Andy Chan (leader of banned pro-independence Hong Kong National Party), and former student leader Althea Suen. Charges ranged from obstructing police and participating in an unapproved assembly to assaulting a police officer and rioting—the latter two charges could result in significant jail time if the accused is found guilty (only Mr. Chan was charged with rioting).¹¹⁶ The high-profile arrests appeared designed to have a deterrent effect on the August 31 march and rally, which the Hong Kong police banned and the organizers canceled.¹¹⁷ However, tens of thousands defied the arrests and ban to proceed with the protest.¹¹⁸

Freedom of Assembly Restricted during Demonstrations

In violation of the Basic Law's protection of freedom of assembly and the International Covenant on Civil and Political Rights, the Hong Kong police have effectively made protests illegal by denying the issuance of "no-objection notices" to protest organizers.‡ Victoria Tin-bor Hui, professor at Notre Dame University, testified to the Commission that the denial of permits has been rare since the 1997 handover, but the move has become a regular occurrence since late July when Beijing increased its involvement. She noted the denial of legal assemblies is designed to limit turnout at these protests, and give justification to Hong Kong police to respond to "unlawful assemblies" with force.¹¹⁹

The Civil Human Rights Front, an umbrella organization of prodemocracy groups which has organized the largest peaceful marches in Hong Kong to date, faced total denials of its permit requests for August 31 and September 15 marches, the first time demonstrations planned by the organization had been banned since the start of the protest movement.¹²⁰ Its October 1 march was also banned by police, though its rally on September 28—the five-year anniversary of the Occupy protests—was authorized.¹²¹ While few large-scale protests since August have been approved unless organizers agree to reduce the scale or move away from areas deemed sensitive, organizers have proceeded to plan and execute demonstrations even under risk of arrest for unlawful assembly.¹²²

*Demosistō chairman Ivan Lam was charged at the same time Joshua Wong and Agnes Chow appeared in court on August 30, but he was not in Hong Kong then. Upon his return on September 3, Mr. Lam was arrested at the airport and charged with "inciting others to participate in an unauthorized assembly." *RTHK*, "Demosistō Leader Ivan Lam Arrested at Airport," September 3, 2019.

†A fourth prodemocracy LegCo member, Ted Hui, was arrested on September 15, 2019 for obstructing police. If Mr. Hui or the other legislators that were arrested are sentenced to more than one month in jail, they could be removed from office by a two-thirds majority vote in LegCo. As of September 16, a number of other prominent figures have been arrested due to their involvement in demonstrations, including three march organizers, two student leaders, and two district councilors. Kong Tsung-gan, "Hong Kong Anti-Extradition Demonstrations and Arrests," *Medium*, October 2, 2019; Benny Tai, "Who Has the Power to Remove a Lawmaker from Office?" *Hong Kong Economic Journal*, October 25, 2016.

‡Under Hong Kong's Public Order Ordinance, all protests in Hong Kong require a letter of no objection from the Commissioner of Police. If the organizer of the protest receives an objection letter, they are able to submit an appeal letter to the Appeal Board on Public Meetings and Processions. Cap. 245 Public Order Ordinance, November 17, 1967.

Adding to the ire of protesters, the Mass Transit Railway (MTR) Corporation, the company that runs Hong Kong's subway system, announced in late August that it would close MTR stations without prior notice "if fights, vandalism, or acts of violence occur."¹²³ The announcement came after Chinese state media criticized the firm for colluding with demonstrators and allowing them safe passage to escape the police.¹²⁴ Since then, the company has frequently closed MTR stations around protest sites (including those that received permits), preemptively closed stations to prevent people from reaching planned demonstration sites, operated private trains for police to use, and allowed police to use closed stations as rest areas.¹²⁵ Given the company's actions, demonstrators started calling it "the CCP's railway."¹²⁶ The firm operates a number of rail lines and property in mainland China and the Hong Kong government owns a 75 percent stake in the company.¹²⁷

Leaders of 2014 Occupy Protests Sentenced

Nearly five years after the 2014 Occupy movement, the Hong Kong authorities sentenced nine leaders from the protests, raising concerns from rights advocates regarding freedom of expression, particularly prosecutors' use of outdated and rarely used colonial-era public nuisance and Public Order Ordinance laws to target activists. In April 2019, the nine leaders were convicted on public nuisance charges for acts of civil disobedience, resulting in punishments ranging from jail sentences (up to 16 months) to suspended jail sentences and community service.*¹²⁸

The judge's ruling,[†] which included a denunciation of civil disobedience as an unjustifiable defense, provides a legal justification for the Hong Kong government to prosecute peaceful demonstrators in the future.¹²⁹ This ruling came a year after Hong Kong's highest judicial body, the Court of Final Appeal, set a precedent by convicting three other prominent leaders from the 2014 Occupy movement—Joshua Wong, Nathan Law, and Alex Chow—of "unlawful assembly" involving violence and handing them prison sentences under the Public Order Ordinance.¹³⁰

Hong Kong prodemocracy advocates and the international community voiced alarm over the sentences and the government prosecution's intentional use of the archaic and rarely used common law offense to punish the organizers of the 2014 Occupy protests. Hong Kong Watch, a United Kingdom-based advocacy organization, noted

* Co-founders Benny Tai Yiu-ting and Chan Kin-man were jailed for 16 months, while the third cofounder, Baptist minister Reverend Chu Yiu-ming, received a suspended jail sentence of two years with judges citing his old age and contributions to society as a reverend. Lawmaker Shiu Ka-chun and activist Raphael Wong Ho-ming received eight-month sentences, while others—including current and former lawmakers and student leaders—received suspended sentences and community service respectively. Chris Lau and Sum Lok-kei, "Four of Nine Occupy Leaders Jailed for Up to 16 Months over Rules in Hong Kong's 2014 Umbrella Movement," *South China Morning Post*, April 24, 2019.

† Judges are appointed by the chief executive based upon recommendations by the Judicial Officers Recommendation Commission and are subject to the endorsement of LegCo. The commission is an independent body composed of judges, legal professionals, and "eminent persons from [non-legal] sectors." According to the Hong Kong Judiciary, judicial and professional qualities are most valued in selecting judges, and they may be recruited from other common law jurisdictions, such as the UK, Canada, Australia, and New Zealand. Hong Kong Judiciary, *Judiciary Fact Sheet*, December 2018; Legislative Council, *Background Brief Prepared by the Legislative Council Secretariat Subcommittee on Proposed Senior Judicial Appointments*, April 25, 2018, 3–4. https://www.legco.gov.hk/yr17-18/english/hc/sub_com/hs101/papers/hs10120180427cb4-982-1-e.pdf; Cheung Wai-lam, *The Process of Appointment of Judges in Hong Kong Since 1976*, April 10, 2001, 10.

in a July 2019 report that the use of the public nuisance charges, along with the Public Order Ordinance, ran against Hong Kong's commitments to the UN International Covenant on Civil and Political Rights that uphold international human rights standards.¹³¹ In response to the ruling, the U.S. Department of State spokesperson expressed concern that “the decision will limit or discourage the people of Hong Kong from exercising the basic freedoms guaranteed under the [1984 Sino-British] Joint Declaration.”¹³² In March 2019, a group of Hong Kong nongovernmental organizations made a submission to the UN Human Rights Committee noting the Hong Kong government's problematic use of public nuisance convictions.*¹³³

First Reported Case of Political Asylum Granted to Hong Kong Activists

In a move illustrating the international community's eroding confidence in Hong Kong's ability to maintain its rule of law and freedom of expression, two former members of pro-independence political party Hong Kong Indigenous revealed in May 2019 that the German government had granted them political asylum the previous year—reportedly the first such case involving Hong Kong citizens.¹³⁴ In response to the revelation of the decision to grant the activists asylum, China demarched the German government and demanded that it overturn its decision.¹³⁵

The two activists who received asylum, Ray Wong and Alan Li, fled to Germany before they stood trial for their involvement in the 2016 Mong Kok clashes with Hong Kong police over defending unlicensed food stall operators from being shut down in perceived attacks on Hong Kong culture.¹³⁶ Mr. Wong faced charges of rioting, inciting a riot, and incitement to unlawful assembly, while Mr. Li was charged with rioting and assaulting police; the rioting charge alone carries a maximum ten-year jail sentence.¹³⁷ Co-founder of Hong Kong Indigenous Edward Leung received a six-year jail sentence in June 2018 on rioting charges for his alleged involvement in the Mong Kok unrest.¹³⁸ His previous campaign slogan—“liberate Hong Kong, revolution of our times”—became an important rallying cry for the ongoing protest movement.¹³⁹ Notably, Mr. Wong said he decided to reveal his refugee status in part to bring attention to the Hong Kong government's extradition bill.¹⁴⁰

First Arrests under Controversial Legal Arrangement at Rail Terminal

Since the September 2018 establishment of the controversial co-location arrangement allowing mainland security agents to enforce PRC laws inside an area within a Hong Kong high-speed rail terminal connecting Hong Kong with the Mainland, several Chinese arrests not publicized by the Hong Kong government have heightened concerns about the arrangement and rule of law.† As of January

*The International Covenant on Civil and Political Rights, to which Hong Kong is a party, safeguards the right of peaceful assembly. The UN Human Rights Committee is mandated under the covenant to assist all parties in fulfilling their obligations. The committee's general comment on the right of peaceful assembly is designed to collect submissions from all parties and submit a finalized document on best practices. As of this writing, the final document, or “general comment,” has yet to be issued. UN Human Rights Office of the High Commissioner, “Draft General Comment on Article 21 (Right of Peaceful Assembly) of the International Covenant on Civil and Political Rights,” July 2019. <https://www.ohchr.org/EN/HRBodies/CCPR/Pages/GCArticle21.aspx>.

†For more on the establishment of the co-location arrangement, see U.S.-China Economic and Security Review Commission, *2018 Annual Report to Congress*, November 2018, 389–390.

2019, mainland police reportedly had arrested at least two travelers passing through the rail terminal. One case involved a Hong Kong permanent resident who was detained in the mainland port area in October 2018. It is unclear whether the Hong Kong government was informed of the arrest. In the second case in December 2018, the traveler, whose nationality was not disclosed, was not allowed to return to Hong Kong from the Mainland.¹⁴¹

Prodemocracy legislator Tanya Chan said, “These incidents show that Hong Kong people have been kept in the dark and the Hong Kong government doesn’t care to inquire. They exactly demonstrate how the co-location arrangement ‘cedes land’ from Hong Kong to the mainland authorities.”¹⁴² Pro-Beijing legislator Horace Cheung, a supporter of the arrangement, argued these cases showed its effectiveness in protecting the city from criminals.¹⁴³

Legislator Barred from Running for Local Election Seat

In December 2018, a Hong Kong “returning officer,” a civil servant within the Hong Kong Electoral Affairs Commission charged with overseeing elections, disqualified prodemocracy lawmaker Eddie Chu Hoi-dick from running in the January 2019 Rural Ordinary Election for rural area-level representatives.*¹⁴⁴ The decision was the first to bar a candidate from a rural representative election on political grounds, which some warned could recur in future elections.¹⁴⁵ The officer said the decision to reject Mr. Chu’s candidacy was due to his answers to submitted questions concerning his political stance, which could be interpreted as “implicitly confirming support for independence as a possible option for Hong Kong people.” Under this interpretation, the officer asserted his views were against the Basic Law.¹⁴⁶ Mr. Chu denied that he supports independence and filed a legal challenge against his disqualification, which remains pending as of this writing.¹⁴⁷

The ban follows a series of similar actions taken by returning officers, including the run-up to the 2016 LegCo election that resulted in six candidates banned. More candidates have been banned since then due to their political views.†¹⁴⁸ In the past, the Rural Ordinary Election, which occupies the lowest level of Hong Kong elections, had been largely not contested nor politicized. In 2003, the requirement that all candidates must declare their allegiance to the

*The Rural Ordinary Election comprises two separate elections for the New Territories, including the Village Representative Election for indigenous inhabitant and resident representatives and the Kaifong Representative Election for representatives in Cheung Chau and Peng Chau islands. The next level up in Hong Kong’s election system is the District Council Election which is held for all 18 districts in the territory. District Councils play an advisory role to the Hong Kong government on district-level matters. The number of seats contested in each election held every four years are determined by population, while some seats are determined by status. In the November 2019 District Council election, 452 of the 479 seats will be elected by popular vote. Above the District Council elections are those for LegCo, followed by the chief executive. Stephen Thomson, *Administrative Law in Hong Kong*, Cambridge University Press, 2018, 14; Hong Kong Special Administrative Region Constitutional and Mainland Affairs Bureau, Legislative Council Panel on Constitutional Affairs, *Review of the Number of Elected Seats for Sixth-Term District Councils*, July 2017.

†In November 2016, China’s National People’s Congress Standing Committee used its authority under the Basic Law to issue a legal interpretation mandating all Hong Kong officials to solemnly and correctly take their oath of office to pledge allegiance to the Hong Kong Special Administrative Region of the People’s Republic of China and the Basic Law. The decision created a powerful legal weapon for Beijing, as it had reciprocal effect in vacating the seats of prodemocracy legislators-elect. For more on the LegCo oath scandal and Beijing’s legal interpretation, see U.S.-China Economic and Security Review Commission, *2017 Annual Report to Congress*, November 2017, 418–422.

Hong Kong Special Administrative Region was added to the Rural Representative Election Ordinance, mirroring similar language in rules for the LegCo and District Council elections, but had never been used to ban a candidate until this case.¹⁴⁹

Press Freedom Reaches Historic Lows

A year after one of the most serious incidents to erode press freedom in Hong Kong in recent memory—the visa denial of *Financial Times* journalist Victor Mallet*—the media environment continued to worsen. Chris Yeung, chairperson of the Hong Kong Journalists Association, noted in the association’s Annual Report published in July 2019 that a “sharp deterioration” in press freedom had occurred over the previous year “as Beijing’s [overemphasis] on the importance of the principle of ‘one country’ has upset the balance in the ‘one country, two systems’ formula.”¹⁵⁰ The association’s annual 2018 Hong Kong Press Freedom Index measuring public perceptions of press freedom, conducted in January–February 2019 and released in April 2019, sunk to a record low of 45 out of 100 and experienced its biggest year-on-year drop since the survey was launched in 2013, largely due to the central government’s encroachment.¹⁵¹

International advocacy nonprofit Reporters Without Borders also cited Beijing’s “[harmful] influence” as being behind the decline in Hong Kong’s position in the 2019 World Press Freedom Index, where it is down three spots to 73rd out of 180 jurisdictions (ranked from most to least free).¹⁵² Despite the downward trends, Reporters Without Borders notes the growth of independent online media as a positive development.¹⁵³

A central factor driving Hong Kong’s decline in press freedom was mainland China’s large commercial stake in local media outlets, more than half of which are now owned or controlled by pro-Beijing interests. Many of the owners have considerable business interests in the Mainland and are members of key political institutions led by the CCP.[†]¹⁵⁴ As members of these institutions, they are expected to uphold CCP policies.¹⁵⁵ Most recently, this has been evident through pro-Beijing media coverage of the extradition bill protests promoting the CCP’s allegations in mainland Chinese media that foreign “black hands” instigated the protests.¹⁵⁶

Beijing’s growing influence has resulted in rising pressure on Hong Kong journalists, with many now choosing to self-censor or adopt an openly pro-Beijing line. According to the Press Freedom Index survey, before the extradition bill controversy nearly 70 percent of journalist participants said Beijing’s growing emphasis of “one country” over “two systems” made them uncomfortable report-

*For more information on the visa denial of Victor Mallet and its chilling effect on press freedom, see U.S.-China Economic and Security Review Commission, *2018 Annual Report to Congress*, November 2018, 393.

†Many pro-Beijing media owners are members of the National People’s Congress (NPC), China’s rubber-stamp legislative body, and the Chinese People’s Political Consultative Conference (CPPCC), China’s top policy advisory body. According to Reporters Without Borders, more than half of Hong Kong’s major media heads serve as members of the NPC and CPPCC. China’s Liaison Office in Hong Kong, the top party-government organ in the territory, directly controls pro-Beijing newspapers *Wen Wei Po* and *Ta Kung Pao* as well as Sino United Publishing, which owns over half of Hong Kong bookstores and almost 30 publishing houses. Reporters Without Borders, “2019 World Press Freedom Index,” 2019. <https://rsf.org/en/hong-kong>; Kris Cheng, “Gov’t Should Not Intervene in China Liaison Office’s Ownership of Hong Kong Publishing Giant, Says Carrie Lam,” *Hong Kong Free Press*, May 29, 2018.

ing dissenting voices.¹⁵⁷ The survey also found one out of five journalists said they had faced pressure from their bosses to avoid or reduce reporting on the topic of Hong Kong independence.¹⁵⁸

In March 2019, former Hong Kong Chief Executive Leung Chun-ying—now vice chairman of a top CCP advisory body in the Mainland, the Chinese People’s Political Consultative Conference*—publicly attacked companies advertising in the prodemocracy newspaper *Apple Daily* in an apparent attempt to hurt the paper’s business.¹⁵⁹ Attempts to influence media in Hong Kong extended to local foreign press, as central government representatives reportedly instructed foreign journalists to “inject positivity” in their coverage of the extradition bill.¹⁶⁰

Violence and obstruction against journalists, many of whom publicly opposed the extradition bill, also increased dramatically during the protest movement. Since the start of the protests, Hong Kong police officers reportedly have used batons, shields, pepper spray, water cannons, and tear gas against journalists—who were clearly identified as press—covering the protests.¹⁶¹ Media personnel also accused police of verbal assaults, using flashlights to obstruct their work, pushing them toward barriers, and conducting unjustified searches of their equipment.¹⁶²

The Hong Kong Journalists Association issued numerous statements denouncing the violence against journalists and in July 2019 submitted over two dozen complaints by journalists to an investigative entity within the police force.¹⁶³ In a rare occurrence, in July more than 1,500 journalists participated in a silent march to demand press freedom and an end to police violence.¹⁶⁴ A group of prominent media organizations had publicly opposed the extradition bill, arguing it would put journalists at risk and have a chilling effect on freedom of expression.¹⁶⁵

Beijing Steps Up Direct Intrusions into Hong Kong Affairs

Beijing uses a broad array of tools to increase its influence in the territory, many of which have grown more noticeable in 2019. “United Front” work—a strategy to co-opt and neutralize sources of potential opposition to Beijing’s policies—is central to the CCP’s efforts in Hong Kong and has become more overt in recent years with China’s growing reach into Hong Kong affairs.[†]¹⁶⁶

China maintains political control in Hong Kong through meetings in Beijing and the Liaison Office’s frequent interactions with and open support for Chief Executive Lam, pro-establishment members of LegCo, and other groups in Hong Kong. These interactions mostly center around mobilizing support for Beijing’s policies and lobbying for its preferred candidates in elections. In a recent example in August 2019, China’s Hong Kong and Macau Affairs Office and its

*The Chinese People’s Political Consultative Conference is under the direct leadership of the CCP and is the highest-ranking entity overseeing China’s United Front work. Alexander Bowe, “China’s Overseas United Front Work: Background and Implications for the United States,” *U.S.-China Economic and Security Review Commission*, August 24, 2018, 9.

†For a more detailed discussion of United Front work and how it affects U.S. interests, see Alexander Bowe, “China’s Overseas United Front Work: Background and Implications for the United States,” *U.S.-China Economic and Security Review Commission*, August 24, 2018. For more information on United Front work in Hong Kong, see Andrew Higgins, “From the Shadows, China’s Communist Party Mobilizes against Hong Kong Protests,” *New York Times*, August 27, 2019; Sunny Shiu-Hing Lo, Steven Chung-Fun Hung, and Jeff Hai-Chi Loo, *China’s New United Front Work in Hong Kong*, Palgrave Macmillan, 2019; Christine Loh, *Underground Front: The Chinese Communist Party in Hong Kong* (Second Edition), Hong Kong University Press, 2018.

Liaison Office gathered around 500 pro-Beijing Hong Kong business and political leaders in Shenzhen to bolster support for the Hong Kong authorities in ensuring stability and protecting the rule of law.¹⁶⁷ In May 2019, the Liaison Office brought together over 100 Hong Kong National People's Congress and Chinese People's Political Consultative Conference delegates and directed them to support and better explain the extradition bill to the Hong Kong public.¹⁶⁸ Following the meeting, some delegates who had previously opposed the bill reportedly came out in support of it, although the number who changed their stance was not disclosed.*¹⁶⁹

On the sidelines of the 40th anniversary celebrations of China's reform and opening up policies in Beijing in November and December 2018, General Secretary Xi appeared to apply more pressure on Chief Executive Lam and Hong Kong representatives to advance long-delayed national security legislation under Article 23 of the Basic Law.¹⁷⁰ During a March 2019 visit to Beijing, Chief Executive Lam reportedly met with top Chinese officials, including Vice Premier Han Zheng, who told her that implementation of Article 23 would be required for a second term.¹⁷¹ Due to the fallout over the extradition bill, however, there has been little further discussion of Article 23 in 2019 from either side.† Under the Basic Law, the Hong Kong government is required to eventually pass this legislation but it has consistently faced significant opposition from Hong Kong citizens.¹⁷²

During the ongoing demonstrations, the Chinese government was suspected of using cyberattacks to restrict communication among protesters for the first time since the 2014 Occupy movement. In June 2019, Telegram—the encrypted messaging app used by Hong Kong protesters to coordinate demonstrations against the bill—suffered a distributed denial of service cyberattack that overwhelmed the firm's servers and shut down service during the protests.¹⁷³ Telegram founder Pavel Durov said the IP addresses used in the attack originated in China, and the volume of the attack resembled that of a state actor.¹⁷⁴ Around the same time, prodemocracy newspaper *Apple Daily* reportedly suffered a similar attack, which it viewed as an attempt to silence its coverage of the protests.¹⁷⁵ On August 31, the Reddit-like forum LIHKG used by protesters for organizing demonstrations suffered a similar cyberattack as Telegram. Some of the attacks were found to have originated in China.¹⁷⁶

*According to Christine Loh, a leading scholar on Hong Kong United Front work, Beijing has long appointed prominent individuals across Hong Kong society as National People's Congress and CPPCC delegates as part of a political co-option strategy to bolster support for CCP priorities in Hong Kong. As of January 2018, nearly 200 out of 2,158 CPPCC delegates were from Hong Kong, including members of the Executive Council, former chief executives (serving as vice chairmen), pro-Beijing legislators, businesspeople, and representatives from across civil society. Tony Cheung and Kimmy Chung, "China's Top Advisory Body Gains over 50 New Hong Kong Faces," *South China Morning Post*, January 26, 2018; Christine Loh, *Underground Front: The Chinese Communist Party in Hong Kong*, Hong Kong University Press, 2010, 30–33.

† Chinese government officials in recent years have steadily ramped up efforts to encourage Hong Kong to pass the legislation, which could grant the Hong Kong government broad power to detain or prosecute individuals deemed a threat to Beijing or shut down any entity with foreign ties. He Shusi, "Wang: HK Is Obligated to Protect National Security," *China Daily*, April 16, 2019; Kuk Fung, "Conditions Right for Article 23 Legislation," *China Daily (HK Edition)*, December 4, 2017; The Basic Law of the Hong Kong Special Administrative Region of the People's Republic of China, *Chapter II: Relationship between the Central Authorities and the Hong Kong Special Administrative Region, Article 23* (Adopted at the Third Session of the Seventh National People's Congress on April 4, 1990).

Hong Kong's Economic Relationship with Mainland China

Public outcry over the extradition bill has led some economists to debate the extent of Hong Kong's continuing importance to Beijing and its competitiveness globally. As economist Eswar Prasad observed in July 2019, in 2018 Hong Kong's economy was "barely one thirtieth" of China's economy in terms of gross domestic product (GDP).¹⁷⁷ Despite Hong Kong's size relative to the Chinese economy, however, economic analyst Tianlei Huang argued, "[Hong Kong] remains vital to China as a whole. [Its] importance to the Chinese economy is disproportionate to its size."¹⁷⁸ This importance stems from the territory's uniqueness: Hong Kong is positioned as the conduit for China's international financial integration, linking Chinese companies with global capital markets and providing opportunities to internationalize the renminbi (RMB).¹⁷⁹ Equally important, the international business community relies on Hong Kong's independent judiciary and rule of law, both missing in the Mainland.

Hong Kong is widely recognized as a center for international banking and finance. According to the Global Financial Centers Index, Hong Kong is ranked third in a list of global financial centers, after New York and London.¹⁸⁰ The Hong Kong Stock Exchange (HKEX) total market capitalization stood at about \$4.2 trillion (HKD 32.7 trillion) in June 2019,* which allows it to accommodate larger companies.¹⁸¹ Capital raised through initial public offerings (IPOs) totaled \$36.7 billion (HKD 288 billion) in 2018.¹⁸² This marked HKEX as the top IPO destination globally in that year, with a 17.6 percent share of the global IPO market (New York raised \$28.9 billion in 2018).¹⁸³

Hong Kong also serves as a regional hub for international commerce. In 2019, the World Bank ranked Hong Kong fourth globally in its ease of doing business assessment.† Multinational firms maintain regional bases in Hong Kong, including U.S. multinationals.¹⁸⁴ According to a survey by the Hong Kong Census and Statistics Department, U.S. multinationals operated at least 1,351 offices in Hong Kong in 2018, including 290 regional headquarters, 434 offices with a regional coordinating function, and 627 local offices serving only Hong Kong.¹⁸⁵ Multinational companies in Hong Kong operate in sectors such as international trade; wholesale and retail; finance and banking; professional, business, and education services; and transportation and logistics services.¹⁸⁶ American Chamber of Commerce (AmCham) Hong Kong President Tara Joseph stated U.S. businesses with local operations look to Hong Kong for "good governance, global connectivity, and [a] stable, safe environment."¹⁸⁷

Hong Kong has received a steady stream of tourism from the Mainland. In 2018, tourists from mainland China accounted for 78 percent of tourists to Hong Kong.¹⁸⁸ Tourism revenue from mainland China totaled \$17.8 billion (HKD 139.9 billion, or 72.2 percent) of tourist receipts for overnight visitors and \$9.6 billion (HKD 74.9 billion, or 95.1 percent) of tourist receipts for same-day visitors in

*Unless noted otherwise, this section uses the following exchange rate throughout: \$1 = HKD 7.84.

†The World Bank's Doing Business project creates an index using ten criteria: (1) starting a business; (2) dealing with construction permits; (3) getting electricity; (4) registering property; (5) getting credit; (6) paying taxes; (7) trading across borders; (8) protecting minority investors; (9) enforcing contracts; and (10) resolving insolvency. World Bank Group, *Doing Business 2019: Training for Reform*, October 31, 2018, 5, 7.

2018. Mainland Chinese tourists were also the highest spenders per person for overnight visitors and same-day visitors.¹⁸⁹

Economic Impact of the Ongoing Protests

Beijing's encroachment into Hong Kong's autonomy and the resulting public protests are raising serious doubts among global companies whether Hong Kong will retain its status as a hub for international business and finance. When AmCham Hong Kong members were surveyed in late July 2019 regarding the impact of the ongoing demonstrations on business sentiment,* about 37.1 percent of respondents stated they felt "pessimistic" in the short term but felt Hong Kong would "bounce back," while 34.4 percent of respondents stated they felt Hong Kong's long-term prospects had been "irreparably damaged."¹⁹⁰

As one measure of uncertainty, some Hong Kong businesses were reportedly considering transferring assets and operations out of the territory. Singapore has emerged as a possible alternative. In July 2019, Singapore media reported that wealth managers and private bankers in Singapore were receiving an increasing number of inquiries from Hong Kong investors.¹⁹¹ In a survey of AmCham multinationals in September 2019, AmCham Singapore found only about 5 percent of respondents with operations in Hong Kong had transferred capital out of the territory, but 23 percent of respondents were considering shifting business functions to another location, primarily to Singapore.† About two-thirds of surveyed companies reported that the protests had tarnished Hong Kong's reputation as a regional base of operations.¹⁹² Dan Harris, partner at Harris Bricken and business strategy consultant for firms in China, said that since mid-June, businesses began choosing not to set up in Hong Kong or requesting advice on reducing their footprint in Hong Kong.¹⁹³

The continuing protests have also affected tourism to Hong Kong as airports and other means of transit were disrupted. While the Hong Kong Tourism Board had not released August data at the time of writing, Hong Kong financial secretary Paul Chan stated in early September that visitor arrivals fell by nearly 40 percent in August, while occupancy rates in some hotels were halved.¹⁹⁴ As of August 15, 29 countries had issued a variety of alerts regarding travel to Hong Kong.¹⁹⁵ The largest group of tourists typically comes from the Mainland, but in August, mainland group tours to the territory dropped by 63 percent year-on-year.¹⁹⁶ This overall decline in tourism has impacted retail sales. Total retail sales dropped 6.7 percent in June and 11.4 percent in July from the year prior.¹⁹⁷

Beyond business sentiment and tourism, Beijing has started using economic coercion against foreign companies whose employees were suspected of supporting the protests. In August 2019, after Cathay Pacific employees joined or supported demonstrations, the Civil Aviation Administration of China threatened to bar crew members from entering China.¹⁹⁸ Beijing, the second-largest shareholder

*Of the 1,268 companies surveyed by AmCham Hong Kong, 153 members (12 percent) responded. AmCham Hong Kong, "AmCham Calls for Firm Government Leadership to Restore Sagging Business Confidence," July 29, 2019; AmCham Hong Kong, "Fix Hong Kong's Protest Pain Now or Risk Permanent Scars: AmCham Survey," July 26, 2019.

†In total, 120 firms were surveyed. American Chamber of Commerce in Singapore, "AmCham's Flash Survey on Hong Kong Protests," September 12, 2019, 2. https://www.amcham.org.sg/wp-content/uploads/2019/09/AmCham-Survey-HK-Protests-Report_FINAL.pdf.

of the company through state-owned Air China, forced the airline to identify all crew members bound for China and passing through Chinese airspace.¹⁹⁹ On August 16, when pressured to name employees participating in the demonstrations, Cathay Pacific CEO Rupert Hogg resigned after reportedly only naming himself.²⁰⁰ Cathay Pacific has since fired an unknown number of workers who have sided with the protestors or criticized the Hong Kong government or police force on social media.²⁰¹ Hong Kong branches of the big four global accounting firms, PricewaterhouseCoopers, Deloitte, KPMG, and Ernst & Young, also faced pressure from Beijing to fire employees who expressed support for the movement in a full-page ad in the Hong Kong prodemocracy newspaper *Apple Daily*.²⁰²

Other forms of economic pressure on multinational corporations have included boycotts of specific products in mainland China. Beijing has allowed social media calls for boycotts against Taiwan bubble tea chains and Japanese sports drink maker Pocari Sweat, which have publicly stated support for the movement.²⁰³ In addition, at a September meeting organized in Shenzhen by China's State-owned Assets Supervision and Administration Commission,* Chinese state-owned enterprises (SOEs) were reportedly told to shore up Hong Kong's economy and not only hold stakes in Hong Kong companies, but seek "control" and "decision-making power."²⁰⁴

Ultimately, Beijing's actions toward the unrest in Hong Kong may also impact investment flows into China. Following the protests, several notable planned listings on the HKEX were delayed without specifying a reason, including Anheuser-Busch InBev's Asia Pacific Unit (seeking to raise \$5 billion) and Alibaba's secondary listing (seeking to raise \$15 billion).† In September, ratings agency Fitch downgraded its rating outlook on Hong Kong from AA+ to AA, its first rating cut since 1995. Fitch stated that ongoing events had "inflicted long-lasting damage to international perceptions of the quality and effectiveness of Hong Kong's governance system and rule of law."²⁰⁵ Ratings agency Moody's lowered its ratings outlook to reflect "rising risk that the ongoing protests reveal an erosion in the strength of Hong Kong's institutions."²⁰⁶

Ms. Joseph vocalized this sentiment in stating: "If people do not trust Hong Kong as an independent legal jurisdiction, then business will suffer."²⁰⁷ This perception matters for investment not only in Hong Kong, but in China as well. Logan Wright, director at Rhodium Group, argued that capital inflows into China "are not inevitable," and continued escalation of the protests could have a negative impact on future capital flows into China.²⁰⁸ He stated, "Hong Kong's independent legal framework and the open media environment in the territory are the core of the city's comparative advantages," which allow foreign businesses and capital to engage with China under the protection of a credible legal system.²⁰⁹

The ongoing protests add to Hong Kong's headwinds. Its economy already faced challenges stemming from China's economic slowdown

*The State-owned Assets Supervision and Administration Commission, or SASAC, is a powerful central government body with authority over China's state-owned enterprises. Keith Zhai, "Exclusive: China Prods State Firms to Boost Investment in Crisis-Hit Hong Kong," *Reuters*, September 12, 2019.

†Anheuser-Busch InBev's Asia Pacific Unit listed on HKEX on September 30, 2019. Hudson Lockett, "Shares in AB InBev's Asia Unit Rise 4% on Trading Debut," *Financial Times*, September 30, 2019.

and U.S.-China trade tensions.²¹⁰ On August 15, Financial Secretary Chan lowered Hong Kong's 2019 projected growth to between 0 and 1 percent and announced a \$2.4 billion (HKD 19.1 billion) package of economic support measures.²¹¹ AmCham Hong Kong members called on the Hong Kong government to "take immediate and tangible actions to address the root causes of recent demonstrations and restore confidence in the city's status as Asia's preeminent international business and financial center."²¹²

Bilateral Trade and Foreign Direct Investment

Hong Kong's trade and investment flows are closely linked with mainland China, which has been Hong Kong's largest trading partner since 1985.²¹³ According to official Hong Kong statistics, in 2018 the Mainland accounted for 55.0 percent of Hong Kong's total goods exports and 46.3 percent of Hong Kong's total goods imports.²¹⁴ Hong Kong also functions as a trade hub for mainland China: in 2018 about 55 percent of Hong Kong's re-exports* were shipped to mainland China and 57 percent of re-exports originated from mainland China.²¹⁵ Beyond trade in goods, mainland China is also Hong Kong's largest services trade partner, accounting for 39.9 percent of the territory's services exports in 2017; by comparison, only 14.3 percent of its services exports went to the United States, its next-largest export destination (see Table 1).²¹⁶

Table 1: Hong Kong Bilateral Trade with Mainland China and the United States, 2017 and 2018
(US\$ billions)

Partner	Goods (2018)		Services (2017)	
	Exports	Imports	Exports	Imports
Mainland China	291.8	278.9	39.8	29.3
United States	45.5	29.5	14.2	8.5

Note: Conversion rate from U.S. dollars was 7.839 in 2018 and 7.794 in 2017 as per the Hong Kong Special Administrative Region Census and Statistics Department, Hong Kong Special Administrative Region Census and Statistics Department, *Government Accounts, Finance and Insurance, Table 124: Exchange Rates: Year 2018 and 2017*, accessed September 16, 2019. <https://www.censtatd.gov.hk/hkstat/sub/sp110.jsp?tableID=124&ID=0&productType=8>.

Source: Various.²¹⁷

Hong Kong also serves as a major intermediary for foreign direct investment (FDI) flowing in and out of China. According to UN statistics, Hong Kong received about \$116 billion in inbound FDI in 2018, the second-largest FDI inflow in Asia after China (\$139 billion).²¹⁸ Hong Kong was the largest source of inbound FDI in China by the end of 2018, accounting for about \$1.1 trillion in cumulative investment (HKD 8.6 trillion, or 54 percent of China's inbound FDI).²¹⁹ In turn, mainland China was Hong Kong's second-largest source of inbound FDI, accounting for \$496.8 billion in cumulative

*In Hong Kong's trade statistics, "re-exports" refers to products imported into Hong Kong that are re-exported without undergoing a manufacturing process that "permanently and substantially" changed the "shape, nature, form, or utility of the basic materials used in the manufacture." Hong Kong Special Administrative Region Census and Statistics Department, "Merchandise Trade: Concepts and Methods." <https://www.censtatd.gov.hk/hkstat/sub/sc230.jsp>.

investment (HKD 3.9 trillion, or about 25.5 percent) at the end of 2017.²²⁰ It is estimated that more than half of China's inbound and outbound FDI flows through Hong Kong.²²¹

Hong Kong as a Conduit between China and Global Financial Markets

Hong Kong serves as a conduit connecting Chinese firms with global financial markets. Its special status has enabled the territory to intermediate investment flows between mainland China and global financial markets, where China is increasingly integrated. As the International Monetary Fund (IMF) reported in December 2018, Hong Kong's "role as a fundraising platform for Chinese firms has expanded from equity [stock] fundraising through IPOs to bank borrowing and bond financing."²²² In equity fundraising, HKEX serves as a platform for the Shanghai and Shenzhen Stock Connect programs, launched in 2014 and 2016, respectively, which permit foreign investors with accounts in Hong Kong to trade stocks in Shanghai and Shenzhen.²²³ Mainland companies can access international capital by listing on HKEX. According to the Hong Kong Trade and Development Council, as of year-end 2018, 1,146 mainland companies were listed in Hong Kong, with a total market capitalization of \$2.6 trillion (68 percent of the market total).²²⁴ Listing of Chinese SOEs helped establish Hong Kong's position as the premier global IPO destination between 2009 and 2011.²²⁵ In bond fundraising, the Bond Connect program began to allow foreign investors to trade bonds in China through Hong Kong platforms in 2017.²²⁶

The Stock Connect and Bond Connect platforms in Hong Kong also support new passive* foreign investment in Chinese stocks and bonds as they become incorporated in global indices.²²⁷ Dr. Wright estimated about \$95 billion flowed into Chinese capital markets between 2016 and September 2019 via Hong Kong.²²⁸ In February 2019, index provider MSCI announced it would gradually increase the weighting of local Chinese stocks in its Emerging Markets Index from 0.71 percent in March 2019 to 3.3 percent by November 2019, with associated capital inflows of up to \$80 billion following the adjustment.²²⁹ Separately, the Bloomberg Barclays Global Aggregate Index began to include Chinese bonds in April 2019.²³⁰ By the end of a 20-month phase-in process, Chinese companies are expected to make up 6.1 percent of the index, generating more than \$100 billion in foreign capital inflows.²³¹ The People's Bank of China has stated that as much as 15 percent of China's onshore bond market could become foreign owned.²³² Despite these announcements, foreign participation in Chinese bond and equity markets remains low. People's Bank of China Governor Yi Gang estimated foreign holdings at about 2.3 percent of China's bond market and 2.7 percent of Chinese equity markets in March 2019.²³³

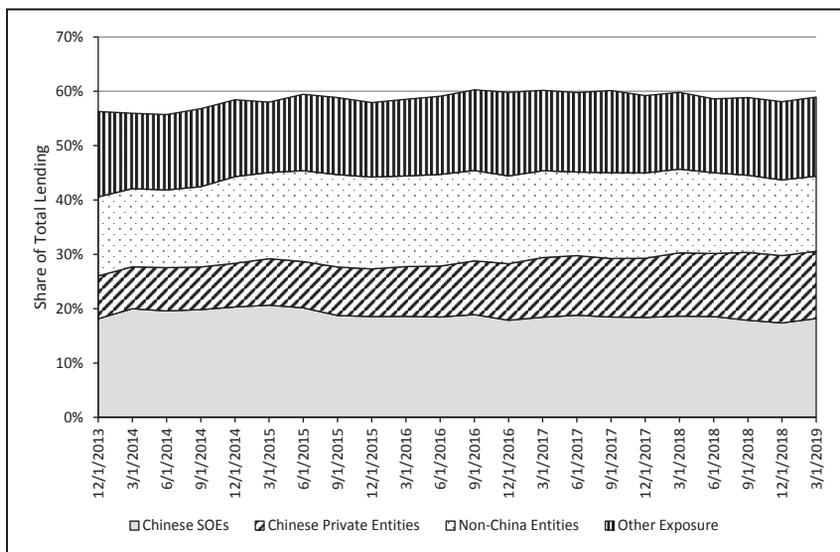
Foreign investors with capital in mainland China complain of receiving "window guidance," or verbal instructions from mainland financial regulators or stock exchange regulators regarding inves-

*A "passive" investment management style relies on an index to determine how to allocate money across stocks or bonds, while an "active" investment management style relies on the discretion of an individual investor (e.g., a wealth manager or portfolio manager). Kenechukwu Anadu et al., "The Shift from Active to Passive Investing: Potential Risks to Financial Stability?" *Federal Reserve Bank of Boston Working Paper* RPA 18-04, August 27, 2018, 1.

tors' market actions.²³⁴ For example, before repatriation caps were removed in June 2018, some institutional investors received a phone call with instructions “not to repatriate the entire 20 [percent] of their Net Asset Value ... or to repatriate only 10 [percent].”²³⁵ Such verbal instructions cause investors to question the legality and fairness of financial regulators. In November 2018, the Shanghai Stock Exchange stated it would halt this practice after the China Securities Regulatory Commission also committed to reducing “unnecessary [market] intervention.”²³⁶

Outside of bond and equity flows, Hong Kong banks commit a substantial amount of their lending toward activities on the Mainland. According to the IMF, about 39 percent of Hong Kong bank lending is channeled toward business activities in mainland China.²³⁷ Around a fifth of lending to non-bank entities is extended to Chinese SOEs (see Figure 1).²³⁸ Given this relationship, the IMF cautioned that a drop in the investment or borrowing needs of Chinese companies could adversely affect Hong Kong banks' outlook.²³⁹ In testimony before the Commission, Victor Shih, Ho Miu Lam Chair in China and Pacific Relations at the University of California at San Diego, said that some banks lend to companies in mainland China and in Hong Kong. “Because the IMF and the [United States] legally treat Hong Kong as a separate entity [from] China, the banks ... lend both to [Chinese companies] Hong Kong based subsidiaries and to the headquarters in Beijing.”²⁴⁰

Figure 1: Hong Kong Banks' Exposure to Nonbank Chinese Entities, by Borrower Type, December 2013–March 2019



Source: Hong Kong Monetary Authority, “Monthly Statistical Bulletin (August 2019—Issue No. 300),” Series 3.4.1 “Loans and Advances by Type—Authorized Institutions,” Series 3.13.3 “Mainland-Related Lending by Type of Borrowers,” Series 3.13.4 “Other Mainland-Related Non-Bank Exposures,” accessed August 12, 2019. <https://www.hkma.gov.hk/eng/market-data-and-statistics/monthly-statistical-bulletin/table.shtml#section3>; International Monetary Fund, “2018 Article IV Consultation Press Release and Staff Report: People’s Republic of China—Hong Kong Special Autonomous Region,” January 2019, 13.

Finally, Hong Kong represents the largest offshore clearing center for RMB. According to the SWIFT global payments processing service, in May 2019 over 75 percent of offshore RMB-denominated payments were cleared in Hong Kong.²⁴¹

To assist RMB internationalization by speeding up payment processing and lowering the cost of cross-border RMB payments, Chinese banks began implementing China's Cross-border Interbank Payment System (CIPS) in September 2015.²⁴² Though CIPS initially began using SWIFT for interbank messaging, over time it is expected to use a separate dedicated communications system.²⁴³ According to a *Nikkei Asian Review* survey, CIPS usage went from about \$2.09 trillion in 2017 to \$3.77 trillion in 2018—an increase of 80 percent.²⁴⁴ While this volume is low compared to SWIFT, which processes between \$5 trillion and \$6 trillion in payments daily, the survey noted that 865 banks take part, including 30 banks in Japan, 23 in Russia, 11 in Turkey, and 31 in South Africa, Kenya, and other African countries.²⁴⁵ (For more information on CIPS, see Chapter 2, “Beijing’s Internal and External Challenges.”)

Efforts to Boost Hong Kong’s Future Competitiveness

In its review of the territory, the IMF noted that while Hong Kong continues to be considered one of the most competitive global economies, it faces increasing challenges from cities in mainland China and elsewhere.²⁴⁶ The Greater Bay Area Outline Development Plan, released on February 18, 2019 by China’s State Council, proposes to address some of those challenges by “fostering the flow of people, goods, capital, and information” between Hong Kong, Macau, and nine cities in Guangdong Province, drawing on Hong Kong’s strong financial, legal, and business services sector.* To remain competitive, however, the territory seeks to foster an innovation and start-up environment that extends beyond those sectors: since July 2017, the Hong Kong government has committed “over [HKD] 100 billion” to promote innovation in biotechnology, artificial intelligence, smart cities, and financial technology.²⁴⁷ It is unclear whether the Greater Bay Area Plan would support this diversified economic vision for Hong Kong. Democratic Party Chairperson Wu Chi-wai criticized the plan “as developing mainland cities at the expense of Hong Kong.”²⁴⁸ In addition, uncertainty over Hong Kong’s future, precipitated by the extradition bill proposal, could prompt an exodus of multinational investment or personnel if enacted at a later date.²⁴⁹

To boost its competitiveness, in 2018 HKEX reduced corporate governance regulations. These revised measures allow the listing of certain loss-making firms and dual-class share structures in what some observers have termed a corporate governance “race to the bottom.”²⁵⁰ Dual-class structures allow certain shareholders—most often company founders and executives—to have a vote that carries more weight relative to other shareholders in corporate voting, permitting those shareholders to maintain greater control over a

* For more on the Greater Bay Area Plan, see U.S.-China Economic and Security Review Commission, Chapter 3, Section 4, “China and Hong Kong,” in *2018 Annual Report to Congress*, November 2018, 399–400. Hong Kong Special Autonomous Region Constitutional and Mainland Affairs Bureau, *Greater Bay Area: Overview*, 2019. <https://www.bayarea.gov.hk/en/about/overview.html>; Hong Kong Legislative Council LC Paper No. CB(1)697/18-19(01), *Outline Development Plan for the Guangdong-Hong Kong-Macao Greater Bay Area*, March 19, 2019.

company's management and firm decisions such as mergers and acquisitions.*

HKEX's reforms are intended to help it attract more Chinese "unicorns," private companies valued at over \$1 billion. Tech startups and biomedical companies may view a dual-class structure as preferable and list accordingly: HKEX has admitted that Alibaba's 2014 decision to list on the New York Stock Exchange with a dual-class share structure prompted HKEX to "reckon with this issue."²⁵¹ From this perspective, the regulatory change may already be achieving its desired result: according to reports, in June Alibaba filed confidentially to launch a secondary listing on HKEX and could raise as much as \$20 billion in capital.²⁵² Critics like the Asian Corporate Governance Association have called HKEX's move to allow dual-class share structures "opportunistic," citing the need for investor rights and fairness in corporate decision making.²⁵³

Apart from reducing corporate governance regulations, HKEX also made an unsolicited \$36.6 billion bid to acquire the London Stock Exchange (LSE) Group on September 11, which LSE rejected.²⁵⁴ In rejecting the bid, LSE pointed to HKEX's "unusual" board structure, as the Hong Kong government can appoint seven of HKEX's 13 board members.²⁵⁵ Following the bid's rejection, HKEX stated it would put the bid before LSE shareholders to see if they would agree.²⁵⁶

U.S. Export Controls as They Apply to Hong Kong

Because of Hong Kong's special status, the United States treats Hong Kong and mainland China as separate export destinations. U.S. and Hong Kong officials cooperate on the enforcement of U.S. export controls, regulations that require businesses to request a license from the U.S. Department of Commerce's Bureau of Industry and Security (BIS) to export U.S. technologies with both commercial and military or proliferation applications ("dual-use" technologies). Some technologies require a license to be exported to China, while they are unrestricted in Hong Kong.²⁵⁷

In 2017, BIS implemented additional regulations requiring exporters and re-exporters of controlled U.S. technologies to Hong Kong to obtain and submit proof of an import license or license exemption from the Hong Kong Trade and Industry Department before export or re-export, in addition to seeking a license from BIS.²⁵⁸ BIS stated this enhanced procedure would "provide greater assurance that U.S. origin items that are subject to the multilateral control regimes ... will be properly authorized by the United States to their final destination, even when those items first pass through Hong Kong."²⁵⁹

Legal analysts view the BIS measure as "a step forward in BIS efforts to combat unauthorized diversions in transshipments through Hong Kong."²⁶⁰ As former Assistant Secretary of Commerce for Export Administration Kevin Wolf testified to the Commission in April 2019:

*A company with a "dual-class" share structure issues two or more classes of stock shares, one of which has significantly more voting power than the other. This allows those specific shareholders—usually the company founders—greater voice and control in corporate decision making. Robert J. Jackson, Jr., "Perpetual Dual-Class Stock: The Case against Corporate Royalty," *Securities and Exchange Commission*, February 15, 2018.

U.S. Export Controls as They Apply to Hong Kong— Continued

*[I]f Hong Kong officials could provide regular, robust assurances that diversions of U.S.-origin items were not occurring, then the additional requirements would remain in effect as is or be removed. If not, then the stricter licensing policies, including policies of presumptive denials, would need to be imposed.*²⁶¹

To support enforcement efforts, BIS stations one of its seven export control officers²⁶² in Hong Kong to “conduct end-use checks, industry outreach, and government liaison work.”²⁶³ In 2018, the Hong Kong Customs and Excise Department reported it completed 285 investigations and prosecuted 59 individuals or companies resulting in total fines of \$120,400 (HKD 940,000), most commonly for export control violations involving integrated circuits and systems, equipment, or integrated circuits for information security (i.e., cryptography).²⁶⁴

Beijing’s increasing encroachment on Hong Kong’s autonomy has raised some concern about the degree to which Hong Kong and mainland China should continue to be maintained as separate export jurisdictions. In December 2018, the *Wall Street Journal* reported a case where U.S. officials had approved restricted U.S. satellite technology for export to a British Virgin Islands company controlled by a Chinese SOE.²⁶⁵ This was permitted under current regulations because the individual in question was a Hong Kong passport-holder.²⁶⁶ (For more information on concerns regarding U.S. technology exports, see Chapter 4, Section 3, “China’s Ambitions in Space: Contesting the Final Frontier”)

U.S. officials have requested additional improvements and assistance from the Hong Kong government. In December 2018, a delegation from the State Department and the Department of Commerce met with Hong Kong government officials to secure “tracking of strategic commodities and controlled items” and greater assistance in “[preventing] diversion of [re-exports] to the development and production of weapons of mass destruction and unauthorized military end users.”²⁶⁷ Later, in its March 2019 *Hong Kong Policy Act Report*, the State Department reiterated its statement from 2018: U.S. representatives “[continued] to raise concerns about cases of diversion of controlled items.”²⁶⁸

Implications for the United States

U.S. policy toward Hong Kong, as outlined in the U.S.-Hong Kong Policy Act of 1992, underscores U.S. support for Hong Kong’s human rights, democratization, and autonomy under the “one country, two systems” framework.²⁶⁹ The preservation of Hong Kong’s way of life and maintenance of its status as a global financial and business hub help facilitate U.S. interests. For these reasons, Beijing’s growing encroachment on Hong Kong’s autonomy in violation of its legal commitments has raised concerns for U.S. policymakers.

In 2019, the CCP interfered more brazenly in Hong Kong’s internal affairs as the Lam Administration took steps to make the ter-

ritory more like any other Chinese city. In particular, with the proposal to amend existing extradition laws, observers both within and outside the territory are increasingly questioning whether Beijing intends to allow Hong Kong residents to maintain any significant degree of their promised freedoms.

In the past year, policymakers in Congress have introduced legislation that would make changes to the United States' Hong Kong policy. As massive protests continued and Beijing's threats of armed intervention escalated in August 2019, Majority Leader Mitch McConnell issued a stark warning: "Beijing must know the Senate will reconsider [the special U.S.-Hong Kong] relationship, among other steps, if Hong Kong's autonomy is eroded."²⁷⁰ He outlined potential changes to Hong Kong policy, including extending reporting requirements on Beijing's interference in Hong Kong's affairs, funding democracy and human rights programs in the region, and examining Beijing's efforts to expand its influence and surveillance in and beyond Hong Kong.²⁷¹ Earlier that month, Speaker of the U.S. House of Representatives Nancy Pelosi urged Chief Executive Lam and LegCo to "finally, fully meet the legitimate democratic aspirations of the Hong Kong people, as guaranteed under 'one country, two systems.'"²⁷² Speaker Pelosi also signaled her support for the pending Hong Kong Human Rights and Democracy Act of 2019 and for banning the sale of U.S. crowd control munitions and equipment to the Hong Kong Police Force.²⁷³ These statements promising action on U.S.-Hong Kong policy followed the State Department's use of new language in its *2019 Hong Kong Policy Act Report* issued in March that for the first time called the territory's degree of autonomy "diminished," due mostly to growing mainland pressure.²⁷⁴

Changes in U.S. treatment of Hong Kong could have repercussions across all aspects of the U.S.-Hong Kong relationship. Hong Kong's special status provides for recognition of Hong Kong passports and diplomatic missions, as well as separate treatment in visa issuance, transportation, export controls, research, cultural, and educational exchange programs, and separate membership in international agreements and organizations.²⁷⁵ Additional U.S. bilateral treaties with Hong Kong govern consular affairs, taxes, legal assistance, air services, and extradition.²⁷⁶ If Hong Kong no longer received separate treatment, the loss of all of these benefits would materially alter not only the U.S.-Hong Kong relationship, but global sentiment and decision-making as well. Chinese University of Hong Kong economist Yifan Zhang stated that uncertainty about Hong Kong's special status could lead to lower investor demand and prompt foreign firms to leave the territory, with a "very damaging effect on Hong Kong's economy."²⁷⁷

Hong Kong is a vibrant global center of commerce geographically close to the Mainland but distinguished by its economic openness, transparent regulatory environment, and commitment to freedom of expression and the rule of law. Hong Kong's uniqueness has engendered a U.S.-Hong Kong relationship characterized by deep, long-standing economic and social ties. U.S. cumulative outbound FDI in Hong Kong stood at approximately \$82.5 billion at the end of 2018.²⁷⁸ Over 1,300 U.S. companies operate in Hong Kong, including most major U.S. financial firms.²⁷⁹ In 2018, about 1.3 million U.S.

visitors went to Hong Kong, while about 127,000 Hong Kong residents traveled to the United States.²⁸⁰ Approximately 85,000 U.S. citizens are Hong Kong residents.²⁸¹ This open interaction is made possible by the perception of Hong Kong in the United States and the international community. In June 2019, AmCham Hong Kong's president Tara Joseph emphasized that U.S. companies "depend on and prize Hong Kong's reputation as a center of excellence for the rule of law."²⁸² Given the continuing political crisis, however, some in the U.S. business community in Hong Kong have begun to explore alternatives.

The United States also works closely with the Hong Kong government on export controls, law enforcement, and hosting U.S. Navy port calls. Cases of diversion of controlled items, however, are cause for concern due to the high risk of transshipment to the Mainland as Beijing extends its reach into Hong Kong.²⁸³ In 2018, the State Department noted increased scrutiny of the Hong Kong government's handling of UN and U.S. sanctions enforcement, which resulted in some positive measures such as legislation and more investigation, but Hong Kong refrained from making formal charges against violators.²⁸⁴ Law enforcement cooperation remains robust and has helped in fugitive surrender cases—with the key exception of the first refusal of a U.S. extradition request in 2017—and disrupting the flow of contraband, including narcotics.²⁸⁵ Port calls are contingent on PRC approval, with Beijing notably denying U.S. port call requests in August and September 2019, two of at least ten such instances since the 1997 handover (see Addendum II for a list of all publicly reported port call denials).²⁸⁶

The future direction of Hong Kong—and with it U.S.-Hong Kong policy—will rest upon the outcome of the historic 2019 protest movement and the extent to which the Hong Kong government respects the aspirations of its people to protect the territory's autonomy. Regardless of the outcome, it is clear that Beijing is unwilling to wait until 2047—when it no longer must abide by the "one country, two systems" arrangement—to exert its influence over all aspects of Hong Kong's affairs. Given recent developments, U.S. policymakers are starting to prepare for the day when Hong Kong loses the legal protections and democratic freedoms that are key pillars of the U.S.-Hong Kong relationship.

Addendum I: Selected List of Demonstrations, June–October 1, 2019

Date	Name	Organizers' Estimated Turnout	Hong Kong Police Estimated Turnout
June 6	Lawyers' silent march against extradition bill	3,000	880
June 9	Civil Human Rights Front (CHRF)-organized march	1,030,000	240,000
June 12	Surrounding of LegCo and government headquarters	100,000	N/A
June 14	Mothers' gathering for young protesters	6,000	1,000
June 16	CHRF-organized march	2,000,000	338,000
June 21	Surrounding of police headquarters	30,000	N/A
June 26	CHRF-organized rally	80,000	N/A
June 27	Surrounding of Justice Department	2,200	N/A
July 1	CHRF-organized march	550,000	190,000
July 1	Anti-flag-raising ceremony protest and LegCo break-in	30,000	N/A
July 5	Mothers' gathering for young protesters	8,000	1,300
July 6	Tuen Mun protest	10,000	1,800
July 7	LIHKG internet forum-organized Kowloon march	230,000	56,000
July 13	Sheung Shui protest	30,000	4,000
July 14	Journalists' silent march against police violence	1,500	1,100
July 14	Shatin protest organized by community group	115,000	28,000
July 15	Hunger strike march to Chief Executive residence	2,400	N/A
July 16	Retiree/elderly march in support of young protesters	9,000	1,500
July 21	Social workers' silent march to government headquarters	4,000	N/A
July 21	CHRF-organized march	430,000	138,000
July 26	Aviation workers-organized sit-in at airport	15,000	4,000
July 27	Yuen Long protest (unauthorized by police)	288,000	N/A
July 28	Chater Garden protest (partially unauthorized by police)	11,000	N/A

**Addendum I: Selected List of Demonstrations, June–October 1, 2019—
Continued**

Date	Name	Organizers' Estimated Turnout	Hong Kong Police Estimated Turnout
August 1	Financial workers' flash mob protest	4,300	N/A
August 2	Medical workers' protest	10,321	N/A
August 2	Civil servants' protest	40,000	13,000
August 3	Mong Kok march	120,000	42,000
August 4	Tseung Kwan O march	150,000	27,000
August 4	Hong Kong Island West rally	20,000	N/A
August 5	General strike gatherings in seven areas of the territory	290,000	N/A
August 6	Sham Shui Po police station protest	1,000	N/A
August 7	Lawyers' silent march against politicized prosecutions	3,000	N/A
August 8	Catholics' march	1,200	N/A
August 9–13	Airport sit-in and protests	Thousands	N/A
August 10	Tai Po march (unauthorized by police)	Thousands	N/A
August 11	Hong Kong Island East march (unauthorized by police)	Thousands	N/A
August 12–14	Medical workers' protest at 15 hospitals	Thousands	N/A
August 12	Social workers' protest at police headquarters	Hundreds	N/A
August 16	Hong Kong universities' student unions-organized rally	60,000	7,100
August 17	Teachers' march	22,000	8,300
August 17	To Kwa Wan march	2,000	N/A
August 18	CHRF-organized rally and march (unauthorized by police)	1,700,000	128,000
August 22	Secondary students' rally	1,000	N/A
August 23	"Hong Kong Way" 37 mile-long human chain protest	210,000	N/A
August 23	Accountants' silent march	5,000	N/A
August 24	Kwun Tong march (unauthorized by police)	Tens of thousands	N/A

**Addendum I: Selected List of Demonstrations, June–October 1, 2019—
Continued**

Date	Name	Organizers' Estimated Turnout	Hong Kong Police Estimated Turnout
August 25	Kwai Tsing-Tsuen Wan march (unauthorized by police)	Tens of thousands	N/A
August 28	Anti-Cathay Pacific firings rally	3,000	730
August 28	Anti-police sexual harassment rally	30,000	11,500
August 31	CHRF-organized march and rally (unauthorized by police)	Tens of thousands	N/A
September 1	Airport 'stress test' (disrupting transport links to airport)	Thousands	N/A
September 2	Secondary students from around 230 schools strike and hold rally	4,000	N/A
September 2	University students from 11 schools strike and hold rally	30,000	N/A
September 2	General strike rally	40,000	4,080
September 2–6	Secondary students from 42 schools form human chains	Thousands	N/A
September 6	Anti-police/anti-Beijing rally	23,000	N/A
September 8	Support for Hong Kong Human Rights and Democracy Act march to U.S. Consulate Hong Kong	250,000	N/A
September 9	Secondary students from 188 schools form human chains	Tens of thousands	N/A
September 9	Students from three universities form human chains	Hundreds	N/A
September 9–12	"Glory to Hong Kong" sing-along protests at various malls, campuses, and public spaces	Tens of thousands	N/A
September 13	Liberate Hong Kong Mid-Autumn Festival protest involving human chains and sit-ins	14,400	N/A
September 15	Causeway Bay to Central march (original route planned by CHRF; unauthorized by police)	490,000	N/A
September 22	Anti-CCP shopping in Shatin	3,000	N/A
September 26	Protest outside Chief Executive Lam's public forum	2,000	N/A

**Addendum I: Selected List of Demonstrations, June–October 1, 2019—
Continued**

Date	Name	Organizers’ Estimated Turnout	Hong Kong Police Estimated Turnout
September 27	Rally against San Uk Ling detentions	50,000	9,520
September 28	CHRF rally	200,000	8,440
September 29	Anti-totalitarianism march	200,000	N/A
October 1	March from Causeway Bay to Central	200,000	N/A

Note: According to Hong Kong writer and activist Kong Tsung-gan, as of October 1, some 482 demonstrations have been held since the start of the protest movement. All protests in this table that are noted as “unauthorized by police” were denied permits to hold the event but did so regardless, risking unlawful assembly charges. Since the start of the movement, four mass pro-Beijing counterprotests have been held supporting the extradition bill and the Hong Kong government and police’s response to the protests. These included: (1) a June 30 rally in front of the Hong Kong government’s headquarters involving 165,000 participants, according to organizers (police estimated 53,000); (2) a July 20 rally at Tamar Park with 316,000 attendees, according to organizers (police estimated 103,000); (3) an August 2 rally at Victoria Park with 90,000 people attendees, according to organizers (police estimated 26,000); and (4) an August 17 rally at Tamar Park with 476,000 attendees according to organizers (police estimated 108,000). Other notable protests held by pro-Beijing groups include: (1) an August 24 protest outside Radio Television Hong Kong criticizing its alleged “biased” reporting involving 10,000 attendees according to organizers (police estimated 1,200 at its peak); and (2) on September 12, pro-Beijing Hong Kong residents reportedly gathered in a mall to sing the PRC anthem, reportedly including more than 1,000 participants.

Source: Adapted from Kong Tsung-gan, “Hong Kong Anti-Extradition Demonstrations and Arrests,” October 2, 2019. <https://medium.com/@KongTsungGan/hong-kong-anti-extradition-demonstrations-and-arrests-8079613e5688>; Various.²⁸⁷

Addendum II: China Denials of U.S. Port Calls in Hong Kong since the 1997 Handover

Date of Requested Port Call	U.S. Ship(s)	Details and Potential Reasoning for Denial (if applicable)
September 2019	<i>Lake Erie</i> , guided-missile cruiser	The ongoing anti-extradition bill movement may have led Beijing to deny the port call.
August 2019	<i>Green Bay</i> , landing platform dock	The ongoing anti-extradition bill movement may have led Beijing to deny the port call.
September 2018	<i>Wasp</i> , landing helicopter dock	The denial occurred days after U.S. sanctions of Central Military Commission Equipment Development Department and its director PLA Lieutenant General Li Shangfu.
May 2016	<i>Stennis</i> , aircraft carrier, and three other ships in the carrier strike group	The carrier strike group had recently transited through the South China Sea near China's disputed claims.
August 2014	<i>Halsey</i> , guided-missile destroyer	U.S. military aircraft flew through China's East China Sea Air Defense Identification Zone months earlier.
November 2007	<i>Kitty Hawk</i> , aircraft carrier, and three other ships in the carrier strike group	China denied permission for the port call as the carrier strike group was en route to Hong Kong. Beijing later approved the visit but it was too late as the ships did not have enough time to turn around.
November 2007	<i>Patriot</i> and <i>Guardian</i> minesweepers	The two ships asked permission to enter Hong Kong harbor for safety and fuel ahead of an approaching storm.
March 2002	<i>Curtis Wilbur</i> , guided-missile destroyer	Beijing denied the port call after the George W. Bush Administration allowed Taiwan's defense minister to travel to the United States for a defense conference, in addition to other steps the Bush Administration took to expand its support for Taiwan.
June 2001	<i>Inchon</i> , minesweeper	The denial occurred two months after a U.S. EP-3 surveillance aircraft crashed into a Chinese fighter jet.
May–September 1999	Ten ships	Beijing instituted a temporary ban on U.S. port calls in Hong Kong after the accidental North Atlantic Treaty Organization (NATO) bombing of the Chinese Embassy in Belgrade in May 1999.

Note: The denied port calls included in this table are only those publicly-reported. It is unclear the exact dates in 1999 when the ten ships were denied port calls following the accidental NATO bombing of the Chinese Embassy in Belgrade that year. According to the State Department's 2000 *U.S.-Hong Kong Policy Act Report*, Beijing denied "numerous U.S. requests" for port calls and aircraft visits over a six-month period following the incident. The State Department's 2001 report, however, indicates ship visits were permitted starting in September 1999. This table uses the September date, which is cited in the later report.

Source: Various.²⁸⁸

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COMPREHENSIVE LIST OF THE COMMISSION'S RECOMMENDATIONS

Chapter 2: Beijing's Internal and External Challenges

The Commission recommends:

1. Congress provide resources for programs that support independent media and the free flow of information to prioritize Indo-Pacific countries in their efforts to counter China's influence and propaganda efforts.
2. Congress require the relevant departments and agencies of jurisdiction—including the U.S. Department of the Treasury, the U.S. Department of Commerce, and the U.S. Securities and Exchange Commission—to prepare a report to Congress on the holdings of U.S. investors in Chinese bonds and other debt instruments. Such a report shall include information on the direct, indirect, and derivative ownership of any of these instruments.
3. Congress require the U.S. Department of the Treasury to prepare a report to Congress on the operation of China's Cross-Border International Payment System. As part of such a report, the department shall include information on the extent to which the Cross-Border International Payment System could be used to bypass international sanctions regimes.

Chapter 3: U.S.-China Competition

Section 1: U.S.-China Commercial Relations

The Commission recommends:

4. Congress enact legislation to preclude Chinese companies from issuing securities on U.S. stock exchanges if:
 - The Public Company Accounting Oversight Board is denied timely access to the audit work papers relating to the company's operations in China;
 - The company disclosure procedures are not consistent with best practices on U.S. and European exchanges;
 - The company utilizes a variable interest entity (VIE) structure;
 - The company does not comply with *Regulation Fair Disclosure*, which requires material information to be released to all investors at the same time.
5. Congress enact legislation requiring the following information to be disclosed in all issuer initial public offering prospectuses and annual reports as material information to U.S. investors:

- Financial support provided by the Chinese government, including: direct subsidies, grants, loans, below-market loans, loan guarantees, tax concessions, government procurement policies, and other forms of government support.
 - Conditions under which that support is provided, including but not limited to: export performance, input purchases manufactured locally from specific producers or using local intellectual property, or the assignment of Chinese Communist Party (CCP) or government personnel in corporate positions.
 - CCP committees established within any company, including: the establishment of a company Party committee, the standing of that Party committee within the company, which corporate personnel form that committee, and what role those personnel play.
 - Current company officers and directors of Chinese companies and U.S. subsidiaries or joint ventures in China who currently hold or have formerly held positions as CCP officials and/or Chinese government officials (central and local), including the position and location.
6. Congress enact legislation requiring the collection of data on U.S.-China economic relations. This legislation would:
- Direct U.S. economic statistics-producing agencies, including the U.S. Census Bureau, the U.S. Department of Commerce's Bureau of Economic Analysis, and the U.S. International Trade Commission, to review methodologies for collecting and publishing not only gross trade flows data, but also detailed supply chain data to better document the country of origin for components of each imported good before it reaches U.S. consumers.
 - Direct the U.S. Census Bureau to restart data releases in its *Current Industrial Reports* at the ten-digit industry level.
 - Direct the U.S. Department of the Treasury to coordinate with the U.S. Census Bureau to match U.S. firm-level data with their U.S. employees' data.

Section 2: Emerging Technologies and Military-Civil Fusion: Artificial Intelligence, New Materials, and New Energy

The Commission recommends:

7. Congress direct the U.S. Department of Justice to reestablish a higher education advisory board under the Federal Bureau of Investigation. In concert with the U.S. Department of Commerce's Bureau of Industry and Security, U.S. Department of Homeland Security, and U.S. Department of State, the higher education advisory board would convene semiannual meetings between university representatives and relevant federal agencies to review the adequacy of protections for sensitive technologies and research, identify patterns and early warning signs in academic espionage, assess training needs for university faculty and staff to comply with export controls and prevent unauthorized transfer of information, and share other areas of concern

in protecting national security interests related to academic research.

8. Congress direct the U.S. Government Accountability Office to conduct an assessment on the risks posed by Beijing's efforts to co-opt foreign researchers or students at U.S. universities to unlawfully appropriate research and other knowledge for the benefit of the government, companies, or interests of the People's Republic of China. This report should:
 - Include the number of foreign students and researchers from China studying in science, technology, engineering, and mathematics fields; past and current affiliations; primary areas of research; duration of stay in the United States; and subsequent employment;
 - Identify whether federally funded university research related to emerging technologies may have been unlawfully appropriated by individuals acting on behalf of Chinese entities; and
 - Evaluate the efficacy and ability of the U.S. Department of State's visa screening mechanism to mitigate the risk of inappropriate technology transfer to China, including but not limited to: assessing the ability of that process to identify students, researchers, and research entities, through a visa disclosure requirement, that are receiving funding from the government of China or an intermediary entity acting in support of China's government.
9. Congress amend Internal Revenue Code Section 41 to extend the research and development tax credit to initial stages of deployment for new products, processes, computer software, techniques, formulae, or inventions that increase the production of final and intermediary goods manufactured primarily in the United States. The tax credit should also extend to precompetitive commercial development of basic and applied research performed in the United States, particularly in industrial sectors where the People's Republic of China threatens the technological leadership of the United States.
10. Congress direct the U.S. Geological Survey, in coordination with the U.S. Department of Energy, U.S. Department of Commerce, U.S. Department of the Interior, and U.S. International Trade Commission to develop and maintain a risk assessment framework that identifies materials used in manufacturing industries critical to both national security and commercial vitality. Such a framework should provide an early warning mechanism for any threats to the U.S. supply of these critical materials, including an increasing concentration of extraction and processing by another country or entity and acquisition of significant mining and processing facilities; increasing export restrictions by another country; large gaps between domestic prices for these materials in another country versus prices on international markets; sharp increases or volatility in price; and substantial control in supply of minerals used within the same industry or related minerals that serve as substitutes by another country.

11. Congress direct the National Science Foundation, in coordination with other agencies, to conduct a study on the impact of the activities of Chinese government, state-sponsored organizations, or entities affiliated or supported by the state in international bodies engaged in developing and setting standards for emerging technologies. The study should examine whether standards are being designed to promote Chinese government interests to the exclusion of other participants.

Section 3: Growing U.S. Reliance on China’s Biotech and Pharmaceutical Products

The Commission recommends:

12. Congress hold hearings assessing the productive capacity of the U.S. pharmaceutical industry, U.S. dependence on Chinese pharmaceuticals and active pharmaceutical ingredients (APIs), and the ability of the U.S. Food and Drug Administration (FDA) to guarantee the safety of such imports from China, with a view toward enacting legislation that would:
 - Require the FDA to compile a list of all brand name and generic drugs and corresponding APIs that: (1) are not produced in the United States; (2) are deemed critical to the health and safety of U.S. consumers; and (3) are exclusively produced—or utilize APIs and ingredients produced—in China.
 - Require Medicare, Medicaid, the U.S. Department of Veterans Affairs, the U.S. Department of Defense, and other federally funded health systems to purchase their pharmaceuticals only from U.S. production facilities or from facilities that have been certified by the FDA to be in compliance with U.S. health and safety standards and that actively monitor, test, and assure the quality of the APIs and other components used in their drugs, unless the FDA finds the specific drug is unavailable in sufficient quantities from other sources.
 - Require the FDA, within six months, to investigate and certify to Congress whether the Chinese pharmaceutical industry is being regulated for safety, either by Chinese authorities or the FDA, to substantially the same degree as U.S. drug manufacturers and, if the FDA cannot so certify, forward to Congress a plan for protecting the American people from unsafe or contaminated drugs manufactured in China.
13. Congress direct the U.S. Government Accountability Office to update its 2016 report, *Drug Safety: FDA Has Improved Its Foreign Drug Inspection Program, but Needs to Assess the Effectiveness and Staffing of Its Foreign Offices*. The updated report should focus on the U.S. Food and Drug Administration’s ability to conduct inspections of Chinese drug manufacturing facilities.
14. Congress consider legislation requiring generic drug manufacturers that sell medicines to the U.S. Department of Defense and U.S. Department of Veterans Affairs to disclose which essential drugs are at risk of shortage or supply disruption because the relevant products, active pharmaceutical ingredients, chemical intermediates, and raw materials contained in them are sourced from China.

15. Congress enact legislation requiring drug companies to list active pharmaceutical ingredients and their countries of origin on labels of imported and domestically produced finished drug products.
16. Congress enact legislation creating a risk-based system making importers of active pharmaceutical ingredients (APIs) and finished products liable for any health risks incurred by consumers in the event the product is proven unsafe due to contamination, mislabeling, or other defects. Special attention should be paid to finished drug products imported from China or containing APIs sourced from China.

Chapter 4: China's Global Ambitions

Section 1: Beijing's "World-Class" Military Goal

The Commission recommends:

17. Congress direct the U.S. Department of Defense to incorporate an assessment in its *Annual Report on Military and Security Developments Involving the People's Republic of China* of China's progress toward achieving its goal to build a "world-class" military. The report should also include an explanation of how the department defines this term.
18. Congress direct a classified assessment identifying where China has undertaken activities that may be aimed at establishing a military presence, operating location, or storage depot. This assessment would include Chinese state-owned enterprises or other commercial interests tied to the Chinese government investing in strategic assets, such as ports and airfields, and should suggest options that could be employed to dissuade host countries from agreeing to host a Chinese military presence.
19. Congress direct the U.S. Government Accountability Office to conduct an assessment of the U.S. government's ability to hire and retain Chinese-language-capable employees. The study would examine U.S. government agencies' processes for determining Chinese-language-designated positions and hiring and clearing employees, assess the extent to which the agencies are meeting their language proficiency requirements for these positions, measure the effects of language proficiency and gaps on the agencies' ability to perform their missions, and develop recommendations to address identified shortfalls.
20. Congress direct the Office of the Director of National Intelligence to restore the unclassified Open Source Enterprise website to all of its original functions for U.S. government employees. Access to the Open Source Enterprise should also be expanded by making appropriate materials available to U.S. academic and research institutions.

Section 2: An Uneasy Entente: China-Russia Relations in a New Era of Strategic Competition with the United States

The Commission recommends:

21. Congress direct the Office of the Director for National Intelligence to prepare a National Intelligence Estimate of China's

and Russia's approaches to competition with the United States and revision of the international order. The assessment would consider the influence of both countries' ideologies on their foreign policies, including areas both of overlap and of divergence; potential "wedge issues" the United States might exploit; and the implications for the North Atlantic Treaty Organization of a two-front conflict involving both China and Russia.

22. Members of Congress promote U.S. interests in the Arctic by participating in congressional delegations to Arctic Council member states and attending the biennial Conference of Parliamentarians of the Arctic Region to discuss economic and security concerns regarding China and Russia.

Section 3: China's Ambitions in Space: Contesting the Final Frontier

The Commission recommends:

23. Congress direct the National Space Council to develop a strategy to ensure the United States remains the preeminent space power in the face of growing competition from China and Russia, including the production of an unclassified report with a classified annex containing the following:
 - A long-term economic space resource policy strategy, including an assessment of the viability of extraction of space-based precious minerals, onsite exploitation of space-based natural resources, and space-based solar power. It would also include a comparative assessment of China's programs related to these issues.
 - An assessment of U.S. strategic interests in or relating to cislunar space.
 - An assessment of the U.S. Department of Defense's current ability to guarantee the protection of commercial communications and navigation in space from China's growing counter-space capabilities, and any actions required to improve this capability.
 - A plan to create a space commodities exchange to ensure the United States drives the creation of international standards for interoperable commercial space capabilities.
 - A plan to streamline and strengthen U.S. cooperation with allies and partners in space.
 - An interagency strategy to defend U.S. supply chains and manufacturing capacity critical to competitiveness in space.
24. Congress direct the U.S. Department of Defense to take the following steps to ensure it is prepared to counter China's and Russia's destabilizing approaches to military operations in space:
 - Ensure U.S. Space Command and any future space-oriented service are responsible for protecting freedom of navigation and keeping lines of communication open, safe, and secure in the space domain, as the U.S. Navy does for U.S. interests in the maritime commons.

- Strengthen the credibility of U.S. deterrence in space by fully integrating the space domain into policy, training, and exercises.
 - Ensure that programs designed to increase survivability, redundancy, reusability, resilience, rapid replacement, and disaggregation of critical U.S. space assets receive continued support, including those programs ordered in the National Defense Authorization Act for 2019 Title XVI, Subtitle A.
25. Congress urge the Administration to actively participate in international space governance institutions to shape their development in a way that suits the interests of the United States and its allies and partners and to strengthen U.S. engagement with key coalitional allies and partners in the space domain.

Section 4: Changing Regional Dynamics: Oceania and Singapore

The Commission recommends:

26. Congress direct the Administration to assess the viability and impact of establishing new military training centers hosted by Indo-Pacific allies and partners to increase connectivity, interoperability, and shared professional military education among countries throughout the region.
27. Congress support the implementation of the Indo-Pacific Stability Initiative to align U.S. budgetary commitments with national security objectives and build the confidence of allies concerning U.S. commitment to security in the Indo-Pacific region.
28. Congress direct the U.S. Department of State to reinstate Peace Corps programs in Palau and the Federated States of Micronesia and consider expanding their presence in other Pacific Island countries to promote U.S. values while counteracting the spread of China's authoritarian influence in the Pacific Islands.

Chapter 5: Taiwan

The Commission recommends:

29. Congress direct the U.S. secretary of state to submit to Congress a report on actions that have been and will be taken by the United States to counter Beijing's attempts to isolate Taiwan's democratically-elected leaders and to strengthen support for Taiwan's engagement with the international community, including actions the Administration will take should Beijing increase its coercion against Taiwan. The report should:
- List measures the U.S. government has taken and will take to expand interactions between U.S. and Taiwan government officials in accordance with the Taiwan Travel Act.
 - Formulate a strategy to expand development aid and security assistance to countries that maintain diplomatic ties with Taiwan.
 - Detail steps to expand multilateral collaboration involving Taiwan and other democracies to address global challenges,

such as the Global Cooperation and Training Framework's workshops on epidemics, cybersecurity, and media literacy.

30. Congress direct the Office of the Director of National Intelligence to conduct a study on the impact of a Taiwan Strait contingency on the supply of high-technology products to the United States from Taiwan, China, Japan, and South Korea.
31. Congress direct the U.S. Department of Defense to prepare a classified study on how People's Liberation Army modernization targets to be met by 2035 will impact the ability of the United States to uphold its obligation established in the Taiwan Relations Act to maintain the ability to resist any resort to force that would jeopardize the security of Taiwan. This study would be briefed to all relevant committees of jurisdiction and provide the basis for a 15-year plan of action aimed at deterring Beijing from making a military attempt to unify Taiwan with China.
32. Congress enact legislation to enhance U.S.-Taiwan security cooperation. Such legislation should contain provisions to:
 - Clarify that direct interactions between uniformed members of the armed forces of the United States and Taiwan in support of Taiwan's self-defense capability are fully consistent with the Taiwan Relations Act and the U.S. position of maintaining relations with the people of Taiwan.
 - Direct the Administration to increase military exchanges and training with Taiwan, including but not limited to humanitarian assistance and disaster relief, search and rescue, and any other skills supporting regional peace and security.
 - Direct the Administration to permit active-duty Taiwan military officers to wear their uniforms during visits to the United States.
 - Direct the Administration to permit active-duty U.S. military officers to wear their uniforms during visits to Taiwan.
33. Congress raise the threshold of congressional notification on sales of defense articles and services to Taiwan to the highest tier set for U.S. allies and partners. Congress also terminate any requirement to provide prior notification of maintenance and sustainment of military equipment and capabilities previously sold to Taiwan.

Chapter 6: Hong Kong

The Commission recommends:

34. Congress amend the U.S.-Hong Kong Policy Act of 1992 to direct the U.S. Department of State to develop a series of specific benchmarks for measuring Hong Kong's maintenance of a "high degree of autonomy" from Beijing. Such benchmarks should employ both qualitative and quantitative measurements to evaluate the state of Hong Kong's autonomy in the State Department's annual *Hong Kong Policy Act Report*.
35. Congress enact legislation stating that all provisions and the special status of Hong Kong included in the U.S.-Hong Kong

Policy Act of 1992 will be suspended in the event that China's government deploys People's Liberation Army or People's Armed Police forces to engage in armed intervention in Hong Kong.

36. Congress enact legislation directing the U.S. Department of Commerce's Bureau of Industry and Security to extend export control measures currently in place for mainland China to subsidiaries of Chinese companies established or operating in Hong Kong.
37. Congress hold hearings examining technologies subject to export controls for mainland China, but not controlled for Hong Kong. These hearings should request that the U.S. Department of Commerce's Bureau of Industry and Security and the U.S. Consulate General in Hong Kong assess the effectiveness of current export controls in preventing unauthorized transshipment to the Mainland or other destinations.
38. Members of Congress participate in congressional delegations to Hong Kong and meet with Hong Kong officials, legislators, civil society, and business representatives in the territory and when they visit the United States. They should also continue to express support for freedom of expression and rule of law in Hong Kong.

APPENDIX I CHARTER

The Commission was created on October 30, 2000 by the Floyd D. Spence National Defense Authorization Act of 2001, Pub. L. No. 106–398 (codified at 22 U.S.C. § 7002), as amended by:

- The Treasury and General Government Appropriations Act, 2002, Pub. L. No. 107–67 (Nov. 12, 2001) (regarding employment status of staff and changing annual report due date from March to June);
- The Consolidated Appropriations Resolution, 2003, Pub. L. No. 108–7 (Feb. 20, 2003) (regarding Commission name change, terms of Commissioners, and responsibilities of the Commission);
- The Science, State, Justice, Commerce, and Related Agencies Appropriations Act, 2006, Pub. L. No. 109–108 (Nov. 22, 2005) (regarding responsibilities of the Commission and applicability of FACA);
- The Consolidated Appropriations Act, 2008, Pub. L. No. 110–161 (Dec. 26, 2007) (regarding submission of accounting reports, printing and binding, compensation for the executive director, changing annual report due date from June to December, and travel by members of the Commission and its staff);
- The Carl Levin and Howard P. “Buck” McKeon National Defense Authorization Act for Fiscal Year 2015, Pub. L. No. 113–291 (Dec. 19, 2014) (regarding responsibilities of the Commission).

22 U.S.C. § 7002. United States-China Economic and Security Review Commission

(a) Purposes

The purposes of this section are as follows:

(1) To establish the United States-China Economic and Security Review Commission to review the national security implications of trade and economic ties between the United States and the People’s Republic of China.

(2) To facilitate the assumption by the United States-China Economic and Security Review Commission of its duties regarding the review referred to in paragraph (1) by providing for the transfer to that Commission of staff, materials, and infrastructure (including leased premises) of the Trade Deficit Review Commission that are appropriate for the review upon the submittal of the final report of the Trade Deficit Review Commission.

(b) Establishment of United States-China Economic and Security Review Commission

(1) In general

There is hereby established a commission to be known as the United States-China Economic and Security Review Commission (in this section referred to as the “Commission”).

(2) Purpose

The purpose of the Commission is to monitor, investigate, and report to Congress on the national security implications of the bilateral trade and economic relationship between the United States and the People’s Republic of China.

(3) Membership

The Commission shall be composed of 12 members, who shall be appointed in the same manner provided for the appointment of members of the Trade Deficit Review Commission under section 127(c)(3) of the Trade Deficit Review Commission Act (19 U.S.C. 2213 note), except that—

(A) appointment of members by the Speaker of the House of Representatives shall be made after consultation with the chairman of the Committee on Armed Services of the House of Representatives, in addition to consultation with the chairman of the Committee on Ways and Means of the House of Representatives provided for under clause (iii) of subparagraph (A) of that section;

(B) appointment of members by the President pro tempore of the Senate upon the recommendation of the majority leader of the Senate shall be made after consultation with the chairman of the Committee on Armed Services of the Senate, in addition to consultation with the chairman of the Committee on Finance of the Senate provided for under clause (i) of that subparagraph;

(C) appointment of members by the President pro tempore of the Senate upon the recommendation of the minority leader of the Senate shall be made after consultation with the ranking minority member of the Committee on Armed Services of the Senate, in addition to consultation with the ranking minority member of the Committee on Finance of the Senate provided for under clause (ii) of that subparagraph;

(D) appointment of members by the minority leader of the House of Representatives shall be made after consultation with the ranking minority member of the Committee on Armed Services of the House of Representatives, in addition to consultation with the ranking minority member of the Committee on Ways and Means of the House of Representatives provided for under clause (iv) of that subparagraph;

(E) persons appointed to the Commission shall have expertise in national security matters and United States-China relations, in addition to the expertise provided for under subparagraph (B)(i)(I) of that section;

(F) each appointing authority referred to under subparagraphs (A) through (D) of this paragraph shall—

(i) appoint 3 members to the Commission;

(ii) make the appointments on a staggered term basis, such that—

(I) 1 appointment shall be for a term expiring on December 31, 2003;

(II) 1 appointment shall be for a term expiring on December 31, 2004; and

(III) 1 appointment shall be for a term expiring on December 31, 2005;

(iii) make all subsequent appointments on an approximate 2-year term basis to expire on December 31 of the applicable year; and

(iv) make appointments not later than 30 days after the date on which each new Congress convenes;

(G) members of the Commission may be reappointed for additional terms of service as members of the Commission; and

(H) members of the Trade Deficit Review Commission as of October 30, 2000, shall serve as members of the Commission until such time as members are first appointed to the Commission under this paragraph.

(4) Retention of support

The Commission shall retain and make use of such staff, materials, and infrastructure (including leased premises) of the Trade Deficit Review Commission as the Commission determines, in the judgment of the members of the Commission, are required to facilitate the ready commencement of activities of the Commission under subsection (c) or to carry out such activities after the commencement of such activities.

(5) Chairman and Vice Chairman

The members of the Commission shall select a Chairman and Vice Chairman of the Commission from among the members of the Commission.

(6) Meetings

(A) Meetings

The Commission shall meet at the call of the Chairman of the Commission.

(B) Quorum

A majority of the members of the Commission shall constitute a quorum for the transaction of business of the Commission.

(7) Voting

Each member of the Commission shall be entitled to one vote, which shall be equal to the vote of every other member of the Commission.

(c) Duties

(1) Annual report

Not later than December 1 each year (beginning in 2002), the Commission shall submit to Congress a report, in both unclassified and classified form, regarding the national security implications and impact of the bilateral trade and economic relationship between the United States and the People's Republic of China. The report shall include a full analysis, along with conclusions and recommendations for legislative and administrative actions, if any, of the national security implications for the United States of the trade and current balances with the People's Republic of China in goods and services, financial transactions, and technology transfers. The Commission shall also take into account patterns of trade and transfers through third countries to the extent practicable.

(2) Contents of report

Each report under paragraph (1) shall include, at a minimum, a full discussion of the following:

(A) The role of the People's Republic of China in the proliferation of weapons of mass destruction and other weapon systems (including systems and technologies of a dual use nature), including actions the United States might take to encourage the People's Republic of China to cease such practices.

(B) The qualitative and quantitative nature of the transfer of United States production activities to the People's Republic of China, including the relocation of manufacturing, advanced technology and intellectual property, and research and development facilities, the impact of such transfers on the national security of the United States (including the dependence of the national security industrial base of the United States on imports from China), the economic security of the United States, and employment in the United States, and the adequacy of United States export control laws in relation to the People's Republic of China.

(C) The effects of the need for energy and natural resources in the People's Republic of China on the foreign and military policies of the People's Republic of China, the impact of the large and growing economy of the People's Republic of China on world energy and natural resource supplies, prices, and the environment, and the role the United States can play (including through joint research and development efforts and technological assistance) in influencing the energy and natural resource policies of the People's Republic of China.

(D) Foreign investment by the United States in the People's Republic of China and by the People's Republic of China in the United States, including an assessment of its economic and security implications, the challenges to market access confronting potential United States investment in the People's Republic of China, and foreign activities by financial institutions in the People's Republic of China.

(E) The military plans, strategy and doctrine of the People's Republic of China, the structure and organization of the People's Republic of China military, the decision-making process of the People's Republic of China military, the interaction between the civilian and military leadership in the People's Republic of China, the development and promotion process for leaders in the People's Republic of China military, deployments of the People's Republic of China military, resources available to the People's Republic of China military (including the development and execution of budgets and the allocation of funds), force modernization objectives and trends for the People's Republic of China military, and the implications of such objectives and trends for the national security of the United States.

(F) The strategic economic and security implications of the cyber capabilities and operations of the People's Republic of China.

(G) The national budget, fiscal policy, monetary policy, capital controls, and currency management practices of the People's Republic of China, their impact on internal stability in the People's Republic of China, and their implications for the United States.

(H) The drivers, nature, and implications of the growing economic, technological, political, cultural, people-to-people, and security relations of the People's Republic of China's with other countries, regions, and international and regional entities (including multilateral organizations), including the relationship among the United States, Taiwan, and the People's Republic of China.

(I) The compliance of the People's Republic of China with its commitments to the World Trade Organization, other multilateral commitments, bilateral agreements signed with the United States, commitments made to bilateral science and technology programs, and any other commitments and agreements strategic to the United States (including agreements on intellectual property rights and prison labor imports), and United States enforcement policies with respect to such agreements.

(J) The implications of restrictions on speech and access to information in the People's Republic of China for its relations with the United States in economic and security policy, as well as any potential impact of media control by the People's Republic of China on United States economic interests.

(K) The safety of food, drug, and other products imported from China, the measures used by the People's Republic of China Government and the United States Government to monitor and enforce product safety, and the role the United States can play (including through technical assistance) to improve product safety in the People's Republic of China.

(3) Recommendations of report

Each report under paragraph (1) shall also include recommendations for action by Congress or the President, or both, including specific recommendations for the United States to invoke Article XXI (relating to security exceptions) of the General Agreement on Tariffs and Trade 1994 with respect to the People's Republic of China, as a result of any adverse impact on the national security interests of the United States.

(d) Hearings

(1) In general

The Commission or, at its direction, any panel or member of the Commission, may for the purpose of carrying out the provisions of this section, hold hearings, sit and act at times and places, take testimony, receive evidence, and administer oaths to the extent that the Commission or any panel or member considers advisable.

(2) Information

The Commission may secure directly from the Department of Defense, the Central Intelligence Agency, and any other Federal department or agency information that the Commission considers necessary to enable the Commission to carry out its duties under this section, except the provision of intelligence information to the Commission shall be made with due regard for the protection from unauthorized disclosure of classified information relating to sensitive intelligence sources and methods or other exceptionally sensitive matters, under procedures approved by the Director of Central Intelligence.

(3) Security

The Office of Senate Security shall—

(A) provide classified storage and meeting and hearing spaces, when necessary, for the Commission; and

(B) assist members and staff of the Commission in obtaining security clearances.

(4) Security clearances

All members of the Commission and appropriate staff shall be sworn and hold appropriate security clearances.

(e) Commission personnel matters

(1) Compensation of members

Members of the Commission shall be compensated in the same manner provided for the compensation of members of the Trade Deficit Review Commission under section 127(g)(1) and section 127(g)(6) of the Trade Deficit Review Commission Act (19 U.S.C. 2213 note).

(2) Travel expenses

Travel expenses of the Commission shall be allowed in the same manner provided for the allowance of the travel expenses of the Trade Deficit Review Commission under section 127(g)(2) of the Trade Deficit Review Commission Act.

(3) Staff

An executive director and other additional personnel for the Commission shall be appointed, compensated, and terminated in the same manner provided for the appointment, compensation, and termination of the executive director and other personnel of the Trade Deficit Review Commission under section 127(g)(3) and section 127(g)(6) of the Trade Deficit Review Commission Act. The executive director and any personnel who are employees of the United States-China Economic and Security Review Commission shall be employees under section 2105 of title 5 for purposes of chapters 63, 81, 83, 84, 85, 87, 89, and 90 of that title. [Amended by P.L. 111-117 to apply section 308(e) of the United States China Relations Act of 2000 (22 U.S.C. 6918(e)) (relating to the treatment of employees as Congressional employees) to the Commission in the same manner as such section applies to the Congressional-Executive Commission on the People's Republic of China.]

(4) Detail of government employees

Federal Government employees may be detailed to the Commission in the same manner provided for the detail of Federal Government employees to the Trade Deficit Review Commission under section 127(g)(4) of the Trade Deficit Review Commission Act.

(5) Foreign travel for official purposes

Foreign travel for official purposes by members and staff of the Commission may be authorized by either the Chairman or the Vice Chairman of the Commission.

(6) Procurement of temporary and intermittent services

The Chairman of the Commission may procure temporary and intermittent services for the Commission in the same manner provided for the procurement of temporary and intermittent services for the Trade Deficit Review Commission under section 127(g)(5) of the Trade Deficit Review Commission Act.

(f) Authorization of appropriations

(1) In general

There is authorized to be appropriated to the Commission for fiscal year 2001, and for each fiscal year thereafter, such sums as may be necessary to enable the Commission to carry out its functions under this section.

(2) Availability

Amounts appropriated to the Commission shall remain available until expended.

(g) Applicability of FACA

The provisions of the Federal Advisory Committee Act (5 U.S.C. App.) shall apply to the activities of the Commission.

(h) Effective date

This section shall take effect on the first day of the 107th Congress.

(Pub. L. 106–398, § 1 [[div. A], title XII, § 1238], Oct. 30, 2000, 114 Stat. 1654 , 1654A–334; Pub. L. 107–67, title VI, §§ 645(a), 648, Nov. 12, 2001, 115 Stat. 556; Pub. L. 108–7, div. P, § 2(b)(1), (c)(1), Feb. 20, 2003, 117 Stat. 552; Pub. L. 109–108, title VI, § 635(b), Nov. 22, 2005, 119 Stat. 2347; Pub. L. 110–161, div. J, title I, Dec. 26, 2007, 121 Stat. 2285; Pub. L. 113–291, div. A, title XII, § 1259B(a), Dec. 19, 2014, 128 Stat. 3578.)

Amendments

2014—Subsec. (c)(2). Pub. L. 113–291 added subpars. (A) to (K) and struck out former subpars. (A) to (J) which described required contents of report.

2007—Subsec. (c)(1). Pub. L. 110–161 substituted “December” for “June”.

2005—Subsec. (g). Pub. L. 109–108 amended heading and text of subsec. (g) generally. Prior to amendment, text read as follows: “The provisions of the Federal Advisory Committee Act (5 U.S.C. App.) shall not apply to the Commission.”

2003—Pub. L. 108–7, § 2(b)(1)(A), inserted “Economic and” before “Security” in section catchline.

Subsec. (a)(1), (2). Pub. L. 108–7, § 2(b)(1)(B), inserted “Economic and” before “Security”.

Subsec. (b). Pub. L. 108–7, § 2(b)(1)(C)(i), inserted “Economic and” before “Security” in heading.

Subsec. (b)(1). Pub. L. 108–7, § 2(b)(1)(C)(ii), inserted “Economic and” before “Security”.

Subsec. (b)(3). Pub. L. 108–7, § 2(b)(1)(C)(iii)(I), which directed the amendment of introductory provisions by inserting “Economic and” before “Security”, could not be executed because “Security” does not appear.

Subsec. (b)(3)(F). Pub. L. 108–7, § 2(c)(1), added subpar. (F) and struck out former subpar. (F) which read as follows: “members shall be appointed to the Commission not later than 30 days after the date on which each new Congress convenes;”

Subsec. (b)(3)(H), (4), (e)(1), (2). Pub. L. 108–7, § 2(b)(1)(C)(iii)(II), (iv), (D)(i), (ii), which directed insertion of “Economic and” before “Security”, could not be executed because “Security” does not appear.

Subsec. (e)(3). Pub. L. 108–7, § 2(b)(1)(D)(iii)(II), inserted “Economic and” before “Security” in second sentence.

Pub. L. 108–7, § 2(b)(1)(D)(iii)(I), which directed the amendment of first sentence by inserting “Economic and” before “Security”, could not be executed because “Security” does not appear.

Subsec. (e)(4), (6). Pub. L. 108-7, §2(b)(1)(D)(iv), (v), which directed the amendment of pars. (4) and (6) by inserting “Economic and” before “Security”, could not be executed because “Security” does not appear.

2001—Subsec. (c)(1). Pub. L. 107-67, §648, substituted “June” for “March”.

Subsec. (e)(3). Pub. L. 107-67, §645(a), inserted at end “The executive director and any personnel who are employees of the United States-China Security Review Commission shall be employees under section 2105 of title 5 for purposes of chapters 63, 81, 83, 84, 85, 87, 89, and 90 of that title.”

APPENDIX II

BACKGROUND OF COMMISSIONERS

Carolyn Bartholomew, Chairman

Chairman Carolyn Bartholomew was reappointed to the Commission by House Speaker Nancy Pelosi for a two-year term expiring on December 31, 2019. She previously served as the Commission's chairman for the 2007, 2009, and 2017 report cycles and served as vice chairman for the 2006, 2008, 2010, 2016, and 2018 report cycles.

Chairman Bartholomew has worked at senior levels in the U.S. Congress, serving as counsel, legislative director, and chief of staff to now House Speaker Nancy Pelosi. She also was a professional staff member on the House Permanent Select Committee on Intelligence.

In these positions, Chairman Bartholomew was integrally involved in developing U.S. policies on international affairs and security matters. She has particular expertise in U.S.-China relations, including trade, human rights, and proliferation. Chairman Bartholomew led efforts in the establishment and funding of global AIDS programs and the promotion of human rights and democratization in countries around the world. She was a member of the first Presidential Delegation to Africa to Investigate the Impact of HIV/AIDS on Children and a member of the Council on Foreign Relations' Congressional Staff Roundtable on Asian Political and Security Issues.

In addition to U.S.-China relations, her areas of expertise include terrorism, trade, proliferation of weapons of mass destruction, human rights, U.S. foreign assistance programs, and international environmental issues. She is a consultant to non-profit organizations and also serves on the board of directors of the Kaiser Aluminum Corporation.

Chairman Bartholomew received a Bachelor of Arts degree from the University of Minnesota, a Master of Arts in Anthropology from Duke University, and a Juris Doctorate from Georgetown University Law Center. She is a member of the State Bar of California.

Robin Cleveland, PhD, Vice Chairman

Vice Chairman Cleveland was reappointed by Senate Republican Leader Mitch McConnell for a two-year term expiring December 31, 2020. After three decades of public service, Vice Chairman Cleveland received her PhD in Counseling and is now in private practice. Vice Chairman Cleveland served U.S. Senator Mitch McConnell in a number of positions including in his personal office, on the Senate Select Committee on Intelligence, the Foreign Relations Committee, and the Senate Appropriations Committee where she was Clerk for the Subcommittee on Foreign Operations. Vice Chairman Cleveland also served as the Associate Director for International and National Security Affairs in the Office of Management and Budget in the

Executive Office of the President and as Counselor to the President of the World Bank.

Vice Chairman Cleveland graduated from Wesleyan University with honors and received her Masters of Arts & Education and PhD in Counseling from The George Washington University.

Andreas Borgeas, PhD

Commissioner Andreas Borgeas is an educator with security expertise on China and Central Asia. He has worked abroad in numerous academic and professional capacities, including as a Fulbright Scholar, Contributing Fellow for the Woodrow Wilson Center, and a Policy Specialist Fellow at the U.S. Embassy in Kazakhstan. He conducted his graduate and doctoral field research in, and published extensively on, China and the neighboring Central Asian Republics, receiving his graduate education at Harvard University, Georgetown Law School and Panteion University of Political Sciences. After clerking for a federal district judge he practiced international law at Luce Forward. He is a scholar in residence at the San Joaquin College of Law and an adjunct professor at the Middlebury Institute of International Studies. Commissioner Borgeas was appointed by House Republican Leader Kevin McCarthy for a term expiring December 31, 2020.

Jeffrey Fiedler

Jeffrey Fiedler has previously served on the Commission and is currently the National Strategic Retail Department Director for United Food and Commercial Workers International Union. Before that he was Assistant to the General President, and Director, Special Projects and Initiatives, for the International Union of Operating Engineers. Previously, he was President of Research Associates of America (RAA) and the elected president of the Food and Allied Service Trades Department, AFL–CIO (“FAST”). This constitutional department of the AFL–CIO represented ten unions with a membership of 3.5 million in the United States and Canada. The focus of RAA, like FAST before it, was organizing and bargaining research for workers and their unions.

He served as a member of the AFL–CIO Executive Council committees on International Affairs, Immigration, Organizing, and Strategic Approaches. He also served on the board of directors of the Consumer Federation of America and is a member of the Council on Foreign Relations. In 1992, Mr. Fiedler co-founded the Laogai Research Foundation (LRF), an organization devoted to studying the forced labor camp system in China. When the foundation’s Executive Director, Harry Wu, was detained in China in 1995, Mr. Fiedler coordinated the campaign to win his release. He no longer serves as director of the LRF.

Mr. Fiedler has testified on behalf of the AFL–CIO before the Senate Foreign Relations Committee and the House International Affairs Committee and its various subcommittees, as well as the Trade Subcommittee of the House Ways and Means Committee concerning China policy. He attended three of the American Assembly conferences on China sponsored by Columbia University and has participated in a Council on Foreign Relations task force and study group

on China. He has been interviewed on CBS, NBC, ABC, CNN, and CNBC on China policy, international trade issues, human rights, and child labor.

A Vietnam veteran, he served with the U.S. Army in Hue in 1967–1968. He received his B.A. in Political Science from Southern Illinois University. He is married with two adult children and resides in California.

The Honorable Carte P. Goodwin

Senator Carte P. Goodwin was appointed to the Commission by Senate Democratic Leader Chuck Schumer for a two-year term expiring December 31, 2019.

He is an attorney with the law firm Frost Brown Todd, LLC where he serves as the Member-in-Charge of its Charleston office, vice chair of the Appellate Practice Group, and a member of Civic Point, the firm's government affairs subsidiary. Goodwin's practice includes litigation and appellate advocacy, and advising clients on government relations, intellectual property matters and commercial transactions.

In July of 2010, West Virginia Governor Joe Manchin III appointed Goodwin to the United States Senate to fill the vacancy caused by the passing of Senator Robert C. Byrd, where he served until a special election was held to fill the remainder of Senator Byrd's unexpired term.

From 2005 to 2009, Goodwin served four years as General Counsel to Governor Manchin, during which time he also chaired the Governor's Advisory Committee on Judicial Nominations. In addition, Goodwin chaired the West Virginia School Building Authority and served as a member of the State Consolidated Public Retirement Board. Following his return to private practice in 2009, Goodwin was appointed to chair the Independent Commission on Judicial Reform, along with former Supreme Court Justice Sandra Day O'Connor, which was tasked with evaluating the need for broad systemic reform to West Virginia's judicial system.

Goodwin also previously worked as a law clerk for the Honorable Robert B. King of the United States Court of Appeals for the Fourth Circuit. A native of Mt. Alto, West Virginia, Goodwin received his Bachelor of Arts degree in Philosophy from Marietta College in Marietta, Ohio, in 1996 and received his Doctor of Law degree from the Emory University School of Law, graduating Order of the Coif in 1999.

Goodwin currently resides in Charleston, West Virginia, with his wife, Rochelle; son, Wesley Patrick; and daughter, Anna Vail.

Roy D. Kamphausen

Commissioner Roy Kamphausen was appointed by Senate Republican Leader Mitch McConnell for a two-year term expiring December 31, 2019. He is the President of The National Bureau of Asian Research (NBR), America's leading Asia-focused policy research institution. A specialist on a range of U.S.-Asia issues, Mr. Kamphausen is the author, contributing author, or co-editor of numerous publications, including chapters in NBR's Strategic Asia series; the Carlisle People's Liberation Army Conference series and the IP Commission's Reports on the Theft of American Intellectual Property.

Mr. Kamphausen is a senior adviser on East Asia for the University of Connecticut's Office of Global Affairs. He has previously served as an adjunct associate professor at Columbia University's School of International and Public Affairs. He lectures regularly at leading U.S. military institutions, including the U.S. Military Academy (West Point) and the U.S. Army War College. Mr. Kamphausen regularly briefs members of Congress and advises the U.S. Department of Defense.

Prior to joining NBR, Mr. Kamphausen served as a career U.S. Army officer. A China foreign area officer, his career included assignments as China policy director in the Office of the Secretary of Defense, China strategist for the chairman of the Joint Chiefs of Staff, and a military attaché at the U.S. Embassy in Beijing.

Mr. Kamphausen holds a BA in Political Science from Wheaton College and an MA in International Affairs from Columbia University. He studied Chinese at both the Defense Language Institute and Beijing's Capital Normal University.

Thea Mei Lee

Commissioner Thea Mei Lee was appointed by Senate Democratic Leader Chuck Schumer for a two-year term expiring December 31, 2020. Commissioner Lee is currently the president of the Economic Policy Institute.

Before joining the Economic Policy Institute, Commissioner Lee served at the deputy chief of staff at the AFL-CIO, a voluntary federation of 56 national and international labor unions. She joined the AFL-CIO in 1997 as chief international economist, then assumed the role of policy director before becoming deputy chief of staff. She is co-author of *The Field Guide to the Global Economy*, published by The New Press, and has authored numerous publications on the North American Free Trade Agreement, the impact of international trade on U.S. wage inequality, and the domestic steel and textile industries.

Commissioner Lee has testified before congressional committees and has appeared on television and radio—including on PBS News Hour, Good Morning America, NPR's All Things Considered and Marketplace, Fox Business, and the PBS documentary *Commanding Heights*. She has also served on the State Department Advisory Committee on International Economic Policy, the Export-Import Bank Advisory Committee, and the Board of Directors of the National Bureau of Economic Research, among others. She currently serves on the boards of the Congressional Progressive Caucus Center, the Center for International Policy, and the Coalition for Human Needs, as well as the advisory board of Capital & Main.

Lee holds a master's degree in economics from the University of Michigan at Ann Arbor and a bachelor's degree in economics from Smith College. Lee lives in Washington, DC, with her husband and dog. She has one daughter, who teaches middle school in Brooklyn.

Kenneth Lewis

Kenneth Lewis, an original member of the U.S.-China Economic and Security Review Commission, was appointed by Senate Democratic Leader Chuck Schumer for a term expiring on December 31, 2020.

Commissioner Lewis was born in 1934 in New York, New York. He received his undergraduate degree from the Woodrow Wilson School of Public and International Affairs at Princeton University in 1955, and his J.D. from Harvard Law School in 1958. He clerked for a U.S. Federal judge in New York after graduation from Law School, and then moved to Portland, Oregon, where he practiced law. In 1963 he joined Lasco Shipping Co., which operated a fleet of ocean-going vessels carrying cargoes throughout the world.

Commissioner Lewis was President of Lasco Shipping Co., from 1979 until his retirement in 1994. He served on the Board of Directors of two international marine insurance organizations: the Britannia Steam Ship Insurance Association, Ltd., of London, England (1986–1994); and the Swedish Club (of which he was Deputy Chairman) of Gothenburg, Sweden (1987–1989). He has traveled extensively in Asia, beginning in 1963 to Japan and Korea and in 1979 to the People's Republic of China, making over a hundred visits to these countries.

He previously served on the Presidential Commission on U.S.-Pacific Trade and Investment Policy (appointed by President William J. Clinton in 1996). Commissioner Lewis also served as a member of the U.S. Trade Deficit Review Commission in 1999–2000, a congressionally created commission charged with studying the nature, causes, and consequences of the U.S. merchandise trade and current account deficits. He is past president of the Port of Portland Commission to which he was appointed by both Republican and Democratic Governors.

He served on the Board of Trustees of Pacific University, the Board of Visitors of the University of Oregon School of Law and the Board of Directors of the Oregon Shakespeare Festival. He was the national Chairman of the "I Have a Dream" Foundation of New York, and was the founding Chairman of the "I Have A Dream" Foundation in Oregon. He also served on the Board of Directors of the Oregon Ballet Theatre, of which he was Chairman and President, and the Board of Directors of the World Affairs Council of Oregon, of which he was President. He previously served on the Board of the Oregon Community Foundation.

Commissioner Lewis received the President's Public Service Award in 1991 from the Oregon State Bar Association, and the Equal Opportunity Award from the Urban League of Portland in 1997.

Michael A. McDevitt

Rear Admiral (Ret.) Michael McDevitt is a Senior Fellow at CNA, a Washington DC area non-profit research and analysis company. During his 21 years at CNA he served as a Vice President responsible for strategic analyses, especially in East Asia and the Middle East. He has been involved in U.S. security policy and strategy in the Asia-Pacific for the last 29 years, in both government policy positions and, following his retirement from the U.S. Navy, as an analyst and commentator.

During his 34 year navy career he had four at sea warship commands, including an aircraft carrier battle group. He was the Director of the East Asia and Pacific policy office during the George H.W. Bush Administration, and also served as the Director of Strategy

and Policy (J-5) for U.S. Pacific Command. His last assignment before retirement was a Commandant of the National War College in Washington, DC. He is a graduate of the University of Southern California and Georgetown University where his MA focused on U.S. East Asian diplomatic history. He also attended the National War College and spent a year as a Chief of Naval Operations Fellow on the Strategic Study Group at the Naval War College.

His most recent research includes a study on U.S. Policy Options and the South China Sea, (https://www.cna.org/CNA_files/PDF/IOP-2014-U-009109.pdf), and a study of security issues from a maritime perspective in the Indo-Pacific region (https://www.cna.org/CNA_files/PDF/IRP-2013-U-004654-Final.pdf). Most recently he completed a two-year study on China's ambition to become a maritime great power (https://www.cna.org/cna_files/pdf/IRM-2016-U-013646.pdf).

The Honorable James M. Talent

Senator Jim Talent was appointed by Senate Republican Leader Mitch McConnell for a two-year term expiring December 31, 2019. Senator Jim Talent is a national security leader who specializes in issues related to the Department of Defense. He has been active in Missouri and national public policy for over 25 years.

Senator Talent's public service began in 1984, when at the age of 28 he was elected to the Missouri House of Representatives where he served eight years, the last four as the Republican leader in the Missouri House.

In 1992, he was elected to the first of four terms in the U.S. House of Representatives where he represented Missouri's Second Congressional District. During his eight years in the U.S. House of Representatives, Talent co-authored the historic welfare reform bill, championed national security issues on the House Armed Services Committee, and enacted legislation to help revitalize distressed neighborhoods, both urban and rural. He was the Chairman of the House Small Business Committee from 1997–2001, where he worked on regulatory reform issues and on legislation to lower health care costs for small business people and their employees. Under Senator Talent's leadership, the Small Business Committee became one of the most prolific and bi-partisan in the House of Representatives, passing numerous bills without a single dissenting vote.

In 2002, Missourians elected Talent to serve in the United States Senate where he worked with Republicans and Democrats to enact critical legislation for Missouri. He served on the Senate Armed Services, Energy and Natural Resources, and Agriculture Committees. Working with Oregon Democrat Ron Wyden, Senator Talent was successful in securing critical funding through construction bonding in the highway bill. He and Senator Dianne Feinstein (D-CA) succeeded in passing the most comprehensive anti-methamphetamine bill ever enacted into law. Senator Talent was a leader on energy issues and was instrumental in the passage of the renewable fuel standard.

After leaving the Senate in 2007, Senator Talent joined The Heritage Foundation as a Distinguished Fellow specializing in military affairs and conservative solutions to poverty. In 2008, he served

as Vice Chairman of the Commission on Prevention of Weapons of Mass Destruction Proliferation and Terrorism. In 2010, he served on the independent panel that reviewed the Quadrennial Defense Review of the Department of Defense. He also served on the independent panel that reviewed the Quadrennial Defense Review of 2014. He also has been a member of the executive panel advising the Chief of Naval Operations. Senator Talent was the first national figure outside Massachusetts to endorse Governor Mitt Romney for president in 2007 and was Governor Romney's senior policy advisor in both the 2008 and 2012 campaigns for president.

Senator Talent is an attorney and currently a Senior Fellow at the Bipartisan Policy Center and a Visiting Senior Fellow and Director, National Security 2020 Project, Marilyn Ware Center for Security Studies at the American Enterprise Institute. He earned his BA from Washington University in St. Louis and his JD from the University of Chicago Law School.

Michael R. Wessel

Commissioner Michael R. Wessel, an original member of the U.S.-China Economic and Security Review Commission, was reappointed by House Democratic Leader Nancy Pelosi for a term expiring on December 31, 2019.

Commissioner Wessel served on the staff of former House Democratic Leader Richard Gephardt for more than two decades, leaving his position as general counsel in March 1998. In addition, Commissioner Wessel was Congressman Gephardt's chief policy advisor, strategist, and negotiator. He was responsible for the development, coordination, management, and implementation of the Democratic leader's overall policy and political objectives, with specific responsibility for international trade, finance, economics, labor, and taxation.

During his more than 20 years on Capitol Hill, Commissioner Wessel served in a number of positions. As Congressman Gephardt's principal Ways and Means aide, he developed and implemented numerous tax and trade policy initiatives. He participated in the enactment of every major trade policy initiative from 1978 until his departure in 1998. In the late 1980s, he was the executive director of the House Trade and Competitiveness Task Force, where he was responsible for the Democrats' trade and competitiveness agenda as well as overall coordination of the Omnibus Trade and Competitiveness Act of 1988. He currently serves as staff liaison to the Labor Advisory Committee to the USTR and Secretary of Labor.

Commissioner Wessel was intimately involved in the development of comprehensive tax reform legislation in the early 1980s and every major tax bill during his tenure. Beginning in 1989, he became the principal advisor to the Democratic leadership on economic policy matters and served as tax policy coordinator to the 1990 budget summit.

In 1988, he served as national issues director for Congressman Gephardt's presidential campaign. During the 1992 presidential campaign, he assisted the Clinton presidential campaign on a broad range of issues and served as a senior policy advisor to the Clinton Transition Office. In 2004, he was a senior policy advisor to the Gephardt for President Campaign and later co-chaired the Trade

Policy Group for the Kerry presidential campaign. In 2008, he was publicly identified as a trade and economic policy advisor to the Obama presidential campaign and advised the Clinton campaign in 2016.

He has coauthored a number of articles with Congressman Gephardt and a book, *An Even Better Place: America in the 21st Century*. Commissioner Wessel served as a member of the U.S. Trade Deficit Review Commission in 1999–2000, a congressionally created commission charged with studying the nature, causes, and consequences of the U.S. merchandise trade and current account deficits.

Today, Commissioner Wessel is President of The Wessel Group Incorporated, a public affairs consulting firm offering expertise in government, politics, and international affairs. Commissioner Wessel holds a Bachelor of Arts and a Juris Doctorate from The George Washington University. He is a member of the Bars of the District of Columbia and of Pennsylvania and is a member of the Council on Foreign Relations. He and his wife Andrea have four children.

Larry M. Wortzel, PhD

Larry Wortzel is Senior Fellow in Asian Security at the American Foreign Policy Council. A veteran Asia scholar with extensive government and military experience, Dr. Wortzel served two tours of duty as a military attaché in the American Embassy in China, and also was assigned in Singapore, Thailand, Hawaii, and on the demilitarized zone in South Korea. On the faculty of the U.S. Army War College, Dr. Wortzel was Director of the Strategic Studies Institute and concurrently professor of Asian studies. He retired from the U.S. Army as a colonel at the end of 1999. After his retirement from the Army, Dr. Wortzel was director of the Asian Studies Center at The Heritage Foundation and also vice president for foreign policy and defense studies at Heritage. Dr. Wortzel was appointed to the U.S.-China Economic and Security Review Commission for a term ending December 31, 2020. Previously he was Chairman of the Commission for two years. Dr. Wortzel is also an adjunct research fellow at the U.S. Army War College Strategic Studies Institute. Dr. Wortzel has written or edited ten books and numerous scholarly articles on China and East Asia. His books include *Class in China: Stratification in a Classless Society*; *China's Military Modernization: International Implications*; *Dictionary of Contemporary Chinese Military History*; and *The Dragon Extends its Reach: Chinese Military Power Goes Global*. He is a member of the Council on Foreign Relations and the International Institute of Strategic Studies. He is a graduate of the Defense Language Institute and the U.S. Army War College. He studied advanced Chinese at the National University of Singapore. Dr. Wortzel earned his Doctor of Philosophy degree in Political Science from the University of Hawaii-Manoa.

Daniel W. Peck, Executive Director

Mr. Peck leads the Commission's full-time professional staff. He is responsible for execution of the Commission's annual hearing cycle, development and publication of the Annual Report to Congress, as well as staff development and overseeing all other activities of the Commission.

Mr. Peck has previously served in senior policy positions at the Office of the Secretary of Defense (OSD) and the American Institute in Taiwan (AIT) Washington Office. His 22 years of service in the U.S. Army include twelve years as a Foreign Area Officer (FAO) focused on China and the Asia-Pacific, with tours as a military attaché at the U.S. Embassy in Beijing, as a senior military analyst at the Defense Intelligence Agency, and as a visiting scholar at Beijing's Capital Normal University. His military service includes two combat tours in Afghanistan, operational deployments to Kuwait and Bosnia, and service in Korea and China.

APPENDIX III

PUBLIC HEARINGS OF THE COMMISSION

Full transcripts and written testimonies are available online at
the Commission's website: www.uscc.gov.

**February 7, 2019: Public Hearing on
“What Keeps Xi Up at Night: Beijing’s Internal and
External Challenges”
Washington, DC**

Commissioners present: Carolyn Bartholomew, Chairman; Robin Cleveland, Vice Chairman; Hon. Carte P. Goodwin (Hearing Co-Chair); Roy D. Kamphausen; Thea Mei Lee; Kenneth Lewis; Michael A. McDevitt; Hon. James M. Talent (Hearing Co-Chair); Michael R. Wessel.

Witnesses: Jude Blanchette, Crumpton Group; Timothy Heath, RAND Corporation; Andrew Wedeman, Georgia State University; Michael Hirson, Eurasia Group; Nicholas Borst, Seafarer Capital; Greg Levesque, Pointe Bello; Dennis Blasko, independent analyst; Rush Doshi, Brookings Institution and Yale Law School; Lindsey Ford, Asia Society Policy Institute.

**February 28, 2019: Public Hearing on
“Risks, Rewards, and Results: U.S. Companies in China and
Chinese Companies in the United States”
Washington, DC**

Commissioners present: Carolyn Bartholomew, Chairman; Robin Cleveland, Vice Chairman (Hearing Co-Chair); Hon. Carte P. Goodwin; Roy D. Kamphausen; Thea Mei Lee; Kenneth Lewis; Michael A. McDevitt; Hon. James M. Talent; Michael R. Wessel (Hearing Co-Chair).

Witnesses: Elizabeth Drake, Schagrin Associates; Paul Gillis, Peking University; William Kirby, Harvard Business School; Scott Kennedy, Center for Strategic and International Studies; Mary Lovely, Syracuse University; Mark Wu, Harvard Law School.

**March 21, 2019: Public Hearing on
“An Emerging China-Russia Axis? Implications for
the United States in an Era of Strategic Competition”
Washington, DC**

Commissioners present: Carolyn Bartholomew, Chairman (Hearing Co-Chair); Robin Cleveland, Vice Chairman; Hon. Carte P. Goodwin; Roy D. Kamphausen (Hearing Co-Chair); Thea Mei Lee; Kenneth Lewis; Michael A. McDevitt; Michael R. Wessel.

Witnesses: Robert Sutter, George Washington University; Richard Weitz, Hudson Institute; Erica Downs, CNA and Columbia University; Jeanne Wilson, Wheaton College; Stephen Blank, American Foreign Policy Council; Pranay Vaddi, Carnegie Endowment for International Peace; Marlene Laruelle, George Washington University; Andrea Kendall-Taylor, Center for a New American Security; Rebecca Pincus, U.S. Naval War College; Samuel Charap, RAND Corporation.*

**April 25, 2019: Public Hearing on
“China in Space: A Strategic Competition?”
Washington, DC**

Commissioners present: Carolyn Bartholomew, Chairman (Hearing Co-Chair); Robin Cleveland, Vice Chairman; Thea Mei Lee; Kenneth Lewis; Michael A. McDevitt (Hearing Co-Chair); Hon. James M. Talent; Michael R. Wessel.

Witnesses: James Cartwright, Center for Strategic and International Studies; William Roper, U.S. Air Force; Todd Harrison, Center for Strategic and International Studies; Brian Weeden, Secure World Foundation; Namrata Goswami, independent analyst; Lorand Laskai, Georgetown Center for Security and Emerging Technology; Michael Gold, Maxar Technologies; Kevin Wolf, Akin Gump Strauss Hauer & Feld; Kevin Pollpeter, CNA; Mark Stokes, Project 2049 Institute; Jonathan Ray, SOS International LLC.

**June 7, 2019: Public Hearing on
“Technology, Trade, and Military-Civil Fusion: China’s
Pursuit of Artificial Intelligence, New Materials, and
New Energy”
Washington, DC**

Commissioners present: Robin Cleveland, Vice Chairman (Hearing Co-Chair); Andreas Borgeas; Jeffrey Fiedler; Hon. Carte P. Goodwin; Roy D. Kamphausen; Thea Mei Lee (Hearing Co-Chair); Kenneth Lewis; Michael A. McDevitt; Hon. James M. Talent; Michael R. Wessel.

Witnesses: Jeffrey Ding, University of Oxford; Helen Toner, Georgetown Center for Security and Emerging Technology; Elsa Kania, Center for a New American Security and Georgetown Center for Security and Emerging Technology; Richard Silberglitt, RAND Corporation; Dan Coughlin, American Composites Manufacturers Association; Alan Hill, National Graphene Association and J.A. Hill Group, LLC; Joanna Lewis, Georgetown University; Jessica Lovering, Breakthrough Institute; James Greenberger, NAATBatt International.

* Did not appear in person, but submitted material for the record.

**June 20, 2019: Public Hearing on
“A World-Class Military: Assessing China’s
Global Military Ambitions”
Washington, DC**

Commissioners present: Carolyn Bartholomew, Chairman; Roy D. Kamphausen; Kenneth Lewis (Hearing Co-Chair); Michael A. McDevitt (Hearing Co-Chair); Hon. James M. Talent; Michael R. Wessel; Larry M. Wortzel.

Witnesses: Christopher Ford, U.S. Department of State; Mary Beth Morgan, U.S. Department of Defense; Daniel Taylor, Defense Intelligence Agency; Dean Cheng, Heritage Foundation; M. Taylor Fravel, Massachusetts Institute of Technology; Phillip Saunders, National Defense University; Isaac Kardon, U.S. Naval War College; Christopher Yung, Marine Corps University; David Santoro, Pacific Forum; Thomas Mahnken, Center for Strategic and Budgetary Assessments; Abraham Denmark, Woodrow Wilson International Center for Scholars; Elbridge Colby, Center for a New American Security;* Derek Grossman, RAND Corporation.*

**July 31, 2019: Public Hearing on
“Exploring the Growing U.S. Reliance on China’s Biotech
and Pharmaceutical Products”
Washington, DC**

Commissioners present: Carolyn Bartholomew, Chairman; Robin Cleveland, Vice Chairman; Jeffrey Fiedler; Hon. Carte P. Goodwin; Roy D. Kamphausen; Kenneth Lewis; Hon. James M. Talent (Hearing Co-Chair); Michael R. Wessel (Hearing Co-Chair); Larry M. Wortzel.

Witnesses: Christopher Priest, Defense Health Agency; Mark Abdo, U.S. Food and Drug Administration;* Rosemary Gibson, Hastings Center; Ben Westhoff, author; Jennifer Bouey, RAND Corporation and Georgetown University; Mark Kazmierczak, Gryphon Scientific; Benjamin Shobert, Microsoft and National Bureau of Asian Research; Katherine Eban, author; Yanzhong Huang, Council on Foreign Relations and Seton Hall University; Craig Allen, U.S.-China Business Council.

**September 4, 2019: Public Hearing on
“U.S.-China Relations in 2019: A Year in Review”
Washington, DC**

Commissioners present: Carolyn Bartholomew, Chairman; Robin Cleveland, Vice Chairman (Hearing Co-Chair); Jeffrey Fiedler (Hearing Co-Chair); Roy D. Kamphausen; Thea Mei Lee; Kenneth Lewis; Michael A. McDevitt; Hon. James M. Talent; Michael R. Wessel; Larry M. Wortzel.

Witnesses: Victor Shih, University of California, San Diego; Andrew Polk, Trivium China; Elizabeth Economy, Council on Foreign Relations; Oriana Skylar Mastro, Georgetown University and American Enterprise Institute; Andrew Krepinevich, Hudson Institute, Center for a New American Security, and Solarium LLC; Michael

Green, Center for Strategic and International Studies and Georgetown University; Bonnie Glaser, Center for Strategic and International Studies; Syaru Shirley Lin, University of Virginia and Chinese University of Hong Kong; Victoria Tin-bor Hui, University of Notre Dame.

APPENDIX IIIA

**LIST OF WITNESSES TESTIFYING BEFORE
THE COMMISSION**

2019 Hearings

Full transcripts and written testimonies are available online at the Commission's website: www.uscc.gov .

**Alphabetical Listing of Panelists Testifying before the
Commission**

Panelist Name	Panelist Affiliation	Commission Hearing
Abdo, Mark *	U.S. Food and Drug Administration	July 31, 2019
Allen, Craig	U.S.-China Business Council	July 31, 2019
Blanchette, Jude	Crumpton Group	February 7, 2019
Blank, Stephen	American Foreign Policy Council	March 21, 2019
Blasko, Dennis	independent analyst	February 7, 2019
Borst, Nicholas	Seafarer Capital	February 7, 2019
Bouey, Jennifer	RAND Corporation and Georgetown University	July 31, 2019
Cartwright, James	Center for Strategic and International Studies	April 25, 2019
Charap, Samuel *	RAND Corporation	March 21, 2019
Cheng, Dean	Heritage Foundation	June 20, 2019
Colby, Elbridge *	Center for a New American Security	June 20, 2019
Coughlin, Dan	American Composites Manufacturers Association	June 7, 2019
Denmark, Abraham	Woodrow Wilson International Center for Scholars	June 20, 2019
Ding, Jeffrey	University of Oxford	June 7, 2019

* Did not attend in person, but submitted material for the record.

**Alphabetical Listing of Panelists Testifying before the
Commission—Continued**

Panelist Name	Panelist Affiliation	Commission Hearing
Doshi, Rush	Brookings Institution and Yale Law School	February 7, 2019
Downs, Erica	CNA and Columbia University	March 21, 2019
Drake, Elizabeth	Schagrin Associates	February 28, 2019
Eban, Katherine	author	July 31, 2019
Economy, Elizabeth	Council on Foreign Relations	September 4, 2019
Ford, Christopher	U.S. Department of State	June 20, 2019
Ford, Lindsey	Asia Society Policy Institute	February 7, 2019
Fravel, M. Taylor	Massachusetts Institute of Technology	June 20, 2019
Gibson, Rosemary	Hastings Center	July 31, 2019
Gillis, Paul	Peking University	February 28, 2019
Glaser, Bonnie	Center for Strategic and International Studies	September 4, 2019
Gold, Michael	Maxar Technologies	April 25, 2019
Goswami, Namrata	independent analyst	April 25, 2019
Green, Michael	Center for Strategic and International Studies and Georgetown University	September 4, 2019
Greenberger, James	NAATBatt International	June 7, 2019
Grossman, Derek *	RAND Corporation	June 20, 2019
Harrison, Todd	Center for Strategic and International Studies	April 25, 2019
Heath, Timothy	RAND Corporation	February 7, 2019
Hill, Alan	National Graphene Association and J.A. Hill Group, LLC	June 7, 2019
Hirson, Michael	Eurasia Group	February 7, 2019
Huang, Yanzhong	Council on Foreign Relations and Seton Hall University	July 31, 2019
Hui, Victoria Tin-bor	University of Notre Dame	September 4, 2019
Kania, Elsa	Center for a New American Security and Georgetown Center for Security and Emerging Technology	June 7, 2019
Kardon, Isaac	U.S. Naval War College	June 20, 2019
Kazmierczak, Mark	Gryphon Scientific	July 31, 2019

**Alphabetical Listing of Panelists Testifying before the
Commission—Continued**

Panelist Name	Panelist Affiliation	Commission Hearing
Kendall-Taylor, Andrea	Center for a New American Security	March 21, 2019
Kennedy, Scott	Center for Strategic and International Studies	February 28, 2019
Kirby, William	Harvard Business School	February 28, 2019
Krepinevich, Andrew	Hudson Institute, Center for a New American Security, and Solarium LLC	September 4, 2019
Laruelle, Marlene	George Washington University	March 21, 2019
Laskai, Lorand	Georgetown Center for Security and Emerging Technology	April 25, 2019
Levesque, Greg	Pointe Bello	February 7, 2019
Lewis, Joanna	Georgetown University	June 7, 2019
Lin, Syaru Shirley	University of Virginia and Chinese University of Hong Kong	September 4, 2019
Lovely, Mary	Syracuse University	February 28, 2019
Lovering, Jessica	Breakthrough Institute	June 7, 2019
Mahnken, Thomas	Center for Strategic and Budgetary Assessments	June 20, 2019
Mastro, Oriana Skylar	Georgetown University and American Enterprise Institute	September 4, 2019
Morgan, Mary Beth	U.S. Department of Defense	June 20, 2019
Pincus, Rebecca	U.S. Naval War College	March 21, 2019
Polk, Andrew	Trivium China	September 4, 2019
Pollpeter, Kevin	CNA	April 25, 2019
Priest, Christopher	Defense Health Agency	July 31, 2019
Ray, Jonathan	SOS International LLC	April 25, 2019
Roper, William	U.S. Air Force	April 25, 2019
Santoro, David	Pacific Forum	June 20, 2019
Saunders, Phillip	National Defense University	June 20, 2019
Shih, Victor	University of California, San Diego	September 4, 2019
Shobert, Benjamin	Microsoft and National Bureau of Asian Research	July 31, 2019
Silberglitt, Richard	RAND Corporation	June 7, 2019
Stokes, Mark	Project 2049 Institute	April 25, 2019

**Alphabetical Listing of Panelists Testifying before the
Commission—*Continued***

Panelist Name	Panelist Affiliation	Commission Hearing
Sutter, Robert	George Washington University	March 21, 2019
Taylor, Daniel	Defense Intelligence Agency	June 20, 2019
Toner, Helen	Georgetown Center for Security and Emerging Technology	June 7, 2019
Vaddi, Pranay	Carnegie Endowment for International Peace	March 21, 2019
Wedeman, Andrew	Georgia State University	February 7, 2019
Weeden, Brian	Secure World Foundation	April 25, 2019
Weitz, Richard	Hudson Institute	March 21, 2019
Westhoff, Ben	author	July 31, 2019
Wilson, Jeanne	Wheaton College	March 21, 2019
Wolf, Kevin	Akin Gump Strauss Hauer & Feld	April 25, 2019
Wu, Mark	Harvard Law School	February 28, 2019
Yung, Christopher	Marine Corps University	June 20, 2019

APPENDIX IV
LIST OF RESEARCH MATERIAL
Contracted and Staff Research Reports
Released in Support of the 2019 Annual Report

Disclaimer

The reports in this section were prepared at the request of the Commission to support its deliberations. They have been posted to the Commission's website in order to promote greater public understanding of the issues addressed by the Commission in its ongoing assessment of U.S.-China economic relations and their implications for U.S. security, as mandated by Public Law No. 106-398, and amended by Public Laws No. 107-67, No. 108-7, No. 109-108, No. 110-161, and No. 113-291. The posting of these reports to the Commission's website does not imply an endorsement by the Commission or any individual Commissioner of the views or conclusions expressed therein.

Contracted Reports

China's Biotechnology Development: The Role of U.S. and Other Foreign Engagement

Prepared for the Commission by Mark Kazmierczak, Ryan Ritter-son, Danielle Gardner, Rocco Casagrande, Thilo Hanemann, and Daniel Rosen
Gryphon Scientific and Rhodium Group
February 2019

<https://www.uscc.gov/Research/china's-biotechnology-development-role-us-and-other-foreign-engagement>

Staff Research Reports, Issue Briefs, and Backgrounders

October Economics and Trade Bulletin

Written by Economics and Trade Staff
October 2019

<https://www.uscc.gov/Research/october-2019-trade-bulletin>

September Economics and Trade Bulletin

Written by Economics and Trade Staff
September 2019

<https://www.uscc.gov/Research/september-2019-trade-bulletin>

August Economics and Trade Bulletin

Written by Economics and Trade Staff

August 2019

<https://www.uscc.gov/Research/august-2019-trade-bulletin>***The Chinese Military's Role in Overseas Humanitarian Assistance and Disaster Relief: Contributions and Concerns***

Written by Policy Analyst Matthew Southerland

July 2019

<https://www.uscc.gov/Research/chinese-military's-role-overseas-humanitarian-assistance-and-disaster-relief-contributions>***July Economics and Trade Bulletin***

Written by Economics and Trade Staff

July 2019

<https://www.uscc.gov/Research/july-2019-trade-bulletin>***June Economics and Trade Bulletin***

Written by Economics and Trade Staff

June 2019

<https://www.uscc.gov/Research/june-2019-trade-bulletin>***China's African Swine Flu Outbreak: Implications for U.S. Food Safety and Trade***

Written by Policy Analyst Sean O'Connor

May 2019

<https://www.uscc.gov/Research/china's-african-swine-fever-outbreak-implications-us-food-safety-and-trade>***May Economics and Trade Bulletin***

Written by Economics and Trade Staff

May 2019

<https://www.uscc.gov/Research/may-2019-trade-bulletin>***Hong Kong's Proposed Extradition Bill Could Extend Beijing's Coercive Reach: Risks for the United States***

Written by Policy Analyst Ethan Meick

May 2019

<https://www.uscc.gov/Research/hong-kongs-proposed-extradition-bill-could-extend-beijings-coercive-reach-risks-united>***How Chinese Companies Facilitate Technology Transfer from the United States***

Written by Policy Analyst Sean O'Connor

May 2019

<https://www.uscc.gov/Research/how-chinese-companies-facilitate-technology-transfer-united-states>***China's Pursuit of Space Power Status and Implications for the United States***

Written by Policy Analyst Alexander Bowe

April 2019

<https://www.uscc.gov/Research/china's-pursuit-space-power-status-and-implications-united-states>

April Economics and Trade Bulletin

Written by Economics and Trade Staff

April 2019

<https://www.uscc.gov/Research/april-2019-trade-bulletin>***March Economics and Trade Bulletin***

Written by Economics and Trade Staff

March 2019

<https://www.uscc.gov/Research/march-2019-trade-bulletin>***February Economics and Trade Bulletin***

Written by Economics and Trade Staff

February 2019

<https://www.uscc.gov/Research/february-2019-trade-bulletin>***China's Missile Program and U.S. Withdrawal from the Intermediate-Range Nuclear Forces (INF) Treaty***

Written by Policy Analyst Jacob Stokes and Research Assistant Alec Blivas

February 2019

<https://www.uscc.gov/Research/chinas-missile-program-and-potential-us-withdrawal-intermediate-range-nuclear-forces-inf>***January Economics and Trade Bulletin***

Written by Economics and Trade Staff

January 2019

<https://www.uscc.gov/Research/january-2019-trade-bulletin>***December Economics and Trade Bulletin***

Written by Economics and Trade Staff

December 2018

<https://www.uscc.gov/Research/december-2018-trade-bulletin>***China's Role in Wildlife Trafficking and the Chinese Government's Response***

Written by Policy Analyst Matthew Southerland and Policy Analyst Suzanna Stephens

December 2018

<https://www.uscc.gov/Research/china's-role-wildlife-trafficking-and-chinese-government's-response>***Fentanyl Flows from China: An Update since 2017***

Written by Policy Analyst Sean O'Connor

November 2018

<https://www.uscc.gov/Research/fentanyl-flows-china-update-2017>***November Economics and Trade Bulletin***

Written by Economics and Trade Staff

November 2018

<https://www.uscc.gov/Research/november-2018-trade-bulletin>

APPENDIX V

CONFLICT OF INTEREST AND LOBBYING DISCLOSURE REPORTING

The Commission seeks to hold itself to the highest standards of transparency in carrying out its mission. In accordance with its policy for avoiding conflicts of interest, Commissioners who believe they have an actual or perceived conflict of interest must recuse themselves from the source or subject matter of the conflict. The following Commissioners recused themselves from the portions of the 2019 Report cycle below:

- Commissioner James M. Talent recused himself from deliberations which relate specifically to Jimmy Lai and Next Animation.

Lobbying disclosure reports filed by any Commissioners who engage in “lobbying activities” as defined by the Lobbying Disclosure Act in connection with their outside employment activities may be accessed via public databases maintained by the House (<http://disclosures.house.gov/ld/ldsearch.aspx>) and Senate (<https://soprweb.senate.gov/index.cfm?event=selectfields>).

APPENDIX VI

ACRONYMS AND ABBREVIATIONS

5G	fifth-generation cellular network technology
AI	artificial intelligence
AIT	American Institute in Taiwan
AmCham	American Chamber of Commerce
APEC	Asia-Pacific Economic Cooperation
API	active pharmaceutical ingredient
APSCO	Asia-Pacific Space Cooperation Organization
ASAT	antisatellite
ASEAN	Association of Southeast Asian Nations
BIS	Bureau of Industry and Security (U.S. Department of Commerce)
BRI	Belt and Road Initiative
CASC	China Aerospace Science and Technology Corporation
CBIRC	China Banking and Insurance Regulatory Commission
CCP	Chinese Communist Party
CFIUS	U.S. Committee on Foreign Investment in the United States
CIPS	Cross-Border International Payments System
CMC	Central Military Commission
CNSA	China National Space Administration
CPPCC	Chinese People's Political Consultative Conference
CSTO	Collective Security Treaty Organization
DOD	Department of Defense
DOJ	Department of Justice
DPP	Democratic Progressive Party (Taiwan)
EEZ	exclusive economic zone
EU	European Union
EV	electric vehicle
FBI	Federal Bureau of Investigation
FDA	U.S. Food and Drug Administration
FDI	foreign direct investment
FIRRMA	Foreign Investment Risk Review Modernization Act of 2018
FTZ	free-trade zone
GAO	U.S. Government Accountability Office
GDP	gross domestic product
GEO	geosynchronous orbit
GPS	Global Positioning System
HA/DR	humanitarian assistance and disaster relief
HKEX	Hong Kong Stock Exchange
ICT	information and communications technology
IMF	International Monetary Fund

INF	Intermediate-Range Nuclear Forces Treaty
IP	intellectual property
IPO	initial public offering
IT	information technology
JV	joint venture
km	kilometers
KMT	Kuomintang (Taiwan)
LegCo	Legislative Council (Hong Kong)
LEO	low-Earth orbit
LGFV	local government financing vehicle
LNG	liquefied natural gas
MIIT	Ministry of Industry and Information Technology
MOU	memorandum of understanding
NASA	National Aeronautics and Space Administration
NATO	North Atlantic Treaty Organization
NDRC	National Development and Reform Commission
NIH	National Institutes of Health
NPC	National People's Congress
NYSE	New York Stock Exchange
OECD	Organization for Economic Cooperation and Development
NIH	National Institutes of Health
OOS	out-of-specification
OPIC	Overseas Private Investment Corporation
PBOC	People's Bank of China
PCAOB	Public Company Accounting Oversight Board
PLA	People's Liberation Army
PKO	peacekeeping operations
PMI	purchasing manager's index
PRC	People's Republic of China
R&D	research and development
RCEP	Regional Comprehensive Economic Partnership
RMB	renminbi
ROC	Republic of China (Taiwan)
RPO	rendezvous and proximity operation
S&ED	Strategic and Economic Dialogue
SAFE	State Administration of Foreign Exchange
SAM	surface-to-air missile
SCO	Shanghai Cooperation Organization
SEC	Securities and Exchange Commission
SOE	state-owned enterprise
THAAD	Terminal High-Altitude Area Defense
TRA	Taiwan Relations Act
UAV	unmanned aerial vehicle
UFWD	United Front Work Department
UN	United Nations
USAID	U.S. Agency for International Development
USTR	Office of the U.S. Trade Representative
VAT	value-added tax
VC	venture capital
VIE	variable interest entity
WHO	World Health Organization
WTO	World Trade Organization

2019 COMMISSION STAFF

DANIEL W. PECK, *Executive Director*

KRISTIEN T. BERGERSON, *Research Coordinator and Senior Policy Analyst, Security and Foreign Affairs*
 VIRGILIO BISIO, *Policy Analyst, Economics and Trade*
 ALEXANDER A. BOWE, *Policy Analyst, Security and Foreign Affairs*
 ERIK CASTILLO, *Operations Support Specialist*
 CHRISTOPHER P. FIORAVANTE, *Director of Operations and Administration*
 BENJAMIN B. FROHMAN, *Director, Security and Foreign Affairs*
 WILL GREEN, *Policy Analyst, Security and Foreign Affairs*
 CHARLES HORNE, *Policy Analyst, Economics and Trade*
 MICHELLE KER, *Policy Analyst, Economics and Trade*
 ANN LISTERUD, *Research Assistant, Economics and Trade*
 ANASTASYA (ANA) LLOYD-DAMNJANOVIC, *Policy Fellow, Security and Foreign Affairs*
 KAJ MALDEN, *Policy Analyst, Economics and Trade*
 ETHAN S. MEICK, *Policy Analyst, Security and Foreign Affairs*
 LEYTON NELSON, *Policy Analyst, Economics and Trade*
 LESLIE TISDALE REAGAN, *Congressional Liaison and Communications Director*
 NARGIZA SALIDJANOVA, *Director, Economics and Trade*
 MATTHEW O. SOUTHERLAND, *Policy Analyst, Security and Foreign Affairs*
 SUZANNA M. STEPHENS, *Policy Analyst, Economics and Trade*
 KERRY SUTHERLAND, *Administrative and Human Resources Assistant*
 BRITTNEY M. WASHINGTON, *Congressional and Policy Fellow*

ACKNOWLEDGEMENTS

The Commission would like to express its deep appreciation to those who testified as expert witnesses, the researchers and analysts who prepared papers under contract, and the representatives from the executive branch and others who briefed the Commissioners on a wide array of economic and security issues. All of these efforts informed the Commission and the public debates on issues vital to ongoing U.S.-China relations.

The Commission owes a deep debt of gratitude and thanks to the following officials of the U.S. Department of State for their outstanding assistance and support provided during the Commission's travel to the Indo-Pacific, and for their assistance in arranging the Commission's meetings with government officials, business representatives, academics, journalists, and other experts, which was instrumental in the success of the Commission's trip: Ambassador Arthur B. Culvahouse Jr., U.S. Embassy in Canberra, and staff, including Peter Dyaico; Consul General Sharon Hudson-Dean, U.S. Consulate in Sydney, and staff, including Kira Moriah; then Chargé D'Affaires Stephanie Syptak-Ramnath, U.S. Embassy in Singapore, and staff, including Ava Leone; then Consul General Kurt Tong, U.S. Consulate in Hong Kong, and staff, including Kelly Busby; and Ambassador Terry Branstad and Deputy Chief of Mission Robert Forden, U.S. Embassy in Beijing, and staff, including Alex Yuan.

The Commissioners are deeply grateful to the service and expertise of the staff who develop materials for our hearings, research papers, and annual report. Each person brings a unique perspective, expertise, and dedication to the Commission and country, which every Commissioner has benefited from as we seek to understand U.S. relations with China. We are also grateful to the administrative team, which offers experienced and capable support ensuring the Commission's hearings and daily operations run smoothly.