



2021

REPORT TO CONGRESS

of the

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

ONE HUNDRED SEVENTEENTH CONGRESS
FIRST SESSION

NOVEMBER 2021

Printed for the use of the
U.S.-China Economic and Security Review Commission
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U.S. GOVERNMENT PUBLISHING OFFICE
WASHINGTON : 2021



U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION

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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: www.uscc.gov/charter.

U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION

NOVEMBER 17, 2021

The Honorable Patrick Leahy
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 LEAHY AND SPEAKER PELOSI:

On behalf of the U.S.-China Economic and Security Review Commission, we are pleased to transmit the Commission's 2021 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 11 members (one appointment remains vacant) voting unanimously to approve and submit it to Congress.

In accordance with our mandate, this Report, which is current as of October 8, includes the results and recommendations of our hearings, research, 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 seven public hearings, taking testimony from 75 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 www.uscc.gov). This year's hearings included:

- U.S.-China Relations at the Chinese Communist Party's Centennial;
- Deterring PRC Aggression toward Taiwan;
- U.S. Investment in China's Capital Markets and Military-Industrial Complex;
- An Assessment of the CCP's Economic Ambitions, Plans, and Metrics of Success;
- China in Latin America and the Caribbean;
- China's Nuclear Forces; and
- U.S.-China Relations in 2021: Emerging Risks.

The Commission received a number of briefings by executive branch agencies and the intelligence community, including both unclassified and classified briefings on net assessments of U.S. and Chinese military capabilities, the cross-Strait military balance, China's nuclear forces, the effects of China's termination of Hong Kong's autonomous status, U.S. responses to the growth of China's mili-

tary power, and developments in China’s biotechnology sector. The Commission also received briefings by foreign diplomatic officials as well as U.S. and foreign nongovernmental experts. The Commission includes key insights gained through these briefings either in its unclassified Annual Report or, as appropriate, in a classified annex to that Report.

The Commission was unable to conduct official travel this year due to the COVID-19 pandemic. We adapted and increased our virtual discussions with interlocutors to ensure the continued diversity of perspectives heard by the Commission. 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 32 recommendations for congressional consideration. The Commissioners agreed that ten of these recommendations, which appear on page 21, are the most important for congressional action. The complete list of recommendations appears on page 491 at the conclusion of the Report.

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

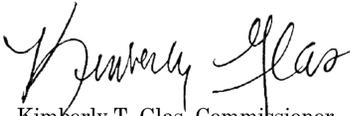
Commissioners Approving the 2021 Report


Carolyn Bartholomew, Chairman

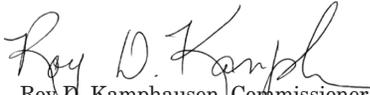

Robin Cleveland, Vice Chairman


Bob Borochoff, Commissioner


Jeffrey Fiedler, Commissioner


Kimberly T. Glas, Commissioner


Carte P. Goodwin, Commissioner


Roy D. Kamphausen, Commissioner


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James M. Talent, Commissioner


Michael R. Wessel, Commissioner


Alex Wong, Commissioner

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EXECUTIVE SUMMARY

Chapter 1: U.S.-China Global Competition

Section 1: The Chinese Communist Party's Ambitions and Challenges at Its Centennial

For the Chinese Communist Party (CCP), 2021 has been a momentous year. As it celebrated the hundredth anniversary of its founding, the CCP aimed to show the world that it has transformed China into a prosperous and powerful country that is prepared to assume and is deserving of a greater leadership role in international affairs. Undeniable successes, such as the fact that hundreds of millions of people rose out of poverty over the past several decades, have emboldened CCP leaders and contributed to their belief in China's supposedly inexorable rise. The CCP's triumphalism likely derives both from a genuine belief in its own superiority and from the need to legitimize and sustain its one-party rule. This triumphalist propaganda, however, hides the CCP's rising concerns that failing to demonstrate the superiority of its model and address longer-term challenges could jeopardize the Party's domestic control and international influence.

While China's leaders may have envisioned 2021 as a showcase for China's rejuvenation under the CCP, the year also made clear the profound internal and external challenges facing the Party. The ongoing economic shocks and international scrutiny of the CCP's handling of the novel coronavirus (COVID-19) pandemic, along with growing international pushback against the CCP's repressive policies in Xinjiang, violation of its commitment to maintain Hong Kong's autonomy, and increasingly aggressive posture regarding Taiwan, provide a stark contrast to the optimistic image promoted by Beijing. China's economy is also confronted with a range of structural challenges, including rising debt, an imbalanced growth model, demographic decline, and environmental degradation. Politically, the CCP faces internal disunity manifested not only among CCP members but also in the highest levels of the policymaking apparatus. The CCP's insistence on its superiority and inability to admit failure limit its ability to effectively address these challenges.

Regardless of whether future developments cause the Chinese government to feel more or less secure, it will likely react by becoming even more assertive. China's leadership is increasingly uninterested in compromise and willing to engage in destabilizing and aggressive actions in its efforts to insulate itself from perceived threats or to press perceived advantages. As Beijing views itself facing a more adversarial international environment, its attempts to impede political and economic coordination between the United States and other democracies will likely intensify. China's increased emphasis on self-sufficiency will also lead to continued difficulties, such as

discriminatory treatment of U.S. firms hoping to participate in China's market. The CCP will likely continue escalating its combative approach absent coordinated action from the United States and its allies and partners.

Key Findings

- The CCP views the 2021 centennial of its founding as a time for both great confidence and great caution as it seeks to consolidate domestic and international support ahead of key political goals in 2035 and 2049. Through a widespread propaganda campaign, it has promoted a triumphalist narrative while omitting any mention of the CCP's serious shortcomings and heavily censoring dissenting opinions. The CCP's triumphalism derives both from a genuine belief in its own superiority and from the need to sustain its authoritarian system.
- CCP leaders publicly express confidence that China will prevail in an ideological and civilizational clash with the United States and other democracies they refer to as "the West." Chinese leaders portray the United States as a waning superpower on a path toward inevitable decline and believe China will be able to continue expanding its power and influence globally.
- China confronts a range of challenges that undermine the CCP's triumphalist narrative. Economically, China faces a set of structural problems, including growing debt, income inequality, demographic decline, and technological dependence on the United States and other advanced democracies that policymakers have been only partly willing or able to address. Politically, the CCP is concerned about internal disunity, corruption, and a lack of ideological conviction within its ranks.
- The CCP also perceives the international environment as becoming increasingly hostile to the Party's aims. This view has sharpened as the United States and other countries have more firmly pushed back against China's actions, including its policies in Xinjiang and Hong Kong, its handling of the COVID-19 pandemic, economic coercion, and Chinese diplomats' aggressive approach to foreign policy. External pressure has increased CCP paranoia about the potential for external forces to amplify internal dissent and threaten its regime.
- Both the CCP's confidence and its insecurity have contributed to an uncompromising approach domestically and to the outside world. Regardless of how China's internal and external environments develop, the CCP's aggressive posture will likely harden further as Chinese leaders confront the tensions between their rhetoric and their challenges. The CCP is now likely to react in an aggressive manner either in order to defend itself against perceived threats or to press perceived advantages.

Section 2: China's Influence in Latin America and the Caribbean

China's role in Latin America and the Caribbean has become less constrained and increasingly visible over the past decade. Economic interests drive China's engagement in the region as it seeks com-

modities and raw materials to fuel its economy while building foreign markets for its companies and technologies. China has become a critical trading partner, investor, and bilateral financier for many Latin American and Caribbean countries. As it has become more economically embedded within the region, China has also devoted increasing attention to promoting its political interests, such as isolating Taiwan, expanding the Belt and Road Initiative, and defending itself from criticism of its human rights abuses.

In pursuit of its goals in the region, China has cultivated relationships in Latin American and Caribbean countries at all levels of government, across the political spectrum, and with nongovernmental actors. China leverages centralized control over its own economy and political apparatus to enhance its negotiating power across seemingly unrelated issue areas, such as by attempting to use provision of vaccines to pressure countries to terminate diplomatic relations with Taiwan. China has previously leveraged its economic and political influence to establish a space tracking station in Argentina under the control of the People's Liberation Army (PLA), and it continues to deepen its involvement both in the financing and development of potential dual-use infrastructure and in the region's emerging space sector.

While China's economic engagement in the region has supported growth, its trade and investment relations risk stunting Latin American and Caribbean countries' development by increasing their economic dependence on commodity exports to China. To solidify its access to regional commodities like lithium, China couples trade with strategic investments and financing that increase its control over entire supply chains. Cementing its central position in some countries' economies, China plays a major role in providing financing for the region's much-needed infrastructure. This economic engagement often contributes to worsening environmental, social, and governance conditions in the region, as many governments compromise their own laws and regulatory regimes to attract Chinese investment.

China's deepening engagement with Latin American and Caribbean countries reinforces trends that run counter to U.S. values and interests. Through trade, loans, and political backing, China has provided an economic lifeline to authoritarians like the Maduro regime in Venezuela while supporting democratic backsliding elsewhere in the region. China's expanding control over entire supply chains in the region may also harm U.S. competitiveness and threaten U.S. access to critical inputs for emerging technologies. Finally, by expanding its economic, political, and security relationships in the region and building dependencies in select countries, China is laying the groundwork for deepening influence and presence in a region of particular strategic significance for the United States.

Key Findings

- China has expanded and diversified its relationships with Latin American and Caribbean countries over the past decade. Although economic interests are the main driver for its activities in the region, China is devoting increasing attention to pursuing political and to some degree security objectives, including

gaining international support for its diplomatic initiatives, pressuring countries to sever relations with Taiwan, and deepening military relationships.

- China employs a whole-of-government approach in its relationships with Latin American and Caribbean countries, often bypassing national governments to advance its interests at the local level. Beijing's strategy coordinates efforts by China's official government representatives, such as embassies and political influence entities, state and nonstate companies, and quasi-governmental entities, to influence decisions across unrelated issue areas. China adapts its approach to individual countries' political and social structures, cultivating relationships with national governments, subnational governments, and nongovernmental organizations.
- China's economic importance and targeted political influence encourage Latin American and Caribbean governments to make domestic and foreign policy decisions that favor China while undermining democracies and free and open markets. China's position as a top trading partner and bilateral lender for many countries gives it economic and political leverage. Substantial foreign direct investment from China is a tool of influence, as accumulation of assets affords Chinese companies the power to impact local and domestic prices in key sectors, such as minerals and energy.
- China has closely collaborated with authoritarian regimes in the region, such as the Maduro regime in Venezuela, and enabled democratic backsliding in other countries, such as Ecuador and Bolivia. By selling digital and surveillance technologies to regimes in the region, China has enabled them to surveil and repress their populations, critics, and opponents. China has also provided significant financial support to these governments, thereby extending them an economic lifeline when they were cut off from international financial markets.
- Although China's demand for commodities has boosted regional economic growth, it has also encouraged its trading partners' overreliance on natural resource extraction at the expense of higher-value-added activities. Many countries voluntarily compromise their own environmental, social, and governance regulations to attract Chinese investment. Due to the region's weak institutions, China's expanding influence may also facilitate corruption and increase risks to countries' resource security and national interests.
- China aspires to deepen its military engagement in Latin America and the Caribbean, although its current security activities in the region are limited in scope. Beijing has previously leveraged its economic and political influence in Argentina to establish a space tracking station operated by the PLA. Influence gained by financing and constructing potential dual-use infrastructure such as ports and supporting space programs throughout the region positions China to further increase its military presence in the future.

Chapter 2: U.S.-China Economic and Trade Relations

Section 1: Year in Review: Economics and Trade

In 2021, China's economy continued to confront immediate disruption caused by the COVID-19 pandemic as well as long-term challenges to economic dynamism and financial stability predating the outbreak. Consumed with shoring up short-term growth and projecting an image of strength on the eve of the CCP's centennial, China's leadership resorted to a familiar playbook of government support for industry. The resulting rebound deepened already acute financial risks, and China's significant debt buildup became a renewed focus for Chinese policymakers. In particular, the Chinese government's attempts to rein in debt-fueled expansion of the property sector led to a sharp contraction in one of the country's main economic drivers and prompted a series of corporate defaults.

China's government initiated numerous regulatory actions against data-intensive industries throughout 2021, particularly in fintech, e-commerce, and online education. The unprecedented regulatory tightening reflected the CCP's desire to reassert control over non-state tech behemoths, such as Alibaba. The effects were felt in international financial markets, underscoring the distinct political risks to U.S. investors posed by U.S.-listed Chinese companies. Chinese regulators' scrutiny of Chinese companies, including ride-sharing app Didi Chuxing immediately following its July 2021 initial public offering on the New York Stock Exchange, led to hundreds of billions in lost market capitalization on U.S. exchanges.

Despite continued tense rhetoric between Washington and Beijing during 2021, bilateral trade is returning to pre-tariff levels and U.S. capital flows to China are on the rise. As commercial and financial flows weave the economies closer together, the Biden Administration is consolidating a complex mix of the Trump Administration's policy initiatives with its own to defend against China's unfair economic policies and threats to U.S. national security. The Biden Administration has signaled that its priorities are to secure U.S. supply chains, boost U.S. competitiveness, and coordinate with U.S. allies and partners. Many U.S. multinational corporations, meanwhile, continue to view China as a priority market despite rising concerns about China's protectionist business environment.

In 2021, China focused on using its economic heft for both economic gain and geopolitical leverage. The Chinese government significantly expanded its use of economic coercion to punish critics and compel behavior it desires from foreign countries and firms. In late 2020 and 2021, the Chinese government also moved quickly in developing a legal and regulatory framework to counter foreign restrictions on Chinese companies and individuals. A central objective in China's expanding legal arsenal is to impose costs on foreign companies complying with U.S. laws that limit technology transfer to China.

Key Findings

- Though China was the first among major economies to recover following the fallout from the COVID-19 pandemic, topline growth figures mask an unbalanced and potentially unsustainable

able recovery. China's short-term rebound relied on government transfers to boost local spending and support firms, exacerbating the country's substantial debt load. The government's approach failed to revive household consumption.

- China's economic rebound in 2020 into 2021 does not represent a fundamental departure from a decade-long slowdown trend. The 14th Five-Year Plan (FYP) acknowledges underlying structural problems, such as declining investment returns, that prevent the economy from transitioning to a more sustainable model. China's leaders believe they can address these challenges through more state-led technology development and by strengthening, rather than loosening, the government's control over the economy.
- Escalating defaults by Chinese property developers show the challenge regulators face in reining in the highly indebted sector. Cash-strapped developer Evergrande's debt troubles have the potential to trigger broader financial instability given Evergrande's significant footprint within China's economy, including its connections to Chinese households, contractors and suppliers in the property sector, banks, and local government finance vehicles.
- Chinese policymakers seek a self-sufficient technology sector that not only is under the CCP's control but also plays a critical international role. In 2021, the Chinese government expanded the breadth of its efforts to foster local technology champions, but it also initiated a range of enforcement actions against major nonstate Chinese tech firms. This crackdown is partly motivated by a desire for greater control of nonstate firms' collection and storage of data, which the government views as a strategic resource and national security priority.
- U.S.-China economic integration is strengthening in some areas but weakening in others. Bilateral trade flows and U.S. portfolio investment into China are increasing. Bilateral foreign direct investment flows are down, but there is an increase in venture capital, private equity, and other investments, and the types of acquisition targets are changing. Despite ongoing political frictions and concerns about discriminatory treatment, many U.S. companies remain committed to the Chinese market.
- The Biden Administration is building on the Trump Administration's assertive approach to addressing China's unfair economic practices, threats to U.S. national security, and denial of human rights by engaging U.S. allies and international institutions in confronting Beijing. Despite tense rhetoric, China's government seeks to prevent commercial tensions with the United States from escalating in order to maintain economic stability, even as both countries seek to strengthen supply chain security.
- China's government is formalizing a legal and regulatory framework to counter foreign trade restrictions and sanctions, aimed especially at U.S. export controls on Chinese companies and financial sanctions on Chinese individuals. The most sweeping of these new measures is the June 2021 Anti-Foreign Sanctions

Law, which prohibits companies operating in China from complying with foreign sanctions the Chinese government determines are “discriminatory.”

Section 2: The Chinese Communist Party’s Economic and Technological Ambitions: Synthetic Biology, New Mobility, Cloud Computing, and Digital Currency

The Chinese government sees itself as competing directly with the United States for global economic leadership, a rivalry in which technological prowess will play a central role. The 14th FYP, China’s economic policy blueprint issued in March 2021, emphasizes innovation and development not only for economic growth but more importantly for technological self-sufficiency, national security, and international influence. Chinese policymakers have diminished the potential role of the market and have strengthened the hand of the state to direct innovation in emerging technologies. Even where China is not able to succeed in its ambitious goals, its implementation of a grand strategy can still have significant consequences for U.S. national security, competitiveness, and jobs.

The 14th FYP builds on a strategy seen in the CCP’s Made in China 2025 plan, augmenting state support for emerging technologies. Not only does innovation in these fields have great commercial potential, but Chinese policymakers also see it as instrumental in resolving key issues currently facing China’s economy and society, from an aging population to environmental degradation. Such technologies include the following:

- *Synthetic biology* has the potential to transform nearly every sector of China’s economy while addressing important quality-of-life issues the CCP views as underpinning its own legitimacy. The CCP has prioritized the collection of genomic data both domestically and internationally to gain global leadership and commercial advantages.
- *New mobility*, which captures everything from ride-hailing services to autonomous vehicles, is a strategic imperative for the CCP as it seeks both to lower China’s carbon emissions and to improve domestic transportation. Heavy subsidization of new energy vehicle production and autonomous vehicle development challenges U.S. leadership in these sectors and undercuts global competition.
- *Cloud computing* is both a critical channel of information flows and an essential component of advancing all other digital services in the economy as it facilitates data collection, transfer, and storage. Chinese cloud companies have succeeded in a protected domestic market and are encroaching on U.S. leadership in developing economies.

The CCP has also prioritized the development of a central bank digital currency to increase its control over and improve transaction efficiency within China’s financial system. Through the introduction of a digital renminbi (RMB), the CCP hopes to reassert the government’s role in digital payments and reduce the influence of nonstate payment platforms Alipay and WeChat Pay while preempting po-

tential challenges from cryptocurrencies, such as Bitcoin. A digital RMB will also increase the CCP's ability to monitor financial transactions, including any transactions involving non-Chinese users of the digital RMB. While the CCP's immediate motivations are primarily domestic, it views the digital RMB as a potential geopolitical tool that can help China reduce reliance on current international financial systems, evade U.S. financial sanctions, and increase its influence over international standards-setting for digital technologies.

Key Findings

- The CCP views achieving technological self-sufficiency as essential for both economic growth and political survival. China's leaders believe they can rely on the domestic development of emerging technologies not only to address long-term structural challenges, such as falling productivity growth, demographic decline, and environmental degradation, but also to strengthen Party control and stability while reducing dependency on foreign technology and products.
- Under General Secretary of the CCP Xi Jinping, the Party has increased its control over China's economy in ways that have further enhanced the links between China's state and nonstate sectors. The CCP believes state control rather than economic liberalization is essential to achieving economic growth while maintaining political stability.
- To achieve dominance in emerging technologies like cloud computing, synthetic biology, and new mobility, Chinese policymakers are relying on extensive subsidization and other tactics similar to those previously used for industries such as shipping, telecommunications, and conventional vehicles. With few internationally accepted standards or rules, Chinese companies and other entities are actively shaping standards in collecting, protecting, and governing data. Chinese efforts to build technological capacity could have lasting negative consequences for the future of U.S. technological leadership.
- The CCP is working to establish China as a global leader in synthetic biology, motivated by the prospective economic benefits and also the potential for synthetic biology to mitigate structural problems such as deficiencies in China's healthcare system and scarce natural resources. The United States leads in most applications of synthetic biology, but Chinese synthetic biology firms receive generous state subsidies and have begun supplementing domestic genomic data collection with international collection efforts.
- With its advancements in new mobility, China is positioned to contest U.S. leadership in various technologies. The Chinese government has prioritized development of new energy vehicle technology through extensive subsidies and protectionist policies while capturing every stage of the supply chain for new energy vehicle batteries. In autonomous and connected vehicles, global competition is increasing as Chinese companies are engaged in pursuit of international markets.

- U.S. global dominance in cloud computing may be challenged by Chinese competitors in developing markets. Chinese cloud computing companies have thrived in a protected home market and with few exceptions can operate freely in the United States, while U.S. companies face barriers in China. Protecting its cloud computing sector to control information and data flows is a national security priority for China as well as a strategic imperative to support other key emerging technologies, such as new mobility, artificial intelligence, biotechnology, smart cities, and big data applications.
- China leads among major economies in the development of a central bank digital currency. The CCP's promotion of a digital RMB is motivated by several factors, including a desire to increase control and surveillance of financial transactions by state and nonstate companies, foreign firms operating in China, and individuals. China's digital RMB does not present an immediate challenge to the U.S.-led global financial system, but in the long term it could undermine the status of the U.S. dollar and efficacy of U.S. financial sanctions.

Section 3: The Chinese Government's Evolving Control of the Corporate Sector

Maintaining strict control over commercial activity is an increasingly urgent priority for the CCP. While the Chinese government has long managed the allocation of resources and shaped market outcomes in the Chinese economy, this capability is under growing strain. In 2021, CCP leaders grappled with the market power of the country's nonstate technology sector and credit events that threatened financial stability and renewed concerns about China's debt sustainability. As the CCP comes to grips with the scale of these problems, it seeks to assert unassailable authority over all manner of companies and fortify supervision of an increasingly complex Chinese economy.

The Chinese government exercises control through various channels to guide corporate decision-making in service of policy priorities. Chinese law already affords the state privileged status in the governance of any corporation for which it is a shareholder. This makes any state-invested enterprise subject to Beijing's influence and control, no matter how small its investment. The Chinese government's recent acquisition of a 1 percent stake in social media giant and TikTok parent company ByteDance, for example, affords it a board seat in one of the firm's subsidiaries. Under General Secretary Xi, the Chinese government has expanded such investment in the nonstate sector to bring broader swathes of commercial activity under the state's control. China's government also deploys policy incentives, including subsidies, grants, and tax breaks, to ensure corporate activity aligns with the CCP's policy interests.

In contrast to the Chinese government's *de jure* mechanisms for intervention and influence, the CCP is not bound by legal constraints. Within state-owned, nonstate, and foreign enterprises alike, CCP committees exert growing influence over corporate governance by overseeing personnel appointments and monitoring employee be-

havior. Within capital markets, the CCP is also superseding the role of regulators in enforcement.

The Chinese government's evolving control over China's corporate sector blurs the relationship between commercial actors and the state, ultimately making distinctions between "state" and "nonstate" companies less meaningful. Instead, China's economy today is one in which the government maintains a ready and rapidly expanding ability to intervene in any company's operations. This ability is fundamentally reshaping government-corporate relations in China and underscores that the state-directed operation of the Chinese economy is wholly distinct from what is observed in market-oriented economies elsewhere. As the CCP further cultivates and bolsters this ability, U.S. businesses and investors must recognize that their participation in the Chinese economy is conditioned by the CCP's policy priorities and subject to its control.

Key Findings

- China's government has developed numerous avenues through which to monitor corporate affairs and direct nonstate firms and resources toward advancing CCP priorities. Within this expanded framework of government control, traditional definitions of state control in an entity no longer apply because any entity may be compelled to act on behalf of the Chinese government's interest, regardless of the state's formal ownership.
- Control of Chinese firms is blurred, contrary to the precise division between state and nonstate firms implied in corporate ownership registration. Historically, nonstate firms have sought state investment to overcome political and regulatory barriers. China's government is also now increasing investments in nonstate firms to advance its technology development goals and policy objectives, further obscuring the distinction between state and nonstate.
- Under General Secretary Xi, the Party has systematically expanded its representation in corporate governance. Whereas traditional regulatory intervention in corporate affairs occurs through Chinese bureaucratic mechanisms prescribed by law, there are no such constraints on the CCP. Consequently, it can be impossible to identify the extent of the exercise of CCP influence.
- The CCP is also supplanting the role of Chinese government agencies in market monitoring and regulatory enforcement. While this may create the appearance of better regulated markets, replacing routine bureaucratic functions with CCP intervention both acknowledges the inherent weakness of Chinese state institutions and further undermines their effectiveness.
- Chinese corporate law affords the state unique and substantial governance rights as an investor and imposes a legal obligation to serve state development goals on all firms. By contrast, nonstate minority shareholders of publicly traded companies, including U.S. investors in China's domestic equities market, are afforded minimal protections.

Section 4: U.S.-China Financial Connectivity and Risks to U.S. National Security

The Chinese government is engineering capital markets to buttress state-led efforts to advance national development objectives. China's strategic use of capital markets seeks to facilitate a more diversified funding of state priorities, leveraging nonstate and foreign capital to bolster technology development and contribute to military modernization. This reflects a shift in how Chinese leaders see financial markets. Whereas stock markets were first developed largely as a means to bail out China's heavily indebted state sector, Chinese policymakers today see the Shanghai and Shenzhen Stock Exchanges as pivotal vehicles to ensure capital flows to where the state needs capital most.

Since 2014, the Chinese government has taken an array of steps to gradually expand foreign access to China's financial markets, and since 2018 it has encouraged foreign financial services firms to establish a presence in the Chinese market. The Chinese government's strategic financial opening has resulted in increased U.S. and foreign investor participation in China's financial markets, with major investment indices adding Chinese securities to their benchmarks. These inclusions are automating U.S. asset allocations toward the Chinese market and redefining Chinese securities as standard features of a well-diversified investment portfolio. The expanded presence of prominent U.S. asset managers in the Chinese market further facilitates perceptions of China's financial markets as sophisticated and stable, amplifying U.S. investor interest in Chinese securities.

China's tightened integration with global financial markets poses distinct economic risks to U.S. investors and national security risks to the United States. Increased U.S. and foreign investor participation in China's capital markets coincides with Beijing's tightened control over China's corporate sector. Beijing also uses a host of investment vehicles, such as government guidance funds and military-themed investment products, to steer capital toward companies contributing to China's military industrial complex. These various investment vehicles contribute to a capital market whose basic function prioritizes development objectives that may run counter to U.S. interests.

The convergence of tightened U.S.-China financial connectivity with the Chinese government's strategic use of financial markets presents novel challenges to U.S. policymakers. U.S. capital and expertise may unwittingly contribute to improvements in China's military capabilities or support a Chinese startup whose underdeveloped technology today may be used to abuse human rights tomorrow. This risk becomes more acute as Beijing's control over China's commercial ecosystem blurs the lines between civilian and defense activities of Chinese companies. Chinese firms' potential government and military ties challenge traditional U.S. policy approaches to restricting trade and investment with problematic partners. This is because U.S. trade and investment screening focuses on individual entities or transactions, an approach that cannot keep pace with the Chinese government's military-civil fusion strategy. Policy solutions

targeting only the most overtly threatening Chinese companies may miss the diversity of actors in China's military-industrial ecosystem.

Key Findings

- A surge of U.S. investor participation in China's markets is outpacing the U.S. government's defense against the diverse threats to U.S. national and economic security posed by U.S. investment in some problematic Chinese companies. This inflow of U.S. capital into China's economy is occurring as the Chinese government strengthens its ability to direct nonstate firms and resources toward advancing strategic priorities that may harm U.S. interests and as Beijing further fuses military and civilian corporate operations.
- The Chinese government permits the participation of foreign firms and investors in the Chinese market only when it suits its national interest. As a result, nominal financial "opening" in China in reality is a carefully managed process designed to reinforce state control over capital markets and channel foreign funding toward fulfilling the Chinese government's national development objectives.
- China's military-industrial ecosystem encompasses state and nonstate firms, research institutes, and investment funds, all acting in concert in service of China's military modernization objectives. These coordinated efforts may advance an agenda that threatens U.S. national security but is not always evident at the level of individual entities or transactions. Traditional legal remedies, such as trade and investment restrictions, are limited in their ability to fully address these threats, and current tools may be inadequate.
- The U.S. government's defense against these challenges is further constrained by strong U.S. investor interest in Chinese markets and the outsized influence of unregulated investment indices in steering global capital flows. The substantial increase in the inclusion of Chinese securities in investment indices automates U.S. investor allocation toward Chinese companies. Because passively managed index funds replicate these indices and actively managed funds seek to at least outperform them, index providers have played a pivotal yet unregulated role in guiding foreign portfolio investment toward Chinese companies.
- Compared to portfolio investment, private equity and venture capital investment present a unique set of challenges. Critical technical knowledge, managerial expertise, and business connections often flow to the investment target in addition to funding. Lack of transparency in private transactions compounds both oversight challenges for U.S. regulators and potential risks to U.S. economic and national security interests.

Chapter 3: U.S.-China Security, Politics, and Foreign Affairs

Section 1: Year in Review: Security, Politics, and Foreign Affairs

In 2021, China's leaders made plain their ambition to present the CCP's one-party rule to the world as a superior political, economic, and moral model to democracy and capitalism. Amid the triumphant celebrations surrounding the centennial of the Party's founding, however, the message of senior leaders was sober. Rather than evince satisfaction that China's economic development had ushered in a new era of peace and prosperity, CCP leaders assessed that internal and external threats from "enemy forces" were intensifying and could grow into systemic risks affecting regime security. Today, the regime is both confident and paranoid, insistent on its superiority but increasingly fearful of subversion and failure.

In its campaign to eradicate perceived harmful influences, over the past year the CCP expanded efforts to control all aspects of Chinese society and culture it viewed as threatening. It issued new counterespionage rules for organizations and enterprises in China responding to intensified "infiltration" by hostile forces. Meanwhile, the Chinese government continued its repression of ethnic minorities in the frontier regions of Xinjiang, Tibet, and Inner Mongolia. Based on reports of authorities' forced sterilizations, coerced abortions, and other human rights abuses against Uyghurs and other ethnic and religious minorities in Xinjiang, the United States formally determined the Chinese government to be committing genocide and ongoing crimes against humanity.

Meanwhile, Beijing stepped up its use of military coercion in the East and South China Seas, the Taiwan Strait, and along the Indian border while encouraging the PLA to establish itself as a global force able to defend China's overseas interests. Chinese diplomats matched the uncompromising tone set by CCP leadership, abandoning much of their remaining decorum as they deepened an embrace of confrontational "wolf warrior" behavior. Claiming that its aggressive approach was morally justified, Beijing refused to countenance criticism of its actions. Instead, it demanded that the United States and other countries alter their own policies, abandoning actions Beijing viewed as competitive and remaining silent on the Chinese government's destabilizing behavior toward Taiwan and human rights violations in Hong Kong, Tibet, and Xinjiang. U.S. policy toward China remained remarkably consistent across the outgoing Trump Administration and new Biden Administration, with senior officials in both administrations describing China as the United States' foremost geopolitical challenge of the 21st century.

Key Findings

- In 2021, the CCP marked the centennial of its founding by instructing Party members and the Chinese people to prepare for a decades-long confrontation with the United States and other democracies over the future of the global order. Chinese leaders grew more uncompromising in pursuing their interests as they insisted historical trends proved the inferiority of democracy to the political, economic, and normative model of their one-party rule.

- In an apparent paradox, the CCP assessed that internal and external threats facing the regime were intensifying and that its rule was becoming less secure despite the growth of Chinese power. CCP leaders vowed forceful measures against officials and Party members wavering in the face of international pressure and continued their repressive campaigns in Hong Kong and against the Uyghur people, Tibetans, and other ethnic minority groups.
- Beijing reaffirmed its intent to maintain high levels of defense spending to transform the PLA into a powerful force able to operate in and beyond the Indo-Pacific region. Chinese leaders showed new levels of frustration with the PLA's lagging efforts to improve its training and personnel quality amid perennial concerns about the force's lack of warfighting experience. The PLA continued to commission advanced warships and field new aircraft capable of projecting force beyond China's borders. Beijing also signaled its interest in establishing additional overseas military bases, reportedly including locations on Africa's west coast.
- China's diplomats deepened their embrace of a belligerent and uncompromising approach to foreign relations. The foreign ministry's disregard for the reputational cost of its strident rhetoric reflected domestic incentives that reward efforts to raise China's global standing while discrediting the United States and other democracies. As it grew more confrontational toward democratic countries, Beijing expanded its partnerships with Russia and Iran and attempted to cast itself as a leader of developing countries across Africa, the Middle East, and Central Asia.
- China's aggressive tone and military coercion of its neighbors prompted deepening cooperation between Indo-Pacific countries and new efforts by the EU and others to increase their diplomatic and military presence in the region. China continued its military tensions with India, building illegal military outposts in neighboring Bhutan and launching cyberattacks that may have caused blackouts across India.
- U.S. concerns over the growing national security threat from China continue. Beijing's refusal to cooperate in investigating the origins of the COVID-19 pandemic and demands that the Biden Administration cease all criticism of China's human rights abuses and abandon other policies opposed by the CCP undermined Beijing's initial hopes for a reset in bilateral ties.

Section 2: China's Nuclear Forces: Moving beyond a Minimal Deterrent

China is engaged in an unprecedented buildup of its nuclear forces. The PLA is constructing hundreds of new silos for its intercontinental ballistic missiles, growing its stockpile of warheads, developing a nuclear triad, and improving the accuracy of its delivery systems. At the same time, the PLA is enhancing the intelligence, surveillance, and reconnaissance (ISR) capabilities essential for strategic early warning, ballistic missile defense, and rapid retaliation. These qualitative and quantitative changes to China's nuclear forces signal a

clear departure from the country's historically minimalist nuclear posture.

The modernization, expansion, and diversification of China's nuclear forces raise concerning questions about Chinese leaders' intentions. A larger, enhanced nuclear arsenal could reinforce the country's longstanding nuclear strategy, which achieves deterrence by maintaining the means to survive and retaliate against an enemy's nuclear first strike. Yet recent improvements in China's nuclear forces clearly allow Chinese leaders to pursue a more ambitious nuclear strategy of limited first use if they wish to do so. Moreover, the growing technological sophistication of China's nuclear forces could enable it to adopt more destabilizing nuclear postures, such as launch-on-warning, which heightens the risk of an accidental nuclear exchange.

China's nuclear buildup creates new risks and planning dilemmas for the United States. Most importantly, China's growing nuclear capabilities raise the risks of unintentional nuclear escalation or a deliberate nuclear exchange during a conventional conflict in the Indo-Pacific. An offensive nuclear strategy could strain U.S. extended deterrence by emboldening Chinese leaders to pursue conventional aggression or nuclear coercion against U.S. allies and partners. Moreover, improvements in China's nuclear forces could complicate U.S. nuclear deterrence planning if the United States is forced for the first time to account for contingencies involving two peer nuclear-armed adversaries. Beijing's longstanding refusal to participate in arms control also inhibits deeper arms reductions by the United States, exacerbates the anxiety of U.S. allies, and threatens to ignite a global arms race.

Finally, the proliferation of dual-use items with nuclear and missile applications by China-based entities challenges regional security and the global nonproliferation regime. The nuclear and ballistic missile technologies provided to Iran, North Korea, and Pakistan in violation of various international agreements restricting the transfer of nuclear and missile technologies over the years continue to threaten the security of U.S. allies and partners, such as Israel, Saudi Arabia, South Korea, Japan, and India. Combined with the direct threat posed by the PLA's growing nuclear arsenal, the indirect threat posed by such proliferation will increase the pressures on U.S. allies and partners to develop missile defenses and credible second-strike capabilities of their own.

Key Findings

- The People's Republic of China is carrying out its most substantial effort to expand, modernize, and diversify its nuclear forces since first acquiring nuclear weapons in the 1960s. The PLA is developing a nuclear triad; fielding new, more mobile, and more accurate nuclear weapons systems; and significantly expanding its stockpile of nuclear warheads. The PLA has also enhanced its ISR systems.
- China's nuclear buildup puts it on a trajectory to become a nuclear peer of the United States in qualitative terms. Qualitative nuclear parity could entail diversified, reliable, and survivable delivery systems; highly precise missiles; warheads of various

yields; robust command and control processes; and sophisticated ISR, all of which enable a truly secure second-strike capability and options for calibrated, offensive nuclear use. Current public projections suggest China could also become a quantitative peer in the number of land-based strategic missiles it deploys by 2030.

- Strategic and political forces are driving China's departure from a minimalist nuclear posture. For most of its modern history, China maintained a small nuclear stockpile mainly suitable for minimal retaliation against an adversary's nuclear attack. General Secretary Xi's ambitions for great power status, combined with military objectives beyond minimal retaliation, have likely motivated the recent buildup of China's nuclear arsenal.
- At minimum, China's nuclear buildup enhances its current retaliatory strategy by better enabling its nuclear forces to deter or respond in kind to a nuclear attack. Chinese leaders may worry that innovations in other nuclear weapon states have undermined their nuclear deterrent, requiring them to make changes in order to keep up.
- The scale of China's nuclear buildup, however, suggests it could also be intended to support a new strategy of limited nuclear first use. Such a strategy would enable Chinese leaders to leverage their nuclear forces to accomplish Chinese political objectives beyond survival, such as coercing another state or deterring U.S. intervention in a war over Taiwan.
- Uncertainties created by China's nuclear buildup heighten the risk of an accidental nuclear exchange or unforeseen nuclear escalation during a regional conflict. Specific risks of nuclear escalation stem from entanglement between China's nuclear and conventional capabilities, its desperation to avoid losing a conventional war in the region, and false alarms that could result from its possible shift to a launch-on-warning posture.
- The PLA's growing arsenal also casts "nuclear shadows" over China's disputes with its neighbors, many of whom are U.S. allies and partners. Improved nuclear capabilities could encourage Chinese leaders to coerce or initiate a conventional conflict against U.S. allies or partners in the region if they believe their nuclear capability would deter the United States from intervening.
- China has continued to play a concerning role in the global proliferation of missile and nuclear technologies, though the manner in which this proliferation occurs has evolved over time. Whereas two decades ago the Chinese government and state-owned enterprises were the main source of missile and nuclear technologies, Chinese companies and private individuals now play a dominant role in the proliferation of such goods to countries of concern. The Chinese government turns a blind eye to, and in some cases tacitly supports, these illicit activities.

Chapter 4: A Dangerous Period for Cross-Strait Deterrence: Chinese Military Capabilities and Decision-Making for a War over Taiwan

Decades of concerted modernization by the PLA have shifted the military balance in the Taiwan Strait and dangerously weakened cross-Strait deterrence. Today, the PLA either has or is close to achieving an initial capability to invade Taiwan—one that remains under development but that China's leaders may employ at high risk—while deterring, delaying, or defeating U.S. military intervention. The PLA's development of this capability has involved years of campaign planning and advancements in anti-access and area denial capabilities. China has also demonstrated significant improvements in its shipbuilding capacity to bolster amphibious and civilian sealift, both of which the PLA has used in amphibious landing exercises. The PLA will continue to develop all of these capabilities to enhance Chinese leaders' confidence that it can successfully execute an invasion campaign.

Cross-Strait deterrence still holds today because Chinese leaders remain deeply concerned about the uncertain success of an attempted invasion as well as its risks and consequences. Failed attempts by the PLA to invade Taiwan or to counter U.S. intervention risk undermining the CCP's legitimacy. The PLA still suffers from significant weaknesses in joint operations and personnel quality, contributing to uncertainty among China's top leaders. A decision to invade Taiwan also risks destabilizing regional trade flows and supply chains, damaging the most productive segments of the Chinese economy and threatening other economic and political objectives associated with China's national rejuvenation. Lastly, Chinese leaders must consider the difficulty of controlling Taiwan's population after an invasion and responding to the international fallout from a conflict. U.S. measures that deepen Chinese leaders' anxieties about these risks are likely to enhance deterrence.

Taiwan is an important U.S. partner and a beacon for democracy in the region. Taiwan President Tsai Ing-wen has taken important initial steps to address the cross-Strait military imbalance by increasing Taiwan's defense budget and fostering Taiwan's indigenous defense industry. Nevertheless, the deterrence challenge facing U.S. and Taiwan leaders will continue to grow more acute as the PLA improves its capabilities. The United States has historically leaned on its conventional military advantages to deter China. The question is whether and to what extent those tools will be effective if the PLA continues to consolidate its military advantages within the first island chain.

Key Findings

- Cross-Strait deterrence is in a period of dangerous uncertainty. Improvements in China's military capabilities have fundamentally transformed the strategic environment and weakened the military dimension of cross-Strait deterrence. China's increasingly coercive approach to Taiwan puts almost daily pressure on the cross-Strait status quo and increases the potential for a military crisis.

- Chinese leaders likely set 2020 as a key milestone for the PLA to develop the capabilities needed to invade Taiwan. To achieve this goal, for nearly two decades the PLA has systematically planned, trained, and built the forces it believes are required to invade the island. The PLA has already achieved the capabilities needed to conduct an air and naval blockade, cyberattacks, and missile strikes against Taiwan. PLA leaders now likely assess they have, or will soon have, the initial capability needed to conduct a high-risk invasion of Taiwan if ordered to do so by CCP leaders. They will continue enhancing this capability in the coming years.
- Any near-term PLA invasion would remain a high-risk option. Such an operation would rely on the success of the PLA's more developed cyberattack, missile strike, and blockade capabilities to sufficiently degrade, isolate, or defeat Taiwan's defending forces as well as its anti-access and area denial capabilities to prevent decisive U.S. intervention. The PLA's current military sea and air lift capacity could carry an initial landing force of 25,000 or more troops. China has developed substantial capabilities to use civilian ships in military operations, providing capacity for the PLA to land additional troops on Taiwan after securing a beachhead.
- Given these developments, it has become less certain that U.S. conventional military forces alone will continue to deter China's leaders from initiating an attack on Taiwan. A deterrence failure is most likely to occur if Chinese leaders believe the United States is not militarily capable of or politically willing to intervene, or if they interpret ambiguities in U.S. policy to mean that opportunistic Chinese aggression against Taiwan will not provoke a decisive U.S. response. General Secretary Xi's higher tolerance for risk and desire to establish a lasting legacy could also contribute to a decision by China's leadership to attack Taiwan despite U.S. warnings.
- Still, whether and when to invade Taiwan is a political rather than a military question for CCP leaders, who continue to face substantial constraints on any decision to use force. These include the inherent uncertainty of a military confrontation with the United States, the extensive damage that would likely result to the Chinese economy, and the risk that an attack on Taiwan could prompt the formation of a coalition of countries determined to constrain any further growth in China's power and influence.
- Taiwan has taken important steps toward asymmetrically defending against a PLA attack, achieving successes in developing indigenous missiles threatening a PLA invasion or blockade. Nevertheless, Taiwan faces significant challenges from decades of underinvestment in defense, leaving it with low stockpiles of critical resources for enduring a PLA blockade. Some military leaders are also resisting steps to adopt a more asymmetric posture.

Chapter 5: Hong Kong's Government Embraces Authoritarianism

Hong Kong has long been recognized as a center for global business and a vibrant multinational culture, but these advantages are at risk as the government rapidly dissolves freedoms in the city. The 1,283 U.S. companies and estimated 85,000 U.S. citizens residing in Hong Kong, as well as any who transit the territory, must now contend with the possibility of arrest. Although the Hong Kong government continues to emphasize its openness to business and promote new investment mechanisms, it is increasingly difficult to determine which business activities will remain safe from political intervention. This blurred line, along with the fear of being charged under the National Security Law, presents growing risks not only to Hong Kongers but also to the future of U.S. businesses, nonprofits, and employees in Hong Kong.

A year since the Chinese government directly implemented the National Security Law in the territory, the Beijing-controlled Hong Kong government has transformed the city into a police state. Despite the Hong Kong government's assurances that the law would not be enforced retroactively, prosecutors have frequently cited once-legal activities as evidence to charge defendants with what are now considered to be national security crimes. The introduction of the National Security Law destroyed the legal system that had prevailed in Hong Kong since 1997, rendering meaningless the rights enshrined in the Basic Law, Hong Kong's mini constitution. Hand-picked judges now oversee all national security cases, and even if defendants are ultimately acquitted, their inability to obtain bail means they may still face years in prison simply for being charged with a crime.

Authorities have gone to great lengths to intimidate prodemocracy advocates, eliminate any potential sources of dissent, and effectively erase Hong Kong's civil society. In January 2021, Hong Kong police arrested dozens of would-be opposition candidates en masse, setting the tone for a year of systemic repression across all institutions in the city. In March, the central Chinese government approved new rules designed to guarantee that only pro-Beijing candidates would be able to run for office in Hong Kong, setting the conditions for deepening authoritarianism in the territory. The Hong Kong government and pro-Beijing entities stripped Hong Kong media organizations of their independence, resembling censorship observed in the Mainland's heavily constrained media environment. Changes to educational curricula force Hong Kong's educators to parrot CCP-approved propaganda, while civil servants must swear a new loyalty oath to the Hong Kong and central Chinese governments.

Key Findings

- In the past year, the CCP-controlled Hong Kong government's implementation of the National Security Law upended the city's social and political environment. The government now views peaceful political participation as inherently subversive, and the authorities are targeting many across a broad cross-section of the population under the new law.

- Changes to Hong Kong's elections and the composition of its legislature now ensure pro-Beijing lawmakers will always have a majority, turning the once-competitive Legislative Council into a rubber-stamp parliament.
- In the year since the imposition of the National Security Law, Hong Kong experienced a net outflow of 87,100 permanent and nonpermanent residents. A new immigration bill that entered into force in August 2021 gives the Hong Kong government the power to block travel. The government now has the legal authority to enact "exit bans" or to prevent critics of the Hong Kong government or China's central government from entering the territory.
- Changes to Hong Kong's educational curricula under the National Security Law now require teachers to promote the CCP's interpretation of history, and authorities are using these new powers to fire them for unapproved speech. Educators are forced to distort reality and history to portray the Party in a positive light.
- Judges overseeing national security cases in Hong Kong are now chosen from a list compiled under the supervision of the territory's new national security apparatus, effectively stripping the Hong Kong judiciary of its former independence. The changes enable the Hong Kong government to ensure all national security cases are assigned to progovernment preferred judges, guaranteeing outcomes favorable to the government and the CCP.
- The National Security Law allows the Hong Kong government to curtail the city's freedoms with little notice or process. Authorities introduced strict film censorship rules overnight in June 2021, and independent and prodemocracy media organizations have been systematically dismantled. Prodemocracy Chinese-language newspaper *Apple Daily* was shut down after the government froze its assets and arrested senior personnel, having previously arrested its owner. Remaining media organizations have lost key staff and resources, and in other cases mainland investors are acquiring control of publishers. The city can introduce comprehensive internet censorship similar to the Mainland's Great Firewall at any time.
- Strict implementation of the National Security Law is stripping Hong Kong of long-held advantages that made it a global financial center. While Beijing relies on Hong Kong to boost capital flows and innovation in the Guangdong-Hong Kong-Macau Greater Bay Area, foreign companies are now more likely to find it advantageous to operate elsewhere in Asia, including in mainland China. Changes diminishing corporate transparency and weakening rule of law endanger U.S. businesses in Hong Kong.
- Hong Kong's business environment is increasingly "Mainlandized," which is likely to increase as the city is integrated further into the Greater Bay Area. Chinese companies are growing their presence in Hong Kong as both the Chinese and Hong Kong governments build greater incentives for Mainland immigration into the territory.

THE COMMISSION'S KEY RECOMMENDATIONS

The Commission considers 10 of its 32 recommendations to Congress to be of particular significance. The complete list of recommendations appears at the Report's conclusion on page 491.

The Commission recommends:

1. Congress consider comprehensive legislation to address risks to U.S. investors and U.S. interests from investments in Chinese equity, debt, and derivative instruments by:
 - Prospectively prohibiting investment in Variable Interest Entities (VIEs) linked to Chinese entities.
 - Absent prohibition, ensuring that the risks of investments in VIEs linked to Chinese entities are more prominently identified for investors, including that the VIE structure is illegal under Chinese law, and that taxpayer subsidies do not support investments in such entities. Provisions that should be considered in support of this goal include:
 - Requiring prominent identification of the potential high risk for investments in VIEs linked to Chinese companies by:
 - Identifying VIEs linked to Chinese companies as such in their stock trading symbols on U.S. exchanges.
 - Requiring that broker-dealers provide risk warning labels on the potential lack of legal recourse for investors for their investments in VIEs linked to Chinese entities.
 - Prohibiting preferential federal tax treatment on losses and gains on investments in VIEs linked to Chinese entities made after the passage of appropriate statutory provisions.
 - Directing the U.S. Securities and Exchange Commission (SEC) as part of its evaluation of potential guidance on reporting on environmental, social, and governance matters by publicly traded companies to require reporting of:
 - Sourcing and due diligence activities of such companies involving supply chains that are directly or indirectly linked to products and services utilizing forced labor from Xinjiang.
 - Transactions with companies that have been placed on the U.S. Department of Commerce's Entity List or those designated by the U.S. Department of the Treasury as Chinese Military-Industrial Complex Companies.
 - Requiring index providers that include within their indices securities issued on mainland Chinese exchanges or the Hong Kong Stock Exchange, securities of China-headquartered companies listed on U.S. exchanges through a VIE, or derivative instruments of either of the preceding types of securities, be subject to regulation by the SEC.
2. Congress take urgent measures to strengthen the credibility of U.S. military deterrence in the near term and to maintain the ability of the United States to uphold its obligations established

in the Taiwan Relations Act to resist any resort to force that would jeopardize the security of Taiwan, including:

- Authorizing and funding the deployment of large numbers of antiship cruise and ballistic missiles in the Indo-Pacific;
 - Authorizing and funding the requests of U.S. Indo-Pacific Command (INDOPACOM) for better and more survivable intelligence, surveillance, and reconnaissance in the East and South China Seas;
 - Authorizing and funding the requests of INDOPACOM for hardening U.S. bases in the region, including robust missile defense;
 - Authorizing and funding the stockpiling of large numbers of precision munitions in the Indo-Pacific; and
 - Authorizing and funding programs that enable U.S. forces to continue operations in the event central command and control is disrupted.
3. Congress ensure the effective implementation of the Export Control Reform Act of 2018 and the Foreign Investment Risk Review Modernization Act of 2018 by enacting legislation that:
- Creates a Technology Transfer Review Group (TTRG) within the Executive Office of the President responsible for identifying emerging and foundational technologies. The TTRG should be chaired by the secretary of defense and include the director of the Office of Science and Technology Policy along with Cabinet-level secretaries or their designees from the U.S. Departments of Commerce, Energy, and Homeland Security.
 - Authorizes the TTRG to direct the Department of Commerce's Bureau of Industry and Security to implement export controls following the identification of these technologies.
 - Authorizes and requires the TTRG to oversee multilateral engagement related to export controls, foreign investment screening, and regulations over technology transfer by relevant agencies to ensure that such engagement does not undermine U.S. national and economic security interests.
 - Require that additional resources be provided to improve and expand end-user verification of export controls. Export licenses to the following entities should receive strict scrutiny: end-users identified as Chinese Communist Military Companies per section 1237 of the National Defense Authorization Act for Fiscal Year 1999, those identified as contributors to China's military-civilian fusion activities per section 1260H of the National Defense Authorization Act for Fiscal Year 2021, entities with direct and formal ties to the Chinese Communist Party (CCP) or government, and entities identified by the U.S. Trade Representative, U.S. Department of Justice, and Federal Bureau of Investigation as being linked to efforts to steal or coerce the transfer of U.S. intellectual property. The inability to identify end-user facilities and, if identified, the

lack of adequate and timely access to these facilities should strongly inform investigating officials and licensing officials.

- Require that the TTRG engage with the Department of Justice, the Department of Commerce’s Bureau of Industry and Security, and other relevant agencies to align “deemed export” controls with engagement on knowledge transfer and expert recruitment strategies such as the 1,000 Talents Program as well as investigations of the CCP’s United Front Work Department and other entities and programs of the CCP designed to acquire U.S. technology and capabilities.
4. Congress consider legislation to create the authority to screen the offshoring of critical supply chains and production capabilities to the People’s Republic of China (PRC) to protect U.S. national and economic security interests and to define the scope of such supply chains and production capabilities. This would include screening related outbound investment by U.S. entities. Such legislation would direct the secretaries of defense and commerce, along with the U.S. Trade Representative, to develop procedures to evaluate existing and proposed supply relationships with the PRC and identify whether critical U.S. interests are being adversely affected, including the loss of domestic production capacity and capabilities. The legislation would authorize the president to take appropriate action, including prohibiting supply relationships or certain transactions to protect U.S. national security.
 5. Congress enact legislation expanding the jurisdiction of existing U.S. investment restrictions targeting Chinese entities placed on the Non-Specially Designated Nationals (SDN) Chinese Military-Industrial Complex (NS-CMIC) Companies List as well as the scope of entities to be targeted by such restrictions. Such provisions should include:
 - Expanding the prohibitions relating to transactions and supporting work by U.S. persons in NS-CMIC securities covered by Executive Order 14032 to include the execution, support, or servicing of transactions by U.S. persons in any market or for any other person, including both U.S. and non-U.S. persons; and
 - Providing additional resources to ensure that a more comprehensive list of entities engaged in supporting the Chinese military-industrial complex be published and that subsidiaries supporting such entities be included on the list. In identifying entities that should be evaluated for inclusion in such designations, authorities should include companies designated by Chinese securities issuing and trading entities as supporting the military-industrial complex.
 6. Congress prevent the erosion of U.S. strategic nuclear superiority and respond to China’s qualitative and quantitative theater nuclear advantages by directing the Administration to continue implementation of the Obama-Trump Program of Record for nuclear modernization.

7. Congress direct the SEC to require that publicly traded U.S. companies with facilities in China report on an annual basis whether there is a CCP committee in their operations and summarize the actions and corporate decisions in which such committees may have participated.
8. Congress consider comprehensive legislation to ensure Chinese entities sanctioned under one U.S. authority be automatically sanctioned under other authorities unless a waiver is granted by the president or the authority applying the initial sanction. This legislation should rationalize existing U.S. sanctions targeting adversarial Chinese entities to ensure, for example, Chinese firms placed on the Entity List and/or Military End User List of the Department of Commerce are also placed on the NS-CMIC and vice versa.
9. Congress mandate from Treasury an annual update of the accurate U.S. portfolio investment position in China since 2008, including money routed through offshore centers, such as the Cayman Islands. This should include exposure for:
 - Individual Chinese sectors;
 - U.S. institution types, such as state pension funds;
 - Sanctioned Chinese entities (Entity List, NS-CMIC List, and others);
 - Individual Chinese recipients who receive more than a minimum amount, such as \$100 million; and
 - Individual U.S. investors with more than a minimum share of the total, such as 2 percent.
10. Congress direct U.S. Customs and Border Protection to initiate action to impose a region-wide Withhold Release Order on products originating from Xinjiang, China. In addition, Congress should require the Department of Homeland Security to provide a comprehensive list of technologies needed and an outline of the resources required to enforce the Withhold Release Order and address other instances of China's use of forced labor.

INTRODUCTION

In 2021, the Chinese Communist Party (CCP) marked the centennial of its founding with boastful confidence, declaring the superiority of its system over a supposedly declining United States and liberal international order. The CCP not only celebrated its successes in overseeing China's transformation into a formidable power on the world stage but also presented its political and economic model to the world as superior to democracy and capitalism. General Secretary of the CCP Xi Jinping reflected this outlook in a July speech in Tiananmen Square marking the Party's centennial celebration, claiming the CCP had used Marxism to "seize the initiative in history" and create a "new model for human advancement."*

Behind the CCP's outward confidence, however, top leaders increased their warnings to guard against threats to the regime. In late 2020, citing General Secretary Xi's collection of speeches, *The Governance of China*, a new Party study guide warned that the economic, social, and technological challenges facing China were long-term and would only become more severe. To overcome these challenges, the study guide concluded that the CCP must act forcefully to defuse risks and neutralize potential threats. Channeling this guidance, in 2021 Chinese leaders grew increasingly willing to wield all tools of national power.

The application of these tools had clear patterns:

1. Increased internal repression in Hong Kong, Xinjiang, and Tibet coupled with greater willingness to respond to ensuing foreign criticism using economic coercion. In the past, China tended to avoid such economic conflict with the United States. Over the past year, the United States may have been the main target.
2. Broadened state intervention in the economy to achieve the CCP's economic, social, and political goals. This was unsurprising after the novel coronavirus (COVID-19) outbreak but evolved in mid-2021 into a crackdown on nonstate sector capital raising. Along with the financial weakness demonstrated by Evergrande, the CCP's crackdown poses risks that passive U.S. investors may not understand. At the same time, Chinese policymakers are courting foreign capital and fund managers as they work to make China's capital markets serve as a vehicle to fund the CCP's technology development objectives and other policy goals.
3. Expanded capabilities of the People's Liberation Army emphasizing a buildup in nuclear forces. This expansion backed

* *Xinhua*, "Xi Jinping: Speech at the Celebration of the Centenary of the Founding of the Chinese Communist Party" (习近平: 在庆祝中国共产党成立一百周年大会上的讲话), July 1, 2021. Translation.

confrontational behavior with India and Taiwan, among others. In Taiwan in particular, the United States faces doubts about U.S. deterrence which can only intensify in the short term without decisive steps to address them.

China's strengths and the threats it presents to U.S. interests are considerable. At the same time, the CCP's own challenges are numerous. Increasing rigidity within the CCP's decision-making process has allowed little course correction from existing policy direction, even when those policies appear to be ineffective. In consolidating power and ideological authority, General Secretary Xi has contributed to CCP leaders' unwillingness to tolerate criticism or admit policy failure. Doing so would negate the Party's narrative of superiority and call into question its prediction of eventual triumph over the United States and other democratic countries. As General Secretary Xi attempts to further consolidate power ahead of the CCP's 20th National Congress next year, the Party's decision-making process is likely to become even more inflexible and brittle.

The CCP was and is aggressively advancing its economic interests to control global resources and markets and influence decision-makers. Its path through Africa and Latin America offers a clear example of its new way of colonizing. Combined with the escalation in projection of power across land, sea, space, and the cyber domain, China is engaged in a systematic effort to attack, oppress, erase, and marginalize the people whose opinions, sociocultural and educational values, religion, and ethnicity it sees as threats to its goals and approach. Whether spreading fake information designed to interfere in elections in Australia; gutting the education system and judiciary in Hong Kong; or carrying out belligerent military incursions across the borders or into the airspace of India, Japan, and Taiwan, China has transitioned from shaping global institutions from within to using punishing sanctions and economic, political, and military power in a campaign to bend the will and destroy the identities of individuals and nations to serve a narrative of a rising China.

As Beijing attempts to curb the aspirations of a rising generation of entrepreneurs, leaders, and advocates of democracy, the message is clear. National sovereignty along with constitutional rights, civil and human liberties, and free market economic values are impediments to the CCP goals of a "community of common human destiny," which in simplest terms is the Party's ever-expanding control over its own people and other nations' citizens as well.

At stake in this clash of identities and sovereignty is the safety and security of the United States and its partners, friends, and allies. The CCP is a long-term, consequential, menacing adversary determined to end the economic and political freedoms that have served as the foundation for security and prosperity for billions of people. Each decision the United States makes over the coming months and years must be taken in consultation with concerned partners and be purposefully directed at upholding an international system that has largely served us well. Otherwise, we will continue to see the slow but certain erosion of the security, sovereignty, and identity of democratic nations.

CHAPTER 1

U.S.-CHINA GLOBAL COMPETITION

SECTION 1: THE CHINESE COMMUNIST PARTY'S AMBITIONS AND CHALLENGES AT ITS CENTENNIAL

Key Findings

- The Chinese Communist Party (CCP) views the 2021 centennial of its founding as a time for both great confidence and great caution as it seeks to consolidate domestic and international support ahead of key political goals in 2035 and 2049. Through a widespread propaganda campaign, it has promoted a triumphalist narrative while omitting any mention of the CCP's serious shortcomings and heavily censoring dissenting opinions. The CCP's triumphalism derives both from a genuine belief in its own superiority and from the need to sustain its authoritarian system.
- CCP leaders publicly express confidence that China will prevail in an ideological and civilizational clash with the United States and other democracies they refer to as "the West." Chinese leaders portray the United States as a waning superpower on a path toward inevitable decline and believe China will be able to continue expanding its power and influence globally.
- China confronts a range of challenges that undermine the CCP's triumphalist narrative. Economically, China faces a set of structural problems, including growing debt, income inequality, demographic decline, and technological dependence on the United States and other advanced democracies that policymakers have been only partly willing or able to address. Politically, the CCP is concerned about internal disunity, corruption, and a lack of ideological conviction within its ranks.
- The CCP also perceives the international environment as becoming increasingly hostile to the Party's aims. This view has sharpened as the United States and other countries have more firmly pushed back against China's actions, including its policies in Xinjiang and Hong Kong, its handling of the novel coronavirus (COVID-19) pandemic, economic coercion, and Chinese diplomats' aggressive approach to foreign policy. External pressure has increased CCP paranoia about the potential for external forces to amplify internal dissent and threaten its regime.
- Both the CCP's confidence and its insecurity have contributed to an uncompromising approach domestically and to the outside

world. Regardless of how China's internal and external environments develop, the CCP's aggressive posture will likely harden further as Chinese leaders confront the tensions between their rhetoric and their challenges. The CCP is now likely to react in an aggressive manner either in order to defend itself against perceived threats or to press perceived advantages.

Recommendations

The Commission recommends:

- Congress hold hearings including Administration witnesses to explore the advisability of forming an economic defense coalition with allies and partners. The object of such a coalition would be to provide mutual support in the event of economic coercion by the People's Republic of China (PRC) against a coalition member. Such support could include:
 - Commitments not to seek, at the expense of the coerced party, market share created by China's action;
 - Formal complaints to the World Trade Organization (WTO);
 - Assistance to the coerced party to reduce its incentive to comply with Chinese demands; and
 - Imposition of retaliatory measures against China in support of the coerced party.
- Congress direct U.S. Customs and Border Protection to initiate action to impose a region-wide Withhold Release Order on products originating from Xinjiang, China. In addition, Congress should require the U.S. Department of Homeland Security to provide a comprehensive list of technologies needed and an outline of the resources required to enforce the Withhold Release Order and address other instances of China's use of forced labor.

Introduction

For the CCP, 2021 has been a momentous year. As it celebrated the hundredth anniversary of its founding, the CCP aimed to show the world that it has transformed China into a prosperous and powerful country that is prepared to assume and is deserving of a greater leadership role in international affairs.* In recent decades, after CCP leaders reversed some of their earlier disastrous policies, such as the Great Leap Forward, hundreds of millions of people have risen out of poverty while China has grown into the world's second-largest economy. These successes have emboldened CCP leaders and contributed to their belief in China's supposedly inexorable rise. Throughout the year of the centennial, CCP leaders praised the Party's centralized control of politics, economics, and society and predicted the triumph of China's model over that of the United States and other democratic countries they refer to as "the West." This triumphalist propaganda, however, hides the CCP's ris-

*The CCP seeks to revise the international order to be more amenable to its own interests and authoritarian governance system. It desires for other countries not only to acquiesce to its prerogatives but also to acknowledge what it perceives as China's rightful place at the top of a new hierarchical world order. (For more, see U.S.-China Economic and Security Review Commission, "The China Model: Return of the Middle Kingdom," in *2020 Annual Report to Congress*, December 2020, 80–135.)

ing concerns that failing to demonstrate the superiority of its model and address long-term challenges could jeopardize the Party's domestic control and international influence.

While China's leaders may have envisioned 2021 as a showcase for China's rejuvenation under the CCP, the year also made clear the profound internal and external challenges facing the Party. The COVID-19 pandemic cast a pall on the centennial celebrations, further stalled China's already-slowing economic growth, and exposed serious shortcomings in CCP governance. Internally, China struggles with persistent inequality and an often unresponsive political system that is failing to deliver an improving standard of living for many citizens. Externally, China faces what it perceives as growing hostility as many countries, particularly democracies, push back against its distorting economic policies, predatory trade practices and economic coercion, termination of Hong Kong's autonomy, and repression of Uyghurs and other minority groups in Xinjiang. The United States and a number of other countries have determined that the Chinese government's treatment of the Uyghurs constitutes genocide.* CCP leaders also view the United States as an increasingly dangerous competitor with the capability of restraining China's ambitions in the short term, even as they insist the United States is already in long-term decline.

Faced with these problems, the CCP has maintained its triumphalist rhetoric while responding more harshly to any criticism and opposition. General Secretary of the CCP Xi Jinping continues to restructure the Party-state to amplify his own power while suppressing political resistance. Over the past several years, the CCP has put greater emphasis on China's domestic economy and placed a greater portion of the economy under state and Party control, prioritizing economic control over addressing distortions. Instead of acknowledging that economic coercion and diplomatic aggression have harmed China's image abroad, China's diplomats continued to lash out in response to even minimal challenges to China's image, agenda, or priorities.

This section assesses the CCP's worldview and priorities at the centennial of its founding. The section begins by examining the ideological and governance imperatives driving the CCP's centennial propaganda push. The section then assesses the many challenges undermining the CCP's confident narrative. These challenges include ongoing shocks from the COVID-19 pandemic, structural economic deficiencies, an unaccountable political system, and growing international opposition to the CCP's increasingly aggressive behavior. It concludes by discussing the implications of Chinese leaders' domestic and foreign policies for the United States. The section draws from the Commission's January 2021 hearing on "U.S.-China Rela-

*The U.S. government, Lithuania's parliament, the Czech senate, the British House of Commons, the Dutch parliament, and the Canadian parliament have all described CCP repression of Uyghurs as genocide. Inter-Parliamentary Alliance on China, "Czech Senate Declares China Perpetrating Genocide on Uyghurs Ahead of Key Vote in Belgian Parliament," June 14, 2021; Andrius Sytas, "Lithuanian Parliament Latest to Call China's Treatment of Uyghurs 'Genocide,'" *Reuters*, May 20, 2021; *BBC*, "Uyghurs: MPs State Genocide Is Taking Place in China," April 23, 2021; *Reuters*, "U.S. Will Address Uighur 'Genocide' in Talks with Chinese: White House," March 11, 2021; *Reuters*, "Dutch Parliament: China's Treatment of Uighurs Is Genocide," February 25, 2021; *BBC*, "Canada's Parliament Declares China's Treatment of Uighurs 'Genocide,'" February 23, 2021; Michael R. Pompeo, "Determination of the Secretary of State on Atrocities in Xinjiang," *U.S. Department of State*, January 19, 2021.

tions at the Chinese Communist Party's Centennial," consultations with experts, and open source research and analysis.

Centennial Drives a Triumphalist Narrative

At the July 1 celebration of the centennial of the CCP's founding, General Secretary Xi struck a victorious tone. In his speech, he congratulated the CCP for its contributions to "the rejuvenation of the Chinese nation" over the past century and declared that China had realized the CCP's first centennial goal—building a "moderately prosperous society in all respects" by 2021.¹ General Secretary Xi also expressed confidence in China's future under the CCP, stating that China was "marching in confident strides" toward the second centennial goal—intended to be completed by 2049, the centennial of the founding of the People's Republic of China—of "building China into a great modern socialist country in all aspects."²

General Secretary Xi's speech was the culmination of months of CCP effort to create an overwhelmingly positive narrative surrounding the centennial, devoting special attention to the Party's central role in China's development. In January 2021, Politburo Standing Committee member and propaganda chief Wang Huning met with propaganda officials, where he "demanded all-out efforts on the publicity work for the celebration of the 100th anniversary of the founding of the CCP, and to tell well CCP stories to mark the Party's centenary."³ In April 2021, the CCP Central Committee published a notice outlining propaganda themes for the centennial celebration, with a guiding theme of "forever following the Party."⁴ In addition to stories in media outlets, the CCP also planned Party-themed entertainment and events across the country.⁵ In April 2021, China's National Film Administration required all Chinese cinemas to show and promote at least two approved new or classic propaganda films per week through the end of 2021.⁶ Local officials were expected to encourage attendance.⁷ The directive stated that the film screenings will cultivate "love of party, country, and socialism."⁸

The CCP also intensified efforts to censor and punish any organizations or viewpoints that could harm the Party's image. In March, China's Ministry of Civil Affairs announced a nationwide crackdown on "illegal" nonprofit organizations, including health organizations and religious groups, as part of an effort to create a "good environment" ahead of the centennial celebrations.⁹ In April, the Cy-

*According to a 2017 speech by General Secretary Xi, the second centennial goal includes several objectives, including achieving "material, political, cultural and ethical, social, and ecological advancement" as well as becoming "a global leader in terms of composite national strength and international influence." Xi Jinping, "Secure a Decisive Victory in Building a Moderately Prosperous Society in All Respects and Strive for the Great Success of Socialism with Chinese Characteristics for a New Era," October 18, 2017.

†In April 2021, the Central Office of the CCP issued a list of 80 propaganda slogans for the centennial, 33 of which directly mention the CCP. Slogans included: "Unswervingly listen to the Party, and follow the Party unswervingly!"; "To achieve the great rejuvenation of the Chinese nation, we must uphold the leadership of the CCP!"; and "Unswervingly persist in and perfect the Party's leadership and continue to advance the great new project of Party building!" As the China Media Project notes, such a release of propaganda slogans on a national level had not occurred in the post-1978 era until 2019, when a list of 70 slogans was published to celebrate the 70th anniversary of the founding of the People's Republic of China. Office of Shanghai Spiritual Civilization Construction Committee, "Propaganda Slogans of the Central Committee on Celebrating the 100th Anniversary of the Founding of the Communist Party of China" (中央关于庆祝中国共产党成立100周年的宣传标语口号), April 12, 2021. Translation; China Media Project, "CCP Slogans for 2021," April 14, 2021.

berspace Administration of China launched a hotline where people can report online users who “distort” CCP history, attack CCP leadership or policies, defame national heroes, or “deny the excellence of advanced socialist culture.”¹⁰ Chinese diplomats have also challenged foreign viewpoints critical of China and the Party, responding to even minor criticisms with harsh and often offensive rhetoric.¹¹ In one example of Chinese diplomats’ aggressiveness, Jojje Olsson, a Swedish journalist who has published articles critical of Beijing’s policies in Xinjiang, said in April he had received threats from the Chinese Embassy in Sweden.¹² Communication from an embassy official instructed Mr. Olsson to stop his critical coverage of China “or face the consequences of [his] actions.”¹³

CCP Propaganda Themes

Dubious Claims of Victory in China’s “War on Poverty”

One of the central themes of the centennial propaganda campaign has been Beijing’s assertion that it had eliminated “extreme poverty” by 2020, a goal first announced by General Secretary Xi in 2015.¹⁴ In April 2021, China’s State Council Information Office released a white paper titled “Poverty Alleviation: China’s Experience and Contribution.” The white paper referred to poverty alleviation as “a key task and index of realization of the First Centenary Goal” and claimed unambiguous success in the CCP’s efforts, stating, “China has secured a complete victory in the battle against extreme poverty, eliminating overall and extreme poverty for the first time in its history of thousands of years, and realizing a century-long aspiration of the Chinese people.”¹⁵ Outside experts have identified serious shortcomings in the Chinese government’s methodology, however, and poverty and income inequality remain serious problems in China (see “Poverty and Inequality Undercut Claims of Success” later in this section).

Rewriting the History of the CCP’s COVID-19 Response

The spread of COVID-19 has caused economic disruptions and exposed the weaknesses of the CCP’s governance model. (For more, see “Setbacks Expose Shortcomings in the CCP’s COVID-19 Response” later in this section.) Nevertheless, the CCP has attempted to revise the narrative regarding its management of the outbreak into a positive propaganda story focusing on its efforts to limit domestic spread while attacking any negative coverage, both at home and abroad, that tried to bring light to the pandemic’s origin or China’s early failings. Throughout 2020 and continuing into 2021, Chinese policymakers and media continued to promote a victorious message. As reported cases of COVID-19 fell across China in early 2021, media reports celebrated the apparent return to normal daily life, particularly in Wuhan, where the outbreak began and was most severe.¹⁶

The CCP also continued to exercise harsh censorship of stories that could show China’s policymakers in a negative light. In January, Chinese journalists reported being instructed by editors to avoid mentioning the anniversary of the lockdown in Wuhan, and social media networks reportedly deleted posts with the word “whistleblower.”¹⁷ In June, Radio Free Asia reported Chinese au-

thorities in Guangdong were cracking down on information about a COVID-19 outbreak in the province, including detaining two men for “rumor-mongering” after they posted about COVID-19 on social media.¹⁸

Promoting the CCP as a Development Partner

While most of the centennial propaganda has been for domestic consumption, Chinese policymakers have also promoted a narrative of the CCP’s international achievements. In a December 2020 speech, Chinese State Councilor and Foreign Minister Wang Yi stated, “As we celebrate the historic hundredth birthday of the [CCP], we will better communicate to the world the [CCP]’s track record of governance.”¹⁹ A prominent focus of the CCP’s external messaging has been China’s role as an international development partner. In March 2021, the *People’s Daily* ran a feature summarizing pro-CCP news articles published that month by media outlets in Africa, Asia, Europe, and Latin America.* According to the feature, the topics in these articles—750 in total, printed in 12 languages in 40 countries—included foreign investment in China as well as China’s role in global poverty reduction efforts.²⁰ According to the China Media Project, a research program in partnership with the University of Hong Kong, these propaganda pieces represent the CCP’s massive efforts “to overcome what its leadership sees as a global discourse power deficit.”²¹

Overtaking the United States

Chinese leaders expressed great public confidence in the country’s future and the United States’ continuing decline.²² According to a statement following the October 2020 Fifth Plenum, CCP leaders assess they can continue extending China’s “period of strategic opportunity” during which the country can continue developing and advancing its power and influence while avoiding armed conflict.²³ Foremost among the opportunities the top leadership identified at the Fifth Plenum is a so-called “profound adjustment to the international balance of power,” a phrase the CCP uses to describe the increase in China’s relative international strength.²⁴ At a high-level meeting in January 2021, General Secretary Xi asserted “time and momentum are on China’s side,” with other officials echoing his assessment.²⁵

In keeping with their triumphalist narrative, Chinese leaders and scholars portray the United States as a declining power.²⁶ General Secretary Xi has prominently described the United States as a weakened superpower in a civilizational confrontation with an ascendant China.²⁷ In early 2021, other top CCP leaders began repeating the phrase “the East is rising and the West is declining,” attributing the judgment to General Secretary Xi himself.²⁸ Chinese scholars have reiterated similar views. In April 2021, Zhang Shuhua, head of the Political Research Institute and School of Government Management at the Chinese Academy of Social Sciences, described the

*According to David Bandurski of the China Media Project, while it is unknown whether the CCP directly paid for all these articles, referred to as “media drops,” “the vast majority of the drops would certainly have been paid for, and this would represent a substantial ad buy, running to tens of millions of dollars.” David Bandurski, “Inside China’s Global Media Blitz,” *China Media Project*, March 17, 2021.

United States as “contaminated with serious illness” and “waning with age.”²⁹ He claimed the United States uses democratic values mainly as cover for suppressing China and other states and insists that no matter how hard the United States tries to maintain its global influence, “not only will it not prevail, it will actually accelerate its own decline” as other countries reject its leadership.³⁰ A May Xinhua article entitled “Reasons that a Hegemon Is Bound to Decline” touted a similar theme and insisted the United States is “embarking on the beaten road” to decline.³¹

Ideology Drives the CCP’s Messaging

The CCP’s triumphalism likely derives both from a genuine belief in its own superiority and from the need to legitimize and sustain its one-party rule. In official statements, General Secretary Xi and other Party leaders assert that the CCP is the only political force suited to lead China and will inevitably demonstrate the superiority of its one-party system over liberal democracy. In his speech at the 19th Party Congress in 2017, General Secretary Xi described the so-called “scientific truth of Marxism-Leninism” as “a solution to China’s problems” and claimed that the CCP alone out of all political forces was able to fulfill the Chinese people’s desire for rejuvenation after a history of humiliation by outside powers.³² In his lecture on Party history in February 2021, General Secretary Xi told gathered Party cadres that history reveals “why the Chinese Communist Party is capable, why Marxism works, and why socialism with Chinese characteristics is good.”³³ He also lectured on the need for Party members to understand “how profoundly Marxism has changed China and changed the world.”³⁴

Lacking a representative governance system, the CCP also uses claims about the superiority of its political model to justify its authoritarian rule and views any criticism or admission of failure as a threat to its legitimacy. CCP leaders thus feel obligated to highlight what they consider to be advantages of China’s authoritarian system, even in the face of clear systemic failures. For example, in January 2021, Xinhua described centralized government control as the “fundamental guarantee of China’s systemic advantage” over other countries, echoing similar statements by the *People’s Daily* in March 2020.³⁵ In an interview in July 2021, China’s Vice Foreign Minister Le Yucheng claimed that so-called “brilliant governance achievements” by the CCP constitute “the most convincing democracy.”³⁶ He similarly attempted to dismiss the CCP’s widespread human rights abuses by claiming the Party was not only “blameless” on human rights issues but “should also be awarded gold medals.”³⁷ In December 2020, former Minister of Public Security Guo Shengkun professed that China’s handling of the COVID-19 pandemic demonstrated the superiority of the CCP’s governance system.³⁸ He cautioned, however, that the CCP must continue demonstrating its alleged superiority to maintain the security of the regime, warning that “momentum that is not flourishing is in decline; order that is not advancing is in retreat.”³⁹

Challenges to the CCP's Triumphalist Narrative

The CCP's centennial propaganda campaign masked Beijing's view that it in fact faced a considerably more troubling state of affairs. A range of political, social, and economic problems belie the triumphalist narrative the CCP promoted throughout 2021. The ongoing economic shocks and international scrutiny of the CCP's handling of the COVID-19 pandemic, along with growing international pushback against the CCP's repressive policies in Xinjiang and violation of its commitment to maintain Hong Kong's autonomy, provide perhaps the most jarring contrast with the optimistic image promoted by Beijing. Meanwhile, the CCP perceives itself as engaged in a simultaneous struggle against domestic and foreign threats it believes threaten the regime's stability. As Sheena Chestnut Greitens, associate professor at the University of Texas, noted in her testimony to the Commission, the Party's combative mindset and intense paranoia stem in large part from its assessment that internal and external security threats to the regime are tightly linked and have the potential to exacerbate one another.⁴⁰

Setbacks Expose Shortcomings in the CCP's COVID-19 Response

In March, China's state media ran an interview with a Chinese professor who claimed "China [had] essentially brought [COVID-19] under control, while most of the West failed in implementing stern containment measures."⁴¹ While officially reported COVID-19 case numbers have indeed fallen across China compared with the early stages of the pandemic, China's stated success in suppressing COVID-19 has come at the cost of lockdowns that have resulted in massive economic disruption. In August, a single case of COVID-19 in a worker at Ningbo-Zhoushan Port, the world's third-busiest port, led to an almost two-week closure of a terminal that represented approximately one-quarter of the port's overall capacity.⁴² Authorities have shut down other ports due to COVID-19 infections among workers, including the Yantian Port in Shenzhen, which led to shipping delays of more than two weeks.⁴³ (For more on China's closure of the Yantian Port, see Chapter 2, Section 1, "Year in Review: Economics and Trade.") China's government has also instituted strict travel prohibitions and business closures upon detecting just a few cases in a city. In September, for instance, after detecting a dozen COVID-19 cases in Xiamen, a city with a population of 4.5 million people, Chinese authorities prevented residents from leaving the city in most cases and closed venues, such as libraries, bars, and movie theaters.⁴⁴

If official data are credible, China's shutdown measures have not significantly harmed the economy. Contrary to most economists' expectations, for example, China's export data from August showed 25.6 percent year-on-year growth despite the Ningbo Port closure.⁴⁵ Economists have warned, however, that a continuation of China's extreme lockdown measures will weigh down economic growth. In September, an S&P Global Ratings report highlighted the economic risks that China's zero-COVID policy posed to Chinese companies already struggling with economic headwinds, saying China's zero-tolerance approach may "push rating momentum further into

the negative if outbreaks continue to bring mobility restrictions that disrupt large parts of the country.”⁴⁶

Suppressing the spread of COVID-19 cases in China is made more difficult by the fact that Chinese-produced vaccines have lower efficacy rates than vaccines produced in other countries, such as the United States.⁴⁷ This means that costly and disruptive lockdown measures will remain a necessity, leading some experts in China to question the feasibility of China’s zero-tolerance COVID-19 policy.⁴⁸ Zhang Wenhong, an infectious disease specialist who is viewed by many Chinese citizens as a trusted voice on public health issues in China, said that “the [July] Nanjing outbreak has prompted a national stress test and serves as food for thought for the future of our pandemic response.”⁴⁹ Dr. Zhang acknowledged that China “will have more to learn” on living with the virus.⁵⁰ In some cases, interviews with Chinese experts who question China’s zero-tolerance COVID-19 policy have been censored and removed from Chinese media outlets.⁵¹

International Fallout from Handling of COVID-19

While the CCP has trumpeted its COVID-19 response as a success, international reception has been less laudatory. Ongoing international scrutiny of the origins of COVID-19 and Beijing’s initial handling and coverup of the outbreak continue to bring the CCP’s credibility into question. Chinese policymakers have obstructed international attempts to investigate the origins of COVID-19 in China, including the possibility that SARS-CoV-2, the virus that causes COVID-19, accidentally leaked from a facility in China. In March, the World Health Organization (WHO) released a joint report with a Chinese research team on the origins of COVID-19 based on an investigation in January and February.⁵² While the report concluded that a lab leak was “extremely unlikely,” many observers criticized the Chinese government for not allowing the WHO investigators sufficient access to facilities and data.⁵³ In July, Tedros Adhanom Ghebreyesus, WHO director-general, admitted there had been a “premature push” to rule out a lab leak.⁵⁴ Dr. Tedros also proposed a second phase of the investigation, including audits of laboratories and research institutions in Wuhan, this time publicly asking China “to be transparent and open and cooperate” on further investigations.⁵⁵ Zeng Yixin, the vice minister of China’s National Health Commission, rejected the proposal and said the WHO needed to get rid of “political interference.”⁵⁶ In August, the Office of the Director of National Intelligence released an unclassified summary of its classified report on the origins of the COVID-19 pandemic, which found that Beijing “continues to hinder the global investigation, resist sharing information and blame other countries, including the United States.”⁵⁷ (For more on the report, see Chapter 3, Section 1, “Year in Review: Security, Politics, and Foreign Affairs.”)

China is the predominant global supplier of personal protective equipment (PPE).⁵⁸ In early 2020, as reports of COVID-19 cases in Wuhan emerged, Chinese authorities began aggressively implementing export controls on PPE, including both finished products, such as face masks, and raw materials used to produce equipment. These restrictions contributed to massive PPE shortages in the

United States and in other countries.⁵⁹ The global PPE crisis was exacerbated by skyrocketing prices and China's apparent prioritization of certain countries to receive PPE before others.⁶⁰ Further, independent analysis confirms that a majority of certain U.S. imports of PPE, including from China, failed to meet necessary healthcare safety standards.⁶¹

In addition to imposing export controls, China stockpiled massive amounts of PPE. Before COVID-19 cases were widely reported outside of China, the CCP's United Front Work Department orchestrated a campaign to purchase PPE items in countries around the world and send them to China.*⁶² A September 2021 report by Internet 2.0, an Australian cybersecurity company, also found that a number of Chinese government institutions in Hubei Province, where Wuhan is located, sharply increased procurement of tests used to detect infectious diseases before Chinese authorities acknowledged the outbreak.†⁶³ Test purchases nearly doubled from \$5.7 million (renminbi [RMB] 36.7 million) in 2018 to \$10.5 million (RMB 67.4 million) in 2019, with a sharp uptick beginning as early as May 2019.‡⁶⁴

While China sold the vast majority of the PPE it exported, Beijing also engaged in a diplomatic campaign of donating certain medical equipment to other countries.⁶⁵ These donations often came with political conditions, such as public statements of gratitude, and some recipients have claimed that the Chinese equipment failed to meet basic safety standards.§⁶⁶ In 2021, China's COVID-19 diplomacy efforts have shifted from medical equipment to vaccines. According to data compiled by Bridge Consulting, a China-based consulting firm, China has primarily sold rather than donated vaccines to other countries, selling 1.3 billion doses and donating 71.9 million as of October 4, 2021.⁶⁷ (For more on China's vaccine diplomacy, see Chapter 3, Section 1, "Year in Review: Security, Politics, and Foreign Affairs.") Struggles with the effectiveness of vaccines developed by the Chinese companies Sinovac and Sinopharm have undermined Beijing's external messaging, however. In April 2021, Gao Fu, the director for the Chinese Center for Disease Control and Prevention, said China's government was considering mixing vaccines as a way of dealing with "not high" efficacy rates of existing vaccines.⁶⁸ Mr. Gao later said his remarks were taken out of context and that he was speaking about "vaccines in the world, not particularly for China."⁶⁹

*The United Front Work Department is a Chinese government entity charged with extending the CCP's influence and control over non-Party organizations both domestically and abroad to advance CCP policy objectives. For more on the United Front Work Department, 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.

†The study assessed 1,716 procurement contracts for polymerase chain reaction (PCR) tests from 2007 to the end of 2019 and found "significant and abnormal 2019 purchases of PCR equipment in Wuhan" by the following entities at the following times: the PLA Airborne Corps Military Hospital in May 2019; the Wuhan Institute of Virology in November 2019; the Wuhan University of Science and Technology in October 2019; and the Hubei Province Districts Centers for Disease Control and Prevention between May and December 2019. David Robinson et al., "Procuring for a Pandemic: An Assessment of Hubei Province (China) PCR Procurement Requirements," *Internet 2.0*, September 2021, 2–3.

‡Unless noted otherwise, this section uses the following exchange rate throughout: \$1 = RMB 6.43.

§For more on Beijing's "mask diplomacy" in the beginning of the COVID-19 pandemic, see U.S.-China Economic and Security Review Commission, Chapter 3, Section 1, "Year in Review: Security, Politics, and Foreign Affairs," in *2020 Annual Report to Congress*, December 2020, 347–349.

Countries that have relied heavily on Chinese vaccines have struggled to contain COVID-19 outbreaks. In May 2021, Seychelles experienced a spike in COVID-19 cases, despite being the country with the highest vaccination rate in the world at the time.⁷⁰ Seychelles had used vaccines supplied by Sinopharm for more than 60 percent of the doses administered at the time of the outbreak.⁷¹ Other countries relying on Sinopharm vaccines, including Chile, Uruguay, and Bahrain, also saw outbreaks continue even amid high vaccination rates.⁷² In July, Malaysia's Ministry of Health announced that once its current supply of the vaccine was depleted it would stop using vaccines made by Sinovac and begin using Pfizer vaccines.⁷³ That month, Indonesia and Thailand announced they would begin supplementing Sinovac doses with non-Chinese vaccines in order to improve the efficacy of the immunizations.⁷⁴ In September, the *Wall Street Journal* reported Brazil's federal government had stopped negotiations to purchase an additional 30 million doses of the Sinovac vaccine amid concerns over its efficacy against the Delta variant.⁷⁵

Economic Challenges Jeopardize Long-Term Growth

Throughout 2021, CCP policymakers promoted an optimistic assessment of China's economic trajectory despite persistent problems in its economy. Beijing's confidence is reflected in the 14th Five-Year Plan (FYP) released in March 2021, which sets China's top economic policy objectives for 2021–2025.⁷⁶ In an unusual move, along with the 14th FYP the CCP also released a longer-range plan in March 2021 detailing goals for 2035, including doubling the size of China's 2020 gross domestic product (GDP).^{*} In order to meet this goal, China's GDP would need to grow by an average of 4.7 percent annually through 2035.⁷⁷ This plan also carries an implicit goal of making China the world's largest economy by 2035, demonstrating CCP confidence in China's continued economic growth.⁷⁸ (For more on the 14th FYP, see Chapter 2, Section 2, "The Chinese Communist Party's Economic and Technological Ambitions: Synthetic Biology, New Mobility, Cloud Computing, and Digital Currency.")

Even as the CCP claims China is on track to achieve its economic ambitions, Beijing has admitted that China's economic growth faces increasing headwinds. At the October 2020 Fifth Plenary Session of the 19th Party Congress, CCP leaders offered a frank assessment of many of China's economic challenges:

*Our country still faces acute problems of unequal and insufficient development; reforming critical steps of key domains remains difficult; our innovation capacity does not match the needs of high-quality development; our agricultural foundation is not strong enough; there is a large rural-urban divide; monumental work awaits on environmental protection; and gaps remain in people's livelihoods and in social management.*⁷⁹

^{*}The release of such a long-term goal document is highly unusual, having occurred only one other time in the past 25 years. Damien Ma, "Getting to \$30 Trillion: China Aims for Largest Economy by 2035," *MacroPolo*, March 1, 2021.

“Dual Circulation” Signals Greater Focus on China’s Domestic Economy

Throughout 2021, the CCP has sharpened its emphasis on China’s domestic economy, reflecting Beijing’s concerns about China’s international economic dependence. While CCP policymakers at the 2020 Fifth Plenum discussed domestic economic challenges, they signaled greater concern than in years past about the country’s external economic challenges. According to Yuen Yuen Ang, associate professor of political science at the University of Michigan, compared with the Fifth Plenum in 2015, which previewed the 13th FYP (2016–2020), the 2020 Fifth Plenum paid comparatively less attention to domestic challenges and placed paramount emphasis on COVID-19 and what it views as an increasingly difficult international environment.⁸⁰ Similarly, the 14th FYP notes that “China’s development environment faces profoundly complex changes,” including an international environment that “is growing steadily more complex, with instability and uncertainty increasing significantly.”⁸¹

One of the most visible manifestations of this trend has been the CCP’s increasing invocation of the “dual circulation” strategy first introduced at a Politburo meeting in May 2020. Dual circulation remains vaguely defined but broadly calls for rebalancing China’s economy away from export-led growth and emphasizing China’s domestic consumption (referred to as the “domestic cycle”) over international trade and investment (referred to as the “international cycle”).⁸² Through dual circulation, the CCP hopes to hedge against what it views as an increasingly hostile international environment by making China’s economy less dependent on external sources of growth while making the rest of the global economy increasingly dependent on China. At a high-level meeting in January, General Secretary Xi promoted dual circulation, saying, “Only by being self-reliant and developing the domestic market and smoothing out [the domestic cycle] can we achieve vibrant growth and development, regardless of the hostility in the outside world.”⁸³

Even as the CCP has placed greater emphasis on China’s domestic economy, however, it has continued opening in certain sectors where it wants to attract foreign capital and knowhow. At a press conference in March, Premier Li Keqiang stated that China would “continue to take the initiative to open further” and said, “China will remain a key destination for foreign investment and a big market to the world.”⁸⁴ Jude Blanchette and Andrew Polk of the Center for Strategic and International Studies have described dual circulation as a “hedged integration” strategy, “engaging international capital, financial, and technological markets when advantages can be gained while simultaneously bolstering indigenous capabilities to avoid overreliance on the global economy—due to national security concerns or the vagaries of global economic cycles.”⁸⁵

Poverty and Inequality Undercut Claims of Success

Although claims of eliminating extreme poverty have been crucial to the CCP’s centennial propaganda campaign, the living standards of many Chinese citizens remain low. In May 2020, Premier Li provoked controversy when he said 600 million Chinese citizens lived on a monthly income of less than \$155 (RMB 1,000).⁸⁶ Dr. Ang tes-

tified before the Commission in January 2021 that “while this may seem mundane to audiences outside of China, in effect, what he said deflated triumphalist narratives about China’s superpower rise.”⁸⁷

While General Secretary Xi celebrated China’s supposed eradication of extreme poverty in his centennial speech, throughout 2021 he also frequently spoke publicly about the need to pursue “common prosperity.”* While the concept of “common prosperity” remains ill defined, it entails greater attention to reducing income inequality. An August 2021 meeting of the Central Commission for Financial and Economic Affairs, the CCP’s top economic deliberation body, chaired by General Secretary Xi, signaled greater scrutiny of wealthy Chinese people and companies. A readout of the meeting said China “must reasonably adjust excessive high-income [sectors] and encourage high-income individuals and companies to make more contributions to society.”⁸⁸

The metrics, methodology, and accuracy of the CCP’s assertion of victory over extreme poverty have met with considerable skepticism among outside observers. The Chinese government’s threshold for poverty is set at an annual income of \$622 (RMB 4,000) per person as of 2020, or \$1.70 a day.⁸⁹ While this standard is slightly higher than the World Bank’s threshold for extreme poverty,[†] economists have argued that it is nevertheless too low for a country with China’s aggregate wealth.⁹⁰ A report published in June by Bill Bikales, former lead economist for the UN in China, also found that the CCP’s definition of poverty reduction overlooked significant portions of China’s population. Notably, Chinese policymakers do not count any urban residents as being poor, even those who receive funds from the Minimum Living Standard Assistance Program, China’s largest social assistance program.[‡]⁹¹ The CCP’s poverty reduction tally also did not include households that entered poverty in 2020 as a result of the economic slowdown caused by COVID-19.⁹² Moreover, China’s official poverty statistics are difficult to verify, with “a conspicuous lack of detailed data that would allow an outside observer to confirm or reject the accuracy” of China’s claims of eliminating poverty.⁹³ The report concluded that despite progress in poverty reduction, “China has not eradicated poverty—even extreme poverty.”⁹⁴

*According to analysis by Bloomberg, General Secretary Xi mentioned “common prosperity” 65 times from January to mid-August 2021, more than the previous four years combined. *Bloomberg*, “Xi Doubles Mention of ‘Common Prosperity,’ Warning China’s Rich,” August 22, 2021.

†The World Bank’s threshold for extreme poverty is \$1.90 a day in 2011 dollars in the United States. This is equivalent to \$1.33 in China in 2020 after adjusting for U.S. consumer inflation and purchasing power parity between the United States and China based on World Bank data. Purchasing power parity is a standard measure for determining the amount of money required to purchase the same basket of goods and services across two countries, but economists disagree on the accuracy and the robustness of the measure. World Bank International Development Program, World Bank Development Indicators Database, and Eurostat-OECD PPP Programme, “PPP Conversion Factor, GDP (LCU Per International \$),” *World Bank Group*, September 15, 2021; International Monetary Fund and International Financial Statistics, “Official Exchange Rate (LCU Per US\$, Period Average),” *World Bank Group*, September 15, 2021; International Monetary Fund and International Financial Statistics, “Inflation, Consumer Prices (Annual %),” *World Bank Group*, September 15, 2021.

‡Eligibility for the Minimum Living Standards Assistance Program is determined by local governments based on the cost of living in a given locality. According to Mr. Bikales’s analysis, setting separate urban and rural poverty lines “may be desirable” given the persistent urban and rural income gap. Doing so reveals an urban poverty rate as high as 14 percent, accounting for 120 million urban residents living in poverty. Bill Bikales, “Reflections on Poverty Reduction in China,” June 2021, 34.

Some economists have also noted the most significant cause of poverty reduction in China since 1987 was simply the cessation of destructive economic policies. According to World Bank data, China's per-capita GDP in 1978 was below all other countries but five.⁹⁵ As Dan Rosen of Rhodium Group described in a 2014 review of China's economic growth, "This greatly impoverished position did not come naturally but reflected the immiserating mistakes of Mao-era economic policy."⁹⁶ A 2021 National Bureau of Economic Research study on China's poverty reduction examined the effectiveness of different policies and similarly concluded that "a large share of China's success following Deng's reforms reflected the prior failure of the Maoist economic-policy model."⁹⁷

Despite progress in reducing poverty, income inequality remains a serious problem in China. As of 2019, China's Gini coefficient—a measure of income inequality—was 0.465, according to Chinese government statistics.^{*98} While this is an improvement from the peak of 0.491 in 2008, China's leaders have previously stated that any Gini coefficient above 0.40 is potentially destabilizing.⁹⁹ Income inequality among China's provinces is stark and particularly pronounced between urban and rural areas. In 2019, the average income of China's three wealthiest provinces was 3.5 times higher than that of the three poorest provinces.¹⁰⁰ According to government figures, the average disposable income of the wealthiest 20 percent of Chinese households was approximately \$11,600 (RMB 76,400) in 2019, which is more than ten times the disposable income of the poorest 20 percent of households, at \$1,100 (RMB 7,380).^{†101} As Elizabeth Economy, now senior advisor for China at the U.S. Department of Commerce, wrote in a May 2021 *Foreign Affairs* article, persistent income inequality can thwart efforts to promote consumption in China and "limit economic growth and sustainability, weaken investment in health and education, and slow economic reform."¹⁰²

China's Economic Growth Faces Structural Problems

Although Chinese officials acknowledge difficulties facing China's economy, some of the solutions the CCP has pursued appear likely to exacerbate these longstanding problems. Even as China's government strengthens its control of the economy, it worsens inefficient allocation of capital and dampens the productivity of China's workers. For the CCP, however, economic inefficiency is an acceptable price to pay for ensuring its power is secured and its political objectives are met.

Rising Debt

In the wake of China's stimulus-led recovery from the COVID-19 pandemic, China's debt burden has further increased, stressing a financial system still struggling to manage an unprecedented debt

^{*}The Gini coefficient measures a country's income inequality on a scale of 0 to 1. Higher Gini coefficients indicate greater levels of inequality. A 2018 International Monetary Fund working paper found China's Gini coefficient was among the highest in the world. Sonali Jain-Chandra et al., "Inequality in China—Trends, Drivers and Policy Remedies," *International Monetary Fund Working Paper*, June 2018, 4.

[†]Disposable income in China includes wage and salary income, net business income, net property income, and net transfer income (i.e., government benefits and subsidies). China's National Bureau of Statistics, *Households' Income and Consumption Expenditure in 2020*, January 19, 2021.

expansion following the 2008 global financial crisis.¹⁰³ In 2016, China's financial regulators launched a deleveraging campaign amid fears over growing instability in the financial system. China's debt has continued to balloon, however, particularly over the past year as the CCP used fiscal stimulus measures to address the economic slowdown caused by COVID-19.¹⁰⁴ By the end of the fourth quarter of 2019, China's total credit* reached 262.9 percent of its GDP at \$37.2 trillion (RMB 259 trillion), up from 178.8 percent at the end of 2010, according to data from the Bank for International Settlements.[†]¹⁰⁵ China's debt growth accelerated between the end of 2019 and the end of 2020, rising to 289.5 percent of GDP.[‡] In December 2020, former finance minister Lou Jiwei said government debt would "increasingly become a threat to future fiscal stability and economic security" of China.¹⁰⁶ The Chinese government has continued to emphasize the importance of debt reduction, listing deleveraging as one of the "five major tasks" for the year in the March 2021 government work report.¹⁰⁷ (For more on debt problems in China, see Chapter 2, Section 1, "Year in Review: Economics and Trade.")

Weak Consumption

In December 2020, China's Ministry of Commerce said it would promote dual circulation by increasing domestic consumption, echoing a longstanding goal of CCP policymakers. Nevertheless, Beijing struggled to improve anemic consumption throughout 2021.¹⁰⁸ For decades, China's growth has relied more heavily on investment spending largely financed by the state, rather than consumption. Since 2001, when China joined the WTO, household consumption has fallen as a proportion of China's GDP, indicating the structure of China's economy has become more unbalanced at the expense of households, even as the country grew wealthier.¹⁰⁹ In 2001, household consumption accounted for 45.5 percent of China's \$1.3 trillion (RMB 11.1 trillion) GDP.¹¹⁰ As of 2019, household consumption accounted for 39.2 percent of China's \$14.3 trillion (RMB 98.7 trillion) GDP—a proportion far below the share of economies such as Russia (51.1 percent), India (60.5 percent), Brazil (64.8 percent), or the United States (67.9 percent).[§]¹¹¹ China's relatively low consumption levels reflect higher precautionary savings among Chinese households, a phenomenon that is driven in part by China's limited social safety net.¹¹²

*The Bank for International Settlements' measurement of total credit includes credit to the nonfinancial nonstate sector and to the government sector. It encompasses currency and deposits, loans, and debt securities. The Bank for International Settlements' debt data do not include special drawing rights (SDRs); insurance, pension, and standardized guarantee schemes; or other accounts receivable/payable, which the bank indicates should "be included in any comprehensive picture of government debt." These are not measured in the same way across countries, so their exclusion makes international comparison more reliable. Bank for International Settlements, "Introduction to BIS Statistics."

†While total U.S. debt levels are comparable to China's levels when measured as a proportion of each country's GDP, U.S. total credit grew much more slowly between 2010 and 2019. At the end of 2019, total U.S. debt was 254 percent of U.S. GDP at \$54.3 trillion, up from 248.7 percent at the end of 2010. Bank of International Settlements, "Total Credit to the Non-Financial Sector (Core Debt)—As a Percentage of GDP"; Bank of International Settlements, "Total Credit to the Non-Financial Sector (Core Debt)—In Billions of USD"; Bank of International Settlements, "Total Credit to the Non-Financial Sector (Core Debt)—Domestic Currency Billions."

‡U.S. debt grew more quickly than Chinese debt in 2020, rising to 295.5 percent of GDP at the end of the year. Bank of International Settlements, "Total Credit to the Non-Financial Sector."

§Exchange rate based on World Bank data.

This unbalanced model is related to China's slowing growth in productivity, or the amount of output that can be produced from a given amount of inputs, such as labor and capital. Between 1978 and 2007, a period when China's officially reported GDP per capita grew an average of 8 percent a year, upward of 70 percent of this growth was due to reallocation of resources from low- to high-efficiency sectors and firms.¹¹³ Since 2007, however, GDP growth has mostly been driven by state-directed investment in infrastructure and housing projects, which faces diminishing returns even if it was initially justifiable.*¹¹⁴ The economic recovery from COVID-19 has prolonged this imbalance, as much of China's initial bounce-back was due to heavy government spending and investment in industries such as real estate and infrastructure, while consumption gains have remained weak.¹¹⁵ (For more on slowing productivity growth in China, see Chapter 2, Section 2, "The Chinese Communist Party's Economic and Technological Ambitions: Synthetic Biology, New Mobility, Cloud Computing, and Digital Currency.")

Demographic Decline

According to the results of China's latest decennial census, released in May 2021, China's population was 1.41 billion people in 2020, which is an increase of 72 million from the 2010 census—the slowest decade of population growth since at least the 1960s.¹¹⁶ China's anemic population growth threatens to stall the economy as the workforce shrinks.¹¹⁷ China's population is also aging more quickly than other low- and middle-income countries, leading to higher healthcare costs and pension payments, while the labor force (people aged 16–59) has fallen for eight years in a row.†¹¹⁸ At the National People's Conference in March, Premier Li said China would gradually raise its retirement age over the next five years and try to reach an "appropriate birth rate."¹¹⁹ Prospects for the CCP's ability to reverse the population trends are dim, however. After China raised the birth limit to two children for most families in 2016, the country saw a small increase in birth rates that year, but the rates resumed their decline in 2017.¹²⁰ According to statistics by China's Ministry of Public Security, there were ten million births in China in 2020, a 15 percent decrease from 2019 births.¹²¹ In May 2021, the CCP announced married couples could have up to three children and promised increased government support for child-rearing expenses. Many Chinese people reacted to the announcement with indifference or even anger, noting having three children could result in career setbacks or unbearable financial burdens.¹²² As Julian Evans-Pritchard, senior economist at Capital Economics, wrote, "With small family sizes now well ingrained into the fabric of Chinese

*China currently spends 25 percent of its GDP on construction investment, a higher proportion than South Korea, Japan, or Taiwan spent during the peak of their construction investment in the 1980s (Japan) and 1990s (South Korea and Taiwan). Houze Song, "Is China's Productivity Slowdown Here to Stay?" *MacroPolo*, February 3, 2021.

†China's dependency ratio (the ratio of people younger than 15 or over 64 to the working-age population) has grown from 36.5 in 2010 to 41.4 in 2019, according to World Bank data. This growth has come almost entirely from an increase in people over 64. The proportion of Chinese people over 64 to the working-age population increased from 11 in 2010 to 16.2 in 2019. World Bank, "Age Dependency Ratio—China"; World Bank, "Age Dependency Ratio, Old (% of Working-Age Population)—China."

society, there is little that policymakers can do to turn back the clock.”¹²³

Environmental Degradation

Decades of pursuing economic growth at any cost have left China as one of the most polluted countries in the world. An estimated 80 percent of Chinese citizens are regularly exposed to air, water, and land contaminants and pollution, compromising safety and wellbeing.*¹²⁴ China’s environmental degradation has led to higher healthcare costs, slower economic growth, and increasing complaints among Chinese citizens over quality-of-life issues, such as food contamination and air pollution.¹²⁵ CCP leaders have acknowledged the importance of finding more environmentally sustainable forms of growth, and the 14th FYP sets a goal of “new progress of ecological civilization” as well as more specific environmental targets, such as an 18 percent reduction in carbon dioxide intensity over the next five years.¹²⁶ As of July 2021, China-headquartered firms accounted for 56 percent of global capacity for coal plants planned or under construction, according to Global Energy Monitor, a non-governmental organization.†¹²⁷ In a September speech at the UN General Assembly, General Secretary Xi said China would not build new coal-fired power plants in other countries.¹²⁸ According to Li Shuo, a policy advisor at Greenpeace China, it was unclear whether General Secretary Xi’s pledge applied to the nonstate sector or to projects that have already been proposed, been approved, or begun construction.¹²⁹ Additionally, Mr. Li said it was unclear whether the moratorium applied to the financing of projects in addition to construction.¹³⁰ China’s government has also long failed to deliver meaningful emissions reductions domestically, particularly as local governments continue to rely on coal-powered plants as an inexpensive source of energy, investment, and jobs.¹³¹ This reliance on coal power seriously threatens China’s pledge to reach carbon neutrality by 2060.¹³²

Dependence on Foreign Technology

China remains highly dependent on foreign technology, something that has concerned CCP policymakers for decades. In 2016, General Secretary Xi said, “The fact that core technology is controlled by others is our greatest hidden danger.”¹³³ Lacking domestic capacity, Chinese companies are highly vulnerable to supply chain disruptions, including from U.S. export restrictions. In the second quarter of 2021, Chinese telecom giant Huawei reported a 38 percent year-on-year fall in revenue, the third straight quarter of decline.¹³⁴ Huawei executives have attributed their troubles to U.S. sanctions,

* For example, in 2017 the average exposure of China’s population to particulate matter with a diameter of less than 2.5 micrometers (PM2.5), an important indicator of air pollution, was more than five times the World Health Organization’s guidelines for average annual exposure. At 52.7 micrograms per cubic meter, China’s average PM2.5 exposure was the world’s 20th worst in 2017 out of 194 reporting countries and territories. World Bank, “PM2.5 Air Pollution, Mean Annual Exposure (Micrograms Per Cubic Meter)”; World Health Organization, “Ambient (Outdoor) Air Pollution,” May 2, 2018.

† Planned projects include those announced, pre-permitted, and permitted but not yet under construction. Capacity is measured as gross megawatts of energy output prior to subtracting the capacity used for plant operations. Global Energy Monitor, “Global Coal Plant Tracker,” July 2021.

which restricted the company's access to chips used in many of its phones.*¹³⁵

Despite massive investment, the CCP has fallen far short of its ambition of creating a self-sufficient domestic manufacturing base to meet China's technological needs. The Made in China 2025 Plan, released in 2015, called for Chinese firms to produce 40 percent of semiconductors used in China by 2020 and 70 percent by 2025.¹³⁶ In 2020, Chinese firms produced only 5.9 percent of semiconductors used in China, with foreign-owned companies in China producing an additional 10 percent, according to a research report by market research firm IC Insights.¹³⁷ The CCP's efforts to foster technological self-sufficiency have also highlighted the inefficiency of China's state-led investment approach, with approximately 50,000 new Chinese firms registering as "semiconductor-related businesses" in 2020, nearly quadruple the number of registrants in 2015.¹³⁸ These registrants included companies that had highly questionable connections with semiconductors, including restaurants and real estate developers.¹³⁹ In October 2020, a spokeswoman for China's National Development and Reform Committee said that some firms "with insufficient knowledge of integrated circuit development have blindly entered into projects."¹⁴⁰ The case of Wuhan Hongxin Semiconductor Manufacturing, a company founded in 2017, is a recent illustration of this problem. In March 2021, the Chinese technology company 36Kr reported that Wuhan Hongxin Semiconductor Manufacturing was a fraudulent business whose founder had no expertise in semiconductors.¹⁴¹ The company reportedly received an estimated \$1.9 billion (RMB 12.4 billion) in government investments, bank loans, and contractor deposits before failing.¹⁴² (For more on China's efforts to achieve technological self-sufficiency, see Chapter 2, Section 2, "The Chinese Communist Party's Economic and Technological Ambitions: Synthetic Biology, New Mobility, Cloud Computing, and Digital Currency.")

Domestic Disunity and Flagging Ideological Commitment Threaten Political Control

In addition to its wide-ranging economic difficulties, the CCP faces significant challenges with internal disunity that appear to extend from the lowest-ranked CCP members to the highest levels of the policymaking apparatus.¹⁴³ The CCP top leadership feels a growing sense of insecurity about flagging ideological commitment and Party unity.¹⁴⁴ In October 2020, China's Ministry of State Security Party Committee published a study guide in the *People's Daily* for the third volume of General Secretary Xi's book, *The Governance of China*. The study guide warned the Party to "strengthen political acuity and political differentiation abilities" to "overcome the political paralysis disease where one lacks the will for struggle, cannot smell out the enemy positions, cannot differentiate right and wrong, and does not understand the direction."¹⁴⁵ In a forceful lecture in February 2021, General Secretary Xi identified intra-Party threats

*In May 2020, the U.S. Department of Commerce Bureau of Industry and Security issued a rule restricting exports of U.S. semiconductors to Huawei. This was followed by a rule in August 2020 that closed loopholes in the May 2020 rule, such as non-U.S. chip designers selling semiconductors they had contracted from other firms to Huawei. Ben Thompson, "New Huawei Rules, What Now for Huawei, Apple's Brand and China Inc.," *Stratocracy*, August 19, 2020.

as the biggest risk facing the CCP, warning that “the fortress is easiest to break from the inside.”¹⁴⁶ State media commentary on his speech further described the CCP’s hundred-year history as “the history of our Party ... unceasingly guarding against the danger of being disintegrated and corrupted.”¹⁴⁷

Persistent problems with corruption and questionable commitment from lower-level cadres reveal core problems with the CCP’s claims to superior governance. In his January 2021 work report, Politburo Standing Committee member and Secretary for the CCP’s Commission for Discipline Inspection Zhao Leji described ongoing corruption within the Party as a “political hazard” and bureaucratic formalism as “a stubborn chronic disease.”¹⁴⁸ In February 2021, General Secretary Xi emphasized the importance of adhering to Party centralization and criticized cadres for “not paying attention to implementing the major policies of the CCP Central Committee.”¹⁴⁹ He admitted that many CCP cadres “will not consider showing initiative” and “waste time in lazy governance,” calling increased attention to an ongoing problem in which lower-level officials calculate it is politically safer to do very little rather than take actions for which they may later be blamed.¹⁵⁰ This failure of the CCP system is a direct consequence of political centralization and the central government’s associated tendency to blame lower levels for problems.¹⁵¹ As Jacqueline Deal, president and CEO of the Long Term Strategy Group, testified before the Commission, such widespread unwillingness to take risks or innovate inevitably erodes the state’s adaptive potential and decreases its ability to react to and navigate new situations.¹⁵²

Evidence suggests disagreements even persist between some of China’s most senior leaders. The widely reported conflict between factions associated with General Secretary Xi and Premier Li is one important example of these high-level disputes. As Dr. Ang argued in her testimony before the Commission, Premier Li’s faction continues to advance an image of China as a developing county still lagging far behind the United States, which contradicts General Secretary Xi’s preferred triumphalist narrative.¹⁵³ In September 2020, Yuan Nansheng, vice president of the foreign ministry-affiliated think tank the China Institute of International Studies and former Chinese consul general in San Francisco, warned that interpreting the COVID-19 pandemic as a historic opportunity for China’s rise was a “strategic misjudgment.”¹⁵⁴ His article was censored after going viral on WeChat.¹⁵⁵ In April 2021, an unnamed Chinese government advisor also criticized China’s diplomatic strategy to outside media for being too focused on “internal propaganda” and stressed that China needs to “make more friends, fewer enemies.”¹⁵⁶

Also in mid-April 2021, former Premier Wen Jiabao published an essay memorializing his late mother in a Macau newspaper that mainland media censors interpreted as a criticism of General Secretary Xi and outside observers described as a “remarkable” intervention in current politics by a Party elder.¹⁵⁷ The former premier implied his discontent with General Secretary Xi’s increasingly brutal leadership by including the statement, “In my mind, China should be ‘a country full of fairness and justice,’ and there should always be respect for the will of the people, humanity and the nature of human beings.”¹⁵⁸ After the essay generated a social media storm within China, WeChat

and Weibo stepped in to block users from sharing it, and reprints of the piece were removed from the internet.¹⁵⁹

An additional topic of debate among the CCP leadership is China's policy toward the United States. In December 2020, Xinhua published a sharply worded commentary that poured vitriol on unspecified Chinese officials for taking too soft a stance on relations with the United States.¹⁶⁰ The article's prominence revealed a view among the highest echelons of the CCP that certain officials' desire for a less confrontational approach to the United States posed a sufficient threat to merit public condemnation.¹⁶¹ The author accused these officials of "worshipping America," "kneeling to America," and "bowing their heads and gluing their ears" to the United States.¹⁶² The article further accused them of suffering from ideological "soft bone disease" and having "lost basic judgement" and exhorted readers to "resolutely struggle [against them], pierce through their disguises, eliminate their influence, and not allow wrong values to lead the people's hearts astray."¹⁶³

Expanding Domestic Control Measures

In an effort to maintain political stability in the year of its centennial, the CCP has continued to tighten the political consolidation and domestic control measures that have characterized General Secretary Xi's rule. In March, the National People's Congress passed an amendment that could facilitate General Secretary Xi's selection of a political ally to replace Premier Li when the latter's term as State Council premier expires in 2023.*¹⁶⁴ In 2021, General Secretary Xi escalated his signature anticorruption campaign, which he has used to address issues of corruption as well as consolidate his power and eliminate political rivals. In January, the leadership set an uncompromising tone for its centennial year by executing Lai Xiaomin, former chairman of state-owned asset management conglomerate China Huarong Asset Management, who had been accused of accepting bribes, shattering a previously unwritten rule against execution for bribery or financial crimes.¹⁶⁵ In April, former senior inspector at the CCP's Central Commission for Discipline Inspection Dong Hong was expelled from the Party on allegations of corruption.¹⁶⁶ Seeking to convince the broader public that General Secretary Xi's campaign has been effective, state media has prominently covered stories of officials who voluntarily turned themselves in for corruption.¹⁶⁷ The CCP also used the anticorruption campaign to take down business leaders perceived as threatening.¹⁶⁸

China's leadership has approached the year of its centennial with an increased focus on preemptively identifying and neutralizing perceived political challenges before they can do lasting damage to the

*The amendment vests the National People's Congress Standing Committee with new authority to appoint or remove vice premiers at any time, actions previously requiring the approval of the full National People's Congress, which convenes only once per year. In practice, this adjustment provides a workaround for the current situation in which no sitting vice premiers young enough to be eligible for promotion to premier in 2023 are General Secretary Xi loyalists. Three of the four are nearing or have already reached the Party's unofficial retirement age of 68 for top officials, and the fourth is aligned with the same faction as Premier Li. The amendment creates a new opportunity for General Secretary Xi to orchestrate the installation of favored candidates as vice premiers in sufficient time for them to gain experience before the next premier is chosen in 2023. NPC Observer, "2021 NPC Session: Dissecting the Amendments to the NPC's Two Governing Laws (Updated)," March 12, 2021; Tsukasa Hadano, "China Alters Vice Premier Selection, Paving the Way for Xi Loyalists," *Nikkei Asia*, March 11, 2021.

regime. The communiqué from the CCP's Fifth Plenum in October 2020 called for the strengthening of a "system for preventing and resolving great risks."* According to Dr. Greitens, this means a heavier reliance on surveillance, policing, ideological indoctrination, and other coercive measures of internal control.¹⁶⁹ Around the same time, China's Ministry of State Security Party Committee's study guide in the *People's Daily* warned that the Party needed to "have clear eyes, see things, early, [and] act quickly" to prevent political risks from developing.¹⁷⁰ In January 2021, the Politburo Standing Committee held a meeting with the theme "be wary of dangers in the midst of stability," signaling continued attention to political regime security.¹⁷¹ In his speech on January 15, Chen Yixin, secretary general of the CCP's Central Political and Legal Affairs Commission and a protégé of General Secretary Xi, instructed the Party to "build an impenetrable wall to guard against infiltration, subversion, and destruction from outside enemy forces" and "eradicate the soil of internal forces that influence political security."¹⁷² Also in January, State Councilor and head of the Ministry of Public Security Zhao Kezhi called upon the Party leadership to prioritize "the prevention of political risks" and to "strictly crack down against hostile forces' infiltration, disruption, subversion, and sabotage activities... [in] the battle of defending political security."¹⁷³ The same month, the CCP amended internal regulations to further restrict Party members' ability to publicly express views contrary to those of the central leadership.¹⁷⁴

Increased power consolidation raises the likelihood of policy mistakes and instability. The increasing centralization and repression, combined with a developing cult of personality around General Secretary Xi, make officials less willing to make decisions and thus undermine the Party's ability to deliver on its promises of efficient governance. According to Dr. Deal, the Party's turn toward totalitarian governance has made it more prone to sudden shocks and discontinuities.¹⁷⁵ Tightened information controls within the Party and prohibitions against criticizing leadership decisions reduce channels for feedback and impede the flow of bad news, creating an echo chamber at the highest levels of the Chinese government.¹⁷⁶ According to Dr. Deal, although consolidation increases General Secretary Xi's direct control over policy decisions, the accompanying reduction in critical feedback "increases the likelihood that the state will charge ahead in the wrong direction."¹⁷⁷ Dr. Deal noted in her testimony that China faced this problem during the Great Leap Forward in late 1950s and early 1960s, when then Chairman Mao Zedong's plan for rapid industrialization of China led instead to widespread famine but CCP elites did not dare to confront him with evidence of the policy's failure.¹⁷⁸ Finally, General Secretary Xi has rendered China's government dangerously reliant on him for political direction and created serious risk for the Party by eliminating his political rivals and failing to designate a successor, taking personal control over critical governance institutions, and enshrining his right to remain in power indefinitely.¹⁷⁹

*This represents an intensification of the Party's focus on preventive management of potential instability, which began with the release of General Secretary Xi's national security strategy and associated policy statements in 2014. Sheena Chestnut Greitens, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on U.S.-China Relations at the Chinese Communist Party's Centennial*, January 28, 2021, 5.

Growing International Opposition

The CCP perceives an international environment fraught with challenges for China. Foremost among the challenges identified at the Fifth Plenum is an intensification of geopolitical uncertainty, particularly from the United States and other democracies. According to M. Taylor Fravel, professor of political science at the Massachusetts Institute of Technology, the CCP's most recent uses of the phrase "profound changes unseen in a century"* have emphasized the negative impact of an uncertain and complex international situation strongly associated with intensifying competition with the United States.¹⁸⁰ Chinese leaders believe fallout from the COVID-19 pandemic has further intensified existing uncertainties, creating an international political environment they describe as fraught with "turbulent change."¹⁸¹ A January 2021 commentary in the *People's Daily* captured this sense of unease, warning that the challenges the CCP faced heading into its centennial year were increasingly severe:

*The closer we get to national rejuvenation, the less likely smooth sailing will be, the more risks, challenges, and even stormy seas there will be.... In the past we were able to take advantage of the trend and opportunities were relatively easy to grasp; now we have to go up against the wind... In the past, the general environment was relatively stable, and risks and challenges were relatively easy to see clearly; now global circumstances are turbulent and complex, geopolitical challenges are high and pressing, and there are many submerged reefs and undercurrents.*¹⁸²

The CCP views the United States, even if in decline, as posing a particularly severe challenge to its power. In the months preceding the centennial, China's leaders and political elites reiterated long-standing views that the United States is a dangerous opponent with which China is locked in a long-term ideological and civilizational confrontation. In January 2021, Secretary General Chen warned that China faced a major threat from "containment and oppression" by the United States.¹⁸³ In March, Yuan Peng, vice president of the China Institute of Contemporary International Relations,† publicly stated that the "security dilemma" between the United States and China is "more profoundly fraught than any other rise and fall of great powers in history."¹⁸⁴ In his view, the epochal stakes at play in U.S.-China competition are the result of major ideological and cul-

*This phrase refers to both the benefits and risks of what the CCP perceives to be accelerated global trends toward multipolarity. As Dr. Fravel explained in his testimony before the Commission, the phrase has been a constant refrain for CCP top leadership since General Secretary Xi first introduced it in 2017. M. Taylor Fravel, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on U.S.-China Relations at the Chinese Communist Party's Centennial*, January 28, 2021, 1–6; *Xinhua*, "(Authorized Release) Communiqué of the Fifth Plenary Session of the 19th Central Committee of the Chinese Communist Party" ((授权发布) 中国共产党第十九届中央委员会第五次全体会议公报), October 29, 2020. Translation.

†The China Institute of Contemporary International Relations is a research institution affiliated with China's Ministry of State Security. In addition to his position as vice president, Yuan Peng directs the organization's Institute of American Studies and is known to counsel the Chinese elite on U.S.-China relations. Yuan Peng lectured China's Politburo on national security in December 2020. China-U.S. Focus, "Commentaries by Yuan Peng, China-United States Exchange Foundation," 2021; David Ownby, "Yuan Peng on the Anchorage Summit," *Reading the China Dream*, 2021; William Zheng, "Why Did China's Communist Party Elite Need a Lecture on the U.S.?" *South China Morning Post*, December 14, 2020.

tural factors, such as a “conflict between capitalism and socialism” and a “clash of Eastern and Western civilizations.”¹⁸⁵

In addition to the challenges posed by the United States, China faces growing international pushback against its foreign and domestic policies. By early 2021, Beijing’s assertive actions had caused significant frictions with many of the world’s democracies. Throughout the year of its centennial, the CCP faced growing criticism of its human rights abuses in Xinjiang. In late March 2021, the United States, the EU, Canada, and the United Kingdom each announced sanctions on Chinese entities over human rights abuses in Xinjiang, eliciting a furious response and countersanctions from the Chinese government.¹⁸⁶ (For more on China’s countersanctions and the EU response, see Chapter 3, Section 1, “Year in Review: Security, Politics, and Foreign Affairs.”) Shortly after the initial sanctions against China, lawmakers in Japan, the only G7 country then lacking an explicit legal basis for international human rights sanctions, announced a cross-party effort to craft legislation that would enable them to develop sanctions of their own.¹⁸⁷ By May, Japan’s newly created Nonpartisan Parliamentary Association for Reconsidering Human Rights Diplomacy had released a draft bill that would allow the freezing of assets and denial of entry into Japan for serious violators of international human rights law.¹⁸⁸ The Chinese government believes the United States is responsible for turning other countries against China, and a statement from China’s Ministry of Foreign Affairs in mid-April 2021 accused the United States of “engaging in bloc politics along ideological lines, and ganging up to form anti-China cliques.”¹⁸⁹

CCP Response to Internal and External Threats in Xinjiang and Hong Kong

The Chinese government’s human rights abuses of Uyghurs and other minorities* in Xinjiang, which the U.S. Department of State recognized in 2021 as genocide, and its imposition of authoritarian rule in Hong Kong are stark examples of how the CCP’s fear of mutually intensifying internal and external threats shapes its foreign and domestic policies. The CCP has long feared the potential for Uyghur resistance to its rule in Xinjiang threatening its control over the region and finding support amid the ethnically similar populations in neighboring Central Asian states.¹⁹⁰ Growing international outrage over the CCP’s human rights abuses in Xinjiang and violation of Hong Kong’s autonomy has undermined the Chinese government’s efforts to prevent its policies in the two regions from damaging its relations with the international community.

*Since 2017, the CCP has detained an estimated one to three million Uyghurs, Kazakhs, and other Muslims in prison camps it claims are for “transformation through education” and vocational training. In fact, detainees are kept in extraordinarily poor conditions, forced to denounce their religious beliefs and culture, and subjected to brainwashing, torture, forced sterilization and abortions, and forced labor. 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 Uyghurs in Camps,” *New York Times*, August 10, 2018.

CCP Response to Internal and External Threats in Xinjiang and Hong Kong—Continued

In both cases, the CCP has attempted to address its concerns through harsh measures both at home and abroad. Internationally, it has attempted to fight coverage of its actions with disinformation, sought international support for its policies through the UN, and retaliated against countries, companies, or individuals who have criticized Chinese policies. At the same time, the CCP fears foreign criticism of its actions may influence domestic opinion and foment discontent with CCP control, so it couples its international response with tightened internal controls and a continual stream of propaganda aimed at the domestic audience. Internal-facing propaganda paints China's external critics as unjust slanderers and portrays the defense of China's Xinjiang and Hong Kong policies as a patriotic duty.¹⁹¹ For example, after the Swedish clothing brand H&M spoke out against forced labor in the Xinjiang cotton industry, the CCP retaliated in March 2021 by erasing the company's internet presence in China and using state media to call for a boycott of its products and accuse it of "dancing with anti-Chinese forces."¹⁹² The Chinese government also often targets Uyghurs overseas, either demanding their deportation or harassing them and threatening their family members remaining in China.¹⁹³ In the case of Hong Kong, Beijing has attempted to silence international criticism through extraterritorial law.¹⁹⁴ The National Security Law[‡] that Beijing unilaterally imposed on the territory in June 2020 includes provisions that criminalize any perceived criticism of the Chinese or Hong Kong governments, regardless of where the offending individual or entity resides.¹⁹⁵

The CCP is particularly concerned about these combined internal and external threats in the context of U.S.-China competition.¹⁹⁶ The Chinese government and state media have accused the United States both of seeking to destabilize China from within by supporting Uyghur unrest and of using Xinjiang as a focal point for intensifying China's external confrontation with the United States and its allies and partners.¹⁹⁷ Thus, the CCP

*Pressure from Beijing has not been successful in convincing H&M to change its policies. According to its online statement, H&M does not work with any garment manufacturing factories located in Xinjiang and does not source products from the region. H&M Group, "H&M Group Statement on Due Diligence."

†The Chinese government has employed these tactics to attempt to silence Uyghur activists and journalists living in the United States, including some U.S. citizens. Chinese government officials have targeted these individuals by intercepting communications between them and their family members in China; sending harassing messages through their family members' social media accounts; and physically detaining, interrogating, and threatening their family members in China. Meagan Flynn, "Their Uyghur Relatives Are Imprisoned in China. From Virginia, They Plead for Help," *Washington Post*, March 19, 2021; Michael R. Pompeo, "Harassment of the Family Members of Uighur Activists and Survivors in Xinjiang, China," *U.S. Department of State*, November 5, 2019; Gulchera Hoja, written testimony for Congressional-Executive Commission on China, *Hearing on Surveillance, Suppression, and Mass Detention: Xinjiang's Human Rights Crisis*, July 26, 2018, 25-26; Shohret Hoshur, written testimony for Congressional-Executive Commission on China, *Hearing on Urging China's President Xi Jinping to Stop State-Sponsored Human Rights Abuses*, September 18, 2015.

‡The law's full official title is Law of the People's Republic of China on Safeguarding National Security in the Hong Kong Special Administrative Region.

§Chinese state media also insists on framing international opposition to the CCP's Xinjiang policies in terms of civilizational conflict. A March 2021 editorial in the state-backed tabloid *Global Times* asserts that "[the U.S.] objective is to promote opposition between the entire West and China... [and] it has chosen Xinjiang as a point of conflict." The article also warns in stark

CCP Response to Internal and External Threats in Xinjiang and Hong Kong—Continued

believes U.S. actions with regard to Xinjiang have implications for not only China's domestic stability but also its international standing.¹⁹⁸ The Chinese government has similarly accused U.S. diplomats and journalists of acting as “black hands” supporting the 2019 prodemocracy protests in Hong Kong, and it continues to claim that U.S. policy toward Hong Kong constitutes “interference in China's internal affairs.”¹⁹⁹

China Launches Assertive Measures

The CCP is attempting to push back against these perceived international threats. According to testimony before the Commission by Robert Sutter, professor of practice of international affairs at the George Washington University, the CCP seeks to “weaken a nascent front against China.”²⁰⁰ Top leaders at the October 2020 Fifth Plenum identified the main goal for diplomacy heading into the centennial as “actively construct[ing] a favorable external environment” for China and emphasized China's need for reliable global partnerships to accomplish that goal in the face of competition with the United States.²⁰¹ According to *Global Times* in March 2021, in order to succeed in its “game” against the United States, China must “form more public customs and unspoken rules with the outside world.”²⁰² Another *Global Times* editorial in April 2021 highlighted a string of Chinese diplomatic exchanges with Russia, five Asian countries, six Middle Eastern countries, and four European countries* as efforts to “break America's encirclement.”²⁰³

The CCP has demonstrated a brazen disregard for international norms, responsibilities, and perceptions. Although the Chinese government long sought to avoid provoking harsh responses by painting China as a country of modest ambition abroad, it is increasingly turning to open intimidation to force other countries to do its bidding.²⁰⁴ China has a developed set of coercive tools for pursuing its national interests vis-à-vis other states, including gray zone operations,† economic coercion, and aggressive diplomacy, which it views as having been highly effective in advancing its interests in interstate disputes.²⁰⁵ As Peter Jennings, executive director of the Australian Strategic Policy Institute, noted in his testimony before the Commission, in recent years China's leaders have demonstrated that their “primary objective is to achieve their strategic aims, and it doesn't matter so much to them if... they are... perceived more

terms that China views the issue as nonnegotiable, stating that “the West would need to die in order to change China's mind on this point of Xinjiang policy.” *Global Times*, “Editorial: China and Europe Must Both Be on Alert, Not to Fall into the United States' ‘Supposed Battlefield’” (社评: 中欧都要警惕, 不落入美国的“预设战场”), March 28, 2021. Translation.

*Countries identified by name include Indonesia, Malaysia, the Philippines, Russia, Singapore, and South Korea. The six Middle Eastern countries and four European countries were not individually named. *Global Times*, “Editorial: Encircle China? Who Is Willing to Be a Brick for America Building a Wall?” (社评: 包围中国? 有谁愿给美国砌墙当砖头), *Global Times*, April 1, 2021. Translation.

†Gray zone operations are akin to military activities that leverage nonmilitary tools to achieve competitive objectives by means below the threshold for open war. Gray zone activities often creep incrementally toward their objectives. For more on gray zone operations, see Michael J. Mazarr, “Struggle in the Gray Zone and World Order,” *War on the Rocks*, December 22, 2015.

negatively by countries in the region while they do it.”²⁰⁶ Mr. Jennings further stated that “with Machiavelli, the CCP has concluded that it is better to be feared than loved.”²⁰⁷

CCP leaders, including General Secretary Xi, have encouraged this aggressive stance. In April 2019, Xinhua called on the CCP to “wage an uncompromising struggle against all phenomena, trends of thought, and actions that damage the fundamental interests of the Chinese nation.”²⁰⁸ In September 2019, General Secretary Xi signaled his approval of government officials engaging in public conflicts on China’s behalf when he instructed CCP cadres to “take the initiative to throw themselves into various kinds of struggles,” “dare to show the sword,” and “dare to resolutely struggle in the face of noxious winds and evil influences.”²⁰⁹ In July 2020, Xinhua circulated General Secretary Xi’s instruction that CCP cadres must “rush up at the critical moment” with the spirit to “prevail over every enemy and not succumb to any enemy.”²¹⁰ In a provocative speech in August 2021, the new Chinese ambassador to the United States, Qin Gang, enumerated U.S. leaders’ supposed “wrong beliefs” about China and accused Congress of acting with “no knowledge” when passing legislation on China policy.²¹¹

Economic Coercion Engenders International Pushback

The CCP continues to view China’s massive economy as a source of international political leverage. In lieu of soft power, which it has largely failed to cultivate, the CCP has attempted to use the appeal of China’s markets to influence or even coerce other countries into supporting Beijing’s policy priorities. In testimony before the Commission, Mr. Jennings described this strategy as Beijing’s “money power.”²¹² Countries that frustrate Beijing’s goals have found themselves subject to punitive manifestations of this “money power,” which often includes being cut off from the Chinese market. In a stark example of the CCP’s escalating use of economic coercion, throughout 2020 and 2021 the CCP banned imports of some Australian products and resources after the Australian government in April 2020 supported calls for an independent inquiry into the origins of the Chinese government’s response to the COVID-19 pandemic.²¹³ The Chinese government introduced trade barriers on a range of Australian exports, including wine, barley, and beef.²¹⁴

China’s 14 Grievances against Australia

In November 2020, amid deteriorating China-Australia relations and China’s imposition of trade barriers against Australia, the Chinese Embassy in Canberra sent Australian media outlets a list of 14 grievances China has against Australia.²¹⁵ The list outlined the following practices of the Australian government that the Chinese government deemed damaging to the bilateral relationship:

1. *Foreign investment decisions, with acquisitions blocked on opaque national security grounds in contravention of [the China-Australia Free Trade Agreement].... [S]ince 2018, more than 10 Chinese investment projects have been rejected by Australia citing ambiguous and unfounded “national se-*

China's 14 Grievances against Australia—Continued

- curity concerns” and putting restrictions in areas like infrastructure, agriculture and animal husbandry.*
2. *The decision banning Huawei Technologies and ZTE from the 5G network, over unfounded national security concerns, doing the bidding of the US by lobbying other countries.*
 3. *Foreign interference legislation, viewed as targeting China and in the absence of any evidence.*
 4. *Politicization and stigmatization of the normal exchanges and cooperation between China and Australia and creating barriers and imposing restrictions, including the revoke of visas for Chinese scholars.*
 5. *Call for an international independent inquiry into the COVID-19 virus, act as a political manipulation echoing the US attack on China.*
 6. *The incessant wanton interference in China's Xinjiang, Hong Kong and Taiwan affairs; spearheading the crusade against China in certain multilateral forums.*
 7. *The first nonlittoral country to make a statement on the South China Sea to the United Nations.*
 8. *Siding with the US' anti-China campaign and spreading disinformation imported from the US around China's efforts of containing COVID-19.*
 9. *The latest legislation to scrutinize agreements with a foreign government targeting towards China and aiming to torpedo the Victorian participation in [the Belt and Road Initiative].*
 10. *Provided funding to anti-China think tank for spreading untrue reports, peddling lies around Xinjiang and so-called China infiltration aimed at manipulating public opinion against China.*
 11. *The early dawn search and reckless seizure of Chinese journalists' homes and properties without any charges and giving any explanations.*
 12. *Thinly veiled allegations against China on cyberattacks without any evidence.*
 13. *Outrageous condemnation of the governing party of China by MPs and racist attacks against Chinese or Asian people.*
 14. *An unfriendly or antagonistic report on China by media, poisoning the atmosphere of bilateral relations.*

Following the release of the list, a Chinese official said, “China is angry. If you make China the enemy, China will be the enemy”; he also stated it “would be conducive to a better atmosphere” if Australia stopped the 14 practices China specified.²¹⁶ Australian politicians roundly criticized the list, with Australian Prime Minister Scott Morrison saying, “Our values are not up for trade, our democracy is not up for trade, and our sovereignty is not up for trade.”²¹⁷

The CCP's threats against Australia, however, have had limited effect and in some cases have proven counterproductive to Beijing's goals. After China restricted certain Australian exports in 2020,

Australian sellers were generally able to divert their products to other markets. Between late 2020 and April 2021, exports of affected goods fell in annualized terms by \$10 billion to China but rose by \$14 billion to other markets, including Saudi Arabia and India.²¹⁸ In April 2021, Roland Rajah, director of the International Economy Program at Australia's Lowy Institute, commented that "the most remarkable aspect of the experience so far is just how ineffective China's attempted trade coercion has been."²¹⁹ Similarly, after China's March 2021 announcement that it would suspend imports of pineapples from Taiwan, Taiwan's Council of Agriculture recorded a surge in pineapple demand, both in domestic sales and export orders.²²⁰

In practice, it appears China's high-profile trade attacks have failed to induce target countries to change their policies to the CCP's liking. On the contrary, China's economic coercion has contributed to a growing backlash among its economic partners. In March 2021, Secretary of State Antony Blinken said during a visit to Tokyo, "We will push back, if necessary, when China uses coercion and aggression to get its way."²²¹ While concrete international action has remained limited so far, as China's coercive measures become more widespread, countries may respond in ways that harm China's economic interests. In April, Australian Foreign Minister Marise Payne announced the cancelation of two contracts that the state of Victoria had signed in 2018 and 2019 to participate in the Belt and Road Initiative, saying the agreements were "inconsistent with Australia's foreign policy or adverse to our foreign relations."²²² In August, Australian Prime Minister Scott Morrison proposed a strategic economic dialogue with the United States to help guard against "economic coercion."²²³ In September, Australia, the United States, and the United Kingdom jointly announced the formation of a trilateral security pact, known as AUKUS, as well as an agreement under which Australia would receive access to technology for nuclear-powered submarines.²²⁴ (For more on AUKUS, see Chapter 3, Section 1, "Year in Review: Security, Politics, and Foreign Affairs.")

In some instances, Beijing's use of China's economic might to gain political leverage has taken less overtly confrontational and more subtle forms—making a coordinated response more difficult. China's international lending, for instance, is often accompanied by political conditions that are not commonly seen among other international lenders. A March 2021 study by AidData, the Center for Global Development, the Peterson Institute for International Economics, and the Kiel Institute for the World Economy analyzing 100 agreements between Chinese state-owned enterprises (SOEs) and foreign governments found many of the contracts contained clauses that could give the Chinese government substantial political leverage over the borrowers. These included cross-default clauses, which, while common in commercial lending settings, are comparatively rare in bilateral and multilateral loans.* The cross-default clauses were also

*Cross-default clauses allow the lender to terminate the loan and demand full repayment if the borrower defaults on any loans to other lenders. The study compared Chinese development financing contracts with a benchmark sample of bilateral and multilateral development financing contracts and found that cross-default clauses were present in approximately half of bilateral contracts and only 10 percent of multilateral contracts. In the sample set of 100 Chinese contracts, 98 contained cross-default clauses. Anna Gelpern et al., "How China Lends: A Rare Look into

broad enough to potentially apply to political developments in the borrowing country, such as clauses that could be triggered if the debtor took action adverse to “any PRC entity” in the borrowing country. The study also found that some of the contracts could allow China to demand accelerated loan repayment in the event of a “political disagreement,” though Chinese lenders do not yet appear to have exercised this sweeping power.²²⁵ (For a case study of China’s international financing practices, see Chapter 1, Section 2, “China’s Influence in Latin America and the Caribbean.”)

As China’s economic growth slows, however, its “money power” and ability to engage in economic coercion may face new limitations. Even before the COVID-19 pandemic, for instance, China’s overseas lending had dropped considerably. According to a 2020 study by Boston University, the outbound lending commitments from the China Development Bank and the Export-Import Bank of China, China’s two main policy banks, dropped from \$75 billion in 2016 to \$3.9 billion in 2019.²²⁶ This slowdown has largely been driven by domestic economic constraints, but it also reflects pushback against China’s lending practices by some debtor countries.²²⁷

Implications for the United States

After one hundred years of the CCP’s existence, China has become a formidable global power with a dynamic economy and growing ability to shape key aspects of world affairs. Still, in the year of its centennial, CCP messaging has been inconsistent as official proclamations of triumph coexist alongside expressions of trepidation. A pressing need to defend itself from what it perceives as mounting internal and external challenges compels the CCP to acknowledge its concerns and attempt to address them. At the same time, however, the CCP’s political inability to admit failure and genuine belief in its own superiority limit China’s ability to address those same challenges. As a result, the CCP views itself as destined to succeed yet threatened from all sides and from within. It perceives an environment that is both ripe with opportunity to expand its own influence and also unstable and increasingly hostile. Rather than reconcile these two assessments by allowing one to temper the other, the CCP pursues both simultaneously by insisting on the Party’s infallibility while attempting to address some of its many shortcomings.

The CCP’s combined triumphalism and paranoia elevate the likelihood of risky decisions, aggression, and miscalculation by Beijing and necessitate U.S. vigilance. The leadup to and celebration of the CCP’s centennial heightened Chinese government attention to long-term political goals, such as immunity from criticism and a leading international role for China, that it considers crucial for its own security but run directly counter to U.S. interests. In his speech on Party history in February 2021, General Secretary Xi illustrated this urgency by warning CCP cadres, “At the moment of this critical juncture, [the Party] cannot tolerate any pause, hesitation, or waiting to see.”²²⁸

Regardless of whether future developments cause the Chinese government to feel more or less secure, it will likely react by go-

¹⁰⁰ Debt Contracts with Foreign Governments,” *Aid Data*, Kiel Institute for the World Economy, Peterson Institute for International Economics, March 2021.

ing on the offensive. Beijing's belief that international trends create opportunities for China to advance may lead to an escalation of assertive behavior. At the same time, the CCP's paranoia incentivizes it to react harshly to perceived threats, also resulting in a more aggressive posture toward the outside world. As Dr. Deal testified before the Commission, the CCP's hypersensitivity to negative developments and perceived "need to reverse negative momentum" have historically resulted in a record of "striking out at moments when it perceives sudden shifts in the tide against it."²²⁹ The high political stakes of the centennial have further increased the Chinese government's focus on preempting and countering potential threats to its regime security, raising the likelihood of overly defensive reactions to both internal developments and U.S. and other foreign countries' actions. Responses to both success and failure are amplified by General Secretary Xi's increasing appetite for risk.²³⁰

The CCP's efforts to sow division between the United States and its allies and partners further challenge U.S. interests. Beijing has attempted to leverage its economic relationships with advanced democracies to push for compliance with its agenda and signal to other countries that defying Beijing carries a price. In doing so, Beijing has at times taken advantage of other countries' limited mechanisms for coordination against economic coercion by framing issues that challenge the interests of all democratic states as bilateral disputes. This has complicated efforts by the United States and other countries to develop common responses with its affected partners.²³¹ As CCP leaders perceive an increasingly fraught international environment, such attempts to impede coordination between the United States and other democracies will likely intensify.

Economically, China's increased emphasis on self-sufficiency will lead to continued difficulties, such as discriminatory treatment for U.S. firms hoping to participate in China's market. To be certain, this trend is not monolithic, and the Chinese government will continue to open discrete sectors of its economy when it judges doing so will benefit its interests. In those cases, some U.S. businesses may benefit from entering China's market. Even if U.S. firms nominally gain more access to China, however, the premium the CCP places on economic stability will lead to policymakers exercising increasing control over larger aspects of China's economy. State intervention in China's economy means U.S. businesses operating in China will face various restrictions that place them at a disadvantage relative to Chinese firms. Because the CCP views state control of the economy as an increasingly important part of economic policymaking, the United States and other economic partners of China should not expect to negotiate any meaningful structural changes to China's economy, even if doing so would ultimately result in a more dynamic Chinese market.

At the same time, China's government seeks to play its foreign trade partners against each other to prevent an emergence of coordinated pushback against China. As the European Parliament's decision to suspend discussions on the Comprehensive Agreement on Investment shows, the CCP's attempts to use its markets as leverage over other countries have limits and can backfire. Nevertheless, the recent conclusion of the Regional Comprehensive Eco-

conomic Partnership and China's formal application to join the Comprehensive Progressive Trans-Pacific Partnership demonstrate that China remains determined to increase its presence in international economic agreements. In the long term, China's increasing use of economic leverage could disrupt U.S. economic relations with many traditional U.S. economic partners and challenge U.S. influence in the international economic system.

The importance the CCP has placed on its centennial year has introduced a sense of urgency into the CCP's approach to both domestic and international affairs that is likely to persist. China's leadership is increasingly uninterested in compromise and willing to engage in destabilizing and aggressive actions in its efforts to insulate itself from perceived threats. The United States must confront an increasingly combative CCP that will push back against actions taken by the United States and its allies and partners that promote an open, rules-based international order. CCP leaders appear to have decided from recent experience that progressive risk-taking can pay off. They will likely continue escalating with this approach.

ENDNOTES FOR SECTION 1

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SECTION 2: CHINA'S INFLUENCE IN LATIN AMERICA AND THE CARIBBEAN

Key Findings

- China has expanded and diversified its relationships with Latin American and Caribbean countries over the past decade. Although economic interests are the main driver for its activities in the region, China is devoting increasing attention to pursuing political and to some degree security objectives, including gaining international support for its diplomatic initiatives, pressuring countries to sever relations with Taiwan, and deepening military relationships.
- China employs a whole-of-government approach in its relationships with Latin American and Caribbean countries, often bypassing national governments to advance its interests at the local level. Beijing's strategy coordinates efforts by China's official government representatives, such as embassies and political influence entities, state and nonstate companies, and quasi-governmental entities, to influence decisions across unrelated issue areas. China adapts its approach to individual countries' political and social structures, cultivating relationships with national governments, subnational governments, and nongovernmental organizations (NGOs).
- China's economic importance and targeted political influence encourage Latin American and Caribbean governments to make domestic and foreign policy decisions that favor China while undermining democracies and free and open markets. China's position as a top trading partner and bilateral lender for many countries gives it economic and political leverage. Substantial foreign direct investment from China is a tool of influence, as accumulation of assets affords Chinese companies the power to impact local and domestic prices in key sectors, such as minerals and energy.
- China has closely collaborated with authoritarian regimes in the region, such as the Maduro regime in Venezuela, and enabled democratic backsliding in other countries, such as Ecuador and Bolivia. By selling digital and surveillance technologies to regimes in the region, China has enabled them to surveil and repress their populations, critics, and opponents. China has also provided significant financial support to these governments, thereby extending them an economic lifeline when they were cut off from international financial markets.
- Although China's demand for commodities has boosted regional economic growth, it has also encouraged its trading partners' overreliance on natural resource extraction at the expense of higher-value-added activities. Many countries voluntarily com-

promise their own environmental, social, and governance regulations to attract Chinese investment. Due to the region's weak institutions, China's expanding influence may also facilitate corruption and increase risks to countries' resource security and national interests.

- China aspires to deepen its military engagement in Latin America and the Caribbean, although its current security activities in the region are limited in scope. Beijing has previously leveraged its economic and political influence in Argentina to establish a space tracking station operated by the People's Liberation Army (PLA). Influence gained by financing and constructing potential dual-use infrastructure, such as ports, and supporting space programs throughout the region positions China to further increase its military presence in the future.

Recommendations

The Commission recommends:

- Congress recognize that Chinese economic, diplomatic, and security initiatives in Latin America and the Caribbean are robust and growing and demand a comprehensive response. Steps Congress should consider include:
 - Strengthening U.S. competitiveness in building out Latin American and Caribbean infrastructure through the expansion of funding mechanisms, including but not limited to low-interest loans from U.S. lending institutions to U.S. companies willing to invest in targeted critical infrastructure projects in high-priority Latin American and Caribbean countries;
 - Supporting the deployment of novel coronavirus (COVID-19) vaccines in Latin American and Caribbean countries, including by requiring a public report issued by the U.S. Department of State every six months outlining vaccine deployment to countries in the region; and
 - Expanding educational exchanges between the United States and Latin America and the Caribbean, including by expanding partnership agreements between U.S. universities and higher education institutions in Latin American and Caribbean countries.
- Congress support Latin American and Caribbean countries in the establishment of inbound foreign investment review processes for sectors critical to national security and economic security by doing the following:
 - Expanding the support given by the U.S. government to governments of U.S. allied and partner countries to establish inbound foreign investment review processes similar to those of the Committee on Foreign Investment in the United States (CFIUS) established in the Foreign Investment Risk Review Modernization Act within Title XVII of the National Defense Authorization Act for Fiscal Year 2019. Support for these governments will expand upon existing information exchange processes to include provision of technical assistance and personnel training.

- Requiring the U.S. Department of State, in conjunction with CFIUS, to provide an annual report to Congress for three consecutive years after enactment of this provision. The report shall outline the progress and outcomes of its engagement with Latin American and Caribbean countries to establish their own inbound foreign investment review processes.
- Congress require the director of national intelligence, in conjunction with the U.S. Department of State and U.S. Department of Defense, to produce an unclassified report, including a classified annex, documenting Chinese investment in port infrastructure in the Western Hemisphere and detailing any known Chinese interest in establishing a military presence at or near these ports. The report should include an assessment of China's current and potential future ability to leverage commercial ports for military purposes and the implications for the United States.
- Congress enact legislation directing the U.S. Development Finance Corporation, U.S. Agency for International Development, U.S. Trade and Development Agency, Millennium Challenge Corporation, and other executive agencies responsible for disbursing foreign aid and development assistance to require within all aid-related applications mandatory disclosures on debt the applicant may owe to Chinese entities, including loan amounts, duration, rates, and contractual provisions.
- Congress enact legislation requiring the U.S. government authorities identified in the Maritime Security and Fisheries Enforcement (SAFE) Act within section 3544 of the National Defense Authorization Act for Fiscal Year 2020 to create a partnership with coastal Latin American states, similar to the Oceania Maritime Security Initiative and the Africa Maritime Law Enforcement Partnership. This partnership would assist coastal Latin American states in maritime domain awareness, with a particular focus on increasing partner countries' capacity to combat illegal, unreported, and unregulated fishing by Chinese vessels in the region.

Introduction

Over the past decade, China has significantly deepened and diversified its activities in Latin America and the Caribbean. China's primary interests in the region have always been economic in nature and include access to commodities and emerging markets. As it has become more embedded within the region, however, China has devoted increasing attention to promoting its political and security interests.

Given the diversity of markets, resources, governments, and geographies across the region, China's approach varies by country and subregion. China's partners in Latin America fulfill Chinese demand for commodities. In Caribbean countries, Beijing cultivates ties to support its diplomatic agenda on issues such as defending itself against criticism of its human rights abuses. Meanwhile, China's loans and investment in the Caribbean deepen its influence in a strategic subregion where it has built potential dual-use port infrastructure and is attempting to expand security engagement. In pur-

suit of its goals, China has cultivated relationships in Latin American and Caribbean countries at all levels of government, across the political spectrum, and with nongovernmental actors.

China's deepening relationships with select Latin American and Caribbean countries have reinforced trends that run counter to U.S. values and interests. Beijing's provision of loans and surveillance technologies to authoritarian regimes and countries with nondemocratic tendencies strengthens these regimes' abilities to control and suppress their populations and political opponents. To attract more Chinese investment, governments in the region have undermined their own environmental, social, and governance protections, while Chinese trade and investment disincentivizes industrialization for regional economies. In some countries, the negative impacts of Chinese engagement have generated pushback among civil society organizations and local communities; however, governments have been hesitant to restrict Chinese investments. Finally, China has leveraged its economic influence to establish a PLA-controlled satellite tracking facility and deepen its security relationships in the region more broadly.

This section explores China's growing influence in Latin America and the Caribbean and assesses its implications for the United States. It first examines China's whole-of-government approach to engagement with Latin American and Caribbean countries and its role as a supporter of authoritarianism in the region. The section then assesses China's growing economic ties and resulting leverage over countries in the region, as well as its approach to securing access to commodities and developing supporting infrastructure. Finally, it discusses China's expanding security relationships and construction of dual-use infrastructure. This section draws from the Commission's May 2021 hearing on "China in Latin America and the Caribbean," consultations with policy experts, and open source research and analysis.

China Pursues an Integrated Strategy

China carries out a whole-of-government approach to its relationships with countries in the Latin American and Caribbean region. Beijing's strategy coordinates efforts by China's official government representatives, such as embassies, and political influence entities,* state and nonstate companies, and quasi-governmental entities, to advance China's interests. China adapts its approach to individual countries' political and social structures, often bypassing national governments to advance its interests at the local level. Through trade, loans, and political backing, China has also provided an economic lifeline to authoritarian regimes and supported democratic backsliding in the region.

Increasing Attention to the Region

China's role in Latin America and the Caribbean has become less constrained and increasingly visible in recent years. Factors driving this evolution include an increasing demand from Latin American and Caribbean countries for Chinese trade and investment and a perception in Beijing that the United States has decreased its attention to the region.¹ Growing authoritarian and nondemocratic ten-

*Chinese Communist Party-affiliated organizations with a role in China's overseas influence activities include the International Liaison Department, the United Front Work Department, and the Chinese People's Association for Friendship with Foreign Countries.

dencies among certain Latin American and Caribbean regimes also facilitate deeper Chinese engagement.² Additional trends driving China's heightened attention to Latin America and the Caribbean are common to other regions of the world, such as China's growing pursuit of foreign opportunities for economic growth and the Chinese government's growing determination under General Secretary of the Chinese Communist Party (CCP) Xi Jinping to gain influence as a leading world power.³

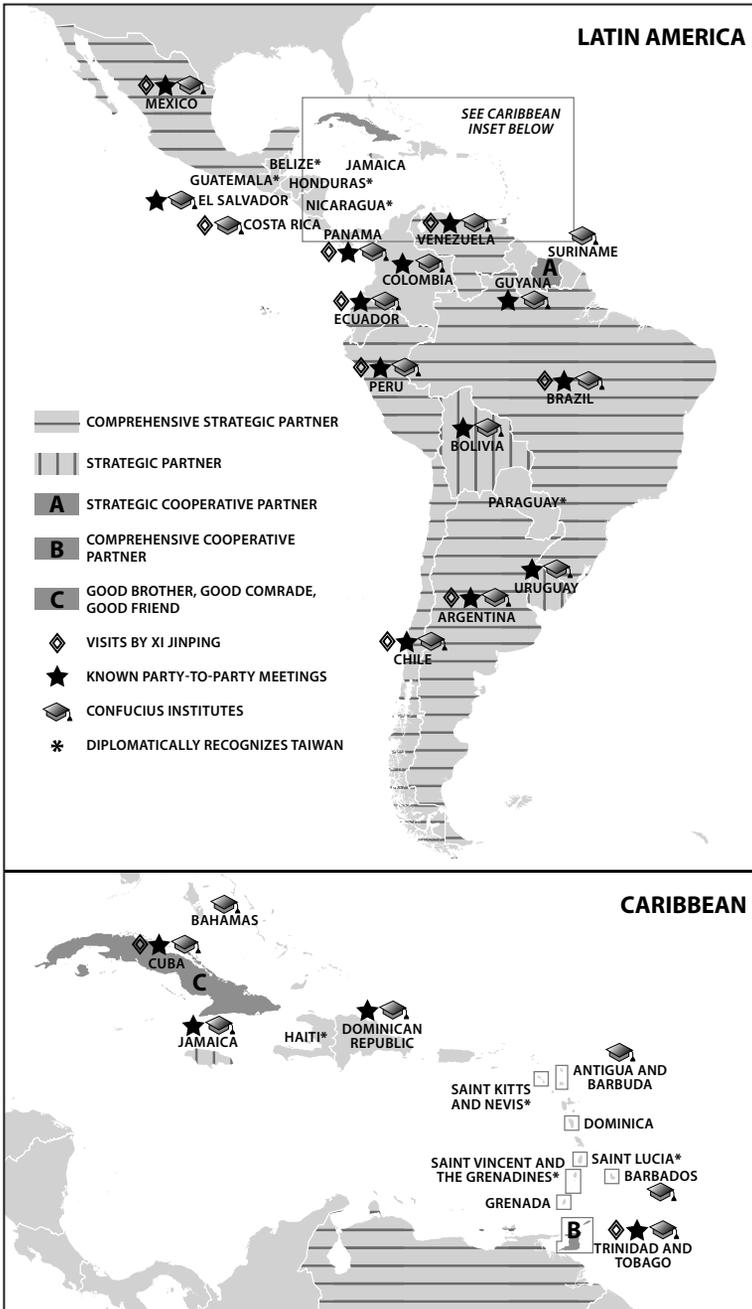
As it does in other parts of the world, China uses diplomatic partnership labels to reflect which countries it prioritizes in its engagement.⁴ Between 2012 and 2016, China upgraded its relationships with Brazil, Peru, Mexico, Argentina, Venezuela, Ecuador, and Chile to "comprehensive strategic partnerships," the highest rank applied to any country in the region though lower than the rank accorded to some countries in Africa and Asia (see Figure 1).⁵ These countries have significant economic, political, and security ties with China and rank among Beijing's top partners in the region for commodity-related trade and investment, party-to-party engagements, space cooperation, and other security activities.⁶ These comprehensive strategic partners also account for 7 of the 11 countries General Secretary Xi has visited in the region since coming to power in 2012, with Argentina and Brazil each visited twice.⁷

China has added Uruguay, Bolivia, and Jamaica as "strategic partners" since 2016.⁸ Bolivia ranks among China's favored security partners and is a potentially important source of lithium for China's growing electric vehicle industry.⁹ Jamaica, China's newest strategic partner, is the first Caribbean country to receive the designation.¹⁰ Taken together with Suriname and Trinidad and Tobago, which hold partnership designations at lower levels,[†] Jamaica's promotion represents a broadening of China's diplomatic attention beyond the large commodity-exporting countries of Latin America. China also has a longstanding relationship with Cuba and frequently refers to the country as a "good brother, good comrade, good friend" in reflection of their shared political system.¹¹

*Although the exact meaning of China's partnership ranking is unclear, according to an explanation by former Premier Wen Jiabao, the word "comprehensive" indicates cooperation across economic, technological, cultural, and political domains and in both bilateral and multilateral settings, while "strategic" indicates cooperation that is stable over time and not hindered by differences in ideology and political systems. Four of China's seven comprehensive strategic partners in Latin America previously held the slightly lower-ranking title of "strategic partner." China designated Brazil its first "strategic partner" in the region in 1993. China elevated Argentina to this same level in 2004, and did the same for Peru in 2008 and Chile in 2012. No Latin American or Caribbean country has yet been granted the higher-level designation "comprehensive strategic cooperative partner" used in other regions, such as Africa and Asia. Margaret Myers and Ricardo Barrios, "How China Ranks Its Partners in LAC," *Dialogue*, February 3, 2021; *South China Morning Post*, "Quick Guide to China's Diplomatic Levels," January 20, 2016; Feng Zhongping and Huang Jing, "China's Strategic Partnership Diplomacy: Engaging with a Changing World," *European Strategic Partnership Observatory*, June 2014, 18.

† Since 2019, China has referred to its relationship with Suriname as a "strategic cooperative partnership," a label Mexico possessed before its promotion to the higher level of "comprehensive strategic partnership." China has referred to its relationship with Trinidad and Tobago as a "comprehensive cooperative partnership" since 2013, when General Secretary Xi visited the country on his first trip to the region after taking power. Margaret Myers and Ricardo Barrios, "How China Ranks Its Partners in LAC," *Dialogue*, February 3, 2021; China Foreign Ministry, *China's Relations with Trinidad and Tobago* (中国同特立尼达和多巴哥的关系), February 2021. Translation; *Xinhua*, "China and Suriname Announce the Establishment of Strategic Cooperative Partnership Relations" (中国和苏里南宣布建立战略合作伙伴关系), November 27, 2019. Translation; *CGTN*, "China, Suriname Elevate Ties to Strategic Partnership of Cooperation," November 27, 2019; Feng Zhongping and Huang Jing, "China's Strategic Partnership Diplomacy: Engaging with a Changing World," *European Strategic Partnership Observatory*, June 2014, 18.

Figure 1: China's Main Diplomatic Partners in Latin America and the Caribbean



Note: Data for “Known Party-to-Party Meetings” are collected for the years 2019–2021.
 Source: Various.¹²

China Uses Influence for Political Gain

The CCP has worked to secure diplomatic support from Latin American and Caribbean countries for its human rights abuses and defiance of international law.¹³ In 2016, when Beijing refused to recognize the outcome of arbitration between China and the Philippines on China's illegal claims in the South China Sea, Dominica, Grenada, and Venezuela publicly supported China's position.¹⁴ In 2019, Bolivia, Cuba, and Venezuela signed a joint letter to the UN Human Rights Council and UN High Commissioner for Human Rights defending China's human rights abuses in Xinjiang.¹⁵ A year later, Cuba, Dominica, Grenada, Nicaragua, and Venezuela supported a similar joint statement at the UN.¹⁶ Also in 2020, a UN statement supporting China's unilateral imposition of the National Security Law in Hong Kong was backed not only by authoritarian regimes in Cuba, Nicaragua, and Venezuela, but also by Antigua and Barbuda, Dominica, and Suriname.¹⁷ Finally, in March 2021 General Secretary Xi expressed appreciation to the prime minister of Trinidad and Tobago for its support to Beijing on Hong Kong, Xinjiang, and Taiwan.¹⁸

China signaled its increasing attention to Latin America and the Caribbean by extending its Belt and Road Initiative (BRI) to the region in 2017.¹⁹ Although Latin America and the Caribbean have been among the last regions to participate in the initiative, as of 2021, 19 of the 24 Latin American and Caribbean countries that recognize China have signed on* in hopes of bringing in Chinese investment.²⁰ Since the official launch of BRI in the region, however, there has not been a noticeable uptick in Chinese investment.²¹ Instead, China has labeled many of its preexisting projects in the region as now being part of BRI.²² Nevertheless, Beijing has heavily promoted BRI branding in the region to deepen its economic and geopolitical influence.

Latin America and the Caribbean is important to China's efforts to isolate Taiwan, as 9 of Taiwan's 15 remaining diplomatic partners are in the region.†²³ Almost immediately after ending an eight-year tacit truce in its diplomatic contest for recognition with Taiwan in 2016,‡ Beijing leveraged economic agreements to induce Panama to

*Nineteen Latin American and Caribbean countries have signed a Memorandum of Understanding with China to signify their joining BRI. These countries include Antigua and Barbuda, Barbados, Bolivia, Chile, Costa Rica, Cuba, Dominica, the Dominican Republic, Ecuador, El Salvador, Grenada, Guyana, Jamaica, Panama, Peru, Suriname, Trinidad and Tobago, Uruguay, and Venezuela. Latin American and Caribbean countries that recognize the People's Republic of China but have not joined BRI include Argentina, the Bahamas, Brazil, Colombia, and Mexico. Green Belt and Road Initiative Center, "Countries of the Belt and Road Initiative (BRI)," January 2021; Embassy of the People's Republic of China in the Commonwealth of Dominica, *Chinese Government and Dominican Government Sign Memorandum of Understanding on Jointly Building the "Belt and Road"* (中国政府与多米尼克政府签署共建“一带一路”谅解备忘录), July 17, 2018. Translation.

†Latin American and Caribbean countries that recognize Taiwan include Belize, Guatemala, Haiti, Honduras, Nicaragua, Paraguay, Saint Kitts and Nevis, Saint Lucia, and Saint Vincent and the Grenadines. Taiwan's Ministry of Foreign Affairs, *Diplomatic Allies*, 2020.

‡Between 2008 and 2016, Beijing and Taipei operated under a tacit understanding not to use financial incentives to compete for recognition from one another's diplomatic partners. This eight-year period coincided with the presidency of Ma Ying-jeou in Taiwan, a member of the Kuomintang Party who sought to improve relations with Beijing. Following the January 2016 election of Tsai Ing-wen from the Democratic Progressive Party, China's leaders became more concerned about preventing Taiwan independence. Two months later, Beijing ended the truce by establishing relations with the Gambia in March 2016. Matthew Southerland, "As Chinese Pressure on Taiwan Grows, Beijing Turns Away from Cross-Strait 'Diplomatic Truce,'" *U.S.-China Economic and Security Review Commission*, February 9, 2017, 1; Ben Blanchard and J.R. Wu, "With Gambia

switch diplomatic recognition in 2017, followed by the Dominican Republic and El Salvador in 2018.²⁴ In testimony before the Commission, R. Evan Ellis, research professor at the U.S. Army War College, argued that although China has benefitted economically from establishing ties with countries that switched recognition from Taiwan, the countries themselves saw limited lasting trade benefits.²⁵ Beijing has attempted to use the promise of assistance in managing the COVID-19 outbreak as leverage to pressure Paraguay and Honduras to terminate diplomatic relations with Taiwan, although without success to date.²⁶ Guatemala, which also recognizes Taiwan, has preemptively announced it would not source vaccines from China due to their low efficacy.²⁷

A Whole-of-Government Approach

China's whole-of-government approach allows it to exploit existing ties with national and subnational governments, local businesses, and other stakeholders to create new opportunities. As Thiago de Aragão, director of strategy at Arko Advice Public Affairs and senior researcher at the Center for Strategic and International Studies, explained in testimony before the Commission, centralized authority in Beijing means the same channels by which economic deals are negotiated also serve as routes for other economic, diplomatic, and security interests, allowing China to benefit from "cross negotiations."²⁸ In 2021, Brazil, which previously planned to bar China's telecoms giant Huawei from participating in its 5G buildout due to security concerns, reversed the ban two weeks after appealing to China for COVID-19 vaccines.*²⁹ After President Jair Bolsonaro indicated Brazil would not buy Chinese vaccines, Beijing leveraged subnational relationships to bypass the central government and negotiate a partnership for Chinese vaccine producer Sinovac to manufacture the vaccine locally in São Paulo Province and later supply the country with Chinese vaccines.³⁰ Vaccine ingredient shipments from China to the São Paulo manufacturer were later delayed, allegedly at the behest of the Chinese government, following President Bolsonaro's statements insinuating COVID-19 originated in a Chinese lab.³¹

CCP leaders aim to cultivate a network of government officials in Latin American and Caribbean countries who admire China's state-led economic model and support China's policy objectives.³² Between 2015 and 2018, over 1,000 leaders of political parties from Latin American and Caribbean countries visited China, and in 2018 the

Move, China Ends Diplomatic Truce with Taiwan," *Reuters*, March 17, 2016; Shannon Tiezzi, "Did China Just Break Its 'Diplomatic Truce' with Taiwan?" *Diplomat*, March 17, 2016; *Associated Press*, "Taiwan Says China Appears to Accept Diplomatic Truce," October 16, 2008; Taiwan's Office of the President, *President Ma's Remarks at Ministry of Foreign Affairs: The Concept and Strategy of the "Flexible Diplomacy"*, August 5, 2008.

*The date of Brazil's 5G auction was repeatedly delayed. As of September 2021, it was expected to occur in early November 2021. Alberto Alerigi, "Brazil Sets 5G Mobile Auction for Nov 4, Expects to Raise \$1.9 bln," *Reuters*, September 24, 2021; Janaína Camelo, "Huawei O.K. with 5G Compromise Deal in Brazil," *Brazilian Report*, August 20, 2021; *Reuters* and *Latin America Business Stories*, "U.S. Warned Brazil about China's Huawei in 5G Network—White House Official," August 9, 2021; Juan Pedro Tomás, "Brazilian Government Confirms 5G Auction for August: Report," *RCR Wireless News*, July 1, 2021; Giovana Fleck, "Why Huawei Was Almost Excluded from the 5G Race in Brazil," *Global Voices*, May 28, 2021; *Reuters*, "Brazil Regulator Approves 5G Spectrum Auction Rules, No Huawei Ban," February 25, 2021.

Chinese government pledged to invite over 600 more by 2021.*³³ China's leaders seek to build influence with Latin American and Caribbean civil servants, legislators, and party leaders from across the political spectrum and at multiple levels of government.³⁴ For example, between 2002 and 2017, representatives from the CCP's International Liaison Department † held nearly 300 meetings with 74 different political parties in 26 of the 33 Latin American and Caribbean countries.³⁵ China tailors its approach to suit host country dynamics and local political power structures, focusing on official diplomatic channels in countries with strong central government authority and prioritizing municipal governments alongside private companies and associations in countries that are more decentralized.³⁶ Through party-to-party trainings, meetings, travel, and other engagements sponsored by the Chinese government and the CCP, Beijing tries to convince many Latin American and Caribbean leaders that partnership with China is the most effective path to economic growth in their own countries.³⁷

Beijing uses people-to-people exchanges to deepen its influence among the region's publics.³⁸ The Overseas Chinese Affairs Office, subsumed under the United Front Work Department in 2018, worked for over a decade with overseas Chinese communities in Latin American and Caribbean countries in an effort to shape positive views of China that would facilitate investment and commercial deals.³⁹ There are about 45 Confucius Institutes in the region, which play a significant role in China's efforts to project soft power.⁴⁰ In testimony to the Commission, Ryan Berg, senior fellow at the Center for Strategic and International Studies, explained that the impact of Confucius Institutes is particularly strong in Caribbean countries where the United States has no official diplomatic presence.‡⁴¹ The Chinese government also pays for students, businesspeople, farmers, academics, and other professionals to come to China for classes, trainings, and conferences, aiming to influence the region's next generation of leaders.⁴² For example, over 4,000 professionals from Latin American and Caribbean countries participated in training in China between 2015 and 2018.⁴³ While absolute numbers may not

*It is unknown how many of the pledged 600 actually completed their visits, particularly given the disruption of the COVID-19 pandemic. Officials who have traveled to China have attended seminars on a range of topics. For example, officials from Colombia attended seminars on agricultural production technology in 2017 and 2018, Argentinian officials attended a seminar on public administration in 2018, and Brazilian civil servants attended programs on foreign investment and sustainable development in 2019. Claudia Trevisan, "Trade, Investment, Technology, and Training Are China's Tools to Influence Latin America," *Council on Foreign Relations*, 2020, 11; China's Ministry of Foreign Affairs, *Join Hands across the Ocean in a New Era*, January 25, 2018.

†The International Liaison Department is the branch of the CCP that conducts party-to-party engagement with foreign political parties. Its focus is on long-term relationship building and ideology, and Dr. Berg suggested in his testimony to the Commission that it also plays an informal role in supporting economic dealmaking. For example, the International Liaison Department met with the mainstream and ruling political parties in Colombia directly before a Chinese company won a roughly \$4-billion-dollar Bogota metro project. Ryan Berg, oral testimony for the U.S.-China Economic and Security Review Commission, *Hearing on China in Latin America and the Caribbean*, May 20, 2021, 77; Ryan Berg, written testimony for the U.S.-China Economic and Security Review Commission, *Hearing on China in Latin America and the Caribbean*, May 20, 2021, 5; Jorge Valencia, "By Building Bogotá Metro, China Makes a New Breakthrough in Latin America," *The World*, November 5, 2020.

‡The United States Embassy in Barbados concurrently serves six other countries, including Antigua and Barbuda, Dominica, Grenada, Saint Kitts and Nevis, Saint Lucia, and Saint Vincent and the Grenadines. China, by contrast, has an embassy in every Caribbean country with which it has diplomatic relations. U.S. Embassy in Barbados, the Eastern Caribbean, and the OECS, *Countries We Serve*; China's Ministry of Foreign Affairs, *Chinese Embassies in Latin America*, 2014.

be large, they have an outsized impact on messages about China in the region, as those who travel to China are the most likely to serve in roles as regional experts on China's activities and influence in their home countries.⁴⁴ As Dr. Ellis assessed, "The expectation of more invitations in the future..., the desire not to be 'ungrateful,' or the fear of losing access to such important information sources leads recipients to self-censor their subsequent remarks about China on topics of sensitivity to its government."⁴⁵

China Pursues Media Influence

The main goal of China's media engagement in Latin America and the Caribbean is to promote favorable reporting on China and stifle information it views as "anti-China narratives," including anything that could point out failings of the CCP or criticize its policies or actions. Thus far, China's attempts to foster positive perceptions through media influence have met with mixed success.⁴⁶ Chinese state media operations are still less developed in Latin America and the Caribbean than in Asia, Africa, or Europe, as the organizations struggle to attract large followings in the regional market mainly dominated by U.S. and European media.⁴⁷ Xinhua, *People's Daily*, and China Radio International nonetheless produce both Spanish- and Portuguese-language content in the region, and China Central Television (CCTV) hosts a free 24-hour Spanish service, though it lacks a Portuguese version.⁴⁸ Chinese state media is often cited as an authoritative source on Chinese affairs, and state media organs have established content-sharing agreements in countries such as Brazil, Chile, and Venezuela to regularly republish content from Chinese state media in local publications and broadcast it on local networks.⁴⁹ China supplements these influence efforts by hosting trainings and events for journalists and news agencies from the region geared toward impressing upon attendees a positive perception of China's economic and political model.*⁵⁰

Since 2020, China's media outreach has focused on shaping the region's perception of the COVID-19 pandemic. Francisco Urdeiz, associate professor at the Pontifical Catholic University of Chile, assessed in his testimony to the Commission that the pandemic has severely damaged China's reputation among publics in the region.⁵¹ In an attempt to reverse the damage, Chinese diplomats in the region not only retweeted positive coverage of China's handling of the outbreak from Chinese state media outlets in English and Spanish but also amplified the voices of local actors with positive views of China and spread disinformation to attack

* In 2018, China convened the China-Latin America and the Caribbean Media Forum, bringing together 13 media outlets from China and over 100 Latin American news agencies. The same year, China's Ministry of Foreign Affairs established the China-Caribbean Press Centre, which facilitates travel exchanges for Caribbean journalists to China. In early 2021, mainstream media outlets in Argentina, Brazil, Chile, Cuba, Peru, and Venezuela published reports echoing the CCP messaging on China's poverty reduction. House Foreign Affairs Committee Republicans, *China Regional Snapshot: South America*, March 16, 2021; House Foreign Affairs Committee Republicans, *China Regional Snapshot: The Caribbean*, March 16, 2021; CCTV, "Mainstream Media in Many Latin American Countries Report Intensively and Highly Evaluate China's Anti-Poverty Achievements" (拉美多国主流媒体密集报道并高度评价中国脱贫成就), March 1, 2021. Translation; Xinhua, "Xinhua Calls for Deepening China-LatAm Media Cooperation," November 20, 2018; CCTV, "China-Caribbean Press Center Launched," May 19, 2018.

China Pursues Media Influence—Continued

the United States.⁵² During an August 2020 virtual dialogue with representatives from 15 Latin American media organizations on the subject of COVID-19, China’s representatives called for increased content sharing and stressed the media’s role in sharing the Chinese government’s so-called “effective measures” against the virus with Latin American countries.*⁵³

Encouraging Authoritarian Trends

Chinese engagement in some Latin American and Caribbean countries has exacerbated authoritarian trends and poor governance. In Venezuela, the authoritarian Maduro regime has worked extensively with Chinese technology companies ZTE and China National Electronics Import and Export Corporation† to develop surveillance systems and a prototype social credit system called the Fatherland Card.⁵⁴ The system allows the Maduro regime access to a repository of Venezuelan citizens’ data and has been used by the regime to track voting patterns, ration food and supplies, monitor social media accounts, and even preferentially distribute COVID-19 vaccines throughout the country.⁵⁵ Marking China’s export of “digital authoritarianism” to the region, the system borrows from China’s emerging Corporate Social Credit System, a sweeping government-wide initiative to aggregate data on legal entities to improve regulatory enforcement.⁵⁶ Former leftist populist governments in the region, such as the Evo Morales government in Bolivia (2006–2019) and the Rafael Correa government in Ecuador (2007–2017), also contracted with Chinese companies to develop and implement surveillance systems intended to help them consolidate control over their populations.⁵⁷ While in power, both governments undermined democratic institutions, attempted to silence media criticism, and were accused of corruption.⁵⁸

Chinese loans have provided a critical economic lifeline to the Maduro regime, and they also enabled the Morales and Correa governments to consolidate control while eroding their countries’ democratic institutions. These governments are also among the largest recipients of Chinese financing in the region.⁵⁹ Unlike international financial institutions (IFIs) like the International Monetary Fund (IMF), Chinese lenders do not require recipients to implement structural economic or governance reforms, such as austerity measures.⁶⁰ Instead, according to a study of 100 Chi-

* Chinese-language coverage of the event highlights remarks by media representatives from five of China’s comprehensive strategic partners, namely Argentina, Brazil, Chile, Peru, and Mexico. The Brazilian representative called for increased media cooperation with China, and the Mexican representative highlighted the importance of China’s experience in fighting the virus for Latin American countries. *Xinhua*, “Chinese and Latin American Media Launch Cloud Dialogue, Media Personnel Join Hands to Fight the Epidemic and Overcome Difficult Times” (中拉媒体开展云端对话 媒体人携手抗疫克时艰), August 28, 2020. Translation.

† In November 2020, the U.S. Department of the Treasury sanctioned the China National Electronics Import and Export Corporation for supporting the Maduro regime’s efforts to undermine Venezuela’s democracy, including its restriction of internet services, digital surveillance, and cyberoperations against political opponents. U.S. Department of the Treasury, *Treasury Sanctions CEIEC for Supporting the Illegitimate Maduro Regime’s Efforts to Undermine Venezuelan Democracy*, November 30, 2020.

nese loan contracts published by the Center for Global Development, many Chinese loans include their own unique conditions that protect China's interests and give Chinese lenders benefits, including access to resources through commodity-backed revenue accounts.⁶¹ Chinese contracts also include strict confidentiality clauses that restrict borrowers from even disclosing that some debts exist, thereby exacerbating issues of transparency and poor governance.⁶² (For more on China's loans to the region, see "Bilateral Loans Provide China with Leverage over Debtor Countries" later in this section.)

Between 2005 and 2020, China extended loans worth at least \$62.2 billion to the Venezuelan Chavez and Maduro regimes, \$17.4 billion to the Correa government in Ecuador, \$3.4 billion to the Morales government in Bolivia, and \$15.3 billion to the Kirchner governments (2003–2015) in Argentina.⁶³ In many cases, China has acted as a lender of last resort for countries that have lost the confidence of international investors.⁶⁴ For example, after defaulting on \$3.2 billion of government bonds in 2008, the Correa government was cut off from international financial markets.⁶⁵ Turning to Chinese policy bank financing as an alternative, the Correa government received over \$7 billion in Chinese loans between 2010 and 2012 alone.⁶⁶ Argentina, which has defaulted on its sovereign debt nine times, is the fourth-largest debtor to China in the region.⁶⁷ In testimony before the Commission, Mr. Aragão suggested Argentina's mounting debt to China gave China leverage to negotiate the construction of a Chinese-controlled space observation center on Argentine soil.⁶⁸ (For more on China's space observation center in Argentina, see "China's Military and Security Engagement" later in this section.)

China's Economic Strategy

China's economic interests drive its engagement in Latin America and the Caribbean as it seeks commodities and raw materials to fuel its economy while building markets for its companies and technologies. China's economic strategy in the region began in the early 2000s with open market purchases of Latin American commodities, and it has since diversified to incorporate strategic investments and financing that increase China's control over entire supply chains. To maintain growth, the region urgently needs financing for infrastructure, which China has been willing to provide, further cementing its central position in some countries' economies. While Caribbean countries are not commodity exporters, China sees the subregion as both a growing market for its surveillance technologies and an important location for infrastructure projects, such as ports. In deepening its economic leverage over the subregion, China also intends to cultivate political support from a bloc of countries with voting power at the UN.

Countries in the region see Chinese trade and investment as an opportunity for economic growth; however, the region's institutions have been ill equipped to effectively manage the boom in Chinese economic activity over the last two decades. As a result, Chinese economic engagement has facilitated a decline in environmental, social, and governance standards, with some local indigenous com-

munities and environmental organizations expressing opposition to Chinese projects and investments. The benefits of trade with China have also encouraged governments to focus on commodities to promote economic growth at the expense of industrialization. Amid a global pandemic and regional economic recession, these forces may be amplified as countries increasingly rely on Chinese trade and investment while disregarding long-term consequences, such as environmental degradation and damage to indigenous populations.

Trade with China Is Critical for Economies in the Region

As China's domestic economy has expanded, its burgeoning demand for commodities has made it a critical trade partner for select commodity exporters in the region. In 2020, China's goods trade with Latin America and the Caribbean stood at just under \$300 billion—up 1,466 percent from \$18.9 billion in 2002.⁶⁹ The region's goods exports to China in 2020 were an estimated \$135.6 billion, while it imported an estimated \$160 billion in goods from China.⁷⁰ Latin America and the Caribbean represented just 6.4 percent of China's global goods trade in 2020, yet China has been ranked the second- or third-largest trading partner for the region since 2011 and has become an important trade partner for multiple economies.⁷¹

While the region occupies a fraction of China's global trade, it is China's primary supplier for select commodities. For example, Brazilian soybeans and Chilean copper respectively supplied approximately 61 percent and 32 percent of China's total global imports of those commodities between 2016 and 2020.⁷² During the same time period, 67 percent of China's imports from the region were in three main commodity categories: agricultural goods (soybeans and oilseeds), energy (crude petroleum oil), and metals (copper ores and concentrates, iron ores and concentrates, and refined copper) (see Figure 2).⁷³ When disaggregated by country, 84 percent of China's purchases from the region originated from just four countries: Brazil (48 percent), Chile (17 percent), Mexico (10 percent), and Peru (9 percent).⁷⁴

Strong economic relationships with Latin American commodity suppliers like Brazil, Chile, and Peru provide China with opportunities to divert its demand between trade partners should political or economic tensions arise. For example, in 2018 China reduced its soybean purchases from the United States by \$9.1 billion to \$3.1 billion, a 74.5 percent drop compared to 2017 levels, in retaliation for duties levied by the United States on Chinese goods.⁷⁵ In the same year, it increased its purchases from Brazil by \$7.9 billion, or 37.9 percent year-on-year.⁷⁶ Similarly, in 2020 China applied duties on Australian wine after Australia called for an international investigation into the origins of COVID-19.⁷⁷ China then expanded its Chilean wine purchases, which increased by over 40 percent in the first quarter of 2021.⁷⁸

Figure 2: Chinese Imports from Latin America and the Caribbean by Commodity and Country, 2016–2020

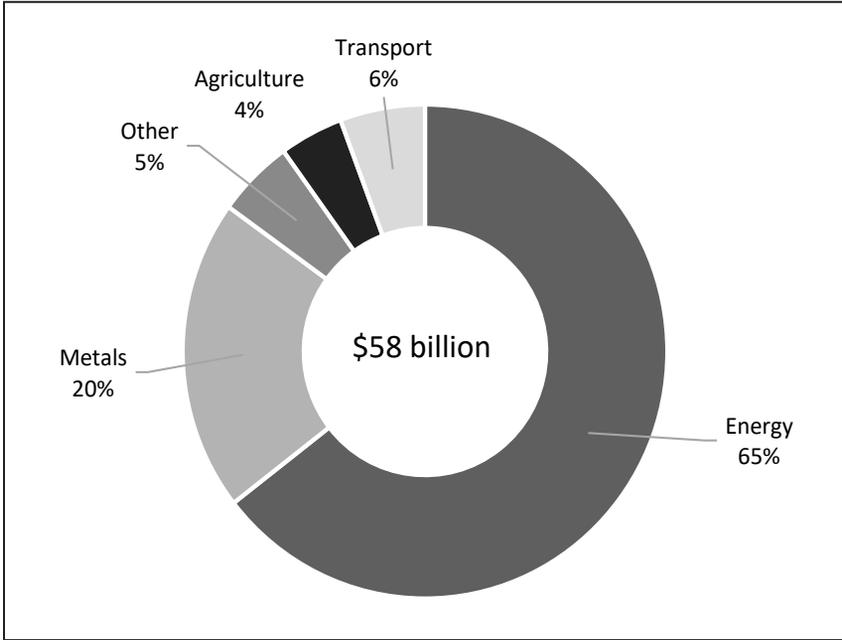


Note: Because 2020 economic data are skewed due to disruptions associated with the COVID-19 pandemic, this figure aggregates data between 2016 and 2020 to demonstrate trends in Chinese trade with Latin America and the Caribbean over multiple years.

Source: United Nations, “UN Comtrade Database,” calculations by Rebecca Ray.

Like Chinese trade with the region, Chinese foreign direct investment (FDI) is concentrated in the energy, metals, transportation, and agriculture sectors, with Brazil, Peru, and Chile as primary destinations.⁷⁹ Although the United States and European countries remain the region’s top sources of investment, accounting for 82 percent of FDI flows in 2019, FDI from China into Latin America and the Caribbean is on the rise.⁸⁰ The majority of Chinese investments have been through mergers and acquisitions (M&A), and China’s share in cross-border M&A in the region increased between the first and second half of the last decade from 12.5 percent to 17.7 percent.⁸¹ Over the same period, the share of European M&A transactions decreased, while it increased for North American companies.⁸² China’s regional investment strategy has also matured and diversified, as Chinese FDI is progressing beyond M&A to greenfield investments that require greater local knowledge to build and operate new businesses. Chinese firms have also begun investing in the region’s finance, real estate, and technology sectors, though these sectors still represent a small fraction of total Chinese FDI to the region (see Figure 3).⁸³

Figure 3: Cumulative Chinese FDI to Latin America and the Caribbean by Sector, 2016–2020



Note: “Other” includes chemicals, finance, logistics, real estate, technology, and utilities. Because 2020 economic data are skewed due to disruptions associated with the COVID-19 pandemic, this figure aggregates data between 2016 and 2020 to demonstrate trends in Chinese investment in Latin America and the Caribbean over multiple years.

Source: American Enterprise Institute, “China Global Investment Tracker,” 2021.

Bilateral Loans Provide China with Leverage over Debtor Countries

Two Chinese policy banks,* China Development Bank and the Export-Import Bank of China (China EXIM Bank), are key facilitators of Chinese engagement.⁸⁴ Many of China’s loans to the region have been tied to the use of Chinese companies and equipment.⁸⁵ The primary recipients of Chinese policy bank lending are all major oil or commodity exporters and include Venezuela (\$62.2 billion, 45 percent), Brazil (\$29.7 billion, 22 percent), and Ecuador (\$18.4 billion, 13 percent), which alone account for 80 percent of all Chinese policy bank lending to the region.⁸⁶ Furthermore, China devoted approximately 68 percent of its financing in Latin America and the Caribbean to the energy sector alone.⁸⁷ For Venezuela and Ecuador, which have both been cut off from traditional financing at different points in time, Chinese lending has exceeded total lending by the

*China has three national state-owned policy banks: China Development Bank, Export-Import Bank of China (China EXIM Bank), and Agricultural Development Bank of China. The policy banks were established as part of a restructuring effort in 1994 to separate commercial and policy financing functions, with each bank charged with specific policy domains. For example, China Development Bank was formed specifically to finance domestic and international development projects, while the China EXIM Bank provides financial services for importers and exporters. For more information on China’s banking sector, see Virgilio Bisio, “China’s Banking Sector Risks and Implications for the United States,” *U.S.-China Economic and Security Review Commission*, May 27, 2020.

World Bank, Inter-American Development Bank, and Development Bank of Latin America.⁸⁸

Chinese policy bank financing to the region has declined in recent years, while Chinese commercial financing* facilitates an array of Chinese nonstate enterprises' engagement. According to the Inter-American Dialogue's China-Latin America Finance Database, between 2005 and 2020 Chinese policy banks provided about \$137 billion in financing to the region; however, this lending peaked in 2010 at \$35.7 billion, and it has significantly declined in recent years due to the political and economic crisis in China's top borrower, Venezuela.⁸⁹ At the same time, however, Chinese commercial banks like the Industrial and Commercial Bank of China and the Bank of China have maintained a steady presence in the region, providing commercial finance, trade finance, and retail banking to Chinese companies, often in cooperation with other international banks.⁹⁰ According to Margaret Myers, director of the Asia and Latin America program at the Inter-American Dialogue, loans from Chinese policy banks were originally intended to facilitate market access for Chinese firms by linking financing to the use of Chinese firms and equipment. Demand for these loans may be declining, however, as Chinese companies have developed their own extensive customer networks and positive reputations in the region's markets.⁹¹

For many countries in Latin America and the Caribbean, Chinese policy bank financing fills a gap when access to financing from IFIs is unavailable due to host country corruption, poor economic fundamentals, or weak project standards. While Beijing does not attach governance and project feasibility standards to its loans as IFIs do, Chinese sovereign loans to other countries include unique provisions that protect China's existing commercial interests and ensure that China is paid before other creditors. The Center for Global Development's groundbreaking study of 100 Chinese loan contracts revealed that these loans prioritize Chinese interests by creating collateral arrangements, such as Chinese-controlled revenue accounts in which revenue from a debtor's sale of commodities is deposited into an account controlled by China and acts as collateral for the loan.⁹² The contracts also include the so-called "No Paris Club" clauses that keep Chinese debt out of collective restructuring efforts among the Paris Club of bilateral lenders,† thereby ensuring that Chinese debts are prioritized above other bilateral debts and allowing China to freeride on multilateral debt relief efforts.⁹³

*China has four primary state-owned commercial banks, including the Bank of China, China Construction Bank, Industrial and Commercial Bank of China, and Agricultural Bank of China. Here, "commercial banks"—as opposed to investment banks and policy banks—refers simply to banks that accept deposits from individuals or corporations; make business, consumer, and mortgage loans; and provide checking account services. China's commercial banks do not provide bilateral sovereign loans but rather support commercial enterprises. For more information on China's banking sector, see Virgilio Bisio, "China's Banking Sector Risks and Implications for the United States," *U.S.-China Economic and Security Review Commission*, May 27, 2020.

†The Paris Club is a group of 22 creditor nations that strive to coordinate workable solutions to mounting debt problems among debtor nations. The 22 permanent members of the group are Australia, Austria, Belgium, Brazil, Canada, Denmark, Finland, France, Germany, Ireland, Israel, Italy, Japan, Korea, Netherlands, Norway, Russia, Spain, Sweden, Switzerland, the United Kingdom, and the United States. Adam Hayes, "Paris Club," *Investopedia*, April 15, 2021; Paris Club, "Permanent Members."

In a pattern that holds across much of the developing world, Chinese bilateral lending to Latin America and the Caribbean creates significant leverage for Beijing. Though there have been no cases of China seizing assets in the region to compensate for debt, sustained debt pressure shapes countries' long-term policies toward China. Venezuela is highly exposed, with debt to China peaking at approximately 17 percent of gross domestic product (GDP) in 2014 before slowly decreasing to approximately 11 percent in 2017 after China stopped issuing it new loans in 2016.^{*94} As of 2019, Venezuela owed \$66 billion in external public debt, with just under a third of this debt owed to China alone.⁹⁵ Similarly, China is the top bilateral lender to Ecuador and Jamaica, both of which owed China approximately 10 percent of their GDP in 2017.⁹⁶ For small countries in the Caribbean, such as Jamaica, which has only received \$2.1 billion in Chinese loans, this financing may have an outsized impact relative to the size of debtor economies and could create excessive leverage for Chinese interests.⁹⁷ Notably, despite the acute financial pressures experienced throughout the region in the wake of COVID-19, Chinese policy banks did not extend any new loans to countries in Latin America or the Caribbean in 2020.⁹⁸ By contrast, the World Bank, Inter-American Development Bank, and Development Bank of Latin America respectively approved \$7.8 billion, \$21.6 billion, and \$14 billion in loans and financial support to countries in the region in 2020.⁹⁹

In Venezuela and Ecuador, this leverage is manifested by China's sustained access to discounted oil for in-kind repayments through resource-backed loans. Although China's resource-backed loans have at times provided financing below market rates, in the cases of Venezuela and Ecuador, falling global oil prices forced both countries to dedicate larger volumes of oil production to repaying Chinese loans.¹⁰⁰ The Natural Resource Governance Institute, a U.S. nonprofit focused on sustainable development, asserts that resource-backed loans have been at the center of Venezuela's public debt crisis and have prompted the country to push for multiple payment extensions.¹⁰¹ Facing its own mounting public debt, Ecuador negotiated a \$4.2 billion IMF bailout in 2019 and another \$6.5 IMF loan in 2020.¹⁰²

Chinese loans also potentially allow Beijing to influence borrowers' domestic and foreign policies through cross-default clauses. Cross-cancellation and cross-default clauses, standard in commercial loans but more unusual in government-to-government lending, protect China's existing loans by entitling Chinese lenders to terminate and demand repayment when a borrower defaults or cancels a loan from another lender.¹⁰³ For example, in Argentina, China leveraged a loan cross-default clause to successfully pressure the Argentine government not to cancel the Chinese-financed Kirchner-Cepernic Dams Project.¹⁰⁴ Because the loan for the project included a cross-default clause, China threatened to cut off financing to an-

*Chinese policy banks do not publish data on their sovereign lending, so third-party analyses track Chinese loans by triangulating open source information. Sebastian Horn, Carmen M. Reinhart, and Christoph Trebesch manage one of the most comprehensive datasets on Chinese loan contracts and debtor obligations, although it only accounts for Chinese loans through 2017. Sebastian Horn, Carmen M. Reinhart, and Christoph Trebesch, "China's Overseas Lending," *National Bureau of Economic Research*, NBER Working Paper No. 26050, 2019.

other project, the Belgrano-Cargas Railway, should the Argentine government cancel the dam.¹⁰⁵ In their study of Chinese loan contracts, researchers at the Center for Global Development note that “using cross-defaults to link otherwise unrelated projects makes it harder for the borrower to walk away from any of them, and gives Chinese lenders as a group more bargaining power—and more policy influence.”¹⁰⁶

Chinese loan contracts also include policy change clauses that allow China to cancel a loan if the debtor country undertakes policy changes “adverse to ‘any PRC [People’s Republic of China] entity’ in the borrowing country.”¹⁰⁷ In fact, the terms in one loan from China Development Bank to Ecuador constrain Ecuador’s ability to enact domestic policies that may adversely impact Chinese interests. They stipulate that China Development Bank will consider Ecuador to be in default, or failing to honor the terms of the debt contract, if it “takes any action for the dissolution or disestablishment of a PRC entity or any action that would prevent a PRC entity or its officers from carrying on all or substantial part of its business or operations” or “takes any action, other than actions having general effect in the Republic of Ecuador, which would disadvantage a PRC entity in carrying out its business or operations in the Republic of Ecuador.”¹⁰⁸ Such clauses pressure Ecuador to maintain positive bilateral relations with China, as a loan default could trigger a range of punitive measures, such as cross-defaults on other Chinese loans to Ecuador or mandatory early repayment of the defaulted loan.

Chinese Engagement Promotes Dependence on Commodity Exports

Latin American and Caribbean economies actively seek Chinese engagement. According to research published by the UN, the 2002–2008 commodity boom, which was primarily driven by growing Chinese demand, prompted the prices for key commodity exports from the region like iron ore and zinc to increase by up to 153.6 and 147.6 percent, respectively.¹⁰⁹ Chinese commodity demand is estimated to have increased the region’s export earnings during the period by up to \$73 billion.¹¹⁰ Despite the fall in commodity prices precipitated by the 2008 global financial crisis, China’s large-scale stimulus efforts helped maintain steady demand for Latin American and Caribbean exports and shielded the region’s economies from the worst of the global recession.¹¹¹ Chinese economic engagement has also increased employment throughout the region, and the International Labor Organization estimates it has generated approximately 1.8 million net jobs between 1995 and 2016.¹¹² The majority of these jobs were low-skilled and concentrated in the agriculture, mining, and energy sectors (that is, sectors that serviced Chinese demand for commodities).¹¹³ According to the UN Economic Commission for Latin America and the Caribbean, China’s expanding economic engagement also coincides with a decline in the proportion of the region’s population living in extreme poverty—from 12 percent in 2002 down to 4 percent in 2018.*¹¹⁴

*Extreme poverty is measured by the UN Economic Commission for Latin America and the Caribbean as the number of people living on less than \$1.25 per day. United Nations Economic Commission for Latin America and the Caribbean, “Sustainable Development Goals Indicator

While Chinese economic engagement has brought significant benefits to economies in the region, it also has been tied to a process of re-primarization. This is a phenomenon in which economies on the cusp of developing their manufacturing or service industries revert to primary industry (e.g., natural resource extraction) as their predominant source of economic growth. Because China mainly imports commodities from Latin America and exports manufactured goods to the region, trade with China has been associated with re-primarization in partner economies. Researchers at the Atlantic Council estimate that between 2002 and 2015, the region's industrial exports as a share of its total global exports fell from approximately 93 percent to approximately 76 percent.¹¹⁵ By contrast, the share of raw materials in the region's export basket has been rising since the beginning of the commodity boom in 2001 when raw materials constituted nearly 23 percent of the region's export basket.¹¹⁶ By 2018, raw materials constituted nearly 30 percent of the region's exports to the world.¹¹⁷ Exacerbating this trend, Chinese financing and investment are concentrated in extractive industries, which further encourages governments to shift emphasis to these sectors at the expense of industrialization.

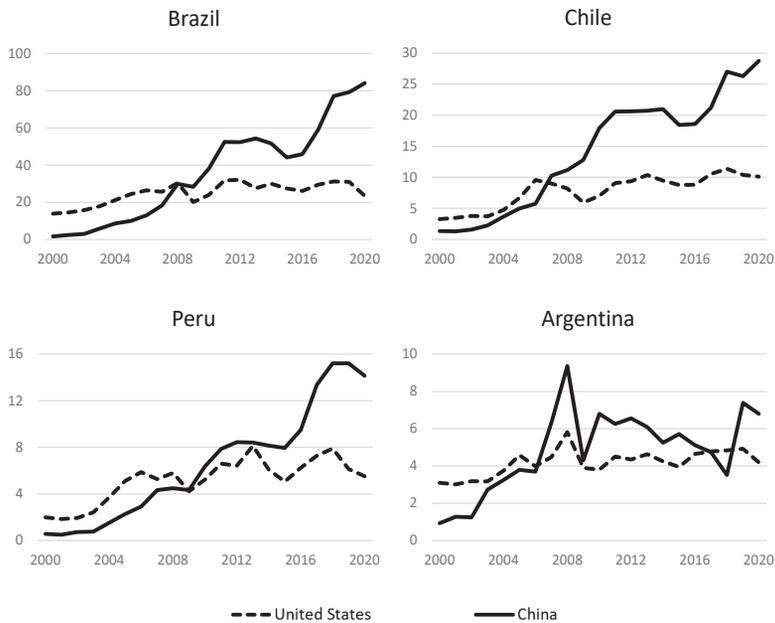
China May Help the Region's Economies Weather the COVID-19 Pandemic

China's strong demand for Latin American commodities is helping economies in the region manage the economic disruption caused by the COVID-19 pandemic. In testimony before the Commission, Ms. Myers explained that in the post-pandemic era, economies in the region would also likely try to attract Chinese investment to boost their recovery.¹¹⁸ The IMF estimates that the region experienced a 7 percent GDP contraction in 2020, while the volume of the region's exports also decreased by 26.1 percent between December 2019 and May 2020.¹¹⁹ Due to structural weaknesses present before the pandemic, economists expect the region to be the slowest among emerging economies to recover.¹²⁰ China's relatively swift economic recovery buoyed demand for Latin American and Caribbean exports, and as in the aftermath of the 2008 global financial crisis, China may provide a balance for economies in the region against external economic shocks and sharp reductions in U.S. demand for regional goods (see Figure 4). For example, in June 2020 total Argentine, Brazilian, and Chilean exports to China increased by approximately 48 percent year-on-year from \$7.5 billion to \$11.1 billion.¹²¹ At the same time, as U.S. and European investors sold their assets in the region amid the global economic downturn, Chinese investment through M&A, particularly in the electricity distribution sector, increased 63 percent from \$4.3 billion in 2019 to \$7 billion in 2020.¹²²

1.1.1 Proportion of Population Below the International Poverty Line, by Sex, Age, Employment Status and Geographical Location (Urban/Rural)," May 27, 2021.

China May Help the Region's Economies Weather the COVID-19 Pandemic—Continued

Figure 4: Chinese and U.S. Imports from Select Latin American Countries, 2000–2020 (US\$ billions)



Source: U.S. Census Bureau, *Trade in Goods Brazil*; U.S. Census Bureau, *Trade in Goods Chile*; U.S. Census Bureau, *Trade in Goods Peru*; U.S. Census Bureau, *Trade in Goods Argentina*; United Nations, “UN Comtrade Database.”

China's Approach to Resource Access Is Evolving

While China's economic engagement with Latin America began with a focus on open market commodity purchases, its strategy in the region is maturing and diversifying. China now invests across entire supply chains, which allows it to exert greater control over industries where it has a strategic interest in resource access or market building. China is also increasingly investing in regional infrastructure, with an interest in improving production capacity while decreasing the time and cost for shipping commodities back to China.

Latin American Minerals Support China's Industrial Development

As China attempts to become a global leader in advanced manufacturing, access to minerals from around the world is an increasingly important component of its industrial policy. Latin America has some of the world's largest deposits of copper, iron ore, silver, lithium, and niobium, which are used to make electronic components,

such as rechargeable batteries and semiconductors.¹²³ Controlling the supply chain for these technologies drives China's investments in Latin America's mining sector.

Chinese investment in Latin America's mining sector reveals a pattern of vertical integration, with Chinese entities acquiring a greater share of value within individual mineral supply chains, culminating with direct ownership over mines themselves.¹²⁴ For example, in the case of lithium, Chinese firms have expanded their investments throughout the supply chain, which involves extraction, refining, and eventually manufacturing the mineral into technologies like lithium-ion batteries for electric vehicles. Latin America's "Lithium Triangle," which spans Argentina, Chile, and Bolivia, is home to more than half of the world's known lithium reserves and has been a target of Chinese investment.¹²⁵ Chinese companies like Tianqi Lithium and Ganfeng Lithium have acquired major stakes in production in Chile, financed new mine development in Argentina, and signed an agreement to develop lithium production in Bolivia.¹²⁶ With the addition of its investments in Australian lithium, China's global investments give it influence or control of over 59 percent of global lithium production.¹²⁷ As China accumulates market power over the lithium supply chain, it also strengthens its ability to influence global supply and pricing.¹²⁸

Local Communities Push Back against Chinese Mining Investments

Some Chinese mining investments in Latin America have generated pushback in response to negative environmental and social impacts. The outcomes of local resistance, however, depend on the local rule of law and the will of governments to place restrictions on Chinese investors. In the case of the Chinese-invested Rio Blanco gold and silver mine in Ecuador, local indigenous communities impacted by water pollution generated by the mine successfully sued the Ecuadorian government for failing to provide the community with free and informed prior consultation on the project and forced the Chinese company to suspend mining operations in 2018.¹²⁹ The Ecuadorian government opposed attempts to close the mine and appealed the decision in a constitutional court in 2020.¹³⁰ Though there is little public information available regarding the progress of the appeal at this time, in February 2021 residents of the local area passed a referendum to ban any new large-scale mining activities in five nearby watershed zones.¹³¹ While it will prevent future mining operations in the area, the referendum will not impact the Rio Blanco mine.

In other cases, local communities have engaged in violence to protest the environmental degradation caused by Chinese mining projects. In one such example, between 2015 and 2016 community protests erupted against the Chinese state-owned enterprise (SOE) MMG Limited's (MMG Ltd.) Las Bambas mine in Peru, citing a lack of adequate prior consultation as well as negative environmental impacts. The protests resulted in violent clashes with Peruvian police that left at least four protesters dead.¹³² Though in 2019 Peru's Environmental Assessment and Enforce-

Local Communities Push Back against Chinese Mining Investments—Continued

ment Agency ordered MMG Ltd. to limit the adverse environmental effects of its activities, local communities had to endure these environmental impacts for years before Peru's government finally acted on their complaints.¹³³

China Invests in Power Distribution Assets to Build Markets

Beyond its open market purchases of Latin American fossil fuels, China has increasingly invested in building and acquiring Latin America's electricity generation and distribution assets. Between 2005 and 2020, 61 percent of Chinese investments in the region were devoted to the energy sector, with Chinese SOEs accounting for the majority of investment.¹³⁴ As the region's electricity production cannot be exported to China, China's acquisitions and greenfield investments in the sector are instead intended to build lucrative markets for its energy generation and distribution technologies, such as solar panels.¹³⁵ In testimony before the Commission, Rebecca Ray, senior academic researcher at Boston University's Global Development Policy Center, argued that Chinese electricity asset acquisitions introduce the risk that Chinese companies could use their ownership stakes to engage in anticompetitive behaviors, such as self-dealing and price fixing.¹³⁶ Chinese SOE Yangtze Power's 2020 acquisition of Peru's Luz del Sur electricity distribution company illustrates these concerns, as Yangtze Power's parent company, China Three Gorges, also has ownership over the Peruvian San Gabán III and Chaglla hydropower plants, both upstream power-generation assets.¹³⁷ To prevent collusion, Peru's Ministry of Energy and Mines stipulated that Luz del Sur must commit to purchasing power through a transparent and competitive bidding process.¹³⁸

In Chile, the 2021 purchase by State Grid, a Chinese SOE, of a 96 percent stake in Compañía General de Electricidad power utility company, combined with State Grid's prior acquisitions of multiple other Chilean electricity distribution assets, resulted in State Grid controlling approximately 57 percent of Chile's electricity distribution.¹³⁹ State Grid's purchase prompted regulatory scrutiny from the country's lawmakers, who expressed concern that a foreign state entity could control a majority portion of a national strategic asset.¹⁴⁰ Though it too was ultimately approved by Chile's antitrust authority, State Grid's acquisition prompted legislators to consider a bill to allow Chile's Congress to block acquisitions of strategic assets by foreign SOEs.¹⁴¹

While host country regulators reviewed both the Yangtze Power and State Grid purchases for potential impacts on market competition, the acquisitions were never reviewed for risks to national security. In fact, the majority of countries in Latin America and the Caribbean lack mechanisms to review the national security impli-

*As of July 2021, the bill was still being debated within Chile's Congress. A. Gonzalez, "Chamber of Deputies Cites Special Session to Analyze Purchase of CGE by Chinese State-Owned Company" (Cámara de Diputados cita sesión especial para analizar compra de CGE por parte de empresa estatal china), *Emol*, July 2, 2021. Translation.

cations of inbound foreign investment.¹⁴² According to Dr. Ray, this represents a serious institutional gap in Latin American countries' ability to regulate the China investment boom, especially given China's accumulating investments in critical sectors like energy that are inextricably linked to a country's national security.¹⁴³

China Seeks Agricultural Resources amid Food Security Concerns

China also employs its vertically integrated approach to accessing Latin American agricultural resources, which help allay domestic food security concerns. Approximately half of China's demand for agricultural products from the region has been concentrated in Brazilian soybeans, where Chinese purchases comprised about 73 percent of Brazil's global soybean exports in 2020.¹⁴⁴ Brazilian soybean producers have been the primary beneficiaries of U.S.-China trade tensions, as China diverted much of its U.S. demand to Brazil in 2018, although Chinese demand for U.S. soybeans has since rebounded after the signing of the U.S.-China Phase One trade agreement.¹⁴⁵ China's demand for Brazilian meat imports like beef and veal increased by 299 percent between 2017 and 2020 and has generated significant deforestation pressures in Brazil.¹⁴⁶ According to research by Trase, an NGO focused on the commodity trade's role in deforestation, in 2017 approximately 40,500 hectares of Brazilian rainforest were at risk of deforestation due to mainland China and Hong Kong's demand for Brazilian beef alone.¹⁴⁷ Beyond trade, major Chinese food companies are targeting acquisitions and investments along different portions of the agricultural supply chain, including production, processing, and storage, and have acquired vertically integrated agricultural operations like Brazil's Fiagril, which processes, markets, and transports grains.¹⁴⁸

As part of China's efforts to secure food resources, Chinese fishing boats have become primary offenders of illegal, unreported, and unregulated (IUU) fishing in Latin America and the Caribbean.¹⁴⁹ China's deep-water fishing fleet, which according to some estimates includes over 17,000 ships, has been accused of illegally fishing in countries' exclusive economic zones and protected maritime areas, overfishing, catching protected species, and contributing to water pollution.¹⁵⁰ A recent study by U.S. NGO Oceana found that between July and August 2020, approximately 99 percent of ships suspected of IUU fishing around the Galapagos were Chinese.¹⁵¹ Likewise, separate investigations found that approximately 82 percent of ships engaging in IUU fishing in Chile's Nazca-Desventuradas protected area between 2018 and 2020 were Chinese.¹⁵²

Countries in Latin America and the Caribbean have had difficulty preventing IUU fishing because their navies lack adequate resources to monitor and patrol their territorial waters.¹⁵³ As a result, in November 2020, the governments of Chile, Ecuador, Peru, and Colombia issued a joint statement condemning the "large fleet of foreign-flagged vessels" conducting IUU fishing near their territorial waters and promised to "prevent, discourage, and jointly confront" such activity.¹⁵⁴ Chinese IUU fishing demonstrates the extent of China's drive to capture the region's resources and is a direct violation of countries' territorial sovereignty. Such malign activities also fundamentally infringe upon the region's long-term economic

welfare by depleting a critical natural resource and cost the region about \$2.7 billion in lost revenue annually.¹⁵⁵

China Invests in Regional Infrastructure

To meet its infrastructure needs, Latin America and the Caribbean require additional investment of around 2.5 percent of regional GDP annually, or \$145 billion in 2019, according to multiple estimates aggregated by the Inter-American Development Bank.¹⁵⁶ The region's lack of infrastructure has been a primary impediment to industrialization, as Latin American and Caribbean countries have struggled to develop regional supply chains.¹⁵⁷ Intraregional trade, for example, constituted less than 15 percent of the region's exports in 2019.¹⁵⁸ Latin American and Caribbean trade is anchored to larger external economies like the United States and China; however, incomplete and aging infrastructure increases the costs of transporting and exporting raw materials to these markets.¹⁵⁹

According to Dr. Ray, Chinese financing has helped to fill the region's infrastructure gap with investments spanning multiple sectors, including surface transportation, ports, energy, mining, agriculture, and telecommunications.¹⁶⁰ Between 2005 and 2020, approximately \$25 billion or 18 percent of Chinese policy bank financing in Latin America and the Caribbean has been allocated to infrastructure in the region, while approximately 60 percent of Chinese greenfield investments between 2011 and 2020 were in infrastructure.¹⁶¹ Most of these investments are intended to facilitate China's access to the region's resources by decreasing the logistical costs of transporting commodities to export centers.¹⁶² For example, in 2013 China Development Bank extended a \$2.1 billion loan to renovate portions of Argentina's Belgrano Cargas railway.¹⁶³ As Argentina is China's second-largest regional supplier of soybeans after Brazil, the railway will support Chinese soy purchases by connecting Argentina's agricultural heartland to the coast.¹⁶⁴ Because they are designed to facilitate the region's exports to China rather than its demand for connectivity to support intraregional trade, China's investments may not fully address the infrastructure needs of the region.

Ports

Chinese investments in Latin American and Caribbean ports are similarly intended to decrease the costs of shipping resources to China. The Development Bank of Latin America estimates that between 2016 and 2040, the region will need approximately \$55 billion in investment to advance its competitiveness in the maritime and port sector and bridge a significant gap between freight demand and current capacity.¹⁶⁵ Chinese entities are involved in approximately 40 ongoing port operations or port projects in the region.¹⁶⁶ This investment may help to fill this gap and ultimately lower the time and cost of shipping goods to China.

Chinese firms are involved at every stage of port development from new port construction and expansion to managing day-to-day operations. Chinese-developed ports in Latin America demonstrate the close ties between China's commodity and logistics interests. For example, China is working with Peru's Volcan Mining Company to jointly develop the country's \$3 billion Chancay

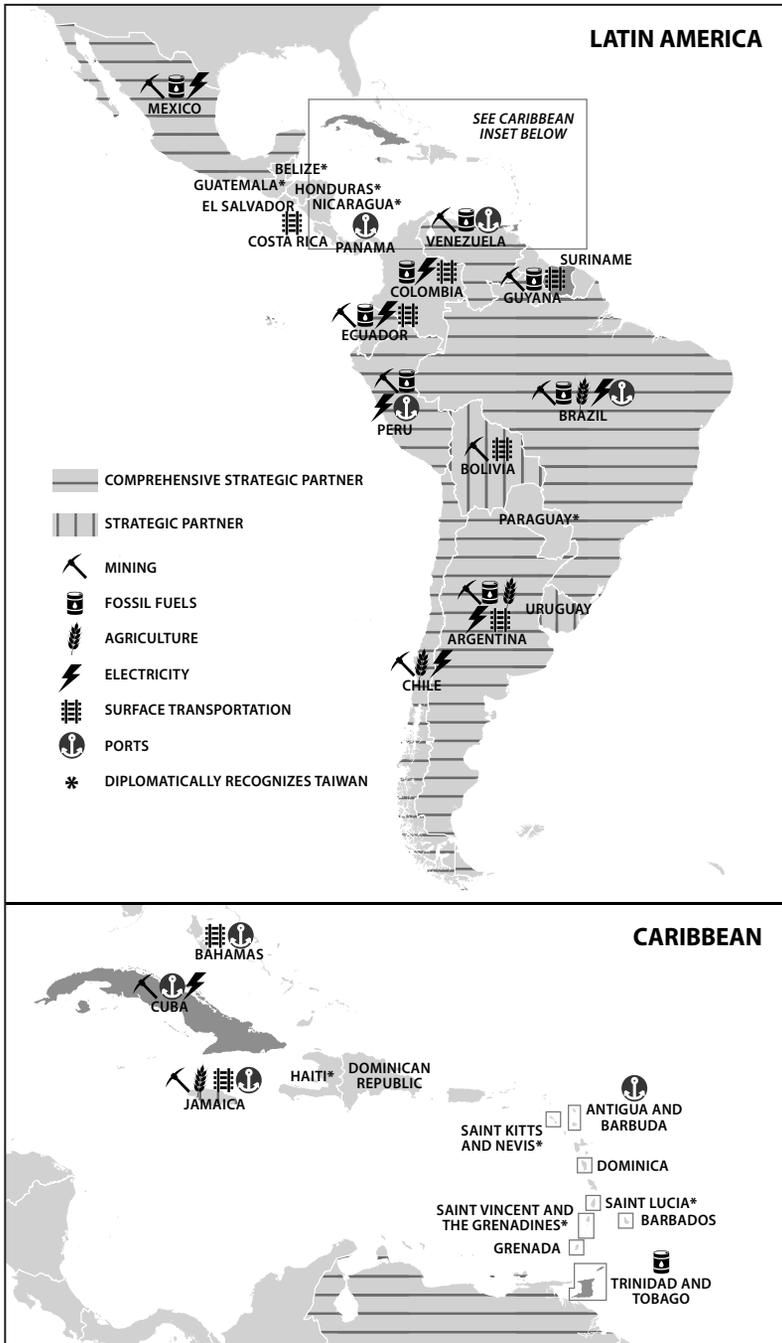
port.¹⁶⁷ Although Caribbean countries are not commodity exporters, they are important logistics hubs due to their proximity to the U.S. market and location at the confluence of maritime trade routes.¹⁶⁸ China has therefore been involved in numerous projects in the subregion, including ports in Cuba, the Bahamas, and Jamaica.¹⁶⁹

Telecommunications

While much of China's infrastructure development in the region is focused on commodity extraction, China is also heavily involved in building out Latin American and Caribbean telecommunications infrastructure. Due to subsidies and government support for national technology champions like Huawei and ZTE, China has successfully marketed its technologies to the region as economically viable alternatives to technologies produced in Europe or the United States.¹⁷⁰ As a result, Huawei has already become a leader in the region's mobile device market and is a top competitor to build out 5G infrastructure in Brazil, Chile, Colombia, and Mexico.¹⁷¹ By integrating Chinese technologies into the region's digital infrastructure, China is setting the stage for building long-term commercial dependencies as the region's market develops.¹⁷² As firstcomers to the market for emerging technologies like 5G and smart cities, Chinese telecommunications companies can begin to lock users into their suite of technology offerings to the exclusion of competitors. They are also in a unique position to shape standards in the region, which will dictate the long-term structure of the region's digital economy and influence which technologies are operable within its infrastructure.¹⁷³

Ms. Myers explained in her testimony that in addition to forming long-term commercial dependencies, China's strategy is driven by its desire to obtain user data from the region.¹⁷⁴ (For more on China's emergent data governance regime, see Chapter 2, Section 1, "Year in Review: Economics and Trade.") China has sold smart city technologies to multiple governments, including Argentina, Bolivia, the Dominican Republic, Ecuador, Guyana, and Venezuela.¹⁷⁵ These technologies include surveillance and facial recognition technologies as well as integrated social tracking systems that access and aggregate significant volumes of citizen data.¹⁷⁶ Due to China's 2017 National Security Law, which obligates Chinese companies to give data to the Chinese government if asked, the integration of Chinese technologies within the region's telecommunications infrastructure and digital economy also presents a security risk given the significant quantities of sensitive data passing through such systems.¹⁷⁷ While the United States has repeatedly warned other countries about the security risks inherent in using Chinese telecommunications equipment, Oliver Stuenkel, associate professor at the Fundação Getulio Vargas School of International Relations, noted in his testimony to the Commission that these warnings are perceived by countries in the region as overtly political and therefore are largely ignored as disingenuous.¹⁷⁸ For many countries with emerging digital economies, the desire to advance quickly and affordably may ultimately overshadow the security risks posed by Chinese technologies.

Figure 5: Select Chinese Investments and Financing in Latin America and the Caribbean, 2005–2020



Source: Various.¹⁷⁹

China's Economic Engagement Exacerbates Institutional Weaknesses

Latin American and Caribbean governments and institutions lack the capacity to adequately manage the deluge of Chinese financing and investment to the region. Since the early 2000s, the rapid increase in Chinese economic engagement has been linked to environmental degradation and social conflict, despite ambitious reforms enacted by numerous governments.¹⁸⁰ Because Chinese creditors like China Development Bank and China EXIM Bank do not impose the same lending standards as IFIs, Chinese finance has flowed to sectors and projects with inherently higher environmental and social risks, and in some cases host governments have deliberately lowered their standards to attract Chinese investment.¹⁸¹ In such cases, Chinese investors and companies view it as the responsibility of host governments to uphold their own environmental, social, and governance standards.¹⁸²

The case of Ecuador's Coca Codo Sinclair dam project illustrates this phenomenon. The dam was financed in part with a \$1.7 billion loan from China EXIM Bank and was constructed by Chinese state-owned hydropower company, Sinohydro, between 2010 and 2016.¹⁸³ Geologists warned that the dam, sitting at the base of an active volcano, was vulnerable to earthquakes and could cause significant environmental disruption to the surrounding ecosystem, and an independent review conducted by a Mexican government agency cast doubt on the functionality of a dam in the area.¹⁸⁴ Due to environmental and social risks outlined in initial feasibility studies, both the World Bank and Inter-American Development Bank declined to finance the Coca Codo Sinclair dam.¹⁸⁵ Nevertheless, President Correa championed the project as having the potential to provide one-third of Ecuador's electricity, and local government officials overlooked environmental, social, and labor regulations in order to speed up the project timeline.¹⁸⁶

According to the Ecuadorian company running the dam, as of 2021 Sinohydro had to make over 7,000 repairs to the dam, while erosion of the Coca River continued to damage its architecture.¹⁸⁷ Due to faulty planning and construction, the dam has been unable to run at full capacity and has also contributed to Ecuador's mounting debt to China.¹⁸⁸ Furthermore, international and Ecuadorian experts indicate that the dam may have caused severe environmental degradation by altering the flow of the Coca River and causing an oil spill that harmed indigenous communities downstream.¹⁸⁹ Indigenous communities have since led protests and launched lawsuits against the Ecuadorian government for failing to protect their right to clean water and food in connection with the spill.¹⁹⁰ Demonstrating a broader regional trend of institutional weakness, the project's outcome is partially the result of Ecuador's poor regulatory enforcement, as Ecuador's government deliberately bypassed its own regulations to complete the project. It also highlights China's willingness to finance projects that have been rejected by multilateral development banks for their poor fundamentals, ultimately resulting in exacerbated environmental and social challenges.

China's Military and Security Engagement

China's military influence in the region has been relatively limited but has gradually expanded in conjunction with China's increasing influence in certain Latin American and Caribbean countries over the past decade. China has successfully used economic leverage to establish a long-term, dual-use presence in Argentina in the form of a satellite tracking facility operated by the PLA's Strategic Support Force. It is also deeply involved in the financing, construction, and operation of other dual-use infrastructure, such as ports.

While China's overt military presence remains limited mainly to military diplomacy, a few exercises, port calls, and exchanges, the PLA is cultivating relationships with militaries across the region. Among China's most consistent security partners have been isolated anti-U.S. regimes in Venezuela and Cuba, the former Correa government in Ecuador, the former Morales government in Bolivia, and the Kirchner governments in Argentina.¹⁹¹ Nevertheless, many other countries, such as Peru, Brazil, Uruguay, Guyana, and Barbados, maintain some military engagement with both China and the United States.¹⁹² Even strongly U.S.-affiliated governments, such as in Colombia and Chile, also cautiously interact with the PLA.¹⁹³ In testimony before the Commission, Cynthia Watson, dean of faculty and academic programs at the National War College, noted that China has steadily increased its engagement with Colombia, one of the United States' closest defense partners in the region, through small-scale meetings and military diplomacy.¹⁹⁴

China Uses Economic Leverage to Enable Potential Military Presence

The most prominent example of Chinese military presence in Latin America and the Caribbean is the PLA's control of a space tracking station in Neuquén, Argentina.¹⁹⁵ The station is China's largest such tracking base outside its own territory.¹⁹⁶ In 2015, following Argentina's inability to pay off Chinese loans under the regime of Cristina Fernandez de Kirchner, the Argentine parliament approved the PLA's construction of the base and agreed to lease it to China tax free for 50 years.¹⁹⁷ Admiral Craig S. Faller, commander of U.S. Southern Command, explained in June 2021 that Argentina's financial vulnerability meant it had very minimal room to negotiate with China on the subject of the base.¹⁹⁸ A PLA detachment under China's Strategic Support Force controls the base without Argentine authorities having any access to or oversight of the facility.¹⁹⁹ Although China claims the installation is intended for peaceful space exploration, it possesses technology that could be used for espionage.²⁰⁰ Moreover, the Argentine government lacks an enforcement mechanism to ensure its use is purely for civilian purposes.²⁰¹

Another key concession China could use to further expand the presence of its security services in the region is leveraged preferential access to Chinese-funded or -constructed ports.²⁰² China is deeply involved in the operation, construction, and financing of Latin American and Caribbean countries' port infrastructure, as it is in many places around the world.²⁰³ Although there have not yet been cases where China has used these investments to establish a military presence, some analysts warn the leverage from significant

Chinese investment may position China to gain preferential access or control over ports that could benefit its military.²⁰⁴

According to Dr. Berg's testimony before the Commission, China is engaged in "several dozen agreements to build or expand deep-water ports" in the region that could potentially be converted for military use.²⁰⁵ Admiral Faller has also repeatedly noted that China's involvement in approximately 40 ongoing port operations and projects in the region raises concerns for U.S. military leaders.²⁰⁶ He further explained that along with China's port projects in the region comes "an erosion of sovereignty and undermining of the security associated with critical infrastructure."²⁰⁷ To date, all of the Latin American and Caribbean ports in the region with Chinese involvement have been built for commercial use but could have future military application.²⁰⁸ Admiral Faller expressed this concern in a press briefing in March 2021, warning that because of China's strong state control, even projects that begin as purely commercial can evolve to have "significant military application."²⁰⁹

Of particular concern is the potential for China to use its influence in ports surrounding critical chokepoints to develop exclusivity or preferential access and disrupt the movement of U.S. commercial and military ships.²¹⁰ Chinese companies currently operate ports on both sides of the Panama Canal,* a significant global chokepoint.²¹¹ A second area of concern is the Strait of Magellan, a natural sea channel near the southernmost tip of Chile that provides passage between the Atlantic and Pacific oceans. Mr. Aragão assessed in his testimony that China could use the port of Punta Arenas in Chile to establish a presence in this area, noting the Chinese government has already expressed interest in using the port for Antarctic exploration.²¹² According to Admiral Faller, the port of Ushuaia in Argentina is another location where China's commercial position could provide China with strategic access to the Strait of Magellan.²¹³ Recent reports also suggest China has engaged in talks with the government of Argentina about potential Chinese participation in a project to upgrade dock and logistics infrastructure at an Argentine naval base in Ushuaia.²¹⁴

China is also particularly involved in port development in the Caribbean. China Harbor Engineering Company† has a regional

*Since the late 1990s, the Hong Kong-based firm Hutchison has operated two main ports, Balboa and Cristobal, located on either end of the Panama Canal. The China Harbor Engineering Company constructed Balboa port on the Pacific side in 2002. Mat Youkee, "The Panama Canal Could Become the Center of the U.S.-China Trade War," *Foreign Policy*, May 7, 2019; R. Evan Ellis, "The Evolution of Panama-PRC Relations since Recognition, and Their Strategic Implications for the U.S. and the Region," *Global Americans*, September 21, 2018; Hutchison Ports PPC, "Learn about PPC"; BNamericas, "Appeal Threatens U.S. \$1Bn Panama Container Port," January 30, 2018; Katherine Koleski and Alec Blivas, "China's Engagement with Latin America and the Caribbean," *U.S.-China Economic and Security Review Commission*, October 17, 2017, 25; *Global Construction Review*, "Chinese Firm Starts Work on \$1Bn Panamanian Megaport," June 12, 2017; U.S. Senate Committee on Foreign Relations, *Hearing on the Panama Canal and United States Interest*, June 16, 1998.

† China Harbor Engineering Company is a subsidiary of the SOE China Communications Construction Company (CCCC). In August 2020, the U.S. Department of Defense added CCCC to the list of companies with ties to the PLA. In December 2020, the U.S. Department of Commerce added CCCC to the Entity List for its role in illegal dredging activities in the South China Sea. CCCC has also participated in projects at Gwadar Port in Pakistan and Hambantota Port in Sri Lanka. U.S. Department of Commerce Bureau of Industry and Security, "Addition of Entities to the Entity List, Revision of Entry on the Entity List, and Removal of Entities from the Entity List," *Federal Register* 85:246 (December 22, 2020); U.S. Department of Defense, *DOD Releases List of Additional Companies, in Accordance with Section 1237 of FY99 NDAA*, August 28, 2020; Shannon Tiezzi, "With Latest Sanctions, US Casts a Shadow over China's Belt and Road," *Diplo-*

headquarters in Kingston, Jamaica, and active projects in almost every major Caribbean country.²¹⁵ China Merchant Port Holdings possesses full ownership of the port in Kingston.²¹⁶ According to Mr. Aragão's testimony before the Commission, China has also gained priority access to the Santiago de Cuba port in Cuba in exchange for China Communications Construction Bank's financing the port's terminal expansion.²¹⁷ The Caribbean occupies a strategically significant geographic position as a maritime gateway to the southeastern United States, and according to Ms. Myers, in the event of a conflict with the United States, China could benefit from having already established a presence in the location.²¹⁸

PLA Engagement Builds Relationships

Military exercises, leadership visits, training, and professional military education exchanges have further improved the PLA's relationships with Latin American and Caribbean partner militaries.²¹⁹ Senior PLA leaders conducted 215 visits with their counterparts across all of Latin America and the Caribbean between 2002 and 2019, prioritizing China's comprehensive strategic partners and strategic partners.²²⁰ The top four countries—Chile, Cuba, Brazil, and Argentina—accounted for over half of the 215 interactions.²²¹

As in Africa, China has established forums for high-level defense exchanges with Latin American and Caribbean countries.²²² China held the first China-Latin America High-Level Defense Forum in 2012 with representatives from Bolivia, Colombia, Cuba, Ecuador, Peru, and Uruguay.²²³ At the fourth meeting in 2018,* China's Ministry of Defense described the forum as an embodiment of "China's sincere desire to develop China-Latin America defense and military relations."²²⁴ China held the first China-Caribbean-South Pacific High-Level Defense Forum in Nanjing in 2013 with the stated intention of deepening understanding between the PLA and the militaries of Caribbean and South Pacific countries.²²⁵ At the fourth meeting in Beijing in 2019, China's defense minister indicated that China sought to "deepen military exchanges and cooperation with Caribbean countries... under the framework of the BRI."²²⁶

The PLA has also occasionally deployed small numbers of forces to the region for exercises.²²⁷ PLA forces participated in a humanitarian assistance and disaster relief exercise with Colombia in 2012 and a jungle patrol competition in Brazil in 2016, but the PLA has yet to conduct any exercise of significant force size in the region.²²⁸ Between 2002 and 2019, the PLA Navy conducted 28 port calls in Latin American and Caribbean countries, prioritizing China's comprehensive strategic partners and occasionally including limited minor exercises with each country visited.²²⁹ In 2013, for instance, two PLA Navy missile frigates and a support ship participated in a joint exercise with the Chilean navy.²³⁰ In 2011, 2015, and 2018, the PLA hospital ship *Peace Ark* made three multi-stop visits of increasing length to the region.²³¹

mat, August 27, 2020; Alex Fang, "US Blacklists Belt and Road Builder for Role in South China Sea," *Nikkei Asia*, August 27, 2020.

*Latin American attendees at the fourth meeting included representatives from Bolivia, Brazil, Chile, Costa Rica, Cuba, Mexico, Uruguay, and Venezuela. Qiao Nannan, "Fourth China-Latin America High-Level Defense Forum" (第四届中拉高级防务论坛开幕), *China's Ministry of Defense*, October 29, 2018. Translation.

Relationship building through professional military education and training is another important component of China's security activities in the region.²³² PLA personnel have attended training at Brazil's Peacekeeping Institute, participated in a special operations course in Colombia, and attended a course on Command and General Staff hosted by the Chilean navy.²³³ The PLA has also participated in training at the Brazilian Jungle Warfare School to improve its ability to operate in jungle environments like those found along China's southern periphery.²³⁴ China's involvement in professional military education in the region is also increasing.²³⁵ For example, China has sponsored defense officials from nearly all countries in the Caribbean basin with which it has diplomatic relations to attend courses in China.²³⁶ China is also orienting some of its engagements in competition with the United States by spreading disinformation about the intentions of the U.S. military and even offering a course to regional militaries that argues against the United States as a military partner of choice.²³⁷

Arms Sales and Space Cooperation Achieve Targeted Dependencies and Reinforce Authoritarianism

Through arms sales and space technology sharing, China has deepened dependencies that have commercially benefited Chinese companies and may strategically benefit the Chinese government.²³⁸ Many regional governments are attracted to China's relatively inexpensive defense equipment and lack of institutional conditions.²³⁹ China's biggest purchasers of arms in the region have been the Chavez and Maduro regimes in Venezuela, the Morales government in Bolivia, and the Kirchner governments in Argentina.²⁴⁰

Under the Chavez and Maduro regimes, China has delivered over \$500 million worth of military equipment to Venezuela, including light tanks, self-propelled artillery and infantry fighting vehicles, Y-8 transport aircraft, K-8 combat aircraft equipped with air-to-air missiles, and antitank missiles and antiship missiles.²⁴¹ The Maduro regime has used Chinese armored vehicles to repress democratic protests and to obstruct the activities of Venezuelan Interim President Juan Guaido and other elected members of the Venezuelan National Assembly.²⁴² During Morales' presidency in Bolivia between 2006 and 2019, China sold the Bolivian military six K-8 combat aircraft worth \$58 million and six helicopters worth over \$100 million.²⁴³ It also donated 41 armored personnel vehicles to the country.²⁴⁴ In Argentina during the presidency of now vice president Cristina Fernandez de Kirchner between 2007 and 2015, China outfitted the Argentinian UN forces with four armored personnel carriers worth \$2.6 million.²⁴⁵ The current government of Alberto Fernandez and Cristina Fernandez de Kirchner is considering purchasing JF-17 fighters from China, which would be the most advanced Chinese aircraft sold to the region.²⁴⁶

China's most significant space cooperation initiatives in Latin America and the Caribbean have mainly occurred with these same governments.* China has helped to develop and launch at least 21

*The notable exception is Brazil, China's oldest strategic partner and space partner in the region. China and Brazil signed a series of agreements to cooperate on satellite development beginning in 1984 at a time when China's own space capabilities were also still relatively underdeveloped. Under the resulting China-Brazil Earth Resources Satellite program, China's relation-

satellites for its top partners in the region, including 10 for Argentina, 6 for Brazil, 3 for Venezuela, and 1 each for Bolivia and Ecuador.²⁴⁷ Venezuela's most recent satellite, which was launched in 2017 during Maduro's presidency when the economy was in a state of collapse, will reportedly be used to aid security forces.²⁴⁸ The development of Bolivia's satellite, which President Morales agreed to purchase in 2010 for \$300 million, was majority financed by a loan from China Development Bank and seen as a Chinese attempt to strengthen ties with the Morales government.²⁴⁹ Although Bolivian media expressed skepticism that the country, one of the poorest in South America, could pay back the loan to China for this satellite, an additional satellite launch is already planned for 2022.²⁵⁰ Ecuador's satellite launched in 2013 during the Correa Administration.²⁵¹ In Argentina, shortly after Cristina Fernandez de Kirchner returned to power as vice president in 2019, China and Argentina resumed a wide range of space cooperation agreements that had stalled under the previous administration.²⁵² China launched ten satellites for Argentina in 2020, and the two sides have agreed to cooperate on space vehicles and additional ground infrastructure to launch and control space missions.²⁵³ China has also played a significant role in constructing space ground control architecture and training space personnel for both Venezuela and Bolivia, potentially giving the Chinese government access to data and imaging captured by or transmitted through their satellites.²⁵⁴

Finally, China engages with its comprehensive strategic partners Argentina, Brazil, Chile, and Peru on a multilateral level through the Asia-Pacific Space Cooperation Organization (APSCO), a multilateral space organization with a headquarters in Beijing.²⁵⁵ China holds considerable sway over APSCO's institutional direction, and in 2015 the organization released a joint statement asserting compatibility between APSCO's mission and BRI.*²⁵⁶ Although none of APSCO's Latin American member states joined BRI individually before 2018, they all nonetheless supported APSCO's affiliation with BRI in 2015.²⁵⁷

Implications for the United States

China's economic importance and targeted political influence encourage Latin American and Caribbean countries to make domestic and foreign policy decisions that favor China while undermining democracies and free and open markets. As Dr. Ellis explained in his testimony to the Commission, China's influence allows it "to lever-

ship with Brazil more closely resembled peer-to-peer cooperation. This presents a stark contrast to later space agreements after 2000 in which its superior technological capabilities and stronger financial position have allowed China to hold considerably more leverage over its Latin American partners. Julie Michelle Klinger, "A Brief History of Outer Space Cooperation between Latin America and China," *Journal of Latin American Geography* 17:2, (July 2018): 46–86, 58; China's Ministry of Foreign Affairs, *China Policy Paper on Latin America and the Caribbean* (中国对拉美和加勒比政策文件), November 24, 2016. Translation.

* In 2015, an APSCO forum convened in Beijing under the title "The Belt and Road Initiative for Facilitating Space Capabilities Building of the Asia-Pacific Countries." The organization issued a statement with unanimous support from members asserting "the objective of jointly building a community of shared interests, responsibility, and destiny proposed by China's 'The Belt and Road' Strategy conforms to the mission of APSCO." It further stated that "the Space-Based Integration Information Corridor concept proposed by China is consistent with the vision of the development and cooperation of APSCO and its Member States." Julie Michelle Klinger, "A Brief History of Outer Space Cooperation between Latin America and China," *Journal of Latin American Geography* 17:2 (July 2018): 46–86, 63.

age Latin America and the Caribbean in its battle to bend global economic, financial, and political institutions to its advantage” and increases its ability to rally opposition to international initiatives of the United States.²⁵⁸ In exchange for promises of economic benefit, governments are increasingly willing to accept Chinese restrictions on their foreign policy decisions, including refraining from criticizing China’s record on human rights, backing China’s initiatives within multilateral fora, supporting BRI, and forgoing interactions with Taiwan. As Admiral Fallor assessed, China is ultimately “trying to create clients, not friends.”²⁵⁹

The attraction of immediate economic benefit from China encourages some governments in the region to compromise their own standards for labor and environmental protections or invest in extractive sectors at the expense of higher-value-added activities. China’s economic leverage over the region ultimately facilitates its own deepening economic interests while hindering countries’ abilities to preserve open and fair markets, undermining their long-term economic sustainability. Authoritarian regimes benefit from Chinese loans and the sale of surveillance and smart city technologies, while some have adopted elements of China’s techno-authoritarian governance model. As a result, the region’s commitment to both free and open market principles and democratic values are at risk as China’s engagement deepens.

The COVID-19 pandemic has amplified ongoing trends in China’s relationship with Latin America and the Caribbean. Countries have become even more likely to turn to Chinese trade, investment, and loans to boost their economic recoveries, while the promise of Chinese COVID-19 vaccines has in some cases created additional leverage for China to attain its goals. Most countries in the region lack institutions strong enough to balance the economic benefits of engagement with China with the national security risks. As a result, some governments in the region are likely to continue deemphasizing long-term risks, such as declining environmental, social, and governance standards; re-primarization; and China’s expanding influence over national assets like lithium mines and electricity distribution networks.

China’s expanding influence over mineral supply chains throughout Latin America has implications beyond countries’ growing dependence on China. In solidifying control over key inputs, China’s government and companies are extending their hold on a host of critical technologies, such as lithium-ion batteries and semiconductors, which could harm U.S. competitiveness. The Biden Administration has highlighted the need to shore up U.S. supply chains for critical technologies, many of which require the United States to import minerals like lithium, copper, and niobium, some of which it sources from Latin America.²⁶⁰

Through its security relationships with Latin American and Caribbean countries, China may be able to lay the groundwork for deepening future cooperation in a region of particular strategic significance for the United States. China’s space observation station in Argentina and construction of satellites for countries in the region grant the PLA access to technology it could potentially use for espionage and to strengthen China’s leverage over individual countries.

China's deep involvement in financing, building, and operating the region's port infrastructure and its presence around the Panama Canal may allow it to extract concessions from host governments for preferential access. China has also made efforts to erode U.S. security partnerships in the region and increase Latin American and Caribbean countries' dependence on China.

Nevertheless, the United States retains strong relationships and historical ties with countries throughout the region. Many Latin American and Caribbean governments and publics desire much deeper U.S. engagement and are seeking to guard against risks from their relationship with China. As Dr. Berg noted in his testimony to the Commission, people in Latin America and the Caribbean want to "try to shield their countries from some of the most corrosive elements of... engagement [with China]."²⁶¹ Robust cultural, educational, and social ties between the United States and the region through diaspora communities and proximate geography grant the United States important advantages that China cannot replicate. U.S. partnerships with governments, regulators, and civil society will have a key role to play in strengthening the region's economies and institutions, advancing U.S. interests, and limiting the negative consequences of deepening Chinese engagement.

ENDNOTES FOR SECTION 2

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CHAPTER 2

U.S.-CHINA ECONOMIC AND TRADE RELATIONS

SECTION 1: YEAR IN REVIEW: ECONOMICS AND TRADE

Key Findings

- Though China was the first among major economies to recover following the fallout from the novel coronavirus (COVID-19) pandemic, topline growth figures mask an unbalanced and potentially unsustainable recovery. China's short-term rebound relied on government transfers to boost local spending and support firms, exacerbating the country's substantial debt load. The government's approach failed to revive household consumption.
- China's economic rebound in 2020 into 2021 does not represent a fundamental departure from a decade-long slowdown trend. The 14th Five-Year Plan (FYP) acknowledges underlying structural problems, such as declining investment returns, that prevent the economy from transitioning to a more sustainable model. China's leaders believe they can address these challenges through more state-led technology development and by strengthening, rather than loosening, the government's control over the economy.
- Escalating defaults by Chinese property developers show the challenge regulators face in reining in the highly indebted sector. Cash-strapped developer Evergrande's debt troubles have the potential to trigger broader financial instability given Evergrande's significant footprint within China's economy, including its connections to Chinese households, contractors and suppliers in the property sector, banks, and local government finance vehicles (LGFVs).
- Chinese policymakers seek a self-sufficient technology sector that not only is under the Chinese Communist Party's (CCP) control but also plays a critical international role. In 2021, the Chinese government expanded the breadth of its efforts to foster local technology champions, but it also initiated a range of enforcement actions against major nonstate Chinese tech firms. This crackdown is partly motivated by a desire for greater control of nonstate firms' collection and storage of data, which the government views as a strategic resource and national security priority.

- U.S.-China economic integration is strengthening in some areas but weakening in others. Bilateral trade flows and U.S. portfolio investment into China are increasing. Bilateral foreign direct investment flows are down, but there is an increase in venture capital, private equity, and other investments, and the types of acquisition targets are changing. Despite ongoing political frictions and concerns about discriminatory treatment, many U.S. companies remain committed to the Chinese market.
- The Biden Administration is building on the Trump Administration's assertive approach to addressing China's unfair economic practices, threats to U.S. national security, and denial of human rights by engaging U.S. allies and international institutions in confronting Beijing. Despite tense rhetoric, China's government seeks to prevent commercial tensions with the United States from escalating in order to maintain economic stability, even as both countries seek to strengthen supply chain security.
- China's government is formalizing a legal and regulatory framework to counter foreign trade restrictions and sanctions, aimed especially at U.S. export controls on Chinese companies and financial sanctions on Chinese individuals. The most sweeping of these new measures is the June 2021 Anti-Foreign Sanctions Law, which prohibits companies operating in China from complying with foreign sanctions the Chinese government determines are "discriminatory."

Introduction

In 2021, China's economy continued to confront immediate disruption caused by the COVID-19 pandemic as well as long-term challenges to economic dynamism and financial stability predating the outbreak. Consumed with shoring up short-term growth and projecting an image of strength on the eve of the CCP's centennial, China's leadership resorted to a familiar playbook of government support for industry. The resulting rebound deepened already acute financial risks, prompting China's leadership to taper stimulus by the end of the first quarter in 2021. Despite the Chinese leadership's claim of spearheading global economic resurgence, it faces urgency to identify new domestic drivers of growth, overcome mounting challenges through innovative breakthroughs, and reduce economic and technological dependency on global economic integration, particularly with the United States. China's policy prescriptions to achieve these goals largely restate previous plans.

The CCP's external economic relations in 2021 focused on using China's economic heft for economic gain and geopolitical leverage and formalizing methods of tit-for-tat retaliation for perceived diplomatic slights or threats to national security. China's government laid the legal foundation for stronger reciprocal action against U.S. export controls and investment restrictions in 2021 while increasing economic coercion against countries and companies that speak out against its actions.

This section examines key developments and trends in China's domestic economy, U.S.-China bilateral economic relations, and China's economic coercion. For analysis of the CCP's worldview and policy priorities at the centennial of its founding, see Chapter 1, Section 1,

“The Chinese Communist Party’s Ambitions and Challenges at Its Centennial.” China’s 14th FYP and Chinese policymakers’ growing emphasis on achieving technological self-sufficiency are reviewed in Chapter 2, Section 2, “The Chinese Communist Party’s Economic and Technological Ambitions: Synthetic Biology, New Mobility, Cloud Computing, and Digital Currency.” For analysis of the Chinese government’s increasing control over the corporate sector, see Chapter 2, Section 3, “The Chinese Government’s Evolving Control of the Nonstate Sector.” Risks to U.S. national security interests posed by greater financial integration with China are discussed in Chapter 2, Section 4, “U.S.-China Financial Connectivity and Risks to U.S. National Security.”

China’s Domestic Recovery Slows as Economy Confronts Long-Term Imbalances

China’s sharp economic contraction at the onset of the COVID-19 pandemic and quick recovery thereafter interrupted but has not altered the country’s long-term economic trajectory. For the last decade, China’s gross domestic product (GDP) growth rate has been slowing due to decreasing returns on investment and failure to generate new drivers of growth. Although China’s government prioritized reducing the outsized contribution of manufacturing, infrastructure investment, and property construction to GDP growth, these sectors continue to dominate economic activity at the expense of household consumption and the services sector. Debt-fueled recovery and economic decisions following COVID-19 have exacerbated these fundamental imbalances. China’s growth in the second half of 2020 into 2021 was primarily a result of central government transfers to support continued spending by localities, even as fiscal revenue contracted. This strategy propped up production but did not spur a corresponding self-sustaining recovery in consumption and services. At China’s annual legislative session in March 2021, policymakers shifted priorities from shoring up short-term recovery. Addressing mounting risks from China’s significant debt buildup became the new focus, and growth within China’s primary economic engines faltered. The central government has resumed efforts to “deleverage,” or reduce overall debt levels, and “de-risk,” or reduce informal channels to less creditworthy borrowers, targeting the property sector and local governments.

China’s Economic Recovery Falters amid Growing Imbalances

After an early recovery, China’s economic growth moderated in the first half of 2021. According to official data* released by China’s National Bureau of Statistics, China’s economy grew by 12.7 percent year-on-year in the first half of 2021, or 18.3 percent in the first quarter and 7.9 percent in the second quarter.¹ Year-on-year GDP growth, which measures economic output relative to the same period in the preceding year, significantly overstates the actual per-

* Foreign economists, investors, and analysts remain skeptical about the reliability of China’s official reported economic data. As a key metric in official performance evaluations, as well as government legitimacy, economic data are highly politicized at all levels of government. For more on the reliability of China’s GDP, see Jacob Koch-Weser, “The Reliability of China’s Economic Data: An Analysis of National Output,” *U.S.-China Economic and Security Review Commission*, January 28, 2013. For more on the reliability of China’s trade data, see U.S. Congressional Research Service, “What’s the Difference?—Comparing U.S. and Chinese Trade Data,” May 20, 2020.

formance of China's economy. Unlike in most major economies, China's government imposed strict quarantine measures following the onset of COVID-19, leading to an acute contraction during the first quarter of 2020 but a quick recovery in the second quarter as lockdown measures were relaxed. By the fourth quarter of 2020, China returned to pre-pandemic growth levels. The momentum of China's recovery largely abated by the first quarter of 2021, as demonstrated by low quarter-on-quarter GDP growth.* The year 2021 saw the first contraction in factory activity since February 2020, with new orders, output, and exports all down amid production bottlenecks, higher material costs, and electricity rationing.²

China's traditional growth drivers slowed in the first half of 2021 as the government curtailed stimulus. China's economic recovery was driven chiefly by infrastructure construction, property investment, and export-oriented manufacturing. The former two sources of growth have slowed as the government reduced access to easy credit from the beginning of 2021. This trend is likely to continue, as contractions in credit growth within China's economy tend to precipitate decreases in economic activity two to three quarters later.³ Though China's manufacturing output held strong through the first half of 2021, the outlook for the sector is similarly precarious. Its robust performance during 2020 owed in large part to China's early reopening compared to other economies, but in 2021 China faces higher input costs and increased competition from other major exporters.⁴

- *Infrastructure:* Owing to lower fiscal expenditure and local government debt issuance, China's overall infrastructure investment decreased for the first time since the outset of the pandemic in May 2021, falling 3.6 percent year-on-year.⁵ By July it had fallen over 10 percent year-on-year.⁶ In particular, country-wide fiscal spending on transportation projects such as highways and railroads declined 4.9 percent year-on-year by August 2021, reaching \$109.5 billion (renminbi [RMB] 704.3 billion).^{†7} To contain local government debt growth, China's central government reduced the amount of "special purpose bonds" local governments could issue to fund infrastructure projects, among other long-term expenditures. China's central government set the special purpose bond quota at \$567 billion (RMB 3.65 trillion) in 2021, down from \$583 billion (RMB 3.75 trillion) in 2020, and by July local governments had only issued approximately 37 percent of their special purpose bond quota for the year.⁸ By contrast, local governments had issued almost 65 percent of their special purpose bonds by the end of the first half of 2020.⁹ The central government is also urging local governments to reconsider carrying out potentially loss-making infrastruc-

*Seasonally adjusted quarter-on-quarter growth shows China's economy grew only 0.4 percent in Q1 2021 compared to 3.2 percent in Q4 2020, marking the lowest growth rate on record with the exception of the pandemic shock in Q1 2020. China's National Bureau of Statistics, *National Economy in the First Half Year Witnessed the Steady and Sound Growth Momentum Consolidated*, July 15, 2021; Logan Wright and Allen Feng, "March/Q1 2021 Macro Data Recap," *Rhodium Group*, April 16, 2021, 2; Evelyn Chang, "China Says Its Economy Grew 18.3% in the First Quarter, Slightly Missing Expectations," *CBC*, April 15, 2021.

[†]Unless noted otherwise, this section uses the following exchange rate throughout: \$1 = RMB 6.43.

ture projects, particularly in the highly indebted rail sector.¹⁰ In the spring of 2021, two high-speed rail projects in Shaanxi and Shandong provinces worth \$20 billion (RMB 130 billion) were halted owing to concerns about commercial viability and excessive leverage.¹¹

- *Property*: A sharp slowdown in China’s property sector* weighed on China’s economy in the first half of 2021, contributing to the flagging recovery. Due to stricter regulatory requirements on developers’ financial conditions detailed below, growth of outstanding bank loans to the property sector slowed to 9.5 percent year-on-year by the end of June 2021, compared to 17.1 percent in June 2019.¹² Investment in new real estate declined sharply in third-tier cities as a result of both new regulations and population exodus.†¹³ Though they are smaller and less wealthy, China’s third-tier cities account for roughly the same volume of property sales by floorspace as both first- and second-tier cities combined.¹⁴ Slowing construction in these cities will therefore weigh more heavily on the property sector, further weakening overall economic growth.¹⁵ The impact of the new regulations took longer to become evident in national home sales data due to speculative investment in China’s major cities. The effect was clear by August 2021, however, as the value of home sales declined 18.7 percent year-on-year.¹⁶
- *Export-oriented manufacturing*: Industrial value added, an indicator for the amount China’s manufacturing and extractive industries contribute to aggregate economic output, slowed consistently, declining from 14.1 percent year-on-year in March to 5.3 percent year-on-year by August 2021.¹⁷ The slowdown was initially led by lower export demand and decreasing heavy vehicle production, a sign of flagging anticipated domestic construction.¹⁸ A global shortage in semiconductors used in automobiles also contributed to reduced vehicle production in China. According to the China Association of Automobile Manufacturers, passenger vehicle production declined 18.7 percent year-on-year in August, “mostly affected by an insufficient supply of chips,” though auto sales remained higher in 2021 than in the same period the preceding year.¹⁹ Closures at Chinese ports in response to localized COVID-19 outbreaks and an ongoing global shipping container shortage contributed to global shipping delays and slowing exports.²⁰

*Loans to the property sector include both individual mortgages and loans to developers of commercial real estate, residential real estate, and government-sponsored low-income housing. People’s Bank of China Monetary Policy Analysis Group, *Monetary Policy Implementation Report for Third Quarter of 2021* (中国货币政策执行报告：2020 年第三季度), November 26, 2020, 46. Translation.

†Chinese cities are unofficially but widely grouped into four “tiers” based on population, affluence, and whether they are governed at a provincial level (e.g., Shanghai, Chongqing, Beijing, and Tianjin are provincial-level municipalities), as provincial capitals, or at lower echelons of administrative hierarchy. For example, Shanghai is a first-tier city; Chengdu, the populous capital of Sichuan Province and a regional hub in the southwest, is a second-tier city; Wenzhou, a prefecture-level port city and tourist destination on the coast of Zhejiang Province, is a third-tier city; and Xiangcheng, a county-level city in Henan Province famous foremost as the birthplace of the first president of the Republic of China, Yuan Shikai, is a fourth-tier city. Dorcas Wong, “China’s City-Tier Classification: How Does It Work?” *China Briefing*, February 27, 2019.

An Illustration of Supply Chain Challenges: Chinese Port Closures Impact Global Shipping

Localized COVID-19 outbreaks in major Chinese ports and the Chinese government's zero-tolerance approach to containing them have contributed to protracted shipping delays and a steady increase in global shipping prices. For example, after numerous cases of COVID-19 were identified at Yantian container port in Shenzhen in May 2021, Chinese authorities temporarily halted loading new export containers for six days, and the port operated at partial capacity from May 21 to June 24.²¹ As operations resumed, terminal congestion led to delays of over 14 days, up from a typical average wait time of a half day.²² Chinese ports handle almost 30 percent of global shipping container throughput, or the greatest volume of containerized goods handled by a single country globally as of 2019.²³ Recurring closures at Chinese ports have consequently exacerbated already rising shipping prices spurred by container shortages, lagging inventories, and recovering global consumer demand.²⁴ According to the logistics company Freightos, as a result of the overall rise in global shipping costs, the costs of shipping goods from Asia to the U.S. east and west coasts rose by 315 percent and 330 percent year-on-year, respectively.²⁵ The cost of shipping goods from China's commodities suppliers in South America to Shanghai, the world's largest port, also rose by 443 percent.²⁶

Delays and price increases for shipping routes between China and foreign consumer markets such as the United States have also contributed to mounting costs for businesses, and the rising cost of importing intermediate goods may be contributing to upstream inflation for producers and retailers.²⁷ Furthermore, since most shipping companies operate on futures contracts that are negotiated annually, current price surges are absorbed into long-term contracts, which will likely result in long-term price increases.²⁸ Global shipping companies, however, have reported record profits due to price surges. China's state-owned COSCO Shipping Holdings, for example, increased its net profit 32-fold from approximately \$179 million to \$5.8 billion in the first half of 2021.²⁹

Household consumption and services have failed to offset the decline in traditional growth drivers. Driven by stimulus policies that favored investment and producers as well as the rebound in U.S. consumption, China's recovery in the second half of 2020 left behind households and the services sector. Both showed tentative recovery in the first half of 2021, but neither are sufficient to power growth in place of investment and exports, and the contraction in China's overall GDP growth resulting from tapering stimulus may undermine their initial recovery.

- *Household consumption:* After remaining virtually stagnant in 2020, China's household consumption finally rebounded part-way through the first quarter of 2021. Retail sales growth, a key gauge of consumption, surged 34.2 percent year-on-year in

March 2021 but decreased thereafter, with growth levels tapering to 17.7 percent in April, 12.1 percent by June, and 2.5 percent by August.³⁰ Economists suggest that consumers remain cautious regarding China's recovery, and households' propensity to save rather than spend remains high due in part to slow wage growth.³¹ Urban disposable income growth, a key driver of consumption, has not kept pace with China's economic recovery, growing 10 percent in the first half of 2021, or 2 percentage points lower than GDP growth rate.³²

- *Services sector*: At 53 percent, the contribution of the services sector* to GDP growth in the first half of 2021 was far below its contribution before the pandemic: in the first half of 2019, it accounted for 60.3 percent of GDP growth.†³³ Services are a key driver of urban employment in China, with demand for labor-intensive services jobs among migrant workers increasing as factory job availability decreased in the past.³⁴ This trend is likely to repeat as global economies recover from the pandemic and demand for Chinese exports slows. Slackening demand for Chinese exports will limit manufacturing employment opportunities, while dampened household consumption will limit continued growth of the services sector.³⁵

The consequences of uneven recovery are apparent in diverging inflation indicators for China's producers versus consumers. The producer price index, a benchmark for the rate at which production input costs are increasing, grew sharply in 2021, increasing 9.5 percent year-on-year by August.³⁶ Surging producer inflation primarily reflects increasing commodity prices, driven by extensive manufacturing and construction activity during the preceding year. Meanwhile, China's consumer price index rose by only 0.8 percent year-on-year by August, after being in deflationary territory for the first two months of the year.³⁸ Continued divergence of producer prices and domestic consumer demand threatens China's recovery, as producers will either need to pass increased input costs to domestic or international consumers or accept lower profit margins.³⁹

*China's National Bureau of Statistics defines the services sector as comprising wholesale and retail; transportation, storage and postal services; accommodation and catering; telecommunications, internet, and software; financial services; real estate, including leasing and business services, property management, real estate intermediary services, and leasing operations; scientific and technological research; water and environmental conservation and public facilities management; residential and repair services; education; healthcare and social work; culture, sports, and entertainment; public administration, social security and civil society organizations; and international organizations. China National Bureau of Statistics Department of Management, *Regulation on the Division of the Three Sectors* (三次产业划分规定), January 14, 2013. Translation; China National Statistics Bureau, 4. *Statistical System and Classification Standards*, 四、统计制度及分类标准 (17), June 19, 2020. Translation.

†By comparison, services contributed 77.3 percent for the United States in 2019. High-income, manufacturing-dependent economies Japan, South Korea, and Germany all have services ratios slightly below 70 percent. World Bank, "Services, Value Added (% of GDP)"; U.S. Central Intelligence Agency, "GDP—Composition, by Sector of Origin," *World Factbook*.

China's Government Increases Economic Data Censorship

To control the official narrative of its economic performance, China's government has increased censorship of economic reporting, including by journalists and nonstate information providers, such as economic consultancies and data services. Economic censorship increases financial and commercial risk for countries, entities, and individuals exposed to China who are unable to obtain accurate information on the performance of its economy. In particular, China's government has tried to contain unofficial estimates of inflation, seemingly to influence market dynamics, and unemployment, which is highly politically sensitive:

- *Inflation*: After monthly producer inflation reached its highest reported level since 2008 in May 2021, China's main economic planning agency and market regulator introduced new compliance requirements for commodity price index reporting.⁴⁰ Analysts suggest the compliance requirements are aimed at bolstering the government's ability to censor information that could contribute to further price increases.⁴¹ Prior to modifying the requirements, China's government reportedly censored industry research that reported price escalation, and it suspended a daily indicator on coal prices after the index reported a sharp increase.⁴²
- *Unemployment*: At the height of China's lockdown and travel restrictions in February 2020, the official unemployment rate stood at 6.2 percent, versus roughly 4 percent reported by China's government for decades.⁴³ In late April 2020, the brokerage firm Zhongtai Securities estimated the number of workers who lost their jobs due to the pandemic may have already exceeded 70 million, indicating an urban unemployment rate of at least 20.5 percent.*⁴⁴ The figure was quickly retracted after gaining attention online, and on May 1 *Caixin* business magazine reported that Zhongtai Securities removed their research chief from his post following the report's publication and censoring.⁴⁵

Increased censorship of economic data and reporting compounds longstanding practices by propaganda agencies and China's national statistics bureau to paint a favorable picture of the economy in order to control market and societal responses to economic news. For media outlets, China's government routinely issues guidance ordering preemptive censorship of topics deemed politically sensitive, which can include reporting on adverse economic conditions. For instance, following the U.S. imposition of tariffs on Chinese goods in July 2018, the *New York Times* reported China's government forbade reporting on the impact of the tariffs in September 2018.⁴⁶ The same government directive forbade coverage of local government debt risks, declining consumer confidence, or

*At the end of 2019, China's National Bureau of Statistics reported that urban employment stood at 442.5 million, with an urban unemployment rate of 3.6 percent. China National Statistics Bureau, *Zhang Yi: The Employment Situation Is Generally Stable* (张毅：就业形势总体稳定就业预期目标较好完成), January 19, 2020. Translation.

China's Government Increases Economic Data Censorship—Continued

economic data suggesting the economy was slowing, among other topics.⁴⁷

As U.S. investors and financial services firms become more involved in China's economy, they face the increasing risk of producing analysis or providing information the Chinese government censors. For instance, according to testimony before the Commission by Rebecca Fair, CEO of data analytics firm Thresher, in late July 2021 the Chinese government removed domestic discussion of U.S. investment managers Merrill Lynch and JP Morgan after they reportedly issued warnings to their investors about the risk of investment in China due to the government's unpredictability.*⁴⁸ In this case, censors quashed the narrative among domestic netizens that Chinese government actions had introduced new or heightened risks to the Chinese market.⁴⁹

Deleveraging and De-Risking Target Local Government and Property Developers' Debt

In shoring up short-term growth, China's government increased the fiscal deficit and paused campaigns aimed at reducing overall debt levels and riskier forms of credit during 2020. Despite being small by international standards, credit growth and fiscal support as part of China's 2020 stimulus contributed to the country's already staggering debt load. At the end of 2020, China's debt-to-GDP ratio reached 285 percent, compared to 258 percent in 2019, according to the World Bank.[†]⁵⁰ The ratio declined to 280 percent by the end of the first quarter of 2021, but only because China's GDP increased rather than because the absolute value of China's debt decreased.⁵¹ China's central government increased the fiscal deficit to a record 3.6 percent of GDP in 2020, and later reduced it to 3.2 percent in 2021 amid stronger fiscal revenues.[‡]⁵²

A substantial portion of the debt growth was also fueled by laxer borrowing standards. In March 2020, the People's Bank of China (PBOC) and several other agencies instructed creditors to extend loan repayment intervals and not to recognize loans with

*In order to shape domestic narratives, the Chinese government leverages both artificial intelligence and humans to moderate and generate content about the Chinese economy, domestic and foreign markets, and domestic and foreign companies. Chinese censors shape narratives primarily by deleting, generating, and amplifying content on traditional and social media. Rebecca Fair, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on U.S.-China Relations in 2021: Emerging Risks*, September 8, 2021, 1.

†The World Bank's measure of debt includes the sum of domestic and external debt, including household, non-financial corporate, and public sector debt. Corporate debt includes that of non-state firms and SOEs, as well as local government financing vehicles, special platforms created by local governments to issue debt on their behalf. World Bank Group, "Beyond the Recovery: Charting a Green and Inclusive Growth Path," *China Economic Update* (June 2021), 11.

‡Increasing the annual budget deficit above 3 percent of GDP represents an important threshold for Chinese policymakers. Since China introduced economic reforms in 1978, the fiscal deficit-to-GDP ratio has mostly been below 3 percent and right at 3 percent during an economic slowdown in 2016 and 2017. By comparison, the U.S. fiscal deficit for 2021 is projected to be 13.4 percent of GDP. Liao Qiaoyi, "China Could Lift Deficit-to-GDP to Highest on Record amid COVID-19," *Global Times*, April 19, 2020; Yawen Chen and Ryan Woo, "China Says Higher 2019 Budget Deficit Will Spur Growth, Won't Open Floodgates," *Reuters*, March 6, 2019; U.S. Congressional Budget Office, *An Update to the Budget and Economic Outlook: 2021 to 2031*, July 2021.

missed payments as delinquent or downgrade the credit rating of borrowers.⁵³ Additionally, in July 2020 China's chief banking regulator extended a year-end deadline on 2018 regulations meant to reduce shadow banking, or off-balance-sheet lending, to avoid regulatory capital requirements.⁵⁴ Banks and asset managers were granted until the end of 2021 to comply with the new requirements.⁵⁵ Even prior to the pandemic, China's government had already been easing off its deleveraging and de-risking campaigns following a sharp escalation in borrowing costs that threatened to dampen overall growth, particularly for China's small- and medium-sized enterprises (SMEs).⁵⁶

Local government expenditure to keep local businesses operating was a key pillar of China's post-pandemic recovery.⁵⁷ To incentivize firms to retain employees, in February 2020 China's central government cut and, in some cases, exempted firms' contributions to social programs, including pension, unemployment, and workers' compensation, which are administered by local governments and amounted to \$240 billion (RMB 1.54 trillion) from February through the end of 2020.⁵⁸ In March 2020, the central government refunded small firms the payments they made toward unemployment insurance in 2019, provided those firms did not reduce employment.⁵⁹ Responding to central government guidance, many local governments introduced other incentives to help businesses weather the economic contraction.⁶⁰ These included providing subsidies for purchasing teleworking equipment and services, allowing corporate income tax deductions for other expenditures related to COVID-19 prevention and control, and cutting a number of other taxes and administrative fees.⁶¹ Other fiscal incentives notably aligned with China's policy priorities. For instance, China's government subsidized research and development costs for smaller firms and granted substantial tax breaks for research and development expenditure related to COVID-19 prevention and control.⁶²

Because local governments' fiscal revenues contracted substantially due to the economic slowdown and tax breaks for businesses, they borrowed heavily through both formal and informal channels to meet their expenditure obligations. According to China's Ministry of Finance, by July 2021 outstanding local government debt reached approximately \$4.4 trillion (RMB 27.9 trillion), or 27 percent of GDP in 2020, up slightly from \$4 trillion (RMB 25.6 trillion) or 25 percent of GDP at the end of 2020.⁶³ The actual amount of local government debt is likely much larger, however, due to "implicit debt" raised through LGFVs, special platforms created by local governments to issue debt on their behalf.*⁶⁴ A Chinese government-linked think tank estimated that by the end of 2020, local government implicit debt had reached approximately

*Prior to 2015, municipal governments could not issue debt directly, with exception to a few pilot programs authorized by China's central government. Because local governments' revenue bases were often insufficient to meet their expenditure obligations, they used LGFVs to evade these restrictions, a practice that has continued since China legalized municipal debt issuance in 2015. China's Ministry of Finance calls funding raised through LGFVs "implicit debt," and it is explicitly recognized as corporate debt rather than a government obligation, but investors often treat LGFV bonds as backed by the government, creating moral hazard. Frank Tang, "China Debt: State Council Says Local Governments Must 'Tighten Their Belts' and Cut Debt to Reduce Financial Risks," *South China Morning Post*, March 16, 2021; Zhiguo He, written testimony for the U.S.-China Economic and Security Review Commission, *Hearing on China's Quest for Capital: Motivations, Methods, and Implications*, January 23, 2020, 6, 10.

\$2.3 trillion (RMB 14.8 trillion).⁶⁵ This estimate would bring total local government debt up to approximately \$6.3 trillion (RMB 41 trillion) in 2020, or 40 percent of GDP, 15 percentage points higher than the official figure.

China's central government renewed efforts to rein in official and implicit local government debt, which ballooned in 2020. In addition to reducing the annual quota for special purpose bonds, or municipal debt local governments may issue to fund items such as infrastructure projects, China's government moved more slowly to issue debt within the limits it set in 2021. In the first four months of the year, local governments only sold or planned sales of special purpose bonds totaling \$34.6 billion (RMB 222.7 billion), compared to \$113.5 billion (RMB 729.6 billion) in the same period in 2019 and \$178.8 billion (RMB 1.15 trillion) in 2020.⁶⁷ In April 2021, China's State Council also issued a circular on budget management, attempting to curb implicit local government debt growth by holding local cadres personally accountable for "problematic" debt raised during their terms, converting LGFVs into state-owned enterprises (SOEs) and stripping their municipal financing functions, and instructing LGFVs to restructure or declare bankruptcy if they cannot avoid default.⁶⁸ Chinese analysts questioned the timetable to convert LGFVs into regular companies, as well as the likelihood China's government would tolerate increasing LGFV defaults. One analyst noted that defaults from a single city-level LGFV bond are likely to cause refinancing problems for every LGFV in the entire province regardless of their creditworthiness, a reflection of the potential financial turbulence China's government faces in exercising greater market discipline.⁶⁹

Chinese policymakers are increasingly relying on tighter banking oversight to remedy China's highly leveraged real estate sector, which is also a target of Beijing's de-risking efforts. Announced in late 2020, the Chinese government's "three red lines" policy cuts off new bank loans to real estate developers that do not meet certain prudential requirements. These requirements include the following: (1) setting a ceiling for developers' debt-to-asset ratios at 70 percent, (2) setting net debt-to-equity ratios at 100 percent, and (3) capping short-term borrowing on par with cash reserves.⁷⁰ Economic research firm Rhodium Group analysts Logan Wright and Allen Feng describe the policy as likely "the most important tightening policy targeting the property sector introduced in recent years."⁷¹ They note that blanket requirements on developers' capitalization impose financial discipline regardless of the source of funding, where previous attempts to rein in property sector debt had focused narrowly on formal channels such as bank loans.⁷² The effect of the three red lines policy has been apparent as developers' property pipelines have begun to shrink. Between January and August 2021, the square footage of land area purchased for real estate development decreased by 10.2 percent relative to the same period in 2020, while land prices also decreased by 6.2 percent amid weakening new construction.⁷³ The PBOC has also instructed banks to strengthen due diligence screenings to ensure operating loans made to businesses are not being used for real estate speculation. At the same time, local governments are imposing tighter property

purchasing restrictions, including requiring purchasers to hold real estate assets longer before reselling them.⁷⁴ For example, new regulations in Hangzhou require owners to hold newly built homes sold through a lottery* for five years before reselling.⁷⁵

Three Red Lines Policy Increases Potential for Property Developer Defaults

China's three red lines policy has threatened the survival of multiple developers in China's highly leveraged property sector. For example, in September 2021 indebted property developer Evergrande announced it would delay payments on its investment products, which it used to raise capital to address funding gaps and pay back other creditors.⁷⁶ By September 30, 2021, Evergrande missed \$131 million in payments to its offshore bondholders, casting doubt that it could make another \$162.4 million in offshore bond payments due in October.[†]⁷⁷ By October 4, trading in Evergrande's shares had been suspended on the Hong Kong Stock Exchange per Evergrande's request.[‡]

According to its unaudited interim financial reports, Evergrande's total liabilities reached \$306 billion (RMB 1.97 trillion) as of the end of June, of which \$37.3 billion (RMB 240 billion) was debt due within one year.⁷⁸ Debt risks from Evergrande also extend beyond China's domestic economy, as the developer accounts for nearly 5 percent of offshore, dollar-denominated bonds from Chinese issuers.⁷⁹

Stricter rules on property developers' capital adequacy have hampered Evergrande and other developers' abilities to raise cash through new loans. Property development in China is a highly leveraged business, with developers funding land purchases and housing construction through loans, bonds, and deposits from home buyers rather than revenue. Because China's three red lines policy restricts property developers' ability to take on new debt, Evergrande and other developers have struggled to pay suppliers and contractors, meet existing debt payments, and finance continued expansion to raise more capital.⁸⁰ The impact of the new regulations has been readily apparent in missed bond payments. Property developers accounted for bond defaults totaling roughly \$8 billion (RMB 51.2 billion) from the beginning of 2021 to August, with more expected.⁸¹ For example, in October property developer Fantasia Holdings Group Co. Ltd. failed to repay principal amounting to \$206 million on its dollar-denominated offshore bonds.⁸²

*Because the number of potential buyers far exceeds the number of available housing units in major Chinese cities, multiple cities have implemented score-based lottery systems in which potential buyers are scored based on their ability to meet criteria including their current housing status, historical payments into local social security, and prior home purchases. Potential home buyers with the highest scores are then entered into a randomized lottery in which they may be selected to purchase housing. Shanghai Metals Market, "Shanghai Xinfang Lottery Launches a Points System to Give Priority to 'Families without Houses,'" February 6, 2021.

†Evergrande's creditors can trigger a default once its bond payments are 30 days past due. Narayanan Somasundaram, "China Evergrande Misses Bond Payment Deadline," *Nikkei Asia*, September 24, 2021.

‡Chinese state media reported that Hopson Development Holdings Limited (Hopson) planned to purchase a 51 percent stake in Evergrande's property services unit, Evergrande Property Services, prompting both Evergrande and Hopson to request a suspension in trading of their shares. Hopson has not yet confirmed the acquisition. Tom Westbrook and Donny Kwok, "Evergrande Eyeing \$5 Bln Property Unit Sale; Rival Fantasia Misses Payment," *Reuters*, October 4, 2021.

While deleveraging, China’s government is attempting to allocate more credit and fiscal support to marginalized non-state firms. China’s SMEs, which are far more likely to be non-state firms, suffered disproportionately from the economic fallout following COVID-19 as initial government stimulus policies favored state-dominated sectors. In spring 2021, China’s government took a series of measures aimed at keeping SMEs afloat. Most constitute a familiar playbook: local governments have slashed fees and taxes for smaller businesses and in some cases offered tax breaks to property owners who cut SMEs’ rents, while the PBOC has encouraged banks to increase lending to SMEs, keep borrowing costs low for SMEs, and extend loan forbearance granted in 2020 into 2021.⁸³ These policies expand upon many previous tax breaks and monetary benefits the Chinese government offered SMEs at the end of 2018 into 2019.⁸⁴ A separate policy from several agencies—including China’s Ministry of Industry and Information Technology, the primary ministry responsible for technology development—pledges state support for SMEs in targeted industries that can help China meet its technological self-sufficiency goals under the 14th FYP.⁸⁵ The continued necessity of special support for SMEs in spite of China’s recovery highlights the impediments to overcoming deeper structural changes that could support a more dynamic nonstate sector. Past efforts to achieve a balancing act in credit expansion—reining in debt growth within leveraged sectors while fostering it in others—have failed, as Chinese regulators have been unable to block avenues for new loans to be redirected toward speculation.⁸⁶

CCP’s “Common Prosperity” Slogan Elevates Campaign against Inequality

In an August 2021 speech highlighting “common prosperity,” General Secretary of the CCP Xi Jinping signaled the Chinese government’s increasing focus on addressing China’s income inequality. At a meeting of the Central Commission for Financial and Economic Affairs, one of China’s top economic deliberation bodies, General Secretary Xi said the CCP should focus on common prosperity while creating an “olive-shaped [income] distribution, where the middle is large and the two ends are small.”⁸⁷ General Secretary Xi said the CCP should “strengthen the regulation and adjustments of high income” and “fairly regulate excessive income.”⁸⁸ According to Chinese state media outlet Xinhua, the meeting also indicated the need to expand the middle class while increasing earnings for low-income individuals.⁸⁹

Concrete policy implications for common prosperity remain unclear. The August meeting emphasized the need for a “tertiary distribution mechanism” consisting of “primary distribution” (allocation of wealth according to labor, capital, and other factors), “redistribution” (through taxation, social security, and transfer payments), and “tertiary distribution” (charitable donations).⁹⁰ The government has not yet announced major policy changes in pursuit of common prosperity and Chinese policymakers and state media have sought to reassure the business community that common prosperity would not result in radical income redistribu-

CCP's "Common Prosperity" Slogan Elevates Campaign against Inequality—*Continued*

tion. Despite this, Chinese regulators have already taken significant enforcement actions against high-income individuals, and nonstate companies have announced large charitable donations in the name of common prosperity.

- On August 26, China's State Tax Administration announced it would crack down on tax evasion and increase supervision of high-income individuals.⁹¹ The next day, the State Tax Administration announced over \$2 billion (RMB 13 billion) in tax fines on several corporations as well as a \$46 million (RMB 300 million) fine on actress Zheng Shuang.⁹² An article in the state-backed tabloid *Global Times* commenting on Zheng's tax case noted, "Such supervision will be further tightened with harsher punishments as China marches toward common prosperity."⁹³
- According to *Bloomberg*, by the end of August, seven of China's wealthiest billionaires had already announced \$5 billion in charitable donations in 2021.⁹⁴ Tech companies, which remain subject to a government crackdown, have been particularly vocal in their donations. Since the August meeting, Tencent, Pinduoduo, and Alibaba have announced charitable donations that together total \$24.8 billion (RMB 160 billion).⁹⁵ Food delivery giant Meituan also pledged to pay closer attention to the welfare and needs of its delivery drivers, with the company's founder Wang Xing telling investors common prosperity is "built into the genes" of the company.⁹⁶

China's 14th FYP Acknowledges Long-Term Challenges but Does Not Offer New Solutions

China's leadership is decreasing emphasis on quantitative targets, looking to correct imbalances. The 14th FYP is a blueprint intended to guide China's development for the 2021–2025 period, setting the stage for goals as far out as 2035 and 2049. Within the 14th FYP, Chinese policymakers pledge to focus on transitioning to "higher quality growth" in recognition of the consequences of China's "growth at all costs" development model, such as acute environmental degradation and rising income inequality.⁹⁷ In the annual legislative session in March, China's leaders set a more modest target of 6 percent GDP growth for 2021, and the 14th FYP itself deviates from previous plans by setting no topline GDP growth goals and reducing the number of other economic targets.⁹⁸ (For more on the 14th FYP's goals, see Chapter 2, Section 2, "The Chinese Communist Party's Economic and Technological Ambitions: Synthetic Biology, New Mobility, Cloud Computing, and Digital Currency.") Chinese policymakers have previously issued blueprints prioritizing addressing economic imbalances and improving investment efficiency. They abandoned these goals, however, when faced with economic turbulence or pushback from blocs of politically favored SOEs that benefit from inefficient investment growth.⁹⁹ Even as China's lead-

ership reiterated pledges to move away from its old model, China's lopsided post-pandemic recovery has exacerbated imbalances to shore up short-term growth.¹⁰⁰

In practice, the 14th FYP revisits and solidifies self-sufficiency and technological breakthroughs as central pillars of China's economic vision under the dual circulation strategy. Chinese leaders believe China should establish a self-sufficient economy, both in localizing entire supply chains and driving economic growth through domestic consumption. They have reframed this approach as the dual circulation strategy, first proposed by China's leadership in May 2020 to address weak global demand and strained bilateral relations with the United States and later integrated into the 14th FYP. According to the strategy, China's economy would grow principally by increasing domestic demand and reorienting Chinese producers to cater to the local market rather than producing for export.¹⁰¹ At the same time, it would reduce the risk of being cut off from critical foreign technologies by strengthening supply chain security.¹⁰² Neither emphasizing China's domestic economy nor reducing dependence on foreign technology are new ideas, though the goals bear new urgency for the CCP in what it views as an increasingly hostile and uncertain external environment.¹⁰³ (For more on dual circulation, see Chapter 1, Section 1, "China's Ambitions and Challenges at the Chinese Communist Party's Centennial.")

China's leaders see technological breakthroughs as key to overcoming a host of economic challenges, including income inequality and demographic change.¹⁰⁴ The 14th FYP also reaffirms a vision of China's role in the international economy in which China establishes dominance by systematically reducing its dependence on international trade and investment to strengthen its own security while increasing other countries' dependence on Chinese trade and investment to gain leverage. As discussed later in this section, this vision is central to China's objectives in its economic relationship with the United States.

China's Government Strengthens Control over Technology and Data

In 2021, the Chinese government increased support to critical sectors to advance its technological self-sufficiency goals. At the same time, it tightened regulatory oversight of data-intensive industries, in some cases damaging the commercial performance of some of China's most successful tech giants. The latter trend follows efforts by the Chinese government to regulate data both as a strategic asset and a potential national security risk, curb the nonstate financial sector's growth at the expense of state banks, and assert greater political control over nonstate firms in general. The split approach of simultaneous support and scrutiny of tech firms reflects the CCP's hopes of promulgating a homegrown technology sector coupled with its deep suspicion of tech giants' accumulation of power and wealth. Ultimately, the Party seeks to retain control of both the technologies and the companies themselves and views both state and nonstate tech firms as strategic assets to advance its policy objectives. (For an in-depth assessment of China's self-sufficiency drive, see Chapter 2, Section 2, "The Chinese Communist Party's Economic and Techno-

logical Ambitions: Synthetic Biology, New Mobility, Cloud Computing, and Digital Currency.”)

Chinese Regulators Crack Down on Big Tech

In 2021, Chinese regulators took unprecedented action against many of China’s top technology firms. The Chinese government pursued these actions under the guise of productive reforms to address genuine problems in the industry, but the actions provide the government with greater control. Companies such as Alibaba and Tencent enjoy monopolistic control over large parts of China’s economy and collect valuable data on China’s population in excess of what the Chinese government itself is currently able to collect.¹⁰⁵ Trivium China, a research consultancy, argues that the increased scrutiny of technology firms comprises “three separate and simultaneous campaigns” that share similar goals but involve different regulatory bodies and are motivated by distinct concerns:¹⁰⁶

- *Addressing systemic risks to China’s financial system:* Concerned over the potentially destabilizing effects of tech firms’ expansion into the financial sector, China’s regulators, led by the PBOC, have imposed stricter regulations on fintech firms. Ant Financial (Ant), an Alibaba affiliate, was the first major fintech company to run afoul of Chinese regulators. In November 2020, the government halted Ant’s initial public offering (IPO) days before it was set to occur.¹⁰⁷ Regulators were in part acting out of concern that the scope of Ant’s microlending business, which was previously not subject to the same standards as bank lending, posed a systemic threat to China’s financial system.¹⁰⁸ In April 2021, Ant released a statement outlining a restructuring plan it had developed in coordination with China’s financial regulators, including conversion to a financial holding company, subjecting Ant to stricter capital requirements similar to those imposed on banks.¹⁰⁹ Soon after Ant’s announcement, regulators ordered 13 tech firms with financial services operations, including industry leaders Tencent, JD, Baidu, and ByteDance, to stop the “disorderly expansion of capital”¹¹⁰ and to comply with requirements similar to those in Ant’s restructuring plan.¹¹¹ While an announcement issued by the PBOC after the meeting did not set a deadline for the 13 tech firms to comply with the rectification requirements, Chinese business magazine *Caixin* reported in May that regulators had ordered Tencent to establish a financial holding company for its finance operations.¹¹²
- *Addressing anticompetitive behavior by tech firms:* In 2021, the State Administration for Market Regulation (SAMR), China’s antitrust enforcer, launched a campaign against Chinese tech firms’ anticompetitive practices. In February, SAMR issued a set of guidelines aimed at addressing different types of anticompetitive behavior among platform firms, including price fixing, restricting sales, or selling below cost in order to squeeze out competitors.¹¹³ In April, SAMR announced a record fine of \$2.8 billion (RMB 18.2 billion) on e-commerce giant Alibaba for its practice of forcing merchants to pick Alibaba as their exclusive distribution channel. This practice, known as “pick one of two,” is prohibited under the February SAMR guidelines.¹¹⁴ In Au-

gust, SAMR released draft regulations prohibiting additional types of anticompetitive behavior, including posting fake product reviews and using technology to disrupt consumers' ability to use rival platforms.¹¹⁵ In October, following a months-long investigation, SAMR fined food-delivery firm Meituan for \$535 million (RMB 3.4 billion) on the basis of antitrust violations similar to those of Alibaba.¹¹⁶ SAMR's heightened and high-profile enforcement actions against Chinese firms mark a change from China's past antitrust practice, which has historically focused on preventing foreign firms from amassing substantial market influence.¹¹⁷

- *Restricting tech firms' collection and transfer of data:* During 2021, Chinese policymakers increased the government's oversight of the collection and storage of data by foreign and domestic nonstate firms. The July investigation into Chinese ride-sharing giant Didi Chuxing (Didi) following its IPO on the New York Stock Exchange, as well as two other Chinese tech companies that had recently listed on U.S. exchanges, epitomizes this trend. (For more on the investigation into Didi, see the textbox "Beijing's Scrutiny of Chinese Companies Listed Overseas Highlights U.S. Investor Risks" later in this section.) For the CCP, the global expansion of China's tech firms offers advantages but also poses a potential risk to the CCP as companies become subject to foreign regulatory provisions, which often include higher transparency requirements.¹¹⁸ Chinese regulators have continued to increase scrutiny of foreign listings. After launching the investigation into Didi, China's State Council announced it would tighten regulations on a range of securities activities, including listing abroad.¹¹⁹ These regulations could stop the use of variable interest entities, a regulatory loophole used by many Chinese tech firms to list on U.S. exchanges.* Separately, in July the Cyberspace Administration of China published draft rules requiring any Chinese company with user data of more than one million users to complete a review with the Cybersecurity Review Office before listing abroad.¹²⁰ In August, *Reuters* reported that Chinese regulators are contemplating requiring Chinese firms seeking foreign listings to hand over management of their data to third-party Chinese information security firms.¹²¹ Such a requirement would allow the information security firms, likely to be backed by China's government, to monitor Chinese companies' data.¹²² This could limit the ability of Chinese firms to transfer data overseas while increasing the Chinese government's access to and control of data. The Chinese government's efforts to gain control over data are leading it to assume greater ownership stakes in nonstate firms.† In September, *Bloomberg* reported the Beijing

* China's government legally prohibits foreign direct investment in certain industries, including many high-tech sectors, and maintains strict controls on foreign exchange and capital flows. To circumvent these restrictions, mainland Chinese companies interested in raising funds on U.S. exchanges create offshore corporate entities for foreign investment using a complex structure called a variable interest entity (VIE). For a more in-depth explanation of VIEs and associated risks, see U.S.-China Economic and Security Review Commission, *2019 Annual Report to Congress*, 176–177.

† On April 30, 2021, ByteDance sold a 1 percent equity stake and gave a board seat to Wangtuo Zhongwen (Beijing) Technology, which is owned by the China Internet Investment Fund (con-

municipal government had proposed an investment that could potentially give SOEs a seat on Didi's board and veto power over important corporate decisions.¹²³

The CCP's Push for Domestic and International Data Control

In June 2021, the National People's Congress passed the Data Security Law, the first comprehensive piece of data security legislation in China. The law contains several significant provisions, including restrictions on transferring data outside of China and a requirement that handlers of data “cooperate” with Chinese public security forces.¹²⁴ The Data Security Law applies to all domestic and foreign organizations handling data in China. The law broadly extends liability to overseas data handling activities that cause “harm to the national security, the public interest, or the lawful rights and interests of individuals or organizations” of China, which are otherwise not specified.¹²⁵ Many of these provisions in the Data Security Law build on or reinforce requirements of other Chinese laws, such as the 2017 National Intelligence Law and the 2017 Cybersecurity Law.¹²⁶ The Chinese government is developing more specific regulations and standards in sectors of particular concern. In May 2021, Tesla announced that all data from cars sold in China would be stored locally in a new data center, following the release of a draft standard for automobile data.¹²⁷

While some of China's protections on data appear similar to those in other countries, they are generally more restrictive. The National People's Congress has also completed China's Personal Information Protection Law, effective November 2021.¹²⁸ The law contains many protections against the collection of personal information by nonstate companies, similar to those of the General Data Protection Regulation (GDPR), the EU's data protection law.¹²⁹ Compared with the GDPR, however, China's Personal Information Protection Law is wider-ranging and includes potentially more restrictive requirements on cross-border data transfer. Like the GDPR, the law would allow organizations to transfer personal information collected in China overseas for “business reasons.” Where the GDPR prescribes clear criteria for such transfers, however, the Personal Information Protection Law does not define the term and mandates that such transfers must pass a security assessment.¹³⁰ The GDPR's requirements for cross-border transfer are generally less obstructive and do not require a government-operated security assessment for each instance of cross-border information transfer, instead operating on the basis of agreements or contracts at a national or company level.¹³¹ China's Personal Information Protection Law also applies to all individuals inside China, including foreign nationals, meaning that organizations outside of China must still meet specific technical requirements to process data of foreign nationals residing in China.¹³² While the GDPR similarly applies to data of all EU res-

controlled by the Cyberspace Administration of China and the Ministry of Finance), China Media Group, and Beijing Municipality Cultural Investment Development Group. The deal granted the CCP greater supervision and control over ByteDance's domestic social media platforms, Douyin and Toutiao, but not TikTok, a subsidiary of an offshore ByteDance entity. For more background on the sale, see Chapter 2, Section 3, “The Chinese Government's Evolving Control of the Non-state Sector.” Juro Osawa and Shai Oster, “Beijing Tightens Grip on ByteDance by Quietly Taking Stake, China Board Seat,” *Information*, August 16, 2021.

idents, China's already strict technical requirements carry greater compliance burdens for organizations outside of China.¹³³

The laws support China's promotion of cybersovereignty, in which cyberspace, data, and networks are regarded as sovereign territory subject to local laws of individual countries. China's development of its data governance regime is also part of a broader pattern of CCP attempts to influence global data governance norms. The Data Security Law says the Chinese government intends to create a domestic standardization system for data and participate in "formulation of international rules and standards."¹³⁴ In September 2020, Chinese Foreign Minister Wang Yi presented a Global Initiative on Data Security, which Foreign Ministry spokesman Zhao Lijian characterized as "contributing China's wisdom to international rules-making" for data.¹³⁵ The initiative urges countries not to weaponize the use of data while also encouraging cybersovereignty and local data storage—a policy that has raised concerns among human rights experts as well as U.S. tech firms.¹³⁶

China Expands Lawfare to Respond to Foreign Sanctions

In late 2020 and 2021, the Chinese government developed a legal and regulatory framework to counter foreign restrictions on Chinese companies and individuals. A central objective in China's expanding legal arsenal is to impose costs on foreign companies that limit technology exports to China in compliance with U.S. restrictions. General Secretary Xi emphasized the need to rely on lawfare in the buildup to the Party's centennial, saying, "We must use the law as a weapon and occupy the moral high ground of the rule of law."¹³⁷ This expanded set of tools focuses on broadly defined "national security and interests" and "national security with Chinese characteristics," which covers military, political, economic, and "development security."¹³⁸ The laws and measures adopted to achieve this vision of national security target companies, organizations, nongovernmental organizations, think tanks, and the family members or affiliates of any such persons inside or outside of China whose actions or statements run contrary to the CCP's interests (see Table 1).

Where China's government had already pursued retaliation against foreign critics, it has now formalized tools and punishments. For instance, between July and August 2020, the CCP sanctioned 11 U.S. lawmakers and nongovernmental organization leaders critical of repression in Hong Kong but did not clarify the scope of these sanctions.* Even as China's Anti-Foreign Sanctions Law was under development, the CCP moved ahead with visa sanctions on a range of individuals in the United States and Europe, many of whom criticized the Chinese government's treatment of Uyghurs. In January 2021, China sanctioned 28 members of the Trump Administration just after they left office, including former Secretary of State Mike Pompeo.¹³⁹ In July 2021, in retaliation for the

* Sanctioned individuals included U.S. Senators Tom Cotton (R-AK), Josh Hawley (R-MO), Marco Rubio (R-FL), and Pat Toomey (R-PA); U.S. Representative Chris Smith (R-NJ); Carl Gershman (then National Endowment for Democracy President); Derek Mitchell (National Democratic Institute President); Kenneth Roth (Human Rights Watch Executive Director); Daniel Twining (International Republican Institute President); and Michael Abramowitz (Freedom House President). Eva Dou and Anna Fifield, "China Puts Sanctions on U.S. Lawmakers, NGO Chiefs, in Tit-for-Tat Retaliation," *Washington Post*, August 10, 2020.

Table 1: Select Chinese Measures Enacted or Introduced in 2020–2021

Title	Purpose	Date
<i>Blocking and Retaliation</i>		
Export Control Law	Regulates dual-use technology and codifies license regime for sensitive products, services, and other transfers.	Effective December 2020
Measures for Blocking Improper Extraterritorial Application of Foreign Laws and Measures	Creates authority for China's government to block implementation of secondary sanctions and prohibit compliance with some foreign laws and measures.	Effective January 2021
Measures for Security Review of Foreign Investment	Establishes security review process for all inbound foreign investment.	Effective January 2021
Anti-Foreign Sanctions Law	Creates legal tool for reciprocating against foreign sanctions and authority to impose retaliatory sanctions on a wide variety of targets, along with family members and affiliates.	Effective June 2021
<i>Data Governance</i>		
Data Security Law	Establishes system of data classification and obligations for organizations handling data, including security requirements and assessments for its protection, collection, use, and transfer internally and overseas.	Effective September 2021
Personal Information Protection Law	Establishes rights to personal information for all individuals in China and obligations for organizations handling personal information for its protection, collection, use, and transfer internally and overseas.	Effective November 2021
Several Provisions on the Management of Automobile Data Security (Draft)	Outlines obligations for organizations on the collection, protection, sharing, and use of data collected by automobiles.	Introduced May 2021
Cybersecurity Review Measures (Draft)	Outlines security review procedures for operators of critical information infrastructure and organizations handling data sensitive to national security, including IPOs and organizations handling data of more than one million users.*	Introduced July 2020
Opinions on Strictly Cracking Down on Illegal Securities-Related Activity in Accordance with Law	Calls for stronger supervision and enforcement of cross-border listings, including improvement of laws and regulations related to data security, transfer, and management involved in such listings.	Introduced July 2021
Internet Information Service Algorithmic Recommendation Management Provisions (Draft)	Establishes new security, privacy, and content management rules for internet services that rely on algorithmic recommendations. Providers allow consumers greater control to enable or disable algorithmic recommendations.	Introduced August 2021

Source: Compiled by Commission Staff.

*The Cybersecurity Administration of China released a new draft of the Cybersecurity Review Measures in July 2021 but added several amendments to the draft later that month, including the one million user threshold.

Biden Administration's joint Hong Kong Business Advisory, Beijing announced its sixth set of sanctions against U.S. individuals and organizations this year. The list named those who have long stood by Hong Kong in defense of human rights and democracy, including the Chairman of this Commission.*

The Chinese government's economic and trade-related rules create broad new authorities and restrictive processes with little to no redressability. Many provisions relating to trade and investment, such as those in the *Measures for Security Review of Foreign Investment*, are focused on "key technologies and other important sectors," but the rules do not provide clear definitions of these terms. These laws also provide regulators and enforcement agencies with broad powers to assess foreign entities and transactions, such as potentially intrusive security reviews for foreign investors, or to erect new temporary restriction mechanisms without specification of standards or processes. Many of these laws also lack any recourse mechanism for parties that object to or find fault with an agency's judgment. For example, China's Export Control Law, released in October 2020 after three years of drafting, introduces a "temporary license" scheme that would give agencies authority to prohibit exports for at least two years, regardless of the end user.¹⁴⁰ Chinese authorities could weaponize this mechanism to cut off countries from critical inputs such as rare earth minerals, for which China currently dominates production.

Released in January 2021, the Measures for Security Review of Foreign Investment require a broad range of inbound investments to China across several sectors to undergo a security review. A joint office under China's National Development and Reform Commission and the Ministry of Commerce conducts the review, but the measures provide neither a rubric or standards for passing or failing the review, nor any redress for rejected investors.¹⁴¹ Furthermore, the Chinese review will be mandatory rather than voluntary and potentially apply to a broad set of inbound transactions.¹⁴² With its vague definitions and potentially arbitrary rejection or delay of investments, China's foreign investment review could be used to retaliate against companies or coerce countries with companies seeking to invest in China.¹⁴³

Chinese lawmakers have added more legal tools to directly counter U.S. policies with "reciprocal measures," which are susceptible to abuse and arbitrary application. The Export Control Law provides agencies with explicit authorization to "take reciprocal measures" against foreign "abuses" of export control rules. The law also gives Chinese export control authorities the right to investigate entities outside of China that either violate the law's provisions or hinder China's nonproliferation and related international obligations.¹⁴⁴ In January 2021, the Ministry of Commerce also issued *Mea-*

*Sanctioned individuals included Wilbur Ross (former Secretary of Commerce), Carolyn Bartholomew (U.S.-China Economic and Security Review Commission Chairman for the 2021 Annual Report Cycle), Jonathan Stivers (former Staff Director of Congressional-Executive Commission on China), DoYun Kim (National Democratic Institute International Affairs staff), Adam Joseph King (International Republican Institute senior program manager), and Sophie Richardson (Human Rights Watch China Director). Ben Hooper, "China Announces Sanctions Against Wilbur Ross, Six Others in U.S.," *UPI*, July 24, 2021.

asures for Blocking Improper Extraterritorial Application of Foreign Laws and Measures to protect Chinese entities from foreign measures or laws designed to inhibit China's economic and trade activities. The measures allow relevant Chinese authorities to issue a "prohibition order" to nullify the relevant extraterritorial foreign measures that would obstruct Chinese economic, trade, or related activities.¹⁴⁵ Chinese lawmakers are also developing a legal framework for countering foreign data security or personal information protection restrictions. Both China's new Data Security Law, passed in June 2021, and Personal Information Protection Law, passed in August 2021, establish the Chinese government's authority to enact reciprocal restrictions against any foreign country that targets China.¹⁴⁶

In 2021, the Chinese government introduced its Anti-Foreign Sanctions Law to target a wider range of threats beyond trade and investment restrictions. Scholars of China's legal system believe the primary purpose of the Anti-Foreign Sanctions Law is to formalize China's sanctions process as well as prohibit all companies operating in China from complying with foreign sanctions.¹⁴⁷ The scope of punishable entities under the law is exceptionally broad. It targets "persons or organizations that directly or indirectly participate in the drafting, decision-making, or implementation of the discriminatory restrictive measures."¹⁴⁸ The law also extends potential retaliation to family members, associates, and affiliated organizations of any such person or organization identified with China-directed sanctions.¹⁴⁹ In particular, the law puts foreign companies operating in China in an even more precarious position as they navigate bilateral tensions and compliance with conflicting legal regimes.¹⁵⁰ The law also provides for the Chinese government to retaliate against those with "conduct endangering our nation's sovereignty, security, or development interests."¹⁵¹ Along with punishing companies that comply with foreign sanctions, the Anti-Foreign Sanctions Law provides that the government may sue violating companies for any related compensation loss.¹⁵² For instance, a Chinese supplier placed on the Entity List could sue a foreign purchaser in Chinese court for canceling a contract in compliance with U.S. law.

U.S.-China Commercial Ties Deepen despite Continued Friction

Even as Washington and Beijing work to reduce economic interdependence, bilateral trade is returning to pre-tariff levels and U.S. capital flows to China are on the rise, weaving the two economies closer together. The Biden Administration is consolidating a complex mix of the Trump Administration's policy initiatives to defend against China's unfair economic policies and threats to U.S. national security. The Biden Administration has signaled that its priorities are to secure U.S. supply chains, boost U.S. competitiveness, and coordinate with U.S. allies and partners. China's government is seeking to mitigate its vulnerability to foreign economies and legal systems, particularly U.S. actions, while deepening other countries' economic dependence on China. The Chinese government's crack-

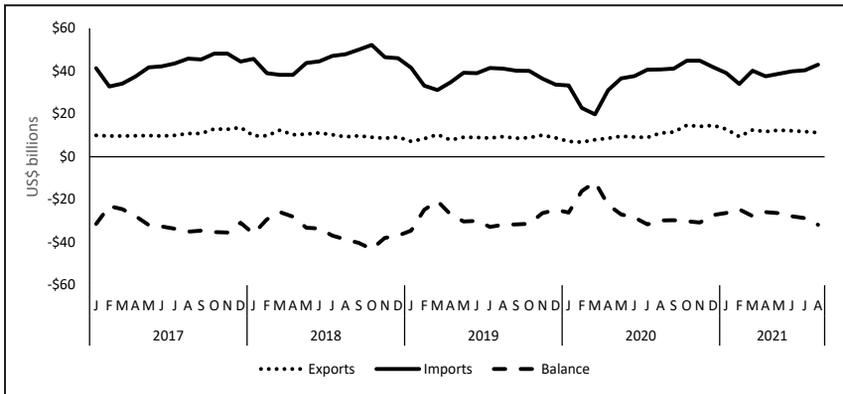
*Under Article 6 of the Anti-Foreign Sanctions Law, punishments for violators include, but are not limited to, denial or cancellation of visas, deportation, asset seizure or freezing, and prohibition or restriction on transactions. "Countermeasures" may include any of the punishments under Article 6 of the law but are otherwise not defined and may be broader in practical implementation. China Law Translate, "Law of the PRC on Countering Foreign Sanctions," June 10, 2021.

down on Chinese tech firms listed on U.S. exchanges led to billions of dollars of losses for U.S. investors and on U.S. capital markets.

Overview of U.S.-China Commercial Ties in 2021

The bilateral trade imbalance is returning to pre-tariff levels. According to Chad Bown, senior fellow at the Peterson Institute for International Economics, in the first eight months of 2021 Chinese purchases of U.S. products covered under the Phase One Economic and Trade Agreement* stood at \$89.4 billion, accounting for 69 percent of a year-to-date prorated target of \$129.9 billion.[†]¹⁵³ Despite China’s purchase commitments made under the Phase One agreement, year-to-date the U.S. goods deficit with China has continued to grow, nearing levels last seen before the U.S. government imposed tariffs on Chinese imports in 2018 (see Figure 1). The resurgence of the deficit in 2021 is attributable to recoveries in both U.S. consumption and Chinese production following sharp contractions throughout 2020 due to the COVID-19 pandemic.¹⁵⁴ In the first eight months of 2021, the U.S. trade deficit with China reached \$219 billion, up 13.4 percent year-on-year.¹⁵⁵ U.S. goods exports to China in the first eight months jumped 35.2 percent year-on-year to reach \$94.1 billion.¹⁵⁶ U.S. imports from China also continued to climb in the same period, reaching \$313 billion, a year-on-year increase of 13.4 percent.¹⁵⁷ (The Chinese government’s Phase One commitments and compliance status are summarized in the Addendum.)

Figure 1: U.S. Bilateral Trade with China, January 2017–August 2021



Source: U.S. Census Bureau, *Trade in Goods with China*, October 5, 2021.

*The “Phase One” agreement was signed on January 15, 2020, and formed part of an effort to resolve trade tensions ongoing since March 2018, when the U.S. Trade Representative published its Section 301 investigation into China’s unfair trade practices related to forced technology transfer, intellectual property theft, and innovation. For more on the Phase One agreement, see U.S.-China Economic and Security Review Commission, *The U.S.-China “Phase One” Deal: A Backgrounder*, February 4, 2020.

†As part of its Phase One trade deal commitments, China pledged to increase purchases of particular U.S. “manufactured goods, agricultural goods, energy products, and services,” whereby purchase amounts “exceed the corresponding 2017 baseline amount by no less than \$200 billion.” Research by Chad Bown, senior fellow at Peterson Institute for International Economics, tracks China’s purchases of U.S. goods covered by the agreement and compares them to annual targets prorated on a monthly basis. For more on the methodology, see Chad Bown, “U.S.-China Phase One Tracker: China’s Purchases of U.S. Goods,” *Peterson Institute for International Economics*, September 27, 2021.

U.S. information and communications technology (ICT) product imports led the U.S. trade deficit in advanced technology products (ATP)* with China in 2021. In the second quarter of 2021, the U.S. trade deficit in ATP with China narrowed 5 percent year-on-year to \$24.6 billion, a record low in the quarterly deficit.¹⁵⁸ ICT products continued to constitute the vast majority of U.S. ATP imports from China in the second quarter of 2021.¹⁵⁹ Excluding ICT products, the United States had a \$6 billion surplus in ATP with China, up 12.6 percent from the previous quarter (\$5.3 billion).¹⁶⁰

While bilateral foreign direct investment (FDI) flows continue to decline, portfolio investment flows are strengthening. According to data compiled by Rhodium Group, FDI flows between the United States and China fell to an 11-year low of \$15.9 billion in 2020.¹⁶¹ Portfolio investment flows, on the other hand, are increasing and vastly outpacing FDI. U.S. investors held as much as \$1.2 trillion in equity and debt securities issued by Chinese entities at the end of 2020, up 57.5 percent from \$765 billion in 2017, while Chinese holdings of U.S. securities reached \$2.1 trillion at the end of 2020.¹⁶² (For more on U.S. investor participation and interest in China’s financial markets, see Chapter 2, Section 4, “U.S.-China Financial Connectivity and Risks to U.S. National Security.”)

Beijing’s Scrutiny of Chinese Companies Listed Overseas Increases U.S. Investor Risks

Chinese regulators’ investigations into Didi Chuxing in July 2021 and elevated scrutiny of Chinese nonstate tech and education companies listed overseas underscored the distinct political risks posed by U.S.-listed Chinese companies to U.S. investors. A Cyberspace Administration of China (CAC) probe into Didi’s data security practices days after its IPO on the New York Stock Exchange saw the company’s share price plummet nearly 20 percent from \$15.53 on July 2 to \$12.49 on July 6, prompting shareholder lawsuits and calls for a U.S. Securities and Exchange Commission (SEC) investigation.¹⁶³ CAC’s scrutiny of Didi was followed by the joint issuance of the *Opinions on Strictly Cracking Down on Illegal Securities Activity in Accordance with Law* by the General Office of the CCP Central Committee and State Council.¹⁶⁴ The opinions pledge to strengthen oversight of Chinese companies issuing securities overseas by, among other things, enhancing data security protection and oversight of cross-border data flows.¹⁶⁵ The Chinese government’s focus on data security for overseas-listed firms is underlined in separate draft CAC draft rules requiring mandatory review for any company collecting personal information of more than one million users prior to listing abroad.¹⁶⁶

While the opinions do not directly address Chinese companies’ use of the variable interest entity (VIE)† structure to list over-

*Advanced technology products 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, *Advanced Technology Product Code Descriptions*, September 10, 2021.

†U.S.-listed Chinese firms most attractive to investors operate in high-growth sectors such as technology, e-commerce, and telecommunications. Because these sectors are deemed sensitive by

Beijing's Scrutiny of Chinese Companies Listed Overseas Increases U.S. Investor Risks—Continued

seas, such firms may encounter more scrutiny moving forward. For example, legal experts note there may be rules requiring VIE-structured firms to obtain approval from Chinese regulators before additional stock issuance.¹⁶⁷ As Chinese regulatory constraints on U.S.-listed Chinese companies rise, the value of U.S. investor holdings of such companies may decline.¹⁶⁸ On July 24, China's State Council unveiled rules that would, among other things, ban China's private education companies from making profits and prohibit them from raising new foreign capital by using a VIE structure.¹⁶⁹ As a result of the Chinese government's regulatory actions, U.S.-listed Chinese companies lost around \$400 billion in value in July 2021.¹⁷⁰ On September 20, the SEC issued an investor bulletin warning U.S. investors about the risks of investing in Chinese VIEs.¹⁷¹ The SEC had previously directed SEC staff to ensure Chinese VIEs provide more robust disclosure in their filings.*

While there were 248 Chinese companies listed on U.S. exchanges with a total market capitalization of \$2.1 trillion as of May 5, 2021, this number does not reflect the value of U.S. investor holdings of U.S.-listed Chinese companies.¹⁷² This is because U.S. investors in U.S.-listed Chinese companies are only minority investors.

China remains a priority market for U.S. companies despite rising concerns about China's business environment and heightening political tensions. According to the 2021 American Chamber of Commerce in China (AmCham China) Business Climate Survey, nearly 85 percent of respondents are not considering relocating manufacturing or sourcing from China.[†]¹⁷³ Despite this deep commitment to the Chinese market, respondents indicate rising concern about China's business environment. For example, concerns about data security and increasing Chinese protectionism ranked as AmCham China member companies' fifth- and seventh-highest concerns, respectively, after being unranked in the previous year.¹⁷⁴ For the first

the Chinese government, direct foreign ownership in them is restricted. Chinese firms thus use VIE structures to circumvent these restrictions and raise capital in overseas financial markets. These structures create effective foreign ownership of the company through an abstract mix of legal contracts and equity ownership while still loosely complying with Chinese foreign ownership laws. For more on the risks associated with VIE structures, see U.S.-China Economic and Security Review Commission, Chapter 3, Section 1, "U.S.-China Commercial Relations," in *2019 Annual Report to Congress*, November 2019, 175–179; 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.

*SEC staff have been directed to ensure a Chinese VIE discloses a number of factors, including whether it faces "uncertainty about future actions by the government of China that could significantly affect the operating company's financial performance and the enforceability of the contractual arrangements," whether the VIE received or was denied permission from China's authorities to list in the United States, and detailed information on the financial relationship between the China-based company and its VIE. Gary Gensler, "Statement on Investor Protection Related to Recent Developments in China," *U.S. Securities and Exchange Commission*, July 30, 2021.

†The 2021 AmCham China Business Climate Survey was completed by 345 U.S. companies operating in China from October 21 to November 23, 2020. Grady McGregor, "The Outlook of U.S. Firms in China Changed Dramatically after Biden's Election," *Fortune*, March 9, 2021; John Liu and Yujing Liu, "U.S. Firms in China See Growth, Improved Ties after Pandemic," *Bloomberg*, March 8, 2021.

time in the survey's history, member companies identified rising tensions in U.S.-China relations as the top challenge to doing business in China, up from the third spot in 2020.*¹⁷⁵ According to AmCham China Chairman Greg Gilligan, friction in the bilateral relationship is resulting in discriminatory treatment for U.S. companies, with local Chinese government officials "offer[ing] preference to domestic industry," though public reports of such unfair treatment are unavailable.¹⁷⁶ AmCham China member companies also worry about the prospect of consumer boycotts against them should they speak out about China's policy choices.¹⁷⁷ In March 2021, Swedish apparel retailer H&M and other foreign brands were met with an online backlash from Chinese consumers following reports the companies had voiced concern about forced labor in China's Xinjiang Province.¹⁷⁸

Biden Administration Maintains Pressure on China

In a speech outlining the Biden Administration's foreign policy, U.S. Secretary of State Antony Blinken noted the U.S. relationship with China "will be competitive when it should be, collaborative when it can be, and adversarial when it must be."¹⁷⁹ The Biden Administration has identified the Chinese government's disregard for democratic values in Hong Kong, abuse of human rights in Xinjiang, intimidation of Taiwan, cyberattacks on the United States, and economic coercion toward U.S. allies as key priorities to manage in the bilateral relationship.¹⁸⁰ While the Biden Administration has highlighted the same challenges in the U.S.-China relationship as the Trump Administration did, its frequent engagement with U.S. allies and international institutions points to a focus on multilateralism as a means of confronting Beijing.

The Biden Administration is continuing heightened use of export controls and financial sanctions to respond to Chinese threats to U.S. interests. A defining feature of the Trump Administration's approach to addressing China's unfair trade and human rights practices was the use of unilateral restrictions to prevent the flow of U.S. technology to Chinese military end users, entities engaged in human rights abuses, and companies supporting China's extraterritorial land reclamation efforts. Additionally, the Trump Administration introduced financial sanctions on key officials responsible for repressing civil liberties in Hong Kong. The Biden Administration appears to be continuing both trends. On July 9, 2021, the Bureau of Industry and Security at the U.S. Department of Commerce announced the addition of 14 Chinese companies to its Entity List due to their role in enabling the Chinese government's repression in Xinjiang.¹⁸¹ The Bureau of Industry and Security also placed export controls on seven Chinese supercomputer developers in April 2021, citing the entities' involvement in China's efforts to develop nuclear and other advanced military weapons.¹⁸² Sep-

*"Rising tensions in U.S.-China relations" first appeared as a business challenge in the 2018 AmCham China Business Climate Survey, when 45 percent of respondents ranked it as the third-highest challenge. 45 and 41 percent of AmCham China member companies continued to rank it as the third-highest business challenge in both the 2019 and 2020 Business Climate Surveys, respectively. In the 2021 Business Climate Survey, 78 percent of AmCham China member companies ranked it as the top challenge to doing business. AmCham China, *2020 China Business Climate Survey Report*, March 2020, 51; AmCham China, *2019 American Business in China White Paper*, April 2019, 8.

arately, while visiting Japan and South Korea, Secretary Blinken announced sanctions for financial institutions that conduct transactions with 24 Chinese and Hong Kong officials per the Hong Kong Autonomy Act on March 17, 2021.¹⁸³

Escalating trade frictions, intensifying U.S.-China technological competition, and the outbreak of the COVID-19 pandemic catalyzed U.S. efforts to address supply chain vulnerabilities vis-à-vis China. Executive orders issued by then President Donald Trump resulted in, among other actions, preliminary studies into U.S. dependence on China for critical minerals and pharmaceuticals and the removal of Chinese firms from U.S. telecommunications networks.* The Biden Administration's actions in 2021 underline a continued focus on mitigating the risks of bilateral economic interdependence in select sectors and heightening U.S. capabilities in others to better compete with China economically. On June 8, 2021, the Biden Administration released a 250-page report assessing supply chain risks and vulnerabilities in semiconductor manufacturing, large-capacity batteries, critical materials and minerals, and pharmaceuticals and active pharmaceutical ingredients.†¹⁸⁴ The United States relies on imports and faces risks of supply chain disruption across all four product categories, with China either dominating large portions of their supply chain (e.g., critical materials and minerals, pharmaceuticals, and active pharmaceutical ingredients) or seeking to secure global leadership (e.g., semiconductors, large-capacity batteries). The review builds on initial investigations undertaken by the Trump Administration and prioritizes reshoring production to the United States to bolster U.S. economic competitiveness. The report is also notable in signaling the use of trade enforcement actions to defend against China's unfair economic practices. For example, a U.S. Trade Representative-led "trade strike force" aims to coordinate unilateral and multilateral enforcement actions against unfair foreign trade practices harming U.S. supply chains and ensure "supply chain resilience [is] incorporated into the U.S. trade policy approach towards China."¹⁸⁵ Separately, as part of a comprehensive review of U.S. supply chains, the Biden Administration indicated the Department of Commerce will explore whether to initiate a Section 232 investigation‡ into the

* For example, former President Trump's Executive Order 13953 on Addressing the Threat to the Domestic Supply Chain from Reliance on Critical Minerals from Foreign Adversaries and Supporting the Domestic Mining and Processing Industries and Executive Order 13944 on Combating Public Health Emergencies and Strengthening National Security by Ensuring Essential Medicines, Medical Countermeasures, and Critical Inputs Are Made in the United States sought to further investigate and rectify U.S. productive gaps in critical minerals and pharmaceutical products, respectively. Executive Office of the President, "Addressing the Threat to the Domestic Supply Chain from Reliance on Critical Minerals from Foreign Adversaries and Supporting the Domestic Mining and Processing Industries," *Federal Register* 85:193 (September 30, 2020); Executive Office of the President, "Combating Public Health Emergencies and Strengthening National Security by Ensuring Essential Medicines, Medical Countermeasures, and Critical Inputs Are Made in the United States," *Federal Register* 85:158 (August 6, 2020).

† The report compiled individual reviews by the Department of Commerce on semiconductor manufacturing and advanced packaging, Department of Energy on large-capacity batteries, Department of Defense on critical materials and minerals, and Department of Health and Human Services on pharmaceuticals and active pharmaceutical ingredients. The reviews were completed pursuant to Executive Order 14017, America's Supply Chains, which also mandates a separate one-year review of the overall resilience of the defense, healthcare, technology, energy, transport, and agricultural sectors. White House, *Executive Order on America's Supply Chains*, February 24, 2021.

‡ Under Section 232 of the Trade Expansion Act of 1962, the Department of Commerce can investigate any product to determine whether it "is being imported into the United States in

national security impact of neodymium magnets used in automotive and electric vehicle motors and industrial applications and sourced chiefly from China.¹⁸⁶

The U.S. government is continuing to work to ensure U.S. telecommunications networks are free from Chinese technology providers. On March 17, the Department of Commerce announced it had served subpoenas on “multiple Chinese companies that provide ICT services in the United States,” without specifying which firms were targeted.¹⁸⁷ The move was completed pursuant to former President Trump’s Executive Order 13873: Securing the Information and Communications Technology Services Supply Chain, for which the Department of Commerce issued implementing rules in January 2021.¹⁸⁸ Separately, the Federal Communications Commission published a new list of ICT equipment and services “deemed to pose an unacceptable risk to the national security of the United States or the security and safety of United States persons.”* The list identified five Chinese companies—Huawei, ZTE, Hytera Communications, Hikvision Digital Technology, and Dahua Technology—as posing such a risk.¹⁸⁹

The U.S. government pursues unilateral action and multilateral coordination. The Biden Administration’s emerging multilateralism capitalizes upon shared values to rally allies and partners against Chinese domestic abuses like forced labor in Xinjiang while building alliances to address more pragmatic concerns such as strategic competition in the technology sector and supply chain security.

- *Coercion and human rights:* In March 2021, the U.S. Office of Foreign Assets Control, in conjunction with authorities in the United Kingdom (UK), EU, and Canada, sanctioned a number of Chinese officials for their involvement in human rights abuses in Xinjiang.¹⁹⁰ The United States has also released separate joint statements with Japan and the Group of Seven (G7)† reflecting common opposition to China’s antidemocratic and coercive policies. The statements condemned Beijing’s human rights abuses in Xinjiang, repression of Tibetans, stifling of democracy in Hong Kong, and aggression in the Taiwan Strait and South China Sea, as well as economic coercion applied to countries speaking out against Chinese policies.¹⁹¹
- *COVID-19 assistance and relief:* In March 2021, Quadrilateral Security Dialogue (Quad)‡ members the United States, Japan,

such quantities or under such circumstances as to threaten to impair the national security” of the United States. If the Department of Commerce finds imports impair or threaten to impair U.S. national security, the president may impose tariffs or quotas to adjust imports. In March 2018, then President Trump imposed 10 percent and 25 percent tariffs on aluminum and steel imports, respectively, including those from China, as a result of a Section 232 investigation undertaken by the Department of Commerce. Rachel E. Fefer et al., “Section 232 Investigations: Overview and Issues for Congress,” *Congressional Research Service*, May 18, 2021.

*This list was developed pursuant to Section 2(a) of the Secure and Trusted Communications Networks Act of 2019, which became law in March 2020.

†The G7 consists of seven democratic advanced economies: Canada, France, Germany, Italy, Japan, the UK, and the United States. The countries’ heads of state as well as representatives from the EU meet annually to discuss economic policies and issues of global governance. The UK hosted the 2021 G7 Summit in June. Sophie Morris, “What Is the G7? 2021 Summit Sees Boris Johnson Host Biden, Macron and Others in Cornwall,” *Sky News*, June 6, 2021.

‡The Quadrilateral Security Dialogue is an informal alliance among democracies Japan, Australia, India, and the United States that supports their coordination on a range of issues of

India, and Australia announced the Quad Vaccine Partnership. The Quad intends to expand vaccine manufacturing capacity in India and deliver at least one billion vaccine doses to Indo-Pacific countries by the end of 2022.¹⁹² The partnership will seek to counter China's global vaccine diplomacy, which uses vaccines as leverage to accomplish political objectives in recipient countries.

- *Technology competition and cybersecurity:* In June 2021, the United States and the EU launched the U.S.-EU Trade and Technology Council, which will likely focus on combatting China's domination of components of vital technology supply chains and its drive to shape global standards for emerging technologies.¹⁹³ Additionally, in July 2021 the Biden Administration in coordination with allies in NATO, the EU, Australia, the UK, Canada, Japan, and New Zealand condemned China's state-sponsored hack of Microsoft Exchange email server software as well as China's broader cyberespionage activities targeting governments, political organizations, and key industries.¹⁹⁴

U.S.-China Climate Cooperation Complicated by Bilateral Tensions

Climate change has emerged as a potential area for U.S.-China cooperation, though China's attempts to condition deeper cooperation on U.S. compliance with its geopolitical objectives may derail incipient collaboration. After both parties signed a joint statement in April 2021 affirming their commitment to cooperation on climate, Foreign Minister Wang indicated that "smooth cooperation" would only be possible if the United States "no longer interferes in China's internal affairs," a blanket term used by China's government to condemn international criticism of its policies in Xinjiang and Hong Kong as well as its claims over Taiwan and the South China Sea.¹⁹⁵ Competition over leadership in clean energy technology will likely further complicate U.S.-China climate cooperation. Reflecting this point, Secretary Blinken said, "It's difficult to imagine the United States winning the long-term strategic competition with China if we cannot lead the renewable energy revolution."¹⁹⁶ At present, China is a market leader in the sector, and accounts for eight of the top ten solar companies globally, for example.¹⁹⁷ China also dominates world supply chains for components used in clean energy technologies, including refining critical minerals such as lithium, rare earth minerals, and copper.¹⁹⁸ The Biden Administration's 100-day supply chain review pursuant to Executive Order 14017 investigated large-capacity batteries and critical minerals and ultimately issued recommendations for reshoring production of renewable energy supply chain components to the United States.¹⁹⁹

mutual interest, including regional security, economic growth, climate change, and global health. Sumitha Narayanan Kutty and Rajesh Basrur, "The Quad: What It Is—And What It Is Not," *Diplomat*, March 24, 2021; White House, *Quad Leaders' Joint Statement: "The Spirit of the Quad,"* March 12, 2021.

China Seeks to Project Strength but Preserve Bilateral Economic Relations

To maintain economic stability without appearing conciliatory, the CCP continues to enlist U.S. business to advocate for easing commercial tensions. Even as China's government emphasizes the importance of the domestic economy to drive growth, strong exports to the United States during 2020 and 2021 underscore the mutual dependence between the Chinese and U.S. economies. China's government has consequently tried to forestall further deterioration of commercial ties with the United States, but without moderating its stance on Xinjiang, Hong Kong, or other self-declared "internal affairs." Two resulting patterns have emerged in China's approach to the United States in 2021.

- *Proportional but not escalatory policy and rhetoric:* Ryan Hass, China expert at the Brookings Institution, observes that in the lead-up to the conclusion of the Phase One Trade Agreement in January 2020, China's leadership was calibrated and at times even conciliatory in response to U.S. policy action toward China.²⁰⁰ Even as relations soured further following the outbreak of COVID-19, China's tit-for-tat exchanges with the United States have remained proportional, for instance closing the U.S. embassy in Chengdu in response to the U.S. closure of China's embassy in Houston for alleged involvement in stealing scientific research.²⁰¹ By contrast, China's retaliatory actions against U.S. allies and partners have been unrestrained and escalatory, described further under "Coercion in China's Global Economic Relations" below.
- *Courting U.S. businesses to safeguard commercial ties:* China's government applies pressure on the United States, touting the openness and strength of China's economy and engaging U.S. companies, investors, and lobbyists to advocate for smooth commercial relations. China hosted a number of prominent business leaders at the April 2021 Boao Forum, an annual economic conference likened to a Chinese version of the World Economic Forum. According to the forum's General Secretary Li Baodong, U.S. executives from Goldman Sachs, Qualcomm, and asset manager Bridgewater Associates, along with former U.S. Treasury Secretary Henry Paulson, attended a closed-door meeting with Chinese officials to discuss how to defuse trade frictions.²⁰² Chinese tech firms have also expanded their lobbying presence in Washington, while Wall Street remains eager to maintain smooth commercial ties as China's government opens its financial services sector to foreign investment.²⁰³

China's government is simultaneously attempting to decrease its dependence on the United States while increasing the rest of the world's dependence on China. A key element of China's bid to secure supply chains is to increase its role in higher-value supply chains even as it reduces its reliance on foreign inputs. Matt Pottinger, distinguished visiting fellow at the Hoover Institution and former deputy national security adviser, called this strategy "offensive decoupling" or a "one-way decoupling" in testimony before the Commission, noting that China aims to use econom-

ic leverage to advance geopolitical goals.²⁰⁴ As part of its effort to strengthen “one-way” economic integration while reducing exposure to the United States, China’s government has pursued increased multilateral cooperation in late 2020 and 2021, intending to expand its regional influence and undermine transatlantic cooperation against China, among other blocs of allied resistance.

- *China-Southeast Asia trade pact*: In November 2020, China, the 10 ASEAN countries, South Korea, Australia, New Zealand, and Japan finalized the Regional Comprehensive Economic Partnership (RCEP). Still requiring ratification from its 15 signatories before going into effect, the trade agreement largely codifies existing tariff schedules but reduces barriers to intraregional production.²⁰⁵ In increasing the ease with which RCEP signatories can transship intermediary goods, RCEP will likely strengthen supply chain integration between Southeast Asian countries and China, further deepening the region’s economic dependence on China.²⁰⁶
- *China-EU investment agreement*: Additionally, China and the EU finalized the Comprehensive Agreement on Investment (CAI) at the end of 2020. China seemingly agreed to concessions after the CAI had been in discussion for seven years and 35 rounds of talks to conclude the agreement ahead of President Joe Biden’s inauguration.²⁰⁷ The future of the CAI remains in doubt, however, since the EU Parliament refused to ratify it after China imposed sanctions on European officials and academics, described in the following section.²⁰⁸
- *China’s application to join transpacific trade pact*: In September 2021, China’s Ministry of Commerce submitted a formal application to join the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP).^{*209} Beijing’s application followed the announcement of AUKUS, a trilateral security pact between Australia, the UK, and the United States,[†] though General Secretary Xi had signaled interest in joining CPTPP in November 2020.²¹⁰ Geopolitical frictions between China and CPTPP signatories as well as Beijing’s distortive economic practices are likely to frustrate Beijing’s bid to join the trade pact.

Coercion in China’s Global Economic Relations

In 2020 and 2021, China’s government significantly expanded its use of economic coercion to punish critics and compel behavior it desires from foreign countries and firms. Though it has long used access

*The CPTPP is a free trade agreement between Australia, Brunei, Canada, Chile, Japan, Malaysia, Mexico, Peru, New Zealand, Singapore, and Vietnam signed in March 2018 and entered into force for all signatories by September 2021. CPTPP signatories began accession negotiations with the UK in June 2021. Australian Government Department of Foreign Affairs and Trade, *Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)*, 2021.

†AUKUS was announced on September 15, 2021. Under the pact, the United States, the UK, and Australia agreed to hold consultations over 18 months to determine how to best build a new nuclear-powered submarine fleet for Australia. The three countries also intend to deepen cooperation on a range of other security and defense priorities, including strengthening joint capabilities and interoperability in cyber, artificial intelligence, quantum technologies, and additional overseas capabilities. Michael Clarke, “The AUKUS Nuclear Submarine Deal: Unanswered Questions,” *Diplomat*, September 22, 2021; U.S. Department of State, *Secretary Antony J. Blinken, Secretary of Defense Lloyd Austin, Australian Foreign Minister Marise Payne, and Australian Defence Minister Peter Dutton at a Joint Press Availability*, September 16, 2021; White House, “Remarks by President Biden, Prime Minister Morrison of Australia, and Prime Minister Johnson of the United Kingdom Announcing the Creation of AUKUS,” September 15, 2021.

to China's domestic market and other forms of economic leverage as both a stick and a carrot, China's government is increasing the frequency and breadth of its coercive tactics, as well as the variety of issues that trigger retaliation. For instance, ostensibly nonstate firms, particularly Chinese e-commerce companies, have removed foreign firms from their platforms for raising concerns over forced labor in Xinjiang's cotton and textile industry.*²¹¹ Chinese consumers are boycotting even more foreign firms for the same reason.²¹² Additionally, where in the past China retaliated on matters it terms "core interests," such as the status of Taiwan, China's government is now acting when countries move against its economic interests, such as excluding Huawei from their telecommunications networks. Aside from heightened retaliation, in 2021 China's government mounted a pressure campaign against countries around the world to defer to China's geopolitical priorities in exchange for access to its indigenously developed COVID-19 vaccines. China's use of inducements to influence domestic policy decisions in South American countries reflects a growing tendency to attempt to intervene in other countries' affairs.

China Increases the Scope and Frequency of Economic Retaliation

Following Australia's support for an independent inquiry into China's handling of the early stages of COVID-19, China imposed import bans on multiple Australian products. Initially, China's trade restrictions targeted agricultural products, including wine, barley, and beef, but later extended to a ban on coal.†²¹³ Prior to the ban, which has not been officially acknowledged by the CCP, China was Australia's second-largest export market for coal, accounting for 21 percent of Australian coal exports in 2020.²¹⁴ Following the ban, Australian coal producers have been able to divert shipments to other countries, most notably Brazil and India.²¹⁵ Consequently, the impact on Australian coal producers appears to have been minimal, with the Australian government reporting that the overall value of Australia's global coal exports rose 12.7 percent year-on-year in June 2021.²¹⁶ Furthermore, the overall volume of Australian exports to China has remained relatively unchanged, with strong sales of iron ore. Beijing has refrained from placing trade restrictions on Australian iron ore, for which there are no

*The Trump Administration banned U.S. imports of cotton and tomatoes from Xinjiang on January 13, 2021, due to forced labor concerns. On June 24, the Biden Administration announced a withhold release order on U.S. imports of solar panel materials from Xinjiang-based metal producer Hoshine Silicon Industry over forced labor concerns. According to the U.S. Department of Labor, artificial flowers, bricks, Christmas decorations, coal, cotton, electronics, fireworks, fish, footwear, garments, gloves, nails, toys, hair products, polysilicon, textiles, thread and yarn, and tomato products are all produced in China using forced labor. The last five categories, in particular, are produced using forced labor from Muslim minorities, including Uyghurs. Bernreuter Research, "What the U.S. Ban on Hoshine Silicon Means for the PV Industry," June 25, 2021; Ana Swanson, "U.S. Bans All Cotton and Tomatoes from Xinjiang Region of China," *New York Times*, January 13, 2021; U.S. Department of Labor International Bureau of Labor Affairs, *Against Their Will: The Situation in Xinjiang*.

†The specific trade restrictions have varied by product. For instance, Beijing placed duties of 80.5 percent on Australian barley and up to 218 percent on Australian wine after antidumping investigations. Chinese authorities suspended imports from several Australian beef producers for what they claimed were health and labeling problems. Saheli Roy Choudhury, "Australia Weighs Taking China to the WTO Again—This Time for a Dispute over Wine," *CNBC*, June 2, 2021; Saheli Roy Choudhury, "Here's a List of the Australian Exports Hit by Restrictions in China," *CNBC*, December 17, 2020.

readily available substitutes.²¹⁷ Meanwhile, the coal ban has contributed to rising coal prices in China, as prices for both domestic and other foreign sources of coal have risen.²¹⁸ The ban has also exacerbated domestic coal supply constraints. In June, coal shortages in Guangdong Province led factories in several cities to ration their use of electricity.²¹⁹

Chinese economic coercion against European political bodies, individual governments, companies, and individuals rose significantly in 2021. The escalation occurred in tandem with Chinese trade negotiators working with the EU to finalize the text of the CAI. The most prominent of these actions was the Chinese government's March 2021 announcement of sanctions against ten European individuals in government and academia, along with four European organizations, including the Mercator Institute for China Studies.²²⁰ Rather than pressure the EU into ratification, the CCP's economic coercion tactics have instead stalled the possibility of progress on the bilateral investment deal. The European Parliament committed to cease talks on the CAI and the possibility of ratification until China lifted sanctions.²²¹ The latest example of country-specific retaliation involves the Chinese government recalling its ambassador to Lithuania in early August 2021 after the Lithuanian government announced it would allow Taiwan to set up a de facto embassy in July.* China then demanded Lithuania recall its ambassador to China, and the following week it unofficially ordered a halt to direct freight rail from China to the Balkan country.²²² Lithuanian food producers and agricultural exporters also reported that the Chinese government had refused or halted renewal of their export permits, alleging the presence of pests and crop diseases.²²³ The economic impact for Lithuania is likely to be insubstantial, as importers can still acquire Chinese goods through indirect routes and Lithuania's total trade volume with China is relatively low.²²⁴ (For more background on these sanctions, see Chapter 3, Section 1, "Year in Review: Security, Politics, and Foreign Affairs.")

Increasingly sensitive to commentary on the CCP's actions in Xinjiang, the Chinese government has not spared foreign private companies from retaliation. In March 2021, Chinese social media and state media rediscovered statements from Swedish fast fashion giant H&M, German sportswear company Adidas, and several other foreign brands on avoiding sourcing cotton from Xinjiang.†²²⁵ Chinese social media platforms teemed with outrage over the companies' statements and state television networks called for boycotts of the brands.²²⁶ Tmall, China's largest business-to-consumer e-commerce platform, removed H&M from its website, and H&M reported a 23 percent drop or \$74 million loss in sales in Q2 2021.²²⁷ H&M released a statement at the end of March that did not

*Taiwan maintains "representative offices" that function as de facto embassies in many European countries, but these are generally called "Taipei representative offices" in deference to China's claim that Taiwan is part of its sovereign territory. By contrast, Taiwan's office in Lithuania will be called a "Taiwan representative office." Reid Standish, "Beijing's Spat with Lithuania Sets the Stage for Shaky New Era of Europe-China Ties," *Radio Free Europe Radio Liberty*, August 17, 2021.

†These companies also participate in the Better Cotton Initiative, a nonprofit focused on sustainable and ethical cotton production that referenced forced labor abuses in Xinjiang throughout 2020. Better Cotton Initiative, "Task Force on Forced Labour and Decent Work," January 2021.

explicitly mention Xinjiang or cotton but reiterated commitments to both “responsible sourcing” and the Chinese market.²²⁸ While Adidas remained available on Tmall, its sales in April 2021 dropped 78 percent year-on-year.²²⁹ Adidas did not release a statement and neither company has issued an apology or restarted sourcing of Xinjiang cotton, as the Chinese media mob had demanded. The Chinese government has indicated it will use other administrative means, such as product labeling requirements and safety warnings, to limit market access for foreign companies critical of the CCP’s actions.

The CCP has also demonstrated a willingness to apply economic coercion on behalf of its national champions. In response to Sweden’s ban on Huawei equipment incorporation in the country’s 5G infrastructure, the CCP has threatened Swedish company Ericsson with exclusion from the Chinese market.²³⁰ Ericsson is a top competitor of Huawei in 5G equipment, but in Q2 2021, revenue in China declined for the first time in three years with a sharp decrease of 63.4 percent.²³¹ Chinese negotiators had previously attempted to insert language into the CAI on penalizing EU member states for banning Huawei from 5G networks and made vague threats to the UK when UK Prime Minister Boris Johnson announced a similar prohibition on Huawei.²³² Despite this increasing political risk, a 2021 business outlook survey conducted by the European Chamber of Commerce in China reported that European firms are nonetheless “committed to the China market now more than ever.”²³³

Addendum: China's Phase One Trade Agreement Commitments and Compliance Status

Phase One Commitment	Commitment Target	Interim Result	Outstanding Concerns
Purchase Targets	Beijing committed to increase purchases of U.S. goods by at least \$200 billion over 2017 levels over two years: \$76.7 billion in 2020 and \$123.3 billion in 2021.	As of August 2021, Chinese imports of U.S. goods stood at 69 percent (\$89.4 billion) of a prorated \$129.9 billion target.	Beijing has leveraged SOEs for some of the purchases, raising concerns that it is using the agreement to strengthen government actors in the economy. ²³⁴
Address Intellectual Property (IP) Violations	The agreement included changes to address longstanding concerns over China's administration of the IP lifecycle: patenting, licensing, and civil and criminal enforcement. The agreement required China to establish an action plan to deter IP theft and counterfeiting, as well as to enforce court judgments. Other IP provisions aim to create a level playing field for foreign firms and ensure stronger IP protection in valuable markets such as pharmaceuticals.	On April 20, 2020, the China National Intellectual Property Administration (CNIPA) released a 2020–2021 plan to implement guidance on strengthening IP protection. From October 2020 to January 2021, China amended its Patent Law, Copyright Law, and Criminal Law, leading some rightsholders to report some degree of improvement in IP enforcement.	China legal expert Mark Cohen noted that while the CNIPA guidance appears to reflect the Phase One agreement in its timetables and delegation of responsibility, CNIPA is administratively subordinate to the State Administration of Market Regulation and may lack the authority to implement the plan. ²³⁵ Local-level implementation is an additional concern, as amendments to national laws governing IP rights do not necessarily create binding obligations at the provincial and lower levels of government in China. ²³⁶
Eliminate Forced Technology Transfer	The agreement prohibits China from conditioning market access on transfer of technology—reiterating a commitment China made in its 2001 WTO accession protocol—and directing overseas investment with the explicit aim of acquiring technology to fulfill industrial policy goals. ²³⁷	The agreement includes no monitoring guidelines, enforcement mechanisms, deadlines, or targets.	The agreement lacks metrics to evaluate Beijing's compliance. Chinese law already prohibits conditioning regulatory approvals on technology transfer, but requests continue. U.S. companies are reluctant to come forward in cases of forced technology transfer for fear of reprisal.

Addendum: China's Phase One Trade Agreement Commitments and Compliance Status—Continued

Phase One Commitment	Commitment Target	Interim Result	Outstanding Concerns
Liberalize Financial Services	China agreed to remove investment restrictions, reduce regulation, and review pending license applications of U.S. companies in its domestic banking, credit rating, electronic payments, asset management, insurance, and securities industries.	In 2020, China committed to allow U.S. credit ratings agencies to acquire majority ownership in existing joint ventures and review U.S. companies' applications for credit rating services for onshore securities. In 2021, China approved U.S. firms owning a majority stake in wealth management joint ventures and having sole ownership over fund management companies.* ²³⁸	Many of Beijing's financial services commitments are restatements or minor improvements on pledges in progress. U.S. financial services firms report licensing requirements can be excessively onerous, hindering entry into and expansion within the Chinese market. ²³⁹
Increase Agricultural Market Access	China agreed to permit the import of beef, pork, and processed meat that passes inspection by the U.S. Food and Drug Administration Food Safety and Inspection Service. Beijing also committed to reduce the review and approval period for genetically modified products to "no more than 24 months," down from the prior approval period of five to seven years.	According to former trade negotiator Darci Vetter, provisions on U.S. meat, poultry, and specialty dairy products appeared promising in terms of increasing market access. The deal text also pledged to reduce burdensome registration, licensing, and bureaucratic processes for U.S. agricultural exporters. ²⁴⁰	Trade association BIO expressed continuing concerns regarding U.S. biotech developers' lengthy wait for product approvals, as Chinese regulators will not begin the approvals process until U.S. regulators have completed their review. ²⁴¹

Source: Compiled by Commission staff.

*Four U.S. financial services firms have received the Chinese government's approval to establish wealth management and/or mutual fund businesses. In May 2021, BlackRock and Goldman Sachs received regulatory approval to establish majority-owned wealth management joint ventures. In September 2021, the China Securities Regulatory Commission approved Neuberger Berman Group to establish a wholly owned mutual fund business. The green light for Neuberger Berman Group followed similar approvals for U.S. asset managers Fidelity and BlackRock to establish wholly owned China mutual fund businesses in August 2021 and August 2020, respectively. Yue Yue and Tang Zivi, "China Awards Wholly Owned Mutual Fund License to Third Foreign Firm" *Caixin*, September 27, 2021; Yue Yue and Han Wei, "Fidelity Cleared to Open Its Own China Mutual Fund Business," *Caixin*, August 7, 2021; Charlie Zhu and Jun Luo, "Goldman Forms Wealth Venture with China's Largest Bank," *Bloomberg*, May 25, 2021.

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SECTION 2: THE CHINESE COMMUNIST PARTY'S ECONOMIC AND TECHNOLOGICAL AMBITIONS: SYNTHETIC BIOLOGY, NEW MOBILITY, CLOUD COMPUTING, AND DIGITAL CURRENCY

Key Findings

- The Chinese Communist Party (CCP) views achieving technological self-sufficiency as essential for both economic growth and political survival. China's leaders believe they can rely on the domestic development of emerging technologies not only to address long-term structural challenges such as falling productivity growth, demographic decline, and environmental degradation but also to strengthen Party control and stability while reducing dependency on foreign technology and products.
- Under General Secretary of the CCP Xi Jinping, the Party has increased its control over China's economy in ways that have further enhanced the links between China's state and nonstate sectors. The CCP believes state control rather than economic liberalization is essential to achieving economic growth while maintaining political stability.
- To achieve dominance in emerging technologies like cloud computing, synthetic biology, and new mobility, Chinese policymakers are relying on extensive subsidization and other tactics similar to those previously used for industries such as shipping, telecommunications, and conventional vehicles. With few internationally accepted standards or rules, Chinese companies and other entities are actively shaping standards in collecting, protecting, and governing data. Chinese efforts to build technological capacity could have lasting negative consequences for the future of U.S. technological leadership.
- The CCP is working to establish China as a global leader in synthetic biology, motivated by the prospective economic benefits and also the potential for synthetic biology to mitigate structural problems such as deficiencies in China's healthcare system and scarce natural resources. The United States leads in most applications of synthetic biology, but Chinese synthetic biology firms receive generous state subsidies and have begun supplementing domestic genomic data collection with international collection efforts.
- With its advancements in new mobility, China is positioned to contest U.S. leadership in various technologies. The Chinese government has prioritized development of new energy vehicle (NEV) technology through extensive subsidies and protection-

ist policies while capturing every stage of the supply chain for NEV batteries. In autonomous and connected vehicles, global competition is increasing as Chinese companies are engaged in pursuit of international markets.

- U.S. global dominance in cloud computing may be challenged by Chinese competitors in developing markets. Chinese cloud computing companies have thrived in a protected home market and with few exceptions can operate freely in the United States while U.S. companies face barriers in China. Protecting its cloud computing sector to control information and data flows is a national security priority for China as well as a strategic imperative to support other key emerging technologies such as new mobility, artificial intelligence (AI), biotechnology, smart cities, and big data applications.
- China leads among major economies in the development of a central bank digital currency. The CCP's promotion of a digital renminbi (RMB) is motivated by several factors, including a desire to increase control and surveillance of financial transactions by state and nonstate companies, foreign firms operating in China, and individuals. China's digital RMB does not present an immediate challenge to the U.S.-led global financial system, but in the long term it could undermine the status of the U.S. dollar and efficacy of U.S. financial sanctions.

Recommendations

The Commission recommends:

- Congress direct the U.S. Department of Energy, in coordination with the National Institute of Standards and Technology and other relevant agencies, to produce a report and research plan outlining a project for the collection and sequencing of nonhuman genomic data, analogous to the Human Genome Project. Such a plan shall include:
 - A description of the types of nonhuman genomic data to be collected and sequenced;
 - An explanation of research value and commercial applications from collecting and sequencing such data;
 - The designation of an existing Department of Energy National Laboratory to coordinate the project and award grants to U.S. universities and private companies in furtherance of the project's goals;
 - A description of ethical considerations and processes for stakeholder engagement; and
 - Articulation of the National Institute of Standards and Technology's role to:
 - Codify technical standards related to the project;
 - Share and protect data collected during the project; and
 - Engage with the public and international partners on the project's findings.

- Congress direct the National Institute of Standards and Technology, in coordination with the National Institutes of Health, the U.S. Patent and Trade Office, the Department of Energy, and the Department of State, to establish a model framework for the protection, collection, and commercialization of nonhuman genomic data. The framework should seek to establish principles on intellectual property rights for the countries of origin of the genomic data. This framework should also be used in international outreach regarding protection of national biotechnology assets and Chinese predatory collection of data.
- Congress request a report from the Administration regarding data servicing operations owned by Chinese firms. Such a report shall include:
 - Whether such firms are operating in the United States, what laws and regulations may apply to such operations and services, and what cloud computing services are offered or provided to U.S. persons;
 - Whether Chinese cloud computing providers are engaged in any joint ventures or servicing arrangements with U.S. firms and the nature of such operations;
 - Whether consumers of these services have access to prominently identified information regarding the ownership of such cloud computing services;
 - Whether U.S. firms can operate freely in the People's Republic of China (PRC) and what, if any, restrictions might apply to their services and operations;
 - Where Chinese-owned firms may be providing equipment or services for the provision of cloud computing support in third-country markets and whether the market share of Chinese-owned firms in those markets may limit, in any way, the ability of U.S.-owned firms to operate independently of such operations; and
 - What support the Chinese government may be providing to cloud computing firms in terms of equipment and services that may act as a subsidy for such operations.
- Congress consider legislation requiring that the U.S. Department of Transportation, in consultation with the U.S. Departments of Commerce, Energy, and Defense, and law enforcement authorities, develop regulations limiting access for Chinese-owned firms developing autonomous vehicle capabilities to protect U.S. national and economic security interests. In preparing such regulations, the authorities should consider the extent to which the Chinese government limits access of U.S. firms for similar uses. Specific attention should be given to data collection activities that may advance the interests of the Chinese military or intelligence agencies. In addition, such legislation shall address any need to protect the data utilized and collected by autonomous vehicles produced and/or serviced by Chinese-owned firms.
- The committees of relevant jurisdiction in the House and Senate investigate and hold hearings with a view toward consider-

ing legislation on the operations of China's Blockchain-Based Service Network, with particular attention to its operations in the United States and participation of U.S. companies in building out the network. Such investigation should look at the goals of the network in developing blockchain infrastructure and whether the involvement of the Chinese government and Chinese state-owned entities may put at risk any U.S. economic and national security interests.

- Congress consider legislation to create the authority to screen the offshoring of critical supply chains and production capabilities to the PRC to protect U.S. national and economic security interests and to define the scope of such supply chains and production capabilities. This would include screening related outbound investment by U.S. entities. Such legislation would direct the secretaries of defense and commerce, along with the U.S. Trade Representative, to develop procedures to evaluate existing and proposed supply relationships with the PRC and identify whether critical U.S. interests are being adversely affected, including the loss of domestic production capacity and capabilities. The legislation would authorize the president to take appropriate action, including prohibiting supply relationships or certain transactions to protect U.S. national security.

Introduction

In the 14th Five-Year Plan (FYP)* (2021–2025), the CCP articulates a vision for economic prosperity that ensures social stability and its paramount control while promoting a “modern socialist country.”¹ While the 14th FYP builds on policy ambitions previously articulated by the Chinese government, one of its most significant changes is that it drops precise numerical growth targets. Instead, mounting socioeconomic challenges—from pollution to rising income inequality—are critical factors in motivating the CCP's focus on delivering quality-of-life improvements. The 14th FYP also looks beyond its five-year remit to longer-term objectives, framing the 2021–2025 period as the latest stage in a longer economic and social development project mapped out to both 2035 and 2049.^{†2}

At the same time that it articulates an ambitious growth agenda, the CCP acknowledges overwhelming domestic obstacles. Achieving indigenous technological breakthroughs is a particularly urgent challenge, driven by the CCP's perception that state-led innovation is an essential part of redirecting the market to fulfill political objectives and subsequently strengthen CCP security. As pressure from the international community around China's practices increases, China's policymakers are looking to assert greater control over the economy, shield its companies from foreign backlash, and direct investment toward high-priority needs such as food security and healthcare. To achieve these objectives, the CCP is rolling out a framework of in-

*FYPs are economic policy blueprints that enumerate the Party's objectives and priorities during the ascribed time period. FYPs historically have centered on production targets or other numerical targets, rooted in the command economy of the Soviet Union and inherited by other Communist regimes. *Economist*, “What Is China's Five-Year Plan?” March 4, 2021.

†The CCP regards 2049 with particular importance as the year will mark the centennial of the founding of the People's Republic of China. Evelyn Cheng, “Xi at Communist Party Anniversary: China Won't Accept ‘Sanctimonious Preaching’ from Others,” *CNBC*, July 1, 2021.

centives to reward companies that follow government guidance and punish those that stray from it.

This section begins with a discussion of CCP economic policy-making, including its growing emphasis on achieving technological self-sufficiency while it assumes further control of key industries for both state and nonstate firms. It then examines the CCP's strategies—including plans for international expansion—around three of many sectors the CCP views as crucial to China's economic future: synthetic biology, new mobility, and cloud computing. Finally, it examines the CCP's recent efforts to promote a sovereign digital currency and its reasons for doing so, which include economic as well as domestic and geopolitical motivations. The section draws from the Commission's April 2021 hearing on "An Assessment of the CCP's Economic Ambitions, Plans, and Metrics of Success," the Commission's staff and contracted research, consultations with policy experts, and open source research and analysis.

Plotting Economic Innovation to 2025

At the start of 2021, China was ahead of the world in post-pandemic recovery while also looking ahead to key CCP milestones. Foreign criticism and pushback against the CCP's policies and practices, along with growing domestic challenges, clouded the outlook for 2021 and helped to strengthen the internal push for self-sufficiency. Demographic decline, environmental degradation, income inequality, and a growing debt burden remain pressing challenges to China's economic growth and social stability while inherently testing CCP control. (For more on these challenges, see Chapter 1, Section 1, "The Chinese Communist Party's Ambitions and Challenges at Its Centennial.") Chinese policymakers formulated the 14th FYP in view of near-term difficulties and their ability to deliver on long-term guarantees of CCP economic management. While these considerations did not drive a departure from previous economic planning and tools, they did push the CCP into a deeper reassessment of China's links to the global economy. In addition to its domestic objectives for technology, the CCP wants to gain international leadership in key technologies to both promote Chinese companies abroad and benefit from controlling the path of global innovation. The 14th FYP outlines the CCP's strengthened commitment to a top-down approach and strategy for realigning China's economic relationships to insulate against disruptions from foreign policies and other external shocks.

The 14th FYP also illustrates the CCP's view that technological upgrades will solve its slowing productivity growth, a problem that has weighed on China's economy for over a decade. Loren Brandt, Noranda chair of economics at the University of Toronto, argues that China's productivity growth was once driven by an abundant supply of labor and strong performance of the nonstate sector, but it has been on the decline since 2007.³ In testimony before the Commission, Dr. Brandt attributed the decline to increased state direction and a departure from government policies of the 1990s and 2000s that enabled the nonstate sector of the economy to flourish.⁴ During that period, government policies lowered barriers to firm entry and allowed labor to move from

agriculture to industrial sectors, where workers gained skills and training. Over the last 15 years, the state's hold on capital- and skill-intensive industries tightened. Education and skills among the workforce also did not progress enough to meet the demand of new high-tech industries.⁵ According to Dr. Brandt, the Chinese government's return to a top-down approach has only exacerbated the drag on productivity, but the CCP sees a top-down approach as a necessity to direct resources into technologies that can boost productivity growth.⁶

The CCP Seeks Supply Chain Security

China's decades-long drive for self-sufficiency has intensified in the wake of extensive U.S. actions to limit access to technology by problematic Chinese companies. The U.S. export control regime, for example, not only affects the flow of goods from the United States to target countries but also extends to third countries' exports of goods that contain U.S. content. In other words, U.S. controls limit the ability of third countries to send controlled technology to certain end users. Since 2018, the Department of Commerce has added nearly 250 Chinese companies and research institutes to its Entity List.⁷ Ling Chen, professor of political economy at the Johns Hopkins School of Advanced International Studies, testified that for Chinese tech companies targeted by U.S. sanctions, "their success or failure was interpreted [by the Chinese government] as a matter of national survival."⁸

Weakening global demand coupled with greater global scrutiny of China's companies has prompted Chinese policymakers to focus on supply chain security. Even prior to the novel coronavirus (COVID-19) pandemic, China's government was seeking to insulate China's supply chains from all manner of shocks, such as a sudden drop in foreign demand, constraints on logistics and transportation, or foreign laws and regulations seeking to block the flow of goods and services. Recognition of these vulnerabilities has been a key driver of China's dual circulation strategy, which aims to reduce dependence on solely export-led growth, and increasing domestic consumption while increasing foreign reliance on China. (For more on dual circulation, see Chapter 1, Section 1, "The Chinese Communist Party's Ambitions and Challenges at Its Centennial.")

For the central government, securing supply chains means not only reducing vulnerabilities with respect to foreign sources but also increasing China's role in higher-value supply chains. Matt Pottinger, distinguished visiting fellow at the Hoover Institution and former deputy national security adviser, called China's approach "offensive decoupling," or a "one-way decoupling," because it seeks to increase global dependencies on Chinese products while also onshoring production in key sectors.⁹ In testimony before the Commission, Mr. Pottinger also defined offensive decoupling as the CCP seeking to decouple on its own terms and use economic leverage for political goals.¹⁰ These actions and the underlying strategy demonstrate what the CCP views as a broad definition of security and its heightened sense of vulnerability.

The 14th Five-Year Plan Places Self-Sufficiency at the Core of China's Development

The 14th FYP comes at a critical time as Chinese policymakers seek to respond to long-standing domestic economic challenges, manage post-COVID-19 recovery, and mitigate mounting international criticism. Released in the same year as the CCP's centennial anniversary, the 14th FYP reflects the CCP's desire to show that its leadership is essential for sustaining a robust economy while concealing or shoring up many negative spillovers of the CCP's approach. One such spillover effect is growing income inequality. Notably, the 14th FYP looks far beyond 2025 to 2035, which is when the country's policymakers envision that China will effectively modernize in key areas and overcome various forms of economic inequality. The 2021–2025 period is also viewed as the beginning of the next great phase of development toward 2049, which will mark the centennial of the founding of the People's Republic of China.¹¹ According to General Secretary Xi, China has achieved the 13th FYP's goal of a “moderately prosperous society.”¹² The national vision for the 14th FYP is to become a “modern socialist country,” a concept that General Secretary Xi outlined in 2017 to include expansion of the middle class and reduction of income inequality.¹³ (For more on this concept, see Chapter 1, Section 1, “The Chinese Communist Party's Ambitions and Challenges at Its Centennial.”)

The policy goals of the 14th FYP remain similar to past plans in terms of core content and direction, but the plan demonstrates a distinct shift in messaging and tone. Income growth is not presented as an underlying guarantee of the plan, while overall economic growth serves as a means to maintaining Party control and stability over the long term. Chinese policymakers are shifting their narrative emphasis from discrete numerical targets to focus on what they call “high-quality growth.” Chinese officials use this term to acknowledge some of the negative effects of a growth-at-all-costs approach, such as environmental degradation, poor healthcare, and income inequality. For the CCP, high-quality growth is an essential component of ensuring social stability. The CCP must assure Chinese citizens that there are still opportunities in the economy and that the Chinese people can rely on the CCP for a robust social safety net. In the past, Chinese policymakers frequently mentioned the need for quality-of-life improvements, but the 14th FYP is the first plan to focus on qualitative rather than quantitative targets, according to Hu Zucui, deputy director of China's National Development and Reform Commission.¹⁴ Accordingly, the 14th FYP is also the first plan that does not incorporate a gross domestic product (GDP) growth target for the concluding year of the plan.

Instead of precise numerical targets, the 14th FYP is more focused than previous plans on qualitative assessments to fulfill basic needs of childcare and education, healthcare, eldercare, and employment.¹⁵ Chinese state media have noted that the qualitative growth approach is appropriate for current uncertainty and would “help China respond to various risks and challenges in a more active and flexible way.”¹⁶ This emphasis on quality of life provides Chinese government agencies a broad runway to complete a smaller set of goals and performance indicators. In contrast to

previous plans, the 14th FYP also introduces new metrics of economic success such as food security and energy security, which have gained importance in the face of an increasingly dire set of demographic and environmental circumstances. Chinese planners hope innovation in areas like agricultural biotechnology and renewable energies will ensure that key quality-of-life goals can be achieved through enhancing China's domestic capabilities and greater self-sufficiency.

The specific areas of emphasis identified for innovation in the 14th FYP are largely consistent with the Made in China 2025 policy, first introduced in 2015 (see Table 1). Chinese policymakers continue to prioritize advancements in the same sectors, including AI, new materials, advanced manufacturing, aerospace, and agricultural machinery. While featured in previous plans, the 14th FYP emphasizes the linkage between innovation, development, and security to intentionally de-emphasize growth objectives. Innovation is viewed as an enabler for many other sectors that will support Chinese growth and help the government mitigate domestic and international challenges. For instance, innovations like AI and synthetic biology will improve healthcare while smart manufacturing will maximize value-added productivity gains.

Table 1: China's Key Technology and Sectoral Targets Comparison

Made in China 2025	14th FYP
Next Generation IT Integrated Circuits	Quantum Information Integrated Circuits Beidou* Navigation Satellite System
High-End Computerized Machines and Robots	Major Technical Equipment Smart Manufacturing and Robotics
Space and Aviation	Space and Aviation Airplane Engines and Gas Turbines
Maritime Equipment and High-Tech Ships	Ships and Maritime Equipment
Advanced Railway Transportation Equipment	Advanced Railway Transportation Equipment
New Energy and Energy-Saving Vehicles	New Energy Vehicles and Smart (Connected) Vehicles
Energy Equipment	Advanced Energy Equipment
Agricultural Machines	Agricultural Machinery and Equipment
New Materials	High-End New Materials
Biopharmaceuticals and High-Tech Medical Devices	High-End Medical Equipment and Innovative Drugs

Source: Simon Rabinovitch (@s_rabinovitch), "Made in China 2025' is dead. Long live 'Made in China 2025'! China's new Five-Year Plan is not nearly as detailed as its controversial MiC 2025 plan, but it targets all the same sectors & technologies, plus a few more." Twitter, March 11, 2021, 10:26 p.m. https://twitter.com/S_Rabinovitch/status/1370214528571514884.

*Beidou is China's global navigation satellite system and has achieved global coverage as of 2020 with 35 satellites worldwide. Beidou is operated by the China National Space Administration. GPS, "Other Global Navigation Satellite Systems."

The “Ten-Year Sprint” to Ensure China’s Global Competitiveness

As Chinese policymakers seek to transform China into a “modern socialist country,” they believe they have a relatively narrow window to do so. Key CCP plans to address the structural challenges in China’s economy, which target completion by 2030 and 2035, indicate an urgency in the Party’s timeline. Predictions that the country’s population will peak between 2025 and 2030 have fueled the urgency to address a host of problems that will come with demographic decline, including a smaller workforce, a more elderly population, and increased strain on government budgets and China’s social safety net.¹⁷ Jude Blanchette, Freeman chair at the Center for Strategic and International Studies, noted in testimony before the Commission that because these challenges “threaten to derail China’s development path and global ambitions, it’s clear that Beijing is engaged in a decade-long sprint, not a hundred-year marathon.”¹⁸ In other words, as Michael Beckley and Hal Brands of the American Enterprise Institute argue in *Foreign Affairs*, this indicates that U.S. competition with China could be “short and sharp.”¹⁹

Chinese policymakers have long acknowledged weaknesses in the country’s science and technology systems, particularly in basic research and development (R&D) and the struggle to draw in talent.²⁰ These deficiencies will become even more crucial not just in the global tech race, but also in the CCP’s race against economic slowdown and demographic decline. The CCP views innovation, development, and security as intrinsically linked and believes development of science and technology will answer its domestic and foreign policy problems. Chinese planners appear confident that they are on track to achieve the necessary talent and tech breakthroughs. At the same time, their approach recognizes challenges to the research environment and its management by various government and non-state actors. The 14th FYP establishes a ten-year action plan to strengthen basic research, commits to changing regulations to support a more dynamic system of R&D, and outlines steps to grow talent. At the same time, policymakers will need to make significant improvements in the education system likely beyond what the 14th FYP prescribes to increase workforce opportunities in an era that values science and technology skills. Inadequate rural education remains a critical obstacle to the future of Chinese employment as China’s 900 million rural residents often lack education beyond a high school level.²¹ With only 15.5 percent of China’s population college-educated as of China’s 2020 census, shifting employment from low-wage labor toward knowledge-intensive innovation and services will be a challenging transition.²²

CCP Control of China’s Nonstate Sector Is Increasing

Under General Secretary Xi, the CCP has increased its control of China’s economy in ways that have further enhanced the linkages between state and nonstate firms. In addition to promoting state-owned enterprises (SOEs), the CCP has also embraced hybrid forms of financing that allow it to direct capital toward, and increase influence in, nonstate enterprises. This approach is typified by the CCP’s use of new tools to extend its reach, including government guidance funds, which are state-nonstate investment vehicles that

seek to raise capital for firms operating in strategic and emerging industries such as AI. According to a March 2021 report by the Center for Security and Emerging Technology at Georgetown University, as of 2020 the Chinese government had set up 1,741 government guidance funds, with a total of more than \$740 billion (RMB 4.76 trillion) raised.*²³

As Chinese and foreign economists have noted, the CCP's oversight of China's economy—and the integration of state and nonstate firms in an economic policymaking ecosystem—brings certain advantages to China's economic development. According to Mr. Blanchette, "The power of China's state capitalist system stems from the synergies created through strategic alliances, cross shareholdings, frequent personnel rotations; and, increasingly, complex vertical integration."²⁴ This is exemplified in the case of COSCO Shipping Group, an SOE that in 2017 raised more than \$1 billion from other SOEs to fund its purchase of 20 new ships.²⁵ As Mr. Blanchette noted, "Most of COSCO's foreign competitors do not possess the ability to raise capital via government-orchestrated equity sales."²⁶

For all its ostensible advantages, China's state-led model imposes significant costs on China's economic growth as well. For instance, the Center for Security and Emerging Technology study on government guidance funds concluded that the funds had several important shortcomings, including misallocation of funds, an overabundance of funds that leads to redundant and inefficient investment, a reliance on "inexperienced, poorly incentivized" bureaucrats, and crowding out of more efficient nonstate-sector investment.²⁷ The report concludes that many of these problems "are not merely 'growing pains,' but are rooted in basic issues of institutional capacity and contradictions in the model—between CCP aims and the profit motive, and between national visions of technological development and local, shorter-term economic development interests."²⁸ Nevertheless, CCP policymakers are willing to accept suboptimal economic outcomes if it ensures achievement of political objectives. As Mr. Blanchette wrote, "Such weaknesses are not lost on China's industrial planners, who instead appear to have adopted a 'venture capitalist' approach that implicitly understands most investment 'bets' won't be winners. The goal, then, is to place sufficient bets to ensure enough productive, profitable, or strategic outcomes."²⁹ (For further discussion on government guidance funds, see Chapter 2, Section 3, "The Chinese Government's Evolving Control of the Nonstate Sector.")

China's Strategy for Emerging Industries

As the CCP sets its sights on the horizon for technological upgrading, it is also seeking to ensure Chinese global leadership in key fields. The 14th FYP enumerates ambitions across a range of emerging technologies, most of which have been previously singled out for government support.

This section examines the Chinese government's promotion of synthetic biology, new mobility, and cloud computing—each itself a constellation of related technologies foundational to achieving breakthroughs outlined in the 14th FYP. Synthetic biology has the

*Unless noted otherwise, this section uses the following exchange rate throughout: \$1 = RMB 6.43.

potential to transform nearly every sector of China's economy, including some of the sectors Chinese policymakers view as the most important, such as agriculture, energy, and medicine. While many of its applications remain in development, synthetic biology also shows great promise in addressing important quality-of-life issues the CCP views as underpinning its own legitimacy. Developing new mobility—an umbrella term that captures everything from ride-hailing services to autonomous vehicles (AVs)—is a strategic imperative for the CCP as it seeks to both lower China's carbon emissions and improve transportation systems for an increasingly urban and aging population. New mobility is integral to China's smart cities ambitions and stands to enhance the CCP's digital surveillance methods, which has implications well beyond China's borders. Chinese leaders have long prioritized cloud computing, both as a critical channel of information flows and for its role in enhancing data collection, transfer, and storage in practically all other sectors due to increased integration of digital services across the economy. Cloud computing enables the mass collection and transfer of genomic data, powers machine learning in transportation infrastructure, and undergirds digital financial payments and recordkeeping.

Advancement in each of these technologies could fulfill several strategic objectives. Development of these technologies may translate into immense economic gains as Chinese firms realize their commercial value. The CCP also hopes that these technologies can help alleviate many of the social and environmental problems currently facing the Chinese population. Finally, the CCP believes leadership in these fields is a valuable geopolitical tool that affords the Party the ability to set international standards favorable to its own interests.* Chinese government policies and tactics to achieve these goals harbor potentially significant implications for the stability of U.S. employment in key sectors, national security, and global competitiveness.

The CCP Views Synthetic Biology as Key to Solving Economic and Livelihood Problems

The CCP believes synthetic biology can help address many of China's most pressing issues, from healthcare needs of an aging population to food supply challenges created by climate change.³⁰ Synthetic biology (also known as engineering biology) is a type of biotechnology focused on designing or redesigning biologically based parts, devices, and systems for useful purposes.† According to the U.S. National Academy of Sciences, there is no precise difference between synthetic biology and other types of biotechnology. Broadly speaking, however, synthetic biology is characterized by the use of approaches common to engineering disciplines, including computational modeling and the construction of prototypes based on the computational models.³¹ Scientists generally understand the term “synthetic biology” to comprise three technologies: (1) gene sequencing (including the ability to “read” the human genome), (2) gene

*For more on the CCP's attempts to expand China's influence in international standards-setting organizations, see U.S.-China Economic and Security Review Commission, Chapter 1, Section 2, “The China Model: Return of the Middle Kingdom,” in *2020 Annual Report to Congress*, December 2020, 80–135.

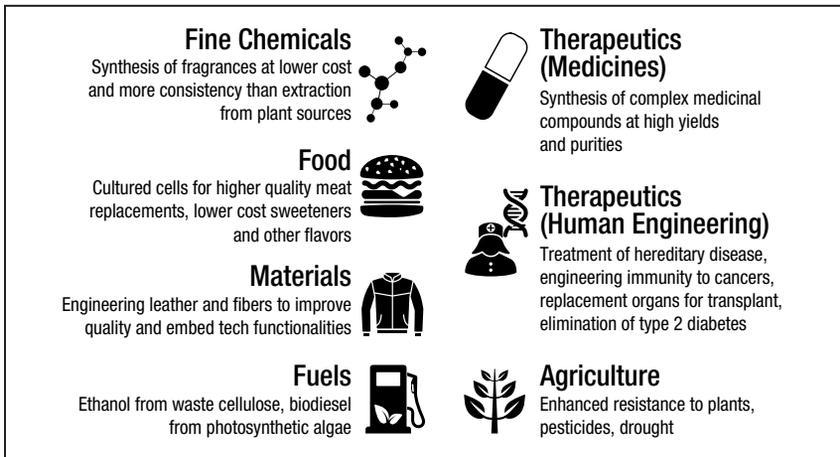
†For more on China's ambitions in biotechnology, see U.S.-China Economic and Security Review Commission, Chapter 2, Section 3, “U.S.-China Links in Healthcare and Biotechnology,” in *2020 Annual Report to Congress*, December 2020, 293–327.

editing (i.e., changing existing DNA), and (3) gene synthesis (i.e., creating DNA and inserting it into an existing genetic sequence).³²

Synthetic biology is a rapidly growing field with the potential to revolutionize many different industries, including food, agriculture, medicine, and energy (see Figure 1). Ginkgo Bioworks, one of the world's largest biotechnology firms, has predicted synthetic biology will one day be able to produce "virtually any physical good."³³ One immediate application of synthetic biology has been to address the COVID-19 pandemic through the rapid development of testing kits and vaccines.³⁴

While advances in synthetic biology will yield benefits to global consumers, the greatest advantage will accrue to the countries that claim leadership in the field, ranging from economic gains such as greater employment opportunities to the ability to play a leading role in the global governance of synthetic biology.³⁵ Leadership in synthetic biology also carries significant national security implications, including the development of new materials with military applications and the possible creation of more virulent bioweapons.³⁶

Figure 1: Applications of Synthetic Biology



Source: Adapted from Tara O'Toole, "Synthetic Biology and National Security: Risks and Opportunities," *Center for Strategic and International Studies*, April 14, 2020.

U.S. scientists agree that while the United States remains the global leader in synthetic biology, its advantage is declining due to China's rapid advances in the field.³⁷ Jason Kelly, CEO of Ginkgo Bioworks, testified before the Commission that China's national champion, BGI, the world's largest genomics company, has already reached near-parity with U.S. firms in gene sequencing.*³⁸ According to Dr. Kelly, China has not yet reached parity with the United States on gene editing and gene synthesis, but it is gaining ground.³⁹ Dr. Kelly noted that maintaining U.S. leadership in bio-

* BGI was founded in 1999 as Beijing Genomics Institute to contribute to the Human Genome Project, an international scientific research project that successfully mapped all human genes. Mark Kazmierczak et al., "China's Biotechnology Development: The Role of U.S. and Other Foreign Engagement," *Gryphon Scientific and Rhodium Group* (prepared for the U.S.-China Economic and Security Review Commission), February 14, 2019, 25; Oak Ridge National Laboratory, "History of the Human Genome Project."

technology will require government support, comparing it to the U.S. government's support of the defense industry in the 1950s.⁴⁰ China's advances have been driven by generous government support for synthetic biology research and significant efforts to obtain research and data from foreign countries, including the United States, sometimes illicitly.

China's Strategy for Synthetic Biology

In recognition of the transformative potential of synthetic biology and the importance of leadership in the field, the 14th FYP has listed biotechnology, including synthetic biology, as one of seven fields in science and technology where the CCP will focus resources and strategic planning.⁴¹ Although detailed data on Chinese government spending on biotechnology are unavailable, according to some estimates, China's central, provincial, and local governments have collectively invested over \$100 billion in life sciences R&D.⁴² This government support includes the establishment of synthetic biology institutes in Beijing and Tianjin.⁴³

Government backing has also been essential to some of China's top synthetic biology companies, including BGI, which received substantial government regulatory support soon after it was founded in 1999 and continues to receive subsidies.⁴⁴ In 2010, BGI received \$1.5 billion in funding from China Development Bank, a state bank, to expand its operations.⁴⁵ Some of the funding was used to purchase gene-sequencing machines from Illumina, a U.S. company, several years before BGI began producing its own gene-sequencing equipment.⁴⁶

China's International Expansion in Synthetic Biology

As part of China's efforts to become a global leader in synthetic biology, Chinese companies and researchers have sought to gain access to foreign expertise. In some cases, Chinese companies' purchases of foreign companies have driven significant breakthroughs in China's own capabilities in synthetic biology. In 2013, BGI purchased Complete Genomics, a U.S. gene-sequencing company.⁴⁷ In 2020, Complete Genomics announced it would be able to sequence a human genome for \$100, compared to \$600 for most of its competitors.⁴⁸ The Chinese government has also supported investment in non-U.S. firms. In 2017, ChemChina, a state-owned firm, purchased Syngenta, a Swiss agricultural company, for \$43 billion, the largest-ever Chinese takeover of a foreign company.⁴⁹ In buying Syngenta, ChemChina acquired not only valuable seedstocks but also research applications for CRISPR, a highly precise and efficient gene-editing technology used in synthetic biology.*⁵⁰

Collection of Genomic Data Key to Global Synthetic Biology Leadership

Genomic data, whether it comes from humans, other animals, or organisms such as plants, provide crucial inputs for advances in syn-

*Both BGI's purchase of Complete Genomics and ChemChina's purchase of Syngenta received clearance from the Committee on Foreign Investment in the United States. Jacob Bunge, Brian Spegele, and William Mauldin, "Powerful U.S. Panel Clears Chinese Takeover of Syngenta," *Wall Street Journal*, August 23, 2016; *Genome Web*, "Complete Genomics, BGI Get Clearance from U.S. Committee; Tender Offer Extended," December 31, 2012.

thetic biology. For instance, using genomic data from SARS-CoV-2, the virus that causes COVID-19, scientists were able to develop prototype COVID-19 vaccines for human testing in less than a year.^{*51} Previously, the fastest a vaccine had been approved for human use was the mumps vaccine in the 1960s, which took four years.⁵² Recognizing the importance of genomic data and its role in synthetic biology leadership, the CCP has set ambitious goals to collect and catalogue genomic data both within China and from other countries.

Human Genomic Data

The Chinese government has long prioritized the collection of human genomic data. The CCP has collected the human genomic data of millions of its citizens: a 2020 report by the Australian Strategic Policy Institute estimated that the Chinese government possesses genomic data of up to 140 million people, the largest such dataset in the world.⁵³ The collection of genomic data is important for research and development of new medical treatments, but it has also been used to further the CCP's efforts to monitor its citizens and persecute ethnic minorities (see textbox "DNA Collection Enables CCP Monitoring of Uyghurs and Other Ethnic Minorities").

In addition to domestic collection efforts, the CCP has also collected human genomic data abroad. The genomic diversity from foreign samples could enable research discoveries and enhances the likelihood of commercial breakthroughs from such research.⁵⁴ Chinese entities have gained potential access to U.S. healthcare data through investment in U.S. firms such as genetic testing company 23andMe, sales of equipment and gene sequencing services, and partnerships with U.S. universities and hospitals.⁵⁵ In many cases, Chinese regulations prevent foreign researchers from gaining reciprocal access to Chinese data.⁵⁶ Chinese state-sponsored groups have also targeted U.S. healthcare data through hacking U.S. healthcare providers and businesses.†

The international sale of certain medical products manufactured by Chinese firms has provided the Chinese government potential access to genomic data from populations around the world. A July 2021 Reuters report found that BGI's prenatal tests, which are sold in at least 52 countries (though not the United States), were developed in coordination with the People's Liberation Army.⁵⁷ The prenatal tests collect a wide range of information, including genetic code, location of the tests, and medical history of the mother. The Reuters investigation found that genetic information of at least 500 women, including women outside of China, was stored in the National GeneBank, a government-supported project administered by BGI to research hundreds of millions of genetic samples of humans, animals, plants, and microorganisms.‡⁵⁸

*The official name of the novel coronavirus responsible for the pandemic is "severe acute respiratory syndrome coronavirus 2," which is abbreviated SARS-CoV-2. COVID-19 is the name of the disease caused by the SARS-CoV-2 virus. World Health Organization, "Naming the Coronavirus Disease (COVID-19) and the Virus That Causes It," 2020.

†For more on the CCP's efforts to gain access to foreign healthcare data, see U.S.-China Economic and Security Review Commission, Chapter 2, Section 3, "U.S.-China Links in Healthcare and Biotechnology," in *2020 Annual Report to Congress*, December 2020; U.S. Cybersecurity & Infrastructure Security Agency, "China Cyber Threat Overview and Advisories."

‡BGI issued a statement disputing the Reuters report, including the assertion that the prenatal tests were developed with the People's Liberation Army. In the statement, BGI also said it "has never been asked to provide, nor has it provided data from its [prenatal] test to Chinese

The use of Chinese test kits by U.S. citizens presents the possibility for U.S. patient data to be collected for use by the Chinese government. In March 2021, Amazon announced it was partnering with BGI to use a modified version of BGI COVID-19 test kits, initially for at-home testing of Amazon employees.⁵⁹ The company's announcement came weeks after the National Security Commission on Artificial Intelligence noted in its report that BGI's COVID-19 testing kits "potentially provide access to large international genetic data sets" and warned that "BGI may be serving, wittingly or unwittingly, as a global collection mechanism for Chinese government genetic databases, providing China with greater raw numbers and diversity of human genome samples as well as access to sensitive personal information about key individuals around the world."⁶⁰

DNA Collection Enables CCP Monitoring of Uyghurs and Other Ethnic Minorities

The CCP's earliest efforts in mass collection of genomic data focused on ethnic minority groups in Tibet and Xinjiang, where scientists gathered tens of millions of samples during what the Chinese government said were free annual physicals.*⁶¹ Along with DNA samples, Chinese authorities collected other forms of biometric data, including photographs, voice recordings, fingerprints, and iris scans, to be stored in police databases.⁶² The biometric data collected from these populations have augmented the use of high-tech surveillance methods to monitor ethnic minorities, including the predominantly Muslim Uyghur population of Xinjiang. A 2019 *New York Times* report found that Chinese police have used facial recognition technology to determine whether residents of some cities were Uyghurs.⁶³

U.S. companies in the past have come under criticism for selling DNA and surveillance equipment to Chinese authorities.⁶⁴ In October 2019, the Department of Commerce placed 28 organizations, including the Xinjiang Public Security Bureau and affiliated entities, on its Entity List due to their involvement in "China's campaign of repression, mass arbitrary detention, and high-technology surveillance against Uyghurs, Kazakhs, and other Muslim minority groups in [Xinjiang]," actions the U.S. government has since deemed to constitute genocide.⁶⁵ U.S. firms are prohibited from conducting business with organizations on the Entity List without first receiving a government license. In June 2021, however, the *New York Times* reported that Xinjiang police departments continued to purchase DNA equipment produced by U.S. companies by obtaining it through Chinese intermediaries not on the Entity List.⁶⁶

authorities for national security or national defense security purposes." BGI, "BGI Statement in Response to Reuters Report," July 8, 2021.

*According to an interview with one Uyghur man living in Xinjiang, the physical involved recording his voice and taking his fingerprints but did not involve checking his heart or kidneys. Sui-Lee Wee, "China Uses DNA to Track Its People, with the Help of American Expertise," *New York Times*, February 21, 2019.

Nonhuman Genomic Data

China's genomic collection also extends to nonhuman genetic data, which Dr. Kelly described as "the raw material of the bioeconomy" in his testimony before the Commission.⁶⁷ While China has historically had high levels of biodiversity, environmental degradation has caused the loss of many species.⁶⁸ China has sought to collect genomic data from many other countries through various channels. In September 2019, BGI announced a joint venture with SpaceTime Ventures in Brazil, which included plans to establish a large-scale R&D center studying tropical plant genomics along with associated sequencing and bioinformatics infrastructure.⁶⁹ BGI has also entered into collaborations with institutions in Ethiopia and South Africa.⁷⁰

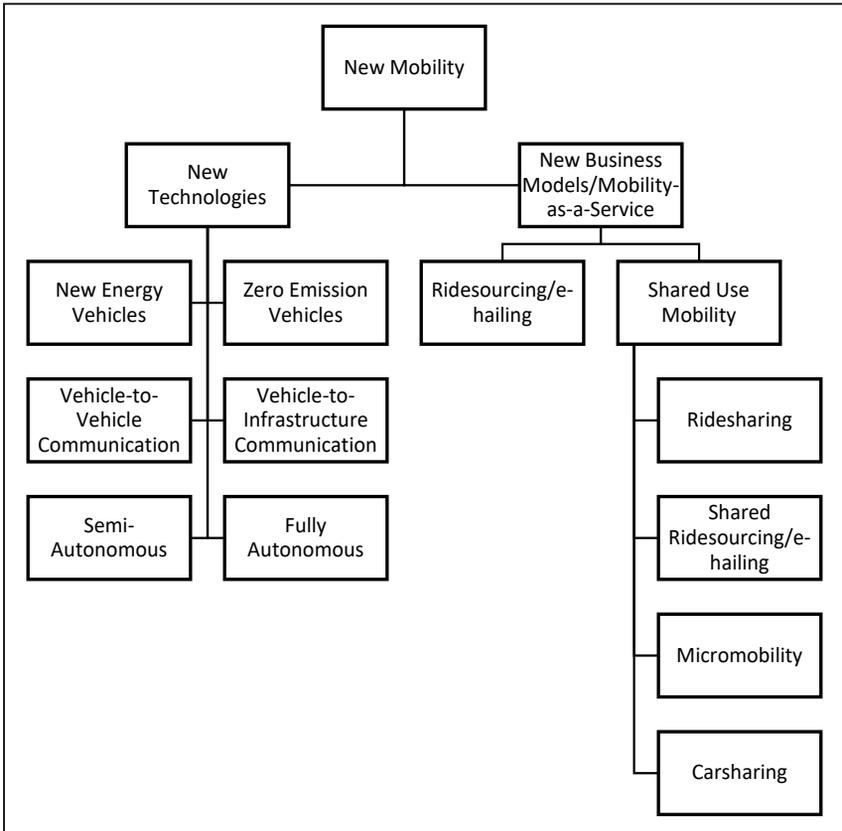
The COVID-19 pandemic has provided China with further opportunities to collect nonhuman genomic data. BGI has built COVID-19 testing laboratories and sold test kits that collect genomic data on the virus that causes COVID-19 around the world. By August 2020, BGI sold more than 35 million COVID-19 test kits to 180 countries, including the United States, and had established 58 COVID-19 testing laboratories in 18 countries.⁷¹ BGI's establishment of these labs provides China with a network of laboratories to collect and sequence genomic data from around the world.⁷²

Many of the world's most biodiverse countries are unaware of the potential value of nonhuman genomic data.⁷³ Moreover, global standards for collecting, protecting, sharing, and monetizing genomic data remain largely undeveloped.* A country that collects more genomic data will have a distinct advantage not only in being able to use the gathered data for commercial gains but also in being able to set international standards for sharing such data.⁷⁴ According to Dr. Kelly, neither the United States nor China currently leads in the collection of nonhuman genomic data, but China has the opportunity to collect massive amounts of nonhuman genomic data from other countries on highly favorable terms.⁷⁵ China's leadership could lead to a more closed system for nonhuman genomic data sharing, in contrast with the United States' role in establishing open ecosystems that have set international standards for technologies such as mobile phones, personal computers, and the internet.⁷⁶

New Mobility Drives Chinese Sustainability and Global Competition

The term "new mobility" refers to two broad categories of innovation in transportation: (1) new technologies, such as NEVs and connected or autonomous vehicles; and (2) new business models or social trends, including ride-hailing apps or "mobility-as-a-service" (MaaS), which integrates different modes of travel in one platform (see Figure 2).⁷⁷ MaaS offerings can include any combination of public transit, individual automobiles, bikes, or scooters, and include companies like ride-sharing giant Uber or the bike and scooter-sharing company Lime.

*The Convention on Biological Diversity, a 1993 international treaty, addresses some aspects of the international exchange of biological materials. China is a party to the Convention on Biological Diversity, while the United States is not. Convention on Biological Diversity, "List of Parties."

Figure 2: New Mobility Subsectors

Source: Adapted from Peter Slowik and Fanta Kamakaté, “New Mobility: Today’s Technology and Policy Landscape,” *International Council on Clean Transportation*, July 2017, 2; Dana Yanocha and Mackenzie Allan, “Maximizing Micromobility,” *Institute for Transportation & Development Policy*, July 2021, 5–7.

Autonomous and connected vehicles are poised to be the most disruptive new mobility technologies. Drawing a distinction between the two sets of technologies, Joanna Moody, then research program manager at the Massachusetts Institute of Technology Energy Initiative Mobility Systems Center, noted that an AV can “make its own driving decisions independently,” whereas “connected vehicles exchange driving information with other vehicles (potentially both automated and nonautomated vehicles) and/or transportation infrastructure.”⁷⁸ Connected vehicles may also connect with passengers’ mobile communication devices.⁷⁹

Where internal combustion engines powered growth and innovation in the 20th century, new mobility has broad implications for the digital economy in the 21st century. For China and many other countries, new mobility will help reduce pollution, accelerate the development of smart cities, and promote better accessibility of transportation infrastructure. For the United States, new mobility will also transform the automotive industry, which remains one of the

largest U.S. employers. According to the U.S. Bureau of Labor Statistics, as of August the automotive industry supported 923,300 manufacturing jobs and 3.2 million jobs in automotive retail in 2021.⁸⁰ In 2020, NEV production employed more than 261,000 people in the United States.⁸¹ Management consulting firm McKinsey estimates that global revenues from AV commercial fleets and personal transportation in urban areas could reach \$1.6 trillion a year by 2030—more than twice the combined 2017 revenues of Ford, General Motors, Toyota, and Volkswagen.⁸² Meanwhile, the MaaS market is predicted to reach \$106.8 billion by 2030, with expected annual growth of 20 percent from the current market valuation of \$60 billion.⁸³

China's Strategy for New Mobility

After decades of investment, China's government has achieved only limited success in the production of internal combustion engine vehicles, but it is determined to achieve leadership in the next generation of mobility technologies. A 2020 China State Information Office white paper, *Sustainable Development of Transport in China*, described transportation as “a basic, leading, and strategic sector of the economy underpinning sustainable development.”⁸⁴ China's government has set a goal of establishing a “modern comprehensive transport system” by 2035 and emphasized “raising the quality of the transport industry through digital, internet-based, intelligent, and green technologies.”⁸⁵ The white paper also highlighted China's move “from follower to leader” in transport technology and referenced other international ambitions, including “promoting reform of global transport governance.”⁸⁶ While China's central government sets broad policy goals for transportation, cities have played an increasingly important role in setting individualized transportation policies to meet these goals.⁸⁷ Local government involvement has been key to expanding the new mobility ecosystem with companies able to refine their business models and product testing based on local conditions.

Although China's government has recently improved the legal framework for foreign automotive companies, such measures have done little to counteract obstacles facing U.S. automakers, such as policies discouraging the purchase of internal combustion engine vehicles and preferential treatment of domestic firms. Despite U.S. automakers' longstanding presence in China's auto market, U.S. firms have struggled to gain a bigger market share there. In 2018, China's National Development and Reform Commission announced it would phase out regulations that limited foreign investment and ownership over automobile companies along with requirements for foreign automobile companies to form joint ventures with Chinese companies.⁸⁸ Companies manufacturing NEVs were the first type of car companies to be exempt from this requirement, beginning in 2018.⁸⁹ A 2019 Office of the U.S. Trade Representative report on China's WTO compliance nonetheless found U.S. firms face other disadvantages in China's market, in part due to other policies “apparently designed to promote the development of a Chinese NEV industry at the expense of foreign enterprises.”⁹⁰ These policies include government subsidies in connection with the purchase of Chi-

nese—but not foreign—NEVs.⁹¹ Between 2018 and 2020, U.S. auto imports were also subject to Chinese retaliatory tariffs in response to U.S. Section 301 tariffs.⁹² This dynamic depressed U.S. car sales in China over this period, though China lifted its tariffs following the finalization of the U.S.-China Phase One agreement in January 2020.⁹³ Many other administrative barriers remain with complex networks of regulations and standards unique to China that are generally easier for local companies to navigate.

Autonomous and Connected Vehicles

For China's government, autonomous and connected vehicles are a critical part of advancing a digital infrastructure strategy. Such vehicles not only make it possible to overcome labor shortages for an array of positions like delivery drivers but also hold the potential to increase road safety.⁹⁴ In 2020, the central government proposed that half of all new cars sold would be at least semi-autonomous by 2025.⁹⁵ Beginning in 2017, cities such as Beijing, Shanghai, and Guangzhou have developed policies to allow AV testing, and many local governments have provided subsidies and favorable policies to companies working on AVs.⁹⁶ While most of the automakers testing on Chinese roads are domestic companies, General Motors' subsidiary in China, Cruise, has been testing some self-driving functions, though not fully autonomous systems, since 2017.⁹⁷ Central government guidance in January 2021 also encouraged local governments to open up more testing and permits as it aims to speed up deployment of AVs and catch up with U.S. AV testing efforts.⁹⁸ Other foreign companies like Audi, BMW, Daimler, and Volkswagen have also been able to test autonomous driving in Chinese cities since 2018.⁹⁹ Honda, Toyota, and Volvo have partnered with Chinese companies like Pony.ai and AutoX to provide vehicles that rely on Chinese autonomous driving systems.¹⁰⁰

At the same time, Chinese regulators are seeking to capitalize on the data-gathering potential of AVs and are moving forward with new rules to address data usage, which may impact foreign firms. Between March and May 2021, the Chinese government restricted military and key SOE personnel from using Tesla cars and moved to prohibit parking Tesla cars near government compounds due to national security concerns about vehicle sensors and cameras.¹⁰¹ In May 2021, the Cyberspace Administration of China released draft rules for the security of car data, which aim to protect consumer information along with controlling “important data” that may be sensitive to national security.¹⁰² The “important data” subject to restriction in the draft includes surveying and mapping data with greater accuracy than public maps; it also includes a catch-all clause for “other data that may affect national security and public interests.”¹⁰³ The draft rules mandate localization of important data as well as specific approval and certification processes to transfer the data overseas. The broad scope of important data increases the possibility of arbitrary restrictions that may limit the effectiveness of foreign AV systems and also introduces an additional administrative burden on companies seeking operations in China. In May 2021, Tesla announced it was building a data center in China to assuage concerns about security.¹⁰⁴

Mobility-as-a-Service and Shared Mobility

MaaS and shared mobility encompass a broad range of services that the Chinese government has at times encouraged and occasionally struggled with as these services have demonstrated applicability to key social problems. Central government ambitions for tech champions along with idiosyncrasies of local governments and their transportation needs have inspired the growth of multinational giants like Didi Chuxing (“Didi”) along with less successful bike-sharing companies like Ofo and Mobike.¹⁰⁵

Didi, China’s largest ride-hailing company, was established in 2012 and began as a ride-hailing app to better connect taxi drivers with customers. Over time, the company has expanded to include not only established taxis but also a more Uber-like model of private carsharing, bikesharing, car rentals, and deliveries for a broad network of transportation services on one app. Didi has focused on sharing datasets and working with local governments to reduce traffic and improve transportation infrastructure.¹⁰⁶ Didi also provides increasingly localized services in some cities, including the ability to book public transit rides on the platform.¹⁰⁷ In 2020, Didi began to focus on addressing accessibility for consumers with disabilities, which is currently an underserved customer base that will only continue to grow with China’s aging population.¹⁰⁸

New Energy Vehicles and Zero Emissions Transportation

The Chinese government promotes NEV development through preferential treatment and subsidization of domestic NEV companies, demonstrating the government’s emphasis on NEV promotion as both an industrial policy and an environmental policy. For Chinese policymakers, domestic production of NEVs solves several problems, including reliance on foreign technology, dependence on oil imports, and air pollution caused by internal combustion engine vehicles. Half of all electric cars in the world are currently in China, as well as 90 percent of electric buses and trucks.¹⁰⁹ China’s growth in this industry has depended on heavy government subsidies. According to estimates by the Center for Strategic and International Studies, total government support for the NEV sector amounted to \$21 billion (RMB 134.9 billion) in 2019, equivalent to 30.7 percent of total NEV sales.¹¹⁰ In November 2020, China’s State Council estimated NEV sales would account for 20 percent of all new car sales by 2025, up from 5 percent today.¹¹¹

China’s strategy to build up its NEV sector consists not just of constructing cars but also, crucially, manufacturing energy storage such as NEV batteries. As Dr. Moody wrote, “While much of the critical research and development that created the lithium-ion battery took place in the U.S., China’s bullish investments in the commercialization of battery production and electric vehicle manufacturing have given it a clear edge.”¹¹² China controls over 70 percent of the global NEV battery supply, a clear advantage as the country increases its proportion of NEV passenger and commercial vehicles.¹¹³ Since batteries are the most important and often most expensive component of NEVs, Chinese control of critical minerals stands to have a significant effect on U.S. and other global NEV manufacturers.

Critically, Chinese companies control not only key nodes of battery production but also access to and processing of mineral inputs that go into production of batteries. NEV batteries rely on a number of minerals like graphite, cobalt, lithium, and nickel.¹¹⁴ In 2019, China held nearly 60 percent of the world's graphite stock and was responsible for processing 80 percent of the world's cobalt.¹¹⁵ New nickel production innovations in March 2021 were slated to boost China's share of processed nickel and sustain its consumption of over half the world's nickel.¹¹⁶ China's stronghold over the NEV battery supply chain has historically been driven by Chinese companies seeking to capitalize on the government's NEV promotion, but those company motivations are increasingly converging with government interests in securing minerals. Strategic investments in the Democratic Republic of the Congo have allowed Chinese companies a steady flow of cobalt, though it is plagued by a legacy of child labor and calls to classify it as a conflict mineral.*¹¹⁷ Manganese is emerging as a potential replacement for cobalt and is more widely available around the world, though China is the primary refiner.¹¹⁸ At least 49 Chinese companies, almost all SOEs, have joined the China National Manganese Industry Technology Committee, which the *Wall Street Journal* described as a Chinese state-backed cartel.¹¹⁹ Pini Althaus, CEO of USA Rare Earth, estimated that it would take the United States 20 to 30 years to catch up to China's progress in NEV battery supplies.¹²⁰

The Chinese government's efforts to build a domestic NEV industry are most visible in China's critical hold on the NEV battery supply chain. China's dominance in both mining and refining key minerals for NEV batteries positions it as central to the overall NEV supply chain. Even if European and U.S. NEVs are competitive against Chinese NEVs, their manufacturers are nonetheless reliant on a broad set of Chinese SOEs to access and build the key component of their products. China's Contemporary Amperex Technology Company (CATL) currently makes up 31.2 percent of global market share for NEV batteries, edging out South Korean competitor LG Energy Solutions for the ranking of top battery supplier.¹²¹ BYD, a Chinese company that also has a NEV automobile division, grew 381.9 percent year-on-year in March 2021, taking 8.9 percent of global market share.¹²² In a demonstration of dependency on Chinese sources for NEV batteries, Reuters reported in June 2021 that Apple approached CATL and BYD to establish U.S. manufacturing sites that would support Apple's planned rollout for an electric vehicle.¹²³

New Energy Vehicle Commercial and Rail Transportation

As Chinese policymakers emphasize ground transportation for goods as part of the dual circulation strategy, autonomous commercial vehicles and rail will be increasingly important in China. Autonomous commercial transportation solutions have been some

*Conflict minerals refer to several categories of raw minerals and their derivatives that are mined from areas subject to extreme violence where the harvesting of such materials may violate human rights. Under U.S. law, there are specifically defined "conflict minerals" under the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2012 that require disclosure and due diligence from companies whose supply chains may rely on conflict minerals. Crowe, "Conflict Minerals."

of the earliest deployed around the world. In China, trucks were the first autonomous vehicles to operate regularly for commercial purposes.¹²⁴ Autonomous commercial fleets are increasingly favored for greater fuel efficiency and safety along with likely reductions in traffic congestion.¹²⁵ At the same time, new energy vehicles for commercial transportation remain in the early stages of development, with even coach buses in China at a minimal 4 percent of electrification.¹²⁶ Similarly, Chinese policymakers are focused on high-speed rail freight transportation as they seek to reduce carbon emissions and expand the country's already robust passenger rail networks.¹²⁷ Chinese producers and policymakers anticipate great commercial advantage from the sale of these vehicles and related equipment, though the U.S. and other national governments have raised concerns with the security and integrity of the technology.* In China, the movement toward more autonomous commercial transportation may also alleviate future shortages in China's labor force, though it currently threatens nearly 220 million jobs that are largely held by low-wage, low-skilled workers.¹²⁸

International Expansion of China's New Mobility Companies

China is gaining ground in new mobility competition with the United States across all subsectors, demonstrating successful innovations in autonomous and connected vehicle systems, potential for higher NEV exports and control over NEV batteries, and notable capture of ride-hailing markets. AVs have yet to reach broad adoption and, along with NEVs, require newer infrastructure to satisfy digital connectivity or electricity needs. Competition between U.S. and Chinese markets is currently limited due to strong consumer preferences, relative brand strength, and respective domestic policies. In 2021, Guidehouse Insights (formerly Navigant Research), a market research firm focused on energy and transportation research, ranked Baidu's AV subsidiary, Apollo, fourth in its assessment of technological advancement among global autonomous driving systems.¹²⁹ U.S. companies Waymo, Nvidia, and Argo AI ranked ahead of Apollo.¹³⁰

Testing and Standards

While Chinese-branded cars are currently not sold in the United States, Chinese AV companies are testing their models on U.S. roads. The United States lacks federal regulations for testing or cybersecurity of AVs.¹³¹ Similarly, there is no clear U.S. federal, state, or local standard for protecting, sharing, and collecting vehicle data in the United States. In 2019, the U.S. Department of Transportation issued a *Data for Automated Vehicle Integration Framework* that outlines principles and guidelines for state and local governments, companies, and other stakeholders on identifying, prioritizing, and sharing data in AV systems.¹³² It recommends that AV companies share data with local governments regarding crashes and infrastructure data, but the framework itself is voluntary.¹³³

*The 116th Congress addressed concerns over Chinese rail cars and public transportation equipment with the passage of the Fiscal Year 2020 National Defense Authorization Act. Section 7613 prohibits government procurement of bus and rail equipment from a range of countries, including China. This restriction particularly affected BYD, which was poised to be a top exporter of bus and rail equipment to the United States. National Defense Authorization Act for Fiscal Year 2020, Pub. L. No. 116-92, 2019; Lindsay Wise and Katy Stech Ferek, "Congress Wants to Ban Chinese Buses, Railcars in Defense Bill," *Wall Street Journal*, December 10, 2019.

California AV Testing

Absent federal regulations, states have been issuing their own frameworks for managing AV testing and deployment, with 18 U.S. states allowing for testing of AVs without a human operator in the vehicle.¹³⁴ Because of the AV industry's connections to Silicon Valley, California retains a high concentration of AV testing sites and companies. In 2012, California began allowing AV testing, and in 2014 it launched its AV Tester Program to promote this development.¹³⁵ As of July 2021, California permitted 54 companies to conduct autonomous testing with a driver, including 23 foreign entities, of which 11 are Chinese.¹³⁶ California has granted permits to eight companies to test AVs without a driver, half of which are Chinese; the other half are U.S. companies.*¹³⁷ California is one of the few states that provide a publicly available list of participating companies.¹³⁸ The notable lack of information elsewhere makes it difficult to verify the presence of companies across states.

California's AV Tester Program and related regulations are rooted primarily in driver safety, but they do not appear to consider specific rules or regulations on data or cybersecurity. AV Tester Program participants are only required to share collision data within ten days of an incident, but they are currently not required to submit to any form of cybersecurity certification. In many other states, like Arizona, no licensing or permits are required to do testing other than regular vehicle registration requirements, and no state or federal U.S. law prevents AV testing otherwise.¹³⁹

Meanwhile, China is developing numerous domestic standards for autonomous, connected, and electric vehicles while Chinese companies remain active participants in global standards-setting bodies. Efforts in multiple standards forums to address various technological components of autonomous and connected vehicles are still at an early stage. Among others, the International Organization for Standardization (ISO) is developing international standards while the International Telecommunication Union (ITU) is pursuing several pre-standardization studies.¹⁴⁰ In 2018, ISO approved a Chinese proposal to form a working group focused on standards development for "test scenarios of automated driving systems" under ISO Technical Committee 22, the primary group under ISO that develops standards for road vehicles.¹⁴¹ While the formation of the working group "was a milestone for Chinese auto standards," the group's work so far appears to rely on the collaborative efforts of multinational experts.¹⁴² China is also an active participant in the ITU and holds leadership positions in two focus groups on AV-related standards.¹⁴³ The structure of the ITU could allow Chinese participants greater influence over the process and the ability to export its standards to

*The eleven Chinese companies include AutoX Technologies, Baidu, DeepRoute.AI, DiDi, Inception Technology, Leonis Technologies, NIO, Pony.AI, Qcraft.ai, WeRide, and Xmotors.AI. California Department of Motor Vehicles, "Autonomous Vehicle Testing Permit Holders," May 21, 2021.

developing nations that tend to participate more in the ITU than in ISO.*

Global Mobility-as-a-Service Competition

MaaS competition is most apparent in the area of ride-hailing services, where Uber and Didi continue to vie for dominance across developing markets.† In 2020, Didi reported that it had 600 million monthly active users and aimed to serve 800 million monthly users globally by 2022.¹⁴⁴ By comparison, Uber had 329 million monthly active users in 2020.¹⁴⁵ Over the last five years, Didi has entered 14 other markets outside of China, covering Latin America, Africa, and Oceania.¹⁴⁶ Didi has been closing in on competition with Uber in Latin America, with operations in six countries across the region.¹⁴⁷ In 2018, Didi claimed 30 percent of market share in Latin America following its acquisition of the preeminent Brazilian ride-sharing app 99 (formerly known as 99 Taxis).¹⁴⁸ In March 2021, Didi began offering services in South Africa in its first venture on the continent.¹⁴⁹

Didi may also hold a data-driven appeal to local governments that have much to gain from Didi's GAIA Initiative. Launched in 2017, the GAIA Initiative shares two of Didi's datasets with registered users such as researchers and government offices and provides a platform for additional research and publications. The anonymized datasets‡ provide information on traffic and ride times to enable more precise transportation planning and assist AI-managed transportation. The GAIA Initiative went global in 2018 and expands along with the company as it gathers more data points in new markets, though public information indicates that much of the data available still centers on Chinese cities.¹⁵⁰ Uber has a similar open platform called Movement for anonymized data sharing that covers 51 cities across markets that Uber serves.¹⁵¹ Data security has nonetheless been a point of contention between Didi and the Chinese government.¹⁵² In June 2021, Didi listed on the New York Stock Exchange to reach a valuation of \$68.4 billion on its first day, but this fell precipitously by 52 percent after Chinese regulators ramped up an antitrust investigation into the company, subjected it to a cybersecurity review, and restricted new user downloads.¹⁵³ (For more on tightening Chinese regulation, see "Chapter 2, Section 1, "Year in Review: Economics and Trade.")

*For more information on the international standards development process, see "U.S.-China Economic and Security Review Commission, Chapter 1, Section 2, "The China Model: Return to the Middle Kingdom," in *2020 Annual Report to Congress*, December 2020, 80–135.

†Uber operated in China from 2014 to 2016, ultimately retreating from the market due to strong local preference, Didi's market dominance, and some Chinese regulations that undercut Uber's services. Uber traded shares with Didi such that each company had a member on the others' board seat and Didi assumed control over a dissolved Uber China. Meanwhile, Didi is able to operate in the U.S. market, but the company does not provide rideshare services due to market saturation. Didi does have three research labs in California, including one in Silicon Valley, which focus on research of advanced safety and security technology for transportation, algorithms, and self-driving technologies. James Crabtree, "Didi Chuxing Took On Uber and Won. Now It's Taking On the World," *Wired*, September 2, 2018; William C. Kirby, "The Real Reason Uber Is Giving Up in China," *Harvard Business Review*, August 2, 2016.

‡Didi anonymizes the accumulated ride data for public access by removing personal information removed from start and end points, along with separating travel times from any personally identifiable information. Didi, "GAIA Open Dataset."

NEV Export Competitiveness and Energy Storage

China does not have a clear advantage in the export of finished NEVs, but it is well positioned to compete with other leading automakers in the United States and Germany. NEV growth has slowed in China since the government reeled back subsidies in 2019, though according to Pew Research Center, China still accounted for 44 percent of the world's total NEV stock in 2020.¹⁵⁴ According to McKinsey in 2019, four Chinese brands—BYD, Beijing Electric Vehicle Co. (commonly known as BJEV), SAIC, and Geely—were among the top ten global NEV sellers, together making up 23.9 percent of global NEV sales.¹⁵⁵ Tesla claimed 16.2 percent alone and top German automakers BMW and Volkswagen accounted for 9.6 percent.¹⁵⁶ The success of Chinese companies appears largely attributable to the Chinese market and its home advantage there. In Europe, the second-largest NEV market, Chinese companies made up less than 2 percent of the market in 2019.¹⁵⁷ Although Chinese companies are still a small part of the passenger vehicle market, they are making inroads in Europe and Latin America with the sale of electric buses. In 2019, Chinese company BYD held nearly 20 percent of European NEV bus market share.¹⁵⁸ Meanwhile, Chinese companies produce at least 71.4 percent of the total electric buses in Latin America as of July 2021.¹⁵⁹

Chinese NEV companies may prove to become more competitive on cost rather than technology or branding when compared to the ever-popular Tesla.¹⁶⁰ Chinese automaker SAIC sold 10,000 units to Europe in 2019 through acquiring British brand MG and has committed to selling 100,000 units annually to Europe by 2025.¹⁶¹ There are more than 400 Chinese NEV companies, some of which are ready to compete internationally after being backed by extensive subsidies over the last decade.¹⁶² While these companies may lack some of the sophistication in technology and brand appeal, Chinese NEVs are, much like in their home market, likely to come at a much lower cost.¹⁶³ Similar to its approach in other industries, Chinese producers could sustain an advantage in the global market by undercutting prices as a result of government support. The proliferation of Chinese NEVs at below-market costs could have significant consequences for global automakers and related manufacturing workers while also raising future questions around overcapacity, particularly concerning batteries.¹⁶⁴

Cloud Computing at the Core of China's Digital Economy Ambitions

Cloud services form a critical backbone for the deployment of other emerging and foundational technologies, including telemedicine, smart manufacturing, quantum computing, and new mobility. The National Institute of Standards and Technology defines cloud computing as a business model that allows for “convenient, on-demand network access to a shared pool of configurable computing resources... that can be rapidly provisioned and released with minimal management effort or service provider interaction.”¹⁶⁵ In other words, cloud computing is not so much a single technology as it is a business model: a cluster of integrated capabilities from analytic infrastructure to servers that can be easily scaled and customized to

suit various storage and operational needs. While cloud computing enables a proliferation of virtual environments and workspaces, it relies on physical data centers, traditional data storage, and hardware (e.g., switches, routers, and servers) in order to function.¹⁶⁶ How the global cloud computing architecture is developed and who controls its operations, data, and access carry significant implications for critical civilian and defense systems. Cloud computing supports a wide range of operations, from managing transmission of electricity across energy grids to battlefield situational awareness in informationized warfare. Cloud computing has appeared in China's FYPs since the 12th FYP (2011–2015) and is still listed in the 14th FYP as a “key industry of the digital economy,” with policymakers encouraging migration to the cloud.

China's Strategy in Cloud Computing

Building on its longstanding approach in other sectors, China's strategy for cloud computing has had two key components: protection of the domestic market from foreign competition and extensive state support for buildout of the Chinese cloud computing industry. Industry alliances, standardization efforts, research centers, and government promotion programs at both the central and local levels helped to create a formidable and remarkably closed cloud computing ecosystem in China. Because cloud computing enables broad and often real-time access to information on a given network, the CCP has a political imperative to control cloud computing access and development and prevent free flow of information via the cloud. Between 2010 and 2012, the central government helped to mobilize not only service providers but also other telecommunications companies in China to improve the underlying infrastructure that supports cloud computing.¹⁶⁷ In 2011, the National Development and Reform Commission partnered with the Ministry of Industry and Information Technology and Ministry of Finance to pool \$236 million in support of Chinese cloud providers.¹⁶⁸ While these subsidies may appear modest, they were complemented by a panoply of other measures that allowed domestic firms to grow easily in the early days of cloud adoption. Local governments looking to satisfy central government objectives and obtain funding also built data centers as “deliverables” for central government big data and cloud computing plans.¹⁶⁹ Preferential local policies also deferred tax payments and provided preferential housing for recruiting talent.¹⁷⁰ Government-driven initiatives did not prove immediately successful, and nonstate firms have ultimately been far more successful than SOEs like China Mobile, which invested \$52 billion between 2011 and 2014 to support cloud services with little market share in return.¹⁷¹

Promotion of cloud computing has always been essential to the CCP's goal of maintaining information control. It has also been tied to the Chinese government's efforts to grow other emerging technologies, such as smart cities.¹⁷² It is difficult to estimate the total spending on cloud computing-related technologies, but a majority of Chinese digital infrastructure projects that receive government financing will contribute to cloud computing capacity in China by expanding storage and analytical capacity. Under the Internet Plus initiative, launched in 2015, the Chinese government dedicated at

least another \$440 million in infrastructure spending from 2016 to 2018.¹⁷³ Amid a raft of COVID-19-related stimulus measures in 2020, the Chinese government announced a “new infrastructure” initiative of nearly \$1.4 trillion over six years between 2020 and 2025 to increase the number of data centers and networking equipment to support cloud computing, 5G, AI, and smart cities.¹⁷⁴

Relying on the government’s support, Chinese cloud companies have had fewer obstacles to operating than their foreign counterparts, though they are still subject to stringent security requirements given the government’s concerns around information control. Today, China is the second-largest cloud services market after the United States and in 2019 accounted for 5 percent of global public cloud services spending.¹⁷⁵ According to market research firm Canalys, Chinese companies Alibaba, Tencent, and Huawei dominate the domestic cloud services market.¹⁷⁶ These three Chinese companies make up 72 percent of domestic market share.¹⁷⁷ Foreign companies as a group, which includes Amazon Web Services and Microsoft Azure, account for less than 20 percent of the Chinese market.¹⁷⁸ The total market in China grew 30 percent each year from 2015 to 2019 and demand increased by nearly 70 percent in 2020 alone as a result of the COVID-19 pandemic.¹⁷⁹ Alibaba is far and away the leader in China’s cloud market, with Tencent its nearest competitor, followed by Huawei, Baidu, and China Telecom.

The Chinese government has boosted incentives for Chinese cloud providers toward sector-specific cloud-based solutions that will support CCP objectives for social development and provide technological solutions for China’s greatest growth challenges. In 2015, Alibaba formed a partnership with BGI and Intel Corporation to launch a cloud platform for precision medicine, which takes genetics, lifestyle, and environment into account.¹⁸⁰ Along with its AI Open Lab, Tencent announced a cloud services offering that allows patients to manage their medical imaging and securely share the images with different medical providers.¹⁸¹ In 2016, with the help of its auto subsidiary, Apollo, Baidu worked with the Ministry of Transport to offer an open data platform that provides publicly available transportation and traffic data, including data shared by companies and research institutes.¹⁸²

International Expansion of China’s Cloud Companies

Chinese companies are increasingly looking to compete with cloud service providers in emerging markets. Being somewhat late to arrive in the United States, Chinese cloud providers do not have a sizable portion of U.S. market share, though some have partnerships with U.S. companies like Equinix or have built data centers in the United States.¹⁸³ In 2019, U.S. imports of Chinese cloud computing and data services were a mere \$10 million, which is less than 2 percent of total U.S. cloud services imports globally.¹⁸⁴ Chinese cloud computing companies appear to have largely given up on market share in already saturated markets like those in North America and Europe. U.S. cloud leaders like Amazon Web Services, Microsoft, Google, and IBM capture over 60 percent of global market share, even with barriers in China’s market.¹⁸⁵

China's cloud computing giants are gaining ground in emerging markets, where competition is set to intensify with U.S. companies. According to Nigel Cory, associate director for trade policy at the Information Technology and Innovation Foundation, "China is ahead of the United States and many others... in terms of advocating for its digital and [information and communications technology] firms and associated projects as part of its [Belt and Road Initiative] and the Digital Silk Road initiatives."¹⁸⁶ U.S. companies continue to retain an edge due to processes that allow large organizations the most up-to-date and seamless experience in data processing and analytics.¹⁸⁷ At the same time, Chinese companies have the advantage of a lower price point (sometimes operating at a loss* and creating an unfair advantage) with fewer up-to-date products but greater flexibility to accommodate unique data localization and information control policies.¹⁸⁸ Chinese companies like Alibaba also appeal to some markets by promising big investments in the host country tech sector, such as commitments to build data centers and other tech infrastructure.¹⁸⁹ Huawei has taken a similar approach as it has focused on the growth of its cloud computing business, partnering with foreign governments and SOEs on cloud infrastructure and services (Figure 3).¹⁹⁰

Although U.S. companies remain the dominant global cloud providers, Chinese companies are gaining ground. According to global advisory firm Gartner, Alibaba claimed 9.5 percent of global market share for public cloud services in 2020 compared to 8.8 percent in 2019 while Huawei's more than doubled from 1.9 percent to 4.2 percent in the same period.¹⁹¹

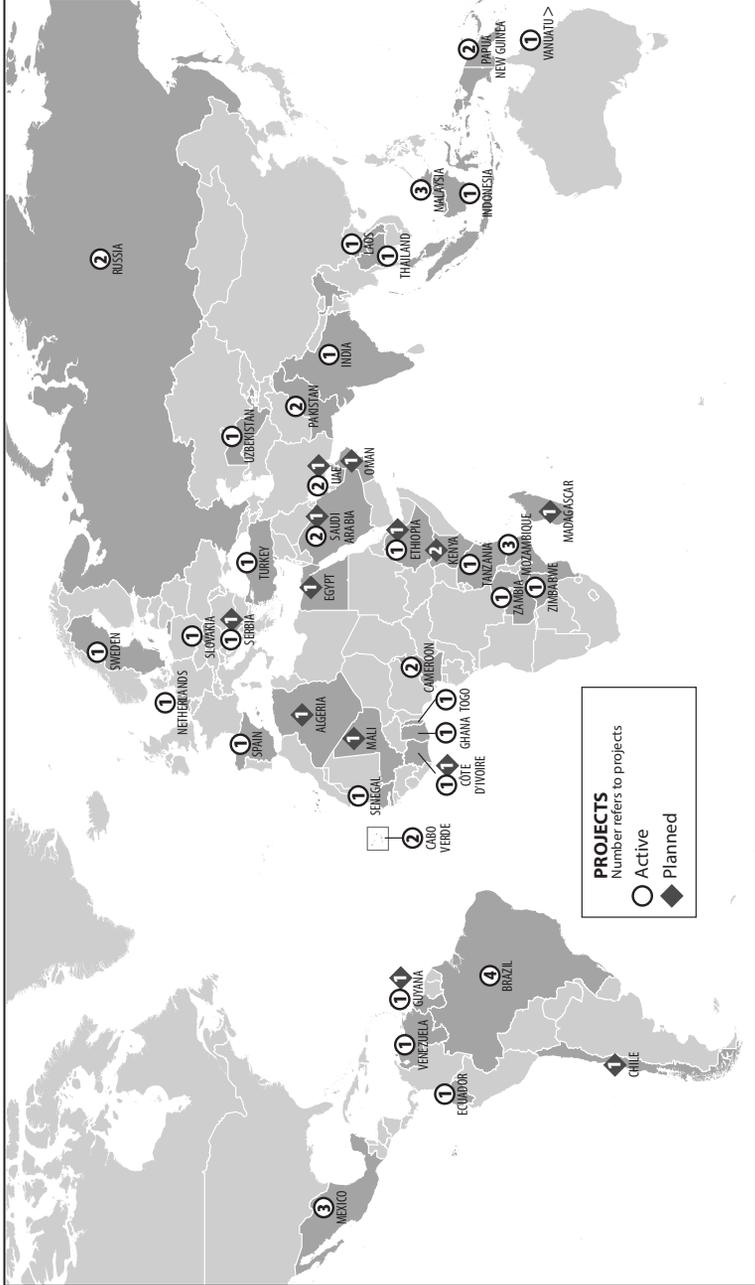
Extensive investment in data infrastructure and tolerance for more restrictive data policies have given Chinese cloud providers a head start on market share in Southeast Asia and other developing economies.¹⁹² Mr. Cory notes that for India, Vietnam, and other Southeast Asian countries with restrictive data localization policies, Chinese companies have a competitive advantage in their willingness to build out isolated data center operations or tailor their offerings to country-specific censorship and content-monitoring regimes.¹⁹³ U.S. companies have historically resisted rules that broadly infringe on consumer privacy for law enforcement and national security investigations, as well as data localization rules that would require building in-country data centers, which can come at significant cost.¹⁹⁴

China's Promotion of a Sovereign Digital Currency

The Chinese government believes that a digital version of the RMB can help it increase control over China's financial system and surveillance over those who participate in it. The government has also stressed the potential for a central bank digital currency to allow for greater financial efficiency and inclusiveness. Therefore, the CCP has made the development of the digital RMB a key priority, announcing in 2016 a "strategic goal" of launching a digital currency.¹⁹⁵ Since then, China has emerged as one of the leading

*Alibaba Cloud, the largest cloud provider in both China and the Asia Pacific region, turned profit only in 2021 after 11 years in operation. A statement from the company noted this was due to achieving "economies of scale." Rita Liao, "Alibaba Cloud Turns Profitable after 11 Years," *Tech Crunch*, February 3, 2021.

Figure 3: Huawei's Overseas Cloud Computing Projects



Source: Reconnecting Asia Project, "Reconnecting Asia Huawei Cloud & e-Government Data," Center for Strategic and International Studies, April 2021.
 Note: "Planned" indicated projects that have been signed through a contract or memorandum of understanding.

countries in researching and developing central bank digital currencies. While supporting the development of a digital RMB, the CCP has sought to prevent the growth of other digital currencies. In October 2020, the People's Bank of China (PBOC) published a draft law that, if passed, would officially recognize the digital RMB and would ban the circulation of other digital currencies or tokens.¹⁹⁶ The 14th FYP reaffirmed China's ambitions for the digital RMB, with an objective to "steadily advance digital currency R&D."¹⁹⁷ As digital payments are already dominant in China through platforms such as Alipay and WeChat Pay, the introduction of a digital RMB does not represent a seismic shift in China's financial landscape. Absent fundamental changes to China's monetary policy, such as the relaxing of its strict capital controls, a digital RMB will not significantly enable the RMB to be used more broadly in cross-border transactions. Nevertheless, China's development of the digital RMB is significant because it will help the CCP expand its surveillance regime. In the longer run, the digital RMB could also reduce China's reliance on the United States-led international system while helping China increase its own influence in other domains, such as the internet.

China has not yet officially launched its digital RMB, which it refers to as Digital Currency and Electronic Payments (DCEP), and many key details of the digital RMB have not yet been publicly confirmed.¹⁹⁸ China has carried out significant testing, however, with trials beginning in four cities in May 2020 and expanding since then to 11 cities and pilot areas.¹⁹⁹ According to a July 2021 PBOC white paper, as of June 2021 more than 20 million personal wallets and more than 3.5 million corporate wallets have been opened, with a total transaction value of approximately \$5.4 billion (RMB 34.5 billion).²⁰⁰

What Are Digital Currencies?

"Digital currency" is an umbrella term for any money that exists only in electronic form and is not available in physical form.²⁰¹ Over the past decade, different forms of digital currencies have appeared. These digital currencies share similar characteristics but differ in important aspects.

Cryptocurrency. Cryptocurrency is a type of digital currency that uses encryption and whose transactions are verified using a decentralized network of computers rather than a centralized bank-based database. Bitcoin is a well-known example of a cryptocurrency. Cryptocurrencies use a distributed ledger technology, typically blockchain, which verifies the validity of transactions through a network of computers using cryptographic tools and third parties rather than through a central banking authority. This process allows cryptocurrency transactions to be pseudonymous. Many cryptocurrencies, including Bitcoin, are not linked with government money or a commodity. These cryptocurrencies are subject to volatile fluctuations in value and are often used as speculative assets rather than means of payment.²⁰²

What Are Digital Currencies?—Continued

Central Bank Digital Currency (CBDC). These are digital currencies issued and backed by sovereign central banks. They may be, but are not necessarily, cryptocurrencies.²⁰³ China's central bank digital currency will not be a cryptocurrency, as the Chinese government does not want to replicate in its sovereign currency the pseudonymity or distributed nature of cryptocurrencies. Instead, the PBOC will retain the ability to precisely monitor and approve transactions.²⁰⁴

Digital Currency/Electronic Payments (DCEP). This is Beijing's nomenclature for its digital currency payments ecosystem. The term refers not only to the digital RMB but also to the electronic payment tools that will link with the digital RMB, such as those offered by Alipay and WeChat Pay.²⁰⁵

Stablecoin. This is a privately issued type of cryptocurrency whose value is tied to government-issued paper or coin money, such as the U.S. dollar, or a commodity such as gold. Stablecoins have more consistent values compared with other cryptocurrencies such as Bitcoin, offering the speed and efficiencies of digital currency without volatility in market pricing. A well-known stablecoin is Diem (formerly Libra), created by Facebook and pegged to the U.S. dollar, which was first proposed in 2019 and set for launch later in 2021.²⁰⁶ Chinese regulators have expressed views that a dollar-backed stablecoin could cement U.S. dollar hegemony while increasing the possibility of destabilizing cross-border capital flows.²⁰⁷

The CCP's Motivations for Promoting the Digital RMB

The CCP's immediate goals for the digital RMB are domestic and focus on shifting how the economy operates and what types of data can be collected. These aims of the digital RMB complement other efforts by the CCP to "informationize" the economy.²⁰⁸ The CCP also has longer-term international aims, however, based on the idea that digital currency will be an important aspect of geopolitical competition.²⁰⁹ As Miles Yu, senior fellow at the Hudson Institute and former principal China policy and planning advisor at the U.S. Department of State, testified before the Commission, "China views the digitization of national currencies as an opportunity to increase its surveillance of its own people and to upend the U.S. dollar-dominated global trade settlement and transactional monitoring systems."²¹⁰ In an indication of the CCP's international ambitions, in March 2021 during a seminar at the Bank for International Settlements a PBOC official proposed a set of global rules for the interoperability of central bank digital currencies.²¹¹

Promoting Efficiency in China's Financial System

In promoting a sovereign digital currency, PBOC officials have highlighted the greater efficiency that digital payments can bring to China's economy. The PBOC's 2016 announcement of the digital RMB as a strategic goal outlined several advantages of digital

payments, including greater efficiency, more financial inclusion, and lower costs in comparison to handling cash.*²¹² Martin Chorzempa, senior fellow at the Peterson Institute for International Economics, testified before the Commission that the technical innovations of central bank digital currencies are less significant than they first appear, as digital payments, including on nonstate payment platforms, are already dominant in China.²¹³ The distinguishing feature of sovereign digital currency is that the money is a liability of the central bank rather than a liability of the bank that provides the customer's account (known as commercial bank money). Because central banks can legally create more money, payments using central bank digital currencies are theoretically less risky than those using commercial money.²¹⁴

Preventing Challenges from Other Digital Currencies

The CCP views private cryptocurrencies such as Bitcoin or Diem (formerly Libra) as potentially destabilizing because of their ability to facilitate unregulated capital flows in and out of China. Moreover, the anonymous nature of transactions with these currencies lessens the Chinese government's ability to monitor economic activity. In 2017, concerns over these cryptocurrencies led Chinese regulators to ban the sale of newly minted digital currencies such as Bitcoin on Chinese exchanges, further cementing the government's role in digital currencies.²¹⁵ In May 2021, amid an increase in speculative trading of Bitcoin, financial regulators in China expanded the restrictions against cryptocurrencies, including banning financial institutions in China from providing an exchange between cryptocurrencies and the RMB.²¹⁶ In September, Chinese regulators banned all cryptocurrency transactions in China, including through offshore exchanges.²¹⁷ Chinese regulators see the implementation of a sovereign digital currency as an urgent part of CCP efforts to prevent challenges from private digital currencies. After Facebook announced its plans in 2019 to introduce a stablecoin, PBOC digital currency research leader Mu Changchun said the PBOC's digital RMB team was working around the clock in response to Facebook's announcement, reflecting Beijing's sense of urgency to develop a digital currency before an alternative gains prominence.²¹⁸

Co-Opting Chinese Nonstate Payment Platforms

The CCP's promotion of a digital RMB reflects Beijing's increasing exercise of control over China's nonstate fintech firms, particularly in the mobile payments industry.† Unlike privately issued digital currencies, mobile payments are conducted in RMB and thus are not an inherent challenge to the PBOC's authority. Indeed, Chinese regulators encouraged the growth of nonstate mobile payment firms in the early 2010s, viewing them as an important source of modernization for China's banking industry. As Mr. Chorzempa testified

*According to the PBOC, the digital RMB is intended to serve as a substitute for physical cash in circulation, though will exist alongside physical cash rather than replace it. It is not intended to serve as a substitute for other ways to store money, such as bank deposits. Working Group on E-CNY Research and Development of the People's Bank of China, *Progress of Research & Development of E-CNY in China*, July 2021.

†In Q3 2019, transactions on third-party mobile payments in China totaled approximately \$8.7 trillion (RMB 56 trillion). *China Banking News*, "China's Mobile Payments Market Grows over 15% in Q3 2019, Alipay's Market Share Exceed Half," January 21, 2020.

before the Commission, the relationship became more complicated after 2016 due to faster-than-anticipated growth of the sector, the exposure of Ponzi schemes, and risky microlending practices.²¹⁹ Regulators are also concerned over the duopoly power of two firms, Alipay and WeChat Pay, which together hold a 94 percent share in China's mobile payments market.*²²⁰

Rather than replacing AliPay and WeChat Pay, however, the PBOC intends to incorporate them fully into the digital RMB system. Since 2016, PBOC officials have articulated a plan for a two-tiered system under which the PBOC issues the digital RMB while financial firms (both banks and mobile payments companies) distribute them through online wallets. Such an arrangement will allow the PBOC to take advantage of the firms' innovative capacity as well as their existing customer base and user data, increasing its oversight of financial transactions in China.²²¹

Enhancing the CCP's Financial Monitoring and Surveillance Capabilities

Samantha Hoffman, senior analyst at the Australian Strategic Policy Institute (ASPI), argued in her testimony before the Commission that while the digital RMB does not create fundamentally new forms of political control, it can enhance the existing monitoring and surveillance capabilities of the CCP.²²² In a recent ASPI report on the digital RMB, Dr. Hoffman and her coauthors argued that while China's central bank digital currency "may address some financial governance challenges, such as money laundering, it would also create unprecedented opportunities for surveillance," including tracking financial activities of Uyghurs and other persecuted minorities under the guise of addressing "terrorist financing."²²³ The adoption of a digital RMB also strengthens the CCP's push for technology-driven governance, particularly in the financial sector.† According to Mr. Mu, digital RMB users may remain anonymous to counterparties but will still be required to register their real names with the government in all but small transactions, allowing the PBOC to "achieve traceability under certain conditions and ensure that regulatory technologies such as big data analysis are useful."²²⁴ PBOC officials have termed this "controllable anonymity."²²⁵

Potential Links to China's Social Credit System

The digital RMB system, and the ability that it could give the CCP to both monitor and prevent financial transactions, could be used with China's Corporate Social Credit System. Launched in 2014, the Corporate Social Credit System collects government records and corporate compliance data into "Corporate Social Credit

*While AliPay and WeChat Pay remain primarily focused on China's domestic market, they have made some expansion abroad. Alipay also has expanded e-payment operations globally and is available in 47 U.S. jurisdictions and 110 countries. According to Mr. Chorzempa, this expansion abroad has so far been relatively modest and mostly consists of Chinese tourists using the platforms while traveling abroad. Martin Chorzempa, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on An Assessment of the CCP's Economic Ambitions, Plans, and Metrics of Success*, April 15, 2021, 4; Nationwide Multistate Licensing System, "NMLS Consumer Access: Alipay US, Inc."

†In 2019, the CCP released a three-year fintech development plan that prioritized big data and artificial intelligence in the financial sector. Yaya J. Fanusie and Emily Jin, "China's Digital Currency: Adding Financial Data to Digital Authoritarianism," *Center for a New American Security*, January 2021.

Files” for every domestic and foreign legal entity in China.²²⁶ Companies with poor social credit scores can be placed on “blacklists,” with consequences including restrictions on issuing stock, restricted access to government subsidies, and suspended approvals for R&D projects. Similarly, companies with high social credit scores are eligible to be placed on “redlists,” with incentives such as fast-tracked approval procedures, reduced inspections, and preferential quotas for imports and exports.* As with the digital RMB, the PBOC has played an important role in planning the Corporate Social Credit System. According to Dr. Hoffman, while CCP sources have not explicitly linked the two systems, the financial transaction data generated through digital RMB payments could be integrated with the social credit system, which covered more than 60 million organizations and enterprises in China at the end of 2020.²²⁷

The CCP envisions control via the digital RMB to extend not just to commercial transactions but also to individuals, including Party members. In June 2020, the Central Commission for Discipline Inspection, China’s top anticorruption body, published an article saying the digital RMB would counter crimes that “cannot be tolerated,” such as bribery and corruption.²²⁸ The enhanced surveillance capabilities could be used to further the CCP’s efforts to exercise control over Chinese citizens. In September 2020, the manager of China Construction Bank’s fintech lab said at a virtual panel that the bank’s fintech projects would incorporate China’s “blacklist.”²²⁹

Reducing Reliance on the Dollar-Led Financial System

Internationalizing the RMB

In 2018, Fan Yifei, deputy governor of the PBOC, stated that a digital currency could promote RMB internationalization, which has been a significant goal of the CCP since the 2008 financial crisis.²³⁰ In theory, the digital RMB could support internationalization of the RMB by enabling easier and more widespread use of the currency in cross-border payments. According to a January 2021 report from the Center for a New American Security, Beijing will likely pursue policies to encourage adoption of digital RMB transactions by foreigners visiting China and could require Chinese citizens to use digital RMB when traveling abroad. Such measures, however, are unlikely to lead to substantial internationalization of the RMB.²³¹ Observers agree that the greatest impediments to internationalization of the RMB are China’s restrictions on capital flows and the opacity of the RMB’s exchange rate policy, which the digital RMB does nothing to address.²³² In May 2021, Zhou Xiaochuan, former chairman of the PBOC, downplayed the role of the digital RMB in internationalizing the RMB, saying that while the digital RMB could make small cross-border payments more convenient, this development “is not in the sense of a reserve currency, nor is it the internationalization of the RMB in the sense of large-value transactions in the financial market.”²³³

*For more on the Corporate Social Credit System, see Kendra Schaefer, “China’s Corporate Social Credit System: Context, Competition, Technology, and Geopolitics,” *Trivium China* (prepared for U.S.-China Economic and Security Review Commission), November 16, 2020.

SWIFT and the Impact of U.S. Sanctions

The digital RMB has the potential to reduce China's reliance on SWIFT,* which the Chinese government views as a source of vulnerability. In 2019, Huang Qifan, chair of the China Center for International Economic Exchanges, argued that developing a digital RMB would help guard against the United States' ability to "exercise global hegemony and carry out long-arm jurisdiction" through SWIFT as well as the Clearing House Interbank Payments System (CHIPS), which is a U.S. clearinghouse for financial transactions.†²³⁴ Aside from establishing the digital RMB, the CCP has already engaged in some efforts to reduce China's reliance on SWIFT and CHIPS. A July 2020 report by the Bank of China called for banks in China to increase their use of China's Cross-border Interbank Payments System, citing the risk of exposing financial payment information to the United States via SWIFT as well as the risk that the United States could cut off Chinese banks' access to SWIFT.‡²³⁵

If eventually adopted around the world, the digital RMB could reduce China's vulnerability to U.S. sanctions, as it could provide the same transfer capabilities as SWIFT and CHIPS without the need for intermediary institutions.²³⁶ Other countries that are susceptible to U.S. sanctions, such as North Korea or Iran, may also decide to use the digital RMB to bypass sanctions.²³⁷ In the short term, however, most economists believe that the digital RMB is unlikely to significantly change the CCP's ability to evade U.S. financial sanctions. In fact, the more comprehensive financial data under the digital RMB could provide a disincentive to attempting to evade sanctions. In testimony before the Commission, Mr. Chorzempa said the adoption of the digital RMB could make evading U.S. sanctions more difficult for the Chinese government because the PBOC's monitoring capabilities of digital RMB payments would prevent the Chinese government from having any deniability of sanctions evasion.²³⁸

Potential Connection to Blockchain-Based Service Network

While the CCP has restricted the use of blockchain-based cryptocurrencies such as Bitcoin in China, Chinese regulators nevertheless want to develop a blockchain network with global users and applications. In 2019, General Secretary Xi said that blockchain "plays an important role in new technical innovation and industrial transformation" and called for China to increase its blockchain R&D, including in setting international blockchain standards.²³⁹ In 2020, China's main economic planning agency, the National Development and Reform Commission, further demonstrated the CCP's commitment to blockchain, classifying it as part of a new model of

*SWIFT (the Society for Worldwide Interbank Financial Telecommunications) is a messaging system that facilitates most of the world's banking transfers. SWIFT has been instrumental in enforcing U.S. financial sanctions, disconnecting sanctioned banks from the system. Mark Dubowitz, "SWIFT Sanctions: Frequently Asked Questions," *Foundation for Defense of Democracies*, October 10, 2018.

†CHIPS (Clearing House Interbank Payments System) is a private sector money transfer system used for electronic payments settled in U.S. dollars. OFX, "What Is CHIPS?"

‡CIPS (Cross-Border Interbank Payment System) is an alternative to SWIFT created by China in 2015. In 2018, CIPS handled \$3.7 trillion, while SWIFT handled \$40 trillion. Kayla Izenman, "DC/EP's Potential Internationalization and the Global Economy" in "The Flipside of China's Central Bank Digital Currency," *Australian Strategic Policy Institute*, October 2020.

infrastructure, along with cloud computing and AI, that will form an important part of China's information technology.²⁴⁰

In an effort to claim global leadership in blockchain development, in 2020 China's government launched the Blockchain-Based Service Network (BSN), which is an international cloud computing network with the capability of supporting blockchain-based applications.²⁴¹ According to Yaya Fanusie, adjunct senior fellow at the Center for a New American Security, the BSN is not a separate internet but rather "a system of low-cost backend architecture on which software developers around the world can build blockchain applications—including digital assets such as cryptocurrencies."²⁴² As of November 2020, the BSN has 131 data centers located on every continent except for Antarctica.²⁴³ The BSN has already partnered with international firms, including some from the United States, for blockchain development projects, due in large part to the lower cost of developing projects versus through traditional cloud service providers.²⁴⁴

The BSN architecture is bifurcated between Chinese and international users. Data servers for Chinese users and international users are physically separate, and internet users within China will not be able to access many of the blockchain applications developed on the BSN.²⁴⁵ Nevertheless, both the domestic and international services fall under CCP control. At a 2020 Hong Kong fintech conference, Tan Min, secretary general of the BSN, stated that the BSN would create an internet where "China controls the rights to [blockchain] internet access."²⁴⁶

China's government has not yet directly linked the digital RMB to the BSN, but it is likely that both the domestic and international versions of the BSN will incorporate central bank digital currencies. CCP officials working on the BSN have discussed the use of the BSN to streamline online payments, and as Mr. Fanusie testified before the Commission, because China will not allow for private cryptocurrencies to be used on the domestic BSN, "it is logical to conclude that the payment instrument for such transactions will be the digital RMB."²⁴⁷ Internationally, Chinese officials also expect the BSN to use foreign central digital bank currencies. A January 2021 blog post outlined BSN plans to establish a universal digital payment network by 2026 based on central bank digital currencies of various countries and "enable a standardized digital currency transfer method and payment procedure."²⁴⁸

Implications for the United States

The Chinese government sees itself as competing directly with the United States for global economic leadership, a rivalry where technological prowess will play a central role. China's pursuit of innovation also includes a struggle for influence over international standards in a range of key technologies that the CCP sees as drivers of the next-generation global economy. The United States may be facing a short, sharp competition with China, but leadership in foundations of future economic growth hangs in the balance.

To mitigate perceived comparative disadvantages, the CCP is strengthening its tools for top-down direction, making it more difficult to determine the extent of its influence and control over the non-state sector. U.S. policymakers and businesses would benefit from a

more detailed understanding of connections between the Party and nonstate firms, which may assist in preventing and mitigating risks. As the Chinese government intensifies pursuit of self-sufficiency across a range of emerging technologies, U.S. businesses can anticipate more intense competition from Chinese actors both in China and in third-country markets. Even where China is not able to succeed in its ambitious goals, its implementation of a grand strategy still can have significant consequences for U.S. national and supply chain security, competitiveness, and jobs.

The CCP's promotion of synthetic biology, including its support of national champions like BGI, could make China the global leader in an emerging field with transformative potential for the future of economic development, environmental protection, healthcare, and national security. China's growing synthetic biology capabilities are not inherently harmful to U.S. interests. Indeed, Chinese developments in synthetic biology, if shared with the world on a reciprocal basis, have the potential to benefit both U.S. and Chinese interests, including through the provision of cutting-edge medical treatments. In practice, however, the CCP views scientific research as a zero-sum contest. China's massive worldwide collection of genomic data—particularly from smaller countries that do not fully appreciate the value of their genetic diversity or have the ability to protect it—gives the CCP the opportunity to enshrine this closed model in emerging international standards for synthetic biology. Since China's track record has not been that of a trusted and reciprocal partner, this could challenge the U.S. tradition of open scientific ecosystems and eventually give China an insurmountable advantage over the United States in the field.

Chinese advantages in new mobility technologies pose a distinct risk to U.S. automakers and workers. China is pursuing a price-competitive strategy for NEVs in third-country markets and is leveraging its influence in international standards bodies to promote its domestic standards for AVs. Without a clear strategy that includes continued investment in R&D as well as participation in international standards setting, the United States could lose competitive advantage in this field. U.S. federal, state, and local governments must also anticipate vulnerabilities in digital infrastructure around Chinese autonomous and connected vehicle operations and may need to contend with exploitation of U.S. digital infrastructure. U.S. companies may be shut out of NEV battery supply chains due to China's state-driven control over critical minerals and dominance in refining and battery production. If China cuts off access to key inputs as part of its offensive decoupling strategy, U.S. companies may struggle to avoid critical shortages without domestic alternatives or cooperation with allies. China has shown willingness to weaponize and politicize supply chains.

Steady growth of China's cloud computing industry strengthens its overall technological capabilities and enables the growth of other strategic industries, such as AI, quantum computing, and smart cities. U.S. cloud computing companies are in a close race for market advantage with Chinese competitors. The growth of Chinese cloud computing companies in emerging markets may also have longer-term consequences for the future of digital rules and encourage

the proliferation of techno-authoritarianism. Greater Chinese influence and competitiveness heighten the risk that Chinese technical standards and security assessments around cloud computing and cross-border data transfer will gain traction in developing markets, undermining the competitiveness of U.S. firms in these markets.

China's development of a sovereign digital currency bears short- and long-term implications for the United States. In the short term, U.S. citizens and companies operating in China could have their financial payments subject to greater CCP monitoring. Potentially, it would be easier for the CCP to impose economically coercive actions against U.S. individuals and firms, including preventing financial transactions of U.S. firms that do not conform to Beijing's policy preferences. In the longer term, China's development of a sovereign digital currency could pose even greater challenges to U.S. leadership of the global financial system. Currently, the greatest impediment to internationalization of the RMB is China's capital controls, which will not be affected by the introduction of the digital RMB. If the CCP does change its capital controls, however, the use of the digital RMB could ease cross-border use of the RMB, thereby aiding internationalization. Similarly, although the digital RMB does not currently undermine U.S. financial sanctions, in the future it could facilitate financial payments that bypass SWIFT and CHIPS, placing them beyond the reach of U.S. financial sanctions.

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SECTION 3: THE CHINESE GOVERNMENT'S EVOLVING CONTROL OF THE NONSTATE SECTOR

Key Findings

- China's government has developed numerous avenues through which to monitor corporate affairs and direct nonstate firms and resources toward advancing the Chinese Communist Party's (CCP) priorities. Within this expanded framework of government control, traditional definitions of state control in an entity no longer apply because any entity may be compelled to act on behalf of the Chinese government's interest, regardless of the state's formal ownership.
- Control of Chinese firms is blurred, contrary to the precise division between state and nonstate firms implied in corporate ownership registration. Historically, nonstate firms have sought state investment to overcome political and regulatory barriers. China's government is also now increasing investments in nonstate firms to advance its technology development goals and policy objectives, further obscuring the distinction between state and nonstate.
- Under General Secretary of the CCP Xi Jinping, the Party has systematically expanded its representation in corporate governance. Whereas traditional regulatory intervention in corporate affairs occurs through Chinese bureaucratic mechanisms prescribed by law, there are no such constraints on the CCP. Consequently, it can be impossible to identify the extent of the exercise of CCP influence.
- The CCP is also supplanting the role of Chinese government agencies in market monitoring and regulatory enforcement. While this may create the appearance of better regulated markets, replacing routine bureaucratic functions with CCP intervention both acknowledges the inherent weakness of Chinese state institutions and further undermines their effectiveness.
- Chinese corporate law affords the state unique and substantial governance rights as an investor and imposes a legal obligation to serve state development goals on all firms. By contrast, nonstate minority shareholders of publicly traded companies, including U.S. investors in China's domestic equities market, are afforded minimal protections.

Recommendations

The Commission recommends:

- Congress direct the U.S. Securities and Exchange Commission to require that publicly traded U.S. companies with facilities

in China report on an annual basis whether there is a CCP committee in their operations and summarize the actions and corporate decisions in which such committees may have participated.

- Congress direct the Bureau of Economic Analysis at the U.S. Department of Commerce to amend its surveys of U.S. multinational enterprise activity in China to report on the presence and actions of CCP committees in the foreign affiliates of U.S. firms operating in China.

Introduction

While China's leadership claims its economy is becoming more open, better regulated, and less dominated by the state, the opposite is true. Since General Secretary Xi assumed power in 2012, the Party has deepened its presence in the nonstate sector and begun supplanting the regulatory and administrative functions of China's bureaucracy in the name of improved market integrity. The CCP is also evolving and increasing means to monitor, exert influence over, and intervene in corporate affairs. China's government is simultaneously becoming an increasingly active investor in nonstate firms and mobilizing broad segments of the nonstate economy to contribute to its technology ambitions.

This section documents the various legal and political channels through which the CCP and China's administrative state are extending their influence over Chinese firms. The proliferation of these channels is motivated by the CCP's attempt to attain greater visibility into and control over China's corporate sector. In principle, China's authoritarian government does not need legal mechanisms (e.g., exercising shareholder voting rights) or political backchannels (e.g., placing CCP members on corporate boards) to intervene in corporate affairs. As China's economy has grown, however, the complexity of economic activity has outpaced the evolution of channels for government oversight. In practice, therefore, the Chinese government's power to direct firms' activities often exceeds its awareness of and information on those activities. The CCP is consequently looking to increase government investment and CCP presence in nonstate firms to improve its ability to monitor corporate behavior and provide channels to steer corporate decision-making when it desires. The CCP is also using its internal anticorruption investigations to gather information on and punish corporate malfeasance, in place of China's weak regulatory apparatus.

The outcome of these processes is a complex expansion of government involvement in China's business environment. This expansion makes it increasingly difficult to distinguish between China's state and nonstate sectors and heightens the risk that investment in Chinese companies ultimately supports CCP objectives that may counter U.S. interests and harm U.S. investors. (For more on the national security risks of U.S. investment in China, see Chapter 2, Section 4, "U.S.-China Financial Connectivity and Risks to U.S. National Security.")

This section draws from the Commission's March 2021 hearing, "U.S. Investment in China's Capital Markets and Military-Industrial Complex"; consultations with government officials, industry experts, and academics; and open source research and analysis.

China's Government Has Numerous Channels for Intervention in Corporate Decision-Making

Control of Chinese firms is often blurry, and the government has wide latitude to intervene in corporate affairs. Many nonstate firms welcome state-owned enterprises (SOEs) as shareholders to curry regulatory favor, while numerous subsidiaries of state-owned conglomerates have raised capital through partial privatization.¹ Even when there are no government shareholders, firms with three or more employees that are CCP members must establish CCP committees, effectively offering the Party a seat at the table. The Chinese government also uses its extensive influence over the economy to guide commercial behavior without directly intervening in individual companies' decision-making. Through policy incentives and control of the financial system, the government shapes the opportunities available to entrepreneurs, steering nonstate firms toward activities that advance state goals.

Three types of channels—legal, political, and economic—are used to influence the corporate sector, any combination of which may be operative for a given company. The complexity of these channels and the increase in the government's potential for intervention demonstrates the limitations of current investment screening policy frameworks to safeguard U.S. national security and economic interests. Analysis of equity ownership to establish actual control, for instance, is less meaningful within an economy that grants the state extensive corporate governance rights even when it owns just a fraction of a percent in a firm.²

1. *Legal channels to intervene in corporate decision-making.* Chinese law grants the state privileged status in the governance of any corporation for which it is a shareholder, regardless of its ownership stake.³ The state may exercise these rights through its extensive investment in the nonstate economy. This section describes in detail the nature of these rights and extent of state ownership, but this should not suggest that legal channels for intervention are of the greatest concern for U.S. policymakers. If anything, political and economic channels are in many cases more important but harder to identify and address.
2. *Political channels to influence corporate affairs.* In contrast to the state bureaucracy's de jure mechanisms for intervention, the CCP is not bound by legal constraints. Within firms, the CCP is expanding its influence over management and personnel decisions through CCP committees. Chinese policy is prioritizing committee members' joint appointments as corporate board members, particularly within SOEs. Within the market more broadly, it is supplanting regulatory agencies' role in monitoring and enforcement.
3. *Economic channels to guide commercial behavior.* Policy incentives, such as subsidies, grants, and tax breaks, as well as corporate monitoring mechanisms, guide companies toward fulfilling the Chinese government's objectives even without direct govern-

ment influence.* (For a case study of how policy inducements realign corporate incentives without direct government intervention, see Chapter 2, Section 4, “U.S.-China Financial Connectivity and Risks to U.S. National Security,” which addresses the commercial environment created by China’s military-civil fusion strategy.)

Legal Channels: State Investment in Nonstate Firms Is Widespread and Expanding

Much of China’s corporate sector remains controlled by the state bureaucracy. The state holds a minority stake in an ever-increasing number of nonstate firms, and state investment has been integral to the success of China’s largest nonstate firms.⁴ As China has retained strong elements of a state-led approach to economic management, the role of state ownership and investment remains an evolving mainstay of Chinese economic policy.⁵

These trends have important consequences for U.S. investors. First, the state is legally afforded great privileges in the governance of Chinese firms. As a result, any state-invested enterprise, not just an SOE, can become subject to the Chinese government’s influence and control. Second, many ostensibly nonstate firms are actually state-invested enterprises, with the appointment of executive personnel serving as a key outcome of state investment.

Chinese Corporate Law Establishes Government Influence

In the 1990s China’s government introduced shareholding as a tool for streamlining and consolidating its control over market development. The system evolved to enable the state to preserve control even if its ownership of SOEs was diluted.⁶ Chinese law also grants the government a say in personnel decisions and other matters of corporate governance for any state-invested enterprise,[†] regardless of whether the state is a controlling shareholder in those enterprises. Because the Chinese government has extensive investments in nonstate firms, special privileges for the state as a shareholder further extend government influence over the nonstate economy. Finally, Chinese law imposes obligations on all firms, state and nonstate, to comply with government supervision and “bear social responsibilities” such as participation in national development objectives.⁷

State Shareholders Have “Super-Control Rights”

China’s corporate governance framework gives the state what law professors Li-Wen Lin and Curtis Milhaupt call “super-control rights,” applicable regardless of its stake in a firm.⁸ Established primarily in China’s State-Owned Assets of Enterprises Law, these rights extend beyond those available even to nonstate controlling shareholders and fall into three broad categories:

*For a discussion of China’s industrial subsidies and their impact on U.S. producers, see Chapter 1, Section 2, “Tools to Address U.S.-China Economic Challenges” in U.S.-China Economic and Security Review Commission, *2018 Annual Report to Congress*, 77–80.

†Article 5 of China’s State-Owned Assets of Enterprises Law defines “state-invested enterprises” as wholly state-owned enterprises, state controlled or majority state-owned enterprises, and any enterprise with minority state equity investment. State Council of the People’s Republic of China, *State-Owned Assets of Enterprises Law of the People’s Republic of China* (中华人民共和国企业国有资产法), 2008. Translation.

1. *State shareholders have outsized influence in personnel decisions.* Regardless of its stake in the company, by law, the state may propose candidates for a firm's board of directors or senior management to a shareholders' meeting, or it may conversely propose the removal of directors or senior management.* In some cases, state shareholders can appoint candidates to a firm's board of directors outright, rather than merely proposing them.† The state also has the authority to establish systems for manager performance assessment and remuneration standards, authorities otherwise vested in the board of directors. Furthermore, the state determines the pay and performance standards for any managers it appoints.⁹
2. *State shareholders have influence over any decision regarding transfer of state-owned assets.* The State-Owned Assets of Enterprises Law gives the state de facto veto power over proposed transfers of assets (e.g., mergers and acquisitions) that could impact the state's rights and interests in a state-invested company, according to Harvard Law School fellow Tamar Groswald Ozery.¹⁰ Normally such transactions are the purview of the board, but Chinese courts have interpreted the law as invalidating otherwise legal contracts to transfer state assets because they did not have the State-Owned Assets Supervision and Administration Commission's (SASAC) approval.¹¹
3. *Nonstate firms and their management have fiduciary obligations to state shareholders.* Beyond the normal fiduciary responsibilities of every company, the management of any nonstate firm is liable for any actions that cause loss of state-owned assets.¹²

Shareholders of Public Companies Have Few Protections

Aside from affording the state unique privileges, China's broader corporate governance legal framework grants unconstrained authority to controlling shareholders, particularly state control over SOEs. Chinese law protects the ultimate authority of the controlling shareholder, limits the rights of public shareholders, and empowers the controlling shareholder to pursue its own goals at the expense of other shareholders' interests.¹³ Dr. Groswald Ozery observes:

[E]ven under an assumption of benevolent, well-coordinated, state asset management, the state as a controlling shareholder may direct the firm in pursuit of objectives that simply run counter to the interest of the firm as a profit-maximizing business. Examples of this in China include the use of state-controlled firms to advance geopolitical goals without

*By contrast, a nonstate shareholder can only propose convening a shareholder's meeting if it holds a 10 percent or greater stake and can only nominate candidates if it holds at least a 3 percent stake. Tamar Groswald Ozery, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on U.S. Investment in China's Capital Markets and Military-Industrial Complex*, March 19, 2021, 7.

†For example, in April 2020, a subsidiary of the state-backed China Internet Investment Fund acquired a one percent stake in Weimeng, an affiliate of Chinese social media giant Weibo. According to Weibo's filings with the U.S. Securities and Exchange Commission, this third-party minority stake includes the right to appoint a director to Weimeng's three-member board of directors. Yingzhi Yang and Brenda Goh, "Beijing Took Stake and Board Seat in Key ByteDance Domestic Entity This Year," *Reuters*, August 17, 2021; U.S. Securities and Exchange Commission, *Form 20-F Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for Weibo Corporation Fiscal Year ended December 31, 2020*, April 22, 2021, 87.

*sound expectations for economic return; harnessing management control to enforce broad social and political agendas, or to accelerate the implementation of market structure reforms; using state-controlled firms to implement special social tasks; and, as recently seen, to influence or even control capital market volatility.*¹⁴

Additionally, governance institutions that serve as a check on corporate malfeasance or poor management in other economies, such as those of the United States, are purposefully weak or constrained in China, enabling the controlling shareholder to make decisions that may harm minority shareholders with impunity.¹⁵ For instance, China lacks institutional investors and advocacy organizations that act on minority shareholders' behalf,* not to mention a free press that could hold corporations accountable.¹⁶ This prevents shareholders' coalitions from exercising oversight capacity in a manner similar to other economies.¹⁷ Capital market regulations also constrain hostile takeover bids (i.e., buying a controlling interest in a listed firm through share purchases) and place stringent restrictions on foreign ownership.¹⁸ For example, in public equities markets, foreign investors are barred from acquiring more than a 10 percent stake in a Chinese company, and combined foreign ownership cannot exceed 30 percent in aggregate.[†]¹⁹

State Investment Is Widespread and Integral to Major Nonstate Firms' Success

Ownership and control of Chinese firms is complex and does not reflect the distinct categories recognized in corporate registration, namely state-owned versus nonstate.‡ Two primary challenges make it difficult to determine actual control of Chinese firms:

*Most institutional investors in China are part of the state-controlled financial system, so even if they collectively obtained a controlling interest in a firm, they would still act on the state's behalf. Tamar Groswald Ozery, "Unraveling China's Capital Market Growth: A Political Economy Account," *University of Michigan Law School*, June 2019, 57–58.

†These foreign ownership restrictions have led some global investment index providers to modify their exposure to select Chinese securities. For example, in March 2019, MSCI announced it would remove Han's Laser Technology Industry Group Co., a Chinese manufacturer of laser processing equipment used in the production of smartphones and other high-technology products, from its MSCI China indices, citing concern about approaching the foreign ownership limit. MSCI's decision followed an announcement from the Hong Kong stock exchange that it would halt buy orders from overseas investors in Han's Laser Technology Industry Group Co. through the Shenzhen-Hong Kong Stock Connect, as foreign ownership was nearing a 30 percent threshold set by Chinese regulators. China Securities Regulatory Commission Vice Chairman Fang Xinghai stated after the Han Laser episode that regulators do not plan to raise limits on foreign holdings in stocks. MSCI, "Standard Announcements—March 06, 2019," March 6, 2019; *Reuters*, "China Halts Foreign Purchases of Shenzhen-listed Stock as Inbound Investment Surges," March 5, 2019.

‡Nonstate firms, literally called "privately operated enterprises" (民营企业), are defined under Chinese business regulations as "economic units invested in or controlled (by holding the majority of the shares) by natural persons who hire workers for profit-making activities." In general, an SOE simply refers to a firm in which the state owns a majority of shares, with various Chinese government agencies employing different precise definitions according to their mandates. Chinese business regulations recognize a number of other corporate forms with exclusively domestic shareholders, including domestic joint ventures (i.e., between an SOE and a nonstate Chinese firm), collectively owned enterprises, cooperative enterprises, joint-stock cooperative enterprises, limited liability companies, companies limited by shares, and "other." Except for cooperative and collectively owned firms, the other types may be considered SOEs or nonstate firms depending on if the controlling shareholder is a natural person or an SOE or state agency. Firms with foreign shareholders (excluding publicly listed firms with foreign portfolio investors) have separate types of business entities, further divided by whether foreign shareholders are domiciled in Hong Kong, Macau, and Taiwan, or in other locations. Zhu Jianlong, "Understand the Identification and Classification of China's SOEs in One Article" (一文看懂我国国有企业的认定与分类), *Lantai Law Firm*, April 21, 2020. Translation; China's National Bureau of Statistics and China State Administration of Industry and Commerce, *Notice on the Revision of the Regulations Regarding*

1. *Ownership does not correlate with control because the state's influence exceeds its equity.* When the state is a majority owner but does not own 100 percent of a firm's shares, it still retains complete control over that firm's operations because Chinese law protects the majority shareholder's interests. This applies for the many SOEs that have sold minority stakes on China's domestic exchanges to raise capital. Of 1,490 companies listed on the Shanghai Stock Exchange at the end of the August 2019, 655 (or 44 percent) were more than 50 percent state owned.²⁰ On the Shenzhen Stock Exchange, 523 (or 22 percent) of 2,377 listed companies were more than 50 percent state owned at the end of 2020.²¹ Additionally, as described above, the state can intervene in corporate affairs even as a minority shareholder. The state is increasingly a minority shareholder in nonstate firms for three reasons. First, when China initially allowed privatization of SOEs in nonessential sectors, such as manufacturing, the state often retained a minority stake.²² Second, many private firms have sought state investors to benefit from political and regulatory privileges afforded by becoming an SOE's subsidiary.* Third, under General Secretary Xi, China's government is actively expanding its portfolio of investment in nonstate firms to fund technological development led by the nonstate sector, improve returns on state capital, and increase government influence over nonstate firms.²³
2. *Elaborate corporate structures often make it difficult to identify the majority owner of a Chinese company.* For instance, a company may be the ultimate majority owner of a second-tier subsidiary (i.e., a subsidiary of a subsidiary) through several affiliates that themselves only hold minority stakes in the subsidiary. In such a case, it would appear the company has no immediate majority shareholder, unless one examines two tiers of shareholding to discover the common owner across multiple minority shareholders. These sorts of relationships are common within large Chinese SOEs, many of which are sprawling conglomerates. Under this structure, a holding company often oversees operations for numerous subsidiaries segregated by function and geography.²⁴ Generally, they oversee at least one listed firm that represents the public face of the conglomerate and includes its high-value assets.²⁵ In addition, conglomerates often have separate financing arms that provide commercial and investment banking services solely to corporate group members, and possibly a number of research institutes.²⁶ The publicly listed subsidiaries, financing arms, and research institutes are in turn often shareholders in a number of state and nonstate firms, adding complexity to the corporate structure and making ultimate ownership difficult to trace. Moreover, SOE managers often purposefully create multilayered corporate structures

the Classification of Enterprise Registration Types (关于划分企业登记注册类型的规定调整的通知), September 30, 2011. Translation.

*Unless otherwise specified, within this section a "subsidiary" refers to any firm that is partly owned by another state or nonstate firm (i.e., the parent company), regardless of the parent company's ownership stake. In the United States, subsidiary generally connotes a controlling, or greater than 50 percent, ownership stake.

in attempt to evade government oversight.*²⁷ In many cases, successful nonstate firms have similarly elaborate structures. Among other reasons, they have often had to form joint ventures with local SOEs across China to gain access to regional markets.²⁸

Nonstate Firms Benefit from State Investment

As the corporatized state sector has taken shape, firms in China's nonstate sector have concurrently sought to bolster their political and legal position by partnering with SOEs and welcoming state investment. Outside of legal guarantees, China's SOEs enjoy political favoritism in receiving licenses and bank loans, as well as priority allocation of contract awards and subsidies to implement state policy objectives. State capital has also been sheltered from private sector competition via administrative monopolies forbidding nonstate firms to operate in certain high-value industries, such as telecommunications.²⁹ Given weak institutional protections for private property and nonstate firms versus robust protections and privileged market access for the state, successful growth as a nonstate firm has often required aligning with state priorities and seeking political support through SOE partners. For instance, Chery, currently China's largest auto exporter, was only able to obtain a license to manufacture automobiles in the late 1990s by selling a 20 percent stake to state-owned Shanghai Automobile, making it an SOE's subsidiary under Chinese law.[†]³⁰

State investment has become an important determinant of success for non-state firms. In a 2020 study tracing state investment patterns in nonstate firms via Chinese corporate registry data, a team of economists led by Tsinghua University professor Chong-En Bai found that the largest‡ nonstate firms are far more likely to have state shareholders than their smaller counterparts.³¹ Importantly, nonstate firms grew faster after receiving state investment, suggesting that partial state ownership was critical to their success.³² Furthermore, nonstate firms with state shareholders have become politically important shareholders themselves in other nonstate firms, as have their subsidiaries.³³ Within China's corporate landscape, there is consequently a hierarchy of nonstate firms based on proximity to the state as a shareholder.³⁴ Notably, the trend of state investment in nonstate firms has increased substantially. Be-

*In China's central SOEs, holding companies are completely owned by the state and directly owned by SASAC. Corresponding provincial and local state-owned assets supervision and administration committees own and oversee state-owned conglomerates at the respective levels of government.

†Chery has since bought back Shanghai Automobile's stake. It is China's tenth largest automobile manufacturer overall. Chong-En Bai et al., "Special Deals from Special Investors: The Rise of State-Connected Private Owners in China," *NBER Working Paper* 28170, December 2020, 2.

‡Within the study, registered capital is used as a proxy for firm size. Under China's Company Law, firms must subscribe a certain amount of funds, called "registered capital," at establishment, with different minimum amounts depending on sector. A firm's registered capital is the maximum liability creditors may collect in event of default, so it signifies a company's financial resources and is closely considered by potential creditors. Consequently, the amount of registered capital is typically determined by the amount of real business needs a firm undertakes, and it can form a rough gauge of a business' size. Registered capital is often increased without issuing new shares as a business expands in order to signal the health of a business to creditors and potential business partners. Chong-En Bai et al., "Special Deals from Special Investors: The Rise of State-Connected Private Owners in China," *NBER Working Paper* 28170, December 2020, 8; China Accounting School Online, "The Difference between 'Registered Capital' and 'Paid-in Capital'" ("实收资本"与"注册资本"的区别), August 11, 2009. Translation.

tween 2000 and 2019, the proportion of non-state firms with a state shareholder increased from 9.9 to 15.3 percent.³⁵

Under Xi, China's Government Is Becoming a More Active Investor in the Nonstate Sector

While nonstate firms have sought state investment to overcome regulatory and political barriers for decades, under General Secretary Xi China's government is actively promoting increased state investment in nonstate firms. The 18th Third Plenum decision, the economic policy blueprint laid out by General Secretary Xi in November 2013, envisions a fundamental shift in the nature of state ownership of assets. Previous plans conceived of the government as an active manager directing day-to-day operations of majority state-owned firms in a limited number of sectors. By contrast, the Third Plenum decision and supplementary policies envision the government transforming into a passive asset manager holding minority stakes in a far greater swath of China's economy.³⁶ Chinese policymakers are pursuing policies that blur the lines between state and nonstate companies.³⁷

This change in the Chinese government's relation to nonstate firms reflects a search for alternative means to achieve goals policymakers have not been able to meet, either by active management of SOEs' corporate operations or by regulating the nonstate sector. Foremost, SOEs have not delivered the contribution to economic growth or innovation sought by state planners. At the start of General Secretary Xi's tenure in 2012, SOEs' return on assets had shrunk to 3.1 percent compared to 5 percent in 2007.³⁸ The inefficiency was particularly extreme in industrial enterprises,* where nonstate firms' return on assets was over 9 percent, more than double that of SOEs at 4.5 percent.³⁹ Critical to China's technology ambitions, the outgoing Hu-Wen government publicly recognized that its attempts to instill state-led innovation had largely failed.⁴⁰ Rampant fraud and the inability of the central government to overcome local blocs of vested interests compounded both SOE inefficiency and lack of innovative capacity.⁴¹

Additionally, China's government is uncomfortable with its inability to anticipate and control market fluctuations, which are often exacerbated by state intervention in the first place. In particular, the government has far less visibility into financial conditions and other important information for the nonstate sector, particularly for firms in which the state is not a shareholder.⁴² The consequences of this limited visibility became apparent during the stock market bubble and subsequent crash in 2015. Leading up to the crash, Chinese regulators had poor understanding of internet finance platforms that circumvented the state-run banking system and had augmented margin trading, such as peer-to-peer lending.⁴³ Caught unaware of the extent stock prices had been inflated by leverage, authorities likely triggered financial panic through a series of regulatory missteps intended to reduce leverage.⁴⁴

*"Industrial enterprises" excludes those in the agricultural and service sectors. It includes commodity extraction and processing as well as manufacturing firms. China's National Bureau of Statistics, 4. *Statistical System and Classification Standards* (四、统计制度及分类标准[17]), June 19, 2020. Translation.

According to Harvard Business School professor Meg Rithmire, the expansion of Chinese government's nonstate investment portfolio in response to these challenges has occurred through multiple channels and in fulfilment of at least three distinct policy objectives:

1. *The government is offering financing to the nonstate sector through government guidance funds.* These funds aim to position the state as a venture capital (VC) investor leveraging nonstate sector dynamism to meet technology development objectives. Such funds form a pillar of China's strategy to achieve indigenization goals under Made in China 2025. For instance, the National Integrated Circuits Industry Development Investment Fund, launched in 2014, aimed to allocate \$21 billion to close the gap between China's domestic semiconductor fabrication capabilities and those of international leaders.⁴⁵ The semiconductor fund, which has been the most high-profile example of such a fund to date, has failed to achieve this stated goal.⁴⁶ The fund has focused on building foundries, but most of the fabrication technologies acquired in China's semiconductor push are generations behind cutting-edge international equipment.⁴⁷ In many cases, construction has been halted before facilities are complete, and those that are finished have neither adequate talent nor sufficient research budgets to keep pace with industry developments.⁴⁸ Despite these setbacks, the fund has facilitated critical advances in China's chip design and packaging capabilities, and government guidance funds constitute an important evolution of both industrial policy and state ownership.⁴⁹ The funds are discussed in further detail later in this section.
2. *The government is acquiring stakes in nonstate firms to seek a return on state-owned assets through "mixed-ownership reform."* Central to the Third Plenum decision's blueprint for restructuring China's state sector, mixed-ownership reform has attempted to improve the efficiency of China's state sector by inviting private capital and managerial expertise into nonstrategic sectors, such as hotel chains and other services, while allowing China's government to concentrate on managing the operations of a smaller number of SOEs in critical sectors of strategic importance, such as energy, telecommunications, and technologies prioritized under industrial policy initiatives.⁵⁰ The state does not necessarily divest from nonstrategic sectors, but reduces its role in actively managing firms in these sectors, transforming the administrative agencies that oversee them into capital managers.*⁵¹ In practice, the program has tilted much more heavily

*Some scholars liken the intent of the revised compound role of China's State-owned Assets Supervision and Administration Commission to Singapore's state-owned holding company Temasek. The government of Singapore set up Temasek in 1974 to manage the city-state's investments but maintained distance from the company's day-to-day business operations. Singapore's government had taken minority shares in many domestic firms to indicate its own confidence in local companies in order to encourage foreign investment and developed the holding company structure in part to address foreign investor concerns regarding the Singaporean government's conflict of interest as a dual shareholder and regulator of much of its economy. In practice, SASAC, the CCP, and other government agencies maintain far more involvement in Chinese SOEs' affairs than Temasek exercises in its portfolio companies. Wei Jie and Nicholas Ng, "Comparative Corporate Governance: Why Singapore's Temasek Model Is Not Replicable in China," *International Law and Politics* 51:1 (Fall 2018), 211–250, 219–221; Weng Shiyu, Zhou Zhe, and Chu Chu, "Chen Qingtai: The Breakthrough is in Managing Capital" (陈清泰: 突破口是“管资本”), *Caijing Magazine*, September 14, 2015. Translation.

toward increased state investment in the nonstate sector rather than vice versa.⁵²

3. *By purchasing stocks to stabilize market turbulence, the government has become a shareholder of many listed nonstate firms.* Through the “national team,” a group of state shareholding funds under the guidance of the China Securities Regulatory Commission, China’s government has intervened extensively in China’s stock market to arrest market downfalls.⁵³ The most large-scale example of the national team in action was during China’s stock market collapse in 2015. Acting in concert, the national team, China’s social security fund and many subnational pension funds, and many SOEs bought shares in companies to prop up prices. Goldman Sachs estimated the national team spent \$234 billion (renminbi [RMB] 1.5 trillion)* in July and August 2015, and in November that year *Financial Times* reported the national team owned 6 percent of China’s stock market.⁵⁴ Since the 2015 crash, the state has retained a substantial portion of its shares and continues to employ similar tactics at a smaller scale during other periods of market turbulence.⁵⁵ Because minority ownership gives the state more visibility into the financial condition of the companies in which it holds shares, regulators view the national team and similar tactics as a financial risk management tool.⁵⁶ It also gives the state potential avenues to exercise control via its special rights as a shareholder.

The Chinese government is also expanding investment in nonstate firms to strengthen influence over the nonstate technology sector. In April 2021, the state-backed Chinese Internet Investment Fund took a one percent stake worth \$308,770 in a domestic operating unit of Chinese social media giant ByteDance.⁵⁷ As part of the deal, a Cyberspace Administration of China official also became a board member of the ByteDance subsidiary.⁵⁸ The move coincided with a government campaign to check the growing influence and anticompetitive behavior of Chinese technology firms. Separately, in September 2021, *Bloomberg* reported several Beijing municipal government-owned companies were considering acquiring a stake in ridesharing firm Didi Chuxing.⁵⁹ The reports followed heightened regulatory scrutiny of the firm’s data management practices in the wake of its initial public offering on the New York Stock Exchange. (For more on Chinese regulators’ actions against top technology firms and Chinese companies listed overseas, see Chapter 2, Section 1, “Year in Review: Economics and Trade.”)

Government Guidance Funds Attempt to Combine Policy Imperative and Profit Motive

In financing industrial policy initiatives, China’s government has rolled out government guidance funds that adopt elements of the VC funding model.† Guided but not actively directed by the Chinese

* Unless noted otherwise, this section uses the following exchange rate throughout: \$1 = RMB 6.43.

† An alternative investment class that is not listed on a public exchange, VC helps firms seeking to commercialize unproven technologies by providing “patient capital,” as opposed to stock investors that typically expect to see immediate profitability. This funding might be used to meet high upfront costs to launch capital-intensive operations, to maintain or scale up operations during the period before a firm establishes a sufficient customer base to cover its operating costs, or to

government, these funds are intended to function as public-private partnerships. The funds are sponsored by central or local government agencies and usually focus on a specific strategic sector, such as semiconductor manufacturing or artificial intelligence. The sponsoring government agency typically contributes 20 to 30 percent of the fund's target capital, then seeks to raise the balance from outside investors, including both nonstate firms and financial institutions as well as SOEs and the state financial sector.⁶⁰

First introduced by local governments in 2000 and then established at the central government level in 2013, these funds have proliferated rapidly since the release of *Made in China 2025* in spring 2015 and the Chinese government's sharpened focus on technological development.⁶¹ Between the end of 2014 and June 2020, the total funding scope* of government guidance funds grew from less than \$100 billion to roughly \$1.7 trillion (RMB 11.3 trillion).⁶² Research by Chinese economic consultancy Zero2IPO counted 1,741 government guidance funds across all levels of government as of the first quarter of 2020.⁶³ Since 2018, formation and fundraising have slowed in response to both declining economic growth and Chinese policymakers' concern about wasted investment and opportunities for fraud.⁶⁴

Compared to standard private equity and VC funds, government guidance funds have a few distinct features unique to China's state-led science and technology system. First, to incentivize participation by nonstate capital, guidance funds offer a number of potential benefits. For example, a guidance fund's government sponsor may forgo their own investment or interest income or assume other investors' losses.⁶⁵ Second, where they might not provide the depth of industry expertise and connections available from top Silicon Valley funds, China's government guidance funds are often able to provide connections to other institutions and resources within China's research and development infrastructure. As Zachary Arnold, research fellow at Georgetown's Center for Security and Emerging Technology, detailed in testimony before the Commission, funds may coordinate with state-led technology incubators and industrial parks to provide access to facilities or work with talent and recruitment programs to help startups secure human capital.⁶⁶ Finally, because guidance funds have a mandate to focus on strategic technologies rather than simply generating return, startups seeking their investment do not have to compete against less technologically advanced companies that might be able to demonstrate a more viable business model.⁶⁷ By contrast, funding patterns in Silicon Valley have trended toward favoring consumer-facing companies with less innovative technology but a shorter timeline to profitability (for further discussion on

expand a workforce to meet production demand. A key driver of VC funds' success is their ability to pick promising business models and technologies and to help the companies they invest in succeed. Aside from providing financing, private equity and VC investors are often involved in their portfolio companies' operations, offering managerial expertise, business connections, and technical acumen. Robyn Klingler-Vidra, "When Venture Capital is Patient Capital: Seed Funding as a Source of Patient Capital for High-growth Companies," *Socio-Economic Review* (October 2016): 1–18.

*Funding scope refers to the target value in the articles of agreement creating the fund, and not all funds have actually raised the target amount. Once the funds are raised, it can take years to deploy them to suitable investments. Barry Naughton, "The Rise of China's Industrial Policy 1978–2020," *Center for Chinese-Mexican Studies of the School of Economics of the National Autonomous University of Mexico*, 2020, 105–106.

government guidance funds' role in the economy, see Addendum I: Government Guidance Funds Struggle to Overcome Limitations of Previous Industry Policies.)⁶⁸

Political Channels: CCP Committees' Involvement in Corporate Governance Is Rapidly Increasing

The Chinese government's potential control over corporate activity through legal channels has limits, insofar as these channels are codified in law and must be exercised through formal mechanisms, such as a shareholder's meeting. By contrast, the CCP exercises influence through a variety of channels that have no legal constraints, even if they have a legal basis.* Though they are often complex and operate without procedural checks and balances, many of these channels are nonetheless highly routinized within the CCP's vast administrative apparatus.†

The CCP Committee Gains Prominence in Corporate Governance and Market Regulation

Changes in the CCP's role both within individual firms and across China's capital markets impact U.S. investors in China's economy. Within firms, the CCP's role and ability to exert influence is becoming more deeply entrenched through CCP committees, among other mechanisms. CCP committees take on three functions: (1) overseeing personnel appointments and management decision-making; (2) coordinating political and ideological education; and (3) monitoring the behavior of employees, for instance to report on corrupt practices.⁶⁹ These are all existing functions of the CCP administrative apparatus, but committees enhance the ability of the CCP to exercise these functions within firms by strengthening coordination between the committees and the larger Chinese government bureaucracy, as well as increasing CCP members' accountability to the Party and their employing firms.⁷⁰

In addition to these traditional CCP functions, China's 2015 Guiding Opinions on restructuring SOEs prioritize joint appointments for CCP committee members as board members and state that the head of the corporate board should be the company's CCP secretary.⁷¹ The document also positions the CCP committee as parallel to the board in granting it capacity to oversee and audit major decisions.⁷² Companies are also amending corporate charters to elevate CCP committees: between 2015 and 2018, nearly 90 percent

*For instance, CCP committees have a constitutional and legal basis. The CCP constitution establishes the requirement that any firm with at least three CCP members must have a CCP committee and grants the committee a monitoring role, while China's Company Law prescribes a role for CCP committees in any company based in China. Unlike legal channels for state control, however, the constitutional and legal bases for CCP committees impose no constraints on their capacities. Tamar Groswald Ozery, "Unraveling China's Capital Market Growth: A Political Economy Account," *University of Michigan Law School*, June 2019, 120–121.

†Other informal channels such as quasi-government trade associations and unions also impact Chinese firms' behavior and are deeply connected to the CCP. Additionally, other CCP channels traditionally focused on political influence, such as the United Front, are now being recruited to increase CCP outreach to private firms. This section confines its discussion to CCP influence over corporate decision-making and monitoring of capital markets. Jason Arterburn, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on U.S. Investment in China's Capital Markets and Military-Industrial Complex*, March 19, 2021, 9–10; *People's Daily*, "General Office of the CCP Central Committee Issues 'Opinions on Strengthening the United Front Work of the Private Economy in the New Era'" (中共中央办公厅印发《关于加强新时代民营经济统战工作的意见》), September 15, 2020. Translation.

of SOEs adopted the policy, and almost 6 percent of nonstate firms implemented similar changes despite not being required to do so.⁷³

Concurrently, the CCP is supplanting the role of the state bureaucracy in implementing policy and enforcing regulation within China's capital markets. As part of General Secretary Xi's nearly decade-long anticorruption campaign, the CCP is dispatching inspection tours to investigate potential fraud and corporate malfeasance within Chinese SOEs as well as high-profile, ostensibly nonstate enterprises, such as property development conglomerate Wanda Dalian.⁷⁴ In executing this campaign, the CCP's Central Discipline Inspection Committee appears to establish cooperation with CCP committees within a conglomerate's subsidiaries, gathering evidence of potential misconduct through financial records and other documents through committee members.⁷⁵ The campaign has systematically progressed through different industries, including energy, health-care, the financial sector, and both nonstate and SOE commercial and offshore investment vehicles.⁷⁶ China's leaders view this as a necessary step to combat widespread corruption and self-dealing within China's state sector and among listed firms.⁷⁷

Notably, this CCP-led enforcement receives high-level collaboration from state bureaucratic institutions, with SASAC and the banking and securities regulators assisting in confiscating documents, freezing bank accounts, and other measures.⁷⁸ Where this cooperation may give the illusion of a legally valid process, the Discipline Inspection Committee operates extralegally, and state agencies are obliged to cooperate without due process under China's 2017 National Supervision Law.⁷⁹ Despite creating the appearance of greater market integrity, increased reliance on the CCP to ensure regulatory compliance in place of state institutions marks a retrogression in China's capital market development.⁸⁰ This dynamic could ultimately lead to markets that not only have the potential for CCP intervention via political channels but also depend on these channels to function.

China's Corporate Social Credit System Seeks to Guide Commercial Behavior

China's emerging corporate social credit system (CSCS)* equips the CCP with an economic channel of corporate control. Officially launched in 2014 with the release of the *Planning Outline for the Construction of a Social Credit System (2014–2020)*, the CSCS comprises a network of central and local government data-gathering initiatives designed to centralize regulation of companies registered in China. Though still under development, it aims to provide China's government a nationwide system to monitor all aspects of corporate behavior and administer automated regulatory responses to keep companies in line with the CCP's governance objectives.[†]⁸¹

*For a comprehensive overview of China's corporate social credit system, see Kendra Schaefer, "China's Corporate Social Credit System: Context, Competition, Technology, and Geopolitics," *Trivium China* (prepared for the U.S.-China Economic and Security Review Commission), November 16, 2020.

†Chinese policy and regulation does not formally distinguish between the corporate social credit system and the social credit system more broadly, which applies to individuals as well as firms. Certain types of data collected apply only to companies or individuals, however, while other categories may apply to both. Li Wang, "New Defaulters' Blacklists Released, Seriously Untrust-

China's Corporate Social Credit System Seeks to Guide Commercial Behavior—Continued

The CSCS also equips the Chinese government with a tool to ensure only companies deemed reliable by the Party are able to participate in the Chinese market. It focuses on aggregating government and corporate compliance data to create “corporate social credit files” on every legal entity in China.⁸² As government departments collect information on firms, they create “blacklists” of “untrustworthy”* companies found to have violated government regulations and “redlists” of firms with exemplary records.⁸³ In testimony before the Commission, Nazak Nikakhtar, former Assistant Secretary for Industry and Analysis at the U.S. Department of Commerce, explained that placement on a government department’s blacklist can subject companies to an array of punishments, including higher taxes or business licensing difficulties.⁸⁴ Additionally, when a company is blacklisted by one government regulator, the blacklist record is included in the company’s corporate social credit file.⁸⁵ This triggers scrutiny from other regulators and can effectively bar that company from participating in the Chinese economy more broadly.⁸⁶ Such inducements enable the CCP to compel compliance with Chinese law and alignment with CCP policy priorities, including among foreign firms.⁸⁷ In place of hard controls currently governing market access, such as investment restrictions, the CSCS provides a framework of incentives to manipulate domestic and foreign firms’ behavior within and beyond China’s borders.⁸⁸

CCP Committees Increase Their Presence within Nonstate and Foreign Firms

In addition to elevated power within SOEs, CCP committees have focused on expanding their presence from SOEs to all firms. Since 1925, the CCP constitution has required that any organization with three or more CCP members form a party unit, but in practice the units have not always been active in nonstate and foreign-invested enterprises in China.⁸⁹ China’s leadership renewed systematic efforts to build CCP committees in nonstate enterprises in the wake of the global financial crisis. Since assuming power in 2012, General Secretary Xi has accelerated this trend, making greater CCP involvement and direction in nonstate affairs, including presence within nonstate and foreign firms, a pillar of Chinese governance.⁹⁰ In 1998, a mere 0.9 percent of nonstate firms had CCP committees, a figure that rose to 16 percent by 2008.⁹¹ By 2013, committee presence in nonstate firms expanded to 58 percent, and by 2017 it

worthy Entities Involved in the Financial Sector Includes 400 New Additions” (10月失信黑名单出炉，金融领域新增严重失信人400家), *People.cn*, November 12, 2018. Translation.

*China’s National Development and Reform Commission segments blacklist behavior into three categories: “generally untrustworthy,” “seriously untrustworthy,” and “particularly seriously untrustworthy.” Companies deemed “particularly seriously untrustworthy” may be those found to have harmed the public interest by, for example, violating food and drug safety regulations, engaging in contract fraud, and making false advertisements, among other things. Kendra Schaefer, “China’s Corporate Social Credit System: Context, Competition, Technology, and Geopolitics,” *Trivium China* (prepared for the U.S.-China Economic and Security Review Commission), November 16, 2020, 31.

reached 73 percent, accounting for 1.9 million firms, according to the CCP Organization Department.⁹² China's government has placed special emphasis on increasing the CCP's oversight of China's major technology companies, with the *Financial Times* reporting in 2017 that more than 35 such companies had quietly instituted committees.⁹³ A newspaper run by China's Ministry of Human Resources and Social Security reported in 2018 that among roughly 15,000 internet firms in Zhejiang Province, home to e-commerce giant Alibaba, more than 65 percent had established CCP committees.⁹⁴

In addition, the CCP is seeking to establish CCP committees within foreign firms.* In 2016, around 74,000 foreign enterprises in China, roughly 70 percent of the total, also had CCP committees, compared with 47,000 at the end of 2011.⁹⁵ One 2017 Reuters investigation found CCP committees had been used to influence investment decisions by foreign-invested firms in China, with two major multinational firms, Samsung and Nokia, confirming the presence of Party units in their China operations.⁹⁶ The Reuters investigation also found that a major U.S. consumer goods firm reported that its CCP committee had pressured the company to locate a new facility in an area where the local government was attempting to draw investment, and the company agreed.⁹⁷

Anhui Province Shows CCP Expansion in the Nonstate Sector Is Systematic

Far from an ad hoc campaign, the CCP's growing presence within the private sector is the result of multipronged and systematic political mobilization. In their 2017 study of the expansion of CCP committees, University of Hong Kong professor Xiaojun Yan and PhD candidate Jie Huang examine the CCP's coordinated approach to Anhui, a major agricultural province and household appliance manufacturing hub on the Yangtze River.⁹⁸ They trace four key steps the CCP took to rapidly increase the penetration of committees throughout the province's nonstate sector beginning in 2012:

- **Establishing a separate organization with the sole purpose of expanding CCP presence in the nonstate sector.** Where private sector engagement used to be the purview of a subordinate department within the provincial CCP organizational department, Anhui's CCP established a separate committee, the Nonstate Economic Organizations and Social Organizations Working Committee, devoted to increasing CCP presence in the nonstate sector.⁹⁹ Granted greater

*China's Company Law requires all companies based in China, both foreign and domestic, allow the establishment of Party units to "carry out the activities of the Party" and to provide "necessary conditions" for these units to function if these companies employ three or more Party members. It is difficult to assess the influence of Party organizations in foreign enterprises. This is because foreign businesses may be reluctant to report their existence or complain about them out of fear of provoking retaliation from the Chinese government. The U.S.-China Business Council (USCBC) reported in 2018 that the state-owned joint venture partners of some USCBC member companies have tried to modify articles of association to support Party units within the joint venture and elevate their role in managerial decisions. Nicholas Borst, "Party Committees in Chinese Companies," *Seafarer*, June 2021; Jérôme Doyon, "Influence Without Ownership: The Chinese Communist Party Targets the Private Sector," *Institut Montaigne*, January 26, 2021; Jake Laband, "Fact Sheet: Communist Party Groups in Foreign Companies in China," *China Business Review*, May 31, 2018.

Anhui Province Shows CCP Expansion in the Nonstate Sector Is Systematic—*Continued*

authority within the CCP administrative hierarchy, the new committee established liaison offices with state agencies responsible for nonstate sector oversight, such as the bureau of industry and commerce that handles corporate registration.*¹⁰⁰

- **Sending “Party building instructors” to nonstate firms.** Reminiscent of Mao-era campaigns that mobilized cadres throughout China to communicate new political doctrine, Anhui’s provincial CCP sent teams of cadres to guide nonstate firms in Party building, dispatching roughly 10,000 instructors in 2013 alone.¹⁰¹ The instructors simultaneously helped nonstate firms manage administrative and political resources while strengthening CCP operations within firms.¹⁰²
- **Recruiting entrepreneurs and awarding prestigious CCP posts.** By 2015, the CCP estimated that 20 percent of all nonstate entrepreneurs and half of the largest company founders had joined the CCP ranks.¹⁰³ To further incentivize membership, the CCP in some instances provided prestigious political appointments to nonstate entrepreneurs, including membership in legislative bodies or leadership positions in trade organizations.¹⁰⁴ These appointments can afford entrepreneurs preferential policy treatment, access to information, and political protection.¹⁰⁵
- **Positioning the CCP as business-friendly.** To overcome suspicions that increased CCP presence in nonstate firms would lead to political interference or undermine managers’ authority, the CCP focused on cultivating an image of the CCP as business-oriented.¹⁰⁶ For instance, CCP committees encourage their members to work harder and more efficiently, and CCP propaganda aimed at the nonstate sector promotes the results of CCP “demonstration brigades” that contribute to firm financial performance through innovation or resolving operational challenges.¹⁰⁷

Implications for the United States

The CCP’s expanding ability to monitor, exert influence over, and intervene in corporate affairs is fundamentally changing the nature of government-corporate relations in China. Where the government has always played an outsized role in directing the allocation of resources in China, the political and policy mechanisms of this direction were generally heavy-handed. By contrast, the evolving legal, political, and economic channels for government intervention under General Secretary Xi are more complex and nuanced. To date, the expansion of these channels appears largely motivated by the CCP’s desire for greater oversight into market conditions and attempts to

*In 2018, these bureaus were superseded by the State Administration of Market Regulation and its provincial bureaus.

steer the nonstate sector toward advancing policy objectives. Their existence nonetheless lays the groundwork for more drastic government intervention in China's corporate sector, with the CCP gaining a greater authority to shape corporate actions of both domestic and foreign companies operating in China.

As U.S. financial integration with China increases, the Chinese governments' complex and expanding presence in China's business environment poses distinct commercial and security risks to the United States. The CCP's quest for greater control over the economy is moving China further away from a rule of law system that protects and provides adequate due process for market participants. Further undermining China's politically weak and insufficiently empowered institutions, the CCP is using political channels, such as its anticorruption campaign, to carry out market regulation. Rather than strengthening market integrity by improving bureaucratic professionalization and authority, this campaign-style enforcement attempts to bolster top-down control of market outcomes. To the extent it is successful, it risks creating the appearance of better regulated markets and further drawing in foreign investors, without achieving any underlying improvement to market regulation or investor protection.

The Chinese government's extensive footprint in China's corporate sector also increases the likelihood that foreign capital invested in China's economy will ultimately fund Chinese government objectives, including activities that may counter U.S. interests. Moreover, numerous avenues for Chinese government oversight challenge conventional regulatory frameworks for assessing whether entities are acting on behalf of foreign governments. For instance, U.S. trade and investment screening procedures often assess government control or influence via equity ownership. Such analysis is less meaningful when evaluating Chinese investors or investment targets, however, as the government is afforded special controlling rights over any firms in which it invests, regardless of its ownership stake. Moreover, the CCP is expanding its influence in corporate decision making and regulatory enforcement via channels that are effectively above the law. Because the CCP seldom acts through legal mechanisms, the nature and extent of its role in a particular company's affairs may be impossible to trace.

**Addendum I: Government Guidance Funds Struggle to Overcome
Limitations of Previous Industrial Policies**

Despite their attempt to introduce market forces into capital allocation, China's government guidance funds are ultimately constrained by many of the same limitations plaguing China's earlier models for financing industrial planning. These include:

Ignoring market fundamentals. Local government guidance funds in particular have a track record of chasing trends and making poor investment decisions by responding to policy signals without adequate due diligence on both the quality of their investment targets and the market potential for their products.¹⁰⁸

Duplicating investment. The rapid proliferation of funds means investment supply has quickly outstripped a volume China's start-up environment can absorb. This leads to duplicative investment, with every provincial government hoping to fund, for instance, biotech start-ups with similar products or services, when natural market demand can support far fewer than the number receiving funding.¹⁰⁹ Additionally, given the number of funds launched, demand for skilled investment managers far exceeds the available pool of talent.¹¹⁰

Failing to raise funding. Some of China's past industrial policies have faltered as unfunded mandates, with the central government directing local governments or agencies to raise funding for implementation they ultimately could not find. Similarly, many guidance funds never find outside investors to raise their target funding amounts.¹¹¹ Of a target size of \$1.6 trillion (RMB 11 trillion), guidance funds had only raised just under \$700 billion by early 2020.¹¹²

Lacking appropriate investment avenues. Even if they are fully funded, sometimes funds never find qualifying firms in which to invest, leaving the capital idling in bank deposits.¹¹³ Investment managers may overlook promising start-ups because they are too risky to meet the high fiduciary obligations for investments made with state capital.¹¹⁴ In other cases, viable start-ups may simply not exist in the sectors and geographies that government guidance funds intend to target. Because many government guidance funds are raised by provincial and local governments, they often aim to make investments in local firms, sometimes explicitly with the intent of drawing start-ups to a city to generate tax revenue.¹¹⁵ For instance, wealthy eastern provinces Guangdong and Zhejiang respectively require funds to deploy 60 and 80 percent of their capital locally, while coastal city Fuzhou requires all investments must be made within its province, Fujian.¹¹⁶ Despite guidance funds having raised \$700 billion, there were only about \$130 billion in total VC and non-venture private equity deals in China during 2020.¹¹⁷

Fraud and self-dealing. A chief reason for mediocre results in past state-led investment is rampant fraud and officials directing funds toward private gain, rather than advancing the goals of the state. Despite General Secretary Xi's perpetual crackdown on corruption, government guidance funds introduce new channels for

fraud by entrusting government funds to investors that might not be part of the state bureaucracy and CCP personnel system (as SOE managers are), and thus are subject to less direct oversight and lighter penalties for appropriating state assets.¹¹⁸

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SECTION 4: U.S.-CHINA FINANCIAL CONNECTIVITY AND RISKS TO U.S. NATIONAL SECURITY

Key Findings

- A surge of U.S. investor participation in China's markets is outpacing the U.S. government's defense against the diverse threats to U.S. national and economic security posed by U.S. investment in some problematic Chinese companies. This inflow of U.S. capital into China's economy is occurring as the Chinese government strengthens its ability to direct nonstate firms and resources toward advancing strategic priorities that may harm U.S. interests and as Beijing further fuses military and civilian corporate operations.
- The Chinese government permits the participation of foreign firms and investors in the Chinese market only when it suits its national interest. As a result, nominal financial "opening" in China in reality is a carefully managed process designed to reinforce state control over capital markets and channel foreign funding toward fulfilling the Chinese government's national development objectives.
- China's military-industrial ecosystem encompasses state and nonstate firms, research institutes, and investment funds, all acting in concert in service of China's military modernization objectives. These coordinated efforts may advance an agenda that threatens U.S. national security but is not always evident at the level of individual entities or transactions. Traditional legal remedies, such as trade and investment restrictions, are limited in their ability to fully address these threats, and current tools may be inadequate.
- The U.S. government's defense against these challenges is further constrained by strong U.S. investor interest in Chinese markets and the outsized influence of unregulated investment indices in steering global capital flows. The substantial increase in the inclusion of Chinese securities in investment indices automates U.S. investor allocation toward Chinese companies. Because passively managed index funds replicate these indices and actively managed funds seek to at least outperform them, index providers have played a pivotal yet unregulated role in guiding foreign portfolio investment toward Chinese companies.
- Compared to portfolio investment, private equity and venture capital investment present a unique set of challenges. Critical technical knowledge, managerial expertise, and business connections often flow to the investment target in addition to funding. Lack of transparency in private transactions compounds both

oversight challenges for U.S. regulators and potential risks to U.S. economic and national security interests.

Recommendations

The Commission recommends:

- Congress consider comprehensive legislation to ensure Chinese entities sanctioned under one U.S. authority be automatically sanctioned under other authorities unless a waiver is granted by the president or the authority applying the initial sanction. This legislation should rationalize existing U.S. sanctions targeting adversarial Chinese entities to ensure, for example, Chinese firms placed on the Entity List and/or Military End User List of the U.S. Department of Commerce are also placed on the Non-Specially Designated Nationals (SDN) Chinese Military-Industrial Complex (NS-CMIC) Companies List and vice versa.
- Congress enact legislation expanding the jurisdiction of existing U.S. investment restrictions targeting Chinese entities placed on the NS-CMIC Companies List as well as the scope of entities to be targeted by such restrictions. Such provisions should include:
 - Expanding the prohibitions relating to transactions and supporting work by U.S. persons in NS-CMIC securities covered by Executive Order 14032 to include the execution, support or servicing of transactions by U.S. persons in any market or for any other person, including both U.S. and non-U.S. persons; and
 - Providing additional resources to ensure that a more comprehensive list of entities engaged in supporting the Chinese military-industrial complex be published and that subsidiaries supporting such entities be included on the list. In identifying entities that should be evaluated for inclusion in such designations, authorities should include companies designated by Chinese securities issuing and trading entities as supporting the military industrial complex.
- Congress pass legislation that defines categories of Chinese persons, Chinese entities, and Chinese Communist Party (CCP)-related persons and entities subject to full blocking sanctions and inclusion on the U.S. Department of the Treasury's SDN list due to actions that harm the vital national interest or the national security of the United States or that constitute gross human rights violations.
- Congress consider comprehensive legislation to address risks to U.S. investors and U.S. interests from investments in Chinese equity, debt, and derivative instruments by:
 - Prospectively prohibiting investment in Variable Interest Entities (VIEs) linked to Chinese entities.
 - Absent prohibition, ensuring that the risks of investments in VIEs linked to Chinese entities are more prominently identified for investors, including that the VIE structure is illegal under Chinese law, and that taxpayer subsidies do not sup-

port investments in such entities. Provisions that should be considered in support of this goal include:

- Requiring prominent identification of the potential high risk for investments in VIEs linked to Chinese companies by:
 - Identifying VIEs linked to Chinese companies be identified as such in their stock trading symbols on U.S. exchanges.
 - Requiring that broker-dealers provide risk warning labels on the potential lack of legal recourse for investors for their investments in VIEs linked to Chinese entities.
- Prohibiting preferential federal tax treatment on losses and gains on investments in VIEs linked to Chinese entities made after the passage of appropriate statutory provisions.
- Directing the U.S. Securities and Exchange Commission (SEC) as part of its evaluation of potential guidance on reporting on environmental, social, and governance matters by publicly traded companies to require reporting of:
 - Sourcing and due diligence activities of such companies involving supply chains that are directly or indirectly linked to products and services utilizing forced labor from Xinjiang.
 - Transactions with companies that have been placed on the Department of Commerce’s Entity List or those designated by Treasury as Chinese Military-Industrial Complex Companies.
- Requiring index providers that include within their indices securities issued on mainland Chinese exchanges or the Hong Kong Stock Exchange, securities of China-headquartered companies listed on U.S. exchanges through a VIE, or derivative instruments of either of the preceding types of securities, be subject to regulation by the SEC.
- Congress ensure the effective implementation of the Export Control Reform Act of 2018 and the Foreign Investment Risk Review Modernization Act of 2018 by enacting legislation that:
 - Creates a Technology Transfer Review Group (TTRG) within the Executive Office of the President responsible for identifying emerging and foundational technologies. The TTRG should be chaired by the secretary of defense and include the director of the Office of Science and Technology Policy along with Cabinet-level secretaries or their designees from the U.S. Departments of Commerce, Energy, and Homeland Security.
 - Authorizes the TTRG to direct the Department of Commerce’s Bureau of Industry and Security to implement export controls following from the identification of these technologies.
 - Authorizes and requires the TTRG to oversee multilateral engagement related to export controls, foreign investment screening, and regulations over technology transfer by rele-

vant agencies to ensure that such engagement does not undermine U.S. national and economic security interests.

- Require that additional resources be provided to improve and expand end-user verification of export controls. Export licenses to the following entities should receive strict scrutiny: end-users identified as Chinese Communist Military Companies per Section 1237 of the National Defense Authorization Act for Fiscal Year 1999, those identified as contributors to China’s military-civilian fusion activities per Section 1260H of the National Defense Authorization Act for Fiscal Year 2021, entities with direct and formal ties to the CCP or Chinese government, and entities identified by the U.S. Trade Representative, U.S. Department of Justice, and Federal Bureau of Investigation as being linked to efforts to steal or coerce the transfer of U.S. intellectual property. The inability to identify end-user facilities and, if identified, the lack of adequate and timely access to these facilities should strongly inform investigating officials and licensing officials.
- Require that the TTRG engage with the Department of Justice, the Department of Commerce’s Bureau of Industry and Security, and other relevant agencies to align “deemed export” controls with engagement on knowledge transfer and expert recruitment strategies such as the 1,000 Talents Program, as well as investigations of the CCP’s United Front Work Department and other entities and programs of the CCP designed to acquire U.S. technology and capabilities.
- Congress mandate from Treasury an annual update of the accurate U.S. portfolio investment position in China since 2008, including money routed through offshore centers such as the Cayman Islands. This should include exposure for:
 - Individual Chinese sectors;
 - U.S. institution types, such as state pension funds;
 - Sanctioned Chinese entities (Entity List, NS-CMIC List, and others);
 - Individual Chinese recipients who receive more than a minimum amount, such as \$100 million; and
 - Individual U.S. investors with more than a minimum share of the total, such as two percent.

Introduction

Despite ongoing U.S.-China tensions, U.S. investors, asset managers, and mutual funds are increasing their participation in China’s financial markets. U.S. holdings of Chinese equity and debt securities have surged 57.5 percent from \$765 billion in 2017 to as much as \$1.2 trillion in 2020.¹ Major global investment index providers accelerate and automate these flows as they continue to widen their indices’ exposure to China A-shares* and government

*A-shares are renminbi (RMB)-denominated securities of companies incorporated in China that trade on either the Shanghai or Shenzhen stock exchanges. The trading of A-shares is not re-

bonds. Many Chinese companies most attractive to U.S. and foreign investors operate in cutting-edge, high-technology sectors. The Chinese government seeks to cultivate these same sectors in realizing its technological ambitions and national security objectives. The entry of foreign wealth managers into China's financial services sector also facilitates perceptions of China's financial markets as sophisticated and stable, amplifying U.S. and foreign investor interest in Chinese securities. U.S. money managers* have promoted increasing investment participation in China.

While it is not clear whether the Chinese government is actively diverting foreign capital inflows toward fulfilling national objectives, the very structure of China's capital markets itself facilitates the funding of state priorities. This strategic use of financial markets occurs in an ecosystem in which all types of Chinese companies are subject to state control and influence. As a result, U.S. investors and policymakers cannot always know to what extent U.S. capital flowing into China may advance China's military modernization, facilitate human rights abuses, or subsidize unfair trade practices by Chinese firms. Of particular concern to U.S. national security is the possibility that U.S. investment could be directed to companies tapped by the Chinese government to modernize China's military as part of its military-civil fusion strategy. This poses unique national security risks to the United States on top of the economic risks to U.S. investors stemming from the flaws in China's financial system.†

This section examines the emerging risks to U.S. national and economic security of rising U.S.-China financial connectivity. First, the section profiles China's financial opening and U.S. and foreign investor participation in China's capital markets. Next, it examines how increased foreign investor participation in China's capital markets coincides with a Chinese government effort to strategically utilize capital markets in advancing technological development and military modernization objectives, to the detriment of U.S. national security interests. Finally, the section evaluates existing U.S. policy efforts to manage this emerging risk. This section draws from the

stricted for Chinese residents, but foreigners can only access the A-shares market through special investment programs such as the Qualified Foreign Institutional Investors and Stock Connect programs. A-shares are distinct from other Chinese share classes such as H-shares (shares in Chinese incorporated companies listed on the Hong Kong Stock Exchange), trading of which is not restricted to Chinese residents. At the end of 2020, foreign investors' holdings of China A-shares reached \$528.8 billion (RMB 3.4 trillion), accounting for approximately 4.3 percent of the total market capitalization of all China A-shares. Gene Ma, Phoebe Feng, and Lu Zhang, "China Spotlight: A-Share Market's Coming of Age," *Institute of International Finance*, April 20, 2021; FTSE Russell, "Guide to Chinese Share Classes," April 2021.

*In August 2021, U.S. asset manager BlackRock's research unit, the BlackRock Investment Institute, said China should no longer be considered an emerging market and recommended investors increase their exposure to the country by as much as three times. BlackRock's recommendation came despite the Chinese government's regulatory tightening on China's technology sector. Goldman Sachs analysts have also argued that Chinese markets remain investable, with Beijing's campaign against Chinese tech firms causing only short-term volatility. John Liu and Yujing Liu, "Goldman Sees Limited Long-Term Damage from China's Crackdowns," *Bloomberg*, September 13, 2021; Steve Johnson, "BlackRock Calls for Investors to Lift Allocations to China's Markets," *Financial Times*, August 17, 2021.

†Rapid debt accumulation and the inefficient allocation of capital to state-owned enterprises have saddled China's financial markets with systemic risks. Furthermore, the Chinese government's tenacious commitment to financial stability and propensity toward market intervention inhibit price signals and limits transparency in China's financial markets. For more on the economic risks endemic to China's financial system, see U.S.-China Economic and Security Review Commission, Chapter 2, Section 2, "Vulnerabilities in China's Financial System and Risks for the United States," in *2020 Annual Report to Congress*, December 2020, 243–292.

Commission's March 2021 hearing on "U.S. Investment in China's Capital Markets and Military-Industrial Complex"; consultations with government officials, industry experts, and academics; and open source research and analysis.

Foreign Participation in China's Capital Markets

China's government sees attracting foreign capital as central to the realization of several overlapping objectives. These include overall capital market development as well as the resolution of a host of economic challenges. Financial opening is therefore carefully managed, with the Chinese government striving to manage foreign investor participation to maximize absorption of foreign capital and expertise while reinforcing its control over markets. Regardless of this extensive government control and the rigid pathways for access, foreign financial services companies and investors are increasing their participation in China's financial markets as the Chinese government opens them. China's emergence as the world's second-largest economy, rapid wealth creation, and initial recovery from the novel coronavirus (COVID-19) pandemic have consolidated the attractiveness of its financial markets to foreign investors as they pursue higher returns and portfolio diversification. U.S. and other foreign financial firms are separately drawn by the potential to generate fee income from increased transactions in Chinese securities.

Foreign Investors Embrace Beijing's Strategic Financial Opening

At the April 2018 Boao Forum for Asia, General Secretary of the Chinese Communist Party (CCP) Xi Jinping and People's Bank of China Governor Yi Gang once again announced the Chinese government would deliver on long-overdue pledges first made when China joined the WTO in 2001 to open China's financial sector to foreign competition.² Since then, Beijing has taken several steps to increase market access in the banking, securities, and insurance industries; grant foreign institutions equal treatment in credit and payment sectors; and open the domestic bond market to foreign investors.³ The Phase One agreement signed by the United States and China in January 2020 mostly codified China's previous commitments to implementing these measures.

The Chinese government encourages foreign investment in China's financial markets to serve its political, economic, and security interests. These include improving the corporate governance of Chinese-listed companies, stabilizing market activity against China's volatile retail investors, and expanding state-owned firms' access to capital.⁴ Financial opening is therefore carefully balanced against the government's strict maintenance of market control and steering of market activity. Rather than opening China's capital markets to unrestricted foreign participation, China's government maintains a number of channels through which it controls capital flows into and out of the country.

China's Government Establishes Rigid Pathways for Foreign Investor Participation in China's Capital Markets

The Chinese government has gradually created an array of mechanisms by which foreign investors can access China's capital markets. In 2002, the Chinese government launched the dollar-denominated Qualified Foreign Institutional Investors (QFII) program. The program granted foreign investors with relevant qualifications* access to China's stock and bond markets, though an aggregate quota was applied to the channel.⁵ A renminbi (RMB)-denominated cap was applied to a parallel RMB QFII program initiated in 2011. In May 2020, Chinese authorities scrapped quotas applied across the programs, allowing qualified foreign institutional investors unrestricted access to China's stock and bond markets.⁶ The QFII and RMB QFII programs were overshadowed, however, by the Stock and Bond Connect programs, launched in 2014 and 2017, respectively, enabling overseas investors with accounts in Hong Kong to trade stocks and bonds on the Shanghai and Shenzhen exchanges.[†]⁷ Leading global investment index provider MSCI's addition of Chinese onshore equity shares to its emerging market indices in 2018 further eased foreign investor access to China's stock market, and several stock and bond investment indices have since moved to increase their weighting of Chinese securities.⁸

While China's government has eased foreign access to its financial markets, foreign investors remain closely monitored and controlled. For example, the Chinese government imposes a ceiling of 30 percent foreign ownership on every publicly traded Chinese company.⁹ This ownership cap limits foreign investors to minority stakes and prevents them from using equity markets to exert control over Chinese companies.¹⁰ The Stock Connect platform also restricts daily flows into China to \$8.1 billion (RMB 52 billion).‡¹¹

*The China Securities Regulatory Commission, People's Bank of China, and the State Administration of Foreign Exchange jointly issued updated Measures for the Administration of Domestic Securities and Futures Investment by Qualified Foreign Institutional Investors and RMB Qualified Foreign Institutional Investors in September 2020. According to the measures, QFII applicants must (1) be in sound financial health, have good credit standing, and possess experience in securities and futures investment; (2) meet relevant professional and regulatory requirements of their home country; (3) possess sound and effective governance, internal control, and compliance management systems and designate an individual to be responsible for supervising compliance with China's investment regulations; (4) have not been subject to major disciplinary action from any regulator within the three year-period preceding their application to the QFII program or since their establishment; and (5) not exert a major impact on the operation of China's domestic capital market. China Securities Regulatory Commission, [Order No. 176] *Measures for the Administration of Domestic Securities and Futures Investment by Qualified Foreign Institutional Investors and RMB Qualified Foreign Institutional Investors* (【第176号令】《合格境外机构投资者和人民币合格境外机构投资者境内证券期货投资管理办法》), September 25, 2020. Translation.

†The Stock Connect program enabled gross flows via Hong Kong into China's capital markets of approximately \$9.5 billion in 2016 and \$31.3 billion in 2017, while the Bond Connect program enabled net foreign inflows of approximately \$28.7 billion in 2016 and \$53.3 billion in 2017. In April 2018, the China Securities Regulatory Commission raised the daily northbound quota (the value that individual Hong Kong and overseas investors can trade in Chinese securities through Hong Kong) for the Stock Connect program from \$1.8 billion to \$7.2 billion for both mainland exchanges. The eased quota contributed to the inclusion of China A-shares into major global investment indices. Bobby Lien and David Sunner, "Liberalization of China's Portfolio Flows and the Renminbi," *Reserve Bank of Australia Bulletin*, September 19, 2019; Logan Wright, "Hong Kong: Unforced Errors, with High Stakes," *Rhodium Group*, September 3, 2019, 6; Alice Woodhouse, "China Raises Mainland-Hong Kong Stock Connect Daily Quotas," *Financial Times*, April 10, 2018.

‡Unless noted otherwise, this section uses the following exchange rate throughout: \$1 = RMB 6.43.

Despite enduring Chinese government control, U.S. and foreign investors have poured into China's capital markets as Beijing has opened them.¹² The Chinese economy's resilience in the face of the global pandemic throughout 2020 further heightened investor interest in Chinese securities. According to independent research provider Rhodium Group,* the value of U.S. investors' holdings of equity and debt securities issued by Chinese entities on mainland Chinese, Hong Kong, and U.S. exchanges totaled as much as \$1.2 trillion at the end of 2020,† up 57.5 percent from \$765 billion in 2017.¹³ The divergence between China's economic recovery and performance and that of other emerging markets in 2020 is prompting some asset managers to change their asset allocations and devise China-specific investment strategies, with U.S. asset management firm BlackRock calling China "an investment destination separate from emerging markets."¹⁴

Some foreign investors have been drawn to China's capital markets because of the size of China's economy and higher returns offered by Chinese securities (see Figure 1). China's stock and bond markets have grown at a rapid clip, each becoming the world's second largest at the end of 2019.‡ Investors in China A-shares, for example, gain exposure to globally competitive Chinese companies operating in high-growth sectors such as technology and digital services.¹⁵ China's government bond market is also increasingly attractive to foreign investors given its high yield relative to other sovereign debt and liquidity.¹⁶ The People's Bank of China left its benchmark interest rates virtually untouched in 2020 while other major economies enacted rate cuts, making Chinese government debt § a rare source of yield in global fixed-income markets.¹⁷

*The estimates prepared by Rhodium Group take an expansive view of U.S. holdings of Chinese securities, collating estimates of U.S. institutional investors' direct purchases of China A-shares, U.S. high net worth investors' purchases of Hong Kong listed H-shares, and U.S. institutional investors' purchases of government debt and onshore and offshore corporate debt. Rhodium Group estimates also include U.S. retail investor purchases of American Depository Receipts issued by U.S. banks that represent shares in Chinese stock. The estimates prepared by Rhodium Group build on research conducted by the Global Capital Allocation Project, led by Antonio Coppola and his colleagues. In their study, *Redrawing the Map of Global Capital Flows: The Role of Cross-Border Financing and Tax Havens*, Coppola et al. trace corporate ownership chains and assess offshore securities issuance in tax havens to better elucidate U.S. holdings of Chinese securities. Among other things, they find U.S. investor exposure to risks inherent in U.S.-listed, variable interest entity-structured Chinese companies is larger than understood; China's net foreign asset position may be half of the official value; and U.S. holdings of Chinese securities are larger when measured on the basis of nationality rather than residency. Adam Lysenko et al., "U.S.-China Financial Investment: Current Scope and Future Potential," *Rhodium Group*, January 2021, 11, 18–19; Antonio Coppola et al., "Redrawing the Map of Global Capital Flows: The Role of Cross-Border Financing and Tax Havens," *Global Capital Allocation Project*, December 2020; 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.

†Rhodium Group finds U.S. investor holdings of equity securities outstrip holdings of debt securities. U.S. holdings of equity securities ranged from \$902 billion to \$1.1 trillion at the end of 2020, while holdings of debt securities ranged from \$65 billion to \$100 billion in the same period. Adam Lysenko et al., "U.S.-China Financial Investment: Current Scope and Future Potential," *Rhodium Group*, January 2021, 12.

‡At the end of August 2021, the total equity market capitalization for the U.S. stock market (defined as the Nasdaq and New York Stock Exchange) was \$50.4 trillion, compared to \$13.4 trillion for the Chinese stock market (defined as the Shanghai and Shenzhen stock exchanges). The U.S. bond market had \$48 trillion in bonds outstanding at the end of the first quarter of 2021, while China's onshore bond market had \$19 trillion in bonds outstanding in the same period. China eclipsed Japan to become the world's second-largest bond market at the end of the first quarter of 2019. Bank for International Settlements, "Debt Securities Statistics," September 20, 2021; *Bloomberg Professional Services*, "China's Bond Market: A Playground of Untold Potential," November 12, 2019; World Federation of Exchanges, "Statistics Portal."

§"Chinese government debt" here refers not only to central Chinese government bonds but also to policy bank bonds and local government bonds. China's Ministry of Finance issues central Chi-

Figure 1: Financial Performance of U.S. and Chinese Stock and Bond Markets, January 2019–September 2021

Panel A: Financial Performance of the CSI 300 Index vs. S&P 500 Index

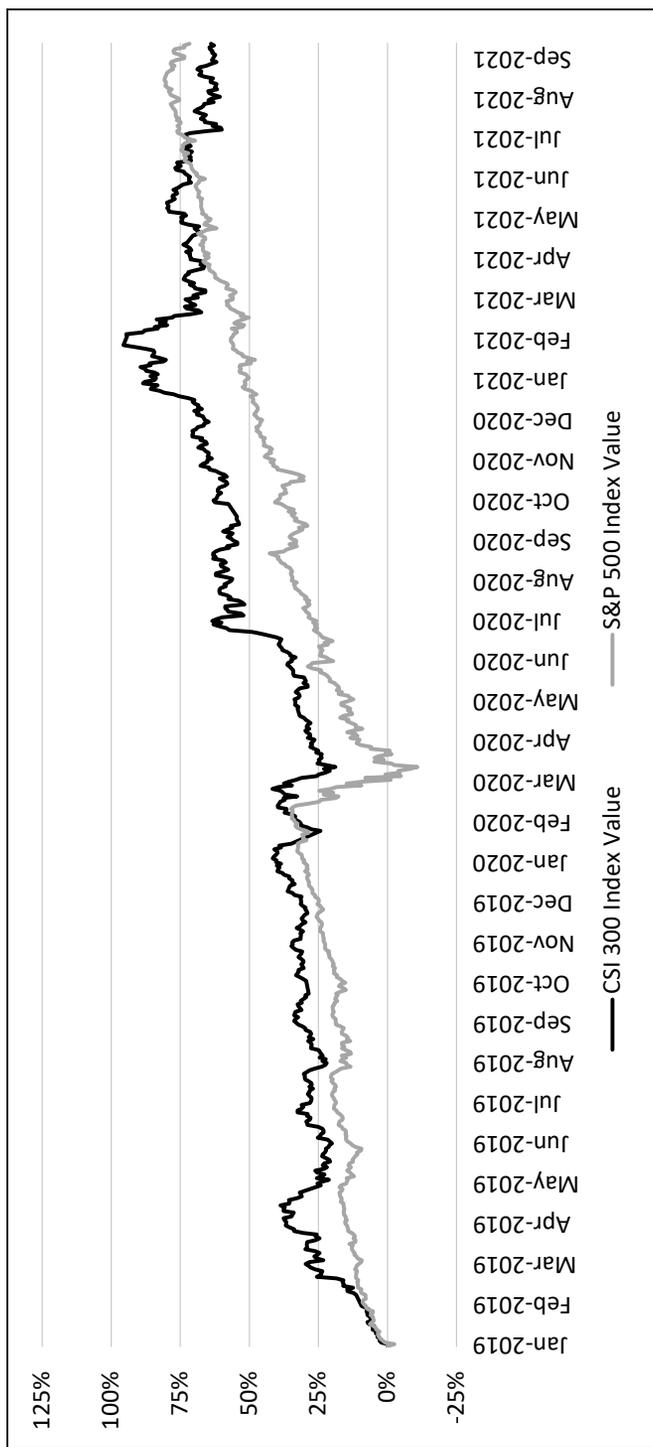
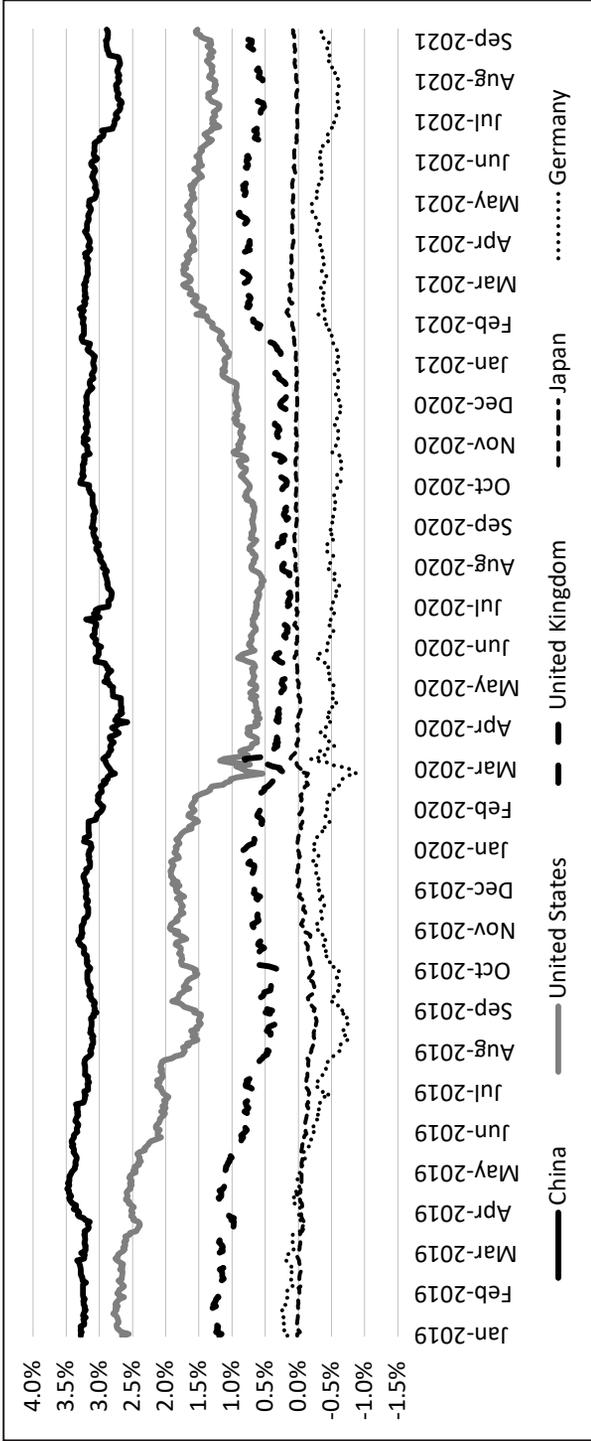


Figure 1: Financial Performance of U.S. and Chinese Stock and Bond Markets, January 2019–September 2021—Continued

Panel B: Ten-Year Government Bond Yields



Note: The CSI 300 is a market capitalization weighted stock market index of 300 of the largest companies listed on the Shanghai and Shenzhen stock exchanges. It is often considered the Chinese counterpart to the S&P 500 Index, a similar benchmark of 500 of the largest companies listed on U.S. stock exchanges. Source: Index value data from Interactive Data Pricing and Reference Data LLC via S&P Capital IQ database; bond yield data from Mergent Data via S&P Capital IQ database.

The Chinese government's campaign to check the growing influence and anticompetitive behavior of Chinese technology firms in retail markets, financial services, and data collection hammered Chinese tech stocks and contributed to a downturn in foreign investor interest in China's capital markets in 2021.¹⁸ Chinese regulators' scrutiny of China's tech giants, which are among the most attractive to foreign investors, began in November 2020 with the abrupt cancellation of fintech firm Ant Group's planned initial public offering (IPO).¹⁹ The move was followed in April 2021 by a series of antitrust actions targeting other tech firms, including a \$2.8 billion fine for Alibaba.²⁰ In early July, Chinese regulators launched a data security investigation into ride-hailing firm Didi Chuxing, erasing billions from its market capitalization within days of its IPO on the New York Stock Exchange.*²¹ Socioeconomic and political concerns are also driving the scrutiny, with China's regulators introducing new regulations barring education-technology and tutoring companies from making profits.²² Such companies are in regulators' crosshairs because of concerns that the private education industry's fees may exacerbate socioeconomic inequality and place an undue burden on families, deterring them from having more children.²³ The government is also concerned that privately taught curriculum may not track the CCP's heightened emphasis on ideological education.²⁴

China's sweeping regulatory review of a broad array of Chinese technology firms has roiled onshore and offshore Chinese stock valuations. At the close of trading at the end of September, the Nasdaq Golden Dragon Index (a gauge of U.S.-listed Chinese stocks) had fallen 33.5 percent on a year-to-date basis, while China's CSI 300 Index had fallen 6.6 percent.²⁵ Broader emerging market indices also declined in value in the same period, with the MSCI Emerging Market Index falling 3 percent.²⁶ As of September 30 2021, Chinese internet giants such as Tencent, Alibaba, and Meituan were among the top five constituents of the index.²⁷ All three firms are in Chinese regulators' crosshairs. (For more on Chinese regulators' actions against China's top technology firms, see Chapter 2, Section 1, "Year in Review: Economics and Trade.")

Despite the market turmoil, the global financial services industry continues to express optimism about longer-term investment pros-

nese government bonds, which are analogous to U.S. Treasury bonds and feature maturities ranging from three months to 50 years. The state-owned China Development Bank, Export-Import Bank of China, and Agricultural Development Bank of China issue policy bank bonds. Chinese provincial and city governments issue local government bonds, which are either general bonds or special purpose bonds. General bonds are used to finance local government expenditure, while special purpose bonds are typically used to fund infrastructure projects. Local government bonds do not have an explicit central government guarantee, making them riskier. They therefore trade at a slightly higher yield compared to central Chinese government bonds. At the end of August 2021, foreign investors held \$342.1 billion (RMB 2.2 trillion) of central government bonds, \$163.3 billion (RMB 1.1 trillion) of policy bank bonds, and \$1.5 billion (RMB 9.4 billion) of local government bonds. ChinaBond, "New Composite Index Decreased Overall as Foreign Investors' Holdings Increased Further—Bond Market Analysis for August 2021" (债券新综合指数下行 境外机构继续增持——2021年8月债券市场分析报告), September 17, 2021. Translation; *Reuters*, "Foreign Holding of China Government Bonds Hit New Record in August," September 6, 2021; UBS, "Investing in China: Opportunities for Global Investors," March 3, 2021, 15–18.

*In the wake of heightened regulatory scrutiny of Didi's data management practices, *Bloomberg* reported in September 2021 that Beijing Tourism Group and other Beijing municipal government-backed companies were considering acquiring a stake in Didi. If executed, the move would mirror a similar one made by a government-backed investment fund in April 2021 to acquire a 1 percent stake in an affiliate of Chinese social media giant ByteDance. For more on the Chinese government's expanded investment in nonstate tech firms, see Chapter 2, Section 3, "The Chinese Government's Evolving Control of the Nonstate Sector."

pects in China's financial markets. Investment strategists at JPMorgan, for example, see opportunity in the China A-shares* market as companies issuing such shares are majority domestic owned, are "often tied to policy initiatives," and are therefore "shielded" from regulatory scrutiny.²⁸ The firm also believes "China will continue to deliver superior nominal economic growth relative to other markets" over the next 10–15 years and that the country "is in the early stages of a financial evolution that will likely offer patient investors a significant opportunity."²⁹ Separately, investment analysts at BlackRock have recommended investors increase their allocations to Chinese assets by as much three times, highlighting opportunities for longer-term returns and diversification opportunities despite political risks and "greater uncertainty."³⁰ Others question or doubt this analysis, warning that investment in Chinese securities may threaten U.S. national security and investment returns may diminish as China's economy slows and Beijing cracks down on nonstate companies.³¹

Foreign Participation in China's Venture Capital Markets

While foreign venture capital (VC) investment in China only became legally permissible in the early 2000s,† it has grown at a rapid pace in the past ten years. By 2018, roughly \$125 billion, or nearly 40 percent of global VC investment activity, funded startups in China.³² This number decreased to roughly \$68 billion or 20 percent in 2020, according to data from Pitchbook.‡³³ At the 2018 peak, 6,005 VC deals were announced in China.§ This number similarly dropped by almost half to 3,529 in 2020 as concerns about slowing macroeconomic growth in China and excessive valuations for startups tempered investor enthusiasm.³⁴

Even before the regulatory structures allowing foreign VC investment were legally established,¶ foreign investors played a signifi-

*As of September 30, 2021, there are 4,158 China A-shares listed on the Shanghai and Shenzhen stock exchanges, with 1,648 in Shanghai and 2,510 in Shenzhen, including on its ChiNext board. Of these A-shares, 1,437 (34.6 percent) are eligible for trading on the Shanghai and Shenzhen Stock Connect platforms. Hong Kong Exchanges and Clearing Market, "HKEX-Connect Scheme: All Eligible Securities," September 30, 2021; Shanghai Stock Exchange, "Stock Data Overview" (股票数据总貌), September 30, 2021. Translation; Shenzhen Stock Exchange, "Securities Summary," September 30, 2021.

†Early foreign VC investments in China, such as Japanese conglomerate SoftBank's \$20 million investment in Alibaba in 2000, were executed through offshore holding companies to circumvent onshore regulatory restrictions. Massachusetts Institute of Technology professor Yasheng Huang argues that a substantial portion of foreign direct investment in China effectively functioned as VC funding, even if it was not labeled as such by investors or recipients. Adam Lysenko, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on U.S. Investment in China's Capital Markets and Military-Industrial Complex*, March 19, 2021, 4; Yasheng Huang, *Selling China: Foreign Direct Investment during the Reform Era*, Cambridge University Press, 2003, xvi.

‡Pitchbook is a financial data and software company that compiles data on private market transactions, including VC, private equity, and mergers and acquisitions.

§By comparison, nearly \$130 billion was invested in close to 9,000 companies in the United States in 2018. PitchBook, "US Venture Capital Investment Reached \$130.9 Billion in 2018, Surpassing Dot-Com Era," January 10, 2019.

¶Among other structures, these include legalizing the limited partnership form usually assumed by private equity funds in 2006 and 2009 regulations allowing foreign investors to participate in RMB-denominated onshore funds and move capital in and out of the country. In a limited partnership, all partners (the third-party investors) are entitled to an equal share of profits absent any other agreement or negotiation on how profits or losses are to be distributed. Only the general partner (the fund manager) can make decisions on the partnership's behalf. State Council of the People's Republic of China, *Administrative Measures for the Establishment of Partnership Enterprises by Foreign Entities or Individuals in China* (外国企业或者个人在中国境内设立合伙企业管理办法), November 2009. Translation; State Council of the People's Republic

cant role in the development of China's startup ecosystem. Virtually all of China's first-wave internet firms, including technology titans Baidu, Alibaba, and Tencent, received financing from U.S. and other foreign VC investors.³⁵ In 2020, U.S. investors participated* in \$20 billion worth of all announced VC fundraising rounds for Chinese startups, accounting for 29 percent of all VC capital raised in China's startup ecosystem (\$68 billion).†³⁶ Though most cross-border venture deals into China are facilitated by major foreign private equity firms, multinational corporations' VC arms, such as Intel Capital, are also major investors in China. In 2020, such corporate investors participated in 15 percent of VC transactions involving any foreign investor in China.³⁷ Foreign funding can also flow into China's VC ecosystem through funding rounds organized by Chinese VC funds managed by Chinese general partners, such as Beijing-based Hony Capital and Hillhouse Capital, investment not reflected in the figures above.³⁸

In value terms, foreign investors have a more prominent role in non-venture private equity transactions that are focused on mature companies, such as established retail chains, rather than emerging technology companies.³⁹ Much of both VC and non-venture private equity investments by foreign firms has tended to favor consumer-facing e-commerce companies and service providers, suggesting investment decisions are driven by an attempt to capture the growth of China's emerging consumer class rather than a strong belief in the innovative capacity of Chinese technology.⁴⁰

Foreign investments in a handful of sectors, including speech recognition and computer vision—forms of artificial intelligence (AI)—and genomic sequencing are notable exceptions.⁴¹ The sectoral composition of foreign venture funding can also be influenced by the heavy hand of the state. For example, a 2017 *State Council Notice on the Publication of the Program to Build a National Technology Transfer System* called for Chinese enterprises to seek foreign VC investment as part of a multifaceted technology transfer strategy, though there is not any evidence of an uptick in foreign VC funding flowing into China's high-technology sectors.⁴² More recently, the Chinese government's 14th Five-Year Plan notes the government will continue to attract and utilize foreign capital in developing emerging technologies, advanced manufacturing, and telecommunications.⁴³ (For more on China's 14th Five-Year Plan, see Chapter 2, Section 2, "The Chinese Communist Party's Economic and Technological Ambitions: Synthetic Biology, New Mobility, Cloud Computing, and Digital Currency.")

of China, *Partnership Law of the People's Republic of China (China)* (中华人民共和国合伙企业法), August 2006. Translation.

* Fundraising rounds typically have multiple investors. The value of a fundraising round is the total capital raised by all participating investors. The contribution of an individual investor is seldom disclosed, and data on fundraising rounds simply indicate which investors participated, which led or contributed the most, and the total value of the round.

† VC funding transactions typically occur in series demarcated by letters according to the maturity of the company and often the volume of funding. Series A, the first funding round aside from any angel funding the startup may have received, is riskier because the firm's business is often less developed, though investors can acquire a larger equity stake for a smaller investment. Series E, by contrast, usually involves substantial investment in more mature companies with established business models, but investors have a higher chance of recouping their investment and earning a return through an IPO or sale. Each funding round typically sees multiple VC firms and potentially other investors participate, with the investor contributing the largest amount said to be "leading" the round.

Chinese Regulators Accelerate Approvals for Foreign Wealth Managers amid Rapid Growth in Investable Assets

Accelerating approvals for foreign financial services firms to enter and expand in the Chinese market underscore the Chinese government's pursuit of foreign expertise in addition to capital. In remarks delivered at a financial forum in October 2020, Guo Shuqing, chairman of the China Banking and Insurance Regulatory Commission, said the Chinese government welcomes foreign financial services firms with expertise in risk control, pension management, consumer finance, wealth management,* and health insurance to "vitalize" China's financial sector.⁴⁴ While still cautious about giving foreign financial institutions too prominent a role, regulators seek to draw on their expertise to build a savings infrastructure that can help manage future economic challenges, such as an aging population.⁴⁵

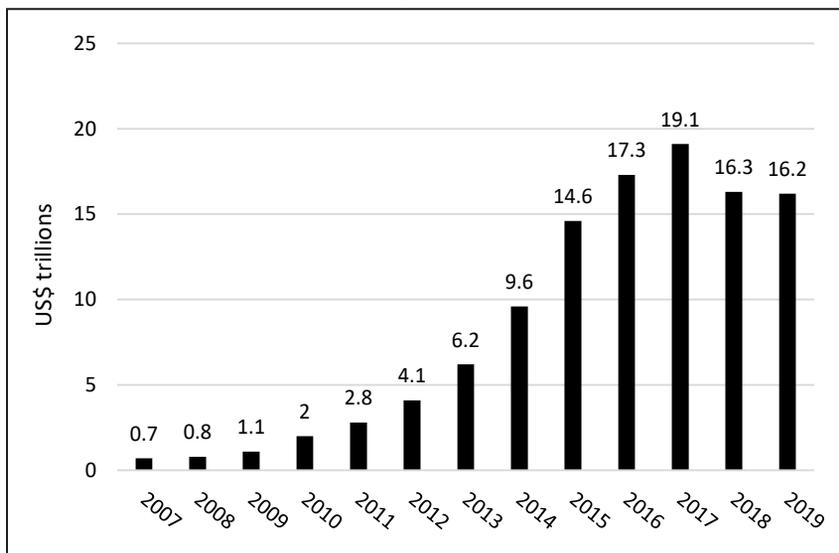
Global financial services firms are expanding into the wealth management sector specifically as the Chinese government accelerates regulatory approvals. To date, four global financial services firms have received approval to establish wealth management joint ventures with Chinese state-owned banks, including U.S. firms Goldman Sachs and BlackRock.⁴⁶ Separately, in March JPMorgan acquired a minority stake in a wealth management business owned by China Merchants Bank, marking the first time a Chinese bank opened up its wealth management subsidiary to a foreign strategic investor.⁴⁷ Executives of Chinese state-owned banks report such ventures enable them to learn from foreign expertise in asset allocation and risk control, while foreign firms are keen to capitalize on rapid growth in investable assets in China (see Figure 2).⁴⁸

While the entry of foreign firms into China's \$16.2 trillion asset management market does not directly facilitate inflows of foreign capital into China's financial system, it does make China's underdeveloped financial markets appear more sophisticated. As more established international financial services firms expand operations in China to serve Chinese investors, foreign investors may view the Chinese market more broadly as a viable investment opportunity despite its significant risks.†

*Wealth management, broadly defined, is a financial advisory discipline that incorporates a diverse range of services to manage affluent clients' overall wealth. Wealth management includes investment management advice alongside other financial advice, such as tax guidance and estate planning. This broader, integrated approach differs from other financial advisory services such as investment management, which narrowly focuses on the professional management of securities and other assets in order to meet specified investment goals.

†For more on systemic risks and vulnerabilities in China's financial system and the Chinese government's pursuit of foreign capital, see U.S.-China Economic and Security Review Commission, Chapter 2, Section 2, "Vulnerabilities in China's Financial System and Risks for the United States," in *2020 Annual Report to Congress*, December 2020, 243–292.

Figure 2: Total Assets under Management of China's Asset Management Industry, 2007–2019



Note: Estimates for assets under management of China's asset management industry in the years 2007–2019 are sourced from research conducted by Oliver Wyman, a consultancy. Assets under management typically refers to the total market value of investments or assets a financial institution manages on behalf of its clients. Oliver Wyman's estimate takes a broad view and includes assets managed on behalf of clients by banks; trusts; private funds; mutual funds; and futures, securities, and insurance asset managers.

Source: Charlie Zhu and Jun Luo, "Goldman Forms Wealth Venture with China's Largest Bank," *Bloomberg*, May 25, 2021; Oliver Wyman, "China (Re)Entry for Globals: Starting the New Chapter," 2019, 16.

Emerging Risks to U.S. National Security of Rising U.S.-China Financial Connectivity

The increase in foreign investor participation in China's capital markets coincides with the Chinese government's strengthening control over China's commercial ecosystem. This rising control makes the distinction between civilian and defense activities of Chinese companies increasingly blurry and furthers the Chinese government's objective of cultivating a commercial environment that supports its military-civil fusion strategy* and broader technological development. Together, these trends increase the risk that U.S. capital may contribute to improvements in China's military capabilities, surveillance technologies, human rights abuses, or other activities inimical to U.S. interests. This phenomenon presents novel challenges to U.S. policymakers. While the U.S. government has restricted U.S. investment flows toward some problematic Chinese companies, this has been done through executive action from the

*In testimony delivered at the Commission's March 2021 hearing on "U.S. Investment in China's Military-Industrial Complex," Emily Weinstein, research analyst at the Center for Strategic and Emerging Technology, described military-civil fusion as a guiding vision to align government agencies, state and nonstate firms, research centers, and investors in fostering emerging and foundational technologies with dual-use applications. For more on the objectives of military-civil fusion, see U.S.-China Economic and Security Review Commission, Chapter 3, Section 2, "Emerging Technologies and Military-Civil Fusion: Artificial Intelligence, New Materials, and New Energy," in *2019 Annual Report to Congress*, November 2019.

president, exemplified most recently by President Joe Biden's Executive Order (EO) 14032. The U.S. government otherwise does not have any statutory authority to compel U.S. investors to cease and desist outbound portfolio investment in a foreign company. Existing U.S. policy frameworks to identify and define Chinese military companies may also struggle to keep pace with the CCP's extensive ability to influence and control all commercial activity in China's economy.

China's Capital Market Development Increases the Risk of Pass-Through from Civilian to Defense Firms

China's government is increasingly looking toward capital markets to fund its technology development goals, including financing civilian research and development (R&D) that may advance military capabilities. This trend is especially pronounced for dual-use emerging and foundational technologies outside the scope of China's traditional defense contractors, such as AI and autonomous systems. As China increasingly turns to capital markets to realize its technology development and military modernization ambitions, there is more acute risk that U.S. investment in China directly or indirectly benefits problematic companies.

Two decades ago, China's military-industrial ecosystem* was almost exclusively financed via state banking and subsidies, and defense expenditure was concentrated entirely in state-owned enterprises (SOEs).⁴⁹ Today, the Chinese government is using both foreign and domestic private equity (e.g., VC), public equities (i.e., stocks), and public debt instruments (e.g., government and corporate bonds) to fund defense-related companies.[†]⁵⁰ In addition to SOEs, this funding is increasingly directed toward nonstate firms that produce dual-use or potentially military end-use items and may supplement China's military capabilities. While few of these modes of financing are explicitly aimed at funneling foreign capital to defense firms, China's government is purposefully developing its capital markets to direct domestic institutional and retail investors toward priority sectors. U.S. investors participating in China's capital markets may in turn be drawn toward these companies in favored sectors.

*While the relationships between armed forces and the companies that make their equipment are often described as being part of a "military-industrial complex," this section finds such networks in China are better described as a military-industrial ecosystem. This is because China's military-civil fusion strategy mobilizes a broader array of actors beyond just Chinese government agencies and state-owned defense contractors to include academic institutions, industrial parks, and nonstate startups. For more background on the structure of China's military-industrial ecosystem, see Addendum I: Key Actors in China's Military-Industrial Ecosystem.

†The extent to which China's military-industrial ecosystem is financed by private debt—or debt extended to privately held companies, typically via nonbank financial institutions—is unclear from public sources. According to PricewaterhouseCoopers China, the majority of private deals in China between 2015 to 2019 were in the real estate sector. James Dilley, Victor Jong, and Ted Osborn, "Chinese Private Debt: On the Ground Insights from PwC," *PricewaterhouseCoopers China*, March 2020, 12.

Military-Civil Fusion Builds a Commercial Ecosystem Designed to Support the Chinese Government's National Security Objectives

For decades, China's government sought to emulate the mutually beneficial relationship between private sector innovation and defense sector research and contracting in the United States. These Chinese government efforts met with moderate success in technological advances, particularly in electronics and shipbuilding, but low rates of nonstate participation persisted in defense procurement.⁵¹ China's military-civil fusion strategy has sought to establish a framework for quickly mobilizing civilian infrastructure to serve defense needs, bolstering economic growth by fostering linkages between the civilian and defense sectors, and leveraging nonstate sector innovation to develop technologies with military applications. Having established an initial framework, the strategy is now entering a critical "implementation" phase during the next 15 years.*

Analysts often describe military-civil fusion as a "whole of government" or "whole of society" effort. These descriptors capture the breadth and magnitude of the program as envisioned, but they also simplify an intricate and evolving process of intra-government coordination as well as coordination between government and nonstate or quasi-state actors, such as privately managed investment funds with mostly passive state shareholders.

The resulting web of investment and administrative relations in China's military-industrial complex is labyrinthine, demonstrating both the ubiquity of military-civil fusion's impact on China's economy and the challenge in identifying whether any particular entity or transaction may be supporting military-civil fusion. In short, a transaction or an entity several steps removed from defense procurement can contribute to military capabilities. Military-civil fusion is having the greatest impact in traditional weapons systems R&D, military logistics and auxiliary functions, and public security, but not in the areas that concern major war-fighting capabilities.⁵²

Various Investment Vehicles Direct Capital toward Potentially Problematic Companies

In the last six years, China's capital market development has coincided with a proliferation of investment vehicles that contribute to both financing companies at different stages of growth and appealing to different groups of investors. The sections below describe various investment vehicles for investing in private equity, trading stocks, and investing in local government debt that steer funding to-

* Experts assess that Chinese policymakers have, to date, focused on laying the groundwork for the military-civil fusion strategy. For example, Blue Path Labs analysts Peter Wood and Alex Stone observe that Chinese leaders aimed to establish a "full-element, multi-domain, and high-return military-civil fusion deep development pattern by 2020." This suggests Chinese leaders may now be moving toward the more fulsome implementation of the strategy. Alex Stone and Peter Wood, "China's Military Civil-Fusion Strategy: A View from Chinese Strategists," *China Aerospace Studies Institute*, June 15, 2020, 26; Brian Lafferty, "Civil-Military Integration and PLA Reforms," in Philip C. Saunders et al., eds., *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms*, National Defense University Press, March 3, 2019, 638.

ward China's military-industrial ecosystem. Not all of these vehicles draw foreign investment toward potentially problematic companies directly, but all contribute to a capital market that prioritizes funding the state's development objectives.

Private Equity: Government Guidance Funds and Defense Conglomerates' Finance Subsidiaries

The launch of the Made in China 2025 initiative in 2015 spurred rapid proliferation of government guidance funds that seek returns while advancing policy goals.⁵³ These funds intend to bring outside management expertise and expand the pool of capital available to finance government objectives by enticing nonstate co-investors.⁵⁴ Some of these funds explicitly aim to invest in military-civil fusion projects, and many others support investment in dual-use technologies.⁵⁵ Among government guidance funds focused on military-civil fusion or dual-use technologies, portfolios often resemble or overlap significantly with the investment targets of China's defense conglomerates' financing arms.* Although foreign VC investors may invest in companies receiving government guidance funding, VC investors generally are not required to disclose the proportion of capital they invest in any investment target.⁵⁶ For example, SenseTime, a Chinese AI firm specializing in computer vision and deep learning, raised \$620 million in Series C+ funding in May 2018, with proceeds used to "spearhead China technology ambitions and to invest in research, development, and talents."⁵⁷ Qualcomm Ventures, the VC arm of U.S. semiconductor design firm Qualcomm, was among one of the participating investors.⁵⁸ This investment occurred before the U.S. Department of Commerce Bureau of Industry and Security (BIS) placed SenseTime on the Entity List. In October 2019, BIS added SenseTime along with seven other Chinese technology firms to the Entity List for their role in enabling human rights violations against Uyghur Muslims in China's restive Xinjiang Province.⁵⁹ SenseTime has also raised VC funding from Beijing-based China Internet Investment Fund Management Company.⁶⁰ The fund manager is an investment firm specializing in AI, big data, and cloud computing and whose limited partners include the Cyberspace Administration of China and China's Ministry of Finance.[†]⁶¹

Public Equities: Initial Public Offerings and Military-Related Exchange Traded Funds

While government guidance funds typically concentrate on private equity investment, two trends in China's public equities markets are also contributing to Chinese defense firms' ability to raise capital. China's securities regulator is introducing changes intended to create an equity financing pipeline that takes new ventures from start-up to IPOs, as the VC environment does within the United States. Chief among these is the STAR Market, a Nasdaq-style board with less stringent listing requirements than China's main exchanges in

* For example, the China Integrated Circuit Industry Investment Fund, a government guidance fund focused on developing China's semiconductor industry, has invested in Shenzhen China Electronics International Information Technology. The firm has also received investment from Chinese defense conglomerate China Electronics Corporation. S&P Capital IQ database.

† Neither the China Internet Investment Fund Management Company's website nor Chinese media reports provide details on the exact date or scope of the company's investment in SenseTime.

Shanghai and Shenzhen. Launched in June 2019 by the Shanghai Stock Exchange, the STAR Market is aimed at tech companies, and features a registration-based rather than approval-based IPO system. It includes Semiconductor Manufacturing International Corporation,* China's largest contract chipmaker, which was added to the Entity List in December 2020 for its involvement in China's military-civil fusion program.⁶² Additionally, AI company Cloudwalk and surveillance system microelectronics developer Shenzhen Intellifusion, both added to the Entity List for their role in China's human rights abuses in Xinjiang, have planned IPOs on the STAR Market.† The Chinese government continues to emphasize the role of public equities markets in channeling capital to technology firms as well as small- and medium-sized enterprises, announcing the establishment of a new Beijing stock exchange in September 2021.⁶³

A number of Chinese brokerages have established exchange-traded funds (ETFs) aimed explicitly at investing in military-related companies, drawing investors to their stocks and reducing their cost of capital by improving their valuations. This class of ETFs has become extremely popular on Chinese domestic exchanges, with a financial publication operated by state-run news outlet *People's Daily* tracking that their total capitalization grew tenfold to \$3.7 billion (RMB 23.9 billion) in less than five months between August 2020 and January 5, 2021.⁶⁴ Generally, these funds hold between 60 and 100 securities, many of which are suppliers to Chinese defense contractors rather than subsidiaries of the major SOEs such as Aviation Industry Corporation of China (AVIC) or China Aerospace Science Industry Group Corporation (CASIC).⁶⁵ As of September 10, 2021, 23 funds with the word "military" in the fund title were registered with the China Securities Regulatory Commission.⁶⁶ At present, while foreign institutional investors generally do not trade these ETFs, strong performance companies in any given ETF are likely to draw investor attention.

Public Debt: Municipal Bonds Raise Capital to Fund Problematic Companies

Outside of equity financing, both China's defense conglomerates and more established government guidance funds have used corporate debt markets to raise capital that may advance state objectives. For instance, Guangzhou Industrial Investment Fund Management Co., Ltd., a capital management firm run by the municipal government of Guangdong, capital of wealthy southern province Guangzhou, has raised \$460 million in total through three separate offshore bond issues to foreign investors during 2016 and 2017 in

*Semiconductor Manufacturing International Corporation is also listed on the Hong Kong Stock Exchange.

†As of September 30, 2021, the STAR Market comprised 341 firms, including firms involved in producing dual-use technology. Shenzhen Intellifusion Technology Co., Ltd., a company that designs chips used for intelligent vision in security cameras and cloud-based surveillance systems, released its IPO prospectus in December 2020. The company was added to the U.S. Department of Commerce's Entity List in June 2020 for its involvement in human rights violations in China's Xinjiang Uyghur Autonomous Region. Shanghai Stock Exchange, "Stock Data Overview" (股票数据总貌), September 30, 2021. Translation; Shenzhen IntelliFusion Technology Co., Ltd., "Initial Public Offering on the STAR Market IPO Prospectus (Declaration Form)" (首次公开发行股票并在科创板上市招股说明书(申报稿)), December 31, 2020, 1–23. Translation. https://pdf.dcfu.com/pdf/H2_AN202012081437957528_1.pdf; U.S. Department of Commerce Bureau of Industry and Security, "Addition of Certain Entities to the Entity List; Revision of Existing Entries of the Entity List," *Federal Register* 85:109 (June 5, 2020), 34503–34508.

Hong Kong.⁶⁷ It also issues debt on China's domestic markets.⁶⁸ Among other holdings, Guangzhou Industrial Investment Fund is an investor in CloudWalk, a Chinese AI company added to the Entity List in June 2020 for its involvement in human rights violations in China's Xinjiang Uyghur Autonomous Region.⁶⁹

Hikvision's Rise from a Research Institute to Global Prominence

Hangzhou Hikvision Digital Technology is a state-owned manufacturer and supplier of video surveillance equipment. The company was founded in 2001 by the 52nd Research Institute at the China Electronics Technology Group Corporation (CETC), one of dozens of CETC research institutes and subsidiaries.⁷⁰ Chinese government contracts totaling more than \$1 billion helped propel the company's rise in the intervening years, with Hikvision providing video recording, alert notification, and data storage services for the 2008 Beijing Olympics and deploying video surveillance equipment for a smart city project in Chongqing in 2011.⁷¹ Hikvision listed on the Small and Medium-Sized Enterprise Board* on the Shenzhen Stock Exchange in 2010, and by 2016 it was the largest surveillance equipment manufacturer globally, commanding 21.4 percent of the world's market share for closed-circuit television cameras and other surveillance equipment.⁷²

The Chinese government's careful cultivation of Hikvision and the surveillance technology market contributed to strong foreign investor interest (including U.S. investors)† in the company's shares once they were made accessible to foreign investors. Foreign ownership of the company jumped from 4 percent of common stock outstanding in April 2017, just after the launch of the Shenzhen-Hong Kong Stock Connect, to a peak of 12 percent of common stock outstanding in May 2018.⁷³ The firm's market capitalization also ballooned from \$31.2 billion in 2016 to \$50.7 billion in 2018, a 62.5 percent increase, and reached \$82.9 billion at the end of 2020.⁷⁴ Hikvision's rapid growth in value has occurred despite an uptick in public reports detailing how the firm's technologies are used to prosecute the CCP's mass surveillance and oppression of Muslim communities in Xinjiang.⁷⁵ In October 2019, Hikvision was placed on the Entity List because of its provision of surveillance technology used in repression in Xinjiang, and the U.S. Department of Defense (DOD) designated the firm along with CETC as "Communist Chinese Military Companies" in June 2020.⁷⁶ CETC, an SOE and Chinese aerospace defense conglomerate, owned 40.8 percent of Hikvision's common stock outstanding as of June 30, 2021.⁷⁷

*The Small and Medium-Sized Enterprise Board was established in 2004 on the Shenzhen Stock Exchange with the goal of building a multilayer stock market to create more listing opportunities for high-tech firms that could not meet the listing standards of the exchange but otherwise have growth potential. *China Banking News*, "Shenzhen Stock Exchange Frabs Approval for Merger of Main and SME Boards," February 7, 2021; Franklin Allen et al., "The Development of the Chinese Stock Market" in Marlene Amstad, Guofeng Sun, and Wei Xiong, eds., *The Handbook of China's Financial System*, Princeton University Press, 2020, 285–286.

†At the end of 2018, U.S. institutional investors T. Rowe Price, BlackRock, and JPMorgan were among the top 25 investors in Hikvision. S&P Capital IQ database.

Index Inclusion Automates U.S. Portfolio Investment in Chinese Companies

The Chinese government's strategic financial opening since 2017 has more tightly integrated Chinese securities with global financial markets. This is most visible in the growing inclusion of Chinese securities in an array of global investment indices, against which an estimated \$7.8 trillion in assets under management are currently benchmarked.⁷⁸ To date, five major indices* have announced or begun implementing inclusions of Chinese stocks and government bonds† into their indices.‡ These inclusions are projected to lead to an estimated \$385 to \$450 billion in new foreign portfolio investment inflows into China by the end of 2022.⁷⁹

The scale of asset allocation to China's domestic equities markets is significant, even if foreign shareholding accounts for a fraction of the total outstanding shares of any one Chinese firm. For example, as of September 30, 2021, the MSCI Emerging Markets Index and FTSE Russell Emerging Index feature 34 percent and 37.2 percent asset allocation toward Chinese equities, respectively, more than any other country.⁸⁰ Because many ETFs and other passively managed index funds are often designed to closely mirror these indices, Chinese companies have become a significant component of investors' emerging markets investment portfolios. Index providers have thus played a pivotal role in guiding foreign portfolio investment toward Chinese companies. The rising inclusion of Chinese companies' equity shares in these investment indices has also effectively lowered these companies' cost of capital.⁸¹ This is because passively managed index funds draw capital from a wide range of sources, including institutional investors, mutual funds, and pension funds, expanding the pools of capital available to Chinese companies.⁸²

*The five indices are the Bloomberg Barclays Global Aggregate Index, FTSE Russell World Government Bond Index, JPMorgan EM Global Diversified Index, MSCI Emerging Markets Index, and FTSE Russell Global Equity Index.

†The Chinese government bond universe includes central Chinese government bonds issued by China's Ministry of Finance, policy bank bonds issued by China's state-owned policy banks, and local government bonds. To date, three major government bond indices (Bloomberg Barclays Global Aggregate Index, JPMorgan Government Bond Index-Emerging Markets, and FTSE Russell World Government Bond Index) have announced or begun implementing inclusions of Chinese government bonds. The JPMorgan Government Bond Index-Emerging Markets includes only central Chinese government bonds issued by the Ministry of Finance, while the Bloomberg Barclays Global Aggregate Index includes these bonds as well as policy bank bonds. FTSE Russell plans to begin phased inclusion of central Chinese government bonds in its FTSE Russell World Government Bond Index in November 2021 over a 36-month period. State Street, "SPDR Bloomberg Barclays Global Aggregate Bond UCITS ETF (Dist)," September 23, 2021; BlackRock, "iShares J.P. Morgan EM Local Govt Bond UCITS ETF," September 22, 2021; FTSE Russell, "UPDATE: Reminder: Upcoming Inclusion of China in the FTSE World Government Bond Index," August 19, 2021.

‡For more on investment indices' inclusion of Chinese securities, see U.S.-China Economic and Security Review Commission, Chapter 2, Section 2, "Vulnerabilities in China's Financial System and Risks for the United States," *2020 Annual Report to Congress*, December 2020, 264–267.

The Power of Investment Indices in Steering Global Capital Flows

The rising inclusion of Chinese securities in global investment indices coincides with a shift in the asset management industry from active to passive investment strategies.* In an active investment strategy, individual investors or portfolio managers buy or sell individual stocks.⁸³ Such an investment approach requires individual investors or the managers overseeing their portfolios to closely follow market activity and particulars of specific companies. In contrast, in a passive investment strategy, investors invest in an index fund, usually an ETF, whose composition of stocks and bonds reflects a market benchmark, such as the S&P 500.⁸⁴ According to Johannes Petry, lecturer at the Freie Universität Berlin, because passively managed index funds often simply replicate investment indices, index providers' inclusion decisions lead to "quasi-automatic asset reallocations."⁸⁵

Since the global financial crisis, investors have allocated some \$4.6 trillion in assets to ETFs.⁸⁶ According to PricewaterhouseCoopers, about \$30.7 trillion is invested globally in these passively managed funds that follow indices, and the firm forecasts passive assets could reach \$40.4 trillion by the end of 2025, accounting for 29 percent of the industry's total assets.⁸⁷ As the industry grows, the index providers who design the indices against which assets are benchmarked exercise growing authority over capital flows.⁸⁸ According to Perth Tolle, founder of investment index provider Life + Liberty Indexes, one implication is that index providers strongly influence global portfolio investment flows, providing benchmarks that asset allocators for global financial institutions are mandated to track.⁸⁹ Index providers' assessment of what constitutes appropriate corporate governance at the firm level and a favorable investment environment at the country level impacts firms' and countries' ability to attract foreign capital.⁹⁰ This influence extends not only to passively managed funds but to actively managed funds as well. By directing more and more passive investment via their inclusion decisions, index providers exert a "pull effect" on actively managed funds that must increasingly invest in companies included in the index in an attempt to match or outperform it.⁹¹ Legal experts have voiced concern about the light regulation of index providers,† arguing they effectively

*According to one study by the Federal Reserve Bank of Boston, as of March 2020, passively managed funds accounted for 41 percent of combined U.S. mutual fund and exchange-traded fund assets under management, up from 14 percent in 2005. Kenchukwu E. Anadu et al., "The Shift from Active to Passive Investing: Risks to Financial Stability?" *Federal Reserve Bank of Boston*, May 15, 2020, 2–3.

†Though the International Organization of Securities Commissions, an international body that convenes global securities regulators to develop and implement standards for securities regulation, published guidelines in 2013 on appropriate disclosure of investment index construction methodologies, these guidelines are not legally binding. In 2016, the European Parliament and Council of the EU legislated the EU Benchmark Regulation. It regulates indices used as benchmarks in financial instruments and financial contracts or to measure the performance of an investment fund. Among other things, the regulation requires index providers operating in the EU to register with the European Securities and Markets Authority (ESMA) and publish detailed information on index construction and constituent selection via a "benchmark statement." Compliance among U.S. index providers is mixed. For example, while S&P Dow Jones is registered with ESMA, MSCI is not. This is because the latter previously complied with the EU Benchmark

The Power of Investment Indices in Steering Global Capital Flows—*Continued*

operate as specialized asset managers or investment advisers rather than mere publishers of market data.⁹²

Index providers' methodologies for inclusion exclusively focus on a given equity share's value and liquidity without consideration for any risk to national security.* This narrow focus on business fundamentals, together with the passive investment management style associated with index funds, raises the risk that investors may unintentionally provide material support to Chinese companies that engage in practices contrary to U.S. national economic and security interests. In some cases, U.S. and other foreign capital can flow toward companies otherwise deemed a national security threat by the U.S. government and subject to trade restrictions. For example, on October 9, 2019, BIS placed iFLYTEK and Dahua Technology, among several other Chinese companies, on its Entity List† due to their supplying surveillance technology deployed in Beijing's repressive campaign of mass detention and surveillance of Muslim minority groups.⁹³ As of September 1, 2021, these two companies are still included in the MSCI China index.⁹⁴

Expertise and Knowledge Flow alongside VC Investment

A challenge for U.S. policymakers is that VC investment is not subject to the same market disclosures as publicly traded investment holdings. Because of these limited disclosure requirements, VC investment data are often self-reported and subject to major biases.⁹⁵ For example, privacy, competition concerns, or other considerations may lead investors party to a VC transaction to not report fundraising details.⁹⁶ As a result of these dynamics, it is difficult to track comprehensively the behaviors of U.S. VC and private equity investors in China.⁹⁷ Researchers examining U.S. VC and private equity investment in China need to rely on private market data aggregated by commercial data providers such as Preqin, Pitchbook,

Regulation via its registration with the UK Benchmarks Register, and it now has until December 2023 to register with ESMA under a transition period in the wake of Brexit. Despite these variations in registration, both S&P Dow Jones and MSCI, among other major index providers, publish benchmark statements providing information on the construction of their indices. The U.S. Securities and Exchange Commission regulates neither the supervision nor the content of stock market indices. MSCI, "Index Regulation," 2021; Johannes Petry, Jan Fichtner, and Eelke Heemskerck, "Steering Capital: The Growing Private Authority of Index Providers in the Age of Passive Asset Management," *Review of International Political Economy* (December 10, 2019): 19; Kelly Sporn, "Guide to the EU Benchmark Regulation," *Linklaters*, February 2017; International Organization of Securities Commissions, "Principles for Financial Benchmarks," July 2013; U.S. Securities and Exchange Commission, *Market Indices*, updated October 15, 2012.

*For example, in January 2019, 141 European institutional investors submitted a letter to major index providers requesting they exclude weapons manufacturers from their indices. Index providers responded that their indices, in being constructed on a market capitalization basis, aim to offer the broadest choice to investors, and that investors can choose from alternative indices that do not include securities issued by the companies of concern. Johannes Petry, written testimony for U.S.-China Economic and Security Review Commission, *Hearing on U.S. Investment in China's Capital Markets and Military-Industrial Complex*, March 19, 2021, 8; Susanna Rust, "Index Providers Respond to Controversial Weapons Campaign," *Investors & Pensions Europe*, February 14, 2019; Swiss Sustainable Finance, "Open Letter to Index Providers," January 31, 2019.

†The Entity List (Supplement No. 4 to part 744) identifies entities reasonably believed to be involved, or that pose a significant risk of being or becoming involved, in activities contrary to the national security or foreign policy interests of the United States.

or CB Insights.⁹⁸ Because VC deal announcements can vary in the quantity and quality of information reported, however, even datasets collected by such firms can lack comprehensiveness.⁹⁹ Uneven visibility into the structure of U.S. VC transactions in China compounds the risk that U.S. VC investors' knowledge and expertise could be leveraged to advance China's technological development and military modernization.

These risks of knowledge transfer extend to other private market investment strategies, such as private equity. In testimony before the Commission, Adam Lysenko of Strider Technologies noted foreign private equity investors often leverage their in-house technical expertise to offer support to portfolio companies in China, enabling them to accelerate product or technology development or commercialization.¹⁰⁰ Such investors are often drawn to certain technology segments or sectors that benefit from Chinese government procurement and may contribute to the Chinese government's efforts to utilize market mechanisms in cultivating technology startups' development.¹⁰¹ For example, by developing a sweeping end market for surveillance technology used to monitor Chinese citizens, the Chinese government has created attractive revenue opportunities for technology startups involved in the development of facial recognition software.¹⁰² An array of Chinese facial recognition firms, including Megvii and Hong Kong-headquartered SenseTime, have benefited from private capital provided by foreign investors keen to capitalize on Chinese government support for the market.¹⁰³ A lack of public visibility into private transactions by U.S. VC and private equity investors complicates oversight challenges for U.S. regulators.

U.S. Responses to National Security Threats from Chinese Companies

Since 2020, the U.S. government has bolstered defenses against the threats posed by problematic Chinese companies. Through an array of executive actions,* the Trump Administration took preliminary steps to curtail the flow of U.S. financing to Chinese companies that threaten U.S. policy interests. These steps culminated in a November 2020 EO banning U.S. investment in Chinese companies designated by DOD as "Communist Chinese Military Companies" (CCMCs). The Biden Administration built on these restrictions in 2021, modifying and expanding their scope in a signal of the U.S. government's hardened focus on defending both U.S. national security and democratic values. The implementation of these restrictions continues to evolve, with challenges in determining Chinese companies' proximity to the state, inconsistency with U.S. export controls, and narrow focus on public capital markets, highlighting the multifaceted threats Chinese military companies pose to U.S. interests.

*For a comprehensive review of the Trump Administration's executive actions on U.S.-China policy, see U.S.-China Economic and Security Review Commission, *Timeline of Executive Actions on China (2017-2021)*, April 1, 2021.

U.S. Deploys Investment Restrictions to Bolster Defenses against Chinese Companies

On November 12, 2020, then President Donald Trump issued an EO on “Addressing the Threat from Securities Investments That Finance Communist Chinese Military Companies” (EO 13959).^{*104} In the order, then President Trump cited the national security threat posed by China’s military-civil fusion strategy and the risk that U.S. investors are funneling capital toward the modernization of China’s military as key motivating factors for its implementation.¹⁰⁵ The order prohibited “any transaction in publicly traded securities” issued by 31 companies deemed by DOD at the time to be CCMCs.¹⁰⁶ On December 28, 2020, the U.S. Department of the Treasury Office of Foreign Assets Control (OFAC) clarified the scope of the order and announced it would publicly list the subsidiaries of CCMCs, to be defined as companies either 50 percent or more owned by one or more CCMCs or “determined to be controlled by one or more” CCMCs.¹⁰⁷ In January 2021, then President Trump amended EO 13959 to prohibit possession of CCMC securities, while total DOD designations of CCMCs reached 44 distinct companies.¹⁰⁸

On June 3, 2021, President Biden released a new EO building on EO 13959.¹⁰⁹ President Biden’s EO 14032 expanded the number of CCMCs subject to investment restrictions to 59 companies, with 18 prior CCMCs removed and 33 new companies added.¹¹⁰ EO 14032 also renamed CCMCs as Chinese Military-Industrial Complex (CMIC) companies and transferred authority to designate which companies face investment restrictions from DOD to the Treasury Department.¹¹¹ Investment restrictions took effect on August 2, 2021.¹¹²

While largely a continuation of the previous order, EO 14032 redefined the scope of investment restrictions on Chinese companies to focus on defense contractors, surveillance technology companies, and companies with corporate affiliates in either sector or ties to other firms listed in the order.¹¹³ Notably, the evolved restrictions target not just Chinese defense firms that pose an overt threat to U.S. national security but also those firms that “undermine the... democratic values of the United States and [its] allies.”¹¹⁴ The reframed scope therefore rationalizes previously designated Chinese military companies such as Huawei and Hikvision as subject to investment restrictions not only if they have ties to China’s military but also if they facilitate repression and human rights abuses.[†] (For more

^{*}The issuance of the order marked the culmination of a gradual tightening of U.S. government scrutiny of Chinese securities in 2020, with the Trump Administration taking preliminary steps to close regulatory loopholes and curtail the flow of financing to Chinese companies whose operations threaten U.S. policy interests. On May 12, 2020, the Trump Administration directed the Federal Retirement Thrift Investment Board to “immediately halt” steps to benchmark the Thrift Savings Program’s I Fund to the MSCI All Country World Index. Separately, the Presidential Working Group on Financial Markets issued a report in July 2020 detailing the risks posed by U.S.-listed Chinese companies’ shoddy accounting practices and recommending the U.S. Securities and Exchange Commission seek enhanced risk disclosures and due diligence on the part of registered investment funds whose holdings include Chinese securities. For more, see U.S.-China Economic and Security Review Commission, Chapter 2, Section 2, “Vulnerabilities in China’s Financial System and Risks for the United States,” in *2020 Annual Report to Congress*, December 2020, 271–275.

[†]According to President Biden’s notification to Congress of the order, “The use of Chinese surveillance technology outside [China] and the development or use of Chinese surveillance technology to facilitate repression or serious human rights abuse, constitute unusual and extraordinary threats... to the national security, foreign policy, and economy of the United States.” White House,

background on the U.S. government's evolving implementation of investment restrictions, market responses, and some Chinese companies' efforts to challenge their designations as Chinese military companies, see Addendum II: Background on U.S. Outbound Investment Restrictions on Chinese Companies.)

Statutory Authorities Underpinning U.S. Outbound Portfolio Investment Restrictions

The designation of CCMCs was first mandated by Section 1237 of the 1999 National Defense Authorization Act (NDAA), which authorizes the president to use powers granted by the International Emergency Economic Powers Act (IEEPA) against them.¹¹⁵ In November 2020, then President Trump declared a national emergency under IEEPA with reference to Section 1237 in issuing EO 13959 and formalizing investment restrictions targeting CCMCs.¹¹⁶ Section 1237 initially defined CCMCs as companies identified in two Defense Intelligence Agency publications (VP-1920-271-90, dated September 1990, and PC-1921-57-95, dated October 1995) and any other entity “owned or controlled by the [People’s Liberation Army] (PLA) [including the intelligence services] and... engaged in providing commercial services, manufacturing, producing, or exporting.”¹¹⁷ This definition has evolved in subsequent NDAs. The 2005 NDAA adds that entities are considered CCMCs if they are “affiliated with” the PLA or are owned by, controlled by, or affiliated with “a ministry of the government of the People’s Republic of China or that is owned or controlled by an entity affiliated with the defense industrial base of the People’s Republic of China.”¹¹⁸ The 2021 NDAA further expanded the definition to companies “directly or indirectly owned, or ... acting as an agent on the behalf of” the PLA or other organizations “subordinate to the Central Military Commission of the Chinese Communist Party” and targeted any company “identified as a military-civil fusion contributor to the Chinese defense industrial base.”¹¹⁹

Investment restrictions facilitated via then President Trump’s EO 13959 and President Biden’s EO 14032 are implemented through the invocation of a national emergency under IEEPA. Such an invocation is, by definition, temporary. This contrasts with other U.S. policy tools to defend against the national security threats posed by problematic companies. Specifically, trade restrictions imposed on Chinese companies via their placement on the Department of Commerce’s Entity List source their statutory authority from the Export Administration Regulations, permanently codified into law by the Export Control Reform Act of 2018.*

*Letter to the Speaker of the House of Representatives and the President of the Senate on Addressing the Threat from Securities Investments That Finance Certain Companies of the People’s Republic of China,” June 3, 2021.

*The Export Administration Regulations (EAR) initially derived statutory authority from the Export Administration Act of 1979, but under the Cold War-era legislation the regulations were only ever temporary, and the statutory authority underpinning the EAR lapsed permanently in 2001. Prior to the passage of ECRA in August 2018, the EAR continued to derive authority from EOs invoking IEEPA. For more on the Export Control Reform Act of 2018, see Emma Rafaelof,

The 2015 to 2016 surge in Chinese investment in the United States, the expansion of “military-civil fusion” policies, and resulting challenges to U.S. interests and expanding state control of the Chinese economy generally were primary reasons why Congress, on a bipartisan basis, passed updates to relevant statutes through the Foreign Investment Risk Review Modernization Act (FIRRMA) and the Export Control Reform Act (ECRA). These became law in 2018. The updates to these statutes were intended to ensure appropriate legal authorities to address new threats to national security not addressed by the then-existing laws.

In passing this legislation, as one of the key staffers who drafted the FIRRMA legislation David Hanke testified to the Commission in its September 2021 hearing, Congress was seeking to achieve a number of goals:

First, the national security landscape had evolved, and CFI-US's (the Committee on Foreign Investment in the United States) legacy authorities were outdated and inadequate. China had 'weaponized' investment and was using it to meet strategic government objectives... Second, in the modern national security landscape, technologies beyond the Commerce Control List and the U.S. Munitions List were becoming increasingly important to our long-term national security.¹²⁰

Rather than legislate a list of technologies that would guide certain aspects of government activities relating to export controls and inform implementation of CFIUS, and could become outdated within a few years, Congress delegated to the Secretary of Commerce the authority to identify emerging and foundational technologies. In the three years since, there has been no unilateral U.S. action on emerging technologies and almost no action on foundational technologies.*

At the Commission’s September 2021 hearing, Jeremy Pelter, Acting Undersecretary for Industry and Security, defended the Department’s approach to issuing the emerging and foundational technologies lists. He indicated that engaging allies to agree on multilateral definitions was the route being prioritized. In defending such action, Undersecretary Pelter explained that:

If BIS imposes unilateral controls targeting specific countries or entities and suppliers exist in other countries that can backfill orders to those targets with comparable items, then we will not achieve our national security or foreign policy objectives. The target of our unilateral action will still

¹²⁰“Unfinished Business: Export Control and Foreign Investment Reforms,” *U.S.-China Economic and Security Review Commission*, June 1, 2021.

*A staff-authored study prepared for the Commission indicated that to date, the Department of Commerce has “failed to carry out its responsibilities.” The study noted that a “lack of clarity from the Department of Commerce on what constitutes emerging and foundational technologies impedes the ability of the Committee on Foreign Investment in the United States (CFIUS) to fulfill its responsibilities. The years-long delay in developing these definitions may exacerbate national security risks. By law, a list of technologies defined as emerging and foundational triggers mandatory filings on certain transactions, drawing CFIUS scrutiny to higher-risk transactions. In the absence of the complete list, CFIUS continues to operate without this additional guidance and may be constrained in its ability to screen transactions.” In addition, “[b]y law, the Department of Commerce would refer to the list of emerging and foundational technologies to determine the necessity of additional export controls on a given technology.” See Emma Rafaelof, “Unfinished Business: Export Control and Foreign Investment Reforms,” *U.S.-China Economic and Security Review Commission*, June 1, 2021.

*receive the items of concern. Also, this scenario harms our technological innovation and leadership—if U.S. companies lose sales to their competitors over time, then the loss of revenue deprives U.S. companies of the substantial revenue that funds the research and development needed to stay at the leading edge. Thus, potential unilateral controls must be carefully analyzed to assess their effectiveness on the target and impact on important U.S. industry sectors, both in the short term and long term.*¹²¹

In his prepared testimony, Mr. Hanke referred to a Congressional Research Service report on the failure of the Department of Commerce to issue such lists in abiding by Congressional intent. The Congressional Research Service report stated:

*The lack of new technology identification arguably impedes not only ECRA implementation but also congressional reforms that expanded the authority of [CFIUS] to review Chinese and other foreign investments in critical and emerging technologies below a traditional threshold of foreign control. CFIUS can only act against non-controlling foreign investments if the technologies involved in the transaction are controlled.*¹²²

As a consequence, Mr. Hanke believes that CFIUS has “likely been unable to review a single non-controlling, nonpassive investment involving emerging or foundational technologies controlled under Section 1758.”* In testimony prepared for the Commission’s hearing, Giovanna Cinelli, a fellow at the National Security Institute at George Mason University Antonin Scalia Law School, also noted the “relatively slow pace of identifying these technologies” and the limits it places on CFIUS reviews and potential impact on national security interests. Ms. Cinnelli added, however, that nothing currently prevents CFIUS from determining a non-notified transaction † is within its jurisdiction after the fact.¹²³ This means that should CFIUS decide a previously made transaction unreported to CFIUS threatens U.S. national security by enabling a foreign party access to U.S. technology, CFIUS maintains the ability to review that transaction retroactively.

*Section 1758 “requires the Department of Commerce to establish appropriate controls on the export, reexport, or transfer (in country) of emerging and foundational technologies. Under ECRA, emerging and foundational technologies are those technologies that are essential to the national security of the United States and are not critical technologies [previously] described.” U.S. Department of Commerce Bureau of Industry and Security, “Identification and Review of Controls for Certain Foundational Technologies,” *Federal Register*, 85:167 (August 27, 2020).

†A non-notified transaction is a deal that has not been submitted to CFIUS for review and approval. CFIUS has long had the authority to review such transactions retroactively, but resources to do so were historically limited. FIRRMA strengthened CFIUS’ ability to conduct such reviews and pursue relevant enforcement actions by increasing the hiring of personnel and formalizing a process to identify non-notified transactions through the establishment of the Office of Investment Security, Monitoring, and Enforcement at the U.S. Department of the Treasury. This Office monitors transactions unreported to CFIUS, enforces CFIUS’ mandatory declaration requirements, oversees compliance with CFIUS regulations, and administers and enforces civil monetary penalties for violations. Olga Torres and Maria Alonso, “CFIUS Heightens Scrutiny of Non-Notified Transactions,” *Torres Law*, July 3, 2021; Farhad Jalinou et al., “CFIUS Outreach on Non-Notified Transaction: What it Means, What to Expect, and How to Successfully Navigate the Process,” *White & Case*, June 1, 2021.

Implementation Challenges and Limitations of Investment Restrictions

U.S. policymakers lack a comprehensive and efficient methodology to identify companies involved in China's technological development and military modernization drive. The proliferation of varying U.S. government designations of risky Chinese companies, including the Commerce Department's Entity List, DOD's list of CCMCs, and Treasury's Non-Specially Designated Nationals* Chinese Military-Industrial Complex Companies List, underscores the complexity of identifying, monitoring, and assessing Chinese companies of concern. Emily Weinstein, research analyst at the Center for Strategic and Emerging Technology, added that the ongoing blurring between defense and civilian sectors further complicates efforts to arrive at "a concise yet actionable definition" of companies of concern.¹²⁴ Nazak Nikakhtar, former U.S. assistant secretary for industry and analysis, contended that the evidence required for CCMC designation prevents the United States from keeping pace with the threats posed by CCMCs.¹²⁵

Investment restrictions as designed may not meaningfully alter capital flows toward China's corporate ecosystem. While investment restrictions have resulted in investment index providers deleting select securities from their indices, none of the traded subsidiaries of the companies designated as CCMCs by DOD are among the top ten constituents by market capitalization of such indices.¹²⁶ For instance, Alibaba Group and Tencent Holdings, neither of which are Chinese military companies, are among the most heavily weighted Chinese companies in three MSCI indices.[†]¹²⁷ Chinese military companies' loss of capital from unilateral U.S. divestment can also be readily restored by other global investors, suggesting multilateral implementation could heighten their effectiveness.¹²⁸ For example, in early January, Asian and European investors purchased discounted equity shares issued by CMIC companies such as China Mobile, China National Offshore Oil Corporation, and Semiconductor Manufacturing International Corporation, taking advantage of a sell-down in these companies.¹²⁹

Investment and trade restrictions are neither synchronized nor comprehensive. Investment restrictions as prescribed by EOs 13959 and 14032 do not target all companies the U.S. government has already deemed a threat to national security via placement on the Entity List. Such companies are subject to U.S. trade restrictions. For example, Anhui-Sun Create Electronics Company, a designer and manufacturer of radar and security systems, was placed on the Entity List in August 2018 due to its procurement of commodities and technologies for military end-use in China.¹³⁰ While EO 14032 bars investment in the company's parent, CETC, U.S. investors can otherwise continue to purchase shares of Anhui-Sun Create Electronics

*As part of its sanctions enforcement efforts, OFAC publishes lists of individuals and companies owned, controlled, or acting for or on behalf of targeted countries. It also lists individuals, groups, and entities such as terrorists and narcotics traffickers designated under programs that are not country specific. Collectively, these entities are called "Specially Designated Nationals" or "SDNs." In addition to SDN lists, OFAC maintains other sanctions lists, including the Non-SDN Chinese Military-Industrial Complex Companies List, U.S. Department of the Treasury, *Specially Designated Nationals and Blocked Persons List (SDN) Human Readable Lists*, June 10, 2021.

†These include MSCI China All Shares Index, MSCI All Country World Ex-U.S. Index, and MSCI Emerging Markets Index.

Company despite U.S. trade with the firm being restricted.* In other cases, investment restrictions are not matched with trade restrictions. For example, Inspur, a cloud computing and big data services provider, is designated a CMIC company but is not subject to U.S. export controls.¹³¹ Such mismatches between U.S. investment and trade restrictions reduce the strength with which the United States can defend against Chinese companies that threaten the national interest. Other companies recognized as military companies in China's own financial markets are not subject to any U.S. sanctions yet continue to benefit from U.S. investment. For example, shares of Wuhan Guide Infrared Company, an infrared thermal imaging and night vision systems developer, are included alongside those of several CMIC and Entity List companies in the Fullgoal Leading Military Enterprises Fund, a defense sector-focused Chinese ETF, suggesting its business activities may be of concern to U.S. national security.¹³²

Investment restrictions exclusively target public capital markets but omit VC and private equity. Current investment restrictions only target publicly traded securities investment, though private-market investments such as VC and private equity could pose even higher risk. Private sources such as PitchBook, Preqin, and CB Insights can provide some detail at a cost, but private market transactions are otherwise not subject to securities disclosure requirements that would enable government oversight.¹³³ Chinese technology startups, increasingly enlisted in the Chinese government's military modernization drive, benefit not just from private U.S. capital but also from the technical and financial expertise, business networks, and other resources U.S. private market investors provide.¹³⁴ These resources may prove to be of greater value to Chinese technology firms and defense conglomerates than capital they can already secure from the Chinese government and domestic market players.

Implications for the United States

The Chinese government's evolving priorities for financial market development elevate the risk that U.S. investors are funding Chinese defense and surveillance technology firms. Whereas China's economic planners once looked to stock exchanges to bail out China's heavily indebted state sector, today they see them as sources of capital to fund technological development and military modernization. This strategic use of financial markets therefore raises the risk that U.S. capital may be contributing to improvements in Chinese military capabilities, surveillance technologies, human rights abuses, and other activities contrary to U.S. national security, economic interests, and democratic values. Detecting and responding to these risks poses unique but not insurmountable difficulties for U.S. policymakers because of the blurring of boundaries between state and nonstate firms and the civilian and defense sectors.

Even as the U.S. government is increasingly challenging China's economic practices, the U.S. financial sector is becoming more invested in China's financial markets. Chinese companies operate in

*As of August 31, 2021, foreign institutional investors still hold positions in the company, though their ownership is miniscule (0.118 percent of the company's outstanding shares). S&P Capital IQ database.

dynamic, high-growth sectors, while Chinese government and corporate debt offer higher yields than what is available elsewhere. The gravitational pull China's financial markets increasingly exert on the global investment community, together with investment indices' automated investment toward Chinese securities, outpace U.S. policy efforts to defend against the threats posed by investing in some Chinese companies. As China's influence in the global economy increases and Chinese stocks and bonds become more integral components of investors' portfolios, U.S. policy efforts to manage the risks of financial integration are becoming more challenging.

Chinese firms' potential government and military ties challenge conventional policy frameworks for restricting trade and investment with problematic partners. U.S. trade and investment screening for military end use, human rights abuses, and other activities often focuses on individual entities or transactions, an approach that is ill-equipped to respond to China's military-civil fusion program. This is because military-civil fusion transforms China's military-industrial complex into a commercial ecosystem in which the aggregate efforts of firms, funds, and research institutes may pose risks not evident at the level of individual entities or transactions.

The threat of commercial advances aiding military capabilities is exacerbated by the inherent dual-use nature of many emerging and foundational technologies. In testimony before the Commission, Undersecretary Pelter identified several actions that the Department had taken to garner public sector input on the technologies to be included. However, three years after the passage of ECRA and FIRMA, the emerging technologies that have been newly controlled have all been done in accordance with the existing multilateral process, not in response to the stronger Congressional guidance. Additionally, no foundational technologies have been controlled at all. This constitutes a failure to guide implementation of those statutes such that the private sector understands what transactions and sales involve national security. As a result of this delay, undesirable acquisitions of U.S. assets may have avoided CFIUS reviews and technologies that enhance China's military or surveillance capabilities may have been transferred.

Separately, previously unidentified and multifaceted risks arising from U.S.-China financial integration present novel challenges to U.S. policymakers. There is no template for outbound investment restrictions, and those that narrowly target only the most overtly threatening Chinese companies may miss the broader ecosystem of actors participating in China's military-industrial complex. Structural features of global financial markets also create multiple pathways for U.S. capital to flow toward Chinese companies of concern. Against this backdrop, the U.S. government's initial attempts to craft outbound investment restrictions reflect only a preliminary step toward safeguarding U.S. national security. First, restrictions on U.S. capital flows to certain Chinese companies, as currently advanced, are facilitated by executive authority that invokes a temporary emergency response. This contrasts with established U.S. policy tools such as the CFIUS or export controls that are predicated on permanent legal authorities. Second, these outbound portfolio investment restrictions do not synchronize with other U.S. policy

efforts to defend against the threats some Chinese companies pose to U.S. national security. Some companies placed on the Entity List, for example, continue to benefit from access to U.S. capital. Third, in targeting only publicly traded securities, outbound investment restrictions leave unaddressed private flows of capital, business acumen, and technical expertise to the next generation of Chinese startups developing potentially dual-use technologies. This shortcoming is compounded by a lack of U.S. visibility into such private market transactions.

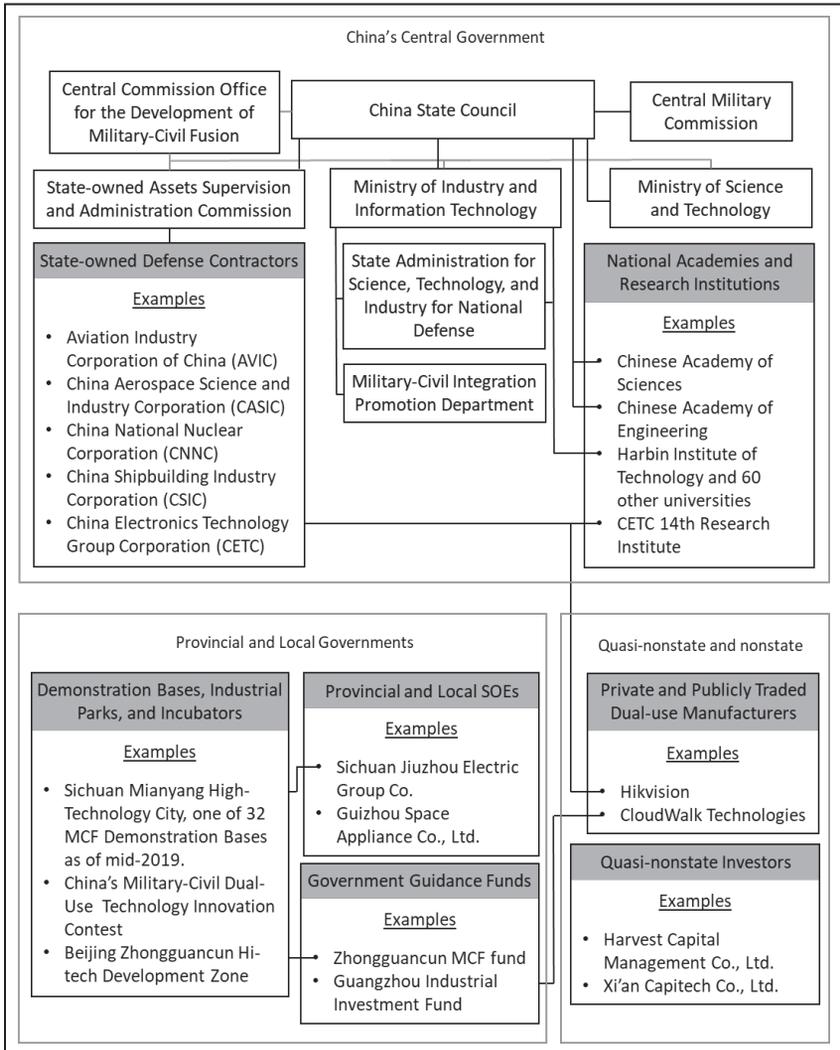
Addendum I: Key Actors in China's Military-Industrial Ecosystem

The various actors within China's military-industrial ecosystem can be grouped into a few distinct categories, detailed below and presented in Figure 3.

Central Government Agencies

Numerous government agencies are charged with implementing different facets of military-civil fusion, but their roles can similarly be grouped into three overlapping and complementary functions. First, the bulk of China's defense sector remains composed of state-owned defense conglomerates, and a number of government agencies and military offices exist to oversee fulfillment of PLA procurement needs. Second, in implementing military-civil fusion, China's government has redoubled efforts to build a network of research institutions that support technological advances in China's military capabilities, including through licitly and illicitly acquiring foreign technology as well as identifying and encouraging military applications of civilian research. Third, several central government agencies with primarily civilian mandates, such as China's Ministry of Commerce, are working to create a commercial environment that facilitates—and in some cases legally requires—civilian involvement in defense production and mobilization. Each of these functions is described further below.

- *Administering traditional defense procurement.* A network of agencies and offices interface between the PLA and Chinese defense contractors to establish procurement needs and oversee the entire lifecycle of military equipment. This includes defining procurement requirements and R&D or, as described below, identifying foreign sources for acquisition, manufacturing, deployment, maintenance, and other support. Civilian participation in most of these areas remains relatively minimal so far, as much of the information required to perform these functions according to military specifications is classified, and bureaucratic inertia within China's defense sector prevents regulatory changes to allow greater information sharing. R&D is a key exception, however, with civilian firms introducing cutting-edge knowhow into defense research.¹³⁵ A status update on military-civil fusion from *China High-Tech Industry Herald* similarly found civilian enterprises are contributing valuable knowhow to materials and parts production but are often barred from systems production and major systems integration.¹³⁶
- *Fostering military R&D and technological advances.* Led chiefly by the Ministry of Industry and Information Technology and its subordinate agencies, China's government oversees a vast and decentralized network of government research institutes with a mandate to assist in advancing defense-related R&D.¹³⁷ This network also includes offices that identify foreign technologies for acquisition and recruit foreign talent to help China close gaps in capabilities between itself and other countries, principally under China's Ministry of Science and Technology.¹³⁸ This is a particularly important facet of China's government-led R&D apparatus: as Zachary Arnold, research fellow at Georgetown's

Figure 3: China's Military-Industrial Ecosystem

Source: Various.¹³⁹

Center for Security and Emerging Technology, observed in his testimony before the Commission, China's government has a far clearer understanding of U.S. technological capabilities than vice versa due to the significant resources it expends on identifying technologies for acquisition.¹⁴⁰ In execution, the external face of these policies often makes them appear purely commercial. China's Ministry of Commerce, for instance, administers a catalogue of "encouraged foreign imports," and the Chinese government more broadly facilitates ostensibly civilian outbound investment to acquire technological capabilities, such as a multi-billion-dollar acquisition spree of U.S. and European en-

gines, materials, and avionics by aerospace conglomerate AVIC in the 2010s.¹⁴¹

- *Creating a commercial environment that facilitates civilian participation in defense production and mobilization.* Agencies with a primarily civilian mandate, such as the Ministry of Commerce, also play a pivotal role in financing nonstate firms' participation in military-civil fusion projects and coordinating between the civilian and defense sectors.
 - Foremost, a number of agencies, particularly the Ministry of Industry and Information Technology and China's state planning agency, the National Development and Reform Commission, offer funding directly to nonstate firms through subsidies or by investing through government guidance funds. These agencies also transfer funds to local governments to implement their own military-civil fusion initiatives and develop criteria for selecting firms and projects to participate in these initiatives.¹⁴² China's Ministry of Finance, its subordinate State Administration of Taxation, and local finance and taxation bureaus also work to establish favorable fiscal policies to implement military-civil fusion, for instance by offering tax breaks to firms that establish production within specially designated "demonstration bases."¹⁴³
 - Agencies such as the Standards Administration of China and State Administration for Science, Technology and Industry for National Defense (SASTIND) are involved in improving the compatibility between commercial and defense production, for instance by aligning military and civilian technical standards.
 - Lastly, China's legislature has drafted and passed laws to provide legal underpinning for military-civil fusion, such as the 2017 National Defense Transportation Law. The law aims to facilitate civilian sector support for China's military logistics, requiring road, railway, port, and airport construction to comply with defense requirements and allowing the PLA to expropriate civilian transportation resources, among other provisions.¹⁴⁴

Defense Conglomerates

The core of China's defense production is undertaken by a group of central SOEs in traditional military sectors such as aerospace and aviation. Following a major overhaul of China's defense production in the late 1990s, China's defense contractors were organized around five key sectors. Business in each sector was effectively divided among two SOEs in 1999 to encourage oligopolistic competition, though in practice the firms developed monopoly specializations. Key sectors and major defense contractors therein include:

- *Aviation.* The Chinese government established AVIC in 2008 by remerging two separate conglomerates, AVIC I and AVIC II, back into a single company.¹⁴⁵ The former focused on fighter jets, bombers, and transportation aircraft, while the latter focused on helicopters, lighter aircraft, and unmanned autonomous vehicles.¹⁴⁶ At the time of the merger, the Chinese gov-

ernment also created the Commercial Aviation Corporation of China (COMAC), a state-owned company focused on commercial aircraft production, though AVIC has an outsized influence on the firm's operations.¹⁴⁷

- *Aerospace.* China Aerospace Science and Technology Corporation (CASC) is China's premier space equipment supplier, building space launch vehicles, satellites, and missiles. China Aerospace Science Industry Group Corporation (CASIC) also supplies missiles as well as electronic and other equipment.¹⁴⁸
- *Shipbuilding.* China State Shipbuilding Corporation (CSSC) constructs frigates and smaller surface warfare combatants as well as commercial ships. China Shipbuilding Industry Corporation (CSIC) constructs destroyers and commercial vessels.¹⁴⁹
- *Ordnance.* China North Industries Group Corporation (NORINCO) supplies tanks, armored vehicles, and artillery. China South Industries Group Corporation (CSGC) produces other munitions as well as automobiles and motorcycles.¹⁵⁰
- *Nuclear.* Exercising a dual civilian role, China National Nuclear Corporation (CNNC) focuses on nuclear energy development, fuel, and equipment, while China Nuclear Engineering and Construction Group Corporation (CNECC) focuses on building nuclear power plants.¹⁵¹
- *Information and electronics.* In 2002, China Electronics Technology Group Corporation (CETC) was formed as an 11th defense enterprise group, focusing on a sixth defense sector.¹⁵²

A few common features hold true for the major defense contractors. First, they are vast conglomerates that also include extensive civilian operations and unrelated businesses. This trend dates from a 1990s policy that encouraged defense contractors to retool some of their production lines toward meeting civilian demand in order to improve profitability and cater to a growing consumer class in China.¹⁵³ An important externality of this policy was that it provides defense conglomerates with a web of ostensibly civilian subsidiaries, often not obviously connected to their parent companies, through which to engage foreign partners in joint ventures and acquire foreign technology they can transfer back to their corporate parent.¹⁵⁴ Additionally, these subsidiaries have their own financing arms and vast networks of semiautonomous research institutes. These financing arms are important in providing steady streams of revenue to the corporate group, financing major acquisitions, and making strategic VC investments in technology capabilities the defense contractors aim to cultivate.¹⁵⁵ Through investment arms such as AVIC Capital, China's defense contractors have also become minority shareholders in large swaths of China's economy, giving them financial oversight of their portfolio firms' operations.¹⁵⁶

National Academies, Universities, and Research Institutes

China's vast network of research institutes contributing to defense R&D is divided into three tiers:

1. China's State Council directly oversees institutions such as the Chinese Academy of Science, which has dozens of subordinate

- institutes focusing on basic research in areas like precision mechanics or lasers.¹⁵⁷ Additionally, some scientists from the academies, often among China's most accomplished, are assigned to PLA-affiliated universities as faculty and advisors.¹⁵⁸
2. Many of China's major universities are involved in developing technology for China's military, with SASTIND supervising 61 universities throughout China, according to research from Alex Joske, an analyst at the Australian Strategic Policy Institute.¹⁵⁹ In testimony before the Commission, Ms. Weinstein outlined a pattern of defense-affiliated universities having linkages to Chinese defense contractors, such as Northwest Polytechnic University acquiring a Xi'an-based research firm in which AVIC previously held a 45 percent minority stake.¹⁶⁰
 3. China's defense conglomerates themselves have multiple dedicated research centers to support the R&D efforts of their corporate parents.¹⁶¹ As with defense-affiliated universities, these research institutes are a key vector for acquiring foreign technology for military end use. CASC, CASIC, CETC, and CSIC, for instance, all have numerous research institutes designated on the U.S. Department of Commerce's Entity List for illegally importing U.S. technology to provide to the PLA or for use in defense production.¹⁶² The defense conglomerates' research institutes have also served as technology incubators, developing early-stage startups into successful firms, then spinning them off into venture-backed or even listed companies.¹⁶³

Demonstration Bases, Industrial Parks, and Incubators

To encourage civilian firms to participate in military R&D, provincial and local governments in China have established a few templates to provide fiscal incentives and frameworks for military-civil cooperation. Chief among these are demonstration bases and industrial parks, special zones that offer perquisites to civilian organizations that meet the criteria to establish an office or plant within the zone.¹⁶⁴ For instance, Hebei Province requires firms and research institutes to be engaged in dual-use R&D projects with clear military application and commercial promise, and in turn grants firms meeting these conditions priority in allocating military-civil fusion funding and awards to participation in military R&D projects.¹⁶⁵ Sichuan Province similarly covers 2 percent of the cost of R&D up to \$1.5 million (RMB 10 million) for Sichuan-based firms.¹⁶⁶

Addendum II: Background on U.S. Outbound Investment Restrictions on Chinese Companies

EOs 13959 and 14032, their amendments, and evolving Chinese military company designations have sparked confusion in the financial services industry* (see Figure 4). In response, Treasury's OFAC released 17 frequently asked questions (FAQs) clarifying the scope of the order between December 2020 and June 2021.¹⁶⁷ Among other things, the FAQs clarified timelines for compliance and addressed whether investment securities issued by companies whose names closely but do not precisely match those detailed by DOD and OFAC are subject to the restrictions.¹⁶⁸ In testimony before the Commission, Teresa Kong, portfolio manager for Matthews Asia, stated that some broker dealers "stopped making markets† altogether while waiting for further clarifications, resulting in mark-to-market losses."¹⁶⁹

The order's complexities resulted in a mixed impact. Major investment index providers such as MSCI and FTSE Russell, for example, removed Dawning Information Industry and Hangzhou Hikvision from their indices, effectively curbing foreign capital flows to them.¹⁷⁰ Separately, some Asian asset managers reported trading CCMC bond issues at a lower value as brokers shunned the designated companies.¹⁷¹ European and Asian investor interest in affected securities heightened amid a sell-down in early January 2021, however, leading to momentary upswings in share prices of Chinese telecommunications firms.¹⁷²

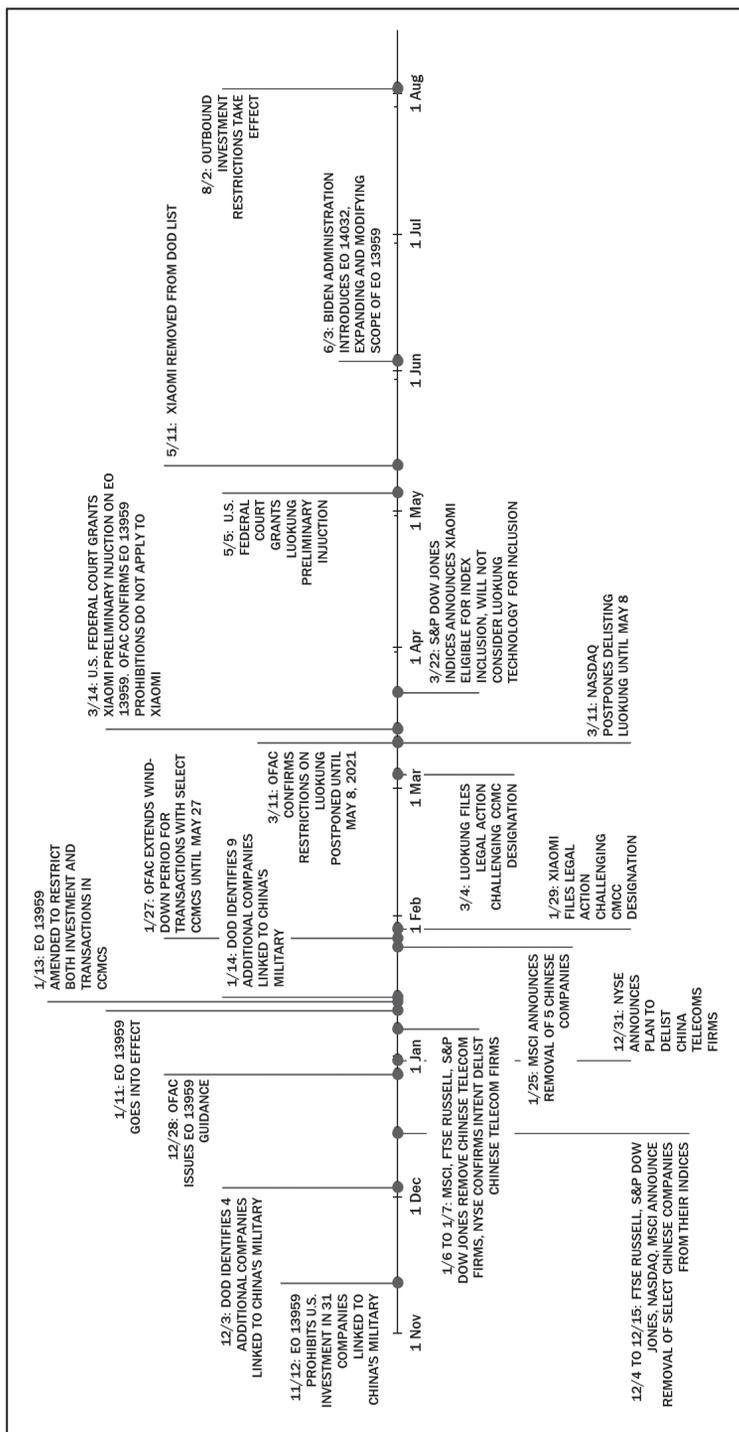
Legal setbacks from Chinese firms successfully challenging their EO 13959 CCMC designations in court prompted concerns about the viability of the Trump Administration's restrictions. Xiaomi (a smartphone maker) and Luokung (a big data processor) challenged their designation as CCMCs before the U.S. District Court for the District of Columbia and were granted preliminary injunctions in March and May 2021, respectively.¹⁷³ Court opinions for both injunctions said evidence furnished by the U.S. government of the companies' ties to China's military was insufficient to justify their designations as CCMCs.‡¹⁷⁴ Following the Xiaomi injunction, DOD removed the company from the list of CCMCs on May 11.¹⁷⁵ The adverse legal action raised concerns that more CCMCs would challenge the investment restrictions in court.¹⁷⁶ GOWIN Semiconductor, another company initially listed as a CCMC, challenged its designation in a complaint submitted to the U.S. District Court of the District of Columbia on May 21.¹⁷⁷

* Most notably, the New York Stock Exchange announced it would remove U.S.-traded shares of China Mobile, China Unicom, and China Telecom, all identified as CCMCs by DOD, on December 31, 2020. It reversed the decision on January 4, 2021, and finally delisted the telecoms on January 6 following guidance from OFAC. Jesse Pound, "NYSE Will Delist Three Big China Telecoms, Reversing Decision Once Again," *CNBC*, January 6, 2021.

† Typically large banks or financial institutions, market makers are high-frequency trading firms that engage in the buying and selling of stocks en masse to facilitate investor transactions in financial markets. In providing these high-volume trading services for investors, market makers help create markets for investors to buy or sell securities, keeping financial markets liquid. Market makers usually hold a high inventory of shares in a security so they can fulfill large amounts of orders.

‡ As such, the designations failed the "arbitrary and capricious test" established by the Administrative Procedure Act (APA), according to the ruling. Section 706(2)(A) of the APA indicates courts reviewing regulation may overturn agency actions if they find factual assertions or underlying rationale "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law."⁷

Figure 4: Timeline of EO 13959 Implementation and Market Responses, November 2020–October 2021



Source: Created by Commission staff.

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CHAPTER 3

U.S.-CHINA SECURITY, POLITICS, AND FOREIGN AFFAIRS

SECTION 1: YEAR IN REVIEW: SECURITY, POLITICS, AND FOREIGN AFFAIRS

Key Findings

- In 2021, the Chinese Communist Party (CCP) marked the centennial of its founding by instructing Party members and the Chinese people to prepare for a decades-long confrontation with the United States and other democracies over the future of the global order. Chinese leaders grew more uncompromising in pursuing their interests as they insisted historical trends proved the inferiority of democracy to the political, economic, and normative model of their one-party rule.
- In an apparent paradox, the CCP assessed that internal and external threats facing the regime were intensifying and that its rule was becoming less secure despite the growth of Chinese power. CCP leaders vowed forceful measures against officials and Party members wavering in the face of international pressure and continued their repressive campaigns in Hong Kong and against the Uyghur people, Tibetans, and other ethnic minority groups.
- Beijing reaffirmed its intent to maintain high levels of defense spending to transform the People's Liberation Army (PLA) into a powerful force able to operate in and beyond the Indo-Pacific region. Chinese leaders showed new levels of frustration with the PLA's lagging efforts to improve its training and personnel quality amid perennial concerns about the force's lack of warfighting experience. The PLA continued to commission advanced warships and field new aircraft capable of projecting force beyond China's borders. Beijing also signaled its interest in establishing additional overseas military bases, reportedly including locations on Africa's west coast.
- China's diplomats deepened their embrace of a belligerent and uncompromising approach to foreign relations. The foreign ministry's disregard for the reputational cost of its strident rhetoric reflected domestic incentives that reward efforts to raise China's global standing while discrediting the United States and other democracies. As it grew more confrontational toward democratic countries, Beijing expanded its partnerships with Russia

and Iran and attempted to cast itself as a leader of developing countries across Africa, the Middle East, and Central Asia.

- China's aggressive tone and military coercion of its neighbors prompted deepening cooperation between Indo-Pacific countries and new efforts by the EU and others to increase their diplomatic and military presence in the region. China continued its military tensions with India, building illegal military outposts in neighboring Bhutan and launching cyberattacks that may have caused blackouts across India.
- U.S. concerns over the growing national security threat from China continue. Beijing's refusal to cooperate in investigating the origins of the novel coronavirus (COVID-19) pandemic and demands that the Biden Administration cease all criticism of China's human rights abuses and abandon other policies opposed by the CCP undermined Beijing's initial hopes for a reset in bilateral ties.

Introduction

In 2021, the CCP celebrated the centennial of its founding. Amid the triumphant celebrations, however, the message of senior CCP leaders was sober. Rather than evince satisfaction that China's economic development had ushered in a new era of peace and prosperity, CCP leaders instructed Party members and the Chinese people to prepare for a decades-long confrontation with the United States and other democracies over the future of the global order. Meanwhile, China's leaders made plain their ambition to present their one-party rule to the world as a superior political, economic, and moral model to democracy and capitalism.

Behind their global assertiveness, CCP leaders perceived growing internal and external threats to the survival of their regime. As the United States and other democracies took steps to defend themselves against China's influence activities, military power, and coercive economic practices, the CCP escalated attacks against the "enemy forces" at home and abroad that it described as attempting to undermine its rule. Today, the regime is both confident and paranoid, insistent on its superiority but increasingly fearful of subversion and failure. Having declared the superiority and inevitable triumph of their model, CCP leaders have proved unwilling to tolerate any domestic or foreign criticism of their actions.

Over the past year, the CCP regime rejected compromise and responded aggressively to any criticism or challenge to its interests. China stepped up its use of military coercion in the East and South China Seas, the Taiwan Strait, and along the Indian border, while attempting to coerce Australia into revising internal policies displeasing to Beijing, such as calling for an independent investigation into the origins of COVID-19. China also extended its use of coercion beyond the Indo-Pacific region, demanding Guyana cancel plans for a new Taiwan trade office and halting rail shipments to Lithuania after the country decided to open a similar representative office.¹ At the same time, Beijing attempted to cast itself as a leader of countries across the developing world, such as by trumpeting an agreement with Arab states to form a "Chinese-Arab community of common destiny."² Despite the steady coalescing of many democra-

cies within and outside the Indo-Pacific against its coercive behavior, Beijing projected confidence in its ability to expand partnerships with other countries and overcome all opposition to achieve its goals.

This section examines the key developments in China's politics, military posture, and foreign relations in 2021. It begins by examining CCP leaders' view of their position within the international system and concerns over intensifying threats to their rule. The section then assesses the Party's increasing domestic repression, the growth and continued shortfalls of the PLA, and the mixed results of Chinese foreign policy in the Indo-Pacific and globally. It concludes by examining the evolution of U.S.-China relations through the transition to and early days of the Biden Administration. This section is based on Commission hearings and briefings, discussions with outside experts, and open source research and analysis throughout the year.

Remaking the International Order

In its centennial year, the CCP forcefully asserted its ambition to replace the processes and norms of the liberal international order with those of its own making. In a speech in Tiananmen Square marking the Party's centennial celebration in July, General Secretary of the CCP Xi Jinping quoted Mao Zedong in reminding his audience of the CCP's original aim to fundamentally alter the post-World War II international order. "Through tenacious struggle," he recited, "the Party and the Chinese people showed the world that the Chinese people were capable of not only destroying the old world, but also building a new one."³ He further argued that by using Marxism the CCP had "seized the initiative in history."⁴ Using these principles, General Secretary Xi declared, the Party had not only developed China's own economy and material power but had also "created a new model for human advancement."⁵

General Secretary Xi's characterization of the global relevance of China's model followed similar arguments by CCP officials earlier in the year. Seizing upon the contested U.S. presidential election and the January 6, 2021, assault on the U.S. Capitol, CCP leaders claimed that a clear contrast had emerged between the "order of China" and the "chaos of the West."⁶ In another assessment of China's growing strength relative to the United States and other democracies, CCP leaders claimed that historical trends indicated the "East is rising and the West is in decline."^{*7} In his speech in Ti-

* Senior CCP officials have used the phrases "order of China and chaos of the West" and "the East is rising and the West is in decline" with growing frequency throughout 2021. Although Party leaders have mentioned "order of China and chaos of the West" since late 2020, Chinese media articles used the phrase as early as 2017. Chinese media introduced the phrase "the East is rising and the West is in decline" in 2019, but it was not used in authoritative CCP statements until early 2021. Sina Finance, "Chen Yixin Conveys the Spirit of the Seminar: 'The East Is Rising and the West Is Falling' Is the Trend. This Development Trend Is Beneficial to Us" (陈一新传达研讨班精神: "东升西降"是趋势 发展态势对我有利), January 15, 2021. Translation; William Zheng, "The Time for China's Rise Has Come, Security Chief Tells Law Enforcers," *South China Morning Post*, January 15, 2021; Chris Buckley, "The East Is Rising: Xi Maps Out China's Post-Covid Ascent," *New York Times*, March 3, 2021; William Zheng, "China's Officials Play Up 'Rise of the East, Decline of the West,'" *South China Morning Post*, March 9, 2021; Guo Shengkun (郭声琨), "Building a Safer China of a Higher Level (Study and Implement the Spirit of the Fifth Plenary Session of the 19th Central Committee of the Party)" (建设更高水平的平安中国(学习贯彻党的十九届五中全会精神), *People's Daily*, December 2, 2020. Translation; Chen Xiangyang (陈向阳), "[China Daily Online Review] Xi Jinping's Diplomatic Thought Leads the World's Changes in a Hundred Years" (【中国日报网评】习近平外交思想领航世界百年大变局), *Xinhua*, October 11, 2019. Translation; Qiushi, "The Institutional Causes of Chaos in the West and Order in China" (西方之

ananmen Square, General Secretary Xi broadcast the CCP's unwillingness to alter its governance practices or foreign policy in the face of outside pressure, declaring that the Party would not "accept sanctimonious preaching from those who feel they have the right to lecture us."⁸ Instead, he warned, anyone attempting to "bully" China would "crack their heads and spill blood on a Great Wall of steel fortified by the flesh and blood of 1.4 billion Chinese people."⁹

The CCP regime further judged it faced a unique opportunity to establish its governance model as a leading political force internationally. Central to this calculation was the Party's judgment that the international order was entering a period of "turmoil and transformation" while experiencing "great changes not seen in a century."¹⁰ Chinese leaders assessed the COVID-19 pandemic had quickened the pace of these changes and helped push the world to a "historical dividing line."¹¹ At this point, the CCP judged, great power relations were experiencing a "new round of adjustment" while the global order split up and formed new groupings.¹² In an article published in November 2020, China's top diplomat and Politburo member* Yang Jiechi asserted that China must lead the world's transformation and establish a Sinocentric "community of common human destiny."¹³ In January 2021, State Councilor and Foreign Minister Wang Yi added in the Party's theoretic journal *Qiushi* (*Seeking Truth*) that General Secretary Xi had identified the "correct direction" for the global order's transformation.¹⁴ In the coming years, Party leaders argued, the CCP would therefore place an even greater emphasis on contributing a "China approach" to global governance.¹⁵

"China Cannot Compromise"

Underlying the CCP's aspiration to global leadership is its unfounded claim to speak for the international community and represent new norms of justice superseding those of the international order prior to China's rise. In a year when the United States and other countries condemned the CCP's genocide against the Uyghur people, the dismantling of Hong Kong's democracy and civil liberties, and other human rights abuses, Chinese leaders were unmoved. In his January 2021 article, Foreign Minister Wang claimed that China "stood on the side of international morality and justice" in its foreign relations and would "speak with the force of justice" against criticism of the CCP's handling of the COVID-19 outbreak; its governance system; and its actions toward Taiwan, Hong Kong, Xinjiang, and Tibet.¹⁶ In an interview in April, the foreign minister revealed the linkage between the CCP's increasingly harsh tone toward the United States and other countries and its moral self-justification. Referring to U.S. officials' remarks on the need for a mixture of cooperation and confrontation with China, Foreign Minister Wang responded simply, "China cannot compromise because what we ad-

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*The Politburo (formally known as the Central Political Bureau) of the CCP is currently composed of 25 members. The Politburo Standing Committee, currently comprising the group's leading seven members, is mandated to conduct policy discussions and make decisions on major issues when the Politburo is not in session. In practice, the Politburo Standing Committee holds supreme authority over both the CCP and the Chinese government.

here to is the basic norms of international relations. China cannot yield because there are numerous developing as well as medium and small countries behind us.”¹⁷ For these reasons, he declared, China “certainly has the right to strike back because we must safeguard our country’s sovereignty and national dignity.”¹⁸

China depicted the United States and other developed democracies as outdated global rules-setters that the rest of the world should cast aside in favor of Beijing’s own definition of international norms. When leaders of Group of Seven countries gathering in the United Kingdom (UK) in June 2021 criticized China’s human rights abuses and market-distorting economic practices, Chinese officials questioned the authority of attendees at the summit, which also included Australia, India, and South Korea, to make these assertions. “The days when global decisions were dictated by a small group of countries are long gone,” the spokesperson for the Chinese embassy in the UK declared. “There is only one set of rules for the world, that is, the basic norms of international relations... not the so-called rules formulated by a small number of countries.”¹⁹ The spokesperson accused the summit’s communique of “wanton[ly] smearing... China” and “flagrantly violat[ing] the basic norms of international relations.”²⁰ A *People’s Daily* editorial published after the summit made a similar attempt to cast China as the true arbiter of global order. “The unilateral retrogressive acts of the United States and a few other countries will only undermine international rules and order,” it claimed. “Lies are lies, and the nature of a lie will not change because of a few vilifying remarks from rumormongers.”²¹

Fears of Growing Threats to the Regime

Despite their projection of self-assurance, Chinese leaders assessed that threats to their regime were growing and exacerbating challenges inside China. Moreover, the CCP judged that further growth of Chinese power would make the Party’s leadership more, rather than less, insecure. In October 2020, *People’s Daily* published a study guide expressing this pessimistic view following the release of the third volume of General Secretary Xi’s collection of speeches, *The Governance of China*. “It is impossible for the road ahead to be smooth sailing,” the study guide warned. “The greater our accomplishments, the more we must act with extreme caution... and forcefully respond to major risks and challenges.”²² The guide continued, “We must concentrate on the most harmful aspects of all developments,” recognizing that if the Party failed to respond forcefully, “small risks and threats will become large ones and partial risks and threats will become systemic ones.”²³ Left unaddressed, external threats would eventually become domestic threats while challenges to China’s “economy, culture, society, technology, and internet... would transform into political risks and challenges threatening the Party’s ruling position.”²⁴ The threats facing the CCP were long-term and would only grow more complex, the guide concluded, to the point of the Party encountering “unimaginably stormy seas.”²⁵

Chinese leaders viewed U.S. policies pushing back against the CCP’s growing assertiveness as central to the regime’s challenges. In January 2021, Secretary-General of the CCP’s Central Political

and Legal Affairs Commission* Chen Yixin declared “containment and suppression” by the United States to be a major threat to the CCP. Referring to Mao’s strategy for fighting Japan during World War II, Secretary-General Chen assessed the confrontation between the United States and China to have characteristics of a “protracted war.”†²⁶ In remarks on the sidelines of China’s National People’s Congress in March, State Councilor and Defense Minister Wei Fenghe described the long-term relationship between the United States and China as one of “containment versus counter-containment” and predicted U.S. containment efforts would last for decades.²⁷ He repeated his assertion from the 2020 National People’s Congress that China had entered a phase of high risk for national security and urged the country to improve its military capability to prevail over “strong enemies”—a phrase CCP leaders use to refer to the United States.²⁸

The CCP judged that ideological threats to the regime were at least as severe as traditional national security challenges. In December 2020, Politburo member and head of the Central Political and Legal Affairs Commission Guo Shengkun claimed that both traditional and nontraditional threats were increasing and becoming more interconnected against the “great backdrop of the strategic contest between China and the United States.”²⁹ If left unchecked, he warned, these threats could easily grow into “systemic risks.”³⁰ CCP leaders argued that underlying these threats was the hostile intent of “outside enemy forces” advocating for principles such as democracy and the rule of law and questioning the Party’s right to rule.³¹ In its study guide on *The Governance of China*, the *People’s Daily* provided more detail on the paranoia gripping the highest ranks of the CCP. “Every kind of enemy force has never stopped their plots to ‘Westernize’ and divide China, nor have they stopped their activities to topple and destroy the Communist Party’s leader-

*The Central Political and Legal Affairs Commission is an important body coordinating the CCP’s “security maintenance” work, coded language for managing social unrest to protect the regime, including through the use of force. In this capacity, it has direct oversight over China’s law and order bodies, including the Supreme People’s Court, Ministry of Public Security, and Ministry of State Security. The Commission’s head, titled the secretary, reports directly to General Secretary Xi through the National Security Commission, which Xi chairs. The secretary-general of the Central Political and Legal Affairs Commission is responsible for drafting documents representing the commission’s views and implementing its decisions. The commission’s secretary typically exercises control over organizational decisions by working closely with the secretary-general to draft policy details. Wen-Hsuan Tsai and Wang Zhou, “Integrated Fragmentation and the Role of Leading Small Groups in Chinese Politics,” *China Journal* 82 (July 1, 2019): 1–22, 14–15; Dali L. Yang, “China’s Troubled Quest for Order: Leadership, Organization and the Contradictions of the Stability Maintenance Regime,” *Journal of Contemporary China* 26:103 (January 2017) 35–53, 36, 42, 50.

†Chinese official discussions of “protracted war” refer to Mao’s famous 1938 essay “On Protracted War,” in which he advocated for a long-term strategy to prevail over Japan during World War II. Mao used the essay to urge CCP members to resist both the allure of a quick victory and of defeatism, arguing instead for a “long and ruthless war” to defeat its more powerful adversary. By being more willing to tolerate casualties, economic damage, and other costs of conflict, Mao envisioned China forcing a “strategic stalemate” from which it would gradually rise to a superior position and launch a decisive counteroffensive. He expected conditions for this victory to be set in part by the powerful adversary suffering heavy casualties, discontent among its population and troops, economic losses, and condemnation by world opinion. Chinese official statements have used the phrase more in recent years, such as in a July 2020 Politburo meeting statement that China’s economic challenges “must be understood from the perspective of protracted war.” *Xinhua*, “General Secretary Xi Jinping Presides over a Central Committee Politburo Meeting, Where It Decided to Hold the Fifth Plenary Session of the 19th CCP Central Committee and Where It Analyzed and Studied the Current Economic Situation and Economic Work” (中共中央政治局召开会议 决定召开十九届五中全会 分析研究当前经济形势和经济工作 中共中央总书记习近平主持会议), July 30, 2020. Translation; Mao Zedong, “On Protracted War” (论持久战), *Selected Works of Mao Tse-tung* Vol. II, 1967, 113–194.

ship and China's socialist system," the paper warned.³² "They have plotted all along to attempt a 'color revolution' in China."³³

Vows of a Forceful Response

CCP leaders declared their intent to fight back forcefully against these perceived threats, focusing particular attention on combating ideological threats. In its study guide, *People's Daily* called on the Party to use "offensive moves" in a "war of strategic initiative" to guard against risks and neutralize challenges.³⁴ Identifying political security as the CCP's foremost security concern, it urged the Party to implement its "democratic people's dictatorship" to "severely strike enemy forces' activities to infiltrate, destroy, topple, and split apart" the CCP.³⁵ According to the paper, of particular concern to Party leaders were systemic risks with the potential to "delay or cut short" China's rejuvenation.³⁶ In his December 2020 article, Central Political and Legal Affairs Commission head Guo issued a similar instruction to strike back against enemy forces attempting to destroy the CCP and called on officials to protect the security of the Party's ruling position and ideology.³⁷

In a rare but clear indication that individuals or factions within the CCP still oppose the Party's main line, CCP leaders singled out for special criticism Party members whose resolution and belief had been shaken by these perceived "hostile forces."³⁸ In a February 2021 speech to members of the Central Political and Legal Affairs Commission, Chen Yixin expressed General Secretary Xi's view that in the face of mounting external pressures, "every kind of mistaken thinking would seize the opportunity to surface" within the CCP.³⁹ In what was likely an understatement of the extent of the problem, Chen warned of the threat from a "tiny minority of Party members and officials" whose belief in the CCP's legitimacy and mission had "faded from their memories."⁴⁰ (For more on CCP leaders' concerns over Party members opposing or lacking commitment to the policies of the central leadership, see Chapter 1, Section 1, "The Chinese Communist Party's Ambitions and Challenges at Its Centennial.")

The Party's Tightening Grip

In its campaign to eradicate perceived harmful influences, over the past year the CCP expanded efforts to control all aspects of Chinese society and culture it viewed as threatening to its rule. In April 2021, the Ministry of State Security promulgated new rules for organizations and enterprises in China responding to "intensified infiltration" by "overseas espionage and intelligence agencies and hostile forces."⁴¹ The new rules require regular counterespionage education and training for personnel who routinely interact with foreigners, rather than only for those who work on secret matters, reflecting the CCP's view that any interaction with foreign entities is inherently a security risk.⁴² The regulations detail the responsibilities of Party and state organs, social groups, enterprises, and public institutions to actively prevent espionage within their units and require state security organs to train these entities in counterespionage.⁴³

The CCP's efforts at control extended even to the domains of archaeology and Chinese history.⁴⁴ In a speech published in November 2020 but given several months earlier at a Politburo study session,

General Secretary Xi asserted that historical and cultural “struggles... will exist for a long time” and that the Party must use archaeological studies to counter “distortions and slanders” on China’s history.⁴⁵ Acting on Mao’s dictum that “the past should serve the present,” he connected the development of what is now China to the Party’s mission of “developing and upholding socialism with Chinese characteristics... in the correct historical direction.”⁴⁶ By emphasizing the primacy of “telling a good story of China’s history,” General Secretary Xi promoted a view of Chinese history that distorts facts to argue for the superiority of the Party’s leadership.⁴⁷

Extending the Party’s Influence at Home and Abroad

In January 2021, the CCP’s United Front Work Department issued updated regulations cementing General Secretary Xi’s ideology in the Party’s central bureaucracy for guiding domestic and overseas influence operations. The new regulations, updating trial regulations issued in 2015, show that United Front work has grown both broader in scope and more focused on discrete groups.⁴⁸ For example, the new regulations explain in detail the importance of “guiding” overseas and returned Chinese, including overseas Chinese students and their families in China. They also define for the first time the United Front’s focus on “new social classes,” which include knowledge workers and other skilled Chinese employees of foreign-invested enterprises, social organizations, and media organizations.⁴⁹

The CCP moved to further entrench its ideology in the Chinese court system and extend the international influence of its “rule by law” system where authorities use the law as a means of suppressing political opposition. In November 2020, the CCP held its first ever central-level work conference on law-based governance and established “Xi Jinping Thought on the Rule of Law” as the main guide of China’s legal system. In January 2021, the CCP Central Committee issued a plan calling for a “socialist rule of law with Chinese characteristics” to take shape by 2025 and be “basically formed” by 2035, with the aim of bringing about the “convergence and coordination of internal Party regulations and national laws.”⁵⁰ The goal of this legal system, according to Zhu Zheng, assistant professor at China University of Political Science and Law, is “entrenching the Party’s leadership on political power and ideology more deeply than before.”⁵¹ Other goals of the Central Committee’s plan are for China to “active[ly] participate in the formulation of international rules,” “accelerate the construction of a legal system applicable outside China’s jurisdiction,” and promote its view internationally that the rule of law* should serve the Party’s interests.⁵² State media praised the “socialist rule of law with Chinese characteristics” concept as a contribution to advancing the world’s understanding of the rule of law.⁵³

* Chinese discussion of legal systems often interchangeably uses “rule of law,” under which laws constrain political leaders, and “rule by law,” under which political leaders use the legal system to protect their own power. The two phrases sound the same in Chinese, and legal experts have argued official Chinese sources sometimes use the former translation when they mean the latter to give the impression that the meaning of “rule of law” is the same in China as it is in democratic countries. Cheng Li, “Chinese Politics, Economy, and Rule of Law,” *Brookings Institution*, September 20, 2016; *China Focus*, “Laying Down the Law: Jerome Cohen on the Rule of Law in China Pt. 2,” August 12, 2015; Josh Chin, “Rule of Law or ‘Rule by Law’? In China, a Preposition Makes All the Difference,” *Wall Street Journal*, October 20, 2014.

Continued Repression of Ethnic Minorities

CCP repression of ethnic minorities in Xinjiang, Tibet, and Inner Mongolia continued to devastate communities in these frontier regions. Evidence emerged in late 2020 that the Chinese government had built factories inside Xinjiang detention camps and that for years it had forced detained Muslims to work as part of a “labor transfer program” that is tainting global supply chains with forced labor.⁵⁴ The U.S. government responded to reports of forced labor-derived cotton, tomato, and silica products from Xinjiang by issuing six new orders in fiscal year 2021 to prohibit the import of relevant goods.* Based on reports of authorities’ forced sterilizations, coerced abortions, and other human rights abuses against Uyghurs and other ethnic and religious minorities in Xinjiang, the United States in 2021 formally determined the Chinese government to be committing ongoing crimes against humanity and genocide in Xinjiang.⁵⁵

The CCP continued its campaign to “sinicize” Tibetan Buddhism, tightening its political control over the religion. The Chinese government issued new rules in January 2021 requiring religious professionals to “love the motherland, support the leadership of the CCP, and support the socialist system,” forcing them to subordinate their religious views to the Party and the Chinese state.⁵⁶ In June, a Tibetan monk surrounded by security cameras and government observers told a closely monitored group of foreign journalists in Tibet that his “spiritual leader” was General Secretary Xi.⁵⁷ After the Chinese government implemented policies in 2020 to phase out Mongolian-language education in Inner Mongolia, Chinese officials reportedly began warning students from Inner Mongolia in Japan not to talk about the ongoing Chinese government suppression of Mongolian culture.⁵⁸ In response, in April 2021 a group of Japanese legislators created a parliamentary caucus to protect Mongolian culture from assimilation.⁵⁹

Toward a Global People’s Liberation Army

Over the past year, the CCP signaled its ambition to transform the PLA into a global force able to operate both within and beyond the Indo-Pacific region. In his speech celebrating the CCP’s centennial in July, General Secretary Xi described the PLA as “a powerful force for protecting peace in our region and beyond.”⁶⁰ Central Military Commission Vice Chairman General Xu Qiliang similarly linked the PLA to China’s global leadership ambitions, noting in a November 2020 article the force would “contribute its strength” to building a “community of common human destiny” and carry out duties “commensurate with China’s international status.”⁶¹ In a further reflection of top leaders’ vision for the PLA’s global role, he added that the force would work to establish a “security guarantee” for China’s overseas interests.⁶²

*U.S. Customs and Border Protection may issue an order to withhold release of any goods from its custody that are suspected of having been produced with forced labor. In 2021, these orders also targeted widespread use of forced labor in an entire commercial fishing fleet based in eastern China. As of June 2021, according to a White House fact sheet, 35 of 49 active withhold release orders were on goods from China, and 11 were on goods originating in Xinjiang. White House, *FACT SHEET: New U.S. Government Actions on Forced Labor in Xinjiang*, June 24, 2021; U.S. Customs and Border Protection, *Forced Labor Enforcement, Withhold Release Orders, Findings, and Detention Procedures*, August 2016.

The CCP continued to support its ambitious goals for force development with high levels of defense spending. In 2021, the PLA's official budget* grew by 6.8 percent, which is a slightly higher growth rate than the 6.6 percent increase it maintained in 2020 despite slowing economic growth and pandemic conditions.⁶³ Meanwhile, the PLA continued producing sophisticated weapons and ships that further extend its power projection capabilities. In April 2021, the PLA Navy commissioned its first Type 075 (YUSHEN) amphibious assault ship, third Type 055 (RENHAI) destroyer,† and sixth Type 094 (JIN) nuclear-powered ballistic missile submarine.⁶⁴ China's Type 075 ships support what one analyst considers to be "an amphibious capability that is second only to the United States," and they likely serve as the prototype for an even newer class of amphibious assault vessels capable of launching fixed-wing aircraft.⁶⁵ The PLA typically keeps its Type 094 submarines from public view, so their inclusion in a public commissioning ceremony with China's newest amphibious assault ship and premier destroyer likely served propaganda purposes by stoking nationalist pride.⁶⁶ In March, China launched three additional Yaogan-31 surveillance satellites, joining a constellation likely to provide the PLA with real-time targeting of distant maritime targets such as U.S. aircraft carriers.⁶⁷

China further advanced its power projection capabilities by fielding the Y-20U aerial refueling tanker aircraft, while reports indicated Beijing may be exploring opportunities for stationing troops abroad. With the Y-20U entering service this year, the PLA will be more capable of extending the flight range and duration of its J-20 fighter, H-6 bomber, and KJ-500A early warning and control aircraft.⁶⁸ Reuters reported China may also be expanding the number of facilities that PLA aircraft can use, notably with a secret agreement to upgrade an airstrip on an island in Kiribati.⁶⁹ This agreement could position Chinese facilities astride important sea lanes and flight paths between the United States and Oceania.⁷⁰ In May 2021, commander of U.S. Africa Command General Stephen Townsend stated in an interview that China was actively seeking to develop a naval base on Africa's western coast and had recently approached countries from Mauritania to Namibia in hopes of securing an agreement.⁷¹ He assessed that China sought to construct a port facility for rearming and repairing naval vessels, which would be capable of hosting Chinese submarines or aircraft carriers.⁷²

The PLA also hardened and extended the range of its border defenses this year. In May, the PLA Army tested new long-range rockets able to strike targets 100 miles (160 kilometers) away, which is a sufficient distance to hit targets in Taiwan from firing positions in the Chinese mainland.⁷³ Along the China-India border, the PLA Army established a joint air defense system that uses advanced PLA Army anti-aircraft systems to enhance the early warning and rapid deployment capabilities of the PLA Air Force.⁷⁴

*China's government does not report all defense spending in its official budget. Its official figures are inconsistent and cannot be verified. *Jane's* experts assessed that in 2021, China's defense spending was 25 percent higher than officially reported. Jon Grevatt and Andrew MacDonald, "China Announces 6.8% Increase in 2021 Defence Budget," *Jane's Defense Weekly*, March 5, 2021.

†The RENHAI-class destroyer has tonnage and capabilities that exceed those of ships that were previously designated as cruisers. For a discussion on the distinction between destroyers and cruisers, see U.S.-China Economic and Security Review Commission, *2020 Annual Report to Congress*, December 1, 2020, 342.

Continued Frustration over Shortfalls in Personnel Quality and Leadership

Despite the PLA's success in fielding advanced weapons systems, China's civilian and military leaders showed signs of impatience with the PLA's meager gains in its longstanding efforts to overcome weaknesses in training and personnel quality. China's leaders have long criticized the PLA as suffering from a "peace disease," which is a term highlighting the concerns of civilian and military leaders over the PLA's lack of combat experience and preparedness for war.⁷⁵ In 2021, General Secretary Xi escalated this criticism by taking the unusual step of convening a conference on improving combat-realistic military exercises and by modifying his annual training mobilization order to express the need for the PLA to "build a new military training system."⁷⁶ General Xu also reflected dissatisfaction with the PLA's competence in his November 2020 article, urging the force to continue elevating personnel quality.⁷⁷ He further instructed the PLA to enhance its focus on warfighting, warning that "forgetting how to fight spells danger and neglecting to prepare for battles to come guarantees defeat."⁷⁸

The PLA refocused efforts to remediate its lack of wartime experience by practicing unit-level decision-making. PLA exercises in 2021 placed a greater focus on giving units the autonomy to make decisions in the field.⁷⁹ The PLA Air Force improved officer autonomy this year by significantly increasing "unrestrained air combat training," an approach in which pilots are permitted to make their own decisions in combat.⁸⁰ PLA Navy pilots from the Northern, Eastern, and Southern Theater Commands held a major cross-regional exercise this year also focused on unrestrained air combat training.⁸¹ Despite these efforts, state media reported that PLA units continued to struggle with autonomous decision-making, such as deputy commanders for some units being unprepared to take over command when exercises simulated injuries to their senior officers.⁸²

Political Work May Conceal Insecurities about Loyalty

The PLA continued to ramp up its emphasis on political work, potentially revealing insecurities about troop loyalty. In one example, the 2020 edition of the *Science of Military Strategy*, an authoritative textbook for PLA officers published by the PLA's National Defense University, included a new chapter on wartime political work that anticipates modern warfare will include a "hidden front" that involves "inciting defections."⁸³ In his November 2020 article, General Xu indirectly expressed concern over political reliability in the ranks, demanding that soldiers be "absolutely loyal, clean, and reliable" and allow "absolutely no wavering or deviation... on the fundamental issue" of Party loyalty.⁸⁴ In December 2020, a spokesperson for China's Ministry of National Defense announced that PLA servicemembers would receive further political training through a dedicated app called "Study the Strong Military."⁸⁵ State media described some challenges facing the PLA's political education efforts. For instance, some brigade leaders reported concerns that their younger enlisted members were "ideologically active with distinct personalities," euphemistically describing individualism resistant to indoctrination.⁸⁶

Conscription in the PLA

Chinese citizens may volunteer for military service or be involuntarily conscripted for two years, after which they may choose to continue service or be demobilized.⁸⁷ China does not publish data on how many of its recruits are conscripts rather than volunteers, and PLA recruitment practices may further blur the lines between voluntary and forced recruitment. Since 2009, the PLA has sought to conscript or recruit at least 100,000 college-educated enlistees each year.⁸⁸ The PLA appears to struggle to meet this goal, however, having repeatedly lowered its physical standards for conscription to recruit college-educated enlistees.⁸⁹ Moreover, college-educated recruits may not be of the quality the PLA needs to modernize its force. For example, one 2017 report found PLA college-educated recruits included “basically no graduates” of China’s top 100 civilian educational institutions.⁹⁰ Some PLA research also reveals concerns that college-educated conscripts are not inclined to continue their military service after their initial two-year term.⁹¹

New Leaps for China’s Space Program

China’s dual-use space and rocketry programs met important milestones in 2021, including successfully landing a probe on Mars and launching the first module of its long-term space station. The successful landing and deployment in May of the Zhurong Mars rover for a 93-day mission was notable both for being China’s first time landing a probe on another planet and for being the first time any space agency had succeeded on its first try at the notoriously difficult Mars landing, nicknamed the “seven minutes of terror.”⁹² The Chinese government also added sophisticated new ground infrastructure to support space exploration missions. The Tianwen-1 orbiter, which carries additional instruments to study Mars’s surface and atmosphere, will relay data through a new, specially constructed 70-meter steerable radio telescope, which is the largest in Asia.⁹³

China launched the Tianhe core module of its long-term low-Earth orbit space station in April 2021, celebrating the project as the culmination of a 30-year plan to master human spaceflight and test technologies for long-term space habitation.⁹⁴ The first team of three taikonauts launched in June to carry out a three-month tour, which is China’s longest crewed space mission ever.⁹⁵ The launch was the third of a total of 11 required to complete the station’s construction between 2021 and 2022.⁹⁶ China intends to use the station to further international scientific coordination, including joint missions between taikonauts and foreign astronauts, according to the military agency overseeing China’s human spaceflight program.⁹⁷

The Chinese government’s apparent indifference to the international downrange risk from its rockets marred the diplomatic victory of lofting its first space station module.* Debris from launches in China’s interior has long threatened areas within China, but the new Long March-5B (LM-5B) rocket, which was used to launch the

*The United States and Russia lofted their first modules for the International Space Station in 1998. ISS National Laboratory, “History and Timeline of the ISS.”

Tianhe module in April, now spreads this risk to the international community.⁹⁸ Its design eschews boosters designed to provide maneuverability after launching its payload, causing the entire rocket to achieve orbit and then fall back to earth unpredictably.*⁹⁹ According to Harvard astronomer Jonathan McDowell, in designing the LM-5B this way the Chinese government is “deliberately just not caring and leaving it to reenter.”¹⁰⁰ Plans to launch two additional space station modules on LM-5Bs in 2022 will risk the safety of people in downrange countries each time.¹⁰¹

Leading experts and official policy continued to signal that the space sector would remain an important focus in China’s national ambitions. The 14th Five Year Plan (2021–2025), approved in March 2021, stressed the importance of breakthroughs in seven science and technology frontier sectors, including deep space.¹⁰² That month, Liu Zhirang, National People’s Congress delegate and Party Secretary of the China Academy of Aerospace Propulsion Technology, said China’s rocketry program would strive to reach “world-class” level during the next five years.¹⁰³ Jiang Jie, an expert at the China Academy of Launch Vehicle Technology, said that during this period China Aerospace Science and Technology Corporation would work on a new heavy-lift rocket and another new rocket for crewed launches.¹⁰⁴ Former Chinese National Space Administration head Luan Enjie also confirmed in March that the feasibility study for the super-heavy-lift LM-9, expected to take taikonauts to the moon in the 2030s, had “basically concluded,” allowing research to begin in earnest.¹⁰⁵

Escalation of “Wolf Warrior” Tactics

In 2021, Chinese diplomats matched the uncompromising tone set by CCP leadership, deepening their embrace of “wolf warrior” behavior distinctive for its confrontational and belligerent style. This year, China’s diplomats abandoned much of their remaining decorum as they levied sensationalist accusations and used disinformation against other countries.† In February 2021, top diplomat Yang Jiechi demonstrated China’s uncompromising approach by laying out a list of policy changes he demanded the new Biden Administration make to improve the U.S.-China relationship.¹⁰⁶ In his speech, Yang defined a “constructive relationship” between the United States and China as one that required the United States government to abandon competition against China; cease its efforts to curb Chinese foreign influence operations within the United States; and remain

*There is no international requirement to design rockets to reenter under control, but experts view it as a best practice. The initial LM-5B flight in 2020 was the first intentionally uncontrolled reentry of an object exceeding 10 metric tons since 1990. Jonathan McDowell (@planet4589), “Before the CZ-5B started flying there were NO ‘by design’ uncontrolled reentries above 10 tonnes since 1990. DOS-6 (Salyut-7), STS-107 and Fobos-Grunt were all failures,” Twitter, May 2, 2021, 8:53 p.m.

†For example, China’s “wolf warrior” diplomats accused the Canadian government of “Western egotism and white supremacy” for urging an end to the Chinese government’s arbitrary detention of two Canadian citizens. Chinese Ministry of Foreign Affairs spokesperson Zhao Lijian spread disinformation against the United States and Australia over Twitter by suggesting the COVID-19 pandemic was spread by the U.S. military and by sharing an image digitally altered to show an Australian soldier holding a knife to the throat of an Afghan child. *Associated Press*, “COVID Conspiracy Shows Vast Reach of Chinese Disinformation,” February 15, 2021; Kirsty Needham, “China Tweet That Enraged Australia Propelled by ‘Unusual’ Accounts, Say Experts,” *Reuters*, December 4, 2020; Raymond Zhong, “China’s Ambassador to Canada Blames ‘White Supremacy’ in Feud over Arrests,” *New York Times*, January 10, 2019.

silent on the Chinese government's destabilizing behavior toward Taiwan and human rights violations in Hong Kong, Tibet, and Xinjiang.¹⁰⁷ Yang's framing suggests China no longer seeks to cooperate or find common ground but rather is now dictating that the United States must submit to all of China's preferences. In a June 2021 interview, China's ambassador to France Lu Shaye summarized China's diplomacy in plainer terms. "We're doing things differently now," he boasted. "Get used to it."¹⁰⁸

At times, Chinese aggressive "wolf warrior" behavior appeared intentionally designed to provoke outrage. In April 2021, the Central Political and Legal Affairs Commission's social media account posted an image juxtaposing a recent Chinese space launch with pictures of cremation pyres and hazmat suits in India, apparently mocking India's COVID-19 crisis.¹⁰⁹ In July, the Chinese consul general in Rio de Janeiro mocked a deadly building collapse in Surfside, Florida, on Twitter by juxtaposing a picture of U.S. President Joe Biden with the collapsed building and appending the caption, "America is coming back! But none of the people buried in the ruins has come back!!!"¹¹⁰ Referencing this pattern of behavior, a senior German official explained, "Dialogue is now conditional on us not criticizing China."¹¹¹ Notably, Beijing's provocative rhetoric is most frequently targeted at the United States, Japan, Taiwan, and issues pertaining to China's sovereignty claims.¹¹² Still, China's diplomats have also turned their "wolf warrior" tactics against developing countries.†

China's leaders appeared aware of, though unconcerned with, the negative global reception to their "wolf warrior" diplomats. Instead, they continued projecting confidence in what China Media Project Director David Bandurski described as the "unshakable premise that China's system is superior in terms of its performance," leading them to dismiss any criticism as "strong ideological bias and cultural prejudice."¹¹³ CCP leaders have actively sold this message to Chinese citizens. According to Steve Tsang, director of the University of London's China Institute, China's belligerent diplomatic rhetoric stems from "a revamp of the Communist Party's social contract with the Chinese people" emphasizing legitimacy drawn from the promise of a powerful China that commands global respect.¹¹⁴ As such, CCP leaders have directed and sustained their diplomats' aggressive posture.

*The belligerent turn by China's diplomats draws upon longstanding tendencies in the diplomacy of the People's Republic of China (PRC). Peter Martin, author of the book *China's Civilian Army* on China's diplomatic history, assesses that since the PRC's founding, China's diplomats have consistently shown "they were more concerned about looking weak in front of domestic audiences than truly improving China's reputation." Chinese leaders temporarily restrained some of these tendencies during much of the country's reform era to align with former leader Deng Xiaoping's dictum to "hide your strength and bide your time." After General Secretary Xi took office, China's diplomats responded to his encouragement of a more hawkish foreign policy by gradually dialing up their aggressive behavior. In 2019, this trend escalated sharply after Zhao Lijian's promotion from minister counsellor in Islamabad to foreign ministry spokesperson demonstrated that CCP leaders would reward "wolf warrior" behavior. Peter Martin, *China's Civilian Army: The Making of Wolf Warrior Diplomacy*, Oxford University Press, 2021, 195, 216–218, 224.

†China's diplomats have resorted to bullying and even violent criminal behavior targeting developing countries. For example, at the 2018 Asia-Pacific Economic Cooperation Summit, Chinese diplomats physically forced their way into the hosting Papua New Guinea foreign minister's office to demand diplomatic concessions. In October 2020, Chinese diplomats physically beat a Taiwan trade office librarian in Fiji, leaving the victim concussed and hospitalized, amid their concern that Fiji might switch diplomatic recognition from Mainland China to Taiwan. Peter Martin, *China's Civilian Army: The Making of Wolf Warrior Diplomacy*, Oxford University Press, 2021, 1–2, 223.

At a May 2021 Politburo group study session, General Secretary Xi appeared to acknowledge China's poor international image by calling on its diplomats to create a "trustworthy, lovable, and venerable" image of China amid a global "struggle" over public opinion.¹¹⁵ The speech was more likely an emphasis on the stakes of China's international propaganda, however, rather than a criticism of its diplomats' aggressive style. As Zhang Weiwei, director of Fudan University's Institute for Chinese Studies, explained about the speech, any adverse international reaction to "telling China's story well" is "mainly a problem on the part of the 'West'" and not the fault of Chinese diplomats.¹¹⁶ Ambassador Lu Shaye further clarified the future direction of Chinese diplomacy several weeks after General Secretary Xi's remarks, claiming in an interview that China's aggressive approach was justified and would continue.¹¹⁷ The "fundamental reasons behind changes in China's diplomatic style," he explained, "are changes in the international situation and in China's power."¹¹⁸

Using Vaccine Diplomacy to Build a Sphere of Influence

Meanwhile, China attempted to cast itself as a leader of developing countries and the only source of readily available COVID-19 vaccines for much of the world. In a speech at the Global Health Summit in May 2021, General Secretary Xi emphasized the need to provide more COVID-19 vaccines to developing countries and presented China as a model in this effort.¹¹⁹ While the United States has donated more than 175 million COVID-19 vaccine doses worldwide and contributed to the international COVAX initiative to distribute vaccines, however, China has primarily sold rather than donated vaccine doses to other countries, including many in Africa and Latin America.¹²⁰ China's vaccines have also proved less effective in preventing infections from COVID-19, with many countries that paid for China's vaccines continuing to face outbreaks despite high vaccination rates.¹²¹

At times, China suggested that its vaccine exports were part of a zero-sum competition with the United States and other countries. In many developing countries, China capitalized on sometimes slower deliveries by U.S. and European vaccine manufacturers to claim it was the only provider of vaccines.¹²² In a June 2021 visit to Indonesia, for instance, Foreign Minister Wang reportedly accused a "handful of developed countries" of having "hoarded vaccines."¹²³ The foreign minister's message carried an air of triumphalism in Indonesia, where Chinese Sinovac vaccines comprised 89 percent of the 95 million doses the country received in the first half of 2021.¹²⁴

China also used vaccine exports as a diplomatic cudgel by treating them as leverage over recipient countries. In October 2020, China announced it would give Malaysia priority access to its vaccines, after which Malaysia promptly released 60 Chinese sailors who had been detained for trespassing in its territorial waters.¹²⁵ After receiving Chinese vaccines, Philippines President Rodrigo Duterte ordered his ministers to refrain from publicly criticizing China for incursions by hundreds of Chinese fishing vessels in the Philippines' exclusive economic zone (EEZ).¹²⁶ In another instance, Ukraine withdrew from a UN Human Rights Council statement calling for an independent investigation of human rights abuses in Xinjiang

after China threatened to block a planned vaccine shipment to the country.¹²⁷ Nevertheless, China's efforts to extract a political price for its vaccines were not uniformly successful. When Paraguay suffered soaring COVID-19 infection rates in early 2021, China's diplomats saw an opportunity to pressure the country into severing diplomatic ties with Taiwan.¹²⁸ Paraguay refused to respond to China's inducements, however, with President Mario Benitez explicitly stating Paraguay would not "accept any kind of blackmail for vaccine purchases."¹²⁹ He added that the country remained open to engaging with Chinese vaccine producers "without any type of conditions involving our diplomatic relations."¹³⁰

Questions Mount over Chinese Transparency on Vaccines and COVID-19 Origins

Already faced with poor results from Chinese vaccines in combating earlier strains of COVID-19, Chinese officials have also been unable to demonstrate that their vaccines are effective against the COVID-19 Delta variant. China's National Health Commission has declined to comment on the efficacy of Chinese vaccines in preventing infections from the Delta variant.¹³¹ Rather than providing data on vaccine efficacy, Chinese officials have encouraged containment measures such as distancing and avoiding gatherings to curb Delta variant transmission, likely reflecting their doubts about Chinese vaccines.¹³² Chinese officials have also suppressed efforts to access information on the efficacy of Chinese vaccines. In one instance, a *People's Daily* reporter was disciplined for requesting information on how many new COVID-19 infections in China are among vaccinated people, which health authorities did not provide.¹³³ Facing this lack of data, countries in Southeast Asia that previously relied heavily on Sinovac vaccine doses purchased from China began supplementing these inoculations with the Pfizer and BioNTech, Moderna, and AstraZeneca vaccines, including millions of doses donated by the United States.¹³⁴

Confrontation over Calls for Greater Transparency in COVID-19 Investigations

China's resistance to a full, transparent international investigation into the origins of COVID-19 reinforced questions about a lab leak being a possible origin of the pandemic.¹³⁵ In May 2021, President Biden called for a 90-day intelligence review to allow the U.S. government to "redouble their efforts" to further study the origins of the virus.¹³⁶ After U.S. National Security Advisor Jake Sullivan said China could face international isolation if it did not allow proper investigations into the origins of the virus, a Chinese Foreign Ministry spokesperson called the statement a "blatant threat."¹³⁷ The intelligence assessment, delivered to President Biden in August 2021, did not offer a definitive conclusion on the origins of the virus.¹³⁸ The assessment noted "China's cooperation most likely would be needed to reach a conclusive assessment" on the virus' origins, but that Chinese officials hindered the investigation, preventing U.S. officials from reaching a definitive conclusion.¹³⁹

New Evidence of Strength and Constraints in China-Russia Entente

China and Russia continued to deepen ties throughout 2021 as they celebrated the 20th anniversary of a pact that laid the basis for their multifaceted cooperation today.¹⁴⁰ At the same time, Russia's independent diplomatic engagements with India and the United States underscored the opportunistic nature of the Sino-Russian relationship.

Sino-Russian defense cooperation over the past year signaled to Washington the two countries' closeness. Military exercises improved their ability to operate together in ways that could allow them to simultaneously contest U.S. interests. Chinese troops and equipment from the PLA's Western Theater Command participated in Russia's large-scale Kavkaz-2020 strategic military exercise over five days in the fall of 2020, practicing joint live fire-strike, mobile defense, and battlefield situation control.¹⁴¹ Chinese troops and wheeled equipment traveled to Russia on several Y-20 transport aircraft, marking the first time China had sent Y-20 transport aircraft with military cargo beyond its borders.¹⁴² In December 2020, Russian and Chinese bombers flew a second joint patrol mission over the Sea of Japan and the East China Sea after their first ever joint aerial patrol in 2019.¹⁴³ The Russian Defense Ministry claimed the joint mission was intended to "increase the level of cooperation between the two militaries, expand their ability for joint action and strengthen strategic stability."¹⁴⁴ Both activities reinforce the trend in recent years toward Sino-Russian exercises that are increasingly frequent, geographically varied, and complex, raising concerns the two could coordinate their military capabilities to challenge U.S. interests abroad.¹⁴⁵ Even so, some observers argue the exercises remain superficial and do not yet meaningfully improve the two countries' interoperability.¹⁴⁶

Concern among some observers also grew over the potential combined threat posed by the two countries in the nuclear domain. China's significant expansion of its nuclear arsenal prompted Admiral Charles A. Richard, commander of U.S. Strategic Command, to express concern about the potentially "additive" nuclear threat posed by the two countries, particularly if they choose to work together. (For more, see Chapter 3, Section 2: "China's Nuclear Forces: Moving beyond a Minimal Deterrent.")¹⁴⁷

China and Russia continued to take complementary positions on key diplomatic issues and to expand joint scientific initiatives. In March 2021, both countries blocked a UN Security Council resolution to condemn the military coup in Burma (Myanmar).¹⁴⁸ The two countries also made progress toward their goal of building a joint research base on the moon. The heads of the Chinese and Russian space agencies signed a memorandum of understanding on the planned lunar base in March and formally invited other countries and international organizations to join the project in April.^{*149} The moves came just months after Russia's space agency Roscosmos condemned U.S. plans for a lunar Gateway, part of the National Aeronautics and Space Administration's Artemis lunar exploration

*As of August 2021, no countries or international organizations had formally joined the project.

program, as too “U.S.-centric” and indicated it could withdraw from the International Space Station partnership in 2025.¹⁵⁰ According to a promotional video released by Roscosmos, the Sino-Russian lunar base will develop in three phases: reconnaissance with probes until 2025, construction from 2026 to 2035, and utilization from 2036.¹⁵¹

Meanwhile, Russia and India for the first time held a “two plus two” meeting of their foreign and defense ministers in April 2021 that one former Indian official argued was Russia’s way of signaling that close relations with China would not limit its strategic autonomy or arms sales to India.¹⁵² After a telephone call in April 2021, Russian President Vladimir Putin also met with President Biden at a summit in Geneva in June.¹⁵³ Some observers speculated that Chinese leaders were anxiously watching the aftermath of the phone call and summit for any signs that Russia could be aligning itself more closely with the United States.¹⁵⁴ Chinese commentators argued the meeting was intended to drive a wedge between Russia and China.¹⁵⁵

Chinese Sanctions Dash Hopes for Using European Countries as Counterweight

Sanctions China levied against the UK and EU undermined Beijing’s hopes to use ties with European countries as a strategic counterweight against growing tensions with the United States. In January 2021, Chinese Foreign Minister Wang described the year ahead as a critical “turning point” for China-EU relations and called for deepening trust and coordination with the EU amid what he described as the “most severe situation” in U.S.-China relations in over 40 years.¹⁵⁶ He further trumpeted the then-recently signed EU-China Comprehensive Agreement on Investment as a symbol of the two sides’ deepening ties.¹⁵⁷ Nevertheless, Beijing jeopardized the agreement two months later by sanctioning members of the European Parliament as well as European academics after the UK and EU governments joined the United States and Canada in sanctioning Chinese officials over their human rights abuses in Xinjiang.*¹⁵⁸

Beijing’s countersanctions turned European opinion sharply against it and created political pressure against approving the investment agreement.¹⁵⁹ The heads of 37 European research institutions cosigned a statement in response to the sanctions, expressing concerns that “targeting independent researchers and civil society institutions undermines practical and constructive engagement” and harms Europe-China relations more broadly.¹⁶⁰ The European Parliament reported in April that before it would consider approving the investment deal, China must first not only lift the sanctions it

*China’s retaliatory sanctions, which were not authorized by any specific Chinese law, prohibit sanctioned individuals and their families from entering China, including Hong Kong and Macau, and any companies and institutions affiliated with the individuals from doing business with China. China’s sanctions against Europe followed an earlier round of sanctions in January aimed at just-departed officials from the Trump Administration, which China’s Ministry of Foreign Affairs accused of acting against China’s interests out of “bias and hatred.” Ministry of Foreign Affairs of the People’s Republic of China, *Foreign Ministry Spokesperson Announces Sanctions on Relevant EU Entities and Personnel*, March 22, 2021; Gerry Shih, “China Fires Parting Sanctions at Trump Officials, Seeks ‘Better Angels’ in Biden Team,” *Washington Post*, January 21, 2021; Ministry of Foreign Affairs of the People’s Republic of China, *Foreign Ministry Spokesperson Hua Chunying’s Regular Press Conference on January 21, 2021*, January 21, 2021; Ministry of Foreign Affairs of the People’s Republic of China, *Foreign Ministry Spokesperson Announces Sanctions on Pompeo and Others*, January 20, 2021.

imposed on EU entities and individuals but also present a timetable for ratifying and implementing the International Labor Organization's forced labor conventions and recommit to upholding its commitments to Hong Kong.¹⁶¹ The European Parliament overwhelmingly voted to "freeze" discussion of the deal in May, making clear it would not approve abandoning what they saw as European values for the purpose of increased trade.¹⁶²

Europe pushed back against concerning Chinese actions in other ways over the past year. The EU's new foreign investment screening framework, inspired by the need to block predatory acquisitions from Chinese entities, became fully operational in October 2020. The framework sets minimum standards for EU member states' investment screening regimes, though it does not harmonize national-level screening mechanisms or require member states to introduce any such screening.¹⁶³ In November 2020, the European Parliament suspended an EU-China Friendship Group of lawmakers advocating for closer ties with China over concern the group was too close to the Chinese government.¹⁶⁴ In April 2021, the Council of the European Union released its first ever Indo-Pacific strategy, recognizing the EU's need to actively engage with partners in the region to maintain its rules-based order in the face of China's challenges to that order.¹⁶⁵

Notable National-Level Policy Shifts

Amid the debate in Brussels regarding EU policy toward China, some of Europe's leading governments signaled their own policy shifts.¹⁶⁶ In June 2021, the powerful Federation of German Industries, which is often seen as a bellwether for Berlin's largely trade-driven foreign policy, criticized China's new anti-sanctions law as creating uncertainty and harming the business environment.¹⁶⁷ In July, UK Prime Minister Boris Johnson ordered a national security review of a Chinese-owned firm's purchase of the UK's largest semiconductor producer.¹⁶⁸ Although the transaction ultimately proceeded in August, a UK government spokesperson stated that the UK's National Security Advisor "will continue to monitor the situation closely" and "will not hesitate to take further action if needed."¹⁶⁹ Throughout 2021 the UK government also continued seeking to restrict the involvement of Chinese state-owned nuclear energy company China General Nuclear Power Group (CGN) in nuclear power plant projects in the country.*¹⁷⁰

Cracks began to emerge in China's influence over Central and Eastern European countries, many of which had previously been open to Chinese investment and trade. Some European leaders skipped a meeting of the Cooperation between China and Central and Eastern European Countries forum, or the 17+1, which the Chi-

*The U.S. Department of Commerce added CGN to the Entity List in 2019. CGN is already heavily invested in financing two French-led nuclear power plant projects in the UK, Hinkley and Sizewell, and it seeks to build an additional plant at Bradwell that would feature its own nuclear reactor technology. In August 2020, members of the UK parliament began exploring measures to prevent CGN from participating in the Bradwell project. According to reports from July and September of 2021, the UK government is moving toward a deal that could end CGN's involvement in the Sizewell project. *Reuters*, "UK Looking at Deal to Remove China from Nuclear Project—Report," September 25, 2021; *Reuters*, "UK Looks to Remove China's CGN from Nuclear Power Projects—FT," July 26, 2021; Jonathan Ford, Jim Packard, and Nathalie Thomas, "China Tensions Raise Doubts over UK Nuclear Projects," *Financial Times*, August 5, 2020.

nese government set up in 2012 to directly influence the policies of individual European countries against the interests of the broader EU.¹⁷¹ When General Secretary Xi chaired a long-delayed 17+1 summit in February 2021, six member countries sent ministers instead of national leaders. The downgraded delegations showed some participants were frustrated enough by the lack of follow-through on promised Chinese investment to snub Beijing despite the high-level attention General Secretary Xi attempted to place on the meeting.¹⁷² In May, Lithuania became the first member of the group to quit the forum entirely.¹⁷³ Lithuania then agreed to open a new “Taiwanese Representative Office” in Vilnius, the first representative office Taiwan has established in Europe since 2003 and its first in any European country to bear the name “Taiwan” rather than “Taipei.”¹⁷⁴ In response, the Chinese government expelled Lithuania’s ambassador and recalled its own ambassador before escalating tensions by suspending a rail link to Lithuania.¹⁷⁵

Expanding Influence in the Middle East, Africa, and Central Asia

While it grew increasingly confrontational toward European and other democracies, China made concerted efforts to deepen its influence in developing countries in the Middle East, Africa, and Central Asia. In the Middle East, Beijing demonstrated an increased appetite for involvement and its interest in using ties to Middle Eastern countries to globally promote its alternative definition of human rights.¹⁷⁶ In March 2021, Foreign Minister Wang visited Iran, Saudi Arabia, Turkey, the United Arab Emirates (UAE), Bahrain, and Oman.¹⁷⁷

China and Iran made headlines when the two nations inked a \$400 billion economic and security cooperation agreement in March 2021 after five years of negotiations.¹⁷⁸ The wide-ranging deal, which many experts consider a political maneuver against the United States, seeks to boost Chinese investment in Iran’s infrastructure over 25 years in exchange for discounted access to Iranian oil and gas.¹⁷⁹ The pact also calls for strengthened political and defense ties between the two countries. Despite the deal’s ambitious investment goal, questions remain whether the agreement truly signals a sustainable intensification of China-Iran economic ties, with a growing number of China-Middle East experts surmising that the “terms, significance, and price of the agreement have all been greatly exaggerated.”* China is also likely to carefully calibrate deepening its ties with Iran due to its fear of antagonizing other close partners in the region such as Saudi Arabia and the UAE.¹⁸⁰

*For instance, according to Chinese customs data, China-Iran bilateral trade stood at \$14.9 billion in 2020. This figure was a marked decrease from its already relatively low \$23 billion in 2019. In contrast, China’s trade with Saudi Arabia and the UAE in 2020 was valued at \$67.2 billion and \$49.3 billion, respectively. Will Green and Taylore Roth, “China-Iran Relations: A Limited but Enduring Strategic Partnership,” *U.S.-China Economic and Security Review Commission*, June 28, 2021, 6; Kabir Taneja, “Iran under Ebrahim Raisi: The View from India,” *Observer Research Foundation*, August 2021; William Figueroa, “A Fact Check of the 25-Year Iran China Agreement,” *Al Sharq Strategic Institute*, April 8, 2021; Lucille Greer and Esfandyar Batmanghelidj, “China and Iran Announced a New Economic and Security Partnership. That’s Not as Alarming as It Sounds,” *Washington Post*, April 1, 2021; Jacopo Scita, “No, China Isn’t Giving Iran \$400 Billion,” *Bourse & Bazaar Foundation*, September 20, 2021; Jonathan Fulton, “Slender Beijing-Tehran Agreement: More Is Less, despite Hype,” *Arab Gulf States Institute in Washington*, April 1, 2021.

Foreign Minister Wang also sought to deepen China's ties to Arab states, emphasizing China's agreement with Arab countries to build a "China-Arab community of common destiny."¹⁸¹ Speaking at the end of the trip, he attempted to frame China's ties with the Middle East as representing an alternative view of international norms, announcing that China and the Middle Eastern countries he visited "believe that the view of human rights in some 'Western' countries does not represent the international view on human rights."¹⁸² Building on the momentum from these state visits to the region, China managed to garner widespread support later in the year from the Arab world concerning its treatment of Uyghur Muslims, with a majority of the Arab Gulf states publicly praising China's "counter-terrorism and deradicalization measures in Xinjiang."^{*}

In May 2021, Chinese diplomats made further attempts to promote China as an alternative leader in the region and criticize the United States, accusing Washington of "standing on the opposite side of international justice" in its position on the 11-day conflict between Israel and Hamas.¹⁸³ The violence in Gaza also generated tensions in China's generally warm relations with Israel, prompting Chinese authorities to call on "all parties, especially Israel... [to] exercise restraint and stop hostilities immediately."¹⁸⁴ China's relations with Israel faced additional strain when an August 2021 report revealed that Chinese operatives, posing as Iranian hackers, carried out a series of coordinated cyberattacks "against Israeli government institutions, IT providers, and telecommunications entities" between 2019 and 2020.¹⁸⁵

Finally, China continued using COVID-19 diplomacy in an attempt to increase its influence in the region. China's most important Middle Eastern partners in COVID-19 diplomacy are the UAE and Bahrain, both of which participated in phase III trials of the Sinopharm vaccine and were among the earliest adopters worldwide of the vaccine in 2020.¹⁸⁶ In March 2021, Sinopharm entered into a joint venture with an Abu Dhabi-based technology company, allowing the UAE to become the first country to produce the Sinopharm vaccine outside of China.¹⁸⁷ The joint venture also includes plans for a research and development center for life sciences and

^{*}Despite mounting international pressure over China's systemic campaign of oppression against Uyghurs and other Muslim minority groups in the far western region, support for China's actions remains strong in much of the Arab world. To date, nearly every country in the Middle East has expressed support for China's policies on issues related to Xinjiang, Hong Kong, Taiwan, and Tibet in one capacity or another, citing opposition to "interference in China's internal affairs under the pretext of human rights." Saudi Arabia, Egypt, and the UAE have also reportedly collaborated with Chinese authorities to arrest and deport Uyghur Muslims seeking refuge in the Middle East. In October 2020, a number of leaders from Middle Eastern countries signed onto a joint statement during the General Debate at the Third Committee of the 75th session of the UN General Assembly, praising China for its efforts in combating the "threats of terrorism and extremism" within its borders. In June 2021, 10 Middle Eastern nations were among 69 countries that issued a joint statement at the 47th session of the United Nations Human Rights Council in Geneva, criticizing countries for interfering in China's internal affairs "under the pretext of human rights." Permanent Mission of the People's Republic of China to the UN, "Cuba Made a Joint Statement on Behalf of 45 Countries in Firm Support of China's Counter-Terrorism and Deradicalization Measures in Xinjiang," October 6, 2020; Permanent Mission of the People's Republic of China to the United Nations Office at Geneva and Other International Organizations in Switzerland, "Joint Statement of 69 Countries at the Interactive Dialogue on High Commissioner's Annual Report at the 47th Session of the Human Rights Council," June 22, 2021; Jonathan Hoffman, "Why Do Some Muslim-Majority Countries Support China's Crackdown on Muslims?" *Washington Post*, May 4, 2021; Jomana Karadshah and Gul Tuysuz, "Uyghurs Are Being Deported from Muslim Countries, Raising Concerns about China's Growing Reach," *CNN*, June 8, 2021; Middle East Monitor, "UAE, Saudi, Egypt Deporting Uyghurs to China, Report Says," June 9, 2021.

biotechnology, indicating China's interest in using the pandemic to establish a permanent foothold in the region's biomedical sector.¹⁸⁸

Continued Promotion of a China Model in Africa

The CCP stepped up its promotion of China's political and developmental model to Africa over the past year. In a December 2020 online briefing for African political party leaders, CCP International Liaison Department head Song Tao described to his African interlocutors "enlightenments acquired by the Party throughout the years of its development" and asserted "the Chinese system... can serve as a reference to all developing countries including African countries in their pursuit of independent progress."¹⁸⁹ He further encouraged African party leaders to increase exchanges between their parties and the CCP on the topic of governance and to support more people-to-people interactions between their countries and China.¹⁹⁰

China undertook a flurry of diplomatic activity in Africa throughout early 2021 to prepare for the upcoming Forum for China-Africa Cooperation, held once every three years. In early January 2021, Foreign Minister Wang visited Nigeria, the Democratic Republic of the Congo (DRC), Botswana, Tanzania, and Seychelles, continuing a 31-year tradition prioritizing Africa for the Chinese foreign minister's first overseas visit of the year.¹⁹¹ During the trip, Botswana and the DRC signed memoranda of understanding to officially join China's Belt and Road Initiative (BRI), bringing the total number of participating African countries to 46.¹⁹² While in the DRC, Foreign Minister Wang agreed to cancel approximately \$28 million in interest-free loans from the Chinese government to the DRC government that had matured in 2020.¹⁹³ He also agreed to provide \$17 million in additional financial support to the DRC* and to fund the refurbishment of the DRC's foreign ministry headquarters.¹⁹⁴ In April 2021, China agreed to construct an annex to Ghana's foreign ministry building,† while the Kenyan government revealed in May 2021 that China had agreed to fund construction of a new building for Kenya's foreign ministry.¹⁹⁵ After concluding agreements with China earlier in the year, DRC President Felix Tshisekedi nonetheless demonstrated a willingness to push for a more equitable relationship with Beijing by calling for the renegotiation of mining contracts with foreign companies operating in the DRC, the great majority of which are Chinese.¹⁹⁶

Strengthening Ties in Central Asia

In Central Asia, China's diplomacy in 2021 centered on improving its strategic position amid the U.S. withdrawal from Afghanistan and expanding China-led mechanisms for regional coopera-

*According to Foreign Minister Wang, \$15 million of the total \$17 million will be used to support development projects in the DRC, while the remaining \$2 million will be used to support the DRC in its leadership of the African Union in 2021. February 22, 2021, "President Felix-Antoine Tshisekedi Tshilombo Elected Chair of the AU for the Year 2021—Five Member Bureau Elected to Support the Work of the Assembly," February 22, 2021; Jevans Nyabiage, "China Cancels Democratic Republic of Congo Loans as It Joins Belt and Road," *South China Morning Post*, January 7, 2021.

† Chinese contractors originally constructed Ghana's foreign ministry headquarters building in 2013. Citi Newsroom, "Ghana, China Sign Agreement for Construction of Foreign Ministry Annex Building," April 11, 2021; Daily Guide Network, "Agreement Signed for Implementation of China-Aid Foreign Ministry's Annex Building Project," April 9, 2021; *Ghana Business News*, "Chinese Contractor Completes Ghana's New Foreign Affairs Building," March 18, 2013.

tion. Against the backdrop of the U.S. withdrawal from Afghanistan, Foreign Minister Wang hosted a nine-member delegation of senior Taliban officials in late July led by the Taliban's chief negotiator and cofounder Mullah Abdul Ghani Baradar in Tianjin, signaling "warming ties" between China and the Islamist militant group.¹⁹⁷ Beijing's motives for strengthening relations with the Taliban have largely been driven by its fears that Afghanistan could become a potential hub for Uyghur militants from Xinjiang and other insurgent groups operating near the China-Afghan border, as well as by its desire to secure its economic assets in the region.¹⁹⁸

Beijing has pledged support for the Taliban in the form of economic support and investment for Afghanistan's reconstruction, with Chinese authorities urging the Taliban to "make a clean break with terrorist forces," including the East Turkestan Islamic Movement.¹⁹⁹ Despite having historical connections with Xinjiang's Uyghur militant groups affiliated with al Qaeda, the Taliban agreed it would prevent Uyghur separatist fighters, some of whom had previously sought refuge in Afghanistan, from entering and operating in Afghanistan. In early September 2021, the new Taliban government claimed China as its "most important partner" because of Beijing's readiness to invest in Afghanistan following the group's forcible takeover of the country.²⁰⁰ Also in September, China's foreign ministry spokesperson praised the Taliban's formation of an interim government as a "necessary step for Afghanistan to restore domestic order and pursue post-war reconstruction."²⁰¹ Despite these overtures, many experts have assessed China's cooperation with the Taliban to be reluctant at best, particularly given China's campaign against Uyghur Muslims in Xinjiang. At the same time, the Taliban will likely seek to "assuage China's concerns" and are "eager to secure Beijing's acquiescence to their rule" in an effort to obtain greater international legitimacy.²⁰²

China also maintained positive relations with neighboring Pakistan. In June 2021, Foreign Minister Wang announced that China, Afghanistan, and Pakistan had agreed to support the "substantial expansion" of BRI in Afghanistan and expressed interest in extending the China-Pakistan Economic Corridor into the country.²⁰³ In July, Prime Minister Imran Khan supported the Chinese government's actions in Xinjiang and lauded the CCP for providing the world a "better alternate governance model" superior to the democratic system of "Western" countries.²⁰⁴

China also expanded its diplomatic engagement with other Central Asian countries. On May 12, Foreign Minister Wang hosted foreign ministers from Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan for the second Foreign Ministers Meeting of a new China-led grouping called "China + Central Asia" (C+C5).^{*} The

^{*}The first C+C5 Foreign Ministers Meeting convened by videoconference in July 2020. The membership of the C+C5 grouping overlaps considerably with the original membership of the Shanghai Cooperation Organization, an organization founded between China, Russia, Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan in 2001. China initially used the Shanghai Cooperation Organization as a framework to deepen cooperation with Central Asian states without arousing a defensive reaction from Russia, which considered post-Soviet states its sphere of influence. In contrast, the C+C5 grouping is notable for Russia not being a member. China Foreign Ministry, *Wang Yi Talks about Eight-Point Consensus and Ten Outcomes of "China + Central Asia" Foreign Ministers' Meeting*, May 12, 2021; Casey Michel, "It's Official: India and Pakistan Join Shanghai Cooperation Organization," *Diplomat*, June 12, 2017; *China Daily*, "History of Development of SCO," June 12, 2006; Edward Lemon, Research Assistant Professor, Texas A&M

group released statements outlining plans for increased cooperation in the economic and security domains and pledged mutual support of each other's "core interests," likely reflecting China's desire to prevent Central Asian states from criticizing it on issues it considers sensitive, such as Taiwan and Xinjiang.²⁰⁵ The countries also discussed increasing security cooperation under the framework of BRI, creating a new initiative under the project they termed the "Safe Silk Road."* In particular, they pledged to increase counterterrorism efforts in light of the evolving situation in Afghanistan.²⁰⁶

Chinese Coercion Prompts Indo-Pacific Countries to Strengthen Ties with the United States

China's increasing use of coercion in the Indo-Pacific prompted enhanced efforts by countries in the region to balance against China's aggressive tactics. A key country leading these efforts was Japan, whose relationship with China continued to deteriorate over the past year. In February 2021, Japan's government canceled an anticipated state visit by General Secretary Xi, which would have been the first official visit by a CCP general secretary to Japan since 2008.²⁰⁷ Japan's government had already postponed a visit in 2020 due to concerns over the COVID-19 pandemic.²⁰⁸ At that time, Japan's ruling Liberal Democratic Party urged the government to cancel the visit altogether given "grave concerns" about "the principles of freedom, human rights, [and] democracy."²⁰⁹ Some Japanese lawmakers continued to politically oppose the state visit in 2021.²¹⁰ While Japan's government did not announce that General Secretary Xi's visit was cancelled for these reasons, the announcement that he would not visit Japan in 2021 was nonetheless a high-profile sign of tensions in the China-Japan relationship.

Meanwhile, China continued escalating its military coercion in Japanese airspace and waters. In 2021, Chinese government ships set the longest recorded streak of 112 consecutive days sailing in the contiguous zone† of the Japan-administered Senkaku Islands.²¹¹ In

University, interview with Commission staff, August 6, 2020; Michael Yahuda, "China's Relations with Asia, Continuity amid Change," in David Shambaugh, ed., *China and the World*, Oxford University Press, January 30, 2020, 283; Zhao Huasheng, "China's View of and Expectations from the Shanghai Cooperation Organization," *Asian Survey* 53:3 (2013): 436–460, 436–437; China Foreign Ministry, *Wang Yi Talks about Eight-Point Consensus and Ten Outcomes of "China + Central Asia" Foreign Ministers' Meeting*, May 12, 2021; China Ministry of Foreign Affairs, *Foreign Ministry Spokesperson Hua Chunying's Regular Press Conference on July 17, 2020*, July 17, 2020.

*Creating a "Safe Silk Road," according to Foreign Minister Wang, would entail cooperation between China and Central Asian nations to address a number of security challenges, including transnational organized crime, illicit drugs, and cybersecurity, in addition to protecting "large-scale activities... projects... personnel and facilities." China's ambitions to step up security cooperation with Central Asian countries stem from concerns of a resurgence of terrorism in Afghanistan amid the withdrawal of U.S. troops and the potential threat to regional projects that are part of the BRI. China Foreign Ministry, *Wang Yi Hosts "China + Central Asia" Foreign Ministers' Meeting*, May 12, 2021; Rachel Zhang, "China Seeks to Expand Belt and Road to Afghanistan in Name of Security as US Withdraws Troops," *South China Morning Post*, June 4, 2021; Rachel Zhang, "China Looks to Central Asia on Security to Create 'Safe Silk Road,'" *South China Morning Post*, May 14, 2021; *Economic Times*, "China Foresees Threat to BRI Projects amid US Drawdown from Afghanistan," May 16, 2021.

†Under international law, coastal states are entitled to territorial seas, which extend up to 12 nautical miles from their baseline, such as a continental shelf, and a contiguous zone, which extends up to 24 nautical miles from that baseline. Within their contiguous zones, states may exercise control needed to prevent infringement of laws within their territorial seas. The 2021 record of days Chinese government ships stayed in Japan's contiguous zone exceeds the record set in 2020 by a single day, demonstrating China's trend of setting, then exceeding, such records on an annual basis since 2019. Prior to 2019, the record for the longest streak of consecutive days Chinese government ships sailed around the Senkaku Islands was in 2013. U.S. National Oceanic and Atmospheric Administration, *Maritime Zones and Boundaries*, July 7, 2021; *Japan Times*,

March, the PLA Navy sent a Type 055 (RENHAI) warship through the Sea of Japan for the first time, which a *Global Times* article suggested was in response to a U.S.-Japan joint statement that “seriously provoked China” by emphasizing the importance of stability in the Taiwan Strait.²¹² One month later, the PLA Navy sailed its *Liaoning* carrier group through the Miyako Strait, leading some experts to assess that the PLA is signaling to Japan its ability to “punch through” the First Island Chain.²¹³

Japan also grew more vocal in its support for Taiwan. In addition to referring to the importance of stability in the Taiwan Strait during a summit between President Biden and then Japanese Prime Minister Suga Yoshihide in April 2021, Japan for the first time stated the same in a joint statement with the EU and in its annual defense white paper.²¹⁴ In June, the *Financial Times* reported that in 2020 U.S. and Japanese military officials “began serious planning for a possible conflict” against China over Taiwan.²¹⁵ In July, Japan’s Deputy Prime Minister Taro Aso was even more explicit in describing the importance of Taiwan to Japan, stating that an attack on Taiwan may also be a “threat to Japan’s survival,” in which case “Japan and the U.S. must defend Taiwan together.”²¹⁶ In August, Japan’s ruling Liberal Democratic Party announced plans to initiate a security dialogue with Taiwan’s ruling Democratic Progressive Party, noting the talks were requested by the Japanese side.²¹⁷ (For more on Japan’s growing engagement with Taiwan, see Chapter 4, “A Dangerous Period for Cross-Strait Deterrence: Chinese Military Capabilities and Decision-Making for a War over Taiwan.”)

Japanese Policy and Public Opinion Harden against China

Japan’s government suggested it was preparing to take historic steps to increase defense spending in the face of mounting pressure from China. In May 2021, the Liberal Democratic Party proposed that Japan “drastically increase” its defense budget in response to China’s coercive behavior in the region.²¹⁸ In June, Japan’s Ministry of Defense announced it had shed its self-imposed cap of spending no more than one percent of Japan’s gross domestic product on defense.²¹⁹ Following Prime Minister Suga’s resignation from office in September, Japan’s Ministry of Defense announced it would review the country’s core national security guidelines, citing the fact that the security and technological environment in the region had “changed significantly” since Japan formulated its first national security strategy in 2013.²²⁰ Fumio Kishida, who took office as Japanese prime minister in October, has supported Japan’s shift toward a more proactive foreign and defense policy. During his campaign, Prime Minister Kishida called for Japan to stand up for universal values and human rights “in the face of the expansion of authoritarian regimes like China” and to develop the capability to strike Chinese missile bases in response to a hypothetical PLA attack.²²¹

Japan’s policy changes align with the Japanese public’s growing support for a more proactive foreign and defense policy. A *Nikkei* poll taken in April 2021 found that 74 percent of Japan’s public sup-

“Chinese Ships Sail near Senkakus for Record 112 Straight Days,” June 5, 2021; Shun Niekawa, “Chinese Ships Set 65-Day Record for Closing in on Senkaku Waters,” *Asahi Shimbun*, June 17, 2020; Caitlin Doornbos and Hana Kusumoto, “Japan Reports a Record Number of Chinese Ships near Contested Senkaku Islands,” *Stripes*, December 3, 2019.

ports the government taking an active role in cultivating stability in the Taiwan Strait.²²² Similarly, a Japan Ministry of Foreign Affairs poll taken in March found that 69 percent of respondents wanted Japan's government to take a "strong stance" against China Coast Guard ships entering Japan's waters.*²²³

The Quad Takes New Steps

Other counterbalancing efforts were led by countries comprising the Quadrilateral Security Dialogue, or Quad (the United States, Australia, India, and Japan) and included other participants from the region. In a historical first, the Quad countries' heads of government met in March 2021, producing a joint statement affirming their commitment to "a free, open rules-based order, rooted in international law" that will "counter threats to [security and prosperity] in the Indo-Pacific and beyond."²²⁴ The leaders further committed to regular senior level meetings and held their first in-person summit at the White House in September, releasing a joint statement recommitting to a vision of a rules-based order "undaunted by coercion."²²⁵ The Quad countries maintained a regular dialogue with vice foreign ministers of New Zealand, South Korea, and Vietnam, a grouping outside observers called the "Quad-plus," meeting 15 times between March 20, 2020, and March 19, 2021.²²⁶

The Quad partnership addressed a broad range of issues. The joint statement following the Quad summit in March noted that future objectives for the group included delivering COVID-19 vaccines, collaborating on international standards for technology, and leading efforts to address climate change.²²⁷ Following their summit in September, Quad leaders additionally committed to advance secure and transparent 5G and "beyond-5G" networks and to secure supply chains of critical technologies and materials such as semiconductors.²²⁸ Quad countries also stepped up cooperation between their space programs. In October 2020, a U.S.-India joint statement announced the two countries would begin sharing space situational awareness information.²²⁹ In early 2021, the India Space Research Organization also signed agreements with the Australian Space Agency and Japan Aerospace Exploration Agency to increase cooperation on space-related issues.²³⁰

Chinese leaders and scholars were critical of the Quad's growth. Immediately after the March summit, China's Foreign Ministry spokesperson Zhao Lijian described the grouping as an "exclusive clique" that he warned "will neither receive a welcome nor have its way."²³¹ In May 2021, China's ambassador to Bangladesh warned his host country's officials that any future collaboration with the Quad would "substantially damage" the China-Bangladesh relationship.²³² In June, President Biden mentioned that General Secretary Xi had urged him previously to refrain from working with Quad countries.²³³ In response to the Quad's cooperation, China indicated it might seek to deepen its own security relationships in the region.

*In one illustration of Japan's changing approach to China, the cover of the Ministry of Defense's annual defense white paper depicted an armored samurai mounted on a charging horse. In contrast, in 2020 the defense white paper's cover had depicted an idyllic scene of Mount Fuji. Ken Moriyasu, "A Tale of Two Covers: Japan's Message on Taiwan Draws US Notice," *Nikkei Asia*, July 21, 2021.

In a May 2021 interview, Pakistan's Foreign Minister Shah Mahmood Qureshi hinted at one such possibility, suggesting decisions on plans for a PLA Navy base in Pakistan "depends on how the Quad turns out."²³⁴

Problems Linger from China's Deadly Clash with India

Unresolved tensions from the deadly 2020 clash between the PLA and the Indian Armed Forces continued to shape both countries' policies in 2021. The fatal border clash and following standoff were, according to a former Indian security official, a "very fundamental change" that drove revisions in India's "whole policy and discourse around China."²³⁵ In a February 2021 interview, Indian Army Lieutenant General Y K Joshi said India was "absolutely on the brink" with the PLA in August 2020.²³⁶ Satellite imagery showed Indian and PLA tanks fewer than 500 feet apart at that time.²³⁷ In an April 2021 speech to Chinese and Indian scholars, Indian Ambassador to China Vikram Misri noted an "inadvisable" tendency among Chinese diplomats "to sweep [the border conflict] under the carpet and characterize it as just a minor issue," which he warned was "tantamount to running away from the problem."²³⁸ In the same speech, the ambassador said sustained dialogue and "complete disengagement in all friction areas" would be a necessary first step toward "restoring trust and confidence in the relationship... that was damaged through last year's actions."²³⁹

Chinese and Indian forces disengaged at two of four standoff locations along their disputed border in 2021, but limited discussions on troop withdrawal make further disengagement uncertain.²⁴⁰ In August, an unusually large patrol of over 100 PLA troops entered disputed territory in the Indian state of Uttarakhand, emerging from multiple locations to venture several miles into territory administered by India before departing after three hours.²⁴¹ Both militaries are hardening their positions along the disputed border beyond the existing standoff locations. China has taken a new step in building "militarized village[s]" that position electronic warfare and air defense stations close to India.²⁴² It constructed several of these villages in neighboring Bhutan, which researcher Robert Barnett describes as part of an effort to "force the Bhutanese government to cede territory that China wants elsewhere in Bhutan to give Beijing a military advantage in its struggle with New Delhi."²⁴³ The militarized villages are part of China's "Plan for the Construction of Moderately Well-Off Villages in the Border Area of the Tibet Autonomous Region," which describes building 628 such villages near the contested border between 2017 and 2020 under the guise of "poverty alleviation."²⁴⁴

Shortly after the 2020 border dispute and continuing through 2021, PLA cyberespionage and other Chinese state-sponsored organizations significantly increased their attacks on targets in India. One Chinese group, using techniques and resources similar to those of hackers affiliated with the PLA and Ministry of State Security, launched a "concerted campaign against India's critical infrastructure," targeting at least ten regionally important nodes in India's

power grid and two sea ports with cyberattacks.*²⁴⁵ These attacks may have caused blackouts throughout India, including a blackout on October 13, 2020, in Mumbai that stopped trains and forced hospitals to rely on generators.²⁴⁶ At the time, local Indian media reported the cyber department in Maharashtra, the Indian state in which Mumbai is located, discovered malware that may have caused the power outage.²⁴⁷ Analysts at U.S. cybersecurity company Recorded Future also uncovered evidence suggesting a coordinated cyber-attack took place against India's power grid at the time of the power failure.²⁴⁸ Responding to the Recorded Future report, in March 2021 India's Ministry of Power denied any power disruption "due to the referred threat" in a statement that declined to mention the Mumbai outage.²⁴⁹ In the first six months of 2021, another group closely affiliated with PLA cyberespionage units heavily targeted Indian aerospace companies, defense contractors, and telecommunications providers.²⁵⁰

New Steps toward Decoupling from Chinese Technology

In 2021, India also expanded its 2020 policies to selectively restrict Chinese companies' access to the country's 5G and data markets. India's Ministry of Communications did not include any Chinese companies in its May 2021 announcement listing participants selected to join trials to extend 5G network coverage in India.²⁵¹ In addition, India's Ministry of Electronics and Information Technology announced the government's previously temporary ban on 59 Chinese smartphone applications was now permanent, citing privacy concerns.²⁵²

Australia Rebuffs China's Demands for Policy Changes

China unsuccessfully sought to compel Australia to make key policy concessions on more than a dozen matters ranging from Australia's domestic freedom of expression to its international advocacy for an independent COVID-19 investigation, leading Australian perceptions of China to crater.²⁵³ The Chinese Embassy attempted to pressure Canberra in November 2020 by leaking an official list of 14 grievances Beijing told Canberra were "poisoning" Australia-China relations.²⁵⁴ The list claimed the bilateral relationship could be improved only if Australia changed its stance on many internal policy matters, such as by repealing Australia's antifoign interference laws, effectively demanding Canberra make it easier for agents of foreign influence to subvert its politics.[†]²⁵⁵

Peter Jennings, executive director of the Australian Strategic Policy Institute, which Beijing also criticized in its list of complaints, testified to the Commission in January 2021 that China "seems to have dispensed with any pretense toward friendly relations" with

*These attacks may have been partially enabled by information Chinese hackers stole through Microsoft Exchange. Since 2017, Chinese hackers have been targeting foreign ministries and energy companies, including India's Hindustan Petroleum Corp., accumulating five gigabytes of stolen data consistent with what Chinese state-sponsored hackers have previously targeted. The same trove of stolen data also includes information from Malaysia's Petronas Nasional Berhad energy company and documents from the foreign ministries of Bahrain, Egypt, Iraq, Jordan, Oman, and Turkey. Kartikay Mehrotra, "Microsoft Exchange Used to Hack Diplomats before 2021 Breach," *Bloomberg*, August 4, 2021.

† For details on the anti-foreign interference laws, see U.S.-China Economic and Security Review Commission, *2018 Annual Report to Congress*, November 2018, 325–326.

Australia.²⁵⁶ Negative perceptions of China among Australians have increased fivefold in just three years as General Secretary Xi's treatment of Australia has "lost the Australian heart and mind for a generation," according to Mr. Jennings.²⁵⁷ An annual poll by Australia's Lowy Institute found in 2021 that 63 percent of Australians now see China as "more of a security threat to Australia" than an economic partner, which is up from 41 percent in 2020 and 12 percent in 2018.²⁵⁸ Australian Prime Minister Scott Morrison said in June 2021 that his government is ready to resume constructive dialogue with Beijing to resolve the "completely unconscionable" Chinese trade sanctions on Australian goods, but Beijing has not responded to overtures.²⁵⁹

Canberra used new powers in 2021 to prevent Victoria State from pursuing its own agreements with China, completing a saga begun when Victoria signed its own BRI memorandum of understanding in 2018. Following criticism of the 2018 BRI memorandum and a subsequent 2019 framework agreement, the Australian Parliament in December 2020 approved a bill giving the foreign minister veto power over state and local agreements with foreign countries to ensure such agreements do not harm Australia's interests.²⁶⁰ When Foreign Minister Marise Payne then canceled Victoria's BRI agreements along with two other unrelated deals* in April 2021, the Chinese Embassy voiced "strong displeasure and opposition" even though a spokesperson for China's Ministry of Foreign Affairs had earlier called the legislation an "internal affair" for Australia.²⁶¹ Australia's creation and use of this new oversight tool marked a significant setback for the CCP's strategy of using subnational diplomacy to bypass national governments by directly incentivizing local governments to adopt policies favorable to China's interests. (For more on the CCP's strategy of subnational diplomacy, see Chapter 1, Section 2, "China's Influence in Latin America and the Caribbean.")²⁶²

Australia, the United States, and the UK also jointly announced a trilateral security pact in September 2021 that most observers perceived as a move to counterbalance China.²⁶³ Under the pact, known as AUKUS, the United States and the UK agreed to help Australia acquire a nuclear-powered submarine fleet by sharing advanced technology for nuclear propulsion.²⁶⁴ Such a fleet will enhance the three countries' interoperability and efforts to counter Chinese military expansion across the Indo-Pacific.²⁶⁵ The pact will also strengthen U.S., UK, and Australian technological cooperation in cyber, artificial intelligence, quantum technologies, and other underseas capabilities.²⁶⁶

Cracks Widen between China and Southeast Asia

In 2021, China's diplomatic achievements fell short of its ambitions in Southeast Asia. This year marked the 30th anniversary of the China-ASEAN relationship. In anticipation of the anniversary, China's Ministry of Foreign Affairs announced two major diplomatic

*The four Victoria State agreements canceled under the Foreign Arrangements Scheme were a 2004 memorandum of understanding on technical and vocational training with the Islamic Republic of Iran, a 1999 scientific cooperation agreement with the Syrian Arab Republic, a 2018 Belt and Road Initiative Memorandum of Understanding with China's National Development and Reform Commission, and a 2019 Belt and Road Initiative Framework Agreement with the National Development and Reform Commission. Senator the Hon Marise Payne, *Decisions under Australia's Foreign Arrangements Scheme*, April 21, 2021.

goals. First, it sought to elevate what it called the China-ASEAN “strategic partnership” to a “comprehensive strategic partnership,” a higher level of cooperation in China’s diplomatic parlance.²⁶⁷ Second, it wanted to complete long-ongoing negotiations over a South China Sea Code of Conduct.*²⁶⁸ Alexander Vuving, a researcher with the Daniel K. Inouye Asia-Pacific Center for Pacific Studies, noted that China’s diplomatic corps exerted “maximum pressure” on Southeast Asian countries to meet this 2021 goal.²⁶⁹

China’s diplomats did not achieve either objective. The joint statement concluding the June 7 Foreign Minister’s Meeting only reaffirmed the China-ASEAN “strategic partnership” and made no mention of the Code of Conduct despite the 2020 joint statement’s acknowledgment of progress in Code of Conduct negotiations.²⁷⁰ Following the 2021 meeting, an ASEAN diplomat reportedly said China’s target for completing the Code of Conduct “has become more flexible” and that negotiations will extend into 2022.²⁷¹ China’s diplomatic shortcomings with ASEAN are likely related to a simultaneous recognition and growing distrust of Chinese power in Southeast Asian countries. An annual survey of Southeast Asian policymakers and civic leaders found that 76 percent of respondents considered China to have the most economic influence in the region, but of these, 72 percent said it was a worrying development rather than a welcome one.²⁷² Similarly, 49 percent of respondents said China had the most strategic-political influence in Southeast Asia, but of these, 89 percent said that was a worrying development.²⁷³

New Chinese Provocations Elicit Opposition in the South China Sea

Throughout 2021, Chinese military and paramilitary forces continued to assert illegal maritime claims over much of the South China Sea. Among these incidents, China regularly singled out Malaysia and the Philippines, souring China’s relationship with both countries.† In November 2020, China Coast Guard ships began harassing a drilling rig and accompanying ships operating in Malay-

*Chinese leaders consider the Code of Conduct a significant opportunity to set rules defining permissible activities in the South China Sea. Other South China Sea claimants, including Indonesia, Malaysia, the Philippines, and Vietnam, support the UN Convention on the Law of the Sea’s (UNCLOS) authority on permissible activities and for settling international disputes. Many South China Sea disputes not involving China do not rise to the level of international tribunals. In 2021 alone, Malaysia signed maritime cooperation agreements with Vietnam and Brunei, coordinating rather than competing in their overlapping claims. A Code of Conduct negotiated aside from UNCLOS would support China’s ambitions to selectively ignore international agreements. *Malay Mail*, “Malaysia, Vietnam Expected to Ink MoU on Maritime Security This Year, Says MMEA D-G,” April 5, 2021; Dawn Chan, “Malaysia, Brunei Agree to Jointly Develop Oilfields Straddling Common Maritime Border,” *New Straits Times*, April 5, 2021; Viet Hoang, “The Code of Conduct for the South China Sea: A Long and Bumpy Road,” *Diplomat*, September 28, 2020.

† Both Malaysia and the Philippines have recently taken steps against China’s illegal maritime claims in the South China Sea. In December 2019, Malaysia submitted information to the UN about the limits of its continental shelf, claiming an expanded EEZ within the South China Sea pursuant to UNCLOS. In 2016, the Philippines won a unanimous award before an international tribunal declaring that China’s expansive maritime claims in the South China Sea has no basis. In March 2020, the Philippines cited the ruling to declare China’s expansive maritime claims illegitimate. China’s coercive behavior is driven by its desire for the maritime resources within its unlawful claims and as a means of deterring countries from appealing to international law. Darryl John Esguerra, “On 4th Anniversary of Arbitral Win vs. China, PH Insists Award ‘Non-Negotiable,’” *Inquirer*, July 12, 2020; United Nations Division for Ocean Affairs and the Law of the Sea, “Commission on the Limits of the Continental Shelf (CLCS) Outer Limits of the Continental Shelf beyond 200 Nautical Miles from the Baselines: Submissions to the Commission: Partial Submission by Malaysia in the South China Sea,” June 19, 2020; United Nations, “Malaysia Partial Submission to the Commission on the Limits of the Continental Shelf Pursuant to Article 76, Paragraph 3 of the United Nations Convention on the Law of the Sea 1982 in the South China Sea,” December 12, 2019.

sia's EEZ only 44 nautical miles off Malaysia's coast, the closest to shore such harassment had been recorded and escalating a pattern of harassment of Malaysian ships that began in late 2019.²⁷⁴ In June 2021, 16 PLA IL-76 and Y-20 transport aircraft, sufficient military airlift to carry an airborne battalion with its combat equipment,* flew within 60 nautical miles of Luconia Shoals, a feature Malaysia administers but China includes within its illegal maritime claims.²⁷⁵ Malaysia reported the PLA aircraft flew in "tactical formation" and were unresponsive to repeated requests for contact from regional air traffic control, which conveyed a clear threat regardless of whether any PLA troops were actually embarked.²⁷⁶ The PLA flight occurred shortly after Malaysia's state-owned oil and gas company finished transporting materials to build a drilling platform in the same location.²⁷⁷

The unusually provocative nature of the flight appeared to drive Malaysia to adopt new policies pushing back against China.²⁷⁸ Malaysian Foreign Minister Hishammuddin Hussein, who earlier in 2021 said to Chinese Foreign Minister Wang "you will always be my elder brother," called the event a "breach" of "Malaysian airspace and sovereignty."²⁷⁹ Two days after the event, Malaysia requested bids for a long-range air surveillance radar that would improve its aerial detection and tracking capabilities.²⁸⁰ On July 1, Malaysia announced it would partner with Ericsson to develop its 5G network despite appearing to favor China's Huawei in 2020.†²⁸¹

China's aggressive maritime activity also pushed the Philippines to adopt a more confrontational approach to China in 2021. On March 20, the Philippines' National Task Force for monitoring South China Sea activities reported that approximately 220 Chinese fishing vessels, later confirmed to be maritime militia,‡ were moored within the Philippines' EEZ at Whitsun Reef.²⁸² Over the following week, the Philippines ordered navy patrols around Whitsun Reef and filed a diplomatic protest, while Australia, Canada, Japan, the UK, the United States, and Vietnam each voiced support.²⁸³ Shortly thereafter, much of China's maritime militia dispersed to other areas within or just outside the Philippines EEZ, leaving a much smaller contingent of vessels behind.²⁸⁴

Meanwhile, China's maritime forces escalated their harassment activities near other features both China and the Philippines claim.

*According to Air University China Aerospace Studies Institute Director of Research Roderick Lee, 16 IL-76 and Y-20 aircraft would be able to deliver an airborne battalion, two artillery companies, and over one dozen lightly armored infantry transport vehicles. Roderick Lee (@roderick_s_lee), "Some context about what "16 aircraft" translates into (assuming they're all Y-20s/IL-76s): That's enough to deliver a full PLAAF Airborne light combined arms battalion, a howitzer company, rocket artillery company, 12–15 Mengshis as prime movers, and associated supplies." Twitter, June 1, 2021, 2:12 p.m.

†Speaking in 2019, then Malaysian Prime Minister Mahathir Mohamad said Huawei "can spy as much as they like because we have no secrets." Tashny Sukumaran, "Malaysia's Mahathir Backs Huawei, Snubbing US Blacklist of Chinese Telecoms Giant," *South China Morning Post*, May 30, 2019.

‡In addition to its navy and coast guard, China operates the People's Armed Forces Maritime Militia, a paramilitary force composed of armed civilians and their vessels, most of which are fishing boats. According to Naval War College professor Andrew Erickson and research associate Conor Kennedy, China's maritime militia is a "state-organized, -developed, and -controlled force operating under a direct military chain of command to conduct Chinese state-sponsored activities," which are typically provocations and skirmishes with sailors from other countries in the South China Sea. Conor M. Kennedy and Andrew S. Erickson, "China's Third Sea Force, the People's Armed Forces Maritime Militia: Tethered to the PLA," *China Maritime Studies Institute*, March 2017, 2.

On April 9, PLA Navy Type 022 (HOUBEI) fast attack craft repelled Philippines reporters approaching Second Thomas Shoal, which is a feature the Philippines administers.²⁸⁵ Later that month, the Philippines Coast Guard accused China Coast Guard boats of “shadowing, blocking, dangerous maneuver, and radio challenges” near Scarborough Shoal.²⁸⁶ In May, the Philippines reported incursions by 287 Chinese maritime militia vessels in its EEZ.²⁸⁷ Philippines President Duterte publicly declared that China’s actions are psychological operations intended “just to show the Filipino that no matter how many times we go back there, nothing will happen because we are not in possession of the sea, it’s with them.”²⁸⁸ Rejecting China’s false narrative, the Philippines responded to China’s escalations by dispatching at least 13 vessels to conduct 57 patrols in the South China Sea from March through May 2021, escalating from three vessels conducting seven patrols across the ten months prior.²⁸⁹ In July, President Duterte reversed his 2020 decision to terminate the Philippines’ Visiting Forces Agreement with the United States, which authorizes the rotational deployment of thousands of U.S. forces into the Philippines.²⁹⁰

U.S. Partners Grow their Military Presence in the South China Sea

This year, Southeast Asian countries hedged against China’s rising power by continuing to build defenses in the South China Sea and by increasing military engagements with countries like India, Japan, and Australia in addition to the United States. The Philippines began building a logistics base and improving its maritime monitoring facilities on Thitu Island, which is only 12.4 nautical miles from China’s military base on Subi Reef.*²⁹¹ Vietnam continued its own artificial island-building in the Spratlys, developing coastal defense installations able to host anti-air missiles and the country’s EXTRA artillery system (a precision-guided rocket system with the range to strike all of China’s bases in the Spratlys).²⁹² Indonesia collaborated with the United States to build a maritime training center at the entrance to the Malacca Strait where the Indonesian Coast Guard will operate the center alongside U.S. agencies, including U.S. Indo-Pacific Command.²⁹³ Several Southeast Asian countries also increased their defense industry coordination with Quad countries. In 2021, Indonesia and India signed an agreement to jointly develop new naval vessels and technologies, replicating an agreement India already has with Malaysia and Vietnam.²⁹⁴ Vietnam also signed a defense agreement with Japan to acquire Japanese naval radar and surveillance equipment.²⁹⁵

U.S. security partners also began increasing their naval activity in the South China Sea. In February 2021, France deployed a nuclear attack submarine to patrol the South China Sea.²⁹⁶ French Defense Minister Florence Parly called the patrol “extraordinary” and “striking proof of our French navy to deploy far away and for a long

*In recent years, the Philippines had generally avoided repairs and upgrades to its facilities on Thitu Island due to Chinese pressure. The most visible expression of that pressure has been the presence of Chinese maritime militia vessels in the area. From December 2018 to March 2020, dozens of Chinese maritime militia vessels surrounded Thitu Island, tacitly threatening Philippine leaders against developing the feature further. Likely as a result, Philippines leaders often delayed ongoing construction projects. Asia Maritime Transparency Initiative, “The Long Patrol: Stare-down at Thitu Island Enters Its Sixteenth Month,” *Center for Strategic and International Studies*, March 5, 2020.

time, together with our Australian, American and Japanese strategic partners.”²⁹⁷ In April, the UK deployed a carrier strike group to join exercises with countries in Southeast Asia as it transited the South China Sea.²⁹⁸ In May 2021, the UK First Sea Lord announced that two offshore patrol vessels will be permanently stationed in the Indo-Pacific, with frigates to join in the future.²⁹⁹ India and Germany both followed suit in August 2021, with Germany sending a frigate into the South China Sea for the first time since 2002 and India sending a destroyer, a frigate, and two other ships.³⁰⁰ When asked by a Chinese reporter about the UK deployment, Wu Shicun, president of the Ministry of Foreign Affairs-affiliated National Institute for South China Sea Studies, suggested firing warning shots at the British ships, citing reports that Russian forces had fired in the path of a UK destroyer in the Black Sea in June.³⁰¹

China Undermines International Response to the Military Coup in Burma

On February 1, 2021, Burma’s military launched a coup d’état and detained President Win Myint, State Counsellor Aung San Suu Kyi, and other senior government officials while launching sweeping crackdowns across the country.³⁰² As of October 6, security forces have arrested 8,770 Burmese citizens and foreign advisors and killed 1,158 people.³⁰³ Hostilities in Burma may escalate further after some ousted civilian officials assembled to form a National Unity Government, which on September 7, 2021, announced a “defensive war” calling on armed civilians to target Burma’s military and its assets.³⁰⁴

Chinese leaders continue to hedge between Burma’s military and the country’s ousted civilian government. Undermining international efforts to restore Burma’s civilian government, Chinese state media characterized the February coup as a “major cabinet reshuffle,” and China and Russia blocked a UN Security Council statement condemning the coup before later signing on to a statement condemning “violence against peaceful protestors.”³⁰⁵ As violence in Burma raged on, however, China closed its 1,320-mile border with Burma in July 2021 and agreed with the United States in September to block Burma’s military government from addressing the UN General Assembly that month.³⁰⁶ Meanwhile, Chinese officials have maintained relations with Burma’s ousted civilian leaders. In August 2021, Chinese officials reportedly told Burma’s military government that the former civilian government should continue to exist as a political party, which Chinese leaders reinforced by inviting the ousted leaders and three Burmese political parties to an online summit to discuss economic development.³⁰⁷

Developments on the Korean Peninsula

China worked to enhance its diplomatic ties with North Korea following a decrease in bilateral engagement since the outbreak of the COVID-19 pandemic. In celebration of the founding of the Korean Workers Party in October 2020, General Secretary Xi sent a mes-

sage to North Korean leader Kim Jong-un applauding his “strong leadership” and emphasizing China’s willingness to strengthen bilateral ties.³⁰⁸ In April 2021, China appointed senior diplomat Liu Xiaoming, a former ambassador to the UK known for his outspoken views on U.S.-China relations, as its special representative on Korean Peninsula affairs, where he will oversee Beijing’s relationship with both Pyongyang and Seoul.³⁰⁹ According to one analyst, his appointment reflected Chinese leaders’ view of the growing importance of North Korea and the broader Korean Peninsula in the context of an increasingly competitive U.S.-China relationship.³¹⁰ The two countries’ leaders also exchanged messages to celebrate the 60th anniversary of the China-North Korea Treaty of Friendship, Cooperation and Mutual Assistance in July 2021.^{*311}

China has also made efforts to strengthen bilateral relations with South Korea amid concerns over developments in the U.S.-South Korea alliance. In January 2021, President Moon Jae-in announced his intention to elevate bilateral ties to “a new height” and expressed his hopes to host General Secretary Xi in Seoul sometime this year.³¹² Nevertheless, an October 2020 Pew poll showing 75 percent of South Koreans had either somewhat unfavorable or very unfavorable views of Beijing reflected the limits of China’s influence in South Korea.^{†313} China also expressed concerns over South Korea potentially joining the Quad, with one *Global Times* article warning that South Korea joining the group would “inevitably damage the just restored strategic mutual trust between China and South Korea.... If Seoul joins the Quad, it will destroy such mutual trust.”³¹⁴ In May 2021, the U.S. terminated an agreement limiting the range of South Korea’s ballistic missiles, prompting Chinese concerns that the extension would now allow South Korean missiles to reach Beijing.^{‡315}

An Increasingly Adversarial U.S.-China Relationship

Tensions between the United States and China continued through the change in U.S. presidential administrations in 2021. China’s coercion against U.S. allies and partners like Australia and Taiwan,

*The China-North Korea Treaty of Friendship, Cooperation and Mutual Assistance was signed in 1961 and formally stipulates the two countries’ defense obligations to each other. The treaty is up for renewal every 20 years, with the two sides last renewing the treaty in 2001. In July 2021, Chinese Foreign Ministry Spokesperson Wang Wenbin stated the treaty “remains in force unless agreement is reached on its amendment or termination.” Although Kim Jong-un has pledged to further strengthen relations with China, the North Korean government has not yet publicly reaffirmed the treaty. Ministry of Foreign Affairs of the People’s Republic of China, *Foreign Ministry Spokesperson Wang Wenbin’s Regular Press Conference on July 7, 2021*, July 7, 2021; *Global Times*, “China-North Korea Friendship Treaty ‘Remains in Effect’ All the Time: FM Spokesperson,” *Global Times*, July 7, 2021; Jagannath Panda, “How ‘Eternal’ Is the Sino-DPRK Alliance?” *38North*, June 30, 2021.

†A June 2021 joint survey from polling company Hankook Research and news magazine *Sisa IN* showed similar results. According to the poll, South Koreans now view China more unfavorably than they view Japan, and they prefer the United States over China by a margin of six to one. Over 58 percent of respondents called China “close to evil,” while only 4.5 percent said China was “close to good.” Choe Sang-Hun, “South Koreans Now Dislike China More Than They Dislike Japan,” *New York Times*, August 20, 2021.

‡The United States and South Korea signed a memorandum of understanding in October 1979 that restricted the maximum range and payload of South Korea’s ballistic missiles. The two countries had previously renegotiated these guidelines on multiple occasions to increase the range and payload cap of South Korea’s missiles. Prior to its termination in May 2021, the agreement had limited South Korean missiles to a range of approximately 500 miles. Yonhap News Agency, “Chronology of major events leading to abolishment of S. Korea-U.S. missile guidelines,” May 22, 2021; *Korea Times*, “What South Korea is Facing with the New Missile Guideline,” September 7, 2020, 5.

repression in Xinjiang and Hong Kong, and lack of transparency over the origins of COVID-19 all drove new U.S. response measures.

In the final months of the Trump Administration, U.S. government agencies and high-level officials made statements that signaled significant shifts in U.S. policy toward China. In a December 2020 op-ed, then Director of National Intelligence John Ratcliffe called China the “greatest threat to democracy and freedom worldwide since World War II.”³¹⁶ In January 2021, the U.S. Department of State declared the CCP to be committing acts of genocide against the Uyghur people and other ethnic minorities in Xinjiang. China’s response was vitriolic, with Chinese Foreign Ministry Spokesperson Hua Chunying accusing then Secretary of State Michael Pompeo of being a “notorious liar” and making himself into a “doomed clown.”³¹⁷ Immediately after President Biden’s inauguration, the Chinese government issued sanctions targeting U.S. officials purported to have “seriously violated China’s sovereignty,” including former Secretary of State Pompeo and former National Security Advisor Robert O’Brien.³¹⁸ Also in January, the State Department announced it would lift restrictions on official contacts between the United States and Taiwan.*³¹⁹

Tensions Continue in the Biden Administration

Concerns over the growing national security threat from China remained after the U.S. presidential transition. Chinese officials initially hoped for a reset in U.S.-China relations, with Chinese Foreign Minister Wang stating in January 2021 that bilateral ties had “come to a new crossroads” and that “a window of hope” was opening.³²⁰ Ministry of National Defense Spokesperson Senior Colonel Wu Qian similarly described the two countries’ military-to-military relationships as being “at a new historical starting point.”³²¹

Chinese officials’ hopes were diminished within the first few months of the Biden Administration. In February 2021, the U.S. Department of Defense announced it would be conducting a four-month task force review to assess the department’s current policies and programs related to China.† In a March 2021 speech, Secretary of State Antony Blinken called the U.S. relationship with China “the

*The State Department under the Biden Administration issued new guidelines for interactions between U.S. officials and their Taiwan counterparts in April 2021. The guidelines encourage working-level meetings with Taiwan counterparts in U.S. federal buildings and at Taiwan’s offices in the United States such as the Taipei Economic and Cultural Representative Office. They also allow U.S. officials under certain conditions to attend events at the Twin Oaks estate in Washington, DC (the former residence of China’s ambassador to the United States between 1937 and 1979, retained by Taiwan after the U.S. change in diplomatic recognition). Meanwhile, the guidelines restore some restrictions that were lifted during the Trump Administration, such as restricting the display of the Republic of China flag during meetings between U.S. officials and Taiwan’s representatives while in the United States. U.S. Department of State, *New Guidelines for U.S. Government Interactions with Taiwan Counterparts*, April 9, 2021; Matthew Lee, “US Unveils New Rules for Government Contacts with Taiwan,” *AP News*, April 9, 2021; Robert Delaney, “US Announces New Policy Encouraging Government Ties with Taiwan Officials,” *South China Morning Post*, April 10, 2021; Nick Wadhams, “U.S. Ease Limits on Taiwan Contacts as China Tensions Climb,” *Bloomberg*, April 9, 2021; Demetri Sevastopulo, “US to Erase Restrictions on Meeting Taiwanese Officials,” *Financial Times*, April 9, 2021; *Reuters* and David Brunnstrom, “U.S. Issues Guidelines to Deepen Relations with Taiwan,” *Reuters*, April 9, 2021.

†Final recommendations from the task force were submitted to Secretary of Defense Austin in June 2021. It has since been reported that as result of the review, the Pentagon is considering creating a permanent naval task force in the Pacific to better address the threat from China in the region. Jim Garamone, “Biden Announces DOD China Task Force,” *U.S. Department of Defense*, February 10, 2021; U.S. Department of Defense, *Secretary of Defense Directive on China Task Force Recommendations*, June 9, 2021; Lara Seligman, “Pentagon Considering Permanent Naval Task Force to Counter China in the Pacific,” *Politico*, June 15, 2021.

biggest geopolitical test of the 21st century.”³²² Continuing tensions were also on display during the two countries’ initial high-level engagement in Anchorage, Alaska, later that month.* While the U.S. delegation criticized China’s use of economic coercion and human rights abuses in Xinjiang, Hong Kong, and Taiwan, top diplomat Yang Jiechi attacked the United States’ “Cold War mentality” and domestic political issues.³²³ Yang’s remarks, which ran for over fifteen minutes, led to a senior U.S. official stating that the Chinese delegation “seem[ed] to have arrived intent on grandstanding, focused on public theatrics and dramatics over substance.”³²⁴

Open displays of U.S.-China frictions continued after the Anchorage Summit. Also in March, the Biden Administration reaffirmed the previous administration’s May 2020 determination that Hong Kong is no longer autonomous and does not deserve special treatment from the U.S. government.³²⁵ The State Department’s annual human rights report reaffirmed that China’s actions against the Uyghurs and other ethnic minorities in Xinjiang constituted genocide.³²⁶ In April 2021, the Office of the Director of National Intelligence announced it would create the Foreign Malign Influence Center to coordinate findings on foreign influence activities from countries, including China and Russia.³²⁷ Chinese leaders undermined their own efforts to improve bilateral military ties by denying Secretary of Defense Lloyd Austin’s requests to meet with General Xu, his counterpart within the PLA hierarchy as executive vice chairman of the Central Military Commission.†³²⁸ Pentagon officials in the Biden Administration and the PLA did not hold official talks until August 2021, when Deputy Assistant Secretary of Defense for China Michael Chase spoke with PLA Major General Huang Xueping using the U.S.-PRC Defense Telephone Link.‡³²⁹

In June 2021, the U.S. Senate’s passage of the U.S. Innovation and Competition Act prompted the Chinese Foreign Ministry to retort that the bill “distorts facts and slanders China’s development path and its domestic and foreign policies.”³³⁰ Prior to Deputy Secretary of State Wendy R. Sherman’s July 2021 meeting with Chinese officials in Tianjin, Foreign Minister Wang warned that the Chinese government would give the United States a “tutorial” on how to treat China equitably.³³¹ In a move reminiscent of Beijing’s imposi-

*The two sides disagreed on how to label the discussion. Chinese Foreign Ministry spokesman Zhao Lijian called the event a “high-level strategic dialogue,” whereas the U.S. side declined to use the strategic dialogue terminology. See Tsuyoshi Nagasawa and Tsukasa Hadano, “US and China Play Mind Games over How to Frame Alaska Meeting,” *Nikkei Asia*, March 12, 2021.

†As the executive vice chairman on the Central Military Commission, Xu Qiliang is the PLA’s top military officer and undertakes most duties that belong to the secretary of defense in the United States. In his role as Central Military Commission chairman, General Secretary Xi has the official responsibilities of commander-in-chief. By contrast, the Chinese Minister of National Defense has little formal responsibility over the PLA and instead primarily interacts with foreign defense ministers. You Ji, “How Xi Jinping Dominates Elite Party Politics: A Case Study of Civil-Military Leadership Formation,” *China Journal* 84, July 2020; Michael D. Swaine, “The PLA Role in China’s Foreign Policy and Crisis Behavior,” in Phillip C. Saunders and Andrew Scobell, eds., *PLA Influence on China’s National Security Policymaking*, Stanford Security Studies, 2015, 144.

‡The U.S.-PRC Defense Telephone Link is a secure military crisis notification mechanism established between the United States and China in 2008. The goals of this agreement include “prevent[ing] destabilizing escalation in times of crisis or tension.” The Defense Telephone Link was used only four times between 2008 and 2014 until its use was regularized in 2016. U.S. Department of Defense, *Annual Report to Congress Military and Security Developments Involving the People’s Republic of China 2016*, April 16, 2016, 96; U.S. Department of Defense, “Military Crisis Notification Mechanism for Use of the Defense Telephone Link,” September 24, 2015; Robert Pape, “A Hotline to Cool Asian Crises,” *Washington Post*, April 29, 2014.

tions on Australia in late 2020, Chinese interlocutors proceeded to issue twin lists of demands during the meeting, including for the United States to lift visa restrictions for Chinese students and sanctions on CCP officials.³³²

In September 2021, following Huawei executive Meng Wanzhou's admission of wrongdoing in U.S. court and permission to return to China, Beijing immediately released Canadian citizens Michael Kovrig and Michael Spavor, whom it had detained shortly after Ms. Meng's arrest in 2018 and imprisoned for over 1,000 days.³³³ Beijing also released U.S. citizens Victor and Cynthia Liu, whom it had prevented from leaving China for over three years.³³⁴ While the Chinese government had previously claimed there was no link between Ms. Meng's arrest and its detention of Canadian citizens or use of exit bans against U.S. citizens, Beijing's actions clearly demonstrated this linkage and its willingness to use hostage diplomacy against the United States.

ENDNOTES FOR SECTION 1

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2. *Xinhua*, “(International) State Councilor and Foreign Minister Wang Yi Is Interviewed by Media after Concluding Visit to Six Middle Eastern Countries -- China Is Permanent and Reliable Strategic Partner of Middle Eastern Countries,” March 30, 2021.

3. *Xinhua*, “Xi Jinping: Speech at the Celebration of the Centenary of the Founding of the Chinese Communist Party” (习近平: 在庆祝中国共产党成立一百周年大会上的讲话), July 1, 2021. Translation.

4. *Xinhua*, Xi Jinping: Speech at the Celebration of the Centenary of the Founding of the Chinese Communist Party” (习近平: 在庆祝中国共产党成立一百周年大会上的讲话), July 1, 2021. Translation.

5. *Xinhua*, Xi Jinping: Speech at the Celebration of the Centenary of the Founding of the Chinese Communist Party” (习近平: 在庆祝中国共产党成立一百周年大会上的讲话), July 1, 2021. Translation.

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SECTION 2: CHINA'S NUCLEAR FORCES: MOVING BEYOND A MINIMAL DETERRENT

Key Findings

- The People's Republic of China (PRC) is carrying out its most substantial effort to expand, modernize, and diversify its nuclear forces since first acquiring nuclear weapons in the 1960s. The People's Liberation Army (PLA) is developing a nuclear triad; fielding new, more mobile, and more accurate nuclear weapons systems; and significantly expanding its stockpile of nuclear warheads. The PLA has also enhanced its intelligence, surveillance, and reconnaissance (ISR) systems.
- China's nuclear buildup puts it on a trajectory to become a nuclear peer of the United States in qualitative terms. Qualitative nuclear parity could entail diversified, reliable, and survivable delivery systems; highly precise missiles; warheads of various yields; robust command and control processes; and sophisticated ISR, all of which enable a truly secure second-strike capability and options for calibrated, offensive nuclear use. Current public projections suggest China could also become a quantitative peer in the number of land-based strategic missiles it deploys by 2030.
- Strategic and political forces are driving China's departure from a minimalist nuclear posture. For most of its modern history, China maintained a small nuclear stockpile mainly suitable for minimal retaliation against an adversary's nuclear attack. General Secretary of the Chinese Communist Party (CCP) Xi Jinping's ambitions for great power status, combined with military objectives beyond minimal retaliation, have likely motivated the recent buildup of China's nuclear arsenal.
- At minimum, China's nuclear buildup enhances its current retaliatory strategy by better enabling its nuclear forces to deter or respond in kind to a nuclear attack. Chinese leaders may worry that innovations in other nuclear weapon states have undermined their nuclear deterrent, requiring them to make changes in order to keep up.
- The scale of China's nuclear buildup, however, suggests it could also be intended to support a new strategy of limited nuclear first use. Such a strategy would enable Chinese leaders to leverage their nuclear forces to accomplish Chinese political objectives beyond survival, such as coercing another state or deterring U.S. intervention in a war over Taiwan.
- Uncertainties created by China's nuclear buildup heighten the risk of an accidental nuclear exchange or unforeseen nuclear escalation during a regional conflict. Specific risks of nuclear es-

calation stem from entanglement between China's nuclear and conventional capabilities, its desperation to avoid losing a conventional war in the region, and false alarms that could result from its possible shift to a launch-on-warning posture.

- The PLA's growing arsenal also casts "nuclear shadows" over China's disputes with its neighbors, many of whom are U.S. allies and partners. Improved nuclear capabilities could encourage Chinese leaders to coerce or initiate a conventional conflict against U.S. allies or partners in the region if they believe their nuclear capability would deter the United States from intervening.
- China has continued to play a concerning role in the global proliferation of missile and nuclear technologies, though the manner in which this proliferation occurs has evolved over time. Whereas two decades ago the Chinese government and state-owned enterprises (SOEs) were the main source of missile and nuclear technologies, Chinese companies and private individuals now play a dominant role in the proliferation of such goods to countries of concern. The Chinese government turns a blind eye to, and in some cases tacitly supports, these illicit activities.

Recommendations

The Commission recommends:

- Congress direct the Administration to conduct an interagency review of any Chinese universities that maintain research or training arrangements with China's nuclear weapons research institutes, such as the Chinese Academy of Engineering Physics and the Northwest Institute of Nuclear Technology. The review should be led by the U.S. Department of Energy and include the U.S. Departments of Commerce, Treasury, and Defense; the Intelligence Community; and other federal departments and agencies as appropriate. The review would:
 - Assess the impact of such cooperation on China's nuclear weapons programs and capabilities;
 - Assess whether current U.S. export controls adequately address risks from the transfer and exchange of information and technologies with applications to nuclear research, particularly by researchers and departments in relevant academic disciplines at U.S. universities to these Chinese universities;
 - Identify Chinese universities and research institutes that should be added to the Entity List, based on the risks posed by their cooperation with the Chinese Academy of Engineering Physics, Northwest Institute of Nuclear Technology, and other Chinese institutions involved in nuclear weapons development, as appropriate;
 - Identify Chinese universities and research institutes that merit a presumption of denial for all export licenses involving items covered by the Export Administration Regulations; and
 - Develop and maintain a list of all academic partnerships in fields with applications to nuclear weapons development en-

tered into between Chinese universities and U.S. universities that receive federal funding for the purpose of determining whether these activities are subject to export controls.

- Congress prevent the erosion of U.S. strategic nuclear superiority and respond to China’s qualitative and quantitative theater nuclear advantages by directing the Administration to continue implementation of the Obama-Trump Program of Record for nuclear modernization.
- Congress enact legislation creating an independent bipartisan commission, similar to the Quadrennial Defense Review commissions authorized in the past, to assess the Nuclear Posture Review and advise Congress about whether the current U.S. nuclear posture is sufficient to maintain deterrence against the expanding Chinese and Russian nuclear forces. The Commission should:
 - Determine how Russian and Chinese nuclear capabilities have changed between 2010 and 2022;
 - Evaluate whether the current number of U.S.-deployed strategic weapons is sufficient to deter both Russia and China over the next 20 years; and
 - Identify any further changes required to U.S. force posture, doctrine, and missile defense.
- Congress authorize funding for a comprehensive diplomatic strategy on nuclear deterrence and arms control. This comprehensive program would include:
 - Intelligence diplomacy with key allies and partners in the Indo-Pacific and in Europe to inform them of developments in China’s nuclear forces;
 - Dialogue to convince these allies and partners to pressure Beijing diplomatically to enter into arms control talks and to explore these partners’ willingness to host U.S. intermediate-range forces and other U.S. assets; and
 - Continued efforts to engage both Russia and China in trilateral arms control talks, including by continuing efforts with Russia to persuade China to enter into arms control discussions.

Introduction

In June 2021, independent researchers analyzing commercial satellite imagery identified the construction of 119 new intercontinental ballistic missile silos in a desert in northwestern China.¹ Their discovery provoked speculation in the expert community and alarmed U.S. officials, who had expressed concerns about China’s opaque nuclear activities for years. U.S. Department of State spokesperson Ned Price told reporters the silos reflected China’s growing deviation from its decades-old nuclear strategy of limiting China’s nuclear forces to the “minimum” size required for deterring a nuclear attack.² “These reports and other developments suggest that the PRC’s nuclear arsenal will grow more quickly, and to a higher level than perhaps previously anticipated,” Mr. Price said.³

Concerns about the silos followed remarks by numerous U.S. officials in recent years about the pace, scale, and nature of ongoing changes to China's nuclear arsenal. Then director of the Defense Intelligence Agency Lieutenant General Robert Ashley told an audience at the Hudson Institute in 2019 that China would at least double its nuclear warhead stockpile "in the course of implementing the most rapid expansion and diversification of its nuclear arsenal in China's history."⁴ Admiral Charles A. Richard, commander of U.S. Strategic Command, told the House Armed Services Subcommittee on Strategic Forces in April 2021 that Chinese leaders are engaged in a "breathtaking expansion" of their country's nuclear capabilities that will "backstop their conventional capability and will potentially constrain our options."⁵ Their statements underscore the potential for China's nuclear buildup to presage an arms race and embolden Chinese conventional aggression toward U.S. allies. Considered together with a nuclear-armed Russia, China's nuclear forces may also pose a more complex strategic challenge to the United States than U.S. military planners have previously assumed.

This section assesses the ongoing transformation of China's nuclear arsenal as well as China's role as a supplier of nuclear and missile technologies to countries of proliferation concern. First, the section examines the modernization, expansion, and diversification of China's nuclear arsenal. Next, it explores competing interpretations of the purpose for which Chinese leaders are building a larger and more capable arsenal: to bolster their retaliatory capability in line with declared strategy or to pursue a new, more ambitious nuclear strategy that threatens or uses nuclear weapons to accomplish China's regional objectives. It then discusses ambiguity in Chinese nuclear doctrine and several scenarios in which China could either inadvertently or intentionally escalate to the threat or use of nuclear weapons during a conflict in the Indo-Pacific region. Finally, the section surveys the role of China-based companies and individuals in the proliferation of dual-use items with nuclear and missile applications to countries like Iran and Pakistan. This section is based on the Commission's June 2021 hearing on the topic as well as open source research and analysis.

China's Official Stance on Nuclear Weapons

China's official discourse about the strategy and policy behind its nuclear weapons has remained consistent since the country detonated its first atomic device in October 1964. Chinese leaders publicly adhere to a nuclear strategy focused on deterring nuclear use against China, insist that they maintain the "minimum" number of nuclear weapons required for deterrence, and assert a "no-first-use" policy.

China's declared "self-defensive nuclear strategy" achieves deterrence by maintaining the means to survive and credibly retaliate against an enemy's nuclear first strike, a strategy some scholars have described as one of "assured retaliation."^{*6} Chinese leaders'

^{*}China's 2006 defense white paper stated that China pursues a "self-defensive nuclear strategy," and subsequent white papers have repeated this formulation. Western scholars have variously characterized China's nuclear strategy as one of "existential deterrence," "limited nuclear retaliation," or "assured retaliation," making use of U.S. and European concepts of strategic deterrence to differing extents. By contrast, some Chinese scholars have argued that China's nuclear

distinctive views about the utility of nuclear weapons and their personal experience of nuclear coercion influenced the development of this strategy in the early 1960s.⁷ CCP Chairman Mao Zedong's famous remark that "the atomic bomb is only a paper tiger" reflected his belief that future wars would remain conventional because nuclear weapons were too destructive to actually be used in a situation where two nuclear-armed states had achieved mutual vulnerability.⁸ At the same time, Chairman Mao recognized that nuclear weapons could also be used against nonnuclear weapon states to blackmail them or inflict substantial damage in a war.⁹ In the face of repeated U.S. and Soviet threats to use nuclear weapons when tensions arose over conflicts in the 1950s and 1960s, Chairman Mao and his fellow CCP leaders concluded that acquiring enough nuclear weapons to deter nuclear coercion and aggression was a "destiny-determining matter" for the nation.¹⁰

Subsequent Chinese leaders, defense white papers, and textbooks published by Chinese military academies have continually affirmed that China's nuclear strategy is purely "defensive" and aims only to establish a secure second-strike capability.*¹¹ Accordingly, the authoritative *Science of Military Strategy* describes only one campaign involving the use of nuclear weapons, a "nuclear counterstrike campaign" to be carried out against an adversary's cities after China absorbs a nuclear attack.¹² China's historical focus on targeting an adversary's cities (known as "countervalue" targeting) made sense partly because it required considerably less sophisticated technology than did the U.S. and Soviet strategies of targeting an adversary's nuclear forces and military infrastructure (known as "counterforce" targeting).†

Another important element of China's declared nuclear strategy is its focus on limiting China's nuclear forces to the "minimum" size required to deter nuclear coercion or attack. The PRC's early leaders stressed that even a small number of nuclear weapons could create a deterrent effect and that scarce financial resources should not be wasted on the development of excess nuclear weapons.¹³ China simply needed what PLA Marshal Nie Rongzhen termed "the minimum

strategy is best understood as one uniquely shaped by the country's own strategic traditions, such as the thought of Chinese military strategist Sunzi and early PRC leaders' decades of experience fighting revolutionary guerilla war. See, for example, Eric Heginbotham et al., "China's Evolving Nuclear Deterrent: Major Drivers and Issues for the United States," *RAND Corporation*, 2017, 17; Xu Weidi, "China's Security Environment and the Role of Nuclear Weapons," in Li Bin and Tong Zhao, eds., *Understanding Chinese Nuclear Thinking*, Carnegie Endowment for International Peace, 2016, 20; State Council Information Office of the People's Republic of China, *China's Military Strategy* (中国的军事战略), May 2015. Translation; M. Taylor Fravel and Evan S. Medeiros, "China's Search for Assured Retaliation," *International Security* 35:2 (Fall 2010): 50–51, 63; State Council Information Office of the People's Republic of China, *China's National Defense in 2008* (2008年中国的国防), January 2009. Translation; State Council Information Office of the People's Republic of China, *China's National Defense in 2006* (2006年中国的国防), December 2006. Translation; John Wilson Lewis and Xue Litai, *China Builds the Bomb*, Stanford University Press, 1988, 216.

*A secure second-strike capability is the ability of a nuclear state, after being struck by a nuclear attack, to strike back with nuclear weapons and cause massive damage to the adversary. Theorists of nuclear deterrence generally believe that nuclear states must have such a capability, and make their adversaries believe that capability is credible, in order to deter their adversaries from attempting to gain military advantage through a disarming first strike.

†Counterforce and countervalue targeting are generally associated with nuclear warfare and refer to the use of nuclear weapons against an enemy that possesses nuclear weapons. Counterforce involves striking an opponent's nuclear forces and military infrastructure in order to degrade its war-making capacity, whereas countervalue involves striking an opponent's population, society, industrial base, economy, or other valuable target in order to degrade its will to escalate or persist in prosecuting a war. However, some states use advanced conventional weapons to carry out counterforce and countervalue strikes.

means of reprisal,” which could be launched days or even weeks after China absorbed an adversary’s nuclear attack.¹⁴ Political guidance to restrain the arsenal endured over the following decades in official statements and documents. China’s 2002 defense white paper declared that the country’s nuclear arsenal is “kept at the lowest level necessary for self-defense only,” while defense white papers from 2006 onward described China’s nuclear forces as “lean and effective.”*¹⁵ As recently as June 2021, Chinese Foreign Minister Wang Yi asserted that China limits its nuclear arsenal to “the minimum level required for national security” and “does not compete with any other country in the size or scale of nuclear force[s].”¹⁶

Finally, China’s public stance on nuclear weapons is defined by its longstanding no-first-use policy and negative security assurances.† After successfully conducting the country’s first nuclear test on October 16, 1964, the Chinese government pledged in a public statement that “China will never at any time and under any circumstances be the first to use nuclear weapons.”‡¹⁷ China also issued assurances at the UN in 1978 and 1995 that it would never use or threaten to use nuclear weapons against nonnuclear weapon states or nuclear-weapon-free zones.¹⁸ Chinese officials have also often promised never to engage in arms races and expressed their aspiration for a future in which all nuclear weapon states totally disarm, though they refuse to participate in talks about arms control or reduction.¹⁹ The Chinese government continues to affirm these elements in its defense white papers, authoritative military texts, press conferences, and speeches at international organizations.²⁰

Provocative remarks by Chinese generals have occasionally contradicted this narrative. In 1995, General Xiong Guangkai implicitly threatened to use nuclear weapons against Los Angeles if the United States defended Taiwan in a conflict.²¹ Similarly, Major General Zhu Chenghu said in 2005 that China should use nuclear weapons against the United States if the U.S. military intervenes in a conflict over Taiwan.²²

*According to retired PLA Major General Yao Yunzhu, keeping the arsenal “lean” means exercising “restraint” in the overall number of nuclear weapons China develops, while keeping it “effective” means ensuring China’s arsenal is modern and robust enough to ensure a retaliatory second strike. The “lean and effective” concept neither imposes specific numerical limits on China’s nuclear arsenal nor dictates a specific threshold of destruction the adversary should sustain, though the 2013 edition of the authoritative military text *Science of Military Strategy* notes such destruction should be “unbearable.” Yao Yunzhu quoted in Eric Heginbotham et al., “China’s Evolving Nuclear Deterrent: Major Drivers and Issues for the United States,” *RAND Corporation*, 2017, 20; Shou Xiaosong, ed., *The Science of Military Strategy* (战略学), Military Science Press, 2013, 172. Translation; David C. Gompert and Phillip C. Saunders, *The Paradox of Power: Sino-American Strategic Restraint in an Age of Vulnerability*, National Defense University Press, 2011, 53; Yao Yunzhu, “Chinese Nuclear Policy and the Future of Minimum Deterrence,” *Strategic Insights* 4:9 (September 2005): 4.

†In the context of nuclear warfare, “negative security assurances” and “positive security assurances” are statements by nuclear powers intended to reassure nonnuclear weapon states that they will not be the victims of a nuclear attack. A negative security assurance is a declaration that a country will not use nuclear weapons against a nonnuclear weapon state. A positive security assurance is one in which a nuclear weapon state pledges it will come to the aid of a nonnuclear weapon state if that state is the victim of a nuclear attack. All five of the nuclear weapon states recognized in the Treaty on the Non-Proliferation of Nuclear Weapons have issued negative security assurances, which the UN Security Council recognized in Resolution 984 in 1995. These pledges are nonbinding, however, and some nuclear weapon states reserve the right to use nuclear weapons against nonnuclear weapon states under certain conditions. Arms Control Association, “Nuclear Declaratory Policy and Negative Security Assurances,” March 2018; Nuclear Threat Initiative, “Negative Security Assurances (NSAs) and Positive Security Assurances (PSAs),” 2003.

‡China is the only nuclear weapon state recognized under the Treaty on the Non-Proliferation of Nuclear Weapons that maintains an unconditional no-first-use policy. Ankit Panda, “No First Use” and Nuclear Weapons,” *Council on Foreign Relations*, July 17, 2018.

Why China Has Shunned Arms Control Negotiations

Chinese leaders have long been skeptical about nuclear arms control on the grounds that it is a “trap” intended to undermine China’s nuclear deterrent and “lock in” the superpowers’ nuclear advantages.²³ Whereas U.S. experts believe transparency about nuclear capabilities and behavior enhances strategic stability* by increasing predictability among nuclear powers, Chinese experts believe “transparency is a tool of the strong to be used against the weak.”²⁴ As a result, China has divulged few details about the capabilities of its nuclear forces and shunned the efforts of every post-Cold War U.S. president to involve it in arms control mechanisms.²⁵ Chinese officials at the same time decried the United States’ withdrawal from the Intermediate-Range Nuclear Forces (INF) Treaty in 2019 as a ruse to “free its hand and develop its missile capabilities” in East Asia.²⁶ They also rejected calls by the United States and Japan to join proposed negotiations about a multilateral INF Treaty, arguing the United States should further slash its own nuclear stockpile rather than shift its arms control “duties” to other countries.²⁷ Similarly, China’s Foreign Ministry spokesperson Wang Wenbin rebuffed U.S. calls for China to join a trilateral arms control framework after the United States and Russia extended the New START Treaty in February 2021.²⁸ Noting the “order-of-magnitude difference” between the Chinese arsenal and those of the United States and Russia, he emphasized that China “firmly reject[s] the groundless allegation and vilification from the U.S. side.”²⁹

Strategic and Political Rationales for China’s Nuclear Buildup

Major developments in China’s security environment and international status have provided its leaders strong rationales for its nuclear buildup, raising the question of whether Chinese leaders’ public statements concerning the use of nuclear weapons reflect their true position on the issue. Chinese leaders may be responding to these rationales by redefining the requirements of their current nuclear strategy and no-first-use policy. Chinese leaders also may be reacting with an undeclared departure from their nuclear strategy of assured retaliation to one that wields nuclear weapons to accomplish the country’s political objectives in the region.

China’s insistence that its stance on nuclear weapons has not changed over nearly six decades is notable given major developments in China’s strategic environment, which Chinese scholars and strategists have argued necessitate a buildup of the country’s nuclear arsenal. U.S. advancements in precision-guided conventional weapons, ballistic missile defense, and ISR since the 1990s have

*“Strategic stability” has many definitions, but at the broadest level it refers to the absence of armed conflict between nuclear-armed states. Other definitions include the ideas that: in a time of crisis, there is no incentive to be the first to use military force of any type, nuclear or otherwise (also known as “crisis stability”); in a crisis or conventional conflict, there is no incentive to be the first to use nuclear weapons (“first strike stability”); and neither side believes it can improve its relative position by building more weapons (“arms race stability”). Linton F. Brooks, “Perceptions of Sino-American Strategic Stability: A U.S. View,” *Carnegie Endowment for International Peace*, November 7, 2017.

exacerbated longstanding concerns within China that its retaliatory capability is too vulnerable.³⁰ China's "nuclear neighborhood" has grown more complex with Russia's nuclear modernization, the emergence of Pakistan and India as nuclear powers, and North Korea's development of nuclear and missile capabilities.³¹ Despite the apparent comity between the two countries, Russia's deployment of low-yield nuclear weapons to its Far East, ongoing missile defense efforts, and modernization of its already formidable arsenal challenge the survivability of China's nuclear deterrent.³² Continued border tensions with India, a neighboring nuclear power,* underscore the potential for escalation to nuclear use in a crisis, though Chinese analysts remain dismissive of that possibility and of Indian nuclear capabilities in general.³³

China's static public stance on nuclear weapons also stands in contrast to recent official remarks that highlight nuclear weapons' contribution to China's great power status and broader security interests. In a 2016 speech at PLA Rocket Force headquarters, General Secretary Xi described the newly elevated service † that oversees the country's land-based missiles as "the strategic support of our country's status as a major power," suggesting the Chinese leadership views nuclear weapons as an important element of China's international prestige.³⁴ PLA Rocket Force officers and a political commissar have argued nuclear weapons enable China to deter adversaries from threatening the country's "sovereignty," "core interests," and "development interests" in addition to "fulfill[ing] the state's political and diplomatic objectives," aims more expansive than simply deterring nuclear attacks against China.³⁵ Chinese leaders have readily leveraged their growing conventional capabilities to advance their interests in regional territorial disputes, raising the question of whether they might see the threat or use of nuclear weapons as appropriate means to supplement conventional methods.

China Modernizes, Diversifies, and Expands the Nuclear Forces

China's unchanging public stance on nuclear weapons raises questions in light of the significant and observable transformation of China's nuclear posture ‡ underway today.§ This effort involves

* India has a stockpile of around 150 nuclear warheads and currently operates eight types of nuclear-capable delivery systems: two types of aircraft, four land-based ballistic missile systems, and two sea-launched ballistic missile systems. At least three more systems are in development and will soon be combat ready. India's nuclear-capable aircraft and land-based missiles provide a mix of strike options against China, but its current sea-launched ballistic missiles cannot yet range China's east coast. Indian nuclear capabilities are not as robust or sophisticated as Chinese nuclear capabilities. Hans M. Kristensen and Matt Korda, "Indian Nuclear Forces, 2020," *Nuclear Notebook*, July 20, 2020; Alex Lockie, "We Ranked the World's Nuclear Arsenals — Here's Why China's Came Out on Top," *Business Insider*, January 25, 2019.

† During military reforms announced in December 2015, the PLA Second Artillery Force was renamed the PLA Rocket Force and elevated from a military branch to a military service. Like its predecessor, the PLA Rocket Force oversees China's land-based missile force. It is responsible for nuclear and conventional deterrence and strike missions. Michael S. Chase, written testimony before the U.S.-China Economic and Security Review Commission, *Hearing on China's Military Reforms and Modernization: Implications for the United States*, February 15, 2018, 1.

‡ A state's nuclear posture encompasses its nuclear forces' size, structure, capabilities, and readiness.

§ According to Mr. Hans Kristensen, director of the Nuclear Information Project at the Federation of American Scientists, the modernization of China's nuclear forces has occurred in phases. The first phase, which occurred in the 1960s and 1970s, introduced bombers and liquid-fuel moveable medium-range ballistic missiles (the DF-1, DF-2, and DF-3). The second phase, which occurred in the 1980s and 1990s, introduced longer-range liquid-fuel moveable and silo-based

developing a viable nuclear triad;* improving the mobility, accuracy, and penetration of deployed weapons systems; and significantly expanding the country's stockpile of nuclear warheads. The PLA is also working to build up its nuclear command, control, and communications (NC3) system, which includes improved ISR capabilities that enable future missions such as rudimentary strategic early warning and ballistic missile defense. As a result, the size and capabilities of China's nuclear forces will soon clearly exceed those required for the minimum and purely retaliatory deterrent it claims to have.

If these improvements continue apace, China could become a qualitative nuclear peer of the United States in around a decade, with a similarly diversified, precise, and survivable force.†³⁶ Such a force will give China a truly secure second-strike capability as well as options for highly calibrated nuclear use, be that in the context of retaliation or first use. China could even become a quantitative nuclear peer if current projections for the growth of its land-based strategic missile forces bear out.³⁷

China's Nascent Nuclear Triad

For most of its history, China's strategic nuclear forces‡ were land based and composed of high-yield, "city-busting" warheads mounted atop imprecise missiles.³⁸ Today, the Chinese nuclear forces are making significant if uneven progress toward a nuclear triad composed of submarine-launched ballistic missiles (SLBMs), land-based intercontinental ballistic missiles (ICBMs), and nuclear bombers. Many of its new sea-based and land-based weapons systems are longer range and more accurate than earlier generations, innovations that expand the number of targets within the PLA's reach and give it new options to calibrate the level of damage inflicted on adversary targets. China is also developing new technologies that will improve

intercontinental ballistic missiles that put almost all of the United States in range. The second phase also included the first solid-fuel, road-mobile medium-range ballistic missile (the DF-21) and an experimental nuclear-powered ballistic missile submarine (the Type 092). The third phase, which occurred in the first decade and a half of the 2000s, introduced solid-fuel, road-mobile intercontinental ballistic missiles (the DF-31A), an upgrade to the liquid-fuel intercontinental ballistic missiles (the DF-5B) with multiple independently targetable warheads, and a small fleet of SSBNs (the Type 094). The fourth and current phase is ongoing. Hans M. Kristensen, written testimony for the U.S.-China Economic and Security Review Commission, *Hearing on China's Nuclear Forces*, June 10, 2021, 1–2.

*A nuclear triad is a tripartite nuclear force structure consisting of land-, sea-, and air-based capabilities. Nuclear missiles can be launched from platforms such as ground-based silos, road-mobile launchers, and submarines. Strategic aircraft can drop nuclear bombs and launch nuclear missiles.

†Brad Roberts, director of the Center for Global Security Research at Lawrence Livermore National Laboratory, told Commission staff in an email that he expected China to become a qualitative nuclear peer of the United States sometime during the decade 2030 to 2040. Brad Roberts, Director of the Center for Global Security Research at Lawrence Livermore National Laboratory, interview with Commission staff, August 27, 2021.

‡"Strategic" nuclear forces refer to intercontinental-range missile systems armed with high-yield warheads; historically, these were intended for use against an adversary's major urban and industrial centers. The New START Treaty signed by the United States and Russia defined the range of strategic missiles as greater than 5,500 kilometers. "Non-strategic" forces encompass missiles with ranges of less than 5,500 kilometers, potentially including short-, medium- and intermediate-range delivery systems. Medium- and intermediate-range delivery systems are often associated with China's "regional" nuclear force. Separately, "tactical" warheads are a subset of "non-strategic" weapons intended for use on the battlefield in close proximity to friendly forces; they have relatively low explosive power and are carried by very short-range delivery systems of 1,000 kilometers or less. Philip C. Saunders and David C. Logan, "China's Regional Nuclear Capability," in James M. Smith and Paul J. Bolt, eds. *China's Strategic Arsenal*, Georgetown University Press, 2021, 126–127; Arms Control Association, "The Intermediate-Range Nuclear Forces (INF) Treaty at a Glance," August 2019.

its ability to counter other countries' ISR, ballistic missile defense, and precision-strike systems. These include multiple independently targetable reentry vehicles (MIRVs), maneuverable reentry vehicles, decoys, chaff, jamming, and hypersonic glide vehicles.*³⁹ China's strategic forces are complemented by the PLA's growing arsenal of medium- and intermediate-range ballistic missiles (MRBMs and IRBMs) that can deliver nuclear warheads throughout the Indo-Pacific region.⁴⁰

China's Nuclear Submarines Become a Credible Deterrent Force

China's nuclear-powered ballistic missile submarine (SSBN) fleet now constitutes what the U.S. Department of Defense (DOD) describes as a "credible" sea-based nuclear deterrent after more than six decades of incremental progress and development.⁴¹ Before its first Jin-class (Type 094) SSBN entered service in 2014, the PLA Navy had since the 1980s operated a sole Xia-class (Type 092) SSBN that undertook a single patrol and reportedly never sailed beyond Chinese waters.⁴² Today, China has four operational Type 094 SSBNs based on Hainan Island and two more in the process of being outfitted.⁴³ Each Type 094 carries up to 12 JL-2 nuclear SLBMs, designed to be equipped with a single warhead each.⁴⁴ DOD's annual reports on China's military capabilities, as well as other U.S. government sources, suggest China's Type 094 SSBNs have conducted "deterrence patrols" since at least 2016, though it remains unclear whether these patrols occur with nuclear warheads mated to the missiles on board.⁴⁵

China is constructing a follow-on SSBN, the Type 096, that will enter service in the mid-2020s and improve on the Type 094's noisy design and limited range.⁴⁶ The Type 094 is much louder than the top Russian or U.S. SSBNs, making it easily detectable and vulnerable to adversaries' anti-submarine warfare capabilities.⁴⁷ Moreover, the JL-2 has a range of approximately 7,200 kilometers, which is sufficient to target Alaska, Guam, and Hawaii from waters near China but unable to reach the continental United States unless the submarine operates in the Western Pacific.⁴⁸ To reach Washington, DC, a Type 094 carrying the JL-2 would need to operate in waters north and east of Hawaii.⁴⁹ China will equip the Type 096 with the JL-3, an SLBM capable of striking targets at a range of more than 9,000 kilometers.⁵⁰ The Type 096 would allow China to target northwestern parts of the continental United States from the Bohai Sea and to hold Washington, DC, at risk if the submarines sail northeast of Japan.⁵¹ The Type 096 could carry between 12 and 16 JL-3 SLBMs, and it is unclear at present if the JL-3s will be MIRVed.⁵²

The PLA Navy exhibits conventional-nuclear "entanglement"† to the extent that it uses the same shore-based, very-low-frequency

*MIRV technology enables a single missile to carry a payload of multiple warheads, each of which can be programmed to hit a different target. Maneuverable reentry vehicle technology enables the warhead on a ballistic missile to track and home in on ground targets. Chaff refers to clouds of tiny metallic strips that aircraft or rockets can release in flight that appear as separate targets to an enemy's radar and confuse a missile sent to intercept it. A hypersonic glide vehicle is a maneuverable glide vehicle that is fired into space by rockets or a ballistic missile and then released to glide to its target along the upper atmosphere. Hypersonic glide vehicles fly at a lower altitude than ballistic missiles and can change their intended target and trajectory repeatedly during their flight.

†Geographic entanglement occurs when a state's conventional and nuclear forces are located in the same space, such as when the forces are garrisoned together during peacetime or when

transmitters to communicate with both its conventional attack submarines and its SSBNs.⁵³ This means any effort by an adversary to disrupt communications between a PLA theater command and at-sea conventional attack submarines during a war could risk nuclear escalation by cutting off communications with the nuclear submarines.

Land-Based Missiles Remain Central to China's Nuclear Posture

China's land-based ballistic missile force is the backbone of its nuclear deterrent and is undergoing a dramatic expansion. The PLA Rocket Force operates China's ICBMs for strategic deterrence missions and a variety of shorter-range ballistic missiles for regional deterrence missions. Up to half of the PLA Rocket Force's 40 missile brigades* may be nuclear capable.⁵⁴ The brigades operating China's nuclear missiles are dispersed at many locations across the country and assigned to six bases;† a seventh base located in Shaanxi Province is responsible for storing and handling most of the force's nuclear warheads.⁵⁵

China's Strategic Missiles

The ICBM force is reducing its vulnerability to an adversary's surprise attack by transitioning from liquid-fuel missiles to a combination of solid-fuel silo-based missiles and road-mobile missiles.‡ There are currently about 100 ICBMs in the PLA Rocket Force's arsenal that could be assigned to various targets in the United States, Russia, and India.⁵⁶ These systems currently include the liquid-fuel, roll-out-to-launch DF-4 (range of 5,500 kilometers); the liquid-fuel, silo-based DF-5 (range of 13,000 kilometers), which has two MIRV variants; and the solid-fuel, road-mobile DF-31, DF-31A, and DF-31AG (ranges varying from 7,000 to 12,000 kilometers).⁵⁷ A new solid-fuel, road-mobile, MIRV-capable ICBM known as the DF-41 (range of 14,000–15,000 kilometers) became operational in 2020 and has been integrated into at least two brigades.⁵⁸ DOD assess-

they operate in the same areas during a crisis or wartime. Operational entanglement occurs when conventional and nuclear forces are operated by or rely on the same military institutions or practices, such as when these forces share personnel, command and control structures, mission sets, or maintenance and logistics infrastructure. Technological entanglement occurs when the delivery systems of conventional and nuclear forces are identical or indistinguishable, as is the case with dual-capable weapons or weapons that have both conventional and nuclear variants. David Logan, "Are They Reading Schelling in Beijing? The Dimensions, Drivers, and Risks of Nuclear-Conventional Entanglement in China," forthcoming in *Journal of Strategic Studies*, 2020, 5–6.

*The PLA Rocket Force has added ten brigades or more, an increase of more than one-third since 2017. Ma Xiu and Peter W. Singer, "What Do We Know about China's Newest Missiles?" *Defense One*, March 19, 2021.

†PLA Rocket Force "bases" are sometimes referred to as "armies" and are responsible for different geographic regions in China. PLA Rocket Force brigades are assigned to bases numbered 61 through 66; an additional base, Base 67, stores the nuclear warheads. Each base may supervise between four and seven brigades, and each brigade encompasses thousands of personnel. The structure of brigades varies depending on whether they operate conventional missiles, mobile nuclear missiles, or fixed site (silo-based or cave-rollout-to-launch-site) nuclear missiles. Conventional brigades may have up to 36 launchers with as many as six missiles per launcher (enabling up to five reloads). Mobile nuclear brigades may have between six and 12 missile launchers per brigade, while fixed site nuclear brigades may have six or fewer launchers (silos or roll-out sites) per brigade. Christopher J. Mihal, "Understanding the People's Liberation Army Rocket Force: Strategy, Armament, and Disposition," *Military Review*, July–August 2021; Decker Everleth, "Mapping the People's Liberation Army Rocket Force," *A Boy and His Blog*, July 2, 2020; David Logan, "Making Sense of China's Missiles Forces," in Phillip C. Saunders, Arthur S. Ding, and Andrew Scobell, eds., *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms*, National Defense University Press, 2019, 403–404.

‡By transitioning to solid-fuel missiles, China is improving the survivability and safety of its ICBM force. Liquid-fuel ICBMs are vulnerable to attack because they take more time to fuel before launch; liquid fuel is also dangerous to handle because it is toxic and corrosive.

es that the DF-41 could also have silo-based and rail-based launch options.⁵⁹

Due to increases in China's arsenal of ICBM missiles, launchers assigned to its ICBM brigades, and MIRV technology, the number of warheads that can be mounted on ICBMs threatening the United States is expanding.⁶⁰ According to Hans M. Kristensen, director of the Nuclear Information Project at the Federation of American Scientists (FAS), in 2000 China possessed 35 ICBMs, of which 20 could hit the continental United States carrying one warhead each.⁶¹ Today, most of China's 100 ICBMs are capable of hitting the United States with a total of about 125 nuclear warheads, though they are not all necessarily assigned to U.S. targets.⁶² DOD predicts that the number of warheads on China's land-based ICBMs capable of striking the United States, which make up only a portion of its total warhead stockpile, will grow to 200 by 2025.⁶³

Moreover, the PLA Rocket Force is constructing more than 270 new missile silos for its ICBM force in remote regions of China that could be intended for multiple purposes. In 2021, researchers analyzing satellite imagery discovered construction underway for 16 silos near the city of Jilantai in the western reaches of Inner Mongolia, 119 new silos near the northwestern city of Yumen in Gansu Province, approximately 110 new silos near the city of Hami in Xinjiang, and at least 29 silos* in Hanggin Banner in Inner Mongolia (see Figure 1).⁶⁴ That total is more than ten times the number of silos the PLA Rocket Force currently operates, greater than the number of ICBM silos Russia operates, and more than half of the approximately 400 land-based ICBMs the United States maintains in silos today.⁶⁵ According to Roderick Lee, director of research at the China Aerospace Studies Institute, between the newly discovered silos and the PLA Rocket Force's currently operational ICBM brigades, China's projected inventory of ground-based ICBM launchers is already "close to or more than the United States' current number of deployed Minuteman III ICBMs."⁶⁶ The silo fields are in various stages of development and could take between five and ten years to become operational.⁶⁷

The emergence of new silos—which are easily identifiable and vulnerable to precision-guided munitions—is surprising given China's emphasis in recent years on improving mobility, camouflage, and concealment for its ICBMs.⁶⁸ The PLA Rocket Force (and its predecessor, the Second Artillery) has long relied on an elaborate infrastructure to store and transport its ballistic missiles, including a vast network of underground tunnels, wheeled transporter erector launchers, and rail networks.⁶⁹ This infrastructure improves the survivability of China's nuclear forces but requires the relatively time-consuming practices of bringing ICBMs out of storage, mating them with their warheads, erecting them on mobile launchers, and connecting them to the appropriate command and control infrastructure before firing a counterstrike. By contrast, silo-based missiles are the most responsive element of a country's nuclear forces because they can be put on high alert and launched quickly.⁷⁰

*Roderick Lee, director of research at the China Aerospace Studies Institute, estimates that this site could eventually contain up to 36 silos. Roderick Lee, "PLA Likely Begins Construction of an Intercontinental Ballistic Missile Silo Site Near Hanggin Banner," *Air University*, August 12, 2021.

Figure 1: China's Silo-Based ICBMs



Sources: Hans Kristensen, Director of the Nuclear Information Project at the Federation of American Scientists, interview with Commission staff, September 24, 2021; Roderick Lee, “PLA Likely Begins Construction of an Intercontinental Ballistic Missile Silo Site Near Hanggin Banner,” *Air University*, August 12, 2021; Matt Korda and Hans Kristensen, “China Is Building a Second Nuclear Missile Silo Field,” *Federation of American Scientists*, July 26, 2021; Joby Warrick, “China Is Building More than 100 New Missile Silos in Its Western Desert, Analysts Say,” *Washington Post*, June 30, 2021; Hans Kristensen, “China’s Expanding Missile Training Area: More Silos, Tunnels, and Support Facilities,” *Federation of American Scientists*, February 24, 2021; Hans M. Kristensen, “China’s Strategic Systems and Programs,” in James M. Smith and Paul J. Bolts, eds., *China’s Strategic Arsenal: Worldview, Doctrine, and Systems*, Georgetown University Press, 2021, 98–100; Roderick Lee, “China’s Air Force Might Be Back in the Nuclear Business,” *Diplomat*, September 9, 2020; Tyler Rogoway, “Image Shows Chinese Submarine Entering Mysterious Cave Facility at South China Sea Base,” *Drive*, August 19, 2020.

Some observers speculate that China could deploy some of its ICBMs across the matrix of new silos while filling others with decoys in a Cold War-style “nuclear shell game” for the purpose of complicating adversary targeting.⁷¹ Alternatively, China could fill most or all of the silos with ICBMs, which—especially if MIRVed—would improve the chances that more of China’s ICBMs survive an adversary’s first strike and defeat its missile defenses.⁷² Finally, DOD assesses that expanding the silo-based force and putting a portion of that force on heightened alert would enable China to shift to a launch-on-warning posture, which would allow China to rapidly launch its ICBMs upon notification of an incoming attack before their silos could be destroyed.⁷³ Each interpretation assumes China’s motive for building the silos is to secure its second-strike capability rather than to develop a first-strike capability. Large numbers of silo-based missiles can also be used to launch a preemptive nuclear strike on an adversary.

China’s Regional Missiles

The PLA Rocket Force also has nuclear-capable MRBMs and IRBMs capable of hitting targets across the Indo-Pacific, such as allied capitals or U.S. military bases. These include the road-mobile, solid-fuel DF-21 MRBM (range of 2,150 kilometers) and the road-mobile, solid-fuel DF-26 IRBM (range of 4,000 kilometers).⁷⁴

Overall, the PLA Rocket Force has assigned about 60 nuclear warheads to regional missions.⁷⁵

The DF-26 entails unique escalation risks because it is a dual-capable missile system that is “hot swappable” or able to switch rapidly between conventional and nuclear warheads on a launch-ready missile.⁷⁶ DF-26 brigades have held drills in which units launch a conventional attack and then reload with a nuclear warhead to prepare for nuclear counterattacks.⁷⁷ This technological and operational entanglement generates pressures for escalation to nuclear use by making it difficult for an adversary to distinguish whether a warhead carried by the DF-26 is conventional or nuclear in flight and, by extension, to decide on an appropriate targeting response.⁷⁸ As DOD notes, because the DF-26 is China’s first nuclear-capable missile system that can conduct precision strikes, it is the most likely weapon system to field a low-yield warhead in the near-term.⁷⁹ The DF-26’s precision enables it to be used for nuclear missions targeting U.S. military assets in the Indo-Pacific, though authoritative Chinese military texts do not show that PLA doctrine has officially shifted from its traditional emphasis on countervalue targeting.

China’s Bomber Force Regains a Nuclear Mission

The PLA Air Force appears to have reassumed a nuclear mission after a long period of dormancy, indicating its bombers could carry out nuclear counterstrike missions to supplement China’s land- and sea-based nuclear deterrent.*⁸⁰ In 2019, the PLA unveiled a new nuclear-capable variant of the H-6 known as the H-6N that is reportedly capable of air-to-air refueling and has a modified fuselage that may allow it to carry a nuclear air-launched ballistic missile.⁸¹ The PLA’s H-6Ns are likely stationed in central China next to a hardened underground facility that could be used to store the aircraft in peacetime.⁸² China is also developing a nuclear-capable long-range stealth bomber known as the H-20 that will likely enter production within the next decade.⁸³

DOD assesses that the deployment of the air-launched ballistic missile on China’s H-6N will “provide China for the first time with a viable nuclear triad of delivery systems,” though the bombers’ limited range suggests they would more likely be used for missions closer to China.⁸⁴ Mr. Lee observes that China’s nuclear triad is somewhat “lopsided” because its air-launched component is relatively small and too limited in range to target the continental United States unless its bombers fly across Russian airspace or the Pacific Ocean with their accompanying tankers.⁸⁵ He argues that the PLA could be pursuing a nuclear bomber force to deter China’s other nuclear-armed neighbors, for use against U.S. bases in the region, or

*The PLA Air Force delivered at least 12 of the nuclear weapons China detonated as part of its nuclear testing program in the 1960s and 1970s. The U.S. Intelligence Community assessed that some of China’s bombers trained for nuclear missions in the 1970s, but the country did not have a dedicated strategic bomber force resembling that of the United States or Soviet Union. The PLA Air Force’s nuclear capability is thought to have atrophied during the Cold War and its nuclear mission did not appear active until the PLA Air Force publicly revealed the H-6N as its first nuclear-capable air-to-air refuellable bomber during a 2019 military parade commemorating the PRC’s 70th anniversary. Kenneth W. Allen and Cristina L. Garafola, “70 Years of the PLA Air Force,” *China Aerospace Studies Institute*, 2021, 83; Hans M. Kristensen and Matt Korda, “Chinese Nuclear Forces, 2020,” *Nuclear Notebook*, December 10, 2020, 453; U.S. Department of Defense, *Military and Security Developments Involving the People’s Republic of China 2020: Annual Report to Congress*, 2020, 50–51.

for the purpose of establishing nuclear competencies within the PLA Air Force.⁸⁶ Given the limited range of China's bombers and sufficiency of other legs of the triad for China's nuclear deterrent, however, some analysts believe the reactivation of the PLA Air Force's nuclear mission more likely reflects its success as a bureaucratic actor in fighting for resources than a clear strategic mission.⁸⁷

Nuclear Warhead Stockpile Could Double by 2030

China needs more nuclear warheads to arm its new delivery systems and will significantly expand its inventory of nuclear warheads over the next decade. China currently maintains a modest stockpile of nuclear warheads similar in size to that of France or the United Kingdom, depending on the estimate used.*⁸⁸ DOD estimated in 2020 that China's operational nuclear warhead stockpile was in the low 200s.⁸⁹ DOD reports on China's military capabilities from the early 2000s do not indicate how large they assessed China's nuclear stockpile to be at that time, though they asserted the PLA planned to increase the number of nuclear warheads that could target the United States in the future.⁹⁰ Researchers at FAS placed China's 2020 stockpile at up to 350 warheads.⁹¹ Their estimate of 350 warheads included roughly 272 operational warheads assigned for delivery by China's land-based ballistic missiles, sea-based missile forces, and nuclear-capable bombers, as well as 78 warheads to arm new land- and sea-based missiles still in the process of being fielded.⁹² FAS researchers assess that the stockpile grew by roughly 118 warheads between 2000 and 2021.⁹³

Projections of the future size of China's stockpile vary, but credible sources generally agree the increase will be significant. DOD estimated in 2020 that the country's operational nuclear warhead stockpile will likely double to more than 400 over the next decade.⁹⁴ Mr. Kristensen testified before the Commission that a doubling of the stockpile over the next decade is plausible given China's past and ongoing modernization efforts.⁹⁵ Admiral Richard predicted publicly in February 2021 that China's nuclear weapons stockpile could even triple or quadruple over the next decade.⁹⁶ Assuming the most extreme case of a quadrupling of DOD's estimate, China could possess up to 1,000 warheads in ten years' time, a figure equivalent to more than two-thirds of the 1,400 strategic warheads the United States deploys on ballistic missiles† and less than one-third of the total U.S. stockpile of strategic warheads.‡⁹⁷

According to Mr. Kristensen, projections for doubling, tripling, or quadrupling China's nuclear warhead stockpile over the next decade would require significant changes to its current force structure.⁹⁸ He estimates that to field a doubled stockpile, China would need to increase the number of its DF-31AG brigades, double its road-mobile DF-41s with MIRV capabilities, deploy a new brigade of silo-based DF-41s with MIRVs, field an additional Type 096 SSBN

*According to the Federation of American Scientists, France and the United Kingdom maintain stockpiles of 290 and 225 nuclear warheads, respectively. Hans M. Kristensen and Matt Korda, "Status of World Nuclear Forces," *Federation of American Scientists*, May 2021.

†The New START Treaty caps the number of deployed U.S. and Russian strategic nuclear warheads and bombs at 1,550. Arms Control Association, "New START at a Glance," February 2021.

‡As of early 2021, the United States maintained an estimated stockpile of around 3,800 nuclear warheads. According to FAS, about 1,800 warheads are currently deployed on ballistic missiles or at strategic bomber bases. Around 2,000 are kept in storage to be used as a "hedge" as conditions warrant. Hans M. Kristensen and Matt Korda, "United States Nuclear Weapons, 2021," *Nuclear Notebook*, January 12, 2021.

with MIRVed JL-3 missiles, and field more than a dozen nuclear bombers.⁹⁹ To field a tripled stockpile, China would need to increase the number of DF-31AG and DF-41 brigades, add additional rail-based DF-41s, field two Type 096 SSBNs, and double the number and weapons capacity of its nuclear bombers.¹⁰⁰ Mr. Kristensen estimates that to field a quadrupled stockpile, China would require a large number of additional road-mobile and rail-based missiles, more nuclear DF-26 units, more bombers, and more MIRVed payloads on its DF-41 ICBMs.¹⁰¹

China's Warhead Stockpile Can Grow without New Fissile Material Production

China could vastly increase its stockpile of nuclear warheads without producing additional fissile material. According to Harvard University Belfer Center research associate Hui Zhang, China halted production of highly enriched uranium and plutonium for nuclear weapons in the 1980s and maintains military stockpiles of 14 ± 3 tons* of highly enriched uranium and 2.9 ± 0.6 tons of plutonium from that time.¹⁰² Mark Hibbs, nonresident senior fellow at the Carnegie Endowment for International Peace, testified before the Commission that China could produce between 200 and 800 additional nuclear weapons using its existing plutonium inventory, depending on how many kilograms of plutonium one estimates is necessary for Chinese nuclear weapons designs.¹⁰³

If Chinese leaders wished to generate additional weapons-grade plutonium for even more warheads, Mr. Hibbs said, they could build a new plutonium production reactor, repurpose an existing Chinese research reactor to produce weapons-grade plutonium, or operate fast reactors as part of their civil nuclear power program to “breed” plutonium.¹⁰⁴ At present, there is no evidence China intends to use its fast reactors for nuclear weapons production, and neither of its two 600-MW reactors are yet operational.¹⁰⁵ Given the sufficiency of China’s existing inventories of fissile material, Chinese leaders may see little need to make use of these additional pathways.

Recent construction activity at China’s testing and weapons production facilities may offer additional evidence China is expanding its production of nuclear warheads. Commercial satellite images of China’s longtime nuclear weapons testing site at Lop Nur taken between 2019 and 2021 showed construction of a probable drill site, a probable underground facility, an excavated recess, and new roads that could be a part of the support facilities required to conduct new nuclear tests.¹⁰⁶ Satellite imagery of Pingtong nuclear facility, which manufactures Chinese nuclear weapons components, also shows new and renovated buildings for steam production and electricity consumption constructed between 2010 and 2020 that may increase its capacity to produce larger numbers of finished nuclear weapons.¹⁰⁷

China May Pursue Low-Yield Warheads in the Future

DOD assesses that China may complement its stockpile of strategic nuclear warheads with the production of low-yield warheads for tactical nuclear weapons in the future.¹⁰⁸ Most of China’s nuclear

*± is a notation used to measure uncertainty and is read “plus or minus.”

warheads have large yields ranging from several hundred kilotons to more than one megaton; they are designed to be delivered across a region or continents and to inflict large-scale damage on their targets.¹⁰⁹ By contrast, low-yield weapons can range from 5 kilotons to 150 kilotons and are useful for calibrating damage to smaller targets, such as military bases or aircraft carriers.¹¹⁰

There is little publicly available evidence that China has developed tactical nuclear weapons, but U.S. Intelligence Community estimates from the 1970s and 1980s noted “circumstantial evidence” the country could have developed low-yield warheads, perhaps for use in small bombs or depth charges.¹¹¹ The PLA also held several military exercises in the early 1980s simulating the use of tactical nuclear weapons, though simulations themselves do not prove development or deployment.¹¹²

Chinese commentators have argued in recent years that China requires lower-yield nuclear weapons to enhance deterrence and to expand the PLA’s options for engaging U.S. forces in a regional war.¹¹³ Moreover, a 2017 article that originally appeared in the overseas edition of the *People’s Daily* cited an interview with retired PLA Rocket Force Senior Colonel Yang Chengjun in which he mentioned that the PLA would develop “smaller tactical nuclear warheads to attack the enemy” and limit collateral damage to civilian targets.¹¹⁴ China reportedly carried out a secret test at its Lop Nur facility in 2019 that the State Department and some observers say was consistent with testing a low-yield weapon.¹¹⁵

China Enhances Nuclear Command, Control, and Communications

China has made substantial progress over the last two decades toward improving the survivability of its NC3, or the systems and processes for directing strategic forces to alert or employ nuclear weapons.*¹¹⁶ According to Phillip C. Saunders, director of the Center for the Study of Chinese Military Affairs at the National Defense University, between the 1980s and early 2000s China had an “underdeveloped” NC3 system and no strategic ISR systems that could provide warning of an incoming attack.¹¹⁷ Since then, China’s NC3 system and the ISR that supports it have improved substantially. The PLA’s situational awareness now enables more rapid retaliation against a nuclear strike and forms the basis for a nascent ballistic missile defense system. This progress is consistent with goals for China’s nuclear force modernization identified by its 2015 white paper, which called for “improved strategic early warning, command and control... and rapid reaction.”¹¹⁸

China’s Shifting Readiness and Nascent Triad Complicate Command and Control

China’s NC3 system has historically emphasized centralization and strict controls to prohibit the unauthorized use of nuclear weapons. Authority to decide whether to use nuclear weapons is reserved

*According to DOD, NC3 includes detecting and characterizing incoming attacks, facilitating decision-making, transmitting orders to alert or use nuclear weapons, and directing the strategic forces. It therefore requires excellent ISR to provide situational awareness of incoming attacks and redundant communications to ensure strategic forces carry out orders to use nuclear weapons. U.S. Department of Defense, *Nuclear Posture Review*, 2018, XIII.

to China's top leaders in the Politburo Standing Committee.¹¹⁹ The Central Military Commission (CMC), headed by General Secretary Xi, handles the execution of Chinese nuclear operations.¹²⁰ The PLA Rocket Force is commanded directly by the CMC rather than indirectly through the geographical Theater Commands that oversee the other services, an arrangement reflecting the importance China's leaders place on controlling the nuclear forces.¹²¹ China may have several practices in place to prevent the unauthorized use of nuclear weapons, including storing warheads and delivery systems separately in peacetime, installing technical-use controls on the weapons themselves, and enacting a "two-man rule" prohibiting access to or control of the weapons by any single person.¹²²

The PLA Rocket Force appears to be putting portions of its forces on heightened alert in an effort to improve its readiness. China keeps the majority of its nuclear forces on a peacetime status with separated launchers, missiles, and warheads, DOD notes, but nuclear and conventional PLA Rocket Force brigades conduct "combat readiness duty" and "high-alert duty," which include assigning a missile battalion "to be ready to launch" and rotating to standby positions as often as monthly for "unspecified periods of time."¹²³ These periods of combat readiness and high-alert duty presumably involve temporarily mating warheads and delivery systems and could be part of what DOD assesses is an impending move by some portions of China's nuclear forces to a launch-on-warning posture.¹²⁴

The PLA Rocket Force's growing numbers of mobile launchers and dual-use missiles could complicate its NC3 process. China's leaders maintain redundant means of communication and command pathways, including the ability to skip echelons of command, to ensure their orders reach the firing units responsible for carrying out nuclear strikes.* Dr. Saunders notes that the NC3 system may struggle to adequately track China's growing number of mobile ICBMs since all of those mobile launchers will be dispersed from garrison to concealed locations during a crisis or conflict.¹²⁵ Another NC3-related complication that may arise is whether the PLA Rocket Force brigades operating the hot-swappable DF-26 missile will answer to orders directly from the PLA Rocket Force, which oversees nuclear missions, or from the Theater Commands, which oversee conventional missions.¹²⁶

Little information is available about the NC3 processes for China's SSBN fleet and strategic bomber force, which may pose their own challenges for command and control. During a crisis or conflict, the CMC will presumably relay orders to alert or use nuclear weapons to PLA Navy headquarters and PLA Air Force headquarters,

*According to George Washington University assistant professor Fiona Cunningham, the CMC will transmit orders to alert or use nuclear weapons to the CMC Joint Operations Command, PLA Rocket Force Headquarters, the missile bases, and then down the chain of command to the missile launch companies. China's leaders can relay orders directly to missile brigades, battalions, or launch companies during a crisis (the so-called "skip echelon" system). The PLA Rocket Force's communications brigades operate redundant means of communication, including radio, fiber-optic cables, and satellites, to ensure CMC orders are successfully transmitted to operational units. The PLA Rocket Force also operates an automated command system that may be interoperable with that of other PLA services and include support for its mobile missile force. Bates Gill, "Organization of China's Strategic Forces," in James M. Smith and Paul J. Bolts, eds., *China's Strategic Arsenal: Worldview, Doctrine, and Systems*, Georgetown University Press, 2021, 171; Fiona Cunningham, "Nuclear Command, Control, and Communications Systems of the People's Republic of China," *Nautilus Institute*, July 18, 2019; Yu Xijun, ed., *The Science of Second Artillery Campaigns* (第二炮兵战役学), People's Liberation Army Publishing House, 2004, 168. Translation.

which will then convey those orders to the submarines on patrol and the nuclear bombers, respectively.¹²⁷ Dr. Saunders observes that each branch must “develop [its] own operational doctrine, personnel reliability systems, and nuclear warhead handling facilities to support... nuclear operations,” but the details are currently unknown.¹²⁸ The SSBN fleet may have difficulty maintaining contact with its command authority while operating in deep ocean waters on patrol, though media reports in 2018 indicated China had built a massive experimental antenna that could transmit messages to submerged submarines via extremely low-frequency waves.*¹²⁹ Moreover, China’s SSBNs cannot replicate the PLA Rocket Force’s practice of keeping nuclear warheads separated from their missiles. The PLA will need to discard this practice for its SSBNs to carry nuclear weapons on patrol, which will remove a traditional barrier to unauthorized use.¹³⁰

ISR Capabilities Will Enable Multiple Missions

China’s ISR systems improve targeting and situational awareness for China’s nuclear forces, enabling missions such as strategic early warning and ballistic missile defense. An overlapping network of radars and sensing satellites, most of which the PLA Strategic Support Force likely operates in direct support of the CMC and PLA Rocket Force headquarters, are the most important elements.¹³¹ Together, these capabilities improve Chinese leaders’ situational awareness and could enable them to move to a launch-on-warning posture, whereby the PLA would launch nuclear weapons in retaliation for an incoming strike that has been detected by ISR systems but not yet detonated on Chinese territory.

China’s ground-based radars, which include large-phased array radars, over-the-horizon radars, and radars that detect low-flying targets, enable the PLA to detect threats from different trajectories. The Strategic Support Force now operates four large-phased array radars that can detect and track incoming ballistic missiles at the apex of their trajectory up to 5,000 kilometers away.†¹³² Moreover, China has two over-the-horizon radar systems that can detect ballistic missile launches up to 2,500 kilometers away from the southeast, giving China radar coverage over neighboring countries in the East China Sea and much of the Western Pacific.¹³³ China also has a high-frequency surface wave radar as well as radars associated with

*Submerged submarines are unable to communicate with their command authorities at ordinary radio frequencies, which do not travel well through saltwater. Submarines can surface and raise an antenna above sea level to use ordinary radio transmissions for communication, but this makes them vulnerable to anti-submarine warfare. Such vulnerability is problematic because submerged submarines need to be able to receive their launch orders in the event of a nuclear war. Technological innovations during the Cold War led to several methods for underwater communication, such as the use of very low frequency radio waves at shallow depths and extremely low frequency radio waves at depths up to hundreds of meters. Extremely low frequency transmitters are technically difficult to construct and only the United States, Russia, China, and India are known to use them. Ryan White, “How Do Submarines Communicate with the Outside World?” *Naval Post*, May 3, 2021.

†The north-facing large-phased array radar at Huanan can detect and track ICBMs launched from the United States and Russia on a polar trajectory, while the large-phased array radars at Yiyuan and Longgangzhen face southeast toward Taiwan and the South China Sea for the possible purpose of bolstering Chinese conventional strikes on targets in those areas. The large-phased array radar at Korla can face west, south, southeast, or east and may be utilized for tracking satellite launch and missile intercept tests. Hans M. Kristensen, “China’s Strategic Systems and Programs,” in James M. Smith and Paul J. Bolts, eds., *China’s Strategic Arsenal: Worldview, Doctrine, and Systems*, Georgetown University Press, 2021, 115–116.

indigenous and Russian-made surface-to-air missile (SAM) systems that can detect low-flying stealth aircraft and cruise missiles from hundreds of kilometers away.¹³⁴

China is developing infrared satellites to detect ballistic missiles from space, though the extent to which it may already have such satellites is unclear. China has built a constellation of infrared early warning satellites named Shaobing akin to the United States' Defense Support Program satellites in geosynchronous orbit, according to a 2018 article in *Science and Technology Daily*, the official newspaper of China's Ministry of Science and Technology.¹³⁵ Secret Chinese satellite launches in 2015, 2017, and 2020 provoked speculation that the country was establishing a constellation of early warning satellites in geosynchronous orbit similar to the United States' Space-Based Infrared System, but it is not clear if this constellation is the Shaobing constellation or something else.¹³⁶ In 2019, Russian President Vladimir Putin said Russia is helping China build an early warning system, cooperation that could include assistance on space-based sensors.¹³⁷ China's Yaogan electro-optical satellite constellation provides broad coverage of ships and aircraft operating in the Pacific Ocean.¹³⁸

China has intermittently researched and tested technologies required for ballistic missile defense since the 1960s, even though it formally opposes U.S. ballistic missile defense.¹³⁹ Dr. Saunders testified that China already has a "limited capability against tactical and medium-range ballistic missiles" enabled by its Russian-built and indigenous SAM systems, advanced interceptors, and ISR capabilities.¹⁴⁰ For example, DOD assesses that China's domestic HQ-9 long-range SAM system "likely has a limited capability to provide point defense against tactical ballistic missiles."¹⁴¹ China has also tested its HQ-19 mid-course interceptor, which may be able to intercept ballistic missiles within a 3,000-kilometer range, similar to the U.S. Terminal High Altitude Area Defense system.¹⁴² Dr. Saunders notes the PLA "has some capability to engage both short-range and medium-range ballistic missiles," though the speed of its interceptors and its launch detection capabilities may limit its ability to intercept longer-range missiles.¹⁴³

China's Modernized Nuclear Forces Enable Changes in Strategy and Heighten Nuclear Risks

The observable transformation of China's nuclear posture and the projections for its expansion over the next decade raise questions about changes in China's nuclear strategy. Recent qualitative and quantitative improvements in the nuclear forces clearly allow Chinese leaders to pursue a more ambitious nuclear strategy if they wish to do so. Regardless of the strategic intent behind these changes, China's buildup creates new capabilities that an increasingly risk-tolerant Chinese leadership could someday feel emboldened to employ either for threats or for limited use during a regional conflict.

Moreover, the risks of a nuclear exchange between China and the United States are higher today than in the past. The entanglement of China's conventional and nuclear forces creates risks of accidental nuclear escalation during a conventional war triggered by Chi-

na's aggression in the Indo-Pacific. If Chinese leaders have already changed their strategy without declaring they have done so, they could be much more likely to intentionally threaten or use nuclear weapons to achieve their regional objectives, such as deterring or degrading intervening U.S. forces in a conventional war over Taiwan they fear they could lose. Finally, if Chinese leaders choose to shift their land-based missile force to a launch-on-warning posture, the difficulties associated with learning to operate such a system could generate false alarms about nonexistent incoming nuclear attacks, potentially triggering a nuclear exchange between China and the United States.

Competing Interpretations of China's Nuclear Buildup

The available evidence about China's nuclear buildup is consistent with multiple interpretations of Chinese leaders' intent. Chinese leaders could simply be upgrading their nuclear forces to ensure they can survive and retaliate against an adversary's first strike without altering China's current nuclear strategy. Alternatively, many of these advances could enable a shift to a launch-on-warning posture. A third possibility is that Chinese leaders could be transforming their nuclear forces to support a strategy involving the limited use of nuclear weapons against conventional military targets in the Indo-Pacific, such as U.S. aircraft carriers and bases, while continuing only to target an adversary's major cities in retaliation for a nuclear attack China sustains first. These explanations are not mutually exclusive; Chinese leaders could intend to keep their current retaliatory strategy for now but reserve the option to adopt a new nuclear strategy in the future should conditions warrant.

China's Buildup Aims to Create a Survivable Retaliatory Force

One interpretation is that China may be building up its nuclear forces in order to improve or restore its second-strike capability, which was arguably never truly secure but has been undermined in recent years by technological advances in other nuclear weapon states China considers a threat.¹⁴⁴ Chinese scholars and some U.S. analysts identify the United States' development of ballistic missile defense and conventional long-range strike capabilities for "damage limitation"* as the main impetus for changes in China's nuclear posture.¹⁴⁵

The PLA's emerging nuclear triad, growing warhead stockpile, and increasing reliance on mobile platforms make it more difficult for an adversary to disarm China in a nuclear first strike, increasing what George Washington University assistant professor Fiona Cunningham and Massachusetts Institute of Technology political science professor M. Taylor Fravel call the "assuredness" of retal-

*"Damage limitation" refers to the ability to significantly reduce the damage an adversary can inflict against the U.S. homeland in an all-out nuclear retaliatory attack. During the Cold War, the United States interpreted damage limitation as denying the Soviet Union an "assured destruction capability" against the United States, which then Secretary of Defense Robert McNamara defined as a state's ability to destroy 20 to 25 percent of another country's population and 50 percent of its industrial base in retaliation after an attack on its nuclear forces. Damage limitation requires robust ISR to track incoming missiles, capable ballistic missile defense to intercept missiles in flight, and long-range weapons (conventional or nuclear) that can destroy a state's nuclear forces on land and at sea, as well as its nuclear command and control infrastructure. Charles L. Glaser and Steve Fetter, "Should the United States Reject MAD? Damage Limitation and U.S. Nuclear Strategy toward China," *International Security* 41:1 (Summer 2016): 54, 55, 62.

iation.¹⁴⁶ MIRV technology on China's ICBMs and the ability to launch enough missiles to impose unacceptable damage on an adversary's cities helps China complicate the U.S. approach to damage limitation and advance a de facto—if not political*—state of mutual vulnerability.¹⁴⁷ Growing numbers of missile silos improve the likelihood that more of China's ICBMs survive an attack, since they are hardened and could be filled with a mix of decoys and real warheads.¹⁴⁸ Viewed through this lens, a decision by China to adopt a launch-on-warning posture could also be consistent with the retaliatory aspect of its current nuclear strategy.¹⁴⁹

China's Buildup Enables a Transition to Launch-on-Warning

Chinese leaders might also intend their nuclear buildup to support the adoption of a launch-on-warning posture. Such a posture, which is technologically sophisticated and greatly increases the speed with which China can retaliate against an incoming attack, arguably supersedes the requirements of minimum deterrence if adopted across the ICBM force. The very short time frame for decision-making created by a launch-on-warning posture could lead Chinese leaders to launch a second strike with overwhelming force, before they are able to assess the scale of the damage sustained by a target as a result of the adversary's first strike. Such a posture thus creates the possibility that China could impose disproportionate damage on an adversary that struck it first in a more limited fashion, behavior that would be inconsistent with the proportionality and relaxed response time emphasized by China's historical nuclear strategy. More importantly, a transition to launch-on-warning heightens the risks of accidental or erroneous nuclear escalation (for more, see "China's Shift to Launch-on-Warning Could Result in Accidental Nuclear Launch").¹⁵⁰

China's Buildup Enables a More Ambitious Nuclear Strategy

China's nuclear posture could also support a more ambitious nuclear strategy that envisions the limited first use of nuclear weapons as a legitimate means of achieving China's political objectives in the region. Such a strategy would be consistent with important, if officially marginalized, Chinese intellectual debates that took place in the past over how China could use nuclear weapons to prevail in wars and whether it should discard the no-first-use policy. Chinese leaders today could be more receptive to the PLA's perennial push for additional strategic options as they consider how best to achieve their expanding political interests.

According to Dr. Saunders, PLA theorists have repeatedly raised the possibility of a shift toward a more ambitious nuclear doctrine that might include nuclear warfighting,[†] only to have CCP leaders

*The United States does not publicly acknowledge a mutual vulnerability relationship with China. The nuclear forces of China and the United States can hold each other's countries at risk, but not to the same extent given the greater size and sophistication of the U.S. arsenal as well as U.S. ballistic missile defense capabilities.

†Nuclear warfighting strategies, often described as "flexible" or "limited" nuclear option approaches, purportedly enable military commanders to limit the effects of a nuclear war by targeting an enemy state's nuclear forces and military infrastructure (counterforce targeting) rather than its major population centers (countervalue targeting). Concepts of nuclear warfighting assume that nuclear weapons can be deployed with discrimination and flexibility to accomplish political objectives without resulting in escalation to all-out nuclear war. Nuclear warfighting strategies are distinct from strategies that envision the only function of nuclear weapons as

end the discussion.¹⁵¹ In the 1980s, for example, Chinese strategists debated the possibility of a shift to “limited deterrence,”* an approach that envisioned a mix of counterforce and countervalue tactical, theater, and strategic nuclear forces to deter escalation to war or compel an adversary to back down if war broke out.¹⁵² Christopher P. Twomey, associate professor at the Naval Postgraduate School, notes that passages in the 2004 authoritative text *Science of Second Artillery Campaigns* discuss “distinct waves of [nuclear] retaliation,” suggesting the text’s authors saw nuclear weapons as a tool to be employed in a graduated way to control further escalation † during a war that had already gone nuclear.¹⁵³

More recently, writings by Chinese strategists and passages in authoritative texts over the past 20 years reflect an officially quashed debate over whether China should abandon or otherwise qualify no first use.¹⁵⁴ Some PLA officers have argued that China should use nuclear weapons first if an enemy’s conventional attack threatens the survival of China’s nuclear forces or of the CCP itself.¹⁵⁵ The aforementioned *Science of Second Artillery Campaigns* describes threatening nuclear use—though not actually employing nuclear weapons—in response to conventional attacks against high-value targets within China.¹⁵⁶ The 2020 *Science of Military Strategy* discusses launching nuclear weapons in “demonstration strikes,” presumably on China’s territory or the open ocean, to signal resolve during a crisis.¹⁵⁷

Nuclear Use against Regional, Conventional Military Targets to Deter or Degrade Adversary Forces

If Chinese leaders decide to adjust their nuclear strategy, they are most likely to adopt one involving the limited first use of low-yield, more precise nuclear weapons against select conventional military targets in the Indo-Pacific region.¹⁵⁸ Chinese leaders may believe such a strategy would deter U.S. intervention or confer significant military advantages if it enables them to destroy assets critical to U.S. military operations, such as U.S. aircraft carriers or the bases

detering an enemy from launching a nuclear attack. Nuclear warfighting strategies generally require many accurate, reliable, and survivable nuclear weapons; robust ISR; and efficient command and control processes, though the quantities may depend on the enemy state’s nuclear capabilities. Bulletin of Peace Proposals, “Nuclear Deterrence, Nuclear War-Fighting and Nuclear Disarmament,” *Arms and Disarmament SIPRI Findings*, 17:3/4 (1986): 391.

*According to Harvard University professor Alastair Iain Johnston, Chinese writings outlining limited deterrence identified as appropriate targets an enemy’s strategic missile, naval and air forces, nuclear weapons stockpiles, command and control, early warning systems, transportation hubs, military industrial targets, and political and economic centers, among others. Hitting these targets and successfully suppressing escalation to higher levels of nuclear violence would require additional numbers of accurate and survivable ICBMs, SLBMs, tactical and theater nuclear weapons, ballistic missile defense, space-based early warning, and anti-satellite weapons. Chinese strategists believed a limited deterrent should be able to respond proportionately to any level of nuclear use, from tactical to strategic, and enable China to “entertain war-winning possibilities.” China did not have the capabilities to implement limited deterrence when it emerged in the 1980s, however, and its core concepts were not reflected in policy or authoritative military texts published afterward. Alastair Iain Johnston, “China’s New ‘Old Thinking’: The Concept of Limited Deterrence,” *International Security* 20:3 (Winter 1995–1996): 5–6, 17–20.

†Nuclear weapons can theoretically be used to control substantial military escalation during an ongoing war, a concept known as “intra-war deterrence” or “transwar deterrence.” Intra-war deterrence can be achieved by threatening to use nuclear weapons should the adversary escalate a conflict beyond a particularly important threshold. Christopher Twomey, written testimony for the U.S.-China Economic and Security Review Commission, *Hearing on China’s Nuclear Forces*, June 10, 2021, 3–4; Keith B. Payne, “The Great Divide in U.S. Deterrence Thought,” *Strategic Studies Quarterly* (Summer 2020): 24; W. Andrew Terrill, *Escalation and Intra-war Deterrence during Limited Wars in the Middle East*, U.S. Army War College Press, 2009, xi.

on Guam and Okinawa.¹⁵⁹ They could signal restraint at the strategic level by keeping their ICBM force de-alerted and communicating directly that China would continue only to target an adversary's major cities with large-yield warheads in retaliation for a nuclear first strike on the Chinese Mainland.

Several technological developments within China's nuclear forces make this shift in strategy possible. Caitlin Talmadge, associate professor of security studies at Georgetown University, testified before the Commission that the precision, range, and hot-swappable character of the DF-26 suggest the system is "designed to be used for something other than a countervalue second strike" and "well suited to limited nuclear use against U.S. military targets in the Pacific."¹⁶⁰ Chinese commentators have described the future development and deployment of lower-yield nuclear weapons as means to destroy U.S. aircraft carriers and bases and to manage escalation.¹⁶¹ Improvements to China's NC3 system and ISR would also better position China's theater nuclear forces to identify and successfully target U.S. forces during a regional conflict.¹⁶² All of these capabilities support Admiral Richard's observation in February 2021 that China can now adopt "any plausible nuclear employment strategy regionally" with its nuclear forces.¹⁶³

Chinese leaders could believe this strategy of limited nuclear use is unlikely to provoke further nuclear escalation because of the imbalance of nuclear forces at the theater level. The United States was unable to deploy nuclear or conventional intermediate-range missiles in the Indo-Pacific between 1987 and 2019 due to its participation in the now-defunct INF Treaty.¹⁶⁴ During the same period, China—which was not party to the treaty—rapidly expanded the intermediate-range missile arsenal that is now foundational to its conventional military strategy and developed several intermediate-range nuclear variants of these systems.¹⁶⁵ Brad Roberts, director of the Center for Global Security Research at Lawrence Livermore National Laboratory, told the Commission that as a result, the balance of Chinese and U.S. ground-based nuclear forces deployed in the Indo-Pacific is "roughly a thousand missiles to zero."¹⁶⁶ This imbalance means the United States lacks proportionate ground-based options to respond to a limited use of nuclear weapons by China at the theater level.

PLA Capabilities to Engage in Limited Nuclear Counterforce against the U.S. Homeland

China's military today may be capable of shifting to counterforce strategies* involving the very limited use of nuclear weapons

*One strategy might involve a limited "demonstration" of nuclear use, such as detonating a nuclear weapon to create an electromagnetic pulse on the open ocean water near a U.S. military installation. Chinese leaders could employ this strategy during a crisis to shock U.S. political leaders and demonstrate their resolve to escalate to higher levels of nuclear violence should the United States fail to "back down" over the issue at hand. The second strategy could involve using a low-yield nuclear weapon against one or more of the radars associated with U.S. missile defense, such as those located at military bases in Alaska. This strategy too would aim to intimidate U.S. leaders into accepting Chinese political objectives during a crisis, but it would have the added benefit of degrading U.S. NC3 and missile defense capabilities that would be relevant in the next stage of a war. Both strategies rely on highly questionable assumptions that the U.S. leadership would either not retaliate at all, for fear of inviting further nuclear attacks, or inflict a "tolerable," proportionate level of damage with a limited nuclear strike against a similar target in China. There is no evidence in Chinese military texts indicating Chinese leaders intend to adopt either strategy. Phillip C. Saunders, Director of the Center for the Study of Chinese Military Affairs at

against targets on the U.S. homeland with its highly precise DF-41 ICBM and lower-yield warheads potentially under development, but these strategies would be unable to manage escalation to all-out nuclear war. China remains technologically incapable of launching a disarming first strike against the United States. China's nuclear forces are not large enough or sophisticated enough to destroy most or all of the United States' nuclear forces. It is true China is developing highly accurate missiles, MIRVs, better ISR, the ability to launch rapidly, and ballistic missile defense, all of which are theoretically useful for destroying an adversary's nuclear forces and limiting any damage China could sustain in response. But to target and degrade large portions of the U.S. nuclear arsenal, the PLA would need vast quantitative increases and qualitative improvements in each of these capabilities. Even if it were to destroy many of the United States' silo-based ICBMs or strategic air bases, the PLA would almost certainly be unable to destroy U.S. SSBNs before they inflicted massive and unacceptable retaliation on the Chinese Mainland.

New Risks of Nuclear Escalation in a Competitive U.S.-China Relationship

Technological changes within China's nuclear forces and the growing chance of a conventional conflict in the Indo-Pacific theater increase the risks of escalation to a limited nuclear exchange between China and the United States. This section discusses specific risks associated with the PLA's entanglement of nuclear and conventional systems, the possibility China might use nuclear weapons to reverse the outcome of a conventional war it was losing, and the adoption of a launch-on-warning posture. It also assesses the risk that China's more credible nuclear deterrent could give Chinese leaders the confidence to pursue coercion or conventional aggression against U.S. allies and partners in the Indo-Pacific.

A U.S. Attack on "Entangled" PLA Assets Results in Nuclear Escalation

Growing entanglement between the PLA's conventional and nuclear forces, specifically in its intermediate-range missile systems and submarine forces, creates risks of accidental or unforeseen nuclear escalation. It is not clear whether the PLA has intentionally entangled these capabilities to heighten the risks it poses to its adversary, thereby enhancing deterrence, or whether it has done so to enhance operational efficiency.¹⁶⁷ Using the same designs for nuclear and conventional missile variants also saves costs associated with research and production, creating economies of scale.¹⁶⁸

The PLA's entanglement of its conventional and nuclear forces increases the possibility that the United States could unintentionally degrade components of China's nuclear arsenal or its associated NC3 systems during a conventional war in ways that precipitate Chinese nuclear escalation. Dr. Talmadge describes this escalation pathway as "conventional counterforce" and notes it is most like-

the National Defense University, interview with Commission staff, July 19, 2021; Christopher P. Twomey, Associate Professor at the Naval Postgraduate School, interview with Commission staff, July 20, 2021.

ly to emerge amid the fog of war and worst-case thinking during an armed conflict over Taiwan.¹⁶⁹ “If Beijing interprets the erosion of its sea- and land-based nuclear forces as a deliberate effort to destroy its nuclear deterrent through conventional counterforce, or perhaps even as a prelude to a nuclear counterforce, it might see limited nuclear escalation as a way to force an end to the conflict,” she observes.¹⁷⁰ Similarly, Dr. Saunders agrees “U.S. strikes which inadvertently destroy a handful of Chinese ICBMs or severely degrade [PLA Rocket Force] strategic command and control systems could significantly heighten Chinese threat perceptions and create ‘use or lose’ pressures that encourage nuclear use.”¹⁷¹

China Threatens or Uses Nuclear Weapons to Avoid Losing a War over Taiwan

Chinese leaders might also consider purposefully threatening the use of or actually using nuclear weapons as a means to reverse the outcome of a conventional war they were losing, such as a war over Taiwan. Consistent with methods of strategic deterrence described in the *Science of Military Strategy*, China could attempt to deter the United States from intervening in a conflict over Taiwan by threatening the use of nuclear weapons through escalatory signaling practices. These methods include adjusting the deployments of China’s nuclear weapons, raising readiness levels, publicly revealing its prepared nuclear weapons, or carrying out warning strikes involving nuclear weapons (presumably on the open ocean), any of which could cause unintended escalation if mistaken by an adversary as preparations for a nuclear first strike.¹⁷²

Alternatively, Dr. Talmadge argues that China could engage in “asymmetric escalation” by actually using nuclear weapons against U.S. military targets during a war over Taiwan.¹⁷³ “Given the island’s political importance, it is not inconceivable to think that Chinese leaders losing a war over Taiwan could engage in asymmetric nuclear escalation to try to get the United States to back down or simply to halt the U.S. conventional campaign,” she said.¹⁷⁴ China’s use of nuclear weapons against conventional U.S. forces and bases during a Taiwan contingency would obviously constitute a violation of its no-first-use pledge, but in Dr. Talmadge’s view would be comparable to the scenarios in which countries facing the loss of territory during a land war have historically threatened asymmetric nuclear escalation.*¹⁷⁵

Chinese leaders’ decision to escalate to nuclear use would rely on the potentially erroneous assumption that the United States would back down because it “cares less” about the outcome of a Taiwan

*Dr. Talmadge points out that China engaged in highly escalatory behavior during a border crisis with the Soviet Union in 1969. “China started a skirmish that risked war and initially believed that nuclear weapons would be irrelevant, even though the Soviet arsenal was several orders of magnitude larger than China’s, just as the U.S. arsenal dwarfs China’s today,” she observed. After learning that the Soviets had discussed with other countries plans to attack China with nuclear weapons, Chinese leaders became deeply concerned that a nuclear attack was imminent despite having no evidence the Soviets intended to follow through on their threat. China tested a thermonuclear weapon at Lop Nur and placed the country’s nuclear forces on a months-long alert for the first and only time in China’s history, a risky move given that at the time the PLA relied on liquid-fueled missiles and rudimentary command and control procedures. Caitlin Talmadge, oral testimony for the U.S.-China Economic and Security Review Commission, *Hearing on China’s Nuclear Forces*, June 10, 2021, 116; Caitlin Talmadge, “Would China Go Nuclear? Assessing the Risk of Chinese Nuclear Escalation in a Conventional War with the United States,” *International Security* 41:4 (Spring 2017): 88–90.

conflict than does China. “The point of nuclear saber rattling in a Taiwan conflict for them would be to awaken us to the asymmetry of stake,” Dr. Roberts told the Commission.¹⁷⁶ He argued that Chinese leaders may not fully appreciate the importance the United States places on Taiwan as a testament to democracy in Asia and as a bellwether for its extended deterrence commitments.¹⁷⁷ “That’s a large stake and that’s not wished away by the nuclear shadow,” Dr. Roberts said.¹⁷⁸

China’s Shift to Launch-on-Warning Could Result in Accidental Nuclear Launch

A decision by China to adopt a launch-on-warning posture for its nuclear forces increases the risk of accidental nuclear use. Disarmament advocates generally regard launch-on-warning as destabilizing because it can produce false alarms about nonexistent attacks and trigger a nuclear exchange.¹⁷⁹ Admiral Richard called China’s potential shift to launch-on-warning “unsettling” before the Senate Committee on Armed Services in April 2021 given what he described as “the immature nature of Chinese strategic forces and compressed timelines needed to assess and frame a response,” which increase “the potential for error and miscalculation.”¹⁸⁰

Moreover, a shift to launch-on-warning could require the predellegation of launch authority to General Secretary Xi or to the CMC since there would be too little time to build consensus within the Politburo Standing Committee over whether to launch in response to potentially false reports of an incoming missile. The abandonment of consensus decision-making over nuclear retaliation, a dynamic that has already occurred in other policy areas, would mean General Secretary Xi’s risk tolerance could play an outsized role in determining whether China uses nuclear weapons. While DOD assesses that China will keep at least a portion of its force on a launch-on-warning posture, Dr. Saunders told the Commission he does not believe a force-wide shift is likely given CCP leaders’ historical distrust of the military and their concern that such a posture could heighten the risks of escalation or accidental nuclear conflict.¹⁸¹

Increased Potential for Coercion or Conventional Aggression

China’s growing nuclear arsenal could embolden it to pursue coercion or conventional aggression against U.S. allies and partners if Chinese leaders believe their nuclear arsenal will deter the United States from intervening on these countries’ behalf. This logic, known in political science as the “stability-instability paradox,” holds that because nuclear adversaries cannot afford to fight for fear of mutual destruction, neither will initiate nuclear war (creating “stability”), but that because of this, conventional war remains a viable option (creating “instability”).¹⁸² Abraham Denmark, director of the Asia Program at the Wilson Center, argued in testimony before the Commission that U.S. allies and partners are concerned China’s nuclear modernization could affect the willingness of the United States to provide extended deterrence in the long term because the potential costs of defending them from conventional aggression against a more capable nuclear-armed China will be higher than before.¹⁸³

Chinese conventional aggression is most plausible against Taiwan and Japan. Mr. Denmark described in testimony one scenario in which China could attempt to quickly seize Taiwan and present the United States with a *fait accompli*, threatening nuclear use should U.S. forces attempt to roll back its gains.¹⁸⁴ Other analysts, especially those in Japan's strategic community, have argued that China could extend its presence around or even seize the Senkaku Islands.¹⁸⁵

China's Proliferation Activities: An Added Nuclear Threat

China continues to facilitate the global proliferation of nuclear and missile technologies today, presenting the United States and its allies with another nuclear-related threat. Whereas decades ago the Chinese government and SOEs dominated the trade of prohibited nuclear and missile technologies,* today Chinese private individuals and companies are the most important vectors for proliferation to countries of concern, and the goods they export are dual-use rather than those with pure military applications.¹⁸⁶ "The Chinese government has adopted an, at best, passive response to this trade, neither actively preventing nor punishing private entities for such exports or re-exports," Valerie Lincy, executive director of the Wisconsin Project on Nuclear Arms Control, testified to the Commission.¹⁸⁷

U.S. government reports in recent years allege that "China-based entities" proliferate technologies and materials with nuclear and missile applications to other countries, and that the Chinese government turns a blind eye to their activities. For example, the 2021 version of the State Department's annual report, *Adherence to and Compliance with Arms Control, Nonproliferation, and Disarmament Agreements and Commitments*, stated, "Chinese entities continued to supply [Missile Technology Control Regime]-controlled† goods to missile programs of proliferation concern in 2020," though it referred readers to a classified annex for details.¹⁸⁸ The report noted that the U.S. government had raised a number of cases with the Chinese government concerning transfers of missile-related goods and technology by Chinese entities to countries of concern throughout 2020. "Although the United States has asked that China inves-

*In the 1980s and 1990s, Chinese SOEs made strategically significant transfers of technology and knowhow—including the complete design for a nuclear weapon and multiple missile systems—to Pakistan, Iran, and North Korea, among others. China made the transfers despite these countries variously refusing to sign the Treaty on the Non-Proliferation of Nuclear Weapons, violating their treaty commitments, or withdrawing entirely from the treaty. The Chinese government began to observe some nuclear nonproliferation norms and multilateral export control regimes in the mid-1990s, which U.S. government sources at the time assessed led to improvement in the export practices of SOEs and an end to confirmed transfers of nuclear-capable missiles. China acceded to the Treaty on the Non-Proliferation of Nuclear Weapons in 1992, joined the Zangger Committee in 1997, and joined the Nuclear Suppliers Group in 2004. Valerie Lincy, written testimony for the U.S.-China Economic and Security Review Commission, *Hearing on China's Nuclear Forces*, June 10, 2021, 3–11; Congressional Research Service, *Chinese Nuclear and Missile Proliferation*, May 17, 2021, 1; White House, *A Report Relating to the Approval and Implementation of the Agreement for Nuclear Cooperation between the United States and the People's Republic of China, Pursuant to 42 U.S.C. 2153(d)*, January 12, 1998.

†The Missile Technology Control Regime is a multilateral export control regime that restricts the proliferation of missiles, complete rocket systems, unmanned air vehicles, and related technology for systems capable of carrying a 500-kilogram payload at least 300 kilometers as well as systems intended for the delivery of WMD. China agreed to apply some of the Missile Technology Control Regime's guidelines for curbing missile proliferation despite the rejection of its formal application for Mission Technology Control Regime membership in 2004 on the grounds that it failed to meet the group's nonproliferation standards. Wade Boese, "Missile Regime Puts Off China," *Arms Control Association*, November 2004.

tigate and put a stop to such activities, most of these cases remain unresolved,” the report asserted.¹⁸⁹ The report also assessed that China “has failed to adhere” to a pledge it reportedly made to the United States in November 2000 that it would not assist “in any way, any country in the development of ballistic missiles that can be used to deliver nuclear weapons.”¹⁹⁰

The U.S. government continues to sanction China-based entities for their facilitation of nuclear and missile proliferation. On at least two occasions in 2020, for example, the State Department announced sanctions in accordance with the Iran, North Korea, and Syria Nonproliferation Act on a number of Chinese individuals and firms for transferring sensitive technology and items to Iran’s missile programs.¹⁹¹ More broadly, the U.S. government has placed numerous Chinese SOEs, firms, and individuals involved in China’s nuclear weapons program and proliferation activities on the U.S. Department of Commerce’s Entity List.¹⁹² Several Chinese individuals have been prosecuted in recent years for conspiring to illicitly transfer U.S.-origin technologies with nuclear and missile applications to China.¹⁹³

Proliferation of Dual-Use Items to Iran

China-based individuals and private enterprises have played a dominant role in publicly documented cases of proliferation to Iran over the last decade.* In some cases, Chinese nationals have engaged in elaborate schemes to transfer dual-use items from China to Iran. The most notorious of these individual proliferators is Li Fangwei (also known as Karl Lee), a China-based businessman whom the United States has sanctioned 12 times since 2010, including most recently in 2019, for transferring sensitive dual-use technologies such as gyroscopes, accelerometers, high-strength alloys, and graphite cylinders to Iran.¹⁹⁴ According to a 2019 statement by the National Security Council’s senior director for weapons of mass destruction (WMD), Mr. Li’s transfers “contributed to Iran’s development of more advanced missiles with improved accuracy, range, and lethality.”¹⁹⁵ Mr. Li remains at large in China despite U.S. requests to extradite him and a \$5 million reward the U.S. government has offered for information leading to his arrest or conviction.¹⁹⁶ Another prominent example of a Chinese individual enabling proliferation to Iran is Cheng Sihai, a Chinese businessman who provided Iran with titanium sheets and tubes, seamless steel tubes, pressure valves, bellows, flanges, and U.S.-origin pressure transducers for the country’s uranium enrichment program.¹⁹⁷ Mr. Cheng was arrested

*Affiliates or subsidiaries of Chinese SOEs have sometimes been implicated in recent proliferation activities that benefit Iran’s WMD activities. For example, China’s Wuhan Sanjiang Export and Import Co. Ltd. was sanctioned by the U.S. Department of the Treasury in 2017 for selling more than \$1 million worth of technology, including radars and missile guidance equipment, to a subsidiary of Iran’s Ministry of Defense and Armed Forces Logistics. Wuhan Sanjiang Export and Import Co. Ltd. is a subsidiary of the large enterprise China Sanjiang Space Group, which is in turn a subsidiary of the SOE China Aerospace Science and Industry Corporation. In the 1980s and 1990s, the Chinese government reportedly helped Iran explore for uranium, provided the design for the conversion plant at Isfahan, and made transfers that aided Iran’s development of a solid-fuel ballistic missile. Valerie Lincy, written testimony for the U.S.-China Economic and Security Review Commission, *Hearing on China’s Nuclear Forces*, June 10, 2021, 9; U.S. Department of the Treasury, *Treasury Designates the IRGC under Terrorism Authority and Targets IRGC and Military Supporters under Counter-Proliferation Authority*, October 13, 2017; Foreign Trade Online, “Wuhan Sanjiang Import & Export Co., Ltd.”

by U.S. authorities in 2014 and sentenced in 2016 to nine years in prison.¹⁹⁸

In other cases, Iranian individuals and companies have operated from inside China to arrange transfers of dual-use items. Ms. Lincy highlighted the case of Ghobad Ghasempour, an Iranian-born Canadian national who set up front companies in China with the help of a Chinese partner to transship U.S.-origin items with applications to missile guidance systems—such as a precision lathe machine, thermal imaging cameras, and an inertial guidance system—to an Iranian state-controlled engineering company.¹⁹⁹ Mr. Ghasempour was arrested in the United States in 2017 and sentenced in 2018 to 42 months in prison, but his accomplice remains at large, presumably in China.²⁰⁰

SOEs Share Civil Nuclear and Missile Technologies with Pakistan

Beijing was instrumental in helping Pakistan develop its nuclear program in the early 1980s, and Chinese SOEs continue to export dual-use technologies to Pakistan that could further its nuclear and missile programs.* Chinese SOEs support a variety of projects linked to China's provision of fuel and services for nuclear power plants it has built in Chashma and Karachi.²⁰¹ In 2012, China National Nuclear Corporation subsidiary China Zhongyuan Engineering Corporation moved ahead with a plan to build two new civil nuclear reactors in Chashma in addition to the two it had built there prior to China joining the Nuclear Suppliers Group in 2004.† Chinese officials made this decision despite the fact that Nuclear Suppliers Group guidelines‡ prohibit such assistance to Pakistan because it is neither a member of the Treaty on the Non-Proliferation of Nuclear Weapons nor does it have all of its nuclear facilities under International Atomic Energy Agency safeguards.§²⁰² One of the SOEs constructing the Karachi plants, the China Nuclear Energy Industry Corporation, reportedly supplied fuel assemblies and core components to the Pakistan Atomic Energy Commission, the main Pakistani counterpart for the project that has been on the U.S. Department of Commerce's Entity List since 1998 due to proliferation concerns.²⁰³ Trade data reviewed by the Wisconsin Project

* In the 1980s and 1990s, China provided Pakistan with the complete design of a tested nuclear weapon; a supply of weapons-grade uranium to fuel that design; the solid-fuel short-range DF-11 ballistic missile system, which likely formed the basis for Pakistan's Shaheen missile system; and 5,000 ring magnets necessary for centrifuges used in uranium enrichment. Shirley A. Kan, "China and Proliferation of Weapons of Mass Destruction and Missiles: Policy Issues," *Congressional Research Service*, February 26, 2003, 4–5.

† China built two nuclear reactors at Chashma as a result of agreements struck in 1991 and 2003. When China joined the Nuclear Suppliers Group in 2004, it informed fellow member states that apart from these two reactors at Chashma, it would not supply any further reactors to Pakistan. In 2011, however, Beijing asserted that it would "grandfather" a new deal to build two reactors into the 2003 agreement, which was concluded before China's entry into the Nuclear Suppliers Group. Jeff M. Smith, "China and Pakistan's Nuclear Collusion," *Wall Street Journal*, April 2, 2013; Sharad Joshi, "The China-Pakistan Nuclear Deal: A Realpolitique Fait Accompli," *Nuclear Threat Initiative*, December 11, 2011.

‡ The Nuclear Suppliers Group is a group of nuclear supplier countries that implements two sets of guidelines for nuclear exports and nuclear-related exports in order to curb the proliferation of nuclear weapons. China joined the Nuclear Suppliers Group in 2004. Nuclear Suppliers Group, "About the NSG;" Nuclear Suppliers Group, "Guidelines;" Nuclear Suppliers Group, "Participants."

§ While Pakistan has International Atomic Energy Agency safeguard agreements in force for all its Chinese-built civil nuclear reactors, its nuclear weapons facilities in Islamabad do not have such safeguards. Congressional Research Service, *Chinese Nuclear and Missile Proliferation*, May 17, 2021, 2.

shows that in 2014 and 2017, Wuhan Sanjiang Import and Export Co. Ltd., which is ultimately subordinate to the SOE China Aerospace Science and Industry Corporation,* shipped items with applications to missile transporters and launchers to Pakistani entities associated with the country's ballistic missile work.²⁰⁴

Nuclear relations between China and Pakistan remain “extensive and problematic,” Ms. Lincy told the Commission.²⁰⁵ China's civil nuclear cooperation with Pakistan allows the country to devote more of its unsafeguarded nuclear infrastructure to fissile material production for nuclear weapons and provides it access to advanced nuclear technologies that could ultimately benefit the unsafeguarded program.²⁰⁶

Chinese Finance Benefits North Korea's WMD Programs

Private actors in China indirectly support North Korea's acquisition of dual-use goods for its nuclear and missile programs by facilitating its access to the foreign currency required to fund these programs.†²⁰⁷ Ms. Lincy argues this support entails hosting agents for North Korean financial networks that process illicit transactions to finance North Korea's nuclear and ballistic missile programs as well as North Korean nationals who remit income ultimately used for the same purposes.²⁰⁸ Then Deputy Assistant Secretary of State and current Commissioner Alex Wong said in a November 2020 speech that “China hosts no less than two dozen North Korean WMD and ballistic missile procurement representatives and bank representatives” despite a UN Security Council resolution requiring the expulsion of North Korean diplomats and representatives who assist in the evasion of sanctions related to the country's nuclear and missile programs.²⁰⁹ “The United States has provided China with ample actionable information on the ongoing UN-prohibited activities occurring within its borders,” Deputy Assistant Secretary Wong noted, “but Beijing has chosen not to act.”²¹⁰ North Korean workers also continue to reside in China and earn income for North Korea's nuclear weapons program. For example, North Korean information technology workers linked to a UN-sanctioned entity that oversees North Korea's nuclear and missile programs—the Munitions Industry Department—have established Chinese companies and sponsored visas for North Korean workers.²¹¹

*Wuhan Sanjiang Export and Import Co. Ltd. has been sanctioned by the Treasury Department for its sales of technology with missile applications to Iran; it is not on the Entity List maintained by the U.S. Department of Commerce. The company is also not on the Non-SDN Chinese Military-Industrial Complex Companies List (NS-CMIC List), presumably because it is not publicly traded. U.S. Department of Commerce Bureau of Industry and Security, *Supplement No. 4 to Part 744 - ENTITY LIST*, July 19, 2021; U.S. Department of the Treasury Office of Foreign Assets Control, “Non-SDN Chinese Military-Industrial Complex Companies List,” June 16, 2021; Valerie Lincy, written testimony for the U.S.-China Economic and Security Review Commission, *Hearing on China's Nuclear Forces*, June 10, 2021, 9–10.

†In the 1990s, Chinese SOEs provided technology and knowhow that furthered North Korea's ballistic missile program. For example, in 1998 the Chinese SOE China Academy of Launch Vehicle Technology, a subsidiary of China Aerospace Corporation, allegedly helped North Korea's space program develop satellites that were later used for the North Korean Taepodong-1 MRBM. Valerie Lincy, written testimony for the U.S.-China Economic and Security Review Commission, *Hearing on China's Nuclear Forces*, June 10, 2021, 10.

Implications for the United States

The rapid buildup of China's nuclear arsenal signals a clear departure from the country's historically minimalist nuclear posture. It suggests Chinese leaders are more expansively redefining the requirements of their assured retaliation strategy and potentially even contemplating a more ambitious strategy envisioning the first use of nuclear weapons to accomplish China's regional objectives. As Dr. Roberts observes, the significance of China's buildup for the United States "depends, in part, on China's answer to the question, 'How much is enough?'" and that so far, "China has given us no answer."²¹²

China's nuclear buildup puts it on a path to become a qualitative nuclear peer of the United States in around a decade, with a similarly diversified, precise, and survivable force.²¹³ Such a force would give China a truly secure second-strike capability as well as options for highly calibrated nuclear use that could support both their current assured retaliation strategy and a new strategy of limited nuclear first use in the region. China could even become a quantitative nuclear peer if projections for the growth of the land-based leg of the nuclear triad are correct. Regardless of what the future holds, however, several troubling implications are already apparent.

First, China's growing nuclear capabilities create uncertainty and raise the risk of accidental or unforeseen nuclear escalation during a regional conflict. Because some of the PLA's conventional and nuclear forces and supporting infrastructure are either comingled or indistinguishable, the United States might accidentally attack nuclear capabilities in the course of attacking nonnuclear capabilities during a conventional war in the Indo-Pacific. Such a situation could lead to "crisis instability" whereby China resorts to nuclear first use in order to preserve its nuclear deterrent, which it believes to be in serious danger. Reducing the risks stemming from entanglement in the PLA will be challenging because Chinese leaders may worry they will undermine deterrence or reduce operational efficiency if they agree to reduce entanglement.²¹⁴ Moreover, Chinese leaders may not believe that accidental nuclear escalation is a serious concern. The belief that inadvertent escalation is unlikely actually makes it more probable, however. As several nuclear experts affiliated with the Carnegie Endowment for International Peace argue, this view "leaves political and military leaders less inclined, in peacetime, to take steps that could mitigate the risks and more inclined, in wartime, to interpret ambiguous events in the worst possible light."²¹⁵ Similar risks of unintentional nuclear escalation could stem from a launch-on-warning posture, which is prone to false alarms.

Second, China's growing nuclear capabilities raise the risks that a conventional conflict in the Indo-Pacific could escalate to a deliberate nuclear exchange, though these risks are still small in absolute terms. The expansion, modernization, and diversification of China's nuclear forces give the PLA greater flexibility, resiliency, and capacity to use its nuclear weapons. According to Dr. Roberts, the result of these changes "will be a China that's more confident in running risks, military and political, and more risk for the United States in defending its interests in a conflict over Taiwan or elsewhere in the region with China."²¹⁶ In a high-stakes conventional war, Chinese

leaders could conceivably decide to threaten or engage in limited nuclear use against U.S. conventional forces and bases for fear of losing the conflict or their grip on power.

Third, China's growing nuclear capabilities could strain U.S. extended deterrence by emboldening conventional aggression or nuclear coercion against U.S. allies and partners. As China's nuclear arsenal grows, Dr. Roberts observes, Chinese leaders could become confident in their "ability to suppress escalatory responses by the United States because of the long shadow of nuclear weapons."²¹⁷ With stability achieved at the strategic level, Chinese leaders may feel more confident in their ability to use conventional force to resolve territorial disputes over Taiwan, the East China Sea, or the South China Sea. They could also stop short of using force and instead rely on their nuclear arsenal for coercion. Chinese leaders' possible interest in threatening nuclear use to deter Japanese involvement in a Taiwan contingency seemed evident in the decision by a municipal Chinese government authority to repost on social media a video threatening Japan with nuclear war in July 2021 after Japanese leaders made statements indicating they could come to Taiwan's defense.²¹⁸

Fourth, improvements in China's nuclear forces could complicate U.S. nuclear deterrence planning in the future even if they do not presently threaten the survivability of U.S. nuclear forces. Never before has the United States faced two peer nuclear-armed adversaries at the same time. The pace of China's nuclear modernization, the expansion of its nuclear warhead stockpile, and the extent to which it cooperates with Russia may require the United States to reexamine its deterrence strategies and force posture. Dr. Roberts told the Commission the major challenges for the United States in the decades ahead are "whether, as China's nuclear force grows... we need a strategic force of our own that's larger as well" and "whether [China and Russia] are an additive problem or whether China remains a lesser-included problem because it's a smaller force."²¹⁹

Fifth, China's expanding nuclear arsenal raises the specter of an arms race. China's longstanding refusal to engage in arms control inhibits deeper arms reductions by the United States, exacerbates the anxiety of U.S. allies, and prompts other countries to hedge in their nuclear strategies.²²⁰ Chinese leaders may be uninterested in creating mechanisms for crisis communication and management because, as Mr. Denmark observes, "the way they make decisions, the way they share information, does not lend itself well to those sorts of communications."²²¹ Without China's participation in arms control, an unbridled arms race between the world's major nuclear powers could develop and U.S. allies and partners in the Indo-Pacific could decide to pursue their own nuclear deterrents.

Finally, the Chinese government's tolerance for Chinese companies and individuals' proliferation of dual-use technologies undermines the global nonproliferation regime and poses a different type of nuclear threat to U.S. allies and partners. The nuclear and ballistic missile technologies provided by various Chinese entities to Iran, North Korea, and Pakistan over the years will continue to threaten the security of U.S. allies and partners such as Israel, Saudi Arabia, South Korea, Japan, and India. Combined with the direct threat

posed by the PLA's growing nuclear arsenal, the indirect threat posed by such proliferation will increase the pressures on U.S. allies and partners to develop missile defenses and credible second-strike capabilities of their own.

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CHAPTER 4

A DANGEROUS PERIOD FOR CROSS-STRAIT DETERRENCE: CHINESE MILITARY CAPABILITIES AND DECISION-MAKING FOR A WAR OVER TAIWAN

Key Findings

- Cross-Strait deterrence is in a period of dangerous uncertainty. Improvements in China's military capabilities have fundamentally transformed the strategic environment and weakened the military dimension of cross-Strait deterrence. China's increasingly coercive approach to Taiwan puts almost daily pressure on the cross-Strait status quo and increases the potential for a military crisis.
- Chinese leaders likely set 2020 as a key milestone for the People's Liberation Army (PLA) to develop the capabilities needed to invade Taiwan. To achieve this goal, for nearly two decades the PLA has systematically planned, trained, and built the forces it believes are required to invade the island. The PLA has already achieved the capabilities needed to conduct an air and naval blockade, cyberattacks, and missile strikes against Taiwan. PLA leaders now likely assess they have, or will soon have, the initial capability needed to conduct a high-risk invasion of Taiwan if ordered to do so by Chinese Communist Party (CCP) leaders. They will continue enhancing this capability in the coming years.
- Any near-term PLA invasion would remain a high-risk option. Such an operation would rely on the success of the PLA's more developed cyberattack, missile strike, and blockade capabilities to sufficiently degrade, isolate, or defeat Taiwan's defending forces as well as its anti-access and area denial capabilities to prevent decisive U.S. intervention. The PLA's current military sea and air lift capacity could carry an initial landing force of 25,000 or more troops. China has developed substantial capabilities to use civilian ships in military operations, providing capacity for the PLA to land additional troops on Taiwan after securing a beachhead.
- Given these developments, it has become less certain that U.S. conventional military forces alone will continue to deter China's leaders from initiating an attack on Taiwan. A deterrence failure is most likely to occur if Chinese leaders believe the United

States is not militarily capable of or politically willing to intervene, or if they interpret ambiguities in U.S. policy to mean that opportunistic Chinese aggression against Taiwan will not provoke a decisive U.S. response. General Secretary of the CCP Xi Jinping's higher tolerance for risk and desire to establish a lasting legacy could also contribute to a decision by China's leadership to attack Taiwan despite U.S. warnings.

- Still, whether and when to invade Taiwan is a political rather than a military question for CCP leaders, who continue to face substantial constraints on any decision to use force. These include the inherent uncertainty of a military confrontation with the United States, the extensive damage that would likely result to the Chinese economy, and the risk that an attack on Taiwan could prompt the formation of a coalition of countries determined to constrain any further growth in China's power and influence.
- Taiwan has taken important steps toward asymmetrically defending against a PLA attack, achieving successes in developing indigenous missiles threatening a PLA invasion or blockade. Nevertheless, Taiwan faces significant challenges from decades of underinvestment in defense, leaving it with low stockpiles of critical resources for enduring a PLA blockade. Some military leaders are also resisting steps to adopt a more asymmetric posture.

Recommendations

The Commission recommends:

- Congress enhance Taiwan's ability to purchase U.S. defense articles and accelerate the process for their sale and delivery to Taiwan by:
 - Authorizing and appropriating on a multiyear basis Foreign Military Financing Program funds for Taiwan to purchase defense articles from the United States and allowing Taiwan to use Foreign Military Financing funds to purchase arms through direct commercial contracts;
 - Amending the Foreign Assistance Act to make Taiwan eligible to receive priority delivery of U.S. excess defense articles; and
 - Directing the Administration to use the Special Defense Acquisition Fund to reduce defense procurement lead times for arms sales to Taiwan by pre-stocking defense articles needed to maintain cross-Strait deterrence.
- Congress take urgent measures to strengthen the credibility of U.S. military deterrence in the near term and to maintain the ability of the United States to uphold its obligations established in the Taiwan Relations Act to resist any resort to force that would jeopardize the security of Taiwan, including:
 - Authorizing and funding the deployment of large numbers of antiship cruise and ballistic missiles in the Indo-Pacific;
 - Authorizing and funding the requests of U.S. Indo-Pacific Command (INDOPACOM) for better and more survivable in-

telligence, surveillance, and reconnaissance in the East and South China Seas;

- Authorizing and funding the requests of INDOPACOM for hardening U.S. bases in the region, including robust missile defense;
- Authorizing and funding the stockpiling of large numbers of precision munitions in the Indo-Pacific; and
- Authorizing and funding programs that enable U.S. forces to continue operations in the event central command and control is disrupted.

Introduction

China's leaders have historically been deterred from attacking Taiwan by the threat of U.S. intervention and their fears that a war would disrupt their economy and global standing. Decades of concerted modernization have resulted in a PLA that today either has or is close to achieving an initial capability to invade Taiwan—one that remains under development but that China's leaders may employ at high risk—while deterring, delaying, or defeating U.S. military intervention. The PLA still suffers from significant weaknesses in joint operations and personnel quality but will continue working to address these shortfalls. The PLA's progress toward building an invasion capability has already undermined cross-Strait deterrence by diminishing the credibility of the U.S. threat to deny the PLA its objectives through intervention. The overall state of deterrence is now undeniably more fragile than before and could fail entirely if certain specific conditions are met.

Cross-Strait deterrence continues to hold today, however, because Chinese leaders remain deeply concerned about the risks and consequences of a decision to invade Taiwan. Specifically, Chinese leaders are currently deterred by the inherent uncertainties of launching an invasion and fighting the U.S. military. They are also concerned about the damage a war could do to China's economy and the possibility that an attack on Taiwan could prompt a U.S.-led coalition of countries determined to constrain any further growth of Chinese power and influence. As such, diplomatic and economic tools have also become increasingly important for maintaining peace and stability in the Taiwan Strait.

This section assesses the state of cross-Strait deterrence and identifies conditions under which it could fail to prevent a Chinese attack on Taiwan. First, the section examines the requirements for successful deterrence and the history of deterrence in the Taiwan Strait. Next, it discusses how decades of PLA modernization and planning have shifted the cross-Strait military balance and why the PLA either has or may soon have the capability to invade Taiwan, albeit at great military, economic, and political risk. While the PLA has the capabilities to execute various military campaigns against Taiwan, each of which could inflict great damage on the island, this section focuses on the PLA's emerging invasion capability as an existential threat facing Taiwan and a sharp challenge to U.S. deterrence.¹ Next, the section evaluates the factors in Chinese leaders' decision-making that could persuade them to initiate a war over

Taiwan or constrain such a decision. Finally, the section considers the implications of weakened cross-Strait deterrence for the United States. This section is based on the Commission's February 2021 hearing on the topic as well as consultations with U.S. government officials and nongovernmental experts and open source research and analysis.

Deterrence in the Taiwan Strait

In its simplest form, deterrence refers to the practice of discouraging an opponent from taking an unwanted action, such as military aggression.*² Deterrence relies on credible threats that create fear in the mind of the opponent that it will either suffer unacceptable retaliation or be unable to achieve its objectives should it undertake the unwanted action.†³ States practicing deterrence often employ threats of military force, but they can also leverage nonmilitary tools of statecraft such as economic sanctions or diplomatic exclusion to deter aggression against themselves (direct deterrence) or third parties (extended deterrence).⁴

Successful deterrence in the Taiwan Strait requires several conditions. First, China must recognize that the United States has the capability and the will to carry out its threat to intervene in response to a Chinese attack on Taiwan.⁵ Second, China must believe there are actions that could lead to a U.S. response and that costs will be imposed if China takes those actions.⁶ China is increasingly testing the resolve of the United States and its allies and partners through coercive military and economic actions.⁷ Finally, whether China can be deterred depends partly on its own reasons for undertaking aggression against Taiwan. These might include opportunism, dissatisfaction with the status quo, fear that the alternative is more dangerous to its interests, or other factors related to Chinese leaders' beliefs or behavioral tendencies that may not appear entirely rational.⁸

U.S. policies have also shaped Beijing's attitude toward the use of force over time. The CCP has identified unification with Taiwan as among its highest priorities.‡ From a political perspective, the United States' One China Policy maintains a diplomatic balance that accords Beijing official recognition, acknowledges but does not

*A state practicing "deterrence" seeks to persuade an opponent to refrain from undertaking a specific action, whereas a state practicing "compellence" seeks to persuade an opponent to undertake a specific action it otherwise might not want to carry out. Some academics also distinguish between strategies of "deterrence," which involve threats to discourage an action, and strategies of "dissuasion," which affect an opponent's cost-benefit calculus by pairing threats with assurances, concessions, or benefits for the purpose of making alternatives to a certain action more attractive. Michael J. Mazarr et al., "What Deters and Why: Exploring Requirements for Effective Deterrence of Interstate Aggression," *RAND Corporation*, 2018, 6–7.

†These approaches are known as "deterrence by punishment" and "deterrence by denial," respectively. Michael J. Mazarr, "Understanding Deterrence," *RAND Corporation*, 2018, 2; Glenn Snyder, "Deterrence and Power," *Journal of Conflict Resolution*, 4:2 (June 1960): 163.

‡Chinese officials have publicly described Taiwan's status as a "core interest" since 2003, and the country's legislature passed the Anti-Secession Law in 2005 enshrining "non-peaceful means" as a legal last resort to prevent "Taiwan independence." Every Chinese leader from Mao Zedong onward has threatened Taiwan with war if it declared independence and made the island's eventual "return" to China a theme of his public rhetoric. Michael Swaine, "China's Assertive Behavior Part One: On 'Core Interests,'" *China Leadership Monitor* 34 (February 22, 2011): 3, 7–8; Murray Scott Tanner and Peter W. MacKenzie, "China's Emerging National Security Interests and Their Impact on the People's Liberation Army," *CNA Corporation*, 2014, 21; Paul H.B. Godwin and Alice L. Miller, *China's Forbearance Has Limits: Chinese Threat and Retaliation Signaling and Its Implications for a Sino-American Military Confrontation*, NDU Press, April 2013, 69–104.

recognize Beijing's position on Taiwan sovereignty, and provides for a robust unofficial relationship between Taipei and Washington.*

From a military perspective, the United States has explicitly leveraged credible threats of intervention to deter a Chinese invasion of Taiwan in the past.† Between the early 1950s and 1979, the United States expressed its capability and will to defend Taiwan by committing itself to a formal alliance, maintaining a military command on the island, routinely sailing warships through the Taiwan Strait, training Taiwan's military, selling Taiwan arms, and threatening to use nuclear weapons against China on Taiwan's behalf.‡⁹ The United States threatened to intervene with overwhelming military superiority, both conventional and strategic, to prevent CCP leaders from seizing Taiwan's offshore islands during the so-called "First Taiwan Strait Crisis" (1954–1955) and "Second Taiwan Strait Crisis" (1958).¹⁰ In 1979, the U.S. Congress passed the Taiwan Relations Act (TRA), which committed the United States to provide Taiwan with defensive arms and services and required the United States to maintain the capacity to resist any efforts by China to change Taiwan's political status through force or coercion.¹¹ During the "Third Taiwan Strait Crisis" (1995–1996), the United States leveraged military threats to deter Chinese leaders from escalating their use of force beyond missile tests by deploying two aircraft carrier battle groups and an amphibious assault ship to waters near the island.¹²

Irrespective of the U.S. threat to intervene militarily during the Third Taiwan Straits Crisis, CCP leaders may also have decided against further provocation at that time because they worried a war over Taiwan could derail their efforts to build up China's wealth, power, and international status. In the mid-1990s, Chinese leaders were focused on acceding to the WTO, reforming the PLA, and repairing their tarnished image in the wake of the Tiananmen Square Massacre.¹³ Cai Xia, a former professor at the CCP's Central Party School and dissident now living in exile, argues that Chinese leaders did not challenge the United States during the Third Taiwan Strait Crisis or after the 1999 bombing of the Chinese Embassy in Belgrade because they were anxious the United States could suppress China's rise if it chose to exercise all levers of national power.¹⁴ "The CCP earnestly avoided sticking its neck out internationally for the

*The U.S. One China Policy is embodied in the three Joint Communiques, the TRA, and the Six Assurances. For more, see Congressional Research Service, "China/Taiwan: Evolution of the "One China" Policy—Key Statements from Washington, Beijing, and Taipei," January 5, 2015, 5–6.

†At the same time, the United States has attempted to deter Taiwan leaders from declaring independence. Observers have termed the U.S. strategy of attempting to deter both China and Taiwan from taking steps that undermine prospects for a peaceful resolution of Taiwan's political status "dual deterrence." David Keegan, "Strengthening Dual Deterrence on Taiwan: The Key to U.S.-China Strategic Stability," *Stimson Center*, July 6, 2021; Richard Bush, "A One-China Policy Primer," *Brookings Institution*, March 2017, 22.

‡To deter further Chinese aggression after the first Taiwan Straits Crisis (1954–1955), President Dwight D. Eisenhower went to Congress in January 1955 for an authorization to use force. Congress subsequently passed a joint resolution that gave the U.S. president broad authority to employ the military "as he deems necessary" for the specific purpose of protecting Taiwan and the Pescadores from attack. The so-called "Formosa Resolution" was open-ended enough to allow the possible use of nuclear weapons, though it was never actually invoked. In the years afterward, President Eisenhower made several public threats to use nuclear weapons against the PRC if it attempted to invade Taiwan. Matthew Waxman, "Remembering Eisenhower's Formosa AUMF," *Lawfare*, January 29, 2019; Joint Resolution Authorizing the President to Employ the Armed Forces of the United States for [H. J. Res. 159] Protecting the Security of Formosa, the Pescadores and Related Positions and Territories of That Area, H.J. Res. 159, introduced January 28, 1955.

twenty years from 1989 to 2008, because the CCP needed time to become bigger and stronger,” Ms. Cai wrote in a 2021 essay.¹⁵ “Realizing that the power disparity between China and the U.S. was too great and that China was unable to directly confront the U.S., the CCP practiced ‘forbearance’ in [bilateral] encounters.”¹⁶

Since the 2000s, however, the deterrent power of U.S. military threats has weakened as China’s capabilities for invading Taiwan have grown. For the last two decades, Beijing has engaged in a purposeful and well-resourced effort to improve the PLA’s capabilities, organization, training, and joint operations. As a result, the U.S. Department of Defense (DOD) assesses the PLA is now able to mount a full air and naval blockade of Taiwan and is capable of punishing the people of the island through missile, air, and cyberattacks.¹⁷

Moreover, the PLA has developed sea denial and power projection capabilities to potentially counter a U.S. intervention.*¹⁸ Captain Thomas H. Shugart III, USN (Ret.), adjunct senior fellow with the Center for a New American Security, testified before the Commission that these capabilities create “uncertainty as to the spectrum of possible results in a cross-Strait conflict.”¹⁹ Taken together, these changes have shifted the conventional military balance in China’s favor and highlight the diminishing efficacy of military threats as one of several tools the United States can leverage to deter China from invading Taiwan.

The Changing Cross-Strait Military Balance

As the Commission has documented in its past Reports, China has been engaged for decades in a well-resourced campaign to modernize the PLA, with the explicit goal of developing the capability to forcibly annex Taiwan through a cross-Strait invasion. As a result, the PLA can today execute a range of missions against Taiwan, including a full air and naval blockade, with a high confidence of success.

In addition, the PLA is nearing or already has an initial operational capability for a successful cross-Strait invasion—though at high risk of failure if the United States commits its forces to defend Taiwan. According to DOD, “initial operational capability” is “the first attainment of the capability to employ effectively a weapon, item of equipment, or system of approved specific characteristics that is manned or operated by an adequately trained, equipped, and supported military unit or force.”²⁰ Initial operating capability is in contrast to full operational capability, a point at which a weapon or system’s capabilities are mature and when the military is able to maintain the system, modernize it, and deploy it when needed.²¹

The PLA’s development in this regard is the result of consistent and explicit planning over the last two decades. Executing those directives has required years of operational planning, dedicated investment (particularly in China’s shipbuilding industrial base), sustained growth in the PLA’s amphibious capability, the adaptation of civilian sealift to military purposes, and comprehensive advances in anti-access and area denial capabilities to deter, delay, or defeat U.S.

*For more on power projection, see U.S.-China Economic and Security Review Commission, Chapter 3, Section 2, “China’s Growing Power Projection and Expeditionary Capabilities,” in *2020 Annual Report to Congress*, December 2020, 404–405.

military intervention. Moreover, the PLA—again at the direction of the highest level of CCP authority—is continuing to develop its capabilities so as to enhance the confidence of Chinese leaders that it can successfully execute an invasion campaign.

For over a decade, the PLA has been able to prosecute a growing range of campaigns short of invasion intended to coerce Taiwan into submission. In 2008, DOD assessed that the PLA had achieved the capabilities necessary for firepower strikes and a limited blockade of Taiwan.²² The PLA's plans for a joint firepower strike campaign involve launching missiles, rockets, and other munitions at targets in Taiwan to force Taiwan's leaders to submit to unification* with China. In 2015, the DOD annual report on China's military power did not include prior reports' assessment that the PLA could not enforce a full military blockade, suggesting the PLA had achieved that capability.²³ A PLA island blockade campaign would involve seizing control of the air and waters around Taiwan and shutting down Taiwan's economy by preventing the import of energy, food, and other essential goods until Taiwan's leadership capitulates. Between 2008 and 2015, the PLA began demonstrating the capability to conduct offensive cyber operations against military networks and critical infrastructure in Taiwan and the continental United States.²⁴ Cyber operations can bolster China's other campaign options or stoke social unrest that may compromise Taiwan public trust in its government or military.²⁵

In testimony before the Commission, Lonnie Henley, former defense intelligence officer for East Asia with the Defense Intelligence Agency, assessed that China's government probably ordered the PLA to have an initial Taiwan invasion capability by 2020.²⁶ The 2020 milestone, which then General Secretary Hu Jintao established in 2004, reflects Chinese leaders' understanding that a military invasion of Taiwan is the most escalatory in a range of potential campaigns requiring years of focused planning, training, and technological innovation.†²⁷ These efforts appear to have borne fruit. Since 2018, DOD has suggested that China may have an invasion capability by noting the PLA has a military "option" to invade Taiwan.²⁸ In its latest report on China's military power, issued in 2020, DOD reiterated that China's military options include a "full-scale amphibious invasion to seize and occupy some or all of Taiwan or its offshore islands" and added new language suggesting China is

*The Chinese government maintains that Taiwan is an inalienable part of the state called "China" ruled by the PRC. For that reason, it refers to the process of absorbing Taiwan as "unification" or "reunification."

†General Secretary Hu established 2020 as an important milestone for other military modernization targets. In 2004, he also ordered the PLA to achieve "major progress" in being capable of fighting "modern local wars under informatized conditions" by 2020. These orders were publicized with additional detail in China's *2006 Defense White Paper*, which elaborated a three-step modernization process in which the PLA must "lay a solid foundation" for modernization by 2010, "make major progress" toward becoming an informationized force by 2020, and be "capable of winning informationized wars" by mid-century. General Secretary Hu added further detail to the 2020 milestone in his work report to the CCP's 18th National Congress in 2012, calling on the PLA to "basically accomplish mechanization and make significant progress in information construction" by 2020. Joel Wuthnow, written testimony for the U.S.-China Economic and Security Review Commission, *Hearing on U.S.-China in 2020: Enduring Problems and Emerging Challenges*, September 9, 2020, 24–25; Wanda Ayuso and Lonnie Henley, "Aspiring to Jointness: PLA Training, Exercises, and Doctrine, 2008–2012," in Roy Kamphausen, David Lai, and Travis Tanner, eds., *Assessing the People's Liberation Army in the Hu Jintao Era*, Strategic Studies Institute, 2014, 171–173, 187.

now “capable” of such an invasion.*²⁹ Similarly, Mr. Henley testified that as of 2020, the PLA has already built the initial capabilities it believes are necessary to invade Taiwan and win a war against intervening U.S. forces.³⁰

While some other experts offer differing assessments of whether the PLA is currently ready to invade Taiwan, there is general consensus that the PLA is actively developing and quickly approaching an invasion capability. For example, in March 2021 then Commander of U.S. Indo-Pacific Command Admiral Philip S. Davidson testified before Congress that the PLA may be able to conquer Taiwan by 2027.³¹ Former Central Intelligence Agency analyst and former national intelligence officer for Asia John Culver suggested the milestone was further out, in 2030 or 2035.†³² By contrast, in October 2021, Taiwan Minister of National Defense Chiu Kuo-cheng told Taiwan’s legislature that China currently has the capability to invade Taiwan, and that it will have a “comprehensive” invasion capability by 2025.³³

Taiwan’s leaders are working to blunt the PLA threat. After her election in 2016, President Tsai Ing-wen and her Administration have taken important first steps toward mitigating the PLA’s advantages, but Taiwan’s military continues to face large gaps in size, funding, and capabilities compared to the PLA. Taiwan’s military capabilities extend the time Taiwan can effectively resist a PLA attack, but given the disparity with the PLA’s size and resources, Taiwan will likely only be capable of resisting an invasion long enough for the United States and other partners to come to its aid.³⁴

The PLA Reshapes Itself into an Invasion Force

The PLA’s modernization, military training, and investments in its defense industrial base have demonstrated significant progress toward its 2020 invasion milestone. U.S. analyses published in 2000 determined the PLA would not be able to invade Taiwan even without U.S. military support of the island.³⁵ Since then, the PLA’s advancements in power projection and precision strike capabilities, as

*Beginning in 2018, DOD introduced language in its annual report on China’s military power stating that China has a military option for a full-scale amphibious invasion of Taiwan. The introduction of this language, which was not included in prior versions of DOD’s report, was significant and suggested the PLA may have had or was nearing the capability to invade Taiwan. In its 2020 report, DOD strengthened its assessment by reiterating that China had a military option for a full-scale invasion while suggesting the PLA also had the *capability* to invade Taiwan. Following a lengthy discussion of China’s approach to a full invasion of the island, the report continued that China is “capable of accomplishing various amphibious operations short of a full-scale invasion of Taiwan *as well*,” (emphasis added) implying these capabilities exist in addition to a full-scale invasion capability. Each year, DOD has caveated its assessment by explaining such an operation would carry “significant political and military risk.” U.S. Department of Defense, *Annual Report to Congress: Military Power of the People’s Republic of China 2020*, August 21, 2020, 114.

†Why ADM Davidson proposed 2027 is not immediately clear, but it is likely associated with the CCP’s 19th Party Congress Fifth Plenum communique, released in 2020, introducing a vague benchmark of army-building in 2027, the centenary of the PLA’s founding. While some published analysis argues this represents an acceleration of PLA modernization that pushes modernization targets from 2035 to 2027, there is no publicly available evidence that suggests such a change to the PLA’s timetable. The 2027 centennial is more likely a symbolic benchmark for the PLA than a new step in military modernization. Similarly, while he did not provide his reasoning, Mr. Culver may have been referencing the PLA’s existing 2035 benchmark to become a fully modern military for his estimate of when the PLA will achieve an invasion capability. John Culver and Ryan Haas, “Understanding Beijing’s Motives Regarding Taiwan, and America’s Role,” *Brookings Institution*, March 30, 2021; Meia Nouwens, “Is China Speeding Up Military Modernisation? It May, But Not Yet,” *Interpreter*, November 4, 2020; *Xinhua*, “Authorized Release: Communique from the Fifth Plenary Session of the Nineteenth CCP Central Committee” ((授权发布) 中国共产党第十九届中央委员会第五次全体会议公报), October 29, 2020. Translation.

well as the general modernization of the PLA Navy and Air Force, have eroded Taiwan's defensive advantages while posing a credible threat to intervening U.S. forces. The PLA continues to suffer from perennial weaknesses, including poor officer quality, a lack of warfighting experience, and what U.S. analysts consider a critical lack of amphibious lift for a direct beach assault of Taiwan. Nevertheless, the PLA is keenly aware of its shortcomings and is working to rectify them with continued modernization and training. Furthermore, PLA doctrine suggests civilian sealift may close the critical gap in amphibious lift.

Building an Invasion Force

Today, public sources suggest the PLA has the military air and sea lift capacity for a first-echelon invasion force of more than 25,000 troops.* The PLA's amphibious sealift capacity can transport approximately 20,000 troops in mechanized battalions, including hundreds of infantry fighting vehicles and main battle tanks (see Table 1).† One expert analysis found that a PLA Air Force airborne campaign would likely be able to contribute an additional light infantry brigade of approximately 5,000‡ troops with lightly armored vehicles and artillery.³⁶ The PLA Army also has two air assault brigades able to deploy approximately 3,200 troops by helicopter.³⁷ These numbers do not include either the PLA's expected combat losses or forces delivered by civilian air and sealift. It is unclear whether PLA planners assess the first-echelon landing force they could currently transport is large enough to set conditions for follow-on forces to invade and occupy Taiwan.

Table 1: China's Amphibious Capacity in 2021

Class	NATO Designator	Vehicle Type	Count	Troops and Vehicle Capacity
Type 067A	YUNNAN	Landing craft, utility	~30	1 tank or 2 infantry fighting vehicles or 1 infantry unit
Type 071	YUZHAO	Amphibious transport dock	6	800 troops; 60 armored vehicles; 4 helicopters
Type 072-II	YUKAN	Landing ship, tank	4	200 troops; 10 tanks
Type 072-II/III	YUTING I	Landing ship, tank	9	250 troops; 10 tanks; 2 helicopters
Type 072A/B	YUTING II	Landing ship, tank	15	250 troops; 10 tanks

*Using a force of this size to invade Taiwan would likely restrict PLA planners to limited circumstances in which the force could survive in the face of Taiwan's defenses and accomplish its mission. These circumstances almost certainly include a prerequisite condition that the PLA is able to attrite or otherwise make irrelevant to the initial conflict large parts of Taiwan's military, including through blockade, bombardment, and cyberattacks. Another prerequisite condition would almost certainly be that the PLA is able to prevent, delay, or deter military intervention from the United States or any other intervening country.

†Data compiled by Commission analysts in Table 1. *International Institute for Strategic Studies*, "The Military Balance 2021," 2021, 253–255.

‡The PLA has enough medium- and heavy-lift aircraft to transport more than 5,000 troops, but not all of these aircraft would likely be dedicated to transporting an invasion force, nor will all of the PLA's transport aircraft be configured to maximum troop capacity.

Table 1: China's Amphibious Capacity in 2021—Continued

Class	NATO Designator	Vehicle Type	Count	Troops and Vehicle Capacity
Type 073 II	<i>YUDENG</i>	Landing ship, medium	1	500 troops <i>or</i> 5 tanks
Type 073A	<i>YUNSHU</i>	Landing ship, medium	10	6 tanks
Type 074	<i>YUHAI</i>	Landing ship, medium	10	250 troops; 2 tanks
Type 074A	<i>YUBEI</i>	Landing ship, medium	11	150 troops <i>or</i> 1 tank
Type 075	<i>YUSHEN</i>	Landing helicopter dock	3	900 troops with armored vehicles; 30 helicopters
Type 726	<i>YUYI</i>	Air-cushioned landing craft	10+	1 tank <i>or</i> 2 infantry fighting vehicles
Zubr	<i>POMORNIK</i>	Air-cushioned landing craft	4	360 troops <i>or</i> 3 tanks <i>or</i> 8 infantry fighting vehicles
AMPHIBIOUS TOTAL				~20,000 troops with armored vehicles; 105 helicopters

Source: International Institute for Strategic Studies, "The Military Balance 2021," 2021, 253–255; Chad Peltier, Tate Nurkin, and Sean O'Connor, "China's Logistics Capabilities for Expeditionary Operations," Jane's (prepared for the U.S.-China Economic and Security Review Commission), April 15, 2020, 54; ArmyStar, "First Generation Domestic Production: Type 067 Small Landing Craft" (国产第一代: 067系列小型登陆艇), April 26, 2012. Translation; David Lague, "China Expands Its Amphibious Forces in Challenge to U.S. Supremacy beyond Asia," Reuters, July 20, 2020; Naval Technology, "Zubr Class (Pomornik)"; Military Today, "Shaanxi Y-8"; Military Factory, "Type 726," October 8, 2018; edited and compiled by Commission staff.

China's Civilian Fleet Can Deliver Follow-On Forces

The PLA may be able to use China's civilian fleet to deliver the follow-on forces needed to defeat Taiwan's defenses and conquer the island. The initial invasion force does not need to occupy the entire island. Instead, it needs to secure the beachheads and port facilities to allow civilian ships cooperating with the PLA to transport and safely unload follow-on forces.³⁸ Roll-on/roll-off (RORO) vessels are designed to quickly load and unload vehicles at a port facility, and they would likely be among the most important civilian ships for an invasion campaign. Civilian RORO crews assigned to transport second-echelon invasion forces can train for this operation at China's first dual-use RORO dock,* which began operations in December 2020.³⁹ All Chinese RORO ships built after the 2015 Technical Standards for New Civilian Ships to Implement National Defense Requirements are already tailored to military specifications, which according to state media serve to "convert the considerable potential of [China's] civilian fleet into military strength."⁴⁰ In 2018, Chinese experts on the PLA estimated China had 63 civilian RORO ships suitable for military operations.⁴¹ China's militarily useful RORO fleet includes the Bohai Ferry Group's 11 "large-scale" ships, each

*The Qingdao Port is securely located in the Yellow Sea, where the majority of PLA Navy exercises reported by the Maritime Safety Administration are said to take place.

able to carry approximately 200–300 vehicles and 1,100 to 2,000 passengers.⁴² According to independent analyst and former U.S. military attaché in Beijing Dennis Blasko, the largest of these has “a single-lift capacity of multiple infantry battalions or nearly an entire armored or artillery brigade.”⁴³

The PLA is also likely to combine civilian and military transports to land follow-on forces over beaches secured during the initial assault. While civilian ships typically rely on ports to offload, the PLA began developing the capability to unload troops and materiel at artificial piers as early as 2014.⁴⁴ It recently practiced this capability in 2020 during a PLA Joint Logistics Support Force exercise focused on using civilian vessels for sea crossing and the emergency disembarkation of infantry, trucks, and armored vehicles at a temporary dock.⁴⁵ A state media video of the exercise revealed the title “Eastern Transportation-Projection 2020A,” with the “A” designation suggesting the PLA conducted other iterations of the exercise in 2020.⁴⁶ The exercise also included at least one Chinese RORO outfitted with a reinforced ramp system allowing amphibious fighting vehicles to deploy directly into the water without the need for a dock.⁴⁷ The PLA’s ongoing efforts to develop this capability strongly suggest the military threat facing Taiwan will continue to sharpen in the coming years.

China’s Defense Industry Can Surge Construction of a Future Invasion Fleet

China’s defense industrial base has demonstrated the ability to quickly produce large amphibious assault vessels that would add significant additional lift capacity for an invasion force.⁴⁸ China has undertaken a massive shipbuilding drive that in 2019 alone produced more civilian and military ships than the United States produced over the four years of World War II.*⁴⁹ Among the ships launched in the last three years are three 30,000- to 40,000-ton Type 075 Landing Helicopter Dock amphibious assault ships.⁵⁰ Each Type 075 has an initial capacity of up to 30 helicopters and one mechanized battalion of 900 troops with landing craft.⁵¹ Notably, the PLA Navy and Marine Corps do not currently have sufficient helicopters to fully exploit the Type 075’s capacity, nor does the PLA yet have any short takeoff and vertical landing jets able to take off from the ship’s flight deck.⁵² Analysis from *Jane’s* suggests China may operate a total of 12 Type 075 ships by 2030, providing amphibious lift capacity for an additional 8,100 mechanized troops to China’s current fleet.⁵³

The PLA is also greatly expanding its strategic airlift capacity. *Jane’s* estimates the PLA Air Force may expand its current air fleet of deployable Y-20 heavy-lift aircraft to roughly 50 by 2025 and more than 100 by 2030.⁵⁴ This expansion would bring the total Y-20 airlift capacity to 6,000 and 12,000 fully equipped troops by 2025 and 2030, respectively.⁵⁵ The PLA is also expanding the infrastruc-

*The scale of China’s shipbuilding industry has implications beyond building an invasion fleet. In 2020, U.S. Marine Corps Commandant General David Berger warned that in a protracted conflict, “the United States will be on the losing end of a production race—reversing the advantage we had in World War II when we last fought a peer competitor.” Paul McLearty, “In War, Chinese Shipyards Could Outpace U.S. in Replacing Losses; Marine Commandant,” *Breaking Defense*, June 17, 2020.

ture needed to support its growing air assault capacity, including at the Longtian and Huian airbases, both of which are within 200 kilometers (125 miles) of Taipei.⁵⁶

Training an Invasion Force

The PLA has maintained a regular schedule of training events simulating a Taiwan invasion since 1994. Exercises within the last year demonstrate capabilities for a range of operations from the initial sea crossing to ground operations on Taiwan. Amphibious combined arms brigades regularly hold exercises maneuvering dozens of armored vehicles and hundreds of crew members in the Taiwan Strait off Guangdong Province to ensure quick battlefield access despite hazardous weather conditions in the Strait.⁵⁷ A 2020 exercise involved one thousand PLA soldiers responsible for defeating enemy antitank units to secure a landing zone for amphibious assault vehicles.⁵⁸ In a similar multiday exercise held in 2021, PLA forces defended a Type 071 amphibious transport dock against enemy beach defenses and aircraft before launching a beach assault.⁵⁹

PLA exercises simulating a Taiwan invasion demonstrate significant improvements in joint operations. PLA landing forces in the Eastern and Southern Theater Commands regularly hold exercises pairing amphibious and air assaults with joint fire strikes from warplanes, artillery, and tanks.⁶⁰ A 2021 exercise featuring PLA air-ground coordination included phases in which a landed ground force identified targets, artillery launched firepower strikes against those targets, and PLA Army aviation rapidly airdropped additional forces from helicopters to advance the PLA's position.⁶¹ PLA Army, Navy, and Air Force units have jointly participated in several exercises. For example, a 2019 joint exercise involved PLA aircraft circumnavigating Taiwan while PLA Navy vessels simulated striking adversaries and helicopters simulated an amphibious landing.⁶² The PLA conducted a similar exercise in April 2021, when the PLA Navy's *Liaoning* carrier group was engaged in exercises east of Taiwan and a PLA Y-8 anti-submarine warfare aircraft took an extended flight path through the southern half of Taiwan's air defense identification zone, likely coordinating communications between the *Liaoning* carrier group and other PLA land-based aircraft around Taiwan.⁶³

Chinese state media has reported gradual improvements to the PLA's amphibious forces. For example, when the PLA Navy Marine Corps was expanded to seven brigades in 2017, DOD reported that none of the new units were equipped to conduct amphibious landing exercises.⁶⁴ By 2020, state media began describing the service as having completed a years-long transition toward meeting basic standards such as concurrent air, land, and sea operations.⁶⁵ Similarly, PLA Army air assault exercises have mobilized dozens of attack and transport helicopters and may continue developing into a larger airlift capability.⁶⁶ The PLA Air Force's decision to equip its airborne corps with ZBD-03 amphibious infantry armored fighting vehicles and ongoing exercises with diverse transport aircraft similarly indicate PLA airlift will be an improving capability for a Taiwan invasion.⁶⁷

The PLA's most mature capabilities for a joint island invasion are those it has exercised and incrementally improved for decades: am-

phibious landing, countering U.S. intervention, and naval strike, the latter targeting either Taiwan's land defenses or U.S. naval assets in the theater. Between 1994 and 2004, the PLA conducted nine large-scale joint exercises with amphibious invasion components on Dongshan, a small peninsula in the Taiwan Strait.⁶⁸ During this period, the PLA also began transitioning some of its traditional ground forces to amphibious assault forces, and by 2003 it had produced more PLA Army amphibious forces than were in the PLA Navy Marines.⁶⁹ The PLA then shifted to combine its amphibious landing exercises with naval strikes, with one joint PLA exercise held in 2007 specifically reported to simulate striking Taiwan's defenses in support of a landing operation's second wave.⁷⁰ Since 2010, the annual Mission Action transregional joint exercises continued cultivating the amphibious landing capability prioritized in the Dongshan exercises in joint operation with naval strike.⁷¹ Ensuring Taiwan and other observers did not miss the point of these preparations, a 2015 PLA landing exercise included an assault on what appears to be a replica of Taiwan's presidential palace.⁷² Similarly, the PLA's Zhurihe Training Base includes full-size replicas of parts of downtown Taipei, including elaborate mockups of the presidential palace and Ministry of Foreign Affairs building.⁷³

Denying a U.S. Military Response

Approaching its 2020 invasion milestone, the PLA developed mature sea denial capabilities that can likely delay U.S. forces approaching the theater.* These delays would extend an already protracted timeline, giving the PLA a longer window of opportunity to shape battlefield conditions in a war against Taiwan. In March 2021, Admiral Davidson testified before Congress that U.S. military forces deploying from the west coast of the United States would need three weeks of transit to conduct operations west of Guam.⁷⁴ U.S. forces based in Japan would have a significantly shorter response time but may be hindered by early or preemptive missile strikes. For a preemptive attack on U.S. forces in Japan, the PLA has demonstrated the precision strike capability and missile inventory it would need to strike nearly every U.S. ship in port; more than 200 grounded U.S. aircraft; and all major fixed headquarters, logistics facilities, and runways in U.S. airbases.⁷⁵ The PLA Rocket Force trains for these scenarios, particularly to target high-value U.S. military aircraft while they remain parked.⁷⁶

An attack on U.S. forces in Japan would be an extreme step that all but ensures a coordinated military response from the United States, Japan, and likely many other partner countries. CCP leaders would need to weigh the military benefits of such an attack against its serious military and political consequences. In addition to threatening U.S. and Japanese forces, a preemptive PLA attack

*The PLA considers its campaigns against Taiwan to necessarily involve war with the United States. Chinese policymakers became convinced that the United States is their greatest obstacle to unifying with Taiwan after the U.S. intervened in the 1995–1996 Taiwan Strait Crisis, and since then the PLA has explicitly planned for U.S. intervention in a future Taiwan campaign. Robert S. Ross, “The 1995–1996 Taiwan Strait Confrontation: Coercion, Credibility, and the Use of Force,” *International Security* 25:2 (Fall 2000): 87–123, 120–121; Arthur S. Ding, “The Lessons of the 1995–1996 Military Taiwan Strait Crisis: Developing a New Strategy toward the United States and Taiwan,” in Laurie Burkitt, Andrew Scobell, and Larry M. Wortzel, eds., *The Lessons of History: The Chinese People's Liberation Army at 75*, Strategic Studies Institute, 2003, 369.

on U.S. bases in Japan would threaten international forces making up UN Command-Rear headquartered at the base in Yokota, one of seven UN-designated bases in Japan.*⁷⁷

The Possibility of Preemptive PLA Strikes on Taiwan and U.S. Forces

PLA doctrine suggests it may initiate an invasion of Taiwan with preemptive strikes targeting both Taiwan and U.S. bases in the region. The PLA anticipates U.S. intervention in such a conflict, suggesting it has a limited window of opportunity to set battlefield conditions or achieve objectives before the U.S. military arrives in force. Oriana Skylar Mastro, fellow at Stanford University's Freeman Spogli Institute for International Studies, testified before the Commission that PLA strategists believe victory in a Taiwan conflict is unlikely if the United States is given time to mobilize and respond in the theater, creating an imperative for the PLA to escalate rapidly.⁷⁸ An attack on U.S. forces in Japan, particularly preemptive strikes on ships in port and planes still on the ground, would severely delay and degrade a U.S. response.

PLA strategists likely anticipate that the United States will be less effective in expelling a concentrated † landing force than in destroying an amphibious fleet crossing the Taiwan Strait. According to *Science of Campaigns*, the invasion's sea crossing and landing phase is significantly more difficult than the ground operations following a landing.⁷⁹ The sea crossing's success depends on the PLA's ability to gain superiority over the information, air, and maritime domains.‡ PLA doctrine describes seizing these conditions by launching targeted cyberattacks and a "surprise, fierce, and continuous" firepower campaign bombarding an adversary's command infrastructure, air and naval bases, missiles, and air defense systems.⁸⁰

The PLA Rocket Force has extended its strike range as far as Guam by amassing a stockpile of intermediate-range ballistic missiles (IRBMs) and launchers. DOD estimates China had 20 IRBMs in 2011 and "200+" in 2020.⁸¹ The PLA Rocket Force's mass production of IRBM launchers suggests China may have a larger stockpile of IRBMs than DOD has explicitly stated (see Table 2). If the PLA maintained the 2:1 missile-to-launcher ratio it had in 2019, it would have a stockpile of approximately 400 IRBMs as of 2020, double the

*UN Command-Rear, currently led by an Australian officer, is subordinate to UN Command (which is based in Korea) and coordinates the transit of troops and supplies into Japan from Australia, Canada, France, Italy, New Zealand, the Philippines, Thailand, Turkey, and the United Kingdom (UK). Although UN Command-Rear only has five personnel at Yokota, it maintains key relationships between allied militaries and countries that participated in the Korean War. Seth Robson, "Bringing Up the Rear: U.S. Bases in Japan Support UN Command in S. Korea," *Stars and Stripes*, January 7, 2021; HQ United Nations Command-Rear, "United Nations Command-Rear Fact Sheet," November 25, 2014.

†The *Science of Campaigns* instructs invasion commanders to exert all efforts to concentrate their forces at landing points and achieve a preponderance of forces at those points, even if the overall invasion force cannot achieve theater-wide superiority. Zhang Yuliang, *Science of Campaigns*, National Defense University Press, 2006, 312–316. Translation.

‡Information superiority, air superiority, and maritime superiority are temporary conditions in which no adversary, such as Taiwan or U.S. forces, can effectively contest or deny the PLA's use of these domains.

“200+” DOD confirms.⁸² These weapons can strike U.S. forces moving into the theater as well as the U.S. command and logistics facilities supporting them.⁸³ As early as 2015, a RAND study assessed the PLA could deliver enough ordinance on Guam to close Andersen Air Force Base to any large aircraft for over a week.⁸⁴ China’s mass production of IRBMs magnifies that threat.

Table 2: China’s Inventory of Ballistic Missile Launchers, 2018–2020

	2018	2019	2020
Short-range launchers	300	250	250
Medium-range launchers	125	150	150
Intermediate-range launchers	30	80	200

Source: U.S. Department of Defense Annual Reports to Congress, 2018 through 2020; compiled by Commission staff.

The PLA has important capabilities to counter U.S. intervention using its long-range bomber force and naval expansion. The PLA’s long-range bomber fleet, which has grown to more than 230 aircraft in 2020, is expanding its combat radius and increasing its capacity for long-range air-launched antiship or land-attack missiles.⁸⁵ Additionally, PLA Navy destroyers carry the YJ-18 antiship cruise missile, which boasts an operational range of 290 nautical miles (nm), dramatically beyond the U.S. equivalent Harpoon or Naval Strike Missile, which range 70 nm and 100 nm, respectively.*⁸⁶

Recently, Chinese state media have significantly increased their attention on PLA aviators training to intercept U.S. forces at sea. State media reports from late 2020 onward repeatedly describe large groups of PLA helicopter and fixed-wing aircraft pilots practicing long-range “sea skimming” flight paths, staying low to avoid enemy detection, to strike distant maritime targets.⁸⁷ While the PLA has conducted similar exercises for years, the spike in their reports may indicate a new focus or greater frequency of exercises developing this capability.⁸⁸ One of the recent reports describes PLA forces targeting a “powerful enemy,” using the common Chinese euphemism for the United States.⁸⁹ Reports also indicate a sharp increase in PLA maritime strike exercises that incorporate airborne early warning and control aircraft to identify targets and relay intelligence to other warplanes. State media claimed the PLA conducted hundreds of such exercises in the first quarter of 2021 alone.⁹⁰

PLA Weaknesses Undermine Beijing’s Confidence in Invasion

China’s leaders note persistent weaknesses in the PLA’s operational effectiveness and harbor significant concerns about its invasion capability despite the PLA’s focused efforts to resolve these

* Earlier this year the U.S. Navy received the Block V Tomahawk, which likely outranges the YJ-18 Tomahawk missiles have previously been used for land-attack functions, and open sources have not confirmed that the Block V Tomahawk can accurately strike ships at sea. This capability may be reserved for the Block V Maritime Strike Tomahawk, which the U.S. Navy is not scheduled to receive until late 2023. Richard Scott, “USN Receives First Block V Tomahawk Cruise Missile,” *Jane’s*, March 26, 2021; Xavier Vasseur, “Raytheon Delivers First Batch of Block V Tomahawk Missiles to US Navy,” *Naval News*, March 26, 2021.

weaknesses.* The PLA has yet to train commanders and staff able to plan, coordinate, and conduct the joint operations necessary to invade Taiwan.⁹¹ For an invasion to succeed, commanders leading PLA forces responsible for air control, sea control, and amphibious assault must be able to achieve their operational objectives and secure access for follow-on forces while facing communications disruptions and incoming fire. These operations require a highly adaptable force led by commanders able to make battlefield decisions, yet it is precisely these qualities Chinese leaders have repeatedly found to be lacking in the PLA.⁹² For over a decade, Chinese leaders have used varying slogans pointing to the low aptitude of some PLA personnel, resistance to new operational concepts, and unrealistic training.⁹³ One report describes a chronic reluctance toward improvements in which “many leaders went through the motions of reform without internalizing it; their uniforms have changed, but their mindsets have not; and their ideas cannot keep up with the needs of a strong military.”⁹⁴ The decade-long persistence of these weaknesses suggests the PLA faces continued challenges in training the force needed to assure a successful invasion.

In addition to poor commander quality, PLA leaders continue to identify joint operations as another critical weakness that may undermine Chinese leaders’ confidence in the PLA’s ability to invade Taiwan. The PLA’s plans for war require a joint capability that RAND Corporation senior international defense researcher Mark Cozad assessed to be a “massive and underappreciated departure from the mechanized, attrition-based model that the PLA has relied on since the People’s Republic of China’s (PRC) founding.”⁹⁵ Developing this joint operational capability was an important objective of the major military reorganization General Secretary Xi announced in 2015. More than five years after the reorganization began, however, Chinese state media continues to identify PLA jointness as a weakness to be mediated.⁹⁶ For example, the PLA’s weaknesses in coordinating between its units undermines the PLA Air Force’s ability to provide ground forces with close air support, which would be vital in an amphibious assault on Taiwan.⁹⁷

The PLA’s shortcomings extend to industrial and logistical system failures that could compromise the deployment or sustainment of China’s invasion force. According to Mr. Cozad, PLA support capabilities, such as its defense industrial base and the logistical sustainment necessary to maintain a large urban warfare operation, remain lacking.⁹⁸ Ongoing technological challenges in China’s defense industrial base make the PLA wholly dependent on Russian imports† for the military high-bypass turbofan engines used in its

*One of Chinese leaders’ most prevalent criticisms of the PLA is the “Five Incapables,” which highlight that PLA officers cannot make judgments about battlefield situations, understand their superiors’ intentions, make operational decisions, effectively deploy troops, or handle unexpected situations. The PLA considers these weaknesses to undermine the PLA’s combat leadership capabilities at every level of command. For more on Chinese leaders’ criticism of PLA weaknesses, see U.S.-China Economic and Security Review Commission, Chapter 2, “Beijing’s Internal and External Challenges” in *2019 Annual Report to Congress*, November 2019, 119–168; Dennis J. Blasko, written testimony for the U.S.-China Economic and Security Review Commission, *Hearing on What Keeps Xi Up at Night: Beijing’s Internal and External Challenges*, February 7, 2019, 7.

†Russia is not the only country assisting Chinese aeroengine development. French helicopters and helicopter engines are the predecessors of Chinese Z-8, Z-9, and Z-11 military utility helicopters, and France’s Safran Helicopter Engines continues to cooperate closely with the state-owned Aero Engine Corporation of China on production supply chains. Peter Wood, Alden Wahlstrom,

strategic transport aircraft.⁹⁹ While the PLA Joint Logistics Support Force demonstrated an early capability to deploy and sustain troops for several weeks in response to the novel coronavirus (COVID-19) pandemic, it has not yet demonstrated these capabilities beyond China's borders or under the pressures of war.¹⁰⁰ Further, state media regularly report that PLA support units commit mistakes surprising for a professional military. One notable report from early 2021 described a specialized transport company neglecting to apply antifreeze to its trucks, leading gas lines to freeze ahead of a training exercise.¹⁰¹

Taiwan Takes Initial Steps toward an Asymmetric Defense Posture

As the PLA became larger and better prepared for invasion over the last decade, Taiwan's military shrank as a result of an extended period of flatline defense spending. Between 2011 and 2020, Taiwan's number of ground personnel, artillery pieces, and coastal patrol vessels declined while the PLA produced new aircraft carriers, destroyers, and the large tank landing ships needed for an amphibious invasion (see Table 3). To confront this challenge, since 2017 Taiwan's government has taken initial steps to adopt an asymmetric defense strategy such as the one outlined in the Overall Defense Concept (ODC).^{*102} The Tsai Administration also began making regular increases to Taiwan's defense budget. Still, the Taiwan military continues to face significant challenges. In testimony before the Commission, Kharis Templeman, research fellow at Stanford University's Hoover Institution, argued that the capability gap between China and Taiwan has become so great that Taiwan can no longer deter a PLA attack using only military means.¹⁰³

Table 3: The Cross-Strait Military Balance, 2011 and 2020

	Taiwan	China (in-the-ater)	China (total)	Taiwan	China (in-the-ater)	China (total)
	2011			2020		
	Ground Personnel	130,000	400,000	1,250,000	88,000	412,000
Artillery Pieces	1,600	3,400	8,000	1,100	N/A	6,300
Aircraft Carriers	0	0	0	0	1	2
Destroyers	4	16	26	4	23	32
Frigates	22	44	53	22	37	49

and Roger Cliff, "China's Aeroengine Industry," *China Aerospace Studies Institute*, March 2020, 35.

*The future of the ODC is not clear. Although it was referenced in Taiwan's 2017 and 2019 *National Defense Reports*, no reference to the ODC has appeared in the 2017 or 2021 *Quadrennial Defense Review*. Both documents are published by Taiwan's Ministry of National Defense. The *Quadrennial Defense Review* gives a strategic vision for Taiwan's defense and military strategy, while the *National Defense Report* describes Taiwan's current national defense policy and its implementation. Taiwan Ministry of National Defense, *Quadrennial Defense Review 2021*, March 2021; Taiwan Ministry of National Defense, *Quadrennial Defense Review 2017*, March 2017; Taiwan Ministry of National Defense, *National Defense Report*, September 2019, 6; Taiwan Ministry of National Defense, *National Defense Report*, December 2017, 138.

Table 3: The Cross-Strait Military Balance, 2011 and 2020—Continued

	Taiwan	China (in-the- ater)	China (total)	Taiwan	China (in-the- ater)	China (total)
	2011			2020		
Tank Landing Ships	12	25	27	14	35	37
Medium Landing Ships	4	21	28	0	16	21
Attack Subma- rines	4	35	54	2	34	52
Coastal Patrol Vessels	61	68	86	44	68	86
Fighter Aircraft	388	330	1,680	400	600	1,500
Bomber Aircraft	22	160	620	0	250	450
Transport Aircraft	21	40	450	30	20	400

Source: U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2020*, August 21, 2020, 164–166; U.S. Department of Defense, *Annual Report to Congress: Military and Security Developments Involving the People's Republic of China 2011*, May 6, 2011, 72–78; compiled by Commission staff.

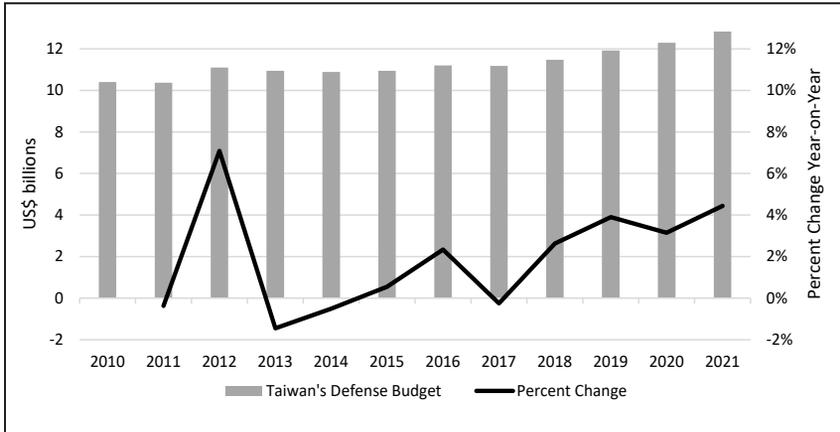
Progress and Challenges in Taiwan's Military Reforms

Taking office in 2016, the Tsai Administration began urging changes to Taiwan's defense policies toward an asymmetric posture, characterized by large numbers of low-cost weapons and warfighting concepts that emphasize denying an invading PLA force from reaching its objectives.¹⁰⁴ The Tsai Administration embraced an approach that envisions saturating the waters closest to Taiwan with sea mines, shore-based firepower, and air strikes while concentrating fire on landing beaches to prevent the PLA from establishing a beachhead.¹⁰⁵ Civilian infrastructure such as offshore wind farms would be constructed as obstacles where beaches are most vulnerable, and Taiwan's reserve forces would wage urban and guerilla warfare should these measures fail.¹⁰⁶ President Tsai's embrace of an asymmetric posture is a significant break from prior defense plans, which envisioned defeating the PLA by maintaining command of the air and seas around Taiwan with expensive traditional platforms such as fighters, frigates, and submarines.¹⁰⁷

The Tsai Administration also ended Taiwan's history of flat defense spending since the early 2000s.¹⁰⁸ As shown in Figure 1, Taiwan's defense budget has steadily increased between 2 and 5 percent every year since 2016, with one exception in 2017.¹⁰⁹ In September 2021, the Tsai Administration announced that in addition to its annual defense budget, Taiwan will spend \$8.6 billion between 2022 and 2026 to enhance its naval and air defense capabilities.¹¹⁰ Nevertheless, Taiwan's recent spending increases are primarily important as a long-term trend that bolsters but is insufficient to uphold cross-Strait deterrence. U.S. experts, including then Acting Assistant Secretary of Defense for Indo-Pacific Security Affairs David Helvey, generally caution that the current increases,

taken alone, would leave Taiwan's defense spending too low to maintain a strong defensive posture against China.¹¹¹

Figure 1: Taiwan's Defense Budget, 2010–2021



Source: Various.¹¹²

President Tsai has called for sweeping reforms to Taiwan's military to address longstanding deficits in readiness and military efficiency.¹¹³ Central to Taiwan's military reforms is the problem of an all-volunteer recruitment model that constantly falls short of its quotas, leaving many units understrength.¹¹⁴ Some front-line ground combat units are reportedly at 60 percent of their authorized end strength.¹¹⁵ Furthermore, Taiwan's military must recruit from a society in which military service is often regarded with disdain and military careers are often seen as a last resort.¹¹⁶ Despite these challenges, President Tsai has endeavored to reverse the Taiwan public's negative perception of its military, including by urging soldiers to wear their uniforms in public and by personally donning a helmet and flak jacket in view of news cameras.¹¹⁷

Taiwan's military also suffers significant shortfalls in active duty and reserve force training. Recruits spend more time on administrative briefs and yard work than on combat tactics, and the combat training they do undergo remains highly scripted.¹¹⁸ These problems are most acute in Taiwan's reserve forces, where Taiwan's defense ministry assesses that only one-third of its 2.3 million reservists were demobilized recently enough to be effective if they were to be mobilized for conflict.¹¹⁹ Of that fraction, over 40 percent have only completed basic training and another 45 percent were conscripts who served for no more than four months.¹²⁰ Nor does Taiwan have the requisite bureaucratic capacity to mobilize most of its reserves. Taiwan's Ministry of National Defense can mobilize only 260,000 reservists quickly enough to respond to a crisis, though its capacity will likely improve under the new Defense Reserve Mobilization Agency set to begin operations in January 2022.¹²¹

Gauging the Taiwan Public's Will to Fight

Public opinion data on how willing the Taiwan public is to fight a potential PLA invasion show uneven results. For example, in 2016 the World Value Survey found 81.1 percent of Taiwan citizens would support Taiwan in a war through actions such as taking up arms or providing logistical support, while the Chengchi University Election Research Center survey found only 22.8 percent of Taiwan citizens would fight for Taiwan in a war against China.¹²² The Taiwan National Security Survey, conducted regularly since 2002, shows that the percentage of Taiwan citizens who would fight against a Chinese attack by joining the military, resist without joining the military, or otherwise comply with government decisions doubled from 15.2 percent in 2018 to approximately 32 percent in 2020.¹²³ Between 2019 and 2020, the percentage of respondents who stated that they would instead flee the country, surrender, or accept the situation declined from approximately 45 percent to 32 percent, and approximately one-quarter of all respondents did not know how they would react.¹²⁴

Dr. Templeman identified several trends from public opinion surveys in Taiwan. He found that while the Taiwan public is not confident in its own military's ability to repel a PLA attack, it is generally confident that the United States will intervene and that at least two-thirds of all other Taiwan citizens will also join the fight.¹²⁵ If Taiwan's civilians do not have visible evidence of both, however, they report being much less likely to support a war effort or resist an invader themselves.

Austin Wang, assistant professor of political science at University of Nevada, Las Vegas, conducted research into Taiwan public opinion that reached similar findings. According to his study, the Taiwan public's will to fight may increase or decrease by as much as 10 percent if it is told whether other Taiwan citizens will join the fight.¹²⁶ In Dr. Wang's control group, this represented an increase from 50 percent to 60 percent of respondents who are willing to fight if told others would do the same.¹²⁷

Successes and Setbacks in Aligning Taiwan's Military Procurements and Defense Strategy

The Tsai Administration has begun to align its military procurements with an asymmetric posture, with the most significant success in tactical missile development.¹²⁸ In 2021, Taiwan accelerated the mass production of its Hsiung Feng-3 sea-skimming antiship missiles and completed production of Tien Kung-3 interceptor missiles, used to strike incoming missiles and aircraft, ahead of schedule.¹²⁹ Taiwan has also begun mass production of multiple long-range missile variants* that are likely to be mobile and able to strike targets

*At least one of these missile variants is very likely to be Taiwan's Yun Feng land attack cruise missile, which the National Chung-Shan Institute of Science and Technology tested for the first time in April 2020. With an upper operational range of 2,000 kilometers, the Yun Feng will be able to reach multiple targets within China, including Beijing. In 2019, Taiwan began developing at least 20 Yun Feng missiles and 10 mobile launch platforms. Alessandra Giovanzanti, "Update: Taiwan Prioritising Development of Long-Range, Precision-Strike Capabilities," *Jane's Defence Weekly*, March 26, 2021; Gavin Phipps, "Taiwan Test-Fires Locally Developed Yun Feng LACM," *Jane's Defence Weekly*, April 28, 2020.

within China as far away as Beijing.¹³⁰ These capabilities directly challenge the PLA's land-based air and missile defense systems, a key strength that Mr. Henley testified would be the center of gravity in a conflict over Taiwan.¹³¹ Taiwan has also begun indigenous production of other asymmetric platforms, recently launching the first of four planned fast minelayer ships.¹³²

Taiwan's adoption of an asymmetric military posture remains an ongoing process. Writing in *Foreign Affairs* in October 2021, President Tsai wrote, "in addition to investments in traditional platforms such as combat aircraft, Taiwan has made hefty investments in asymmetric capabilities, including mobile land-based antiship cruise missiles."¹³³ Taiwan's arms purchases from the United States since President Tsai took office show that Taiwan's government currently spends more heavily on platforms typically considered to be traditional capabilities than on capabilities viewed as asymmetric.* Since 2017, Taiwan spent approximately \$19.03 billion on U.S. arms (see Table 4).¹³⁴ Taipei spent approximately \$6.3 billion, or 34.4 percent of the total, on capabilities typically viewed as asymmetric such as coastal defense cruise missiles and the survivable High Mobility Artillery Rocket Systems (HIMARS).¹³⁵ In contrast, it invested \$12.1 billion, or 64 percent of the total, on traditional capabilities such as F-16 fighters, submarine-launched torpedoes, and Abrams tanks. Two purchases in the same time period, worth approximately \$680 million, went toward logistics or communications support (\$400 million for logistics support and \$280 million for communications systems) that do not neatly fit either category.¹³⁶

Table 4: Taiwan's Arms Purchases from the United States, 2017–2021, Year-to-Date

Year	Purchased Arms	Approximate Cost (USD)
2017	Upgrades to electronic warfare systems supporting four KEELUNG-class destroyers	\$80 million
2017	56 AGM-154C JSOW air-to-ground missiles	\$186 million
2017	Converting 168 MK-46 Mod 5 aerial anti-submarine torpedoes to MK-54 lightweight torpedoes	\$175 million
2017	46 MK 48 Mod 6AT submarine-launched torpedoes	\$250 million
2017	16 SM-2 missiles	\$125 million
2017	50 AGM-88B high-speed antiradiation missiles	\$148 million
2017	Logistics support	\$400 million
2018	Spare parts and repair for F-16, C-130, F-5, and other aircraft systems	\$330 million

* Characterizations of modern weapons as "traditional" and "asymmetric" are widely used but imprecise. Distinguishing between traditional and asymmetric weapons can be challenging. For this section, arms are loosely considered "traditional" if they more closely fit use of Taiwan's air force to seize command of the air space around Taiwan and its navy to retain command of the seas around the island. "Asymmetric" arms are those that more closely fit employment of large numbers of relatively inexpensive weapons to deny the PLA's unimpeded use of the air and seas around Taiwan.

Table 4: Taiwan's Arms Purchases from the United States, 2017–2021, Year-to-Date—Continued

Year	Purchased Arms	Approximate Cost (USD)
2019	F-16 pilot training, maintenance, and logistics support	\$500 million
2019	250 Block I-92F man-portable air-defense system Stinger missiles	\$224 million
2019	108 M1A2T Abrams tanks, 122 M2 machine guns, 216 M240 machine guns, transport vehicles, and tank rounds	\$2 billion
2019	66 F-16C/D aircraft	\$8 billion
2020	18 MK 48 Mod 6 submarine-launched torpedoes	\$180 million
2020	Recertification, test, and repair of Patriot missiles	\$620 million
2020	11 HIMARS launchers and 64 Army Tactical Missile Systems missiles	\$436 million
2020	135 AGM-84H Standoff Land Attack Missile Expanded Response missiles	\$1.008 billion
2020	6 MS-110 reconnaissance pod aircraft attachments	\$367 million
2020	100 Harpoon coastal defense cruise missiles, 400 RGM-85L-4 Harpoon antiship missiles	\$2.37 billion
2020	4 MQ-9B drones	\$600 million
2020	Field Information Communication System	\$280 million
2021	40 M109A6 Paladin Medium Self-Propelled Howitzer Systems	\$750 million

Source: Various.¹³⁷

Taiwan's continued purchases of expensive traditional platforms from the United States indicates bureaucratic resistance against the ODC. George Mason University assistant professor Michael Hunzeker told the Commission that resistance from high-ranking Taiwan military and defense officials leaves the ODC's future "in doubt" as they creatively interpret the ODC's guidance to adopt an asymmetric posture to instead maintain the traditional program of record.¹³⁸ Maintaining some traditional capabilities does continue to serve Taiwan's defense, and Taiwan's Ministry of National Defense emphasizes synergizing asymmetric and traditional capabilities.¹³⁹ Dr. Templeman testified that the ODC itself calls for maintaining a "low quantity of high-quality platforms" to conduct peacetime missions.¹⁴⁰ He further noted, however, that Taiwan's continued procurement of traditional platforms threatens to dominate much of Taiwan's procurement budget for years, leaving fewer resources available to realize the ODC's emphasis on asymmetric systems.¹⁴¹

The asymmetric systems that Taiwan does receive from the United States are subject to long delays in the U.S. foreign military sales process. For example, the U.S. government approved a sale of 56 air-to-ground missiles, an urgently needed asymmetric capability,

to Taiwan in June 2017. DOD, however, is not likely to award a contract to manufacture these missiles until 2022, with expected completion some time in 2025.¹⁴² Similarly, the HIMARS system is not expected to arrive in Taiwan until 2027, seven years after the U.S. government first approved the sale.¹⁴³ Further, procuring and fielding asymmetric systems is only the first step in a years-long transition to an asymmetric posture. Taiwan's military will need to make changes to doctrine, training, and culture after procurement to implement the ODC.¹⁴⁴

The traditional platforms Taiwan's military continues to purchase from the United States are also highly vulnerable to PLA Rocket Force attack. As early as 2009, a RAND study had determined that a combination of PLA Rocket Force and Air Force strikes could largely neutralize Taiwan's air force and pose similar risks to its navy.* Taiwan's missile defenses are highly unlikely to prevent these strikes.¹⁴⁵ Taiwan's Patriot missile defense batteries are likely to fire two interceptors at each incoming missile, meaning its current stockpile is sufficient to target approximately 322 PLA short-range ballistic missiles. The actual number of interceptions will likely be lower as interceptors miss their targets or batteries are destroyed.†¹⁴⁶ Taiwan's missile defenses may improve by 2022, when Taiwan is expected to field 12 indigenously developed Tien Kung-III missile defense batteries, though Taiwan analysts consider these to be less accurate than Patriot systems.¹⁴⁷ Taiwan's traditional platforms and air defense interceptors are also vulnerable to the PLA's electronic warfare capabilities. In 2021, Taiwan's Ministry of National Defense assessed in a public report on China's military power that the PLA now has the initial capability to paralyze Taiwan's operations systems for air defense, sea control, and countermeasures against the PLA.¹⁴⁸

Taiwan's government has not yet matched its investment in expensive platforms with corresponding investment in a logistics and supply system needed to operate those platforms during war. Dr. Hunzeker told the Commission that Taiwan's munitions stockpiles are insufficient for an extended conflict, referencing one report indicating Taiwan's policy is to maintain less than half of the munitions necessary for two days of air combat during peacetime.¹⁴⁹ The shortages extend to Taiwan's ground force. Taiwan soldiers report chronic shortages of ammunition, fuel, and repair services, noting these are only provided during major exercises.¹⁵⁰ Due to a lack of replacement parts, fewer than half of Taiwan's foreign-purchased

*The RAND study found that 60 to 200 short-range ballistic missiles could temporarily close most of Taiwan's fighter bases, preventing most of its fourth-generation fighters from getting off the ground. A later RAND study found a follow-on attack of 100 fourth-generation strike fighters with 600 precision-guided munitions would then be able to destroy all of Taiwan's parked aircraft except for approximately 200 sheltered in an underground facility, which would be pinned down and unable to operate. Michael J. Lostumbo et al., "Air Defense Options for Taiwan: An Assessment of Relative Costs and Operational Benefits," *RAND Corporation*, 2016, 16–17; David A. Shlapak et al., "A Question of Balance: Political Context and Military Aspects of the China-Taiwan Dispute," *RAND Corporation*, 2009, 51.

†Past assessments determined Taiwan has at most 200 PAC-2 and 444 PAC-3 interceptors across nine deployed Patriot batteries, with one battery held in reserve. Some media reports suggest Taiwan's stockpile of PAC-3 interceptors has dwindled to 300. Wang Jionghua, "Ministry of National Defense Invests 20 Billion Yuan to Purchase Approximately 300 PAC-3 Anti-Aircraft Missiles to Counter CCP Aircraft" (國防部投20億採購近300枚愛三防空飛彈 抗中防共機), *Apple Daily*, December 6, 2020. Translation; William S. Murray, "Asymmetric Options for Taiwan's Deterrence and Defense," in Ming-chin Monique Chu and Scott L. Kastner, *Globalization and Security Relations across the Taiwan Strait: In the Shadow of China*, Routledge, 2015, 65.

armored vehicles are fully operational at any point in time. If the PLA imposed a full air and sea blockade, Taiwan's military and populace would only be able to resist invasion with dilapidated, poorly maintained equipment, much of which is reportedly not mission capable.¹⁵¹ Moreover, few estimates of Taiwan's current stockpiles of critical materials and its estimated wartime consumption rate exist in the open source, leaving Taiwan's ability to resist a PLA blockade unclear.¹⁵²

Taiwan's Ability to Endure a PLA Blockade: Trade and Infrastructure Vulnerabilities

As a small, trade-dependent island, Taiwan's economy is highly vulnerable to a Chinese naval and air blockade. In 2019, for example, Taiwan imported nearly 68 percent of its annual food consumption and 97.9 percent of its energy supply.¹⁵³ Taiwan government estimates suggest the island could rely on domestic stockpiles of food and energy for several months in the event of a blockade. According to an April 2020 study by the Taiwan Council of Agriculture, the island had enough food on hand to cover domestic needs for approximately six months.¹⁵⁴ In contrast, in June 2020 Taiwan's Ministry of Economic Affairs estimated the island's stores of foodstuffs such as flour and canned food could last just one to three months.¹⁵⁵ The Bureau of Energy at Taiwan's Ministry of Economic Affairs estimated in August 2021 that domestic oil reserves could last for 158 days.*¹⁵⁶ Stockpiles of these resources could last longer than official estimates suggest if Taiwan authorities rationed their distribution amid a PLA blockade.

Taiwan's economy is exposed to more immediate vulnerabilities that could be exploited by China in the event of a cross-Strait contingency. Short-term power outages in May 2021 revealed fragilities in the island's aging power infrastructure and highlighted its vulnerability to a potential cyberattack or kinetic disruption by China.¹⁵⁷ Chinese threat actors have demonstrated the capability to execute such disruptions. For example, an investigation by cybersecurity firm Recorded Future found Chinese state-backed cyber actors successfully hacked into India's power sector in mid-2020 amid conflict on the Sino-Indian border. The investigation found the attack suggested an ability to "pre-position [power grid] access to support China's strategic objectives... like geostrategic signaling during heightened tensions or as a precursor to kinetic escalation."¹⁵⁸ In testimony before the Commission, assistant professor of political science and international affairs at George Washington University Fiona Cunningham noted Taiwan's civilian critical infrastructure would be among the main targets of cyber operations in the event of a cross-Strait contingency.¹⁵⁹

*According to Taiwan's Petroleum Administration Act, oil refinery operators and importers are required to maintain an oil security stockpile of no less than 60 days' supply, while the government must also maintain an oil security stockpile of no less than 30 days' supply. Taiwan's Ministry of Economic Affairs Bureau of Energy, *Management of Oil Security Stockpile*, December 24, 2019.

Chinese Decision-Making for a War over Taiwan

The PLA's growing capabilities undermine deterrence because they diminish the credibility of the United States' threat to deny the PLA its objectives through military intervention. The state of cross-Strait deterrence is undeniably more fragile today as a result. Even so, whether and when to attack Taiwan is ultimately a political rather than a military question for CCP leaders. Factors such as a judgment by CCP leaders that the U.S. threat to intervene militarily is not credible, their misreading of ambiguities in U.S. policy, or General Secretary Xi's ambition could all contribute to a deterrence failure whereby the leadership orders the PLA to attack Taiwan. Such an attack could include a variety of military campaigns, but this section focuses specifically on decision-making for a blockade or an invasion of the island.

Nonetheless, cross-Strait deterrence continues to hold for now because Chinese leaders still face substantial constraints on any decision to use force. These include the inherent uncertainty of a confrontation with the U.S. military, the damage a war would do to the Chinese economy, and the risk that the United States could organize a determined coalition of countries to counter any further expansion of the CCP's power and influence. Chinese leaders would also need to consider the difficulty and expense of controlling Taiwan's population of 23 million people after an invasion. Moreover, Chinese leaders may independently decide against an invasion of Taiwan if they prioritize other policy objectives over resolving the Taiwan issue or they yield to pressure from other actors in the Chinese political establishment who oppose a conflict.

Factors That Could Lead to Deterrence Failure

Chinese officials have repeatedly stated that they will attack Taiwan if the island declares independence.¹⁶⁰ Short of such a declaration by Taiwan, the United States' efforts to deter China from attacking Taiwan could fail if any of the following conditions are met.

If CCP Leaders Judge the Threat of U.S. Military Intervention Is Not Credible

China must believe the United States has both the capability and the will to credibly carry out its threats if it is to be successfully deterred from invading Taiwan.¹⁶¹ The PLA's progress toward capabilities for invasion and sea denial over the last 20 years could lead Chinese leaders to view the U.S. threat as less credible than before. Chinese leaders could decide to invade Taiwan if they arrive at the conclusion that the U.S. threat to intervene militarily has lost credibility altogether. That in turn could occur if Chinese leaders judge the U.S. military is too weak to mount an effective intervention, or if they believe U.S. leaders are unwilling to intervene for fear of the costs associated with imposing punishment.

CCP leaders could judge the U.S. military is incapable of denying the PLA its objectives when they believe their initial invasion capability has matured or when they have achieved a highly favorable local balance of forces. They could assess that the local balance of forces is highly favorable to China if U.S. forces within the first and second island chains are either so minimal or so vulnerable to the

PLA's anti-access and area denial capabilities that they are unlikely to create risks of escalation or prevent a *fait accompli*.^{* 162} If Beijing judges the United States is "distracted" by another military conflict, or U.S. allies signal that they will not allow the U.S. military to use their bases or forces for operations in a Taiwan conflict, Beijing could also conclude the United States is incapable of carrying out the threat to intervene.

CCP leaders today believe an asymmetry of stakes exists between China and the United States, failing to appreciate the importance the United States places on Taiwan's democracy and its own reputation in the eyes of allies.¹⁶³ They could interpret future U.S. foreign policy developments, debate among U.S. policymakers about whether defending Taiwan is "worth it," or calls by segments of the U.S. public to avoid conflict with China as evidence the U.S. government lacks the will to intervene. For example, the Chinese state tabloid *Global Times* argued in several August 2021 editorials that the United States' withdrawal from Afghanistan shows it cannot not be trusted to come to Taiwan's defense during a war.¹⁶⁴

If CCP Leaders Misread U.S. Policy, Predicting There Will Be No Decisive U.S. Response

To avoid a breakdown of deterrence, China must believe there are actions that could lead to a U.S. response and that costs will be imposed if China takes those actions.¹⁶⁵ A lack of clarity in U.S. policy could contribute to a deterrence failure if Chinese leaders interpret that policy to mean opportunistic aggression against Taiwan might not provoke a quick or decisive U.S. response.

Many in Washington credit the longstanding practice of "strategic ambiguity" with preserving stability in the Taiwan Strait for decades, but some would argue that it could lead China to perceive an inconsistent or hesitant U.S. commitment to Taiwan.[†] By remaining opaque about U.S. intentions, strategic ambiguity aims to create sufficient uncertainty among leaders in Beijing and Taipei to deter an unprovoked Chinese attack on Taiwan as well as rash moves by Taiwan's leaders that could entrap the United States in a war.¹⁶⁶ This "dual deterrence" approach maximizes the United States' freedom of action, but U.S. gestures and statements intended to deter both parties could potentially cause Chinese leaders to perceive a contradictory, changeable, or reluctant U.S. commitment.¹⁶⁷ Moreover, U.S. officials have suggested that an unprovoked Chinese attack on Taiwan might result in U.S. intervention, but they have not specified how the United States would react to other belligerent Chinese

*Though the local balance of forces is often viewed as an important proxy for the defender's capability to deny a potential aggressor its military objectives, it is not strictly necessary for successful deterrence. The potential aggressor may have the military advantage but choose not to pursue an aggressive course of action in a locality because of its concern for the broader ramifications of that course of action. By the same token, potential aggressors have faced a defender that has clear advantages in the local balance of forces and have chosen to attack anyway. According to Michael J. Mazarr of RAND, a defender need only have local forces sufficient to raise the cost of a potential attack, create escalation risks, and deny the aggressor a quick and easy victory. Michael J. Mazarr, "Understanding Deterrence," *RAND Corporation*, 2018, 5–6.

†"Strategic ambiguity" refers to an informal policy the U.S. government has practiced since the late 1970s whereby the United States does not explicitly state whether it will come to Taiwan's defense in the event of a Chinese attack. Michael J. Mazarr et al., "What Deters and Why: The State of Deterrence in Korea and the Taiwan Strait," *RAND Corporation*, 2021, 48; Richard C. Bush, "Untying the Knot: Making Peace in the Taiwan Strait," *Brookings Institution*, 2005, 255–256.

activities below that threshold, such as a blockade or coercive activities in the gray zone.¹⁶⁸

The TRA is another element of U.S. policy that contains ambiguities Chinese leaders might mistakenly interpret as signs the United States will not respond decisively to aggression against Taiwan. The TRA describes efforts to determine the future of the people of Taiwan by nonpeaceful means as a matter of “grave concern” to the United States, language that intentionally evokes similar clauses in mutual defense treaties and implies the potential for military costs.¹⁶⁹ It also requires the U.S. military to 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.”¹⁷⁰ Moreover, the TRA implies that China might incur significant diplomatic costs for aggression, stating that “diplomatic relations with the People’s Republic of China rests upon the expectation that the future of Taiwan will be determined by peaceful means.”¹⁷¹ But the TRA does not obligate the U.S. government to respond militarily to an attack, leaving as open questions how quickly and with what level of force the United States would react to Chinese aggression.

Some Chinese scholars and commentators have argued that ambiguities in U.S. policy undermine deterrence, but it is not clear how the top Chinese leadership views this question.*¹⁷² The perceived lack of clarity in U.S. policy toward Taiwan may be less relevant to deterrence failure than other factors, however, given that Chinese leaders already assume U.S. intervention.

If a Risk-Tolerant and Ambitious General Secretary Xi Discounts U.S. Intervention

Some deterrence theorists identify specific leaders’ biases, beliefs, and cognitive styles as important factors that affect whether the states they lead are successfully deterred from pursuing aggression.¹⁷³ General Secretary Xi’s heightened tolerance for risk and his ambition to leave his mark as one of the greatest leaders in PRC history could increase the likelihood that China attacks Taiwan.

General Secretary Xi has displayed an appetite for risk that could motivate him to order an invasion of Taiwan despite U.S. deterrent threats. Under General Secretary Xi’s watch, China has regularized its intrusions into waters around Japan’s Senkaku Islands; successfully militarized the South China Sea; rammed fishing boats from other South China Sea claimant countries; constructed roads, villages, and security installations on territory belonging to Bhutan; and imposed a so-called National Security Law in Hong Kong despite international protestation and warnings.¹⁷⁴ Equally striking is that he has chosen to pursue China’s interests aggressively on multiple fronts at the same time. General Secretary Xi may therefore be more willing than Chinese leaders before him to take the risk of invading Taiwan, especially if he believes he may already have the military capability to do so.¹⁷⁵ He could

*For example, Yan Xuetong, director of the Institute of International Studies at Tsinghua University, argues that decisions by both the United States and China to adopt “strategic clarity” would stabilize cross-Strait relations by making clear to each side the other party’s “red lines.” Georgetown University Initiative for U.S.-China Dialogue on Global Issues, “America’s Taiwan Policy: Debating Strategic Ambiguity and the Future of Asian Security,” October 12, 2020.

even believe that China's diplomatic influence and economic heft will largely insulate it from the fallout over a Chinese attempt to invade Taiwan. China has successfully wielded both in the past to force other countries to cease arms sales to Taiwan and punish them for engagement with the island.¹⁷⁶

General Secretary Xi could also order an invasion of Taiwan if he decides unification is necessary to secure his personal legacy before he leaves office. In public speeches, General Secretary Xi has emphasized Taiwan's importance, warned that the cross-Strait political impasse "cannot be passed on from generation to generation," and linked unification to his signature project of "national rejuvenation."¹⁷⁷ Dr. Mastro argues that this linkage has "moved the goalpost from preventing Taiwan independence, which means living with the 40-year-long status quo, to an actual change in the nature of the cross-Strait relationship, which is substantially less achievable without the use of force."¹⁷⁸ Because General Secretary Xi abolished term limits on the presidency in 2018 and has so far not nominated a successor, it is unclear when he intends to retire or if he plans to do so at all.¹⁷⁹ He may believe that only he is capable of steering China through a complex international environment to solve some of the country's most important internal and external challenges.¹⁸⁰ That sense of unique historical mission could very well mean General Secretary Xi views unifying Taiwan with the Mainland as a problem he must solve within the next ten to 15 years, before old age precludes him from leadership.¹⁸¹

Finally, strategic or political events could heighten General Secretary Xi's sense of urgency to achieve Taiwan's unification with the Mainland while he believes conditions are still relatively favorable.¹⁸² For example, if future deployments of U.S. forces and new weapons systems in the Indo-Pacific suggest a negative shift in the balance of power is imminent, he may feel urgency to invade Taiwan before the military balance becomes less advantageous. Alternatively, if both major political parties in Taiwan utterly reject eventual unification with China in any form under any circumstance, and a majority of the Taiwan public continues to identify as exclusively "Taiwanese," General Secretary Xi may conclude that there is not—or soon will not be—any future in which the Taiwan public will accept unification on Beijing's terms.¹⁸³ With all "peaceful means" exhausted, he may believe force is his only option left.

Factors Sustaining Deterrence

The following discussion of factors sustaining deterrence assumes that the basic political settlement underpinning U.S. relations with both Taiwan and China has not changed. This includes, for example, the United States' One China Policy, which refers to the U.S. government position that the PRC—rather than the Republic of China government on Taiwan—is the sole legal government of the state called "China."¹⁸⁴ It also includes the U.S. government position that Taiwan's political status is unresolved, rather than a recognition that the island is an independent country.¹⁸⁵ These policies historically contributed to a political environment in which deterrence succeeded by tempering Beijing's impulse to achieve unification through the use of force.

Uncertainty about Winning a War against the U.S. Military

Because the PLA's initial invasion capability only allows the force to accomplish its operational goals under limited conditions and at high risk, CCP leaders may still be deterred from ordering an attack on Taiwan at present by the uncertainty inherent in a war with the U.S. military. Failed attempts by the PLA to invade Taiwan or to counter U.S. intervention could unleash a chain of events that undermine the CCP's popular legitimacy and generate calls for political change.¹⁸⁶ CCP leaders' desires to avoid uncertainty and ensure internal stability are important considerations constraining their decision to initiate armed conflict, providing the United States with an opportunity to bolster deterrence by amplifying the factors that make a PLA victory uncertain.¹⁸⁷ According to Mr. Cozad, Chinese leaders do not dismiss U.S. military capabilities, and they recognize the United States "possesses considerable strength that can be deployed globally with the support of a vast network of global bases, allies, and partners."¹⁸⁸ He argues that Beijing will need to weigh the costs of action seriously before "placing an inexperienced, untested military with widely acknowledged shortcomings into an environment that is intensely hostile toward China and which would likely involve the support of the United States."¹⁸⁹ Chinese leaders may also recognize it would be difficult to prevent a conflict with the U.S. military from escalating or spreading beyond the Taiwan Strait.¹⁹⁰

Uncertainty about the PLA's ability to prevail in a war over Taiwan would become even more acute if the United States successfully persuades key allies, such as Japan, to join military operations against China. Japan maintains a highly professional military equipped with modern hardware and intelligence, surveillance, and reconnaissance capabilities.¹⁹¹ Recent events suggest Japanese leaders are deeply concerned about a crisis in the Taiwan Strait and could act with the United States to bolster deterrence. At a meeting of the "2+2" ministerial dialogue in March 2021, Japanese and U.S. defense chiefs agreed to closely cooperate in the event of a military clash between China and Taiwan.*¹⁹² In July 2021, Japanese Deputy Prime Minister Taro Aso said his country would need to defend Taiwan with the United States if the island was invaded.¹⁹³ Joint statements released after U.S.-Japan and U.S.-South Korea presidential summits in 2021 explicitly referred to the importance of peace and stability in the Taiwan Strait, underscoring growing allied concern.¹⁹⁴

Another key U.S. ally with a highly professional military, Australia, has also made statements reflecting its concern about the potential for Chinese aggression toward Taiwan. In March 2021, the U.S. Embassy in Australia's Chargé d'Affaires Michael Goldman confirmed that the United States and Australia were undertaking "strategic planning" to consider potential joint responses to a war over Taiwan.¹⁹⁵ A month later, Australian Defense Minister Peter Dutton told news media that a conflict involving China over Taiwan

*In April 2021, news media cited Japanese government sources indicating that Japan was studying how the Japanese Self-Defense Force could respond to a military conflict between the United States and China over Taiwan within the confines of the country's security laws. For more, see *Japan Times*, "Japan Studies SDF Response in Event of a Taiwan Strait Conflict," April 25, 2021.

“should not be discounted” and that Australia maintains high levels of readiness to meet any threats against its allies in the region.¹⁹⁶

Economic Costs of a War and Disruptions to Global Trade

When deciding whether to invade Taiwan, another important consideration for China’s leaders will be the costs of resulting disruption to the Chinese economy. The most productive segments of China’s economy stand to be directly affected by the destabilization of global supply chains and trade flows in the Indo-Pacific region. According to the World Bank, goods trade equaled roughly a third (\$4.6 trillion) of China’s gross domestic product (GDP) in 2020 (\$14.7 trillion).^{*197} China’s Indo-Pacific neighbors who would be exposed to any cross-Strait contingency participate in much of this trading activity, with ASEAN becoming China’s top trading partner in 2020 and Japan and South Korea serving as China’s fourth- and fifth-largest trading partners, respectively, in that same year.¹⁹⁸

A Chinese invasion of Taiwan would particularly affect the economies of China’s coastal provinces, whose roles as global manufacturing and trade hubs contribute significantly to China’s overall economic strength. For example, in the first half of 2021 the coastal provinces of Guangdong, Fujian, Jiangsu, and Shandong as well as the Shanghai municipality accounted for 36.5 percent of China’s GDP.¹⁹⁹ The nonstate sector in these provinces also employed 155.8 million workers in 2019, with more than half of them working in the manufacturing and wholesale and retail trade sectors.^{†200} In the same period, these coastal provinces processed \$2.8 trillion, or 62 percent, of China’s \$4.5 trillion worth of global goods trade.^{‡201} China’s decision to invade Taiwan would severely disrupt all of this trading activity, with repercussions spreading to China’s entire economy and straining domestic political stability.

Invasion Risks Derailing China’s Competitiveness in Electronics Manufacturing

While China’s leaders may prioritize the political objective of unification ahead of undamaged access to Taiwan’s semiconductor capabilities, a Chinese invasion will disrupt, at least temporarily, industrial activity in China’s globally competitive electronics manufacturing sector. This is because China’s leadership in electronics manufacturing is attributable to supply chain links with Taiwan and other Indo-Pacific economies. As the world’s main manufacturing hub for electronics, China is the destination for approximately 35 percent of total global semiconductor sales, with many of these semiconductors re-shipped overseas in devices

*China’s \$4.6 trillion worth of goods trade accounted for 13.1 percent of global goods exports and imports (\$35.6 trillion) in 2020, the largest share of any country. World Trade Organization, “Merchandise Imports (Current US\$),” *World Bank*, September 15, 2021; World Trade Organization, “Merchandise Exports (Current US\$),” *World Bank*, September 15, 2021.

†In 2019, there were 405.2 million private enterprise employees and self-employed individuals in China. China’s National Bureau of Statistics reports that a total of 774.7 million persons were employed in China in 2019. China’s National Bureau of Statistics, *2020 China Statistical Yearbook: Employment and Wages: 4-6 Number of Industrial and Commercial Registered Employed Persons in Private Enterprises and Self-Employed Individuals by Sector and Region (End of 2019)*, 2020.

‡Unless noted otherwise, this section uses the following exchange rate throughout: \$1 = renminbi (RMB) 6.43.

Invasion Risks Derailing China's Competitiveness in Electronics Manufacturing—Continued

made in China and exported to other countries.²⁰² China is the top importer of Taiwan semiconductors, with Taiwan accounting for 35.3 percent (\$124.1 billion) of China's total semiconductor imports in 2020 (\$350.8 billion).^{* 203}

A Chinese invasion of Taiwan would likely halt production at the island's foundries, putting cross-Strait production networks and trillions of dollars in mainland electronics manufacturing assets and revenues at risk. In 2020, China's information and communication technology equipment manufacturing sector generated some \$1.9 trillion in revenue, with total manufacturing assets in the industry standing at \$2 trillion.²⁰⁴ Taiwan's singular leadership in the global semiconductor supply chain would be difficult for China to recreate in the short term. Taiwan is home to the world's most advanced semiconductor manufacturer, Taiwan Semiconductor Manufacturing Company (TSMC),[†] and it hosts 20 percent of global semiconductor manufacturing capacity (for more information on the location of advanced semiconductor manufacturing capabilities, see Addendum: Selected Advanced Semiconductor Foundries by Location).²⁰⁵

If China invaded Taiwan, damage inflicted on the island's foundries during a conflict would prevent their immediate use once seized.²⁰⁶ For example, uncontrolled shutdowns to semiconductor manufacturing facilities would damage equipment, the repair or replacement of which would take months or years depending on the equipment involved.²⁰⁷ Additionally, U.S. allies and partners that serve as chief suppliers to Taiwan's semiconductor industry could impose sanctions and embargoes following a Chinese invasion of the island.[‡] This would leave Beijing with highly advanced

* China's imports of semiconductors grew from \$305.9 billion in 2019 to \$350.8 billion in 2020, up 14.7 percent year-on-year, suggesting China is struggling to achieve semiconductor self-sufficiency. Semiconductor market research firm IC Insights estimates Chinese semiconductor manufacturers produced only 6 percent of the semiconductors used by Chinese firms in 2020. IC Insights, "China Forecast to Fall Far Short of Its 'Made in China 2025' Goals for ICs," January 6, 2021; UN Comtrade database.

† TSMC's leadership in advanced semiconductor manufacturing is attributable to the firm's decision to pioneer the "pure-play" foundry model of semiconductor production. A pure-play foundry focuses exclusively on semiconductor device fabrication, leaving chip design to other firms. This model contrasts with the "integrated device manufacturer" model, in which firms both design and fabricate semiconductors. While U.S. firms such as Qualcomm and Nvidia specialize in the design of advanced semiconductors, they contract foundries to manufacture them, including those owned by TSMC. This is because the United States otherwise lacks the capacity to manufacture at the leading edge. According to the Semiconductor Industry Association, the U.S. share of global semiconductor manufacturing has declined from 37 percent in 1990 to 12 percent in 2020. Antonio Varas et al., "Strengthening the Global Semiconductor Supply Chain in an Uncertain Era," *Semiconductor Industry Association*, April 2021, 47; Jan-Peter Kleinhans and Nurzat Baisakova, "The Global Semiconductor Value Chain," *Stiftung Neue Verantwortung*, October 2020, 6; John VerWey, "Chinese Semiconductor Industrial Policy: Prospects for Future Success," *United States International Trade Commission Journal of International Commerce and Economics*, August 2019, 6.

‡ Taiwan's semiconductor foundries rely on an array of complex global supply lines using advanced manufacturing equipment developed in the United States and Japan, specialized lithography equipment produced exclusively in the Netherlands, and silicon ingots refined in a multistage process conducted across Japan and South Korea using silicon dioxide mined in the United States. Antonio Varas et al., "Strengthening the Global Semiconductor Supply Chain in an Uncertain Era," *Semiconductor Industry Association*, April 2021, 27; Tim De Chant, "The Chip Choke Point," *Wire China*, February 7, 2021.

Invasion Risks Derailing China's Competitiveness in Electronics Manufacturing—*Continued*

semiconductor manufacturing assets but without the resources needed to operate them in the immediate term.*²⁰⁸

In the long run, China's leaders are aware of the vulnerability their dependence on Taiwan semiconductors creates and are prioritizing the pursuit of technological self-sufficiency in mitigating it. In time, China's progress in technological development could alter Chinese leaders' perception of the costs of damage to Taiwan foundries and China's economy in the event of invasion. The speed with which China could restore the productive capacity of Taiwan foundries will also shape Chinese leaders' perceptions of these costs.

The United States Could Mobilize a Broad Coalition to Oppose CCP Global Ambitions

The United States' ability to marshal a coalition of countries opposed to the further expansion of China's international power and influence could also deter Chinese leaders from invading Taiwan. Such a coalition would be deeply concerning to Chinese leaders because it could frustrate their efforts to build a consensus around Chinese global leadership, promote China's agenda in international organizations, and increase the global flow of goods, services, technology, and talent to China from business and academic exchanges. A coalition could be especially effective if it encompassed countries beyond the United States' traditional partners in Europe, Asia, and North America.

Statements by Chinese officials at the highest levels already betray anxiety about a coalition of countries opposing China, attesting to the deterrent power of diplomatic threats. General Secretary Xi warned against attempts to build an alliance of democracies to counter China in his January 2021 speech at the Davos World Economic Forum.²⁰⁹ "To build small circles or start a new Cold War, to reject, threaten or intimidate others, to willfully impose decoupling, supply disruption or sanctions, and to create isolation or estrangement will only push the world into division and even confrontation," he said in a veiled reference to U.S. efforts rallying allies and partners around a common China-focused agenda.²¹⁰ Before the acrimonious March summit in Anchorage, Alaska, then Chinese Ambassador to the United States Cui Tiankai expressed dissatisfaction at U.S. talks with allies in advance of the meeting, implying they were aimed at China and harmful to the U.S.-China relationship.²¹¹ After the summit, China's foreign ministry insisted in a statement that it "has always resolutely opposed the U.S. side... ganging up to form

*For example, according to customer and supplier data aggregated by S&P Global, TSMC relies on 26 companies to supply it with manufacturing equipment, specialty gases, chemicals, raw materials, and other inputs necessary for semiconductor manufacturing. Only six of these 26 suppliers are based in Taiwan. Separately, U.S. allies and partners dominate key supply chain segments for semiconductor manufacturing. For example, Germany is the sole global supplier of extreme ultraviolet laser amplifiers and mirrors used in lithography, while Japan accounts for 95 percent of crystal machining tools used in silicon wafer manufacturing and handling. John VerWey, "From TSMC to Tungsten: Semiconductor Supply Chain Risks," *Semi-Literate*, May 3, 2021; S&P Capital IQ database.

anti-China cliques” and complained that other countries should “not [be] reduced to being anti-China tools of the U.S.”²¹²

U.S. allies and partners took steps in 2021 that increased their presence in the Indo-Pacific and suggested that such a coalition may be starting to coalesce. France, the United Kingdom (UK), Germany, the Netherlands, Canada, Japan, India, Australia, and New Zealand all sent warships to the South China Sea over the course of the year, signaling their concerns with Beijing’s aggressive behavior in the region.²¹³ In September 2021, the United States, the UK, and Australia also jointly announced a trilateral security pact known as AUKUS that most observers perceived as a move to counterbalance China.²¹⁴ (For more on AUKUS, see Chapter 3, Section 1, “Year in Review: Security, Politics, and Foreign Affairs.”) In October 2021, the United States, Japan, and the UK also conducted a joint naval patrol involving four allied aircraft carriers in the Western Pacific.²¹⁶

Chinese Leaders Prefer to Prioritize Goals Other than Taiwan

Independent of the United States’ deterrent threats, Chinese leaders may decide against a military attack on Taiwan if they believe unification is a less urgent priority than other policy goals, such as the political and economic requirements for national rejuvenation. Chinese leaders may also rule out such an operation if they believe their current coercive strategy toward Taiwan will eventually succeed.

General Secretary Xi has warned that resolving Taiwan’s status cannot be postponed indefinitely, but he has neither specified a timeline for unification nor focused his energies on cross-Strait issues. Rather, General Secretary Xi has committed himself to the two centenary goals of achieving a moderately prosperous society by 2021 and transforming China into a modern socialist country by 2049, both of which constitute the foundation for his “Chinese dream” of national rejuvenation.²¹⁷ To that end, General Secretary Xi has spent much of his tenure consolidating domestic political control, investing resources into poverty alleviation programs, promoting the Belt and Road Initiative, modernizing the PLA, and overseeing a drive for technological self-sufficiency.²¹⁸ Chinese leaders may view Taiwan as an important but less urgent priority than other initiatives.²¹⁹ More broadly, they understand that initiating a war over Taiwan would lead to a diversion of resources and focus from these more urgent priorities.²²⁰

Past Chinese leaders have often set aside the task of resolving the Taiwan issue to focus on priorities they deemed more pressing. During a secret meeting to negotiate normalization with the United States in 1973, Chairman Mao Zedong suggested his government was in no hurry to take the island forcibly, remarking to then Secretary of State Henry Kissinger, “I say that we can do without Taiwan for the time being, and let it come after one hundred years.”²²¹ On January 1, 1979, the same day U.S.-China relations became “official,” the National People’s Congress released a “Message to Compatriots in Taiwan” declaring an end to Beijing’s periodic shelling of Taipei-controlled islands and establishing peaceful cross-Strait exchange as a guiding principle for the “reunification of the motherland.”²²² Soon afterward, then paramount leader Deng Xiaoping

proposed a political solution for eventual unification called “one country, two systems,” and in the decades afterward a raft of new policies deepened economic and cultural ties across the Strait.²²³ Deng himself reportedly remarked that China could wait one thousand years to unify Taiwan with the Mainland.²²⁴ Underscoring this shift of priorities, Chinese foreign policy from the late 1970s onward focused not on resolving Taiwan’s status but rather on economic development, a task that sometimes came at the expense of the PLA’s budget.²²⁵ General Secretaries Jiang Zemin and Hu Jintao both threatened force to deter what they regarded as provocative moves by Taiwan presidents toward independence, but they did not take proactive steps to compel unification.²²⁶

Chinese leaders may also continue to decide against an invasion of Taiwan if they believe unification can be accomplished through their current coercive strategy. China’s official policy statements on Taiwan, such as its proposal for the 14th Five-Year Plan and Premier Li Keqiang’s annual government work report, continue to refer to unification by “peaceful” means.²²⁷ Chinese leaders may judge their current strategy toward Taiwan, which some have termed “coercion without violence,” is succeeding in demoralizing Taiwan’s people and demonstrating that other countries can do little to mitigate its interference.²²⁸ If so, they may be willing to wait patiently until their coercive strategies cause Taiwan’s people to lose hope and bloodlessly capitulate to Beijing.

Domestic Constituencies Could Oppose an Invasion

A final constraint on Chinese decision-making is the potential for certain constituencies within the domestic political establishment to oppose an invasion. Some high-ranking Party officials frustrated by General Secretary Xi’s unilateral leadership style and confrontational approach to foreign policy issues might voice their opposition to a war (for more on disagreements among Chinese elites, see Chapter 1, Section 1, “The Chinese Communist Party’s Ambitions and Challenges at Its Centennial”). Accountable for hitting certain domestic growth targets, the Party secretaries of Guangdong, Fujian, Jiangsu, Shanghai, and Shandong might express concerns to the top CCP leadership that a war could devastate economic activity in their provinces.²²⁹ The owners of private Chinese businesses in those provinces would have similar concerns. Though the PLA is often portrayed as a belligerent institution pushing for war, some of its high-ranking officials and strategists may also oppose an invasion due to the difficulties of controlling a hostile population of 23 million people and overseeing post-war reconstruction on the island. For example, Major General Qiao Liang, a notoriously hawkish professor at China’s National Defense University, argued in a 2020 commentary that such realities would make an invasion of Taiwan in the near term “a heavy burden on our backs” and stymie China’s larger ambitions of national rejuvenation.²³⁰

Because General Secretary Xi has made himself the top authority within China’s governance system, he will also need to consider that a failed Taiwan campaign could threaten his hold on power. While General Secretary Xi has consolidated power during his tenure, becoming the so-called “chairman of everything,” he still requires the

support of a coalition of elites and interest groups to stay in office.²³¹ Richard McGregor of the Lowy Institute and Jude Blanchette of the Center for Strategic and International Studies argue that this coalition's support is conditional on "shifting domestic and international variables" that presumably affect these various elites' agendas and livelihoods. "While the precise bargain between [General Secretary] Xi and members of the political, economic, or military elite are unknown, a dramatic economic slowdown or the repeated mishandling of international crises would likely make [General Secretary] Xi's job of managing his ruling coalition more difficult and tenuous," Mr. McGregor and Mr. Blanchette write.²³² A failed military operation against Taiwan could produce either of these conditions, potentially alienating many of General Secretary Xi's supporters.

Implications for the United States

For the first time, the United States and Taiwan face Chinese leaders who have or will soon have an initial military capability to invade Taiwan despite U.S. intervention. While U.S. and Taiwan military capabilities were once insurmountable challenges for the PLA, decades of focused efforts to build an invasion capability have substantially shifted the military balance in China's favor. Just as General Secretary Xi and other Chinese leaders cannot be certain the PLA would prevail in a war, leaders in the United States and Taiwan cannot be sure their militaries would deter or defeat the PLA. Nonetheless, Chinese leaders remain deeply concerned about the risks associated with a failed invasion as well as the economic disruptions and diplomatic backlash that would follow. Cross-Strait relations have therefore entered a dangerous period of uncertainty in which the military means of deterrence the United States relied upon in the past will not be as effective for sustaining deterrence in the future.

The deterrence challenges for U.S. and Taiwan leaders are becoming more acute. Over the next five years, U.S. plans to retire older platforms in anticipation of a smaller, more modern force may appear to Chinese leaders as a "window of opportunity" during which the U.S. military's ability to intervene is at its weakest. The United States has scheduled a mass retirement of 48 active duty ships and 256 aircraft by 2026, including one aircraft carrier, 11 cruisers, and 13 submarines.²³³ Moreover, Chinese leaders' political will to bring Taiwan under PRC control will endure, and all trends suggest their military capabilities will continue to grow.

The stakes of maintaining cross-Strait deterrence also extend to the integrity of the U.S.-led security architecture in the Indo-Pacific region. Taiwan is an important U.S. partner and a beacon for democracy in the region. Losing a war over Taiwan, or losing the credibility to defend a vibrant democracy and important security partner, will undermine perceptions of U.S. security guarantees for countries in the Indo-Pacific region. Similarly, a PLA that has successfully conquered Taiwan will have done so despite U.S. political and potentially military opposition, effectively establishing China as the dominant power in Asia and diminishing U.S. influence in the region.

The maintenance of cross-Strait deterrence is also consequential to the global economy given the centrality of Taiwan's semiconductor foundries to global technology supply chains. The loss of or damage to Taiwan's semiconductor industry in a Chinese invasion would be nearly impossible to replace in the short term. The United States, China, and the world are highly dependent on Taiwan-produced semiconductors and vulnerable to risks stemming from broader disruptions to global supply chains. According to the Semiconductor Industry Association, a complete disruption of Taiwan's semiconductor foundries for one year could result in a \$490 billion loss in revenue for the global consumer electronics industry.²³⁴ Shortfalls in the supply of semiconductors used in automobiles in late 2020 and early 2021 underscored the vulnerability of concentrated semiconductor production in Taiwan, as automobile manufacturers scrambled to meet resurgent demand and U.S., German, and Japanese government officials urged Taipei to resolve the shortages.²³⁵ As China intensifies its military intimidation of Taiwan, U.S. policymakers and businesses will need to understand the risks wrought by their exposure to Taiwan's semiconductor manufacturing sector. U.S. efforts to diversify technology supply chains away from Taiwan may deepen the island's economic dependence on the Mainland, effectively undermining the security of a valued U.S. partner.

These heightened stakes may require U.S. policymakers to reassess elements of longstanding U.S. policy toward Taiwan. Commentators are debating whether the United States should discard strategic ambiguity, which critics say now invites China to test the status quo in the Taiwan Strait, in favor of "strategic clarity," or a public, unambiguous commitment to defend Taiwan.²³⁶ The main sticking point is whether successful deterrence depends more on expressions of political will or on demonstrations of military capacity. Most proponents of strategic clarity argue that Beijing would interpret a public U.S. commitment to defend Taiwan as an expression of steadfast political will that might in itself be sufficient to deter an attack on the island.²³⁷ Proponents of strategic ambiguity tend to respond that an unambiguous commitment to Taiwan's defense will not be credible in the absence of major shifts to U.S. force posture and capabilities in the Indo-Pacific; it may also disincentivize Taiwan from making needed investments in defense and could even increase the risk of war by provoking a Chinese preemptive attack on U.S. and Taiwan forces.²³⁸

The United States has historically leaned on its conventional military advantages to deter China, at times overlooking other viable options to strengthen deterrence. Economic and diplomatic measures offer alternative means to shape Beijing's perception of the international environment or the potential consequences of an invasion.²³⁹ Maintaining cross-Strait stability in the future may require the United States to leverage a range of diplomatic and economic tools to convince Chinese leaders that an increasingly capable and confident PLA cannot win a war over Taiwan at acceptable levels of cost or risk. The question is whether and to what extent those tools will be effective if the PLA continues to consolidate its military advantages within the first island chain.

Addendum: Selected Advanced Semiconductor Foundries by Location

Foundry Location	Company Headquarters	Company	Operating Model	Chip Type	Most Advanced Process Technology (Nanometer Size)
Taiwan	Taiwan	TSMC	Foundry	Logic	3 nm
	United States	Micron	IDM	Memory	16 nm
South Korea	South Korea	Samsung	IDM	Logic, Memory	5 nm
United States	United States	Intel	IDM	Logic	10 nm
	South Korea	Samsung	Foundry	Logic	11 nm
China	China	Semiconductor Manufacturing International Corporation	Foundry	Logic	14 nm
	Taiwan	TSMC	Foundry	Logic	16 nm
	South Korea	SK Hynix	IDM	Memory	18 nm
	United States	Intel	IDM	Memory	20 nm
Japan	United States/Japan	Flash Alliance*	IDM	Memory	15 nm
	Japan	Renesas	IDM	Logic, DAO	40 nm

Note: DAO = discrete, analog, and optoelectronics and sensors. Bold text indicates most advanced process technology based on foundry location.

Source: Mathieu Duchâtel, "The Weak Links in China's Drive for Semiconductors," *Institut Montaigne*, January 2021, 11–12; Saif M. Khan, "Securing Semiconductor Supply Chains," *Center for Security and Emerging Technology*, January 2021, 44–45; John VerWey, "Chinese Semiconductor Industrial Policy: Past and Present," *United States International Trade Commission Journal of International Commerce and Economics*, July 2019, 5; Flash Ventures, "Commitments, Contingencies and Guarantees," *U.S. Securities and Exchange Commission*, September 27, 2016; S&P Capital IQ database.

*As of June 1, 2017, Flash Alliance operates as a subsidiary of U.S. data storage firm Western Digital. S&P Capital IQ database.

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CHAPTER 5

HONG KONG'S GOVERNMENT EMBRACES AUTHORITARIANISM

Key Findings

- In the past year, the Chinese Communist Party (CCP)-controlled Hong Kong government's implementation of the National Security Law upended the city's social and political environment. The government now views peaceful political participation as inherently subversive, and the authorities are targeting many across a broad cross-section of the population under the new law.
- Changes to Hong Kong's elections and the composition of its legislature now ensure pro-Beijing lawmakers will always have a majority, turning the once competitive Legislative Council (LegCo) into a rubber-stamp parliament.
- In the year since the imposition of the National Security Law, Hong Kong experienced a net outflow of 87,100 permanent and nonpermanent residents. A new immigration bill that entered into force in August 2021 gives the Hong Kong government the power to block travel. The government now has the legal authority to enact "exit bans" or to prevent critics of the Hong Kong government or China's central government from entering the territory.
- Changes to Hong Kong's educational curricula under the National Security Law now require teachers to promote the CCP's interpretation of history, and authorities are using these new powers to fire them for unapproved speech. Educators are forced to distort reality and history to portray the Party in a positive light.
- Judges overseeing national security cases in Hong Kong are now chosen from a list compiled under the supervision of the territory's new national security apparatus, effectively stripping the Hong Kong judiciary of its former independence. The changes enable the Hong Kong government to ensure all national security cases are assigned to preferred progovernment judges, guaranteeing outcomes favorable to the government and the CCP.
- The National Security Law allows the Hong Kong government to curtail the city's freedoms with little notice or process. Authorities introduced strict film censorship rules overnight in June 2021, and independent and prodemocracy media organizations have been systematically dismantled. Prodemocracy

Chinese-language newspaper *Apple Daily* was shut down after the government froze its assets and arrested senior personnel, having previously arrested its owner. Remaining media organizations have lost key staff and resources, and in other cases mainland investors are acquiring control of publishers. The city can introduce comprehensive internet censorship similar to the Mainland's Great Firewall at any time.

- Strict implementation of the National Security Law is stripping Hong Kong of long-held advantages that made it a global financial center. While Beijing relies on Hong Kong to boost capital flows and innovation in the Guangdong-Hong Kong-Macau Greater Bay Area, foreign companies are now more likely to find it advantageous to operate elsewhere in Asia, including in mainland China. Changes diminishing corporate transparency and weakening rule of law endanger U.S. businesses in Hong Kong.
- Hong Kong's business environment is increasingly "Mainlandized," which is likely to increase as the city is integrated further into the Greater Bay Area. Chinese companies are growing their presence in Hong Kong as both the Chinese and Hong Kong governments build greater incentives for mainland immigration into the territory.

Recommendations

The Commission recommends:

- Congress amend the Hong Kong Autonomy Act to add to the contents of the annual report required by the act a determination of whether the Beijing-controlled Government of Hong Kong has violated freedom of emigration from Hong Kong. The report should assess whether the Government of Hong Kong has:
 - Denied Hong Kong residents' right or opportunity to emigrate;
 - Imposed more than a nominal tax on emigration or on the visas or other documents required for emigration, for any purpose or cause whatsoever; or
 - Made emigration contingent on receiving official approval that is not practicably possible to obtain or is otherwise obstructed by authorities.
- Congress amend section 421 of the U.S.-China Relations Act of 2000 to require the U.S. Trade Representative to include an assessment of Hong Kong's treatment as a separate customs territory in its annual report on China's compliance with commitments made in connection with its accession to the World Trade Organization (WTO). This additional section of the report should consider:
 - Hong Kong's compliance to its commitments under the WTO;
 - Whether mainland Chinese entities operating in Hong Kong are using the Special Administrative Region's status as a transshipment hub to circumvent U.S. duties on China;

- Whether Hong Kong “possesses full autonomy in the conduct of its external commercial relations” and if the United States should continue to recognize Hong Kong’s rights as a separate customs territory under the WTO pursuant to section 201 of the U.S.-Hong Kong Policy Act of 1992; and
- Whether the United States should apply tariffs and all other trade treatment to Hong Kong equivalent to that of the People’s Republic of China (PRC). The U.S. Trade Representative should consult the secretary of state’s determination of Hong Kong’s autonomy when making this recommendation to the president.
- Congress, in consideration of the plight of prodemocracy activists from the Hong Kong Special Administrative Region, should encourage the secretary of homeland security to exercise their authority under the Immigration and Nationality Act on the basis of both a “compelling emergency” and “urgent humanitarian reason[s]” to parole into the United States aliens who are residents of Hong Kong and who are applying for admission to the United States.
- Congress require the U.S. Department of Justice and the U.S. Department of Commerce to collect information from U.S. companies operating in Hong Kong concerning requests from the Government of Hong Kong for content takedowns, access to data, and law enforcement assistance. The departments shall report their findings to Congress every 180 days specifying:
 - The number of requests fulfilled and by which companies;
 - Where such requests involved user data; and
 - Which local laws the requests invoked.
- Congress direct the Department of Justice to require media outlets operating in the United States that are majority owned by the Government of the PRC or the Government of Hong Kong to register under the Foreign Agents Registration Act. Congress should also direct the U.S. Department of State to determine whether such outlets qualify as a foreign mission of the PRC.

Introduction

Guardrails designed to protect Hong Kong’s autonomy have been destroyed since 2020 when China approved a National Security Law for the territory in violation of its international commitment to respect Hong Kong’s high degree of autonomy. The law solidified the CCP’s control over Hong Kong’s government and judiciary, which the territory’s pro-Beijing government exploited to implement draconian policies silencing Hong Kong’s once robust civil society and prodemocracy movement. The Hong Kong government’s persecution of anyone deemed a political threat has effectively transformed the territory into a police state. Authorities hunt down anyone suspected of advocating for democracy or open political discourse in Hong Kong or interacting with foreign organizations and individuals. The changes to election laws mean the legislature can neither advocate for the interests of the Hong Kong people nor act as a check against the pro-Beijing Hong Kong government’s agenda.

Political tensions coupled with weak economic recovery from the novel coronavirus (COVID-19) pandemic have clouded the outlook for Hong Kong's economy. Many foreign businesses are taking a "wait and see" approach that may prove unsustainable as risks escalate. Foreign companies have introduced some new safeguards to weather perceived political sensitivities, while some have chosen to move out of the city for other opportunities in the Asia Pacific region, including in the Mainland. Hong Kong is no longer a necessary or even safe gateway into China for foreign firms.

This chapter begins by examining the People's Republic of China's (PRC) control of Hong Kong's governance, including through new electoral changes designed to ensure that critics of the CCP or of the Hong Kong government cannot win seats in the legislature. It then addresses the Hong Kong government's implementation of pro-Beijing "patriotic education," which the National Security Law has made possible after years of popular resistance, and the government's aggressive new attempts to control civil society, media, and the formerly independent judiciary. It also assesses the effects of Hong Kong's political changes on the city's business environment and the progress of the Greater Bay Area project that links Hong Kong with multiple mainland cities. Finally, it considers the implications of these developments for the United States. This chapter is based on consultations with U.S. government officials and nongovernmental experts, open source research and analysis, and findings from the Commission's September 2021 hearing.

Emergence of a Police State

Since implementing the National Security Law in June 2020, Hong Kong authorities have swiftly and dramatically upended the city's formerly free and open society. The Beijing-controlled Hong Kong government has repeatedly stressed the National Security Law's dictum that the central government's authority over Hong Kong must always take precedence over the city's limited autonomy and the rights and freedoms guaranteed by Hong Kong law.¹ The Hong Kong authorities have enthusiastically and zealously sought out violations of the National Security Law "to please Beijing," according to Michael Davis, global fellow at the Woodrow Wilson Center for International Scholars.² Mr. Davis testified at the Commission's September 2021 hearing that Hong Kong's rapid transformation since the National Security Law's implementation is an example of Beijing "bringing a form of government extremism to an open society."³ Angeli Datt, a Hong Kong expert and senior research analyst at Freedom House, testified, "Hong Kong is not dead, but the territory is nearly unrecognizable under the National Security Law."⁴

The introduction of the National Security Law destroyed the legal system that had prevailed in Hong Kong since 1997, rendering the rights enshrined in the Basic Law, Hong Kong's mini constitution, meaningless in practice. In promulgating the law and imposing absolute control over Hong Kong's affairs, Beijing created a "constitutional rupture" in Hong Kong's governance, according to Dennis Kwok, former Hong Kong legislator, and Elizabeth Donkervoort, expert on the rule of law at the American Bar Association.⁵ The fact that the National Security Law overrides Hong Kong's laws

subsumes Hong Kong's governance under the political interests of the CCP. In June 2021, at a forum co-organized by Beijing's Liaison Office in the territory to celebrate the CCP's centennial the following month, Liaison Office Director Luo Huining asserted that it is "imperative to uphold the [CCP's] leadership... [because it] is the true pioneer, leader, practitioner, and defender" of Hong Kong's governance system.⁶ He added that those who reject the CCP's leadership and work to end one-party rule in China pose "existential threats" to the foundations of Hong Kong's governance, underlining that multiparty governance is unacceptable.⁷

National Security Law Overrides Basic Law's Protection of Rights

Under the National Security Law, the authority of the central Chinese government in Beijing now takes precedence over the rights guaranteed by Hong Kong laws, despite the explicit assurances in the Basic Law that these rights and freedoms should be protected.⁸ Under this new normal of the central government's overt interference in Hong Kong's legal system via the National Security Law, Hong Kongers no longer possess key democratic rights:

Freedom of Speech: The National Security Law has criminalized speech that could be broadly interpreted as violating China's national security interests. At least four educators have been barred from teaching for life, including one who assigned study on a banned pro-independence political party. In July 2021, Hong Kong police arrested five members of a speech therapists' union who published a children's book that allegedly depicted activists as sheep and police as wolves.⁹

Freedom of Assembly: Prodemocracy advocates have been repeatedly prosecuted for participating in unauthorized protests and denied assemblies overall, with authorities bringing multiple charges in succession against peaceful activists.¹⁰ Since the start of the anti-extradition bill protests in 2019, the Hong Kong government has arrested more than 10,000 individuals and prosecuted at least 2,600 for protest-related activities, according to Samuel Chu, founder and former managing director of the Hong Kong Democracy Council.¹¹ The Hong Kong government now treats any dissent, including grassroots political organizations, as criminal.¹² Long established civil society groups have disbanded as a result of persecution by Hong Kong authorities and the imprisonment of key leaders.¹³

Right to a Fair Trial: Under the National Security Law, defendants are no longer guaranteed fair trials. They may only be granted bail if a judge decides they are likely not to continue committing vaguely defined crimes endangering national security.¹⁴ As of July 2021, only 12 of 56 individuals charged with crimes under the National Security Law have received bail.¹⁵ Judges have also denied some defendants in national security cases the right to a trial by jury, choosing instead to issue decisions directly, and they have moved cases to higher jurisdictions to avoid abiding by sentencing caps.¹⁶

Right to Representation: Prodemocracy candidates can no longer run for elected office, denying representation to Hong Kong res-

idents who believe the special administrative region (SAR) should preserve the limited degree of autonomy guaranteed by the Basic Law. Recent changes to election rules ensure only “patriotic” pro-CCP candidates can run for the LegCo, and directly elected district councilors can no longer participate in the committee that elects the city’s chief executive.¹⁷ Armed with the broad mandate of the National Security Law, the central government of the PRC and its allies in the Hong Kong government have quickly implemented policies designed to enforce support for the CCP and silence its critics, establishing a political environment that brooks no dissent. Ministry of State Security forces answering directly to the central government have expanded and made permanent their operations in Hong Kong, making clear that their ubiquitous presence is now a part of everyday life in the territory. In October 2020, the government began requiring all civil servants who joined the government on or after July 1, 2020, to swear a loyalty oath to the increasingly authoritarian Beijing-controlled Hong Kong government and to the PRC. In January 2021, the rule was extended retroactively to those who began their government employment before July 1, 2020, covering all 170,000 of the city’s civil servants.¹⁸ Refusing to take the oath bears significant consequences: in April 2021, authorities announced that 129 government employees who refused to sign the pledge would be fired.¹⁹

Retroactive Application despite Government’s Assurances

The National Security Law presents unique challenges to the rule of law by enabling prosecutors to penalize defendants for conduct that predates its implementation. Hong Kong Chief Executive Carrie Lam Yuet-ngor pledged in a June 2020 address to the UN Human Rights Council that the law would not be applied retroactively, but the Hong Kong government has in effect done so by using activity the National Security Law prohibits as a basis for prosecution under other laws.²⁰ Mr. Davis argued at the Commission’s hearing that authorities investigate suspects under the National Security Law on the basis that “all the things [they] did before the law was passed show what [their] views are.”²¹ For example, in July 2020 the Hong Kong government disqualified 12 LegCo candidates, citing activities that partially predated the National Security Law but arguably fell under its definitions of secession, subversion, and collusion with “foreign forces.”* Ms. Datt testified to the Commission that police cited *Apple Daily* articles written before 2020 as evidence of alleged collusion with foreign forces.²²

In order to prosecute activists on the basis of their now-illegal prodemocracy views, Hong Kong authorities use older laws to charge defendants for conduct that was not illegal before the National Security Law took effect.²³ In August 2021, authorities used

*Among other reasons for disqualifying these candidates, the government cited their “advocating or promoting Hong Kong independence, self-determination or changing the system of the HKSAR by supporting Hong Kong independence as an option for self-determination; soliciting intervention by foreign governments or political authorities in relation to the HKSAR’s affairs; [and] expressing an objection in principle to the enactment of the National Security Law by the Standing Committee of the National People’s Congress and its subsequent promulgation as a national law listed in Annex III to the [Basic Law].” Government of the Hong Kong SAR, *HKSAR Government Supports Returning Officers’ Decisions to Invalidate Certain Nominations for Legislative Council General Election*, July 30, 2020.

an older anticorruption ordinance to justify prosecuting a musician for a 2018 performance at a campaign rally.* In September 2020, authorities cited a colonial-era sedition law that had not been used in decades, but was technically still in effect, to charge a suspect for conduct that partially predated the National Security Law.²⁴ In addition to using this kind of retroactive prosecution, Hong Kong's Commissioner of Police, Raymond Siu, suggested in August 2021 that outright retroactive charges explicitly under the National Security Law itself were still possible, though the government has not yet pursued any.²⁵

United States Responds to Beijing's Interference in Hong Kong

The U.S. government views the Chinese government's interference in Hong Kong as "an unusual and extraordinary threat to the national security, foreign policy, and economy of the United States," and since 2020 it has taken actions to both address these risks and punish officials deemed responsible.²⁶ These actions are consistent with changes in U.S. policy toward Hong Kong under the Hong Kong Autonomy Act, which mandates assessments of Hong Kong's autonomy. Such actions also align with Executive Order (EO) 13936, signed by then President Donald Trump in 2020, which declared a national emergency with respect to Hong Kong.²⁷ In July 2021, the Biden Administration formally extended the declaration of a national emergency for another year.²⁸

- In August 2020, U.S. Customs and Border Protection required that products shipped from Hong Kong be labeled with a "Made in China" designation.²⁹ In October 2020, the Hong Kong government brought a case to the WTO to oppose the U.S. government's "Made in China" labeling requirement.†³⁰
- In December 2020, the U.S. Department of the Treasury released a report mandated by the Hong Kong Autonomy Act of 2020 on foreign financial firms that transacted with foreign persons materially contributing to the erosion of Hong Kong's autonomy. The department did not find any institution that "knowingly conducted a significant transaction" with any of the foreign persons identified through EO 13936, but the report will be regularly updated.³¹
- In the same month, the Department of Commerce's Bureau of Industry and Security eliminated Hong Kong as a separate destination under the Export Administration Regulations. The removal means that for the purposes of export controls, the U.S. government classifies all exports, reexports, and in-country transfers to Hong Kong the same as the rest of China.³² The rule change followed a July 2020 elimination of licensing excep-

*See "Hong Kong Locks Up Dissidents and Rigs Elections" below for more on this incident. Independent Commission against Corruption, Hong Kong SAR, "Duo Charged with Providing Entertainment at 2018 LegCo By-Election," August 2, 2021.

†The case is still in its early stages, as the WTO formed a panel in April 2021 at Hong Kong's request and no action has been taken since. Brazil, Canada, China, the EU, India, Japan, South Korea, Norway, the Russian Federation, Singapore, Switzerland, Turkey, and Ukraine have reserved third-party rights in the case, meaning they have some substantial interest in the proceedings and have the right to comment on arguments of the complainant and respondent. World Trade Organization, "DSB597 United States—Origin Marking Requirement," April 29, 2021.

tions specific to the SAR. The bureau also added 23 new Hong Kong persons to its Entity List throughout 2021.³³

- In its 2020 *Annual Report for the Committee on Foreign Investment in the United States (CFIUS)*, the Treasury Department clarified that in accordance with EO 13936, all CFIUS transactions originating from Hong Kong after July 14, 2020, would be grouped with those originating from mainland China.³⁴ In 2020, U.S. foreign direct investment (FDI) to Hong Kong increased from the previous year by 3.4 percent to total \$92.5 billion, while Hong Kong FDI to the United States rose 8.5 percent from the previous year, reaching \$16.5 billion.³⁵
- In its March 2021 annual report pursuant to the United States-Hong Kong Policy Act of 1992, the Department of State sustained its determination that Hong Kong was no longer sufficiently autonomous to warrant special treatment.³⁶
- In July 2021, Treasury's Office of Foreign Assets Control added 30 Hong Kong persons to its Specially Designated Nationals and Blocked Persons List in accordance with EO 13936, making a total of 57 individuals.³⁷
- In July 2021, the Departments of State, Treasury, Commerce, and Homeland Security issued a joint business advisory, *Risks and Considerations for Businesses Operating in Hong Kong*. The advisory highlighted risks of the National Security Law, data privacy, transparency and access to information, and exposure to conflicting sanctions regimes between the United States and China.³⁸
- In August 2021, President Joe Biden issued a memorandum deferring for 18 months the enforced departure of most Hong Kong residents currently in the United States, which may number approximately 30,000, according to Samuel Chu.*³⁹ The memorandum was the first U.S. action granting extended stays to Hong Kong residents in light of the National Security Law.

U.S.-Hong Kong Trade an Outlier of Special Treatment

Despite the requirement that goods from Hong Kong be marked with a "Made in China" label, U.S. Customs and Border Protection continues to recognize Hong Kong as separate from China when assessing customs duties.⁴⁰ Hong Kong imports are therefore not subject to the Section 301 tariffs levied since 2018[†] that apply duties between 7.5 and 25 percent to more than \$550 billion in U.S. imports of Chinese goods.⁴¹ U.S. application of China-related Section 301 tariffs to Hong Kong could be considered a violation of U.S. obligations under the WTO.⁴²

* Information concerning how many of these 30,000 Hong Kong residents will actually benefit from deferred enforced departure is not publicly available.

† These tariffs were applied to Chinese goods imports based on the findings of the U.S. Trade Representative's Section 301 investigation, concluded in March 2018, into China's technology transfer, intellectual property theft, and other practices. U.S. Trade Representative, "Notice of Modification of Section 301 Action: China's Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation," *Federal Register* 84: 169 (August 30, 2019).

U.S.-Hong Kong Trade an Outlier of Special Treatment— *Continued*

As of 1986, Hong Kong enjoys its own membership in the WTO and is currently considered a separate customs territory from China that “possesses full autonomy in the conduct of its external commercial relations.”⁴³ Application of China-related Section 301 tariffs would run counter to most-favored nation treatment under the WTO’s General Agreement on Tariffs and Trade.⁴⁴ At the same time, according to the U.S.-Hong Kong Policy Act of 1992, the United States may no longer recognize treaties or other international agreements between the United States and Hong Kong should the president determine that Hong Kong is “not legally competent to carry out its obligations under any such treaty.”⁴⁵ U.S. determination of Hong Kong’s legal competency has no direct effect on Hong Kong’s membership in the WTO; however, changes to Hong Kong’s autonomy over its commercial relations could impact its status as a separate customs territory.*⁴⁶

Hong Kong Locks Up Dissidents and Rigs Elections

Changes over the past year have not only made Hong Kong opposition candidates and activists ineligible to run for office but also subjected them to political persecution. The Hong Kong government has signaled that intending to run for office on a platform in opposition to policies the CCP has sanctioned is now tantamount to the crime of subversion. In January 2021, the Hong Kong Police Force (HKPF) arrested 53 former legislators and prodemocracy activists, accusing them of plotting to destabilize the government. The former legislators had allegedly planned to gain a majority in the LegCo and veto all bills tabled by the authorities, up to and including the city’s budget, to force the chief executive to resign. The Basic Law specifically allows LegCo to exercise oversight over Hong Kong’s executive branch by forcing the chief executive to resign in specific circumstances like this,[†] but since the National Security Law overrides the Basic Law, the government is now using it to prevent this oversight.⁴⁷

In light of mass resignations of opposition lawmakers in November 2020 and the subsequent arrests of dozens of political candidates in January 2021, opposition lawmakers and activists now have no legal means of advocating for their views. In July 2021, at least 170 of the city’s more than 400 district councilors resigned en masse to protest a new requirement to take a loyalty oath to the city.⁴⁸ In this environment, opponents of the regime or its policies are no

*Entities can become parties to the WTO contingent on “autonomy in commercial relations” rather than status as a single sovereign state. For instance, the EU is considered a separate customs territory from its 28 member states. Under the WTO, there are four “China” memberships where Taiwan, Macau, Hong Kong, and mainland China are each considered separate customs territories. Zeng Huaqun, “One China, Four WTO Memberships: Legal Grounds, Relations and Significance,” *Journal of World Investment and Trade* 8:5 (January 1, 2007): 671–690.

†Under article 52 of the Basic Law, one of several circumstances in which Hong Kong’s chief executive must resign is “when, after the Legislative Council is dissolved because it refuses to pass a budget or any other important bill, the new Legislative Council still refuses to pass the original bill in dispute.” Basic Law, Art. 52 (Government of the Hong Kong SAR of the PRC).

longer guaranteed legally protected activism, leading some to seek emigration and asylum overseas.

Convictions of multiple prodemocracy advocates for unauthorized assembly, including many of the city's well-known prodemocracy leaders, were an especially dire indicator that the Hong Kong government has no tolerance for opposition and criminalizes free speech. The government has also piled on multiple separate charges to secure serial convictions against dissidents. According to Mr. Chu, prosecutors have adopted a strategy of "working their way through the ladder of what they can do" to bring additional charges, with the goal of detaining people indefinitely.⁴⁹ In April 2021, a Hong Kong court handed down sentences for participating in unauthorized assemblies to many of the city's most prominent prodemocracy activists, including *Apple Daily* owner Jimmy Lai; rights lawyer Albert Ho; and former LegCo members Margaret Ng, Leung Kwok-hung, Leung Yiu-chung, Democratic Party founder Martin Lee, and union leader Lee Cheuk-yan, some of whom received multiple overlapping sentences.⁵⁰

In another case in August 2021, authorities charged Anthony Wong Yiu-ming, a musician, under the Elections (Corrupt and Illegal Conduct) Ordinance for having performed at a 2018 campaign rally for Au Nok-hin, a prior LegCo member.⁵¹ Hong Kong's Independent Commission Against Corruption asserted that Mr. Wong's provision of entertainment at the rally was "corrupt conduct at the election... to induce others to vote for the candidate," even though the election occurred eight days after the rally.⁵² Mr. Au is currently serving a ten-month prison sentence in connection with a 2019 protest and is facing charges connected to the January 2021 mass arrests.⁵³ As a result of these now routine uses of the law to punish democracy advocates, activists in Hong Kong, accustomed for years to advocating for full representation in a democracy that allowed such debate, are now treated like dissidents in mainland China, fighting for their civic freedoms at great risk. Pro-establishment legislator Alice Mak Mei-kuen expressed pride in Hong Kong's new normal, arguing in June 2021 that there "isn't any problem with a police state."⁵⁴

New Election Rules Prevent Prodemocrats from Running

New electoral rules designed to increase the CCP's already considerable control over Hong Kong's elections effectively turned LegCo into a Mainland-style rubber-stamp legislature. In March, China's National People's Congress approved new rules designed to ensure that those who govern Hong Kong are "patriots" who "love China," according to Chinese state media.⁵⁵ The rules ensure that prodemocratic legislators, or pandemocrats, will never be able to get elected.⁵⁶ Chinese state media compared the new rules, which are clearly intended to subvert Hong Kong's democracy, to legitimate election oversight in democracies.⁵⁷ Central government officials falsely equating any criticism of the Chinese government with being "anti-China" claimed these rules are necessary to prevent "anti-China, destabilizing elements" and "radical localists" from exploiting loopholes to take power in Hong Kong and obstruct governance.⁵⁸

Hong Kong's electoral changes both increase the overall number of decision-makers loyal to the central government and make it im-

possible for peaceful critics of the CCP to run for office. The new rules, which will take effect in the December 2021 LegCo elections, mean the basic operations of LegCo now fall under the central government's national security interests. They expand LegCo from 70 members—35 of whom are elected by popular vote once every four years—to 90, with only 20 directly elected members.⁵⁹ They also enlarge the Election Committee, which chooses the city's chief executive, from 1,200 to 1,500 and further pack it with pro-Beijing stakeholders. The rules remove from the election committee the six LegCo seats derived from the District Council and the 117 District Council seats. Until the July 2021 mass resignations, prodemocracy councilors held almost 90 percent of the District Council seats, following record voter turnout in the 2019 elections.⁶⁰

Furthermore, a new vetting committee comprising pro-Beijing Hong Kong officials* will work with the Committee for Safeguarding National Security, which oversees Hong Kong's security affairs without judicial review or public transparency, to approve all candidates for public office.†⁶¹ Since the Committee for Safeguarding National Security is “under the supervision of and accountable to” China's State Council, ultimately the central government in Beijing has a deciding say in approving candidates for office in Hong Kong.⁶²

Immigration Bill Grants Broad New Powers Blocking Free Movement

Prodemocracy advocates fear that a new immigration bill granting the Hong Kong government broad powers to block travel in and out of the territory may be used to introduce Mainland-style arbitrary extrajudicial “exit bans” and bar entry to those the government deems a threat.⁶³ Prior to passing this law, the Hong Kong government had already prevented some Hong Kong activists from leaving the territory, such as the so-called “Hong Kong 12” who tried to flee by boat to Taiwan in 2020.‡ The new law grants the power to block travel for any reason, interfering with rights of free movement guaranteed by Hong Kong's Basic Law and Bill of Rights.⁶⁴

* Chief Secretary John Lee Ka-chiu will lead the committee, which will include Constitution Affairs head Erick Tsang Kwok-wai, Security Secretary Chris Tang Ping-keung, Home Affairs Minister Caspar Tsui Ying-wai, former Justice Secretary Elsie Leung Oi-sie, former LegCo President Rita Fan Hsu Lai-tai, and former Chinese University of Hong Kong Vice-Chancellor Lawrence Lau Juen-ye. Lee, Tsang, and Tang are currently subject to U.S. sanctions for their roles in undermining Hong Kong's autonomy. Lilian Cheng and Tony Cheung, “Hong Kong Chief Secretary John Lee to Lead Vetting Committee for Would-Be Election Candidates,” *South China Morning Post*, July 6, 2021; U.S. Department of the Treasury, *Treasury Sanctions Individuals for Undermining Hong Kong's Autonomy*, August 7, 2020.

† The Committee for Safeguarding National Security, established by the National Security Law and directly under the supervision of the central government, is the chief interagency body in Hong Kong responsible for overseeing all national security affairs. Under article 13 of the law, the committee's members comprise the chief executive, the chief secretary for administration, the financial secretary, the secretary for justice, the secretary for security, the commissioner of police, the head of the HKPF's newly created national security department, the director of immigration, the commissioner of customs and excise, and the director of the chief executive's office. The Law of the People's Republic of China on Safeguarding National Security in the Hong Kong Special Administrative Region (China), 2020, 6.

‡ In August 2020, the China Coast Guard intercepted 12 Hong Kong residents attempting to flee to Taiwan by boat. Two who were minors were sent back to Hong Kong, and the other ten were sentenced in December 2020 to between seven months and three years in jail on charges of illegal border crossing. In January 2021, Hong Kong authorities arrested 11 more people, including a district councilor and the mother of a pro-democracy activist, for suspected crimes related to assisting the initial group's planned flight. *Deutsche Welle*, “Police Make New Arrests over ‘Hong Kong 12’ Flee-Attempt,” January 14, 2021.

The legislation, which entered into force on August 1, 2021, makes information available to Hong Kong's Director of Immigration concerning all passengers and crew on any carriers* crossing the Hong Kong border and empowers the director to prohibit the entry or exit of any passenger or crew member.⁶⁵

Hong Kong Security Secretary John Lee attempted to provide a veneer of legality to the new powers, arguing they are necessary to respond to increasing numbers of illegal immigrants and potentially fraudulent asylum applicants.⁶⁶ According to the Hong Kong Bar Association, however, it is not clear what deficiency the new “extraordinary” powers are designed to address, and the bill includes no safeguards against abuse.⁶⁷ Furthermore, the new law could be used to require personnel outside Hong Kong, such as airport ground staff, to prevent prohibited passengers from boarding Hong Kong-bound aircraft.†

Status of Hong Kong Asylum Seekers

Since the introduction of Hong Kong's National Security Law in 2020, Taiwan has sharply increased residence permits granted to Hong Kong residents, despite the great risk of provoking Beijing. In June 2020, Taiwan's Mainland Affairs Council created the Taiwan-Hong Kong Service Exchange Center to assist Hong Kong residents seeking refuge in Taiwan.⁶⁸ In 2020, the Taiwan government issued 10,813 residence permits and 1,576 permanent residence permits to Hong Kong residents, almost double the number of residence permits issued in 2019.⁶⁹ From January to July 2021, the Taiwan government issued 5,482 residence permits, meaning 2021's total may exceed the total for 2020.⁷⁰ In May 2021, despite Taipei's attempt to avoid overtly antagonizing the Chinese government, Hong Kong closed its decade-old de facto consulate in Taiwan in retaliation for Taiwan's “provocative acts” supporting asylum seekers from Hong Kong.⁷¹

The number of residence permits Taiwan granted to Hong Kongers has been high relative to the island's population in comparison with measures other countries have adopted. For example, in Q1 2021, Taipei granted residency to 3,011 Hong Kongers, or about one per every 7,830 Taiwan residents.⁷² In the same period, under a new immigration scheme for British National (Overseas) passport holders, the United Kingdom (UK) granted 5,600 visas outside the country and 1,600 visas inside the country, or a total of about one per every 9,400 UK residents, with Hong Kong passport holders composing 86 percent of the total.‡ In Q2

*The legislation defines “carrier” as “an aircraft or any other means of transportation” determined by regulation, and thus it could affect travel by bus, train, or hired car, the other main methods of crossing the border currently available. The regulations could likely affect pedestrian travel if necessary. According to the Hong Kong Transportation Department, there are five road-based crossings between Hong Kong and Shenzhen, though it is not clear whether any of them allow crossing by foot. Hong Kong Transportation Department, *Land-Based Cross Boundary Transport*, May 12, 2021; Immigration (Amendment) Ordinance 2021 (Hong Kong), 2021, A101.

†According to the relevant provision of the law, regulations “may require the carrying out of any act by a person (wherever the person may be) and regulate any act or matter... wholly or partly outside Hong Kong.” Immigration (Amendment) Ordinance 2021 (Hong Kong), 2021, A101.

‡British Nationals (Overseas) are Commonwealth citizens but not British citizens. On January 31, 2021, the UK activated a new immigration scheme to allow British National (Overseas) passport holders or those eligible for one—which include those born in Hong Kong before the

Status of Hong Kong Asylum Seekers—*Continued*

of 2021, the number of visas granted under this scheme sharply increased to 29,400 out-of-country and 10,700 in-country, with Hong Kong passport holders composing 68 percent of the total.⁷³ As of January 2021, under a new immigration scheme, Australia had granted five-year extensions to about 3,000 out of 10,000 eligible temporary skilled, graduate, and student visa holders from Hong Kong, or about one per every 8,450 Australian residents.⁷⁴ As of May 2021, almost 6,000 Hong Kong residents had applied for a similar Canadian visa program, though it is not clear how many have succeeded.⁷⁵ In addition to these new programs, Australia, the UK, and Canada have respectively accepted 305, 121, and 21 asylum applications from Hong Kongers since the 2019 protests.⁷⁶

Hong Kong Government Flaunts New Control over Society

Hong Kong observed its first National Security Education Day on April 15, 2021, organized by the territory's new Committee for Safeguarding National Security.⁷⁷ The day's activities involved different branches of Hong Kong's security services and featured a live demonstration of a dramatized counterterrorism operation. The activities prioritized engagement with Hong Kong's youth to help them "form correct values and national identity," according to one school principal.⁷⁸ Then HKPF Commissioner Chris Tang Ping-keung* argued the outreach was necessary because subversive foreign forces were deliberately targeting young people in Hong Kong to "plant anti-China ideas" in their hearts and "ignite... hatred for their government."⁷⁹ More than half of the attendees at these events were connected to Hong Kong's disciplined services,† however, indicating a lack of genuine interest among the public.⁸⁰

The day's activities also saw specially trained members of Hong Kong's disciplined services perform the "goose step" marching style used in the Mainland, a new marker of Beijing's success in impressing a more authoritarian culture upon Hong Kong's security services. The central government has previously attempted to pressure Hong Kong's youth cadet organizations to adopt the goose step, but most of these organizations have resisted out of a preference to continue expressing British heritage rather than mainland China's culture.‡ According to the *South China Morning Post*, People's Libera-

territory returned to the People's Republic of China in July 1997—to live, work, and study in the United Kingdom. Mainland Affairs Council, *Hong Kong and Macao Residents Granted Residence & Permanent Residence in Taiwan*, 2021; Home Office of the UK, *How Many People Come to the UK Each Year (Including Visitors)?* June 18, 2021.

*Tang became Hong Kong's secretary for security on June 25, 2021. Lilian Cheng and Tony Cheung, "Hong Kong Security Minister John Lee Promoted to Chief Secretary, Police Head Chris Tang Fills Cabinet Post in Move Reflecting Focus on Law and Order," *South China Morning Post*, June 25, 2021.

†According to Xinhua, the five disciplined services that performed the goose step during their open day events included the HKPF, the Fire Services, the Correctional Services, Customs and Excise, and Immigration. Xinhua, "Feature: Hong Kong Police March in Chinese-Style Goose-Stepping on National Security Education Day," April 15, 2021.

‡In 2018, Hong Kong newspaper *Ming Pao* reported that the central government's Hong Kong liaison office asked representatives from seven uniformed youth groups to adopt the Chinese goose step during that year's Bauhinia Square flag-raising ceremony commemorating the May Fourth Movement. Thirteen out of 14 youth groups chose to keep using the British marching style

tion Army personnel have trained Hong Kong Police College officers in the goose step ahead of the 2022 parade marking the 25th anniversary of Hong Kong's 1997 handover from the UK.⁸¹ Then HKPF Commissioner Tang appeared to favorably associate the militaristic display with the Mainland when he praised the officers' April 15 demonstration, saying it showed their "pride of being Chinese."⁸²

Forced Nationalism and an Orwellian School System

Hong Kong authorities have ordered sweeping revisions to educational curricula to promote national security, infusing nationalism and revisionist history into even seemingly apolitical topics. These revisions mark a victory for the Hong Kong government in its years-long campaign to impose "patriotic education" to increase popular support for the CCP.* In February 2021, Hong Kong's Education Bureau issued new guidelines on promoting national security education in accordance with article 10 of the National Security Law.⁸³ A government circular, which argued national security education is "part of, and inseparable from, national education," called for universities to develop in students "a sense of belonging to the country, an affection for the Chinese people, a sense of national identity... and a sense of responsibility for safeguarding national security."⁸⁴

According to Reuters, the central government's plan to bring Hong Kong more politically in line with the rest of China amounts to an attempted "societal overhaul" for Hong Kong.⁸⁵ The guidelines alter curricula to fit a nationalistic narrative and affect students beginning at age six and continuing through university, including students at some international schools. For example, the geography curriculum framework for middle school through high school calls for teaching that "the South China Sea islands and related maritime areas... have been a part of China's territory since ancient times."⁸⁶ The biology curriculum framework stresses the central and Hong Kong governments' successful protection of the country during the COVID-19 pandemic.⁸⁷

The curricula changes require educators to actively promote the CCP's concept of national security in addition to censoring prohib-

that year because it reflected their culture and traditions, while the Hong Kong Army Cadets Association, which has used the Chinese style since its founding in 2015, continued to do so. However, in March 2019, after the pro-Beijing Committee of Youth Activities organized a training for some of the groups at the PLA's Fanling barracks and then requested that cadet groups adopt the goose step to "show respect to China," four out of 16 total groups did so in that year's May Fourth parade. Naomi Ng, "Hong Kong Cadet Groups Switch from British Military Drills to Chinese Goose Stepping at May Fourth Event in Wan Chai—but Who Gave the Marching Orders?" *South China Morning Post*, May 4, 2019; *Ming Pao*, "Uniformed Group: Liaison Office of the Central People's Government in the Hong Kong Special Administrative Region Urges Adoption of Chinese-Style Marching, Causes Worry about 'Decolonization.' Youth Army Federation's Chen Zhengbin: Only Offered Assistance, Not Requested" (制服團體：中聯辦促轉中式步操 惹「去殖化」憂慮 青少年軍陳振彬：只協助非要求), February 9, 2018. Translation; *South China Morning Post*, "Hong Kong Youth Groups Reject Chinese-Style Marching Drills," May 7, 2018.

*In 2012, the Hong Kong government attempted to implement patriotic education but withdrew its plans in the face of widespread opposition. In 2019, as historic numbers of prodemocracy activists protested in what many felt was a last stand against the central government's encroachment in Hong Kong, Chinese officials resolved to implement patriotic education in the territory. Shen Chunyao, director of the Legislative Affairs Commission of the National People's Congress Standing Committee, said in October 2019 that the CCP must "strengthen national education for Hong Kong... people, especially civil servants and youth... to boost their national consciousness and patriotic spirit." Anna Fifield, "China Thinks 'Patriotic Education' Built a Loyal Generation. But in Hong Kong? Not So Fast," *Washington Post*, November 29, 2019; U.S.-China Economic and Security Review Commission, *2019 Annual Report to Congress*, November 2019, 481; U.S.-China Economic and Security Review Commission, *2018 Annual Report to Congress*, November 2018, 387.

ited acts, creating a culture of fear and distrust between educators and students.⁸⁸ Mr. Davis testified to the Commission that the changes in Hong Kong's academic culture are having a "profound impact" and could cause an "enormous" loss to the quality of "education [and research] in Asia."⁸⁹ In this climate, according to one teacher quoted by the *Financial Times*, it has become necessary to "stop teaching reality... to avoid violating the rules."⁹⁰ The Hong Kong Education Bureau ordered schools to prevent "political or other illegal activities" in their institutions, which resulted in the firings of some outspoken professors.⁹¹ In October 2020, an educator was barred from teaching for life after allegedly assigning students to study the pro-independence Hong Kong National Party.⁹² As of April 2021, according to the *South China Morning Post*, at least four teachers had been deregistered from the profession for life for political reasons, including one visual arts teacher who had posted cartoons online satirizing Hong Kong's authorities.⁹³

Hong Kong authorities are now openly hostile to student unions, which they view as encouraging opposition to the government, and university administrations have begun to constrain their operations. In addition to punishing students for political activities such as participating in prodemocracy protests and even mourning a student who fell to his death during a protest in 2019, university administrators in some institutions have impeded student unions from collecting dues.⁹⁴ After Hong Kong University's student union passed a motion in July 2021 that authorities claimed glorified violence, the university derecognized the union even though those responsible for the motion apologized and resigned.⁹⁵ Officers from the HKPF's national security unit cordoned off the offices of the student union and seized documents.⁹⁶ The university's decision to cut ties with the student union caused at least one lecturer to resign in protest.⁹⁷ In light of the government and administrators' punitive approach to student unions, one student union leader at Lingnan University, Yanny Chan, told the *New York Times* that unions now feel like they are "just waiting to die."⁹⁸

Some teachers described policy changes introduced in 2020, such as the censorship of protest slogans, references to separation of powers, and illustrations of protesters, as reminiscent of China's Cultural Revolution.⁹⁹ The 95,000-member Professional Teachers' Union, once the biggest single-industry union in the city, was forced to disband in August 2021. Chinese state media and Hong Kong officials, respectively, had accused it of being a "poisonous tumor" and "dragging schools into politics," and state media continued to urge further punitive actions against it.¹⁰⁰ Fearful of losing their jobs, Hong Kong teachers must now self-censor in a way that would have been unthinkable prior to the National Security Law. Overall, according to Tin Fong-Chak, then a vice president of the Hong Kong Professional Teachers' Union, the new policies are intended to control everything that happens in schools and will "destroy the teacher-student relationship."¹⁰¹ The mandate to actively promote the National Security Law now permeates all stages of personnel selection and management at all levels in universities.¹⁰²

Officials have signaled that complying with the new rules could affect universities' funding, emphasizing the requirement to warn

students about “foreign interference” and train faculty in national security education. Publicly funded universities are especially vulnerable to this pressure to step up national security training. In March, Hong Kong’s University Grants Committee, which supervises all publicly funded institutions, reportedly warned universities that increased funding could be tied to implementation of compulsory education on the National Security Law.¹⁰³ In April, the new president of the government-run Open University of Hong Kong, Paul Lam Kwan-sing, suggested adding national security education to the mandatory curriculum, following earlier comments by his predecessor suggesting the city lacked such education.¹⁰⁴ In June 2021, Chief Executive Lam claimed external forces had “penetrated” academic institutions, describing a recent study that paid students to count turnout in prodemocracy protests as allegedly incentivizing participation in protests.¹⁰⁵ She called on university administrators to ensure their students are not “brainwashed” or “indoctrinated” by external forces, portraying academic inquiry into Hong Kong’s protests as inherently subversive.¹⁰⁶

Hong Kong Authorities Crush Civil Society and Media

In 2021, Hong Kong authorities interfered with peaceful civil society activities, demonstrating a Mainland-style “rule by law” approach in which the law is merely a means to the political end of suppressing dissent. In April, the Hong Kong police launched an inquiry into the Civil Human Rights Front, a group known for organizing the city’s annual Tiananmen Massacre vigil, after the *Global Times* claimed the group may be shut down due to suspicions of receiving foreign funding.¹⁰⁷ The police cited the group’s alleged failure to register under the 110-year-old Societies Ordinance, which prohibits secret societies such as Triad gangs,* and ordered it to submit 15 years’ worth of financial information within nine days.¹⁰⁸ The group’s organizer, Figo Chan Ho-wung, denied having received foreign funds and refused to cooperate with the police on principle, claiming the group’s operations have been legal under the Basic Law and that in the past even pro-Beijing former Chief Executive C.Y. Leung described the group as “friends.”¹⁰⁹ Mr. Chan was sentenced to 18 months in prison in May 2021 along with others over his participation in the October 2019 protest, and the Civil Human Rights Front disbanded in August.¹¹⁰ The sudden hostility toward the group in light of the changed political situation, according to Mr. Chan, demonstrates the government’s willingness to use any excuse to target an organization or person it has decided to condemn.¹¹¹

Authorities in Hong Kong are also increasing scrutiny over charities. In September 2021, the government amended the tax guide to remove exemptions for charitable organizations whose activities might be deemed contrary to national security.¹¹² Christopher Hui,

*Triads are organized criminal groups active in Greater China and in Chinese communities around the world. Various Chinese governments have enlisted these gangs, many of which trace their origins to Qing dynasty-era secret societies and trade associations, to carry out violence against political opponents. For example, in 2014 during the Occupy Hong Kong protests, as many as 200 suspected Triad members attacked demonstrators and tried to stir up violence to discredit them, and in July 2019, a mob of suspected Triad members assaulted protesters and bystanders at Yuen Long, injuring at least 45 people. U.S.-China Economic and Security Review Commission, *2019 Annual Report to Congress*, November 2019, 494; Austin Ramzy, “What Are the Triads, and What Is Their History of Violence?” *New York Times*, July 24, 2019.

secretary for Hong Kong's Financial Services and Treasury Bureau, wrote that the government "must prevent people with ulterior motives from using the name of charity to actually endanger national security."¹¹³ With the amendment of the tax guide, Secretary Hui also announced that the Inland Revenue Department will perform comprehensive reviews to determine whether an organization "participate[s] in or use[s] its resources to support or promote activities that are not conducive to national security."¹¹⁴ Two groups ceased operations as the amendment was developed: the Apple Daily Charitable Foundation, a nonprofit arm of the prodemocracy newspaper, and the 612 Humanitarian Relief Fund, a group supporting legal and medical fees for 2019 Hong Kong protestors.¹¹⁵

The Hong Kong government has constrained and shut down media organizations and threatened or sought to coerce their employees, contributing to sharply decreased media freedoms for the press since the crackdowns began in 2019 and the National Security Law was implemented in 2020. According to the Hong Kong Journalists Association's 2021 Press Freedom Index, between 2018 and 2020 the press freedoms rating for journalists in Hong Kong, which is based on public opinion polling, plummeted eight points to a record low of 32.1 out of 100.¹¹⁶ The press freedom report cited a police search at the premises of *Apple Daily* parent Next Digital in August 2020 as particularly harmful.¹¹⁷ In June 2021, *Apple Daily* was forced to cease operations entirely after authorities froze its assets, raided its newsroom, and arrested seven of its senior staff, detaining one as he attempted to leave Hong Kong.¹¹⁸ Seventy-three-year-old *Apple Daily* owner Jimmy Lai was repeatedly arrested and ultimately sentenced to a total of 20 months in jail.¹¹⁹ Other particularly concerning developments included the HKPF's exclusion of Hong Kong Journalist and Press Photographer Associations members from officially recognized "media representatives" and mass layoffs at the news department of i-Cable, a Cantonese-language channel.¹²⁰ In addition to the legal obstruction of news organizations, Chinese security forces reportedly targeted individual media workers directly. The State Department's *2021 Hong Kong Policy Act Report* cited "credible reports" that central government security forces have "harassed, threatened, and arrested" journalists and other media workers.¹²¹

Beijing Undermines Independent Media

The Hong Kong government and pro-Beijing entities have used several tactics to strip Hong Kong media organizations of their independence, mimicking the Mainland's heavily constrained media environment.¹²² In June 2021, authorities froze \$2.32 million in assets belonging to *Apple Daily* and two affiliated companies, leaving the publisher with funds for only a few days.¹²³ In Hong Kong, it is illegal not to pay employees within seven days following a pay period.¹²⁴ Lacking any means of paying the salaries of its 1,300 employees or covering normal operating costs, the paper had no choice but to shut down.¹²⁵

Partnerships with Chinese state media are another tactic the government has deployed successfully to interfere with independent media. In August 2021, Chief Executive Lam announced

Hong Kong's state-funded broadcaster Radio Television Hong Kong (RTHK) would partner with China Media Group, the holding group for PRC state media firms China Central Television and China Radio International, to air "patriotic" content.¹²⁶ According to Chief Executive Lam, the agreement allows RTHK's Chinese-language channel to air Mainland-produced content and produce its own programming to advocate for "safeguarding national security" and "promote a better understanding of developments on the Mainland."¹²⁷ In practice, this ensures promotion of the CCP's preferred political narratives.¹²⁸ Reporters Without Borders described this partnership as providing a "perfect pretext to force RTHK to distribute Chinese propaganda."¹²⁹

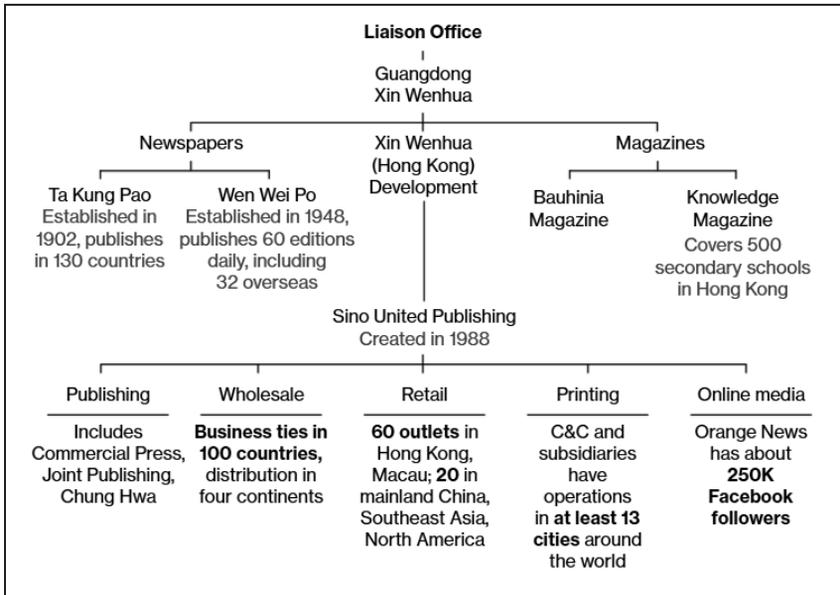
In other cases, the CCP has taken direct control of Hong Kong-based media in order to influence the tone of ostensibly independent organizations. In April 2021, Liu Changle, chairman of Hong Kong-based Phoenix Media Investment, announced he would sell his stake in the company to Bauhinia Culture, a firm administered by the central Chinese government, and to a company owned by Pansy Ho, a businesswoman with reported ties to Triad gangs.¹³⁰ Phoenix has long been "the most important media asset under the [United Front in Hong Kong]," according to former City University of Hong Kong professor Joseph Cheng.¹³¹

The Chinese government has increased control of media entities through other sweeping purchases in the recent past. The Central Liaison Office, Beijing's official representative office in Hong Kong, gained control of 80 percent of Hong Kong's publishing industry when it purchased Sino United Publishing Ltd. in 2015.¹³² The Liaison Office owns several prominent Chinese-language papers, including *Wen Wei Po*, *Ta Kung Pao*, and *Hong Kong Commercial Daily*; major bookstore chains Joint Publishing HK, Chung Hwa Book Co., and Commercial Press; at least 30 publishing houses and brands; and 60 retail bookstores in Hong Kong and Macau (see Figure 1).¹³³ Having solidified control over the majority of print publications and many online sources in the city, the Chinese government can ensure messaging in textbooks and papers supports its goals. For example, in 2020 pro-Beijing Hong Kong tycoons advocated for the National Security Law in the pages of *Ta Kung Pao* and *Wen Wei Po*.¹³⁴

Film Censorship Introduced Overnight

The Hong Kong government's decision to implement strict film censorship rules overnight illustrates how the city's remaining freedoms can be removed at a moment's notice under the National Security Law. In June, the city amended its film classification standards to prohibit content that may violate the National Security Law.¹³⁵ The new guidelines, published on the same day they were announced, now require censors to "be vigilant to [content] which may amount to endangering national security, or... jeopardize the safeguarding of national security."¹³⁶ The rules require censors to prohibit any material that violates "the common responsibility of the people of Hong Kong to safeguard the sovereignty, unification, and territorial integrity of the [PRC]."¹³⁷ These changes, which formally bring censorship standards more in line with those in the Mainland, followed several cancellations of high-profile film events

Figure 1: Media Entities Owned by the Liaison Office of the Central Government, 2020



Source: Blake Schmidt, "The Publishing Empire Helping China Silence Dissent in Hong Kong," *Bloomberg*, August 17, 2020.

in Hong Kong, including a protest documentary. Filmmakers and activists in Hong Kong argued the new policy is so broad as to restrict all films in Hong Kong, not just those related to politics or activism, and will give authorities wide latitude to enforce it as they see fit.¹³⁸ In July 2021, Hong Kong Commerce Secretary Edward Yau Tang-wah clarified that films may still be deemed illegal even after censors in the civil service approve them, since it is up to Hong Kong law enforcement to decide whether or not content breaches the law.¹³⁹

Central Government Security Forces Expand Presence in Hong Kong

The central government in Beijing expanded the presence of personnel tasked with overseeing national security operations in Hong Kong as the city took steps to streamline its ability to prosecute the National Security Law. In April 2021, the Office for Safeguarding National Security, the new super-agency directly under the central government established to enforce the law, announced plans to move to new purpose-built office spaces across government compounds in West Kowloon, an upgrade from the converted hotel its more than 200 personnel have occupied since July 2020.*¹⁴⁰ The Office for Safe-

*The compounds, which comprise two sites totaling 1.15 square kilometers (0.72 square miles) near a People's Liberation Army naval base and government dockyard at Stonecutters Island, will host "permanent office premises and ancillary facilities," according to a government statement. Government of the Hong Kong Special Administrative Region Press Releases, *Land for Office Premises of Office for Safeguarding National Security of the Central People's Government in the HKSAR*, April 23, 2021.

guarding National Security will cover the construction costs for the facilities, but Hong Kong's \$1.03 billion (\$8 billion Hong Kong dollars [HKD]) national security budget for 2021–2022 may be used to cover the salaries of Hong Kong disciplined services personnel seconded to the agency and other expenses.¹⁴¹ Article 19 of the National Security Law allows a “special fund” for national security expenditures to be approved by the chief executive without oversight from LegCo or any other restrictions, so this \$1.03 billion fund could theoretically be used for whatever the chief executive deems necessary.¹⁴² The city is now incentivizing the national security bureaucracy in the territory to continue to justify its own existence by carrying out more arrests, harassment, and surveillance in order to secure more funds.

In May 2021, the *South China Morning Post* reported that the Hong Kong and Macao Affairs Office, which coordinates Beijing's policy on the two SARs, would add two new departments overseeing national security issues and propaganda, both led by Chinese government officials.¹⁴³ According to the *South China Morning Post*, which quotes multiple anonymous mainland sources, Wang Zhenmin, former legal affairs director in the central government's Hong Kong liaison office, will head the former department, and Yang Guang, a previous Hong Kong and Macao Affairs Office spokesperson, will head the latter.¹⁴⁴ The *South China Morning Post*'s sources claim these new departments are necessary due to the increased workload under the National Security Law. The new propaganda department would absorb some of the Liaison Office's duties in managing Hong Kong media. Finally, the paper reported that the changes correspond to the 2020 elevation of Beijing's central coordination group on Hong Kong and Macao Affairs to a higher-level “central leading group” led by Politburo Standing Committee member Han Zheng, reflecting the increased scrutiny Beijing is placing on the two regions.¹⁴⁵

Judiciary Independent in Name Only

Hong Kong's historically independent judiciary is no longer reliably impartial on cases related to matters the Chinese government deems sensitive, since the National Security Law has cemented Beijing's right to determine which judges hear national security cases in which jurisdiction, almost guaranteeing outcomes the CCP prefers. The changes to the judiciary are like an “unstoppable sandstorm” sweeping away constitutional rights, according to an anonymous Hong Kong defense lawyer quoted by Agence France-Presse.¹⁴⁶ The law allows the Office for Safeguarding National Security to exercise jurisdiction in cases involving foreign countries or external elements, if a “serious situation” occurs that inhibits Hong Kong's ability to exercise jurisdiction, or if there is a “major and imminent” threat to national security.¹⁴⁷ At the decision of the Office for Safeguarding National Security, Chinese courts can extradite defendants to the opaque mainland Chinese legal system, which has a conviction rate of over 99 percent.¹⁴⁸ Charles Falconer, who was previously the UK's most senior court official, argued article 55 of the National Security Law is a key indicator that Hong Kong's rule of law is now “gone” and “a charade” because it allows Chinese authorities to resolve cases outside Hong Kong's legal system for any reason and without oversight.¹⁴⁹

Hong Kong's chief executive now has absolute power to funnel national security cases toward select individual judges who then determine how the cases proceed, ensuring outcomes favorable to Beijing. The chief executive, who is also chairperson of the Committee for Safeguarding National Security and answers directly to the central government, is now required to compile a list of all judges approved to handle national security cases.¹⁵⁰ This allows the pro-Beijing leader to exclusively list judges likely to punish alleged national security offenses harshly.¹⁵¹ Furthermore, once placed on the list, any judge can be removed from it if they criticize the National Security Law or commit other vaguely defined national security offenses.* The judges on this list oversee all national security cases, not only those brought under the National Security Law, and in several cases they have already exercised broad discretion in determining jurisdiction.¹⁵²

For example, in April 2021 District Court Judge Stanley Chan Kwong-chi ruled he had jurisdiction to try a sedition case in his lower court. This decision deprived the defendant of the trial by jury in a higher court that this serious indictable offense† would normally require and thus cut out a historically important check on the judiciary.¹⁵³ In a similar demonstration of alignment with Beijing, in May 2021 Chief Magistrate Victor So Wai Tak granted prosecutors' request to move to the High Court the subversion cases of 47 of the 53 activists who had been arrested en masse in January over their plans to gain a majority in LegCo; the High Court has no cap on sentencing.¹⁵⁴ Furthermore, the now common practice of denying bail in national security cases due to the National Security Law's strict standard‡ means defendants can be imprisoned for several years as their cases progress.¹⁵⁵ According to Jerome Cohen, a leading U.S. expert on Chinese law, the prospect of facing three years in prison even if acquitted threatens to "ruin the lives" of Hong Kong residents, deterring them from engaging in activities that might be interpreted as violating the National Security Law.¹⁵⁶

Since the January arrests, Hong Kong's use of the National Security Law has expanded dramatically to include peaceful political opposition, and authorities have signaled their intent to hand down severe sentences. As of August 31, 2021, according to a fact sheet published by the U.S. Consulate General for Hong Kong and Macau, there had been 133 arrests for alleged National Security Law offenses, 64 people and companies charged, and three people convicted.¹⁵⁷ The arrests of mainstream politicians mean there are "no discernible limits" regarding whom the authorities may target. Even

*Article 44 of the National Security Law states, "A designated judge shall be removed from the designation list if he or she makes any statement or behaves in any manner endangering national security during the term of office." The Law of the People's Republic of China on Safeguarding National Security in the Hong Kong Special Administrative Region (China), 2020, 20.

†In Hong Kong and other judiciaries that follow British legal traditions, less serious summary offenses may be heard in Magistrates' Courts, while more serious indictable offenses are almost always heard in higher courts. Summary and indictable offenses are roughly analogous to misdemeanors and felonies, respectively, in the U.S. legal system. Pringle Chivers Sparks Teskey, "What Is the Difference between Summary and Indictable Offences?" 2021; Hong Kong Legislative Council Panel on Administration of Justice and Legal Services, *Reform of the Current System to Determine Whether an Offence Is to Be Tried by Judge and Jury or by Judge Alone*, April 22, 2014, 1–2.

‡Article 42 of the law specifies that "no bail shall be granted to a criminal suspect or defendant unless the judge has sufficient grounds for believing that the criminal suspect or defendant will not continue to commit acts endangering national security." The Law of the People's Republic of China on Safeguarding National Security in the Hong Kong Special Administrative Region (China), 2020, 18.

peaceful advocacy, such as Jimmy Lai's 2019 meeting with then U.S. Secretary of State Mike Pompeo and his calls for the release of the 12 Hong Kongers intercepted as they fled by boat in 2020, is now sufficient for a charge of foreign collusion.¹⁵⁸ In July 2021, Hong Kong police even arrested five members of a speech therapists' union who published a children's book telling the story of the 12 activists using depictions of sheep and wolves to portray the activists and the police, respectively.¹⁵⁹ In addition to the broad scope of targets for these charges, the potentially severe sentencing raises concerns. Under article 29 of the National Security Law, foreign collusion convictions can result in sentences of between three and ten years or, for more severe cases, ten years to life.¹⁶⁰

The Hong Kong government has already made ample use of the National Security Law's criminalization of vaguely defined "collusion with foreign forces" to crack down on activists' contact with international interlocutors, including consulate staff. Despite claims by some observers that this provision was necessary to ensure the national government can intervene if Hong Kong cannot enforce the National Security Law, in practice the Hong Kong government has used it to punish engagement with foreigners.¹⁶¹ The Hong Kong government has used the law to deliberately "break ties between the Hong Kong pro-democracy movement and its [international] supporters," according to the Georgetown Law report.¹⁶²

In April 2021, a Hong Kong judge denied bail to former lawmaker Jeremy Tam Man-ho because U.S. Consulate staff had sought to meet with him, even though he ignored the invitations, demonstrating that even the perceived interest of foreign actors can be enough to endanger a defendant.¹⁶³ According to the U.S. Consulate General for Hong Kong and Macau's fact sheet, 19 of 133 National Security Law cases brought in Hong Kong since July 1, 2020, involved charges of colluding with foreign or external actors to endanger national security, and six involved "collusion with foreign forces" specifically, demonstrating that the government has interpreted this charge fairly broadly.¹⁶⁴ This broad charge can apply to interactions with any foreign entity, not just those with foreign governments specifically. For example, Samuel Chu testified to the Commission that Hong Kongers can be charged with collusion for engaging with Members of Congress, the UN, and overseas diaspora groups.¹⁶⁵

Overseas Judges Lose Confidence in Court of Final Appeal

It is no longer certain that overseas judges serving in nonpermanent posts on the Court of Final Appeal (CFA) can still protect the rule of law in Hong Kong. Since 1997, the Basic Law has allowed the CFA to invite judges from other common law jurisdictions to join the court and hear cases, a practice that has long been regarded as a means of ensuring the independence and professionalism of the judiciary.¹⁶⁶ In light of the National Security Law, however, the UK has begun examining whether it should continue participating in this tradition.* In a mid-2020 report to Parliament on Hong Kong, UK Foreign Secretary Dominic Raab revealed that consultations had

*According to the Hong Kong Judiciary, judges may be recruited from other common law jurisdictions, such as the UK, Canada, Australia, and New Zealand. The CFA currently includes nonpermanent overseas judges from Australia, Canada, South Africa, and the UK. Hong Kong Court of Final Appeal, *Overseas Non-Permanent Judges*.

begun with Robert Reed, president of the UK Supreme Court, on when it might become necessary to review the longstanding practice of sending British judges to the CFA.¹⁶⁷ Lord Reed then announced in October 2020 that the UK's practice of sending judges was under review.¹⁶⁸ In August 2021, Lord Reed and his deputy Patrick Hodge decided to continue serving in their nonpermanent posts after assessing that the Hong Kong judiciary continued to operate free of government interference and in accordance with the rule of law.¹⁶⁹

Whether or not commonwealth countries continue sending judges to the CFA, some foreign CFA judges have already determined they can no longer in good faith participate in a court system the Mainland's interference has so thoroughly undermined. Australian judge James Spigelman resigned in September 2020 and UK judge Brenda Hale announced in June 2021 she intended to resign from her post at the end of her term in July, citing concerns over the law's interference in the judiciary.¹⁷⁰ The Hong Kong Bar Association asked for foreign judges to continue serving in nonpermanent CFA posts, but Professor Cohen testified to the U.S. Congressional-Executive Commission on China in June 2021 that foreign judges are now mere "decorations" in an abusive legal system and should resign.¹⁷¹

The Hong Kong government and some former Hong Kong lawyers have repeatedly dismissed the concerns about foreign judges' role on the CFA as politically motivated, claiming instead that the judiciary should reduce its reliance on foreign legal perspectives. British barrister Grenville Cross, former director of public prosecutions in Hong Kong, published an editorial in Chinese state media praising British judges for resisting political pressure to resign from the CFA and claiming UK "anti-China elements" have long sought to undermine UK judges' participation.¹⁷² Some pro-establishment legislators have even suggested that making negative comments about the National Security Law should disqualify foreign judges from appointments.¹⁷³ In June, LegCo subcommittee members argued that the Hong Kong government should look to other Asian common law countries such as Malaysia and Singapore to fill nonpermanent CFA posts instead of relying on judges from commonwealth countries who might quit due to concerns about the National Security Law.¹⁷⁴ Pro-Beijing lawmaker Junius Ho suggested during the debate that Hong Kong should allow more permanent judges on the top court, which would give the "patriotic" legislature more power to tilt the high court's balance in the government's favor.¹⁷⁵ The subcommittee simultaneously recommended pro-establishment judge Johnson Lam for a long-open permanent position on the CFA, an appointment that will increase the power of the CFA's progovernment camp.¹⁷⁶

Threats to Hong Kong's Economic Future on the Rise

The passage of the National Security Law in July 2020 and subsequent intrusion of mainland oversight into Hong Kong's economic and legal systems have raised concerns about the city's future as a global financial hub. Although foreign firms have not left the city in great numbers, they have adopted a "wait and see" approach while avoiding activity that could be deemed politically sensitive.

Businesses Approach the “New Normal” with Caution

Many businesses have been adjusting to what Tara Joseph, president of the American Chamber of Commerce in Hong Kong (AmCham Hong Kong), described as the “compounded new normal”: heightened political risk, a restrictive COVID-19 response, and continued U.S.-China tensions that have affected the business environment in Hong Kong.¹⁷⁷ AmCham Hong Kong’s survey data show some foreigners and foreign businesses reconsidering Hong Kong as a safe haven, but as of 2021 there is no clear consensus on how foreign companies and residents will deal with Hong Kong’s changes.¹⁷⁸ Some financial firms are increasing their presence in Hong Kong as they seek to expand opportunities in the Asia Pacific market. For example, in 2021 Citigroup will expand its Hong Kong staff by 1,500 on top of its current roster of 4,000 employees in the SAR, while Goldman Sachs plans to add 400 personnel to its current Hong Kong staff of 2,000.¹⁷⁹ Bank of America, UBS, and Morgan Stanley have also announced expanded operations in the city.¹⁸⁰ HSBC relocated senior management from London to Hong Kong in 2021, indicating a particular focus on growth in the city.¹⁸¹

Some companies have chosen to leave but faced unusual scrutiny from Hong Kong authorities.¹⁸² The Securities and Futures Commission of Hong Kong (SFC), the Hong Kong Monetary Authority, the Hong Kong Financial Services and the Treasury Bureau, and the Financial Services Development Council called executives of departing companies to question them about their decision to leave, something executives described as “new and unusual.”¹⁸³ Executives also told the *Financial Times* that the level of interest from agencies other than the SFC was atypical, as only the SFC normally contacts companies changing residency to follow up on any appropriate licensing changes.¹⁸⁴

Foreign companies and expats who once viewed Hong Kong as a necessary gateway and preferred legal center for doing business in the Mainland no longer see a distinct difference between operating in either jurisdiction as Hong Kong’s legal system becomes less independent. Foreign companies in the retail sector, such as luxury brands and other consumer goods, moved northward to have closer proximity to customers in mainland Chinese cities.¹⁸⁵ At the same time, expats can also no longer expect to be shielded from government scrutiny and even arrest. For example, Samuel Bickett, arrested in 2019 for intervening in an assault perpetrated by a plainclothes policeman, was sentenced in June 2021 to more than four months in prison. Mr. Bickett, a former lawyer for Bank of America, believed he was stopping a crime in progress only to find himself charged with one because prosecutors felt he “embarrassed” Hong Kong authorities, according to a former prosecutor on his case.¹⁸⁶

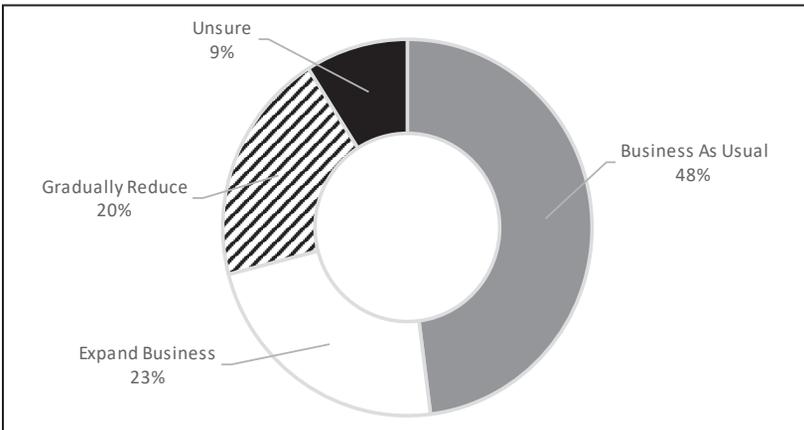
Retaining employees, particularly non-Chinese nationals with more flexibility to leave the city, is likely to become more difficult for companies operating in Hong Kong due to increased personal risk and erosion of the rule of law. In the first 12 months since the passage of the National Security Law, the Hong Kong Census and Statistics Department reported a decline in the population totaling 87,100 people, including both permanent and nonpermanent Hong Kong residents.¹⁸⁷ In the same period, the overall population de-

creased by 1.16 percent, shrinking for the first time since 2003.¹⁸⁸ While the outflow reflects COVID-19-related movement and ongoing border restrictions, it can also be attributed to increased migration of Hong Kongers and foreign residents due to increasing dissatisfaction with political tensions.¹⁸⁹

AmCham Hong Kong Surveys: To Leave, or Not to Leave?

During 2021, AmCham Hong Kong published two surveys that showed a small but steadily increasing number of foreign companies and individuals seriously considering or ready to leave Hong Kong as a result of ongoing changes to the environment. While only representative of 15 percent of its membership, AmCham Hong Kong's January 2021 business outlook survey demonstrated companies' lack of consensus on risk assessment and the economic trajectory in Hong Kong (see Figure 2).¹⁹⁰

Figure 2: AmCham Hong Kong Member Business Expectations, 2021–2023



Source: Adapted from American Chamber of Commerce in Hong Kong, "2021 Hong Kong Business Outlook Survey," January 11, 2021.

Among the survey's 181 respondents, over 60 percent said the business environment had become worse in 2020, and 40 percent expected the business environment in Hong Kong to remain unstable or worsen further in 2021 from the prior year.¹⁹¹ Meanwhile, only 4 percent of respondents said they would move their headquarters out of Hong Kong.

Another AmCham Hong Kong member survey conducted in May 2021 focused on plans to remain in or leave Hong Kong, garnering a total of 325 responses (24 percent of membership). Of the 42 percent of respondents considering departure, 62 percent said they were motivated by the National Security Law while 49 percent also noted COVID-19-related complications.¹⁹² For those with the intention of leaving Hong Kong, 52 percent indicated a more immediate departure by the end of the year or as soon as it became feasible.¹⁹³

The National Security Law has induced some changes in company practice. Many foreign companies have long chosen to sign contracts in Hong Kong instead of mainland China, trusting that courts will abide by rule of law for disputes against Chinese companies.¹⁹⁴ With erosion of rule of law in Hong Kong and the loss of this guarantee, foreign companies are far more exposed to commercial and financial damages. The *Financial Times* reported that some foreign companies remaining in Hong Kong have sought to amend contracts, removing Hong Kong as a preferred location for arbitration and opting for courts in Singapore.¹⁹⁵ From the AmCham Hong Kong January 2021 survey, 53 percent of respondents answered that they were less likely to use Hong Kong as a center for arbitration.¹⁹⁶ This reflects declining confidence in the Hong Kong legal system's ability to adjudicate cases impartially under the National Security Law, even from a commercial perspective.¹⁹⁷ While the direct effect of these changes may be better understood in years to come, the Hong Kong International Arbitration Center still handled 318 arbitration cases in 2020, a marginal increase from 308 cases in 2019.¹⁹⁸ In Asia, Singapore and Hong Kong have long vied for the top ranking in international arbitration. Although it does not directly reflect a choice of parties to move away from Hong Kong, the caseload at the Singapore International Arbitration Center more than doubled from 416 cases in 2019 to 1,018 in 2020; cases with U.S. parties increased eightfold from 65 in 2019 to 545 in 2020.¹⁹⁹

COVID-19 and Hong Kong's Economy

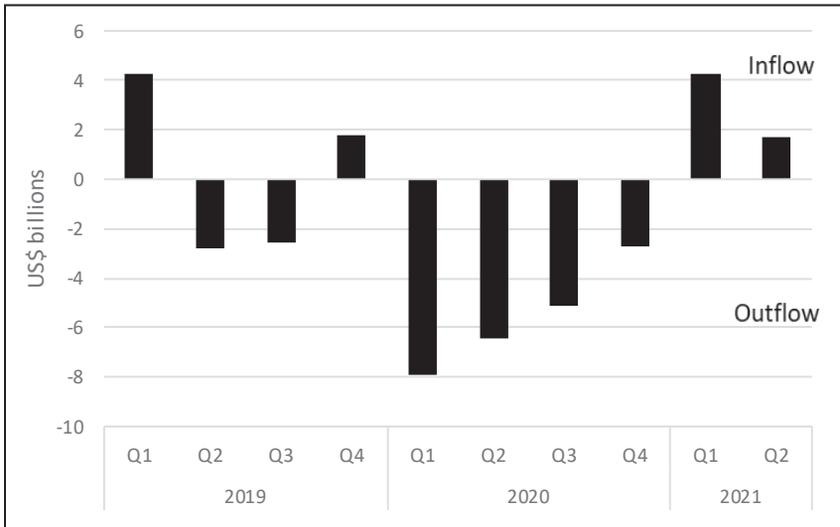
The outlook for businesses is mixed as Hong Kong seeks to recover from the pandemic, while the uneven growth and unequal distribution of assistance have exacerbated economic anxieties for low- and middle-income citizens in Hong Kong.²⁰⁰ The number of low-income households in Q1 2021 grew 40.9 percent year-on-year.²⁰¹ In spite of early successes in economic recovery, efforts to move beyond the pandemic have been beset by continued outbreaks, subsequent lockdowns, and sustained restrictions on economic activity. Intense distrust of government vaccination efforts initially stymied vaccination rates despite adequate supplies being ordered and available for Hong Kong residents.²⁰² By the end of September 2021, the vaccination rate for one dose was 60.8 percent, falling short of the government's previously stated goal of 70 percent vaccination.²⁰³ In the same month, David Hui, chair of the Hong Kong government's Scientific Committee on Emerging and Zoonotic Diseases, said the city would only open its borders and ease other restrictions once the vaccination rate is at least 80 percent, reflecting current mainland Chinese policy.²⁰⁴ Bernard Chan, a top financial advisor to Chief Executive Lam, said that despite the effect on business, Hong Kong is constrained by "China's zero-tolerance approach" that it has deemed necessary for travel between the SAR and the Mainland.²⁰⁵

Hong Kong's gross domestic product (GDP) shrank a record 6.1 percent in 2020, reflecting not only a pandemic-related slowdown but also contractions attributed to social unrest in 2019 and 2020.²⁰⁶ Q1 2021 reversed the trend of economic contraction beginning in Q3 2019 associated with both the pandemic and the protests. As the Q2 2021 GDP rose by 7.6 percent year-on-year, performance expect-

tations of large businesses for Q3 2021 were positive for the time since 2018.²⁰⁷ Consumption was buoyed by a government voucher program in Q2 2021 but remained low compared to pre-pandemic levels as the city navigates additional COVID-19 outbreaks, social distancing measures, and other safety requirements.²⁰⁸ Financial sector performance led the recovery with the expansion of financial services through Q2 2021.²⁰⁹

Foreign portfolio flows also appear to be rebounding as the economy gradually recovers. In Q1 2021, foreign portfolio investment reached a level similar to Q1 2019 after two years of an overall outflow (see Figure 3).²¹⁰ The 2021 resurgence of foreign holdings in Hong Kong indicates renewed investor faith in the city's financial future and confidence in its financial system. Strong inflows also support the continued peg of the HKD to the U.S. dollar, which has been in place since 1983.²¹¹

Figure 3: Foreign Portfolio Flows into and out of Hong Kong, Q1 2019–Q2 2021



Note: Positive values show a capital inflow into Hong Kong. Negative values show a capital outflow out of Hong Kong. A (positive) capital inflow occurs as entities purchase assets in Hong Kong and pay Hong Kong entities for those assets. A (negative) capital outflow occurs as entities sell their Hong Kong assets and repatriate their payment from the sale. Note these amounts only show portfolio investment, not FDI.

Source: Hong Kong Census and Statistics Department, *Balance of Payments, Table 44*, September 23, 2021.

Alongside the financial sector, trade increased 20.2 percent year-on-year in Q2 2021.²¹² Other industries, however, have been slow to return to even pre-pandemic levels. Retail and hospitality sector

* In the first six months of 2020, Hong Kong's portfolio investment abroad increased overall by 5.1 percent year-on-year, with top recipients being the Cayman Islands, mainland China, and the United States. While Hong Kong portfolio investment in the United States grew by 5.6 percent in the same period, such investment to mainland China decreased by 7.2 percent. The Cayman Islands, a global tax haven, saw a 22.9 percent increase. Coordinated Portfolio Investment Survey, "Table 1: Reported Portfolio Investment Assets by Economy of Nonresident Issuer: Total Portfolio Investment," *International Monetary Fund*, September 15, 2021.

recovery has especially faltered in the face of minor COVID-19 outbreaks and reinstated lockdown and quarantine policies.²¹³ Combined, these two industries compose 14 percent of the labor force.²¹⁴ Tourism, which made up 4.5 percent of the 2018 GDP, reflects the overall economic trend, with growth faltering in 2019 and shrinking even more dramatically in 2020.²¹⁵ Between January and June 2020, tourist arrivals shrank 89.9 percent year-on-year and then dropped a further 99 percent over the same period in 2021.²¹⁶

Mainland Company Presence on the Rise

The Greater Bay Area, which links Hong Kong, Macau, and nine cities in southern China, has developed more rapidly in recent years to expand the area's commercial opportunities and further integrate Hong Kong into the Mainland. In addition to expanding business potential in the region, the Hong Kong government has also made a concerted effort to strengthen incentives for wealthy residents to stay in the city by proposing tax breaks and other policies to facilitate greater wealth retention and financial opportunities.²¹⁷ Along with the new tax exemptions,* Hong Kong's government has introduced new licensing procedures to encourage the development of "family offices," private wealth management firms specifically designed for affluent families and individuals.²¹⁸ The territory's government also approved measures to subsidize the return of certain investment and trust funds, a move intended to incentivize more financial sector growth.²¹⁹

As the Hong Kong government enacts more policies to support business and finance, more mainland Chinese companies are moving into Hong Kong. With increased Chinese listings on the Hong Kong Stock Exchange (HKEX), Chinese companies see benefits to setting up physical operations near financial and business services in Hong Kong. The territory's importance as a commercial hub and close proximity to other bustling cities in the Greater Bay Area continue to be key advantages.²²⁰ Larger Chinese purchases of Hong Kong property in 2021 follow office expansions of Chinese banks and Hong Kong branches of other prominent Chinese firms like ByteDance in the previous year.²²¹ In 2020, the number of mainland Chinese company headquarters and regional offices† increased by 12.1 percent compared to a decline of 6.1 percent in U.S. offices.²²²

Compliance Burdens and Legal Risks Escalate for Foreign Companies

Chinese government efforts to retaliate against foreign criticism and sanctions will force foreign companies into a difficult compromise between different legal systems. U.S. companies are navigating changes in Hong Kong just like many other foreign firms are, but U.S. technology companies—particularly social media platforms—

*As of April 2021, Hong Kong's Inland Revenue Department reduced carried interest taxes to zero percent for certain gains made from investment in private companies. The change largely benefits private equity and asset management industries in Hong Kong. In June 2021, the Hong Kong government reintroduced rules to allow for tax exemption in the territory for foreign taxes assessed elsewhere on a gross income basis. Anthony Pak et al., "Carried Interest Tax Concessions Set to Strengthen Hong Kong SAR's Private Equity Industry," *International Tax Review*, August 18, 2021; Ernst & Young, "Hong Kong Enacts Legislation to Allow a Tax Deduction for Foreign Taxes Charged on Gross Income Basis," June 22, 2021.

†This estimate includes only regional headquarters and regional offices, which have parent companies located outside of Hong Kong and regional responsibilities for business in the region. Regional headquarters also manage other branches of the business in the region. Hong Kong Census and Statistics Department, *Foreign-Affiliated Companies in Hong Kong*, November 27, 2020.

will be especially vulnerable as the Hong Kong government's security apparatus grows even more stringent. The National Security Law specifically requires telecommunications and related technology companies to assist law enforcement with requests for data and takedowns of content that violates the National Security Law, similar to other laws in mainland China.²²³

As early as 2019, coinciding with the prodemocracy protests, Facebook began to cooperate less frequently with the Hong Kong government's requests to provide data, but since the imposition of the National Security Law it has stopped entirely.²²⁴ The Hong Kong government's requests for information from Facebook increased by 20.8 percent from 2019 to 2020, particularly in the latter half of the year following the implementation of the National Security Law.²²⁵ In September 2021, the *Hong Kong Free Press* reported that Google was the first U.S. tech company to disclose compliance with Hong Kong authorities over three requests.²²⁶ The company said that two requests were related to human trafficking while the other was an emergency request with a "credible threat to life."²²⁷ Apple and Twitter have stopped responding to content requests since the National Security Law took effect.²²⁸ While Hong Kong authorities have not yet penalized tech companies for lack of cooperation, U.S. tech firms could be fined or forced to cease operations in Hong Kong under the broad scope of the National Security Law.* In its Hong Kong business advisory, the Biden Administration specifically notes China's growing data and cybersecurity apparatus, cautioning the potential for Chinese laws to be applied in Hong Kong.²²⁹

Short of adopting the Mainland's cybersecurity and censorship rules, the Hong Kong government can already order companies and organizations to censor specific content for vague reasons. In September 2021, the Hong Kong Alliance, the group that organized Hong Kong's annual Tiananmen vigils, announced it would comply with police orders to remove content from its website and social media that violated the National Security Law.²³⁰ While U.S. companies have stated their intentions to resist law enforcement data requests originating from Hong Kong, Ms. Datt noted during the Commission's September hearing that U.S. companies have not pledged to deny content takedown requests.²³¹ Police orders for takedown requests could apply not only to online content provision, but also to app stores and digital services. The Hong Kong government could order app stores such as Apple or Google to remove virtual private network programs from app stores in Hong Kong, similar to Chinese government requirements in the Mainland.²³² Such measures might also extend to other applications with privacy features that have become increasingly popular among Hong Kong mobile users, such as Signal, a chat app with encrypted messaging capabilities.²³³ These potential restrictions would render iPhone and many Android users, including U.S. citizens and employees of U.S. businesses, suddenly without a means of browsing the internet safely and without censorship.

* Even without the cooperation of U.S. tech firms, the Hong Kong government has been able to use social media information—even information shared in ostensibly private conversations—to prosecute protestors and prodemocracy figures. For example, in May 2021 Hong Kong courts were able to use private WhatsApp messages between former prodemocracy lawmaker Claudia Mo and foreign journalists to deny her bail, characterizing the exchanges as a "threat to national security." Rhoda Kwan, "Social Media Messages from Hong Kong Democrat Claudia Mo to Int'l Media 'a Threat to National Security,'" *Hong Kong Free Press*, May 28, 2021.

Vague Data Privacy Rules Complicate Compliance and Threaten Press

Upcoming changes to Hong Kong's data privacy policies present another obstacle to operations of U.S. tech companies and other foreign firms that handle personal data. In May 2021, the Hong Kong Office of the Privacy Commissioner for Personal Data (PCPD) proposed amendments to specifically address doxxing, or disclosure of personal information for malicious purposes,* under the SAR's regulations on privacy protection, the Personal Data Ordinance.²³⁴ The proposed amendment would make it a violation of the Personal Data Ordinance to disclose personal data without the subject's consent "with an intent to threaten, intimidate or harass the data subject or any immediate family member, or being reckless as to whether the data subject or any immediate family member would be threatened, intimidated or harassed."²³⁵ Disclosure of personal information with intent to cause psychological harm or "being reckless" to the potential for such harm carries a similar penalty.²³⁶ The PCPD cited that it received over 5,700 complaints related to doxxing between June 2019 and April 2021.²³⁷ A bill to codify the amendments is expected to come before LegCo in October 2021.²³⁸ The bill also grants the Hong Kong privacy commissioner, the government's chief authority on implementation and enforcement of data protection, the right to engage in searches without a warrant to investigate possible doxxing cases.²³⁹ Penalties for violating the proposed amendments include a maximum fine of \$129,000 (\$1 million HKD) and five years of jail time.²⁴⁰

In addition to increased risk of liability and potential difficulty of compliance, U.S. companies may be forced to play a part in selective enforcement efforts on the part of the Hong Kong government. As Ms. Datt said in her testimony before the Commission, "American companies may find that they are forced to choose between complying with censorship requests, having their employees jailed in a standoff, or in the long-term quitting the Hong Kong market, leaving it open to being dominated by compliant mainland companies."²⁴¹ U.S. tech companies have criticized the amendments' language for being overly broad with a vague definition of doxxing that could result in a "disproportionate and unnecessary response."²⁴² The *Wall Street Journal* reported that companies have subsequently indicated to the Hong Kong government that they may not be able to offer services in Hong Kong should the amendments go through, though Chief Executive Lam assured companies that their fears, as with the National Security Law, will not come to pass.²⁴³ The risk exists that the Hong Kong government would deploy data protection rules to target journalists and activists. According to multiple media reports, doxxing became an extensive problem during the 2019 protests, where both sides were targeted, but prodemocracy protestors and journalists were particularly vulnerable.²⁴⁴ Journalists investigate and expose public or influential figures through their reporting, and as a result they are more likely to be unfairly targeted by the amendment.

* Doxxing refers to the disclosure of an individual's personally identifiable information, or "documents," for malicious purposes such as stalking, harassment, or public humiliation. U.S. Department of Homeland Security, *How to Prevent Online Harassment from "Doxxing,"* April 2017.

New Chinese Legal Tools Increase Risks for Affiliates, Employees, and Family Members

China's National People's Congress explicitly created the Anti-Foreign Sanctions Law in June 2021 as a means to retaliate against sanctions that countries enacted in response to China's repression in Hong Kong as well as Xinjiang.²⁴⁵ AmCham China described the law's potential application to Hong Kong as "further erod[ing] the city's autonomy."²⁴⁶ The National People's Congress would still need to pass a motion to include the Anti-Foreign Sanctions Law in Hong Kong's Basic Law, now essentially a legal formality that would be seamless to implement with or without consultation from the Hong Kong government.²⁴⁷ Along with prohibiting companies from complying with foreign sanctions, the Anti-Foreign Sanctions Law provides that the Chinese government may sue entities for any related compensation loss resulting from compliance with foreign sanctions targeting Chinese entities.²⁴⁸ In August 2021, the National People's Congress delayed adopting the Anti-Foreign Sanctions Law into Hong Kong's Basic Law to avoid shaking confidence in the business and investment environment.²⁴⁹ In October, Chief Executive Lam said that the government had no timetable for introducing the law and would do so in consideration of Hong Kong's status as an international financial center.²⁵⁰ Days later, Chief Executive Lam's top financial advisor Bernard Chan said he was "pretty sure that the law is going to be enacted" after the government could resolve final details.²⁵¹ The law's adoption in Hong Kong would mean the Chinese government could punish U.S. and other foreign financial firms that comply with U.S. laws, including those targeting the loss of Hong Kong's autonomy.²⁵² (For more on China's actions to counter foreign sanctions, see Chapter 2, Section 1, "Year in Review: Economics and Trade.")

Obscuring Public Registers Threatens Corporate Transparency

The Hong Kong government introduced new restrictions on the availability of public registers and other government data, sparking concerns about transparency and potential risks to foreign shareholders. In April 2021, the Hong Kong government announced a rule restricting public availability of company registry information for company directors, citing a need to protect directors' privacy.²⁵³ Prior to the rule change, company director names, identification numbers, and home addresses were publicly listed, preventing directors from obscuring their identity across documents and entities.²⁵⁴ The new rule will be implemented in three phases beginning in August 2021 and ending in December 2023 to gradually obscure company directors' data.²⁵⁵ By the final stage, the restrictions could allow companies to obscure all private information of directors such that only a narrow set of people (liquidators, company officers, bankers, and lawyers) could gain access to those companies' documents for designated professional purposes, such as due diligence.²⁵⁶ Many in the business community, including Gordon Jones, former head of the Companies Registry (which administers the company register), criticized the move over concerns it would decrease transparency and enable more corruption and fraud.²⁵⁷

Although the rule has been predicated on concerns over privacy and potential doxxing, the Hong Kong PCPD offered no evidence

demonstrating that company registries were a source of privacy violations.²⁵⁸ A similar rule was proposed in 2013 but was withdrawn after significant pushback from the business community. The government's attempt to introduce the change in 2013 followed reporting that connected high-level CCP members to significant assets held in Hong Kong.²⁵⁹ CCP officials were highly sensitive to these disclosures, which even exposed General Secretary of the CCP Xi Jinping and his relatives. Reporting on the wealth accumulation of these CCP elites garnered Chinese and international scrutiny.²⁶⁰

The increasing restrictions on the availability of government records further constrains Hong Kong's public discourse. Journalists have long relied on public registry data in order to uncover fraud and other abuses. Law firms, civil society groups, and nongovernmental organizations have used such publicly available data for due diligence and other key reporting.²⁶¹ The Hong Kong Journalists Association condemned the rule, but Chief Executive Lam has asserted that no one should have such privilege to access personal information.²⁶² Suzanne Nossel, former U.S. deputy assistant secretary of state for international organizations, cautioned that "the withering of press freedom has direct implications for Hong Kong's business sector."²⁶³

Hong Kong's Stock Exchange Remains Robust

While the Chinese government promotes more open onshore financial markets, such as the high-tech startup hub of the Shenzhen stock market, it views Hong Kong as the preferred alternative to U.S. exchanges for Chinese company listings.²⁶⁴ Prominent Chinese companies like tech giant Baidu and video-sharing platform Bilibili were already flocking to the HKEX. Increased activity on the HKEX followed a number of Chinese company de-listings in the United States spurred by U.S. policies to block investment in Chinese military-related companies (for more on Chinese company de-listings, see Chapter 2, Section 4, "U.S.-China Financial Connectivity and Risks to U.S. National Security").²⁶⁵ At the same time, the Chinese government has thrown the future of listings into question, beginning with its November 2020 suspension of the Ant Group's planned initial public offering (IPO) on the HKEX and extending to a broader tightening of restrictions on tech companies.²⁶⁶ The rush of IPOs between the end of 2020 and the beginning of 2021 has slowed, with IPO offerings declining by 78.1 percent from Q1 to Q2.²⁶⁷

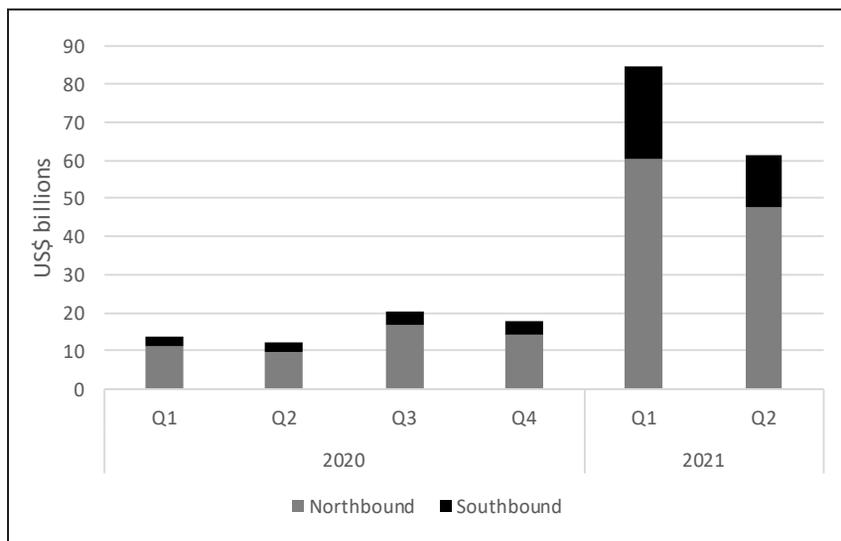
Hong Kong is introducing rules to promote new listings. In July 2021, the HKEX formally introduced the Fast Interface for New Issuance (FINI) platform to digitize and streamline the IPO settlement process in Hong Kong, which the HKEX expects "to help reduce the total money locked up in the largest IPOs by up to 70 percent to 80 percent."²⁶⁸ FINI is expected to be effective by Q4 2022 and will shorten the time between pricing and trading to match the global average.²⁶⁹ Additionally, Hong Kong regulators are contemplating broadening the scope of allowable dual-class share listings on the

*The FINI will only streamline the initial process allowing investors to buy shares following a company's IPO. Introduction of the FINI will not alter preexisting standards and rules for lockup agreements, which prohibit investors in an IPO from selling their shares for a certain amount of time. Peter Alleston, "IPO Lock Up Agreements," *IHS Markit*, July 2021; Jiayue Huang, "Hong Kong to Shorten IPO Settlement Process to Align More with Global Practice," *S&P Global*, July 6, 2021.

city's stock exchange, which currently is limited to tech firms in "emerging and innovative sectors."* Hong Kong approved this model in 2018, and it has since attracted prominent Chinese tech firms like Xiaomi and Alibaba.²⁷⁰

Alongside broader systemic changes, Hong Kong introduced new investment channels to tighten links between financial markets in Hong Kong and the Mainland. In September 2021, the long-awaited southbound Bond Connect opened with an annual cap of \$77 billion, linking the HKEX, China Central Depository and Clearing, and Shanghai Clearing House through 41 approved mainland Chinese banks and 15 Hong Kong banks.²⁷¹ The northbound Bond Connect opened in 2017 and its mainland insurance investment assets reached a value of \$3.37 trillion at the end of 2020.²⁷² Given the success of the northbound link, the southbound link is expected to strengthen HKD- and USD-denominated bonds.²⁷³ The northbound Bond Connect experienced an 82 percent increase in activity over the course of 2020, building up confidence in the southbound Bond Connect's potential to attract investment.²⁷⁴ Alongside the Bond Connect, the Stock Connect linking Hong Kong to Shanghai and Shenzhen saw renewed life in 2020, with northbound traffic up 119 percent and southbound traffic up 128 percent.²⁷⁵ In the first six months of 2021, total revenue of the Stock Connect was up 78 percent year-on-year from the same period in 2020, while the average trading volume increased five-fold (see Figure 4).²⁷⁶ The performance of these channels demonstrates Hong Kong's continued importance as China's offshore finance hub, presenting Chinese investors with reliable investment options.

Figure 4: Stock Connect Average Trading Volume, Q1 2020–Q2 2021



Source: Hong Kong Exchanges and Clearing, "2021 Interim Results Presentation," August 11, 2021.

*Dual-class share listings enable companies to sell shares that are differently weighted and can provide founders with greater control in the company. Yen Nee Lee, "Hong Kong Is Considering 'Dual-Class' Share Listings for Non-Tech Firms, Says Official," *CNBC*, March 30, 2021.

Accelerating “Mainlandization” via the Greater Bay Area

Deepening integration of the Greater Bay Area is critical to fulfilling the CCP’s vision of facilitating technology and innovation growth articulated in its 14th Five-Year Plan.²⁷⁷ The Greater Bay Area is the Chinese government’s plan to strengthen links between Hong Kong, Macau, and nine other Chinese cities around the Pearl River Delta, including the prominent business centers of Shenzhen and Guangzhou. Covering a population of approximately 86 million people, the initiative is focused on increasing economic opportunity through deeper commercial and transportation integration.²⁷⁸ The Chinese government introduced the initiative through its 13th Five-Year Plan in 2015 and announced formal policies to support the initiative in 2017 along with a development plan in 2019.²⁷⁹ In April 2021, China’s National Development and Reform Commission announced a funding plan to boost projects in the Greater Bay Area, particularly those related to science and technology.²⁸⁰ Though the plan did not disclose precise amounts, the fund will come directly from the central government budget.²⁸¹ The CCP focused on the Greater Bay Area and two other regional urban clusters in its 14th Five-Year Plan, emphasizing their role in facilitating China’s international openness as well as science and technology advantages.*²⁸²

Recent momentum has made the Greater Bay Area a source of business confidence, enabling more foreign investment in Hong Kong and the surrounding region. According to AmCham Hong Kong’s 2021 outlook survey, 15 percent of respondents were “very optimistic” about the Greater Bay Area’s growth prospects while 44 percent were “cautiously optimistic.”²⁸³ Domestic and foreign businesses are calibrating an approach to split up operations across the region and take advantage of new funding mechanisms and other infrastructure projects in the region. Alongside proposals for deeper transportation integration, respective real estate markets have also swelled. Some mainland Chinese developers anticipate that growth in Shenzhen will make Hong Kong into its “backyard.”²⁸⁴ Midland, a mainland realtor, reported that mainland Chinese purchases of residential property in Hong Kong increased 40 percent year-on-year in the first two months of 2021.²⁸⁵ Shenzhen’s status as a tech hub has made some parts of the city even pricier than Hong Kong, particularly for real estate near the Shenzhen-Hong Kong border.²⁸⁶

Fitting Hong Kong into Dual Circulation

Chinese and Hong Kong policymakers see great potential for Hong Kong’s role in driving both tracks of the CCP’s dual circulation strategy, which is aimed at reorienting China’s growth toward domestic consumption while remaining open to global markets in strategic sectors (for more on dual circulation, see Chapter 1, Sec-

*The Chinese government has bolstered efforts to integrate urban agglomerations in recent years, with the Chongqing-Chengdu cluster in the west of China being the latest plan formulated in 2019 and described in greater detail over the course of 2020. In addition to supporting innovation goals, the government views these urban agglomerations as platforms for increased domestic consumption and production to enable China’s dual circulation strategy. James Alexander and Deng Zhang, “Chengdu-Chongqing Economic Circle to Drives High-Quality Development | Chongqing Opportunity,” *iChongqing*, December 11, 2020; U.S.-China Economic and Security Review Commission, *November 2020 Trade Bulletin*, November 9, 2020; Hannah Zhihan Zheng, “How China’s New ‘City Cluster’ of Cheng-Yu Can Become Fourth Powerhouse to Drive Nation’s Economic Growth,” *South China Morning Post*, September 21, 2020.

tion 1, “The Chinese Communist Party’s Ambitions and Challenges at Its Centennial”). Under its dual circulation strategy, the CCP aims to create “port clusters” among each of its urban agglomeration projects, including the Greater Bay Area. The Chinese government envisions Greater Bay Area cities leveraging Hong Kong’s expertise and experience as a port city, especially as opportunities for trade increase with the buildout of the Belt and Road Initiative and implementation of the Regional Comprehensive Economic Partnership (RCEP) (for more on China’s participation in RCEP, see Chapter 2, Section 1, “Year in Review: Economics and Trade”).* Beijing also sees Hong Kong’s universities and international orientation as assets to increasing the rest of China’s basic research capabilities as it looks to strengthen its innovation capacity.

Strengthening Financial Ties with New Instruments

The Chinese government has launched or prepared new financial mechanisms to deepen ties within the Greater Bay Area and elevate Hong Kong’s role as an offshore finance hub for Chinese companies. Among them is the GBA Wealth Management Connect, a cross-border investment scheme to enable the sale of investment products among the 11 cities of the Greater Bay Area.† The investment channel launched in September 2021 with 100 to 200 funds eligible to sell products on the Wealth Management Connect and 20 banks interested in seeking approval in the first week of opening.²⁸⁷ Investment sales will be limited to just over \$23.3 billion (150 billion renminbi [RMB]) each direction for a total of \$46.7 billion (300 billion RMB), but regulators are open to raising the quota gradually to attract more investors.²⁸⁸ According to analysts at BNP Paribas and KPMG, the financial products sold through the Wealth Management Connect will be particularly helpful for funding startups and tech companies.²⁸⁹ These developments build on the Chinese government’s efforts to grow the wealth management industry to gain foreign expertise and access much-needed funding as Chinese regulators strive to rein in debt. Hong Kong’s open financial system presents Chinese regulators with a more flexible testing ground for new products and services and remains a valuable funding channel for Chinese firms.

Complementing the Wealth Management Connect, the Insurance Connect will likely launch in 2021 as well. The Insurance Connect will allow Hong Kong insurers to expand into other Greater Bay Area cities, allowing mainland Chinese to purchase products from Hong Kong more easily and vice versa. Mainland Chinese purchases of insurance products in Hong Kong slumped between 2019 and 2020 due to widespread protests and then the pandemic, but in 2018 there were close to \$1.3 billion in new policy sales and \$6.2 billion in premium payments.²⁹⁰ Mainland purchases were at their peak in 2016 at a total of \$9.4 billion, a figure that insurance executives in

*As of August 2021, RCEP is expected to enter into force sometime in the first half of 2022 once six countries have ratified the agreement. Hong Kong trade officials have expressed an expectation to join the agreement once it has been fully ratified. Wang Tianyu, “Hong Kong Actively Applying to Join RCEP, Says Financial Chief,” CGTN, June 24, 2021; Economist Intelligence Unit, “RCEP Unlikely to Become Effective until 2022,” August 4, 2021.

†China’s government has accelerated its work to develop a domestic wealth management industry. For more, see U.S.-China Economic and Security Review Commission, *June 2021 Trade Bulletin*, 7–10.

Hong Kong can aspire to as investment-linked insurance products grow with economic recovery in mainland China and Hong Kong.²⁹¹

As of 2018, Hong Kong ranked first in Asia and is the third-most-developed global insurance market in terms of the concentration of offerings and insurers.²⁹² Life, health, and annuities policies are some of the most purchased Hong Kong insurance products among mainland Chinese.²⁹³ With the continued expansion of financial product offerings, the Insurance Connect is expected to grow Hong Kong's profile as a risk management hub. According to reporting by the *South China Morning Post*, it is unlikely that new products will be offered immediately after its opening, but financial analysts anticipate the Insurance Connect will be able to manage claims and gradually add more products for sale in a steadily growing insurance market.²⁹⁴

Sovereign Digital Currency Will Boost China's Greater Bay Area Plans

Chinese policymakers see great potential in the digital RMB streamlining transactions throughout the Greater Bay Area and boosting the RMB's internationalization.²⁹⁵ They also hope the digital RMB will help the Mainland and the SAR governments of Hong Kong and Macau reduce crime. Greater Bay Area cities were some of the first to test China's digital RMB, with payments issued to Shenzhen residents in December 2020. Beijing envisions the Greater Bay Area as key to increasing the digital RMB's use as a settlement and payment currency.²⁹⁶ In April 2021, the People's Bank of China (PBOC) and the Hong Kong Monetary Authority (HKMA) were working on "technical testing" of the digital RMB as a means of preparing the sovereign digital currency for further cross-border rollout.²⁹⁷ The PBOC also proposed a regulatory testing ground between Shenzhen and Hong Kong that would allow for experimentation of financial offerings based on the digital RMB and create an "expressway" for cross-border finance between the two cities.²⁹⁸ Foreign observers are skeptical the digital RMB would significantly advance its internationalization.²⁹⁹ (For an in-depth discussion, see Chapter 2, Section 2, "The Chinese Communist Party's Economic and Technological Ambitions: Synthetic Biology, New Mobility, Cloud Computing, and Digital Currency.")

Beijing also sees the digital RMB as a key tool in eliminating crimes like cross-border gambling (which is legal in Macau but not mainland China), money laundering, and tax evasion. Use of a traceable currency recorded and maintained by China's central government would likely reduce crime, but Macau casino operators fear the digital currency may shrink business even further after a nearly 80 percent decline in gaming revenue in 2020 due to border closures.³⁰⁰

As Hong Kong works with the PBOC on building out the digital RMB, regulators are also considering the development of a digital HKD.³⁰¹ While the HKMA has said a digital HKD would not change the currency's peg to the U.S. dollar, its development raises several concerns for regulators.³⁰² In June 2021, the HKMA launched a 12-month study of a digital HKD that would advance alongside continued testing of the digital RMB.³⁰³ It is unclear, however, which

institution would be responsible for issuing the digital HKD, as Hong Kong's banking system currently relies on three commercial banks—Standard Chartered, HSBC, and the Bank of China (Hong Kong)—for authorized banknote issuance. Development of a sovereign digital currency issued by the HKMA could prove detrimental to the financial system in Hong Kong by draining commercial bank deposits, constraining banks, and concentrating deposits within the HKMA.³⁰⁴ Popularized use of sovereign digital currencies from either Beijing or Hong Kong will carry an increased likelihood of monitoring and surveillance.

Implications for the United States

The extensive restrictions on freedom of speech, assembly, and association have turned Hong Kong from an open society into a police state. This transformation has been in direct violation of Beijing's international commitments. Fears over widespread enforcement of the National Security Law have become real, affecting everything from Hong Kong residents' access to information to their freedom of movement. The Beijing and Hong Kong governments are intervening in nearly every aspect of life in the city, including business and commerce. U.S. diplomats in Hong Kong cannot carry out their duties to engage with Hong Kong residents without endangering their interlocutors because the Hong Kong government now views any such contact as evidence of collusion with foreign forces. U.S. citizens visiting or transiting Hong Kong are also now subject to the territory's unpredictable and opaque law enforcement.

As Hong Kongers must now contend with the government's authoritarian policies, U.S. companies, investors, travelers, and students who once relied on Hong Kong's transparency, rule of law, and international culture no longer have a "safe haven" alternative to mainland China. Diminishing access to real-time and uncensored information, ambiguous legal interpretation, and selective enforcement of broad new laws increase risks of doing business for the 1,283 U.S. companies in the city.³⁰⁵ U.S. companies that have used Hong Kong as a gateway to mainland China are now vulnerable to financial and legal exposure. Contracts formed under Hong Kong's legal system are no longer reliable as the SAR's court system is now politicized and new rules can be introduced without regard to public consultation.

U.S. companies cannot count on a clear separation between matters of security and commerce or ensure protection against discriminatory treatment or disproportionate punishments. Both local and foreign employees of U.S. firms are now vulnerable to arrest under the National Security Law, potentially resulting in long prison sentences for what would be a minor offense in the United States. The Bickett case demonstrates that foreign citizens in Hong Kong, regardless of affiliation, nationality, and even relationship to the business community, are susceptible to punishments from the sweeping nature of the National Security Law. Foreign companies operating in Hong Kong may ultimately find it more difficult to hire foreign staff as more foreigners choose to leave the city. Local staff may also be hesitant to work alongside foreign colleagues due to the SAR government's broad interpretation of collusion with foreign forces.

Hong Kong's government is now more likely to adopt Mainland-style restrictions on movement, such as informal "exit bans" that prevent certain individuals or their relatives, including U.S. citizens, from leaving China.³⁰⁶ Hong Kong's new immigration bill has given the SAR the tools to impose a blanket ban on emigration for political dissidents. This development raises the specter of travel constraints similar to those of the former Soviet Union that could ensnare U.S. citizens or employees of U.S.-based businesses.

Foreign and local residents of Hong Kong face daily pressures to self-censor alongside increasingly restrictive constraints to information and communication. Authorities in Hong Kong can quickly and arbitrarily extinguish the city's remaining freedoms, such as when they implemented new film censorship rules. Blocking major social media sites could be an early indicator of moving toward more systematic internet censorship and restriction of digital communication. Such restrictions would impair the ability of Hong Kong's residents, including 85,000 U.S. citizens, from communicating with those outside the city and potentially prevent U.S. businesses from reaching their customers in Hong Kong.³⁰⁷ The Hong Kong government could also ban programs like virtual private networks, leaving U.S. citizens in Hong Kong without a means of accessing the internet safely and without censorship.

China's imposition of its government extremism in Hong Kong imperils the future of democracy in the region more broadly. With its robust free market and democratic spirit, Hong Kong was once viewed as a model for a broader shift in China and the region toward free and open societies and markets. The Mainland's destruction of Hong Kong's freedom and autonomy attests not only to the dim prospects for moderation of the political system in China, but also to the prospects of other democratic societies Beijing has pledged to bring under its control, such as Taiwan. The CCP's violent response toward mass protests against its actions and violation of its legal obligation to protect Hong Kong's freedoms reflects the Party's determination to stamp out any opposition it perceives as threatening its interests and political control. Beijing's disregard for its international obligations is a disturbing precedent, signaling to other countries that the rules-based order is unreliable and that authoritarians can crack down on their populations at any time.

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COMPREHENSIVE LIST OF THE COMMISSION'S RECOMMENDATIONS

Chapter 1: U.S.-China Global Competition

Section 1: The Chinese Communist Party's Ambitions and Challenges at Its Centennial

The Commission recommends:

1. Congress hold hearings including Administration witnesses to explore the advisability of forming an economic defense coalition with allies and partners. The object of such a coalition would be to provide mutual support in the event of economic coercion by the People's Republic of China (PRC) against a coalition member. Such support could include:
 - Commitments not to seek, at the expense of the coerced party, market share created by China's action;
 - Formal complaints to the World Trade Organization (WTO);
 - Assistance to the coerced party to reduce its incentive to comply with Chinese demands; and
 - Imposition of retaliatory measures against China in support of the coerced party.
2. Congress direct U.S. Customs and Border Protection to initiate action to impose a region-wide Withhold Release Order on products originating from Xinjiang, China. In addition, Congress should require the U.S. Department of Homeland Security to provide a comprehensive list of technologies needed and an outline of the resources required to enforce the Withhold Release Order and address other instances of China's use of forced labor.

Section 2: China's Influence in Latin America and the Caribbean

The Commission recommends:

3. Congress recognize that Chinese economic, diplomatic, and security initiatives in Latin America and the Caribbean are robust and growing and demand a comprehensive response. Steps Congress should consider include:
 - Strengthening U.S. competitiveness in building out Latin American and Caribbean infrastructure through the expansion of funding mechanisms, including but not limited to low-interest loans from U.S. lending institutions to U.S. companies willing to invest in targeted critical infrastructure projects in high-priority Latin American and Caribbean countries;

- Supporting the deployment of novel coronavirus (COVID-19) vaccines in Latin American and Caribbean countries, including by requiring a public report issued by the U.S. Department of State every six months outlining vaccine deployment to countries in the region; and
 - Expanding educational exchanges between the United States and Latin America and the Caribbean, including by expanding partnership agreements between U.S. universities and higher education institutions in Latin American and Caribbean countries.
4. Congress support Latin American and Caribbean countries in the establishment of inbound foreign investment review processes for sectors critical to national security and economic security by doing the following:
- Expanding the support given by the U.S. government to governments of U.S. allied and partner countries to establish inbound foreign investment review processes similar to those of the Committee on Foreign Investment in the United States (CFIUS) established in the Foreign Investment Risk Review Modernization Act within Title XVII of the National Defense Authorization Act for Fiscal Year 2019. Support for these governments will expand upon existing information exchange processes to include provision of technical assistance and personnel training.
 - Requiring the U.S. Department of State, in conjunction with CFIUS, to provide an annual report to Congress for three consecutive years after enactment of this provision. The report shall outline the progress and outcomes of its engagement with Latin American and Caribbean countries to establish their own inbound foreign investment review processes.
5. Congress require the director of national intelligence, in conjunction with the U.S. Department of State and U.S. Department of Defense, to produce an unclassified report, including a classified annex, documenting Chinese investment in port infrastructure in the Western Hemisphere and detailing any known Chinese interest in establishing a military presence at or near these ports. The report should include an assessment of China's current and potential future ability to leverage commercial ports for military purposes and the implications for the United States.
6. Congress enact legislation directing the U.S. Development Finance Corporation, U.S. Agency for International Development, U.S. Trade and Development Agency, Millennium Challenge Corporation, and other executive agencies responsible for disbursing foreign aid and development assistance to require within all aid-related applications mandatory disclosures on debt the applicant may owe to Chinese entities, including loan amounts, duration, rates, and contractual provisions.
7. Congress enact legislation requiring the U.S. government authorities identified in the Maritime Security and Fisheries

Enforcement (SAFE) Act within section 3544 of the National Defense Authorization Act for Fiscal Year 2020 to create a partnership with coastal Latin American states, similar to the Oceania Maritime Security Initiative and the Africa Maritime Law Enforcement Partnership. This partnership would assist coastal Latin American states in maritime domain awareness, with a particular focus on increasing partner countries' capacity to combat illegal, unreported, and unregulated fishing by Chinese vessels in the region.

Chapter 2: U.S.-China Economic and Trade Relations

Section 2: The Chinese Communist Party's Economic and Technological Ambitions: Synthetic Biology, New Mobility, Cloud Computing, and Digital Currency

The Commission recommends:

8. Congress direct the U.S. Department of Energy, in coordination with the National Institute of Standards and Technology and other relevant agencies, to produce a report and research plan outlining a project for the collection and sequencing of nonhuman genomic data, analogous to the Human Genome Project. Such a plan shall include:
 - A description of the types of nonhuman genomic data to be collected and sequenced;
 - An explanation of research value and commercial applications from collecting and sequencing such data;
 - The designation of an existing Department of Energy National Laboratory to coordinate the project and award grants to U.S. universities and private companies in furtherance of the project's goals;
 - A description of ethical considerations and processes for stakeholder engagement; and
 - Articulation of the National Institute of Standards and Technology's role to:
 - Codify technical standards related to the project;
 - Share and protect data collected during the project; and
 - Engage with the public and international partners on the project's findings.
9. Congress direct the National Institute of Standards and Technology, in coordination with the National Institutes of Health, the U.S. Patent and Trade Office, the Department of Energy, and the Department of State, to establish a model framework for the protection, collection, and commercialization of nonhuman genomic data. The framework should seek to establish principles on intellectual property rights for the countries of origin of the genomic data. This framework should also be used in international outreach regarding protection of national biotechnology assets and Chinese predatory collection of data.

10. Congress request a report from the Administration regarding data servicing operations owned by Chinese firms. Such a report shall include:
 - Whether such firms are operating in the United States, what laws and regulations may apply to such operations and services, and what cloud computing services are offered or provided to U.S. persons;
 - Whether Chinese cloud computing providers are engaged in any joint ventures or servicing arrangements with U.S. firms and the nature of such operations;
 - Whether consumers of these services have access to prominently identified information regarding the ownership of such cloud computing services;
 - Whether U.S. firms can operate freely in the People's Republic of China (PRC) and what, if any, restrictions might apply to their services and operations;
 - Where Chinese-owned firms may be providing equipment or services for the provision of cloud computing support in third-country markets and whether the market share of Chinese-owned firms in those markets may limit, in any way, the ability of U.S.-owned firms to operate independently of such operations; and
 - What support the Chinese government may be providing to cloud computing firms in terms of equipment and services that may act as a subsidy for such operations.
11. Congress consider legislation requiring that the U.S. Department of Transportation, in consultation with the U.S. Departments of Commerce, Energy, and Defense, and law enforcement authorities, develop regulations limiting access for Chinese-owned firms developing autonomous vehicle capabilities to protect U.S. national and economic security interests. In preparing such regulations, the authorities should consider the extent to which the Chinese government limits access of U.S. firms for similar uses. Specific attention should be given to data collection activities that may advance the interests of the Chinese military or intelligence agencies. In addition, such legislation shall address any need to protect the data utilized and collected by autonomous vehicles produced and/or serviced by Chinese-owned firms.
12. The committees of relevant jurisdiction in the House and Senate investigate and hold hearings with a view toward considering legislation on the operations of China's Blockchain-Based Service Network, with particular attention to its operations in the United States and participation of U.S. companies in building out the network. Such investigation should look at the goals of the network in developing blockchain infrastructure and whether the involvement of the Chinese government and Chinese state-owned entities may put at risk any U.S. economic and national security interests.
13. Congress consider legislation to create the authority to screen the offshoring of critical supply chains and production capabil-

ities to the PRC to protect U.S. national and economic security interests and to define the scope of such supply chains and production capabilities. This would include screening related outbound investment by U.S. entities. Such legislation would direct the secretaries of defense and commerce, along with the U.S. Trade Representative, to develop procedures to evaluate existing and proposed supply relationships with the PRC and identify whether critical U.S. interests are being adversely affected, including the loss of domestic production capacity and capabilities. The legislation would authorize the president to take appropriate action, including prohibiting supply relationships or certain transactions to protect U.S. national security.

Section 3: The Chinese Government's Evolving Control of the Nonstate Sector

The Commission recommends:

14. Congress direct the U.S. Securities and Exchange Commission to require that publicly traded U.S. companies with facilities in China report on an annual basis whether there is a Chinese Communist Party (CCP) committee in their operations and summarize the actions and corporate decisions in which such committees may have participated.
15. Congress direct the Bureau of Economic Analysis at the U.S. Department of Commerce to amend its surveys of U.S. multinational enterprise activity in China to report on the presence and actions of CCP committees in the foreign affiliates of U.S. firms operating in China.

Section 4: U.S.-China Financial Connectivity and Risks to U.S. National Security

The Commission recommends:

16. Congress consider comprehensive legislation to ensure Chinese entities sanctioned under one U.S. authority be automatically sanctioned under other authorities unless a waiver is granted by the president or the authority applying the initial sanction. This legislation should rationalize existing U.S. sanctions targeting adversarial Chinese entities to ensure, for example, Chinese firms placed on the Entity List and/or Military End User List of the U.S. Department of Commerce are also placed on the Non-Specially Designated Nationals (SDN) Chinese Military-Industrial Complex (NS-CMIC) Companies List and vice versa.
17. Congress enact legislation expanding the jurisdiction of existing U.S. investment restrictions targeting Chinese entities placed on the NS-CMIC Companies List as well as the scope of entities to be targeted by such restrictions. Such provisions should include:
 - Expanding the prohibitions relating to transactions and supporting work by U.S. persons in NS-CMIC securities covered by Executive Order 14032 to include the execution, support, or servicing of transactions by U.S. persons in any market or for any other person, including both U.S. and non-U.S. persons; and

- Providing additional resources to ensure that a more comprehensive list of entities engaged in supporting the Chinese military-industrial complex be published and that subsidiaries supporting such entities be included on the list. In identifying entities that should be evaluated for inclusion in such designations, authorities should include companies designated by Chinese securities issuing and trading entities as supporting the military-industrial complex.
18. Congress pass legislation that defines categories of Chinese persons, Chinese entities, and Chinese Communist Party (CCP)-related persons and entities subject to full blocking sanctions and inclusion on the U.S. Department of the Treasury's SDN list due to actions that harm the vital national interest or the national security of the United States or that constitute gross human rights violations.
 19. Congress consider comprehensive legislation to address risks to U.S. investors and U.S. interests from investments in Chinese equity, debt, and derivative instruments by:
 - Prospectively prohibiting investment in Variable Interest Entities (VIEs) linked to Chinese entities.
 - Absent prohibition, ensuring that the risks of investments in VIEs linked to Chinese entities are more prominently identified for investors, including that the VIE structure is illegal under Chinese law, and that taxpayer subsidies do not support investments in such entities. Provisions that should be considered in support of this goal include:
 - Requiring prominent identification of the potential high risk for investments in VIEs linked to Chinese companies by:
 - Identifying VIEs linked to Chinese companies as such in their stock trading symbols on U.S. exchanges.
 - Requiring that broker-dealers provide risk warning labels on the potential lack of legal recourse for investors for their investments in VIEs linked to Chinese entities.
 - Prohibiting preferential federal tax treatment on losses and gains on investments in VIEs linked to Chinese entities made after the passage of appropriate statutory provisions.
 - Directing the U.S. Securities and Exchange Commission (SEC) as part of its evaluation of potential guidance on reporting on environmental, social, and governance matters by publicly traded companies to require reporting of:
 - Sourcing and due diligence activities of such companies involving supply chains that are directly or indirectly linked to products and services utilizing forced labor from Xinjiang.
 - Transactions with companies that have been placed on the Department of Commerce's Entity List or those designated by Treasury as Chinese Military-Industrial Complex Companies.

- Requiring index providers that include within their indices securities issued on mainland Chinese exchanges or the Hong Kong Stock Exchange, securities of China-headquartered companies listed on U.S. exchanges through a VIE, or derivative instruments of either of the preceding types of securities, be subject to regulation by the SEC.
20. Congress ensure the effective implementation of the Export Control Reform Act of 2018 and the Foreign Investment Risk Review Modernization Act of 2018 by enacting legislation that:
- Creates a Technology Transfer Review Group (TTRG) within the Executive Office of the President responsible for identifying emerging and foundational technologies. The TTRG should be chaired by the secretary of defense and include the director of the Office of Science and Technology Policy along with Cabinet-level secretaries or their designees from the U.S. Departments of Commerce, Energy, and Homeland Security.
 - Authorizes the TTRG to direct the Department of Commerce’s Bureau of Industry and Security to implement export controls following the identification of these technologies.
 - Authorizes and requires the TTRG to oversee multilateral engagement related to export controls, foreign investment screening, and regulations over technology transfer by relevant agencies to ensure that such engagement does not undermine U.S. national and economic security interests.
 - Require that additional resources be provided to improve and expand end-user verification of export controls. Export licenses to the following entities should receive strict scrutiny: end-users identified as Chinese Communist Military Companies per section 1237 of the National Defense Authorization Act for Fiscal Year 1999, those identified as contributors to China’s military-civilian fusion activities per section 1260H of the National Defense Authorization Act for Fiscal Year 2021, entities with direct and formal ties to the CCP or Chinese government, and entities identified by the U.S. Trade Representative, U.S. Department of Justice, and Federal Bureau of Investigation as being linked to efforts to steal or coerce the transfer of U.S. intellectual property. The inability to identify end-user facilities and, if identified, the lack of adequate and timely access to these facilities should strongly inform investigating officials and licensing officials.
 - Require that the TTRG engage with the Department of Justice, the Department of Commerce’s Bureau of Industry and Security, and other relevant agencies to align “deemed export” controls with engagement on knowledge transfer and expert recruitment strategies such as the 1,000 Talents Program as well as investigations of the CCP’s United Front Work Department and other entities and programs of the CCP designed to acquire U.S. technology and capabilities.

21. Congress mandate from Treasury an annual update of the accurate U.S. portfolio investment position in China since 2008, including money routed through offshore centers, such as the Cayman Islands. This should include exposure for:
- Individual Chinese sectors;
 - U.S. institution types, such as state pension funds;
 - Sanctioned Chinese entities (Entity List, NS-CMIC List, and others);
 - Individual Chinese recipients who receive more than a minimum amount, such as \$100 million; and
 - Individual U.S. investors with more than a minimum share of the total, such as 2 percent.

Chapter 3: U.S.-China Security, Politics, and Foreign Affairs

Section 2: China's Nuclear Forces: Moving beyond a Minimal Deterrent

The Commission recommends:

22. Congress direct the Administration to conduct an interagency review of any Chinese universities that maintain research or training arrangements with China's nuclear weapons research institutes, such as the Chinese Academy of Engineering Physics and the Northwest Institute of Nuclear Technology. The review should be led by the U.S. Department of Energy and include the U.S. Departments of Commerce, Treasury, and Defense; the Intelligence Community; and other federal departments and agencies as appropriate. The review would:
- Assess the impact of such cooperation on China's nuclear weapons programs and capabilities;
 - Assess whether current U.S. export controls adequately address risks from the transfer and exchange of information and technologies with applications to nuclear research, particularly by researchers and departments in relevant academic disciplines at U.S. universities to these Chinese universities;
 - Identify Chinese universities and research institutes that should be added to the Entity List, based on the risks posed by their cooperation with the Chinese Academy of Engineering Physics, Northwest Institute of Nuclear Technology, and other Chinese institutions involved in nuclear weapons development, as appropriate;
 - Identify Chinese universities and research institutes that merit a presumption of denial for all export licenses involving items covered by the Export Administration Regulations; and
 - Develop and maintain a list of all academic partnerships in fields with applications to nuclear weapons development entered into between Chinese universities and U.S. universities that receive federal funding for the purpose of determining whether these activities are subject to export controls.

23. Congress prevent the erosion of U.S. strategic nuclear superiority and respond to China's qualitative and quantitative theater nuclear advantages by directing the Administration to continue implementation of the Obama-Trump Program of Record for nuclear modernization.
24. Congress enact legislation creating an independent bipartisan commission, similar to the Quadrennial Defense Review commissions authorized in the past, to assess the Nuclear Posture Review and advise Congress about whether the current U.S. nuclear posture is sufficient to maintain deterrence against the expanding Chinese and Russian nuclear forces. The Commission should:
 - Determine how Russian and Chinese nuclear capabilities have changed between 2010 and 2022;
 - Evaluate whether the current number of U.S.-deployed strategic weapons is sufficient to deter both Russia and China over the next 20 years; and
 - Identify any further changes required to U.S. force posture, doctrine, and missile defense.
25. Congress authorize funding for a comprehensive diplomatic strategy on nuclear deterrence and arms control. This comprehensive program would include:
 - Intelligence diplomacy with key allies and partners in the Indo-Pacific and in Europe to inform them of developments in China's nuclear forces;
 - Dialogue to convince these allies and partners to pressure Beijing diplomatically to enter into arms control talks and to explore these partners' willingness to host U.S. intermediate-range forces and other U.S. assets; and
 - Continued efforts to engage both Russia and China in trilateral arms control talks, including by continuing efforts with Russia to persuade China to enter into arms control discussions.

Chapter 4: A Dangerous Period for Cross-Strait Deterrence: Chinese Military Capabilities and Decision-Making for a War over Taiwan

The Commission recommends:

26. Congress enhance Taiwan's ability to purchase U.S. defense articles and accelerate the process for their sale and delivery to Taiwan by:
 - Authorizing and appropriating on a multiyear basis Foreign Military Financing Program funds for Taiwan to purchase defense articles from the United States and allowing Taiwan to use Foreign Military Financing funds to purchase arms through direct commercial contracts;
 - Amending the Foreign Assistance Act to make Taiwan eligible to receive priority delivery of U.S. excess defense articles; and

- Directing the Administration to use the Special Defense Acquisition Fund to reduce defense procurement lead times for arms sales to Taiwan by pre-stocking defense articles needed to maintain cross-Strait deterrence.
27. Congress take urgent measures to strengthen the credibility of U.S. military deterrence in the near term and to maintain the ability of the United States to uphold its obligations established in the Taiwan Relations Act to resist any resort to force that would jeopardize the security of Taiwan, including:
- Authorizing and funding the deployment of large numbers of antiship cruise and ballistic missiles in the Indo-Pacific;
 - Authorizing and funding the requests of U.S. Indo-Pacific Command (INDOPACOM) for better and more survivable intelligence, surveillance, and reconnaissance in the East and South China Seas;
 - Authorizing and funding the requests of INDOPACOM for hardening U.S. bases in the region, including robust missile defense;
 - Authorizing and funding the stockpiling of large numbers of precision munitions in the Indo-Pacific; and
 - Authorizing and funding programs that enable U.S. forces to continue operations in the event central command and control is disrupted.

Chapter 5: Hong Kong's Government Embraces Authoritarianism

The Commission recommends:

28. Congress amend the Hong Kong Autonomy Act to add to the contents of the annual report required by the act a determination of whether the Beijing-controlled Government of Hong Kong has violated freedom of emigration from Hong Kong. The report should assess whether the Government of Hong Kong has:
- Denied Hong Kong residents' right or opportunity to emigrate;
 - Imposed more than a nominal tax on emigration or on the visas or other documents required for emigration, for any purpose or cause whatsoever; or
 - Made emigration contingent on receiving official approval that is not practicably possible to obtain or is otherwise obstructed by authorities.
29. Congress amend section 421 of the U.S.-China Relations Act of 2000 to require the U.S. Trade Representative to include an assessment of Hong Kong's treatment as a separate customs territory in its annual report on China's compliance with commitments made in connection with its accession to the World Trade Organization (WTO). This additional section of the report should consider:

- Hong Kong’s compliance to its commitments under the WTO;
 - Whether mainland Chinese entities operating in Hong Kong are using the Special Administrative Region’s status as a transshipment hub to circumvent U.S. duties on China;
 - Whether Hong Kong “possesses full autonomy in the conduct of its external commercial relations” and if the United States should continue to recognize Hong Kong’s rights as a separate customs territory under the WTO pursuant to section 201 of the U.S.-Hong Kong Policy Act of 1992; and
 - Whether the United States should apply tariffs and all other trade treatment to Hong Kong equivalent to that of the People’s Republic of China (PRC). The U.S. Trade Representative should consult the secretary of state’s determination of Hong Kong’s autonomy when making this recommendation to the president.
30. Congress, in consideration of the plight of prodemocracy activists from the Hong Kong Special Administrative Region, should encourage the secretary of homeland security to exercise their authority under the Immigration and Nationality Act on the basis of both a “compelling emergency” and “urgent humanitarian reason[s]” to parole into the United States aliens who are residents of Hong Kong and who are applying for admission to the United States.
31. Congress require the U.S. Department of Justice and the U.S. Department of Commerce to collect information from U.S. companies operating in Hong Kong concerning requests from the Government of Hong Kong for content takedowns, access to data, and law enforcement assistance. The departments shall report their findings to Congress every 180 days specifying:
- The number of requests fulfilled and by which companies;
 - Where such requests involved user data; and
 - Which local laws the requests invoked.
32. Congress direct the Department of Justice to require media outlets operating in the United States that are majority owned by the Government of the PRC or the Government of Hong Kong to register under the Foreign Agents Registration Act. Congress should also direct the Department of State to determine whether such outlets qualify as a foreign mission of the PRC.

ADDITIONAL VIEWS OF COMMISSIONER JEFFREY FIEDLER

JOINED BY COMMISSIONER MICHAEL R. WESSEL

The Trump Administration in its waning weeks hurriedly restricted U.S. investment in some Chinese military-related and surveillance companies. The Biden Administration rationalized the process and dropped some companies and added others. Thus, certain outbound investment was declared to endanger U.S. national security. Up to this point government policy had focused primarily on the dangers of trade and inbound Chinese investment.

Recognition that U.S. investment banks and institutional investors were endangering national security by investing in Chinese military-related and surveillance companies is a major step forward. These “sophisticated investors” cannot credibly claim they did not know, for instance, that AVIC Shenyang Aircraft Company is a primary producer of Chinese fighter jets, including its stealth aircraft. Among U.S. investors with a history of investment in the company are Blackrock, Charles Schwab Investment Management, Dimensional Fund Advisors, Goldman Sachs, J.P. Morgan Asset Management, Lazard Asset Management, Northern Trust, State Street Global Advisors, TIAA-CREF, and Vanguard.

Some argue these investments were not “illegal.” Until now, that was certainly true. One might be excused for thinking that a basic responsibility of American citizenship ought to be not to do anything to endanger U.S. troops. These investors handle trillions of dollars of U.S. workers pension funds and 401K accounts. Most workers have no idea where their retirement savings are invested. Public employee funds, though, fit into the category of “sophisticated investors” and should have done their due diligence on these investments.

China has been labeled by the U.S. government as a “strategic competitor” but is also being treated as a “potential adversary.” This Annual Report presents a lengthy treatment about a potential conflict between the United States and China over Taiwan. It also highlights the potential for conflict through miscalculation in the South China Sea and raises concerns about China’s nuclear weapons strategy. Our defense spending is increasingly focused on China as a threat. All of this makes restrictions on investments in Chinese military-related companies more important.

The Biden Administration Executive Order prohibits investment in only 24 publicly traded Chinese companies. Many more should be on the list. Why they are not is only known to the Department of Treasury, the agency primarily responsible for developing the list in the Executive Order Annex. Part of the problem may be that Treasury is viewing Chinese public companies through the lens of the U.S. corporate system rather than the hybrid authoritarian state capitalism that exists in China. It largely ignores the military-civil fusion concept that is a key factor in the success of China’s rapid military modernization. The downgrading of the role of the Department of Defense in the process may also be a factor.

As a methodology for adding military-related companies to the Executive Order, Treasury should look at the holdings of the over two dozen defense, military, and national security related Exchange Traded Funds (ETFs) that exist in China. These contain at least 300 publicly traded companies that Chinese investment managers self-define as involved in these sectors and likely are not the full universe of companies of concern. The companies represent differing levels of risk to U.S. national security, but risk nonetheless.

In these ETFs one finds, for example, North Industries Group Red Arrow Co., Ltd which lists on the Shenzhen Stock Exchange. A description of its business in a U.S. investment information service states: “The company offers caliber shells, rockets, missiles, submunitions, super hard materials, aircraft parts, anti-terrorism and anti-riot products...” It is owned 17.96% by China North Industries Group Corporation (NORINCO) and 12.62% by North Industries Group Investment Management Company Limited, the former of which is listed on the Executive Order Annex. The next largest investor (a Chinese company) holds 4.9%. If one thinks that because NORINCO entities own less than 50% of the outstanding shares they are not in a control position, then one doesn’t understand how the Chinese corporate system works. The Vanguard Group and Franklin Resources have invested in Red Arrow.

Another example of a company missing from the Executive Order Annex but found in military-related ETFs is North Electro-Optic Co., Ltd, also traded on the Shenzhen Stock Exchange and owned 36.28% by NORINCO and 22.98% by North Industries Group Investment Management. North Electro-Optic “researches, develops, produces and sells optical weapons and equipment in China and internationally.” The Vanguard Group owns shares in the company.

That these and many other companies were missed by the Department of Treasury is baffling. This year’s report recommends that Congress address this issue.

The Biden Administration Executive Order contains a major loophole that Congress should close. It is to be found in the Department of Treasury Frequently Asked Questions 902 issued on June 3, 2021 along with the updated and revised Executive Order: “U.S. persons are not prohibited from providing investment advisory, investment management, or similar services to a non-U.S. person, including a foreign entity or foreign fund, in connection with the non-U.S. person’s purchase or sale of a covered security, provided that the underlying purchase or sale would not otherwise violate E.O. 13959, as amended. For example, a U.S. individual acting as the fund manager for a non-U.S. investment fund, or a U.S. entity that is the investment adviser or investment manager for a non-U.S. investment fund, is not prohibited from advising on, authorizing, directing, or approving purchases or sales of covered securities by the non-U.S. investment fund, provided that the underlying purchase or sale would not otherwise violate E.O. 13959, as amended (e.g., neither the purchase nor sale of the covered security is for the ultimate benefit of a U.S. person, the purchase or sale is not a willful attempt to evade the prohibitions of E.O. 13959, as amended, etc.)...”

In plain language, U.S. investment banks and institutional investors can still buy, sell and profit off of Chinese military-related

companies as long as they are not doing so in the United States and only involve non-U.S. citizens. If we are really interested in protecting U.S. national security rather than simply appearing to, this loophole should be closed as the Commission recommends.

ADDITIONAL VIEWS OF COMMISSIONERS ROY D. KAMPHAUSEN, DEREK SCISSORS, AND ROBIN CLEVELAND

We share the unanimous view of this year's Annual Report that competition with China will be a defining characteristic of America's strategic environment for years to come. Following the conclusions of the 2020 Report, we concur that the People's Republic of China (PRC) has been engaged in one form or another of this competition with the United States since the founding of the PRC. Today, the stakes are much higher because China's capabilities are so much greater.

There is no single policy solution that will win the day. Rather, this competition will be a generation-long effort, won on the basis of steady decision making and enduring fortitude in the face of PRC aggression and pressure.

If the U.S. is to wage competition successfully, using all the tools available will advance and secure a more competitive America. This approach is variously referred to as a "whole of government" effort, or one which employs all the elements of national power—diplomatic, informational, military and economic.

To be concluded, sustained and successful, trade agreements must serve more than global interests. They must work for the domestic economies they represent. In recent years, negotiating good deals that serve domestic constituencies has proven difficult, in the process eroding public confidence in the value of trade agreements.

The perspective we have had a series of "bad" deals has evolved into opposition to any multilateral or bilateral trade agreements. A key factor in increased opposition to trade agreements is linked to the original deal the U.S. made with China. Despite initial expectations and benefits, China's accession to the WTO has harmed the U.S. in multiple ways. Giving up on trade agreements altogether in response would be allowing China to harm the U.S. once again.

This year's Annual Report does not mention trade agreements. Failure to raise the topic of trade agreements, within the context of strategic competition with China, overlooks or disregards a key tool available to the country and the Congress.

Recently, both China and Taiwan have applied to join the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) negotiated amongst some of America's most important economic and security partners including Japan, Canada, and Mexico. The fact that the PRC has applied for membership to the CPTPP likely underscores the CCP's understanding about the comprehensive nature of strategic competition.

The failure to hold China accountable in the WTO for its original and ongoing commitments along with the problems of the 2015 Trans-Pacific Partnership underscore the challenges to any future trade negotiations.

Thus, we are not making a case for the U.S. to apply to the CPTPP. We are encouraging recognition of trade tools and negotiation of bilateral and multilateral trade agreements as an imperative serving our national security and economic interests. The Commission's silence this year on trade agreements reflects general concerns about

prior ineffective policies and mistakes. To abandon the tool altogether going forward would be an even more costly mistake. To prevail in America's strategic competition with China requires the Administration and Congress join in this understanding and pursue a more active role in global trade.

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, 2021. She previously served as the Commission's Chairman for four report cycles and served as Vice Chairman for six report cycles.

Chairman Bartholomew has worked at senior levels in the U.S. Congress, serving as a long-time counsel, legislative director, and chief of staff to now House Speaker Nancy Pelosi. She was a professional staff member on the House Permanent Select Committee on Intelligence and also served as a legislative assistant to then U.S. Representative Bill Richardson.

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 issues related to trade, human rights, and the proliferation of weapons of mass destruction. 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, human rights, U.S. foreign assistance programs, appropriations, and international environmental issues. She has been a consultant to non-profit organizations and serves on the board of Radio Free Asia and the Committee for Freedom in Hong Kong. From 2007 to 2020 she was a director 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 Robin Cleveland was reappointed by Senate Republican Leader Mitch McConnell for a two-year term expiring December 31, 2022. After three decades of government service, Vice Chairman Cleveland received her PhD in Counseling and is now in private practice. Previously, she served as the Executive Director of the Office of Student Life at the Graduate School of Education and Human Development at The George Washington University. Vice

Chairman Cleveland worked for U.S. Senator Mitch McConnell in a number of positions in his personal office, on the Senate Select Committee on Intelligence, the Senate Foreign Relations Committee, and the Senate Appropriations Committee. In addition, Vice Chairman Cleveland served as the Counselor to the President of the World Bank, and as the Associate Director of the Office of Management and Budget in the Executive Office of the President. During her tenure serving President Bush, Vice Chairman Cleveland co-led the interagency effort to develop and implement two Presidential initiatives: the Millennium Challenge Corporation and the President's Emergency Plan for AIDS Relief. These efforts reflect her commitment to link policy, performance, and resource management.

Vice Chairman Cleveland graduated from Wesleyan University with honors and received her Masters and PhD in Counseling from The George Washington University.

Bob Borochoff

Commissioner Bob Borochoff is a successful Texas businessman and community/political leader with over four decades of creating, operating and consulting with small businesses. As Chairman and CEO of The Borochoff Group, Inc., he has owned and managed restaurants, special events and catering ventures providing outstanding food, entertainment and logistical arrangements for major events. The Borochoff Group provides a myriad of services for the restaurant industry, including real estate consulting, marketing, strategy development, concept design, management and operational services. Borochoff serves as a Commissioner on the Texas Finance Commission, which oversees and coordinates the three government departments responsible for the state's financial services industry, including banking, savings and loans, and consumer credit. He is a member of the Board of Directors of the Greater Houston Partnership, currently serves on the Public Policy Steering Committee, and for ten years was a member of the Executive Committee for one of the nation's largest Chambers of Commerce. He is an emeritus member of the Board of the National Restaurant Association, having served 37 years in its Leadership. His volunteer community service also includes serving as a past Vice-Chairman of the Mental Health Mental Retardation Authority of Harris County, Texas. He and his wife, Jane, have three children and reside in Houston, Texas. Commissioner Borochoff was appointed by House Republican Leader Kevin McCarthy for a term expiring December 31, 2021.

Jeffrey Fiedler

Commissioner Jeffrey Fiedler was reappointed to the Commission by House Democratic Leader Nancy Pelosi for a term expiring December 31, 2022. He is the retired National Strategic Retail 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 BA in Political Science from Southern Illinois University. He is married with two adult children and resides in California.

Kimberly T. Glas

Commissioner Glas was appointed by Senate Majority Leader Chuck Schumer for a term expiring December 31, 2022. She joined the National Council of Textile Organizations (NCTO) in May 2019 as President and CEO. She has more than 20 years of experience in government policy development and advocacy. Her multi-faceted career includes spearheading manufacturing and trade policy efforts on Capitol Hill, serving as a key leader on behalf of the textile, consumer goods, and building material industries in the Obama Administration, and leading a non-profit organization working to advance critical policies to grow quality, U.S. jobs in the clean energy economy.

Most recently she served as Executive Director of the BlueGreen Alliance, a non-profit partnership of labor unions and environmental organizations. In that capacity, she led an organization that works to advance policies to help achieve a stronger economy and a more sustainable future at the intersection of energy, the environment and trade.

Before leading the BlueGreen Alliance, Commissioner Glas served as the Deputy Assistant Secretary for Textiles, Consumer Goods, and Materials at the U.S. Department of Commerce. In that role, she worked to improve the domestic and international competitiveness of the broad product range of U.S. industries. She also served as the chairman for the Committee for the Implementation of Textile Agreements, which supervises the negotiation and implementation of textile and apparel agreements.

Commissioner Glas served for a decade on Capitol Hill working extensively on manufacturing, trade, and economic policy issues for Congressman Michael H. Michaud from Maine and Congressman John J. LaFalce from New York. As Deputy Chief of Staff and Legislative Director for Congressman Michaud, she led efforts to establish the House Trade Working Group, a key coalition of Members of Congress that works extensively on trade policy and domestic competitiveness issues to this day.

Ms. Glas earned a B.A. in History and graduated summa cum laude from the State University of New York at Geneseo.

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 on December 31, 2021.

He is an attorney with the law firm of 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 CivicPoint, the firm's government affairs subsidiary. Goodwin's practice includes litigation and appellate advocacy, and advising clients on government relations, regulatory matters and commercial transactions. Goodwin recently completed his term as President of the West Virginia Bar Association and has served as Chair of the West Virginia Bar's Appellate Committee since 2018.

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, 2021. He is President of The National Bureau of Asian

Research (NBR). He 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 its most recent volume, *The People of the PLA, 2.0* (2021); and the IP Commission's *Report on the Theft of American Intellectual Property* (2013, 2017, 2019). His areas of expertise include China's People's Liberation Army, U.S.-China defense relations, East Asian security issues, innovation, and intellectual property protection. He has presented on these topics throughout the United States, Asia, and Europe to government and corporate decision-makers. Mr. Kamphausen is frequently cited in U.S. and international media, including CNN, the *Financial Times*, *Foreign Policy*, National Public Radio, *Newsweek*, and the *New York Times*.

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. He is a member of the National Committee on U.S.-China Relations.

Derek Scissors

Commissioner Scissors is a resident scholar at the American Enterprise Institute (AEI), where he focuses on the Chinese and Indian economies and on U.S. economic relations with Asia. He is concurrently chief economist of the China Beige Book. Dr. Scissors is the author of the China Global Investment Tracker. Starting in late 2008, he authored a series of papers that chronicled the end of pro-market Chinese reform and predicted economic stagnation in China as a result. He has also written multiple papers on the best course for Indian economic development. Before joining AEI, Dr. Scissors was a senior research fellow in the Asian Studies Center at the Heritage Foundation and an adjunct professor of economics at George Washington University. He has worked for London-based Intelligence Research Ltd., taught economics at Lingnan University in Hong Kong, and briefly served as an action officer in international economics and energy for the U.S. Department of Defense. Dr. Scissors has a bachelor's degree from the University of Michigan, a master's degree from the University of Chicago, and a doctorate from Stanford University.

Commissioner Scissors was appointed by House Republican Leader Kevin McCarthy for a term expiring December 31, 2022.

The Honorable James M. Talent

Senator Jim Talent was appointed by Senate Republican Leader Mitch McConnell for a two-year term expiring December 31, 2021. 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 bipartisan 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 and served on the Defense Policy Board in the years 2017–2020.

Since he left the Senate, Senator Talent has been associated with the Heritage Foundation, the American Enterprise Institute, and the Bipartisan Policy Center. He is currently the Chairman of the National Leadership Council for the Reagan Institute.

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, 2022.

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.

Alex Wong

Commissioner Wong is a senior fellow at the Hudson Institute. His research spans U.S. national security policy and foreign affairs, with a particular focus on U.S. strategy in the Indo-Pacific region and the future of the Korean Peninsula.

Mr. Wong most recently served as the Deputy Special Representative for North Korea and the Deputy Assistant Secretary for North Korea at the U.S. Department of State. In that position, he was the No. 2 negotiator in denuclearization talks with North Korea and guided the U.S.-led international pressure campaign.

Previously, Mr. Wong led the State Department's efforts to implement the Free and Open Indo-Pacific Strategy as the Deputy Assistant Secretary for Regional and Security Affairs in the State Department's East Asia bureau. In 2020, Mr. Wong was unanimously approved by the Senate Foreign Relations Committee to be the U.S. Ambassador for Special Political Affairs at the United Nations, a position in which he would have represented the United States on all matters before the UN Security Council.

Prior to his most recent stint at the State Department, Mr. Wong was the Foreign Policy Advisor and General Counsel to Senator Tom Cotton (R-AR) and the Foreign and Legal Policy Director for the Romney-Ryan 2012 presidential campaign.

Mr. Wong is a licensed attorney, spent years counseling Fortune 100 clients on international trade and governmental investigations matters, and began his legal career as a clerk for the honorable Janice Rogers Brown of the United States Court of Appeals for the District of Columbia Circuit.

Mr. Wong graduated summa cum laude from the University of Pennsylvania and received his J.D. with high honors from Harvard Law School where he was the Managing Editor of the Harvard Law Review and an editor of the Harvard International Law Journal.

Commissioner Wong was appointed by House Republican Leader Kevin McCarthy for a term expiring December 31, 2021.

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 and 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 12 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.

**January 28, 2021: Public Hearing on
"U.S.-China Relations at the Chinese Communist Party's
Centennial"
Washington, DC**

Commissioners present: Carolyn Bartholomew, Chairman (Hearing Co-Chair); Bob Borochoff; Robin Cleveland, Vice Chairman; Hon. Carte P. Goodwin; Roy D. Kamphausen (Hearing Co-Chair); Hon. James M. Talent; Michael R. Wessel.

Witnesses: Robert Sutter, George Washington University; Mary Lovely, Syracuse University; Zack Cooper, American Enterprise Institute and Alliance for Securing Democracy; Sheena Chestnut Greitens, University of Texas at Austin; Yuen Yuen Ang, University of Michigan; M. Taylor Fravel, Massachusetts Institute of Technology; Jacqueline Deal, Long Term Strategy Group; Daniel Rosen, Rhodium Group; Peter Jennings, Australian Strategic Policy Institute.

**February 18, 2021: Public Hearing on
"Deterring the PRC's Aggression toward Taiwan"
Washington, DC**

Commissioners present: Carolyn Bartholomew, Chairman; Bob Borochoff; Robin Cleveland, Vice Chairman; Jeffrey Fiedler; Hon. Carte P. Goodwin (Hearing Co-Chair); Roy D. Kamphausen; Derek Scissors; Hon. James M. Talent (Hearing Co-Chair); Michael R. Wessel; Alex Wong.

Witnesses: Lonnie Henley, Defense Intelligence Agency (retired) and George Washington University; Fiona Cunningham, George Washington University; Michael Hunzeker, George Mason University; Oriana Skylar Mastro, Stanford University and American Enterprise Institute; Kharis Templeman, Stanford University; Mark Cozad, RAND Corporation; Thomas Shugart, Center for a New American Society; Bonny Lin, RAND Corporation; David Keegan, Johns Hopkins University School of Advanced International Studies; Shelley Rigger,* Davidson College.

* Did not appear in person but submitted material for the record.

**March 19, 2021: Public Hearing on
“U.S. Investment in China’s Capital Markets and Military-
Industrial Complex”
Washington, DC**

Commissioners present: Carolyn Bartholomew, Chairman; Bob Borochoff (Hearing Co-Chair); Robin Cleveland, Vice Chairman; Jeffrey Fiedler (Hearing Co-Chair); Hon. Carte P. Goodwin; Roy D. Kamphausen; Derek Scissors; Hon. James M. Talent; Michael R. Wessel; Alex Wong.

Witnesses: Tamar Groswald Ozery, Harvard Law School; Meg Rithmire, Harvard Business School; Zachary Arnold, Center for Security and Emerging Technology; Anne Stevenson-Yang, J Capital Research; Johannes Petry, SCRIPTS Cluster of Excellence and Centre for the Study of Globalization and Regionalization; Teresa Kong, Matthews Asia; Adam Lysenko, Strider Technologies; Jason Arterburn, C4ADS; Nathan Picarsic, Horizon Advisory and Foundation for Defense of Democracies; Emily Weinstein, Center for Security and Emerging Technology; Nazak Nikakhtar, Wiley Rein LLP and formerly U.S. Department of Commerce, International Trade Administration; Perth Tolle, Life + Liberty Indexes; Ryan LaFond, Algert Global; Christopher Iacovella,* American Securities Association.

**April 15, 2021: Public Hearing on
“An Assessment of the CCP’s Economic Ambitions, Plans,
and Metrics of Success”
Washington, DC**

Commissioners present: Carolyn Bartholomew, Chairman; Bob Borochoff; Robin Cleveland, Vice Chairman (Hearing Co-Chair); Jeffrey Fiedler; Hon. Carte P. Goodwin; Roy D. Kamphausen; Derek Scissors; Hon. James M. Talent; Michael R. Wessel (Hearing Co-Chair); Alex Wong.

Witnesses: Matt Pottinger, Hoover Institution; Miles Yu, Hudson Institute and Hoover Institution; Loren Brandt, University of Toronto; Jude Blanchette, Center for Strategic and International Studies; Ling Chen, Johns Hopkins University School of Advanced International Studies; Nigel Cory, Information Technology and Innovation Foundation; Jason Kelly, Ginkgo Bioworks; Joanna Moody, Massachusetts Institute of Technology; Martin Chorzempa, Peterson Institute for International Economics; Yaya Fanusie, Center for a New American Security; Samantha Hoffman, Australian Strategic Policy Institute.

**May 20, 2021: Public Hearing on
“China in Latin America and the Caribbean”
Washington, DC**

Commissioners present: Carolyn Bartholomew, Chairman (Hearing Co-Chair); Bob Borochoff; Robin Cleveland, Vice Chairman; Jeffrey Fiedler; Kimberly T. Glas; Hon. Carte P. Goodwin; Roy D. Kamphausen; Derek Scissors (Hearing Co-Chair); Hon. James M. Talent; Michael R. Wessel, Alex Wong.

* Did not appear in person but submitted material for the record.

Witnesses: R. Evan Ellis, U.S. Army War College; Margaret Myers, Inter-American Dialogue; Ryan Berg, Center for Strategic and International Studies; Rebecca Ray, Boston University Global Development Policy Center; Mitch Hayes, *The China Signal* and *Mundo*; Francisco Urdinez, Pontificia Universidad Católica de Chile; Cynthia Watson, National War College; Thiago de Aragão, Arko Advice and Center for Strategic and International Studies; Rasheed Griffith, Tokamak Labs and *China in the Caribbean* podcast; Luis Rubio, México Evalúa; Oliver Della Costa Stuenkel, Fundação Getulio Vargas and Carnegie Endowment for International Peace.

**June 10, 2021: Public Hearing on
“China’s Nuclear Forces”
Washington, DC**

Commissioners present: Carolyn Bartholomew, Chairman; Bob Borochoff; Robin Cleveland, Vice Chairman; Jeffrey Fiedler (Hearing Co-Chair); Kimberly T. Glas; Roy D. Kamphausen; Derek Scissors; Hon. James M. Talent; Michael R. Wessel, Alex Wong (Hearing Co-Chair).

Witnesses: Hans Kristensen, Federation of American Scientists; Phillip Saunders, National Defense University; Mark Hibbs, Carnegie Endowment for International Peace; Christopher Twomey, Naval Postgraduate School; David Logan, Princeton University; Caitlin Talmadge, Georgetown University; Brad Roberts, Lawrence Livermore National Laboratory; Abraham Denmark, Woodrow Wilson International Center for Scholars; Valerie Lincy, Wisconsin Project on Nuclear Arms Control.

**September 8, 2021: Public Hearing on
“U.S.-China Relations in 2021: Emerging Risks”
Washington, DC**

Commissioners present: Carolyn Bartholomew, Chairman; Bob Borochoff; Robin Cleveland, Vice Chairman (Hearing Co-Chair); Jeffrey Fiedler; Kimberly T. Glas (Hearing Co-Chair); Hon. Carte P. Goodwin; Roy D. Kamphausen; Derek Scissors; Hon. James M. Talent; Michael R. Wessel; Alex Wong.

Witnesses: Michael Davis, Woodrow Wilson International Center for Scholars; Angeli Datt, Freedom House; Samuel Chu, Hong Kong Democracy Council; Maureen Thorson, Wiley Rein LLP; Dan Harris, Harris Bricken; Rebecca Fair, Thresher; Shaswat Das, King & Spalding; Jeremy Pelter, U.S. Department of Commerce, Bureau of Industry and Security; Kevin Wolf, Akin Gump; Giovanna Cinelli, George Mason University; David Hanke, George Mason University.

APPENDIX IIIA

**LIST OF WITNESSES TESTIFYING BEFORE
THE COMMISSION**

2021 Hearings

Full transcripts and written testimonies are available online at the Commission's website: www.uscc.gov .

**Alphabetical Listing of Witnesses Testifying before the
Commission**

Witness Name	Witness Affiliation	Commission Hearing
Ang, Yuen Yuen	University of Michigan	January 28, 2021
de Aragão, Thiago	Arko Advice and Center for Strategic and International Studies	May 20, 2021
Arnold, Zachary	Center for Security and Emerging Technology	March 19, 2021
Arterburn, Jason	C4ADS	March 19, 2021
Berg, Ryan	Center for Strategic and International Studies	May 20, 2021
Blanchette, Jude	Center for Strategic and International Studies	April 15, 2021
Brandt, Loren	University of Toronto	April 15, 2021
Chen, Ling	Johns Hopkins University School of Advanced International Studies	April 15, 2021
Chorzempa, Martin	Peterson Institute for International Economics	April 15, 2021
Chu, Samuel	Hong Kong Democracy Council	September 8, 2021
Cinelli, Giovanna	George Mason University	September 8, 2021
Cooper, Zack	American Enterprise Institute and Alliance for Securing Democracy	January 28, 2021
Cory, Nigel	Information Technology and Innovation Foundation	April 15, 2021
Cozad, Mark	RAND Corporation	February 18, 2021
Cunningham, Fiona	George Washington University	February 18, 2021

**Alphabetical Listing of Witnesses Testifying before the
Commission—Continued**

Witness Name	Witness Affiliation	Commission Hearing
Das, Shaswat	King & Spalding	September 8, 2021
Datt, Angeli	Freedom House	September 8, 2021
Davis, Michael	Woodrow Wilson International Center for Scholars	September 8, 2021
Deal, Jacqueline	Long Term Strategy Group	January 28, 2021
Denmark, Abraham	Woodrow Wilson International Center for Scholars	June 10, 2021
Ellis, R. Evan	U.S. Army War College	May 20, 2021
Fair, Rebecca	Thresher	September 8, 2021
Fanusie, Yaya	Center for a New American Security	April 15, 2021
Fravel, M. Taylor	Massachusetts Institute of Technology	January 28, 2021
Greitens, Sheena Chestnut	University of Texas at Austin	January 28, 2021
Griffith, Rasheed	Tokamak Labs and <i>China in the Caribbean</i> podcast	May 20, 2021
Hanke, David	George Mason University	September 8, 2021
Harris, Dan	Harris Bricken	September 8, 2021
Hayes, Mitch	<i>The China Signal</i> and <i>Mundo</i>	May 20, 2021
Henley, Lonnie	Defense Intelligence Agency (retired) and George Washington University	February 18, 2021
Hibbs, Mark	Carnegie Endowment for International Peace	June 10, 2021
Hoffman, Samantha	Australian Strategic Policy Institute	April 15, 2021
Hunzeker, Michael	George Mason University	February 18, 2021
Iacovella, Christopher*	American Securities Association	March 19, 2021
Jennings, Peter	Australian Strategic Policy Institute	January 28, 2021
Keegan, David	Johns Hopkins University School of Advanced International Studies	February 18, 2021
Kelly, Jason	Ginkgo Bioworks	April 15, 2021
Kong, Teresa	Matthews Asia	March 19, 2021
Kristensen, Hans	Federation of American Scientists	June 10, 2021
LaFond, Ryan	Algert Global	March 19, 2021

* Did not attend in person but submitted material for the record.

**Alphabetical Listing of Witnesses Testifying before the
Commission—Continued**

Witness Name	Witness Affiliation	Commission Hearing
Lin, Bonny	RAND Corporation	February 18, 2021
Lincy, Valerie	Wisconsin Project on Nuclear Arms Control	June 10, 2021
Logan, David	Princeton University	June 10, 2021
Lovely, Mary	Syracuse University	January 28, 2021
Lysenko, Adam	Strider Technologies	March 19, 2021
Mastro, Oriana Skylar	Stanford University and American Enterprise Institute	February 18, 2021
Moody, Joanna	Massachusetts Institute of Technology	April 15, 2021
Myers, Margaret	Inter-American Dialogue	May 20, 2021
Nikakhtar, Nazak	Wiley Rein LLP and formerly U.S. Department of Commerce, International Trade Administration	March 19, 2021
Ozery, Tamar Groswald	Harvard Law School	March 19, 2021
Pelter, Jeremy	U.S. Department of Commerce, Bureau of Industry and Security	September 8, 2021
Petry, Johannes	SCRIPTS Cluster of Excellence and Centre for the Study of Globalization and Regionalization	March 19, 2021
Picarsic, Nathan	Horizon Advisory and Foundation for Defense of Democracies	March 19, 2021
Pottinger, Matt	Hoover Institution	April 15, 2021
Ray, Rebecca	Boston University Global Development Policy Center	May 20, 2021
Rigger, Shelley*	Davidson College	February 18, 2021
Rithmire, Meg	Harvard Business School	March 19, 2021
Roberts, Brad	Lawrence Livermore National Laboratory	June 10, 2021
Rosen, Daniel	Rhodium Group	January 28, 2021
Rubio, Luis	México Evalúa	May 20, 2021
Saunders, Phillip	National Defense University	June 10, 2021
Shugart, Thomas	Center for a New American Security	February 18, 2021
Stevenson-Yang, Anne	J Capital Research	March 19, 2021

* Did not attend in person but submitted material for the record.

**Alphabetical Listing of Witnesses Testifying before the
Commission—Continued**

Witness Name	Witness Affiliation	Commission Hearing
Stuenkel, Oliver Della Costa	Fundação Getulio Vargas and Carnegie Endowment for International Peace	May 20, 2021
Sutter, Robert	George Washington University	January 28, 2021
Talmadge, Caitlin	Georgetown University	June 10, 2021
Templeman, Kharis	Stanford University	February 18, 2021
Thorson, Maureen	Wiley Rein LLP	September 8, 2021
Tolle, Perth	Life + Liberty Indexes	March 19, 2021
Twomey, Christopher	Naval Postgraduate School	June 10, 2021
Urdinez, Francisco	Pontificia Universidad Católica de Chile	May 20, 2021
Watson, Cynthia	National War College	May 20, 2021
Weinstein, Emily	Center for Security and Emerging Technology	March 19, 2021
Wolf, Kevin	Akin Gump	September 8, 2021
Yu, Miles	Hudson Institute and Hoover Institution	April 15, 2021

APPENDIX IV LIST OF RESEARCH MATERIAL

Contracted and Staff Research Reports Released in Support of the 2021 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. national 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 Corporate Social Credit System: Context, Competition, Technology and Geopolitics

Prepared for the Commission by Kendra Schaefer
Trivium China
December 2020

<https://www.uscc.gov/research/chinas-corporate-social-credit-system-context-competition-technology-and-geopolitics>

Two Markets, Two Resources: Documenting China's Engagement in Africa

Prepared for the Commission by Emily de La Bruyère and Nathan Picarsic
Horizon Advisory
November 2020

<https://www.uscc.gov/research/two-markets-two-resources-documenting-chinas-engagement-africa>

Staff Research Reports, Issue Briefs, and Backgrounders

Illicit Fentanyl from China: An Evolving Global Operation

Written by Congressional Fellow Lauren Greenwood and former
Congressional Fellow Kevin Fashola
August 2021

<https://www.uscc.gov/research/illicit-fentanyl-china-evolving-global-operation>

China-Iran Relations: A Limited but Enduring Strategic Partnership

Written by former Policy Analyst Will Green and Policy Analyst Taylore Roth

June 2021

<https://www.uscc.gov/research/china-iran-relations-limited-enduring-strategic-partnership>

Unfinished Business: Export Control and Foreign Investment Reforms

Written by Policy Analyst Emma Rafaelof

June 2021

<https://www.uscc.gov/research/unfinished-business-export-control-and-foreign-investment-reforms>

Chinese Companies Listed on Major U.S. Stock Exchanges

May 2021

<https://www.uscc.gov/research/chinese-companies-listed-major-us-stock-exchanges>

Timeline of Executive Actions on China (2017–2021)

April 2021

<https://www.uscc.gov/research/timeline-executive-actions-china-2017-2021>

China's Healthcare System: Addressing Capacity Shortfalls before and after COVID-19

Written by Policy Analyst Leyton Nelson

March 2021

<https://www.uscc.gov/research/chinas-healthcare-system-addressing-capacity-shortfalls-and-after-covid-19>

The Shanghai Cooperation Organization: A Testbed for Chinese Power Projection

Written by former Policy Analysts Matthew Southerland and Will Green, and Policy Analyst Sierra Janik

November 2020

<https://www.uscc.gov/research/shanghai-cooperation-organization-testbed-chinese-power-projection>

Economics and Trade Bulletins

Every month the Commission publishes an Economics and Trade Bulletin written by the Economics and Trade Staff. The Bulletins are accessible on the Commission's website at: <https://www.uscc.gov/trade-bulletins>.

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. There were no recusals by Commissioners from any portions of the 2021 Report cycle.

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 (<https://lobbyingdisclosure.house.gov/>) and Senate (<https://lda.senate.gov/system/public/>).

APPENDIX VI

ACRONYMS AND ABBREVIATIONS

AI	artificial intelligence
AmCham	American Chamber of Commerce
Ant	Ant Financial
ASEAN	Association of Southeast Asian Nations
ATP	advanced technology products
AUKUS	Australia, the United Kingdom, and the United States
AV	autonomous vehicle
AVIC	Aviation Industry Corporation of China
BIS	Bureau of Industry and Security (U.S. Department of Commerce)
BRI	Belt and Road Initiative
BSN	Blockchain-Based Service Network
CAC	Cyberspace Administration of China
CAI	Comprehensive Agreement on Investment
CASIC	China Aerospace Science Industry Group Corporation
CCMC	Communist Chinese Military Company
CCP	Chinese Communist Party
CCTV	China Central Television
CETC	China Electronics Technology Group Corporation
CFA	Court of Final Appeal
CFIUS	Committee on Foreign Investment in the United States
CHIPS	Clearing House Interbank Payments System
CMC	Central Military Commission
CMIC	Chinese Military-Industrial Complex
CNIPA	China National Intellectual Property Administration
COVID-19	novel coronavirus
CPTPP	Comprehensive and Progressive Agreement for Trans-Pacific Partnership
CSCS	corporate social credit system
Didi	Didi Chuxing
DOD	U.S. Department of Defense
ECRA	Export Control Reform Act
EEZ	exclusive economic zone
EO	executive order
ETF	exchange-traded fund
EU	European Union
FDI	foreign direct investment
FINI	Fast Interface for New Issuance

FIRRMA	Foreign Investment Risk Review Modernization Act
FYP	five-year plan
GDP	gross domestic product
GDPR	General Data Protection Regulation
HKD	Hong Kong dollar
HKEX	Hong Kong Stock Exchange
HKMA	Hong Kong Monetary Authority
HKPF	Hong Kong Police Force
HKSAR	Hong Kong Special Administrative Region
ICBM	intercontinental ballistic missile
ICT	information and communications technology
IEEPA	International Emergency Economic Powers Act
IFI	international financial institution
IMF	International Monetary Fund
INDOPACOM	Indo-Pacific Command
INF	Intermediate-Range Nuclear Forces
IPO	initial public offering
IRBM	intermediate-range ballistic missile
ISO	International Organization for Standardization
ISR	intelligence, surveillance, and reconnaissance
ITU	International Telecommunication Union
IUU	illegal, unreported, and unregulated
LegCo	Legislative Council (Hong Kong)
LGFV	local government finance vehicle
M&A	mergers and acquisitions
MaaS	mobility-as-a-service
MIRV	multiple independently targetable reentry vehicle
MRBM	medium-range ballistic missile
NC3	nuclear command, control, and communications
NDAA	National Defense Authorization Act
NEV	new energy vehicle
NGO	nongovernmental organization
nm	nautical mile
NPC	National People's Congress
NS-CMIC	Non-Specially Designated Nationals Chinese Military-Industrial Complex
ODC	Overall Defense Concept
OFAC	Office of Foreign Assets Control (U.S. Department of the Treasury)
PBOC	People's Bank of China
PCPD	Privacy Commissioner for Personal Data
PLA	People's Liberation Army
PPE	personal protective equipment
PRC	People's Republic of China
QFII	Qualified Foreign Institutional Investor
Quad	Quadrilateral Security Dialogue
R&D	research and development
RCEP	Regional Comprehensive Economic Partnership
RMB	renminbi
RORO	roll-on/roll-off
RTHK	Radio Television Hong Kong
SAM	surface-to-air missile

SAMR	State Administration for Market Regulation (China)
SAR	special administrative region
SARS-CoV-2	severe acute respiratory syndrome coronavirus 2, the virus that causes the novel coronavirus (COVID-19) disease
SDN	Specially Designated National
SEC	U.S. Securities and Exchange Commission
SFC	Securities and Futures Commission of Hong Kong
SLBM	submarine-launched ballistic missile
SME	small- and medium-sized enterprise
SOE	state-owned enterprise
SSBN	ballistic missile submarine
TRA	Taiwan Relations Act
TSMC	Taiwan Semiconductor Manufacturing Company
TTRG	Technology Transfer Review Group
UAE	United Arab Emirates
UK	United Kingdom
UN	United Nations
USD	U.S. dollar
VC	venture capital
VIE	variable interest entity
WHO	World Health Organization
WMD	weapons of mass destruction
WTO	World Trade Organization

2021 COMMISSION STAFF

DANIEL W. PECK, *Executive Director*

DANIEL BLAUGHER, *Research Assistant, Economics and Trade*
 JAMESON CUNNINGHAM, *Director, Congressional Affairs and Communications*
 ALEXIS DALE-HUANG, *Research Assistant, Security and Foreign Affairs*
 CHRISTOPHER P. FIORAVANTE, *Director of Operations and Administration*
 BENJAMIN B. FROHMAN, *Director, Security and Foreign Affairs*
 LAUREN GREENWOOD, *Congressional Fellow*
 CHARLES HORNE, *Director, Economics and Trade*
 SIERRA JANIK, *Policy Analyst, Security and Foreign Affairs*
 ANASTASYA LLOYD-DAMNJANOVIC, *Director of Research and Policy Analyst, Security and Foreign Affairs*
 KAJ MALDEN, *Policy Analyst, Economics and Trade*
 DIANA MOYSEOWICZ, *Operations Support Specialist*
 LEYTON NELSON, *Policy Analyst, Economics and Trade*
 EMMA RAFAELOF, *Policy Analyst, Economics and Trade*
 TAYLORE ROTH, *Policy Analyst, Economics and Trade*
 J. KIRT SMITH, *Policy Analyst, Security and Foreign Affairs*
 HOWARD WANG, *Policy Analyst, Security and Foreign Affairs*

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 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 congressional and administrative teams, which offer experienced and capable support ensuring the Commission's hearings, congressional engagement, and daily operations run smoothly.

Finally, the Commissioners express their thanks to former staff members Alexander Bowe, Kendra Brock, Erik Castillo, Lauren Costello, Kevin Fashola, and Will Green. The Commissioners are especially grateful to Nargiza Salidjanova for her many years of service (2005–2021) and her exceptional leadership of the Economics and Trade team (2015–2021).