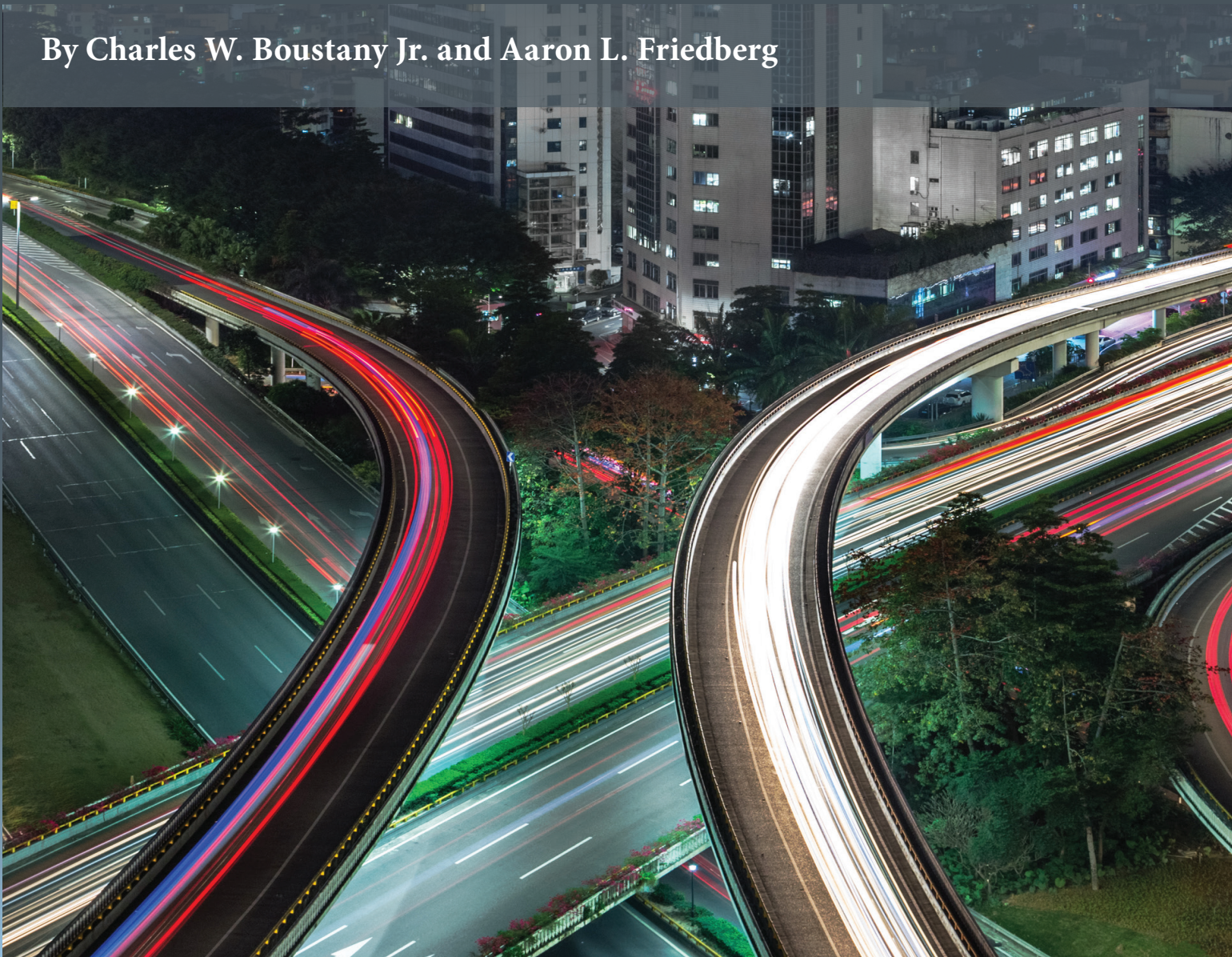


PARTIAL DISENGAGEMENT

A New U.S. Strategy for Economic Competition with China

By Charles W. Boustany Jr. and Aaron L. Friedberg



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PARTIAL DISENGAGEMENT
*A New U.S. Strategy for
Economic Competition with China*

Charles W. Boustany Jr. and Aaron L. Friedberg

The final report of
**THE TASKFORCE ON TRANSFORMING THE
ECONOMIC DIMENSION OF U.S. CHINA STRATEGY**

THE NATIONAL BUREAU *of* ASIAN RESEARCH

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For further information about NBR, contact:

The National Bureau of Asian Research
1414 NE 42nd Street, Suite 300
Seattle, Washington 98105

206-632-7370 Phone
206-632-7487 Fax
nbr@nbr.org E-mail
<http://www.nbr.org>

PARTIAL DISENGAGEMENT

A New U.S. Strategy for Economic Competition with China

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This is the second of two reports from a National Bureau of Asian Research (NBR) taskforce launched in May 2018 to re-examine the economic dimension of U.S. strategy toward China. Sponsored by a grant from the Sarah Scaife Foundation, the Taskforce on Transforming the Economic Dimension of U.S. China Strategy is a nonpartisan effort involving over a dozen specialists from a variety of disciplines and co-chaired by former congressman Charles Boustany Jr. of Louisiana and Professor Aaron Friedberg of Princeton University.

In its first report, published in February 2019, the taskforce described the very different U.S. and Chinese approaches to economic relations and explained how, with the passage of time, the pursuit of divergent objectives by the two powers helped lay the groundwork for the current confrontation. The report also assessed the prospects for a mutually satisfactory negotiated settlement of outstanding differences over trade and investment issues between Washington and Beijing.

At the time of writing in early November 2019, the first report’s generally pessimistic conclusions on this question appear to have been borne out by events. Despite the imposition of successive rounds of additional tariffs on an increasingly wide array of Chinese imports, the Trump administration has thus far been unable to coerce Beijing into accepting its most important demands.¹ Although the Chinese government has recently indicated a willingness to resume and expand purchases of U.S. agricultural products in return for a promise from Washington not to raise existing tariffs, it shows no sign of being willing to abandon its signature, market-distorting trade and industrial policies, including the widespread use of subsidies and the theft or coerced extraction of foreign technology and other intellectual property.²

While some kind of superficial, face-saving deal is still possible and perhaps even probable over the next twelve months, given the mounting costs of the current standoff for both sides, the likelihood of deep, meaningful Chinese concessions on these fundamental structural issues remains exceedingly low. Although Beijing may be willing to make modest adjustments that it regards as being in its interests (for example, by loosening restrictions on financial markets in order to encourage more foreign investment), for the most part the policies to which the United States and the other advanced industrial countries have long objected are deeply embedded in China’s mercantilist-Leninist system. As explained in the first report of the taskforce, these policies are “features” of that system rather than mere “bugs”; they are manifestations of the Chinese Communist Party (CCP) leadership’s belief that “its ability to exert control over the direction of the economy is essential to retaining the party’s grip on political power and eventually achieving its grand strategic objectives.”³

Existing policies also serve the pecuniary interests of influential groups and individuals in the party-state and in Chinese society more generally. At this point, Xi Jinping’s reputation for

¹ For background, see Chad P. Bown, “U.S.-China Trade War: The Guns of August,” Peterson Institute for International Economics, Trade and Investment Policy Watch, August 26, 2019, <https://www.piie.com/blogs/trade-and-investment-policy-watch/us-china-trade-war-guns-august>.

² William Mauldin, Chao Deng, and Vivian Salama, “U.S. and China Move Forward on Trade,” *Wall Street Journal*, October 12, 2019.

³ Charles W. Boustany Jr. and Aaron L. Friedberg, “Answering China’s Economic Challenge: Preserving Power, Enhancing Prosperity,” National Bureau of Asian Research (NBR), NBR Special Report, no. 76, February 2019, 26.

toughness, and perhaps his personal authority, may rest on his ability to resist what could be construed as humiliating concessions to U.S. pressure. “Matched against these powerful sources of resistance,” the taskforce’s first report concluded, “the United States acting alone may simply lack sufficient leverage to compel China to accede to Washington’s most important demands. Given the perceived stakes, combined with uncertainty in Beijing about the strength of the United States’ resolve...the CCP regime is highly unlikely to make meaningful concessions quickly or without exhausting every possible expedient.”⁴

Based on this assessment, the taskforce recommended in February that the Trump administration pursue a four-part approach: (1) maintaining pressure by not prematurely lifting the tariffs that had been imposed to that point, (2) altering its rhetoric so as to manage expectations of a quick and easy “great deal” and to help mobilize public support for a possibly protracted and difficult struggle, (3) attempting to build maximum aggregate leverage by coordinating with friends and allies to develop a common negotiating position toward China, and (4) intensifying defensive measures to protect against Chinese penetration and exploitation of the U.S. economy and the economies of other advanced industrial democracies.

We stand by these recommendations and, in particular, by the suggestion that the United States can increase the chances of defending its interests and achieving its desired aims by coordinating more closely with like-minded nations. The goal of inducing China to modify its predatory and discriminatory practices, adhering to the spirit as well as the letter of its commitments under various international treaties and participating in a truly open, reciprocal, and equitable global trading system, remains a worthy one. But attempting to achieve this goal cannot be the sole focus of U.S. policy for two reasons. First, as has already been suggested, China is simply unlikely to alter its course quickly or radically. After trying for several decades to persuade China to change through gentle exhortation and, more recently, the application of tougher coercive pressures, the United States will need to learn to better manage its interactions with a very large and still-growing country whose policies threaten future U.S. prosperity. Second, even if CCP-ruled China were to modify some of its more objectionable practices, so long as its domestic political regime remains unchanged, it will continue to pose a serious geopolitical and ideological, not just a purely economic, challenge to the United States. Indeed, it is conceivable that, in the long run, moderate reforms that liberalize the economy to a degree but leave the CCP firmly in control could make China a more capable and dangerous competitor than it would be if it remains on its present course.

With this complex set of challenges in mind, the taskforce has convened regularly over the last year and a half, consulting with experts on a wide range of issues and seeking to craft options for an effective U.S. strategy. This final report is the result of months of vigorous conversations and intensive research, and we hope that it will be useful for policymakers at this critical juncture in U.S.-China relations. While all members of the taskforce contributed greatly to the process of developing this report, the views it contains are those of the authors alone and do not necessarily reflect the opinions of other members of the taskforce or NBR.

⁴ Boustany and Friedberg, “Answering China’s Economic Challenge,” 26.

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Partial Disengagement: A New U.S. Strategy for Economic Competition with China

Charles W. Boustany Jr. and Aaron L. Friedberg

CHARLES W. BOUSTANY JR. is a Counselor at the National Bureau of Asian Research. He is Co-chair and a Principal Investigator of the Taskforce on Transforming the Economic Dimension of U.S. China Strategy. He can be reached at <tradecenter@nbr.org>.

AARON L. FRIEDBERG is Professor of Politics and International Affairs at Princeton University and a Counselor at the National Bureau of Asian Research. He is Co-chair and a Principal Investigator of the Taskforce on Transforming the Economic Dimension of U.S. China Strategy. He can be reached at <alf@princeton.edu>.

EXECUTIVE SUMMARY

This final report of the Taskforce on Transforming the Economic Dimension of U.S. China Strategy outlines a four-part strategy for an effective U.S. response to the economic challenges presented by China.

MAIN ARGUMENT

China has long followed a predatory approach to its economic relations with the U.S., deploying subsidies, tariffs, and non-tariff barriers while restricting investment in “strategic sectors” of its economy. Meanwhile, the U.S. has remained comparatively open to Chinese imports and investment. In the last two years, however, the environment has shifted rapidly, with the Trump administration using tariffs and other executive actions to try to compel China toward greater openness while simultaneously attempting to restrict Chinese investment in the U.S. economy, control technology transfer, and reduce reliance on some Chinese-made products. While tariffs are controversial, growing bipartisan concern about national security and economic risks posed by China has resulted in legislation that tightens investment screening and export control regulations. Although there appears to be widespread support for a tougher stance toward China, a clear and comprehensive strategy is still lacking.

POLICY IMPLICATIONS

This report recommends a four-part strategy for defending U.S. prosperity and security by moving toward a posture of partial economic disengagement from China:

- *Achieve a ceasefire in the current tariff war.* The U.S. should avoid a superficial deal that would relieve pressure on Beijing without extracting fundamental concessions. Instead, it should seek at least a temporary settlement that reduces costs to U.S. consumers and producers, while retaining restrictions on select Chinese imports.
- *Strengthen defensive measures to reduce vulnerabilities to surveillance, sabotage, or disruption and to slow diffusion of critical technologies to China.* This will require constricting the outward flows of some technology to China, while regulating the inward flows of some Chinese goods, capital, and people to the U.S.
- *Invest in innovation, technology, and education.* These investments must come from both public and private sources. Boosting public-sector investment will require addressing long-standing fiscal imbalances.
- *Strengthen trade and investment relationships, cooperation, and information sharing with close allies.* While continuing to seek reform of multilateral institutions, the U.S. should work with key allies to bolster a partial (as opposed to a global) open trading system. This system should be built on high-standard plurilateral trade agreements and common approaches to securing data and promoting economic development.

China's trade and industrial policies are an integral part of its overall grand strategy and, as such, they pose a threat to the security as well as the welfare of the United States and the other advanced industrial democracies. After briefly reviewing the origins of the economic challenge posed by China, this report from the Taskforce on Transforming the Economic Dimension of U.S. China Strategy will outline a comprehensive, four-part approach for responding to this challenge by moving toward a posture of partial disengagement from China. This strategy can be briefly summarized as follows:

First, while avoiding a superficial deal that would relieve pressure on Beijing without extracting fundamental concessions, Washington needs to adopt a policy on tariffs that will minimize harm to the U.S. economy and maximize domestic political support for what is likely to be a protracted struggle.

Second, regardless of what happens on the tariff front, the United States must step up defensive measures designed to reduce its vulnerability to subversion, sabotage, or coercion, while slowing outflows of technology to China. The effectiveness of these efforts will be greatly enhanced if they are undertaken in cooperation with the other advanced industrial democracies.

Third, in order to strengthen the nation's ability to sustain a long-term competition with China, the federal government needs to make substantial investments and initiate a set of policies designed to enhance innovation, fuel long-term economic growth, and ensure that the benefits of growth are shared more widely than has been the case in recent decades. Achieving these goals will require attaining a workable political consensus on the severity of the challenge posed by China and the best means of addressing it.

Fourth, without abandoning its efforts to reform existing multilateral institutions like the World Trade Organization, the United States must focus more narrowly on plurilateral efforts to strengthen the ties of trade, investment, consultation, and cooperation among its closest allies and major trading partners in Europe, Asia, and the Western Hemisphere. These are the nations with which the United States shares both interests and values and with which it must cooperate more closely in order to counter the challenge posed by China's growing wealth and power.

This four-part strategy for partial economic disengagement will address critical U.S. vulnerabilities, maximize U.S. strengths, and build leverage to address the challenges presented by China.

Origins of the Current Challenge

Today's economic relationship between the United States and China—with its characteristic flows of goods, capital, people, and information; complex supply chains; and distributed production networks—is the product of innumerable choices by firms and individual consumers, made over the past four decades, about where to invest, what to build and sell, and what to buy. Those choices, in turn, were made within a framework of economic policies put in place by both governments based on strategic calculations of national interest. If (as seems now to be happening) those calculations change, so too will the policies that rest on them and the patterns of trade and investment that they enable.

The United States and China entered into the process of economic engagement with different objectives and expectations, and they have sought to advance their interests and to pursue their goals by following very different strategies. As described in the first report, since the end of the

Cold War, successive U.S. administrations have hoped that engagement would help tame, and ultimately transform, China. Deepening ties of trade and investment with the United States and the rest of the world, it was hoped, would encourage the CCP regime to liberalize the Chinese economy and to become a “responsible stakeholder” in the existing international order, while setting in motion forces that would lead eventually to far-reaching political reforms.

Guided by these beliefs and expectations, the United States adopted an approach to engagement that concentrated on reducing its own barriers to economic exchange, encouraging China to do the same, and then for the most part standing back and letting market forces do the rest. From the early 1990s onward, both Democratic and Republican administrations took steps to open the U.S. market to imports from China, in the process creating conditions that encouraged many U.S. firms to establish production facilities there; accepted the widening bilateral trade deficits and welcomed the massive inflows of capital from China that resulted; promoted, or in any event did little to prevent, the transfer of technology and other intellectual property by U.S. companies to Chinese counterparts; and made it easier for Chinese students, researchers, executives, and entrepreneurs to live, work, study, own property, and invest in the United States.

If the United States engaged China in the hopes of transforming it, CCP leaders sought to grasp the benefits of engagement while containing what they saw as the insidious, and potentially deadly, dangers of transformation. In contrast to the generally laissez-faire policies preferred by the liberal democratic United States, China’s rulers have pursued a statist, mercantilist-Leninist approach that reflects their own distinctive ideology and governing philosophy. Although willing at times to grant a greater role to market forces, CCP leaders from Deng Xiaoping to Xi Jinping have always taken care to maintain a firm grip on the national economy and with it on the reins of political power. From the CCP’s perspective, the primary purpose of all economic activity, and thus the proper goal of economic policy, is to enhance the power of the party in relation to all other actors in Chinese society, while increasing China’s wealth and power with respect to those of all other nations in the international system.

When the Cold War ended and engagement began in earnest, policymakers in both Washington and Beijing believed that time was on their side. While they may not have been sure about the precise pace and extent of political reform, U.S. strategists were certain that the logic of economic development would drive China in favorable directions. For their part, while China’s rulers were no doubt anxious and uncertain in the wake of the Tiananmen Square massacre and the collapse of the Soviet Union, by the turn of the century they had become increasingly confident that their strategy of hiding capabilities, biding time, nurturing their economy, and building all the other implements of “comprehensive national power” was achieving its desired results.

Each side gambled that its strategy would succeed. At least for the moment, it is clear that Beijing has gotten the better half of that bet. China today is vastly richer and stronger than it was three decades ago, but it continues to be ruled by an oppressive authoritarian regime and to pursue market-distorting trade and industrial policies. Far from becoming a “responsible stakeholder” or a status quo power, the CCP regime is starting to express more openly its dissatisfaction with existing institutions and prevailing norms, and it has begun to behave in ways that are increasingly assertive and even aggressive. In contrast to the situation that prevailed 30 years ago, however, China is now deeply embedded in the global economy and, in particular, in the economies and societies of the United States and the other advanced industrial democracies.

The challenges that arise from this situation are a result of China's sheer size coupled with the character of its domestic political regime. The character of the CCP regime, in turn, is reflected both in the state-directed trade and industrial policies that it pursues and in the nature of its external ambitions and behavior. These factors, combined with the way in which the nation's current rulers perceive threats, define their goals, and pursue them, are what make China a danger to the security, autonomy, and potentially even to the survival of the United States and the other market-based democracies. In sum, it is not the mere fact of China's economic growth but rather the manner in which it is being pursued, and the uses to which the resources that such growth generates are being put, that make the country a threat.

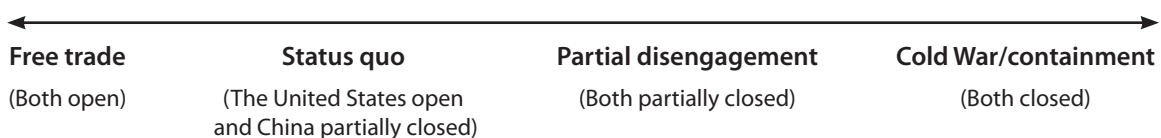
A Strategy for Partial Disengagement

China has been following what can perhaps best be described as a predatory approach to its economic relations with the United States and the other advanced industrial democracies. It has exploited their openness to propel its growth, while carefully controlling and, in certain respects, constricting their access to the Chinese economy. Beijing has already begun a process of distancing itself economically from the United States. Having long prohibited U.S. and other Western companies from participating in broadly defined "strategic sectors" of its economy, China has also restricted procurement of telecommunications and other equipment from non-Chinese sources and intensified its pursuit of "indigenous innovation" and greater "self-reliance" in high-tech sectors. Through the Belt and Road Initiative, among other measures, Chinese economic planners hope to develop alternative sources of demand in the developing world that can help absorb the nation's exports and reduce its dependence on the U.S. market.

The CCP regime views economic relations not as a win-win game, in which all participants benefit by increasing their welfare in absolute terms, but as part of a larger struggle for power in which some must gain relative to others. In keeping with its mercantilist-Leninist principles, Beijing has sought wealth in order to enhance the power of the party and the nation. With increasing assertiveness, it is now attempting to use this power to reshape economic relations in ways that will enable the further expansion of China's wealth relative to that of the United States, and thus the continuing accumulation of its national power.

Putting aside for the moment the complexities of their relationships to the rest of the global economy, **Figure 1** presents a simplified way of visualizing the possible state of economic relations between the United States and China.

FIGURE 1 U.S.-China economic relations



At one extreme (“free trade”), China would return to the path of economic liberalization, enabling both Washington and Beijing to reduce or eliminate barriers to the free flow of goods, capital, information, and people between their two countries. Market forces would prevail, resources would be efficiently allocated, and both nations would enjoy healthy rates of growth. Assuming that economic opening was accompanied eventually by political liberalization, this would be the best of all possible worlds from a U.S. perspective. Even if China were to grow faster, enabling it eventually to become both wealthier (in terms of the absolute size of its economy, if not necessarily its GDP per capita) and more powerful, the United States’ strategic concerns would presumably be mitigated by the commonality of values and the convergence of interests between the two countries. In essence, this is the happy outcome that the policy of engagement was intended to achieve.

At the opposite end of the spectrum (“Cold War/containment”), it is possible to imagine a world in which the United States and China drastically constrict bilateral flows of trade and investment and effectively disengage from one another economically. While the growth prospects of both nations would suffer, given that the United States is still more important to China than China is to the United States, at least in the near term such a breakdown in relations would likely hurt Beijing more than Washington. In the longer run, the effects would depend on the pattern of economic relations between each country and the rest of the world. If the other advanced industrial nations were to join the United States in seeking to isolate China, the pain inflicted on Beijing would obviously be greater. On the other hand, if in its efforts to compel others to go along with it Washington were to impair its own relations with its major allies and trading partners, as well as with other countries, the United States might end up isolating itself, damaging its prospects for future growth, reducing its relative power, and diminishing rather than enhancing its security.

Prior to 2017, the state of relations between the Pacific powers fell somewhere between these two extremes, with the U.S. economy comparatively open and the Chinese economy relatively, and in certain respects increasingly, closed (the “status quo”). Whatever its effects may have been in the past, this situation now threatens to damage the welfare of the United States by potentially reducing the prospects for future economic growth, while also endangering U.S. security by enabling China to enhance its relative power. While there is disagreement in Washington about how best to respond, there is increasingly widespread recognition that, from the U.S. perspective, the status quo is unacceptable and potentially dangerous and thus needs to change.

Since 2017 the Trump administration has effectively struck out in two directions simultaneously. On the one hand, through the application of tariffs on an increasing array of imports from China and demands for structural reform, the administration is trying to compel Beijing toward greater openness. In this sense, it is pursuing the same goal as previous administrations, albeit by different, more aggressive means. At the same time, however, the administration is taking steps that respond reciprocally to some aspects of Beijing’s policy by closing off portions of the U.S. economy to China. It has done so both through the implicit threat that, absent reform, tariffs will remain in place indefinitely and through an array of administrative measures, including tighter investment screening, new export controls, and procurement regulations. Followed through to their conclusion, these aspects of Trump administration policy would lead to a new pattern of relations between the two countries (“partial disengagement”). The evident contradiction between these two aspects of U.S. policy and the apparent lack of consensus within the administration about which should have priority,

combined with the president's periodic statements that a "great deal" is nearly at hand, have led to considerable confusion and a fraying of what appeared at first to be surprisingly widespread support for a tough stance toward China.

Although we regard the genuine liberalization and opening of the Chinese economy as a desirable goal, we remain skeptical that it can be achieved through unilateral U.S. pressure. Indeed, we suspect that this outcome will not truly be possible so long as the CCP remains in power. Nevertheless, working with its like-minded allies and trading partners, the United States should continue to press for this objective. In the meantime, we believe that the proximate aim of U.S. policy should be to achieve a new posture of partial economic disengagement from China, one that will be politically sustainable and increase both the United States' security and, in the long run, the welfare of its citizens. To achieve this objective, the U.S. government should pursue a strategy consisting of four overlapping parts, described in more detail in the remainder of this section.

Tariff War Off-Ramps

After imposing a series of tit-for-tat tariffs, the United States and China have arrived at what political scientists describe as a "hurting stalemate." Although economists disagree about which side has been harder hit, there is no question that both are suffering a measure of pain as exports decline and the cost of some imports increases. Aside from its direct effects, the trade dispute is also contributing to slower global growth, which will have a further negative impact on the U.S. and Chinese economies.¹ In addition, uncertainty over the trajectory of the tariff war (made worse by the sometimes erratic and unpredictable twists and turns in U.S. policy) is hurting investment and future growth, as decision-makers wait for some kind of stable resolution.²

The Trump administration has three options going forward. It could, of course, decide simply to lift all the import restrictions that it has imposed and seek a return to the situation that prevailed in January 2018, before the tariff war began. This would mean surrendering all the leverage the administration has acquired through its actions to date. Except in the highly unlikely event that Washington receives wide-ranging and verifiable concessions from Beijing on all or most of the structural issues it has raised, pursuing this option would be an obvious mistake.

The second alternative is for the administration to leave in place all the tariffs that it has imposed and hunker down for what it now would acknowledge to be a struggle of indefinite duration. While this approach might alleviate some of the negative effects of uncertainty, it would do nothing to reduce the impact of tariffs on the U.S. economy as a whole or, assuming that China retains its own tariffs, on key U.S. sectors targeted by Beijing. Even if the aggregate effects of a prolonged stalemate turn out to be comparatively small for the United States, the impact on some producers and on middle- and lower-income consumers could be significant. Absent a clear

¹ Ana Swanson, "Trump's Trade War Could Put Swiss-Size Dent in Global Economy, IMF Warns," *New York Times*, October 8, 2019.

² For various assessments, see Mary Amity, Stephen J. Redding, and David Weinstein, "The Impact of the 2018 Trade War on U.S. Prices and Welfare," Centre for Economic Policy Research, Discussion Paper Series, March 2, 2019, <https://www.princeton.edu/~reddings/papers/CEPR-DP13564.pdf>; and Beth Ann Bovino, Shaun Roache, and Sylvain Broyer, "The U.S.-China Trade War: The Global Economic Fallout," S&P Global, May 22, 2019, <https://www.spglobal.com/en/research-insights/articles/the-u-s-china-trade-war-the-global-economic-fallout>.

national emergency, the resulting pressure on Congress and the president to abandon tariffs and restore the *status quo ante* might prove difficult to resist.³

For these reasons, a selective ceasefire that lifts tariffs in some sectors but leaves them in place in others is the most plausible option. The question here is whether the two sides could reach a mutually acceptable agreement on a new pattern of bilateral trade. One possible partial resolution of the current standoff would be for the United States to lower barriers to the importation of products such as clothing, toys, furniture, and consumer electronics in return for China dropping its tariffs on U.S. agricultural products and raw materials.⁴ The United States might then retain tariffs on products in sectors where it can demonstrate that Chinese producers are damaging viable U.S. competitors through the use of unfair trading practices (including intellectual property theft), or where, for strategic reasons, it seeks to reduce dependence on Chinese imports and encourage the movement of supply chains to other countries.⁵

Defensive Measures

In an ideal world, free flows of goods, capital, people, and ideas would promote both prosperity and peace, enhancing the welfare and the security of all nations. Unfortunately, in the real world, this is not always the case. The geopolitical ambitions of the CCP regime, and the extent to which it wields power over all Chinese economic actors, mean that the United States can no longer afford to permit all these entities virtually unrestricted access to its own economy and society. Continued, unrestrained openness would pose a threat to the nation's security and future welfare. The federal government must therefore implement defensive measures designed to constrict outward flows of some technology and information to China, while also regulating inward flows of some Chinese goods, capital, and people to the United States. To a certain extent, this has already begun to happen in the past two years, albeit in a piecemeal fashion and without a coherent and compelling public rationale. The question now is not whether some defensive measures are necessary but rather what purposes they should seek to serve, how they should be implemented, and how far they should go.

While they will be treated separately, all the defensive measures outlined here will have a better chance of succeeding, and indeed may only succeed, if they are implemented in conjunction with other policies designed to strengthen the U.S. economy and enable closer cooperation with allies. These policies make up the remaining two parts of the comprehensive approach detailed in this section and will be discussed later. In addition, the success of the defensive portion of a comprehensive strategy will depend on continuing improvements in cybersecurity by both the public and private sectors and in the China-focused intelligence and counterintelligence capabilities of the U.S. government. Space does not permit a full discussion of these issues.

³ Although some may benefit from recent Chinese promises to buy more agricultural products, farmers and ranchers will remain among those hardest hit. Absent a further agreement that lifts at least some U.S. tariffs, it will be easy for Beijing to once again constrict agricultural imports. For more information, see Kevin Breuninger and John W. Schoen, "U.S.-China Trade War Is Hurting Farmers, but They're Sticking with Trump," CNBC, August 7, 2019, <https://www.cnbc.com/2019/08/07/us-china-trade-war-is-hurting-farmers-but-theyre-sticking-with-trump.html>; Michelle Rook, "Farmer Frustration Grows with Trade War and Ag Economy," *Agweek*, August 19, 2019, <https://www.agweek.com/business/agriculture/4648458-farmer-frustration-grows-trade-war-and-ag-economy>; and Gina Heeb, "Trump's Latest Tariffs Are Expected to Hit Women and Lower-Income Americans Hardest," *Business Insider*, September 4, 2019, <https://markets.businessinsider.com/news/stocks/trump-trade-war-tariffs-to-hit-low-earners-women-hardest-2019-9-1028497558>.

⁴ For a suggestion along these lines, see Daniel Rosen, "Is a Trade War the Only Option?" *Foreign Affairs*, March 20, 2018, <https://www.foreignaffairs.com/articles/china/2018-03-20/trade-war-only-option>.

⁵ Whether or not this was the intended effect, the imposition of tariffs and resulting uncertainty over the future of U.S.-China relations have already caused some U.S. and foreign companies to move portions of their supply chains out of China. It is not yet clear how far this trend will go, nor is it obvious what new arrangements the U.S. government ought to prefer or even what policy tools it could use in order to shape them.

The defensive measures needed to address the economic challenge from China have three main goals. The first goal is to reduce the United States' vulnerability to surveillance and sabotage. Second, such measures are necessary to eliminate or alleviate dependencies that could be used to disrupt the functioning of the U.S. economy or exert leverage by threatening to do so. Third, enhanced defenses are needed to slow the diffusion of technologies, thereby helping preserve the U.S. advantage in commercial and military competition.

Reducing vulnerability to surveillance and sabotage. The ubiquity and complexity of modern information technology networks have created a variety of risks that are difficult to assess and mitigate. Although physical intrusion is not the only possible avenue of attack, the implantation of vulnerable or corrupted equipment or even individual components could enable a hostile foreign actor to extract valuable information or disrupt the functioning of individual weapons and communications systems, or even of entire networks. For these reasons, the prominent role of Chinese-based companies in IT manufacturing and their recent efforts to play a part in building portions of the critical infrastructure networks of foreign countries have become a cause for legitimate and growing concern.⁶

Debate over how to address these issues turns on four questions: What is the true character of the Chinese entities involved, in particular with respect to their susceptibility to exploitation or control by the party-state? How broadly should any new regulations be applied to the U.S. economy? How deeply should monitoring and mitigation efforts seek to penetrate into IT supply chains? And how should the likely costs of mitigation, both financial and administrative, be weighed against the benefits of whatever additional increments of security they can provide?

Regarding the first question, thanks in large part to the recent controversy over Huawei's possible role in building new 5G telecommunications networks, there is growing recognition that, due to China's national security laws and the mandatory presence of CCP cells in corporate management structures, not only state-owned enterprises but even nominally private firms must be regarded as potential instruments of state power. Federal procurement regulations have for some time prohibited the U.S. Department of Defense from purchasing a variety of items from companies controlled by the People's Liberation Army (PLA), and similar bans have recently been imposed on the direct purchase by any U.S. government agency of telecommunications equipment manufactured by several "private" Chinese companies, including Huawei.⁷ This action is appropriate and, with the possible exception of routine, off-the-shelf items that pose no conceivable security risk, should be extended to exclude all Chinese entities from the government procurement process.

As to the possible extension of restrictions beyond government agencies to include the private sector, in May 2019 the Trump administration issued an executive order that would empower the

⁶ For an overview of the problem, see Gregory C. Wilshusen, "Information Security: Supply Chain Risks Affecting Federal Agencies," testimony before the House of Representatives Subcommittees on Counterterrorism and Intelligence, Oversight, and Management Efficiency and the Committee on Homeland Security, Washington, D.C., July 12, 2018, <https://www.gao.gov/assets/700/693064.pdf>; and Tara Beeny, "Supply Chain Vulnerabilities from China in U.S. Federal Information and Communications Technology," prepared for the U.S.-China Economic and Security Review Commission, April 2018, <https://docs.house.gov/meetings/IF/IF16/20180516/108301/HHRG-115-IF16-20180516-SD105-U105.pdf>.

⁷ Regarding these earlier restrictions, see U.S. Department of Defense, "Prohibition on Acquisition of Certain Items from Communist Chinese Military Companies," https://www.acq.osd.mil/dpap/dars/pgi/frameset.htm?dfarsno=225_7&pgino=PGI225_7&pgianchor=225.770&dfarsanchor=225.770. The recent regulations are summarized in "Agencies Call for Comments on NDAA 2019 Section 889," Akin Gump Client Alert, June 4, 2019, <https://www.akingump.com/images/content/1/0/v2/106138/Client-Alert-Agencies-Call-for-Comments-on-NDAA-2019-Section-8.pdf>. Regarding restrictions on procurement from Huawei, as well as a number of other Chinese companies, see U.S. Department of Defense, General Services Administration, and NASA, "Federal Acquisition Regulation: Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment," August 13, 2019, <https://www.federalregister.gov/documents/2019/08/13/2019-17201/federal-acquisition-regulation-prohibition-on-contracting-for-certain-telecommunications-and-video>.

U.S. Department of Commerce to ban the purchase of virtually any Chinese telecommunications equipment or service by any company operating in the United States.⁸ The administration has threatened to issue such a ban against Huawei as part of its effort to reach a trade agreement, and members of Congress have proposed legislation that would make these restrictions permanent.⁹ Such regulations would supplement earlier measures designed to discourage rural carriers from installing Huawei equipment in their networks.¹⁰

Given the risks, a concerted effort to exclude Chinese-made equipment from the entire U.S. telecommunications system is prudent and overdue. Similar restrictions will likely also need to be applied to other portions of the nation's critical infrastructure, whether publicly or privately owned, including electric power generation, railroads, water systems, and law-enforcement agencies.¹¹ At this point, however, trying to exclude all Chinese IT products from the U.S. economy by imposing a blanket ban of the sort suggested by the scope of the recent executive order would be unnecessary and unwise. In addition to greatly expanding government intrusion into the private sector, such a measure would be costly and disruptive, especially in the absence of alternative suppliers, and how it would enhance national security is unclear.

Restricting the purchase of Chinese-made computers, switching equipment, or phones is one thing. Trying to prevent any Chinese-made part or subassembly from finding its way into systems manufactured by non-Chinese companies is quite another. The depth, complexity, and fluidity of modern supply chains make it difficult and costly to trace every item back to its source. This kind of scrutiny may nonetheless be needed to ensure the security of weapons, communications, and other defense systems. For this purpose, the U.S. government will need to expand its capacity to collect and analyze relevant commercial and technical information, but it should also work with the private sector to develop new tools and analytic techniques to identify especially risky nodes in complex and rapidly evolving supply chains. An effective mechanism not only would identify risks but also could help prevent threats by incentivizing bad actors to abide by the rule of law if they wish to retain access to the U.S. market.¹²

⁸ Although it does not name China, the order authorizes the U.S. Department of Commerce to block any transaction that “involves information and communications technology or services designed, developed, manufactured or supplied by persons owned by, controlled by, or subject to the jurisdiction or direction of a foreign adversary.” For context, see “Executive Order on Securing the Information and Communications Technology and Services Supply Chain,” White House, May 15, 2019, <https://www.whitehouse.gov/presidential-actions/executive-order-securing-information-communications-technology-services-supply-chain>; and Rod Hunter, “President Trump Issues Supply Chain Executive Order,” Baker McKenzie, May 25, 2019, <https://www.bakermckenzie.com/en/insight/publications/2019/05/president-trump-issues-executive-order>.

⁹ For a press release from the office of Senator Mark Warner on the proposed legislation, see “Cotton, Van Hollen, Colleagues Introduce the Defending America’s 5G Future Act,” Office of Senator Mark Warner, July 16, 2019, <https://www.warner.senate.gov/public/index.cfm/2019/7/cotton-van-hollen-colleagues-introduce-the-defending-america-s-5g-future-act>.

¹⁰ For further information, see “Protecting Against National Security Threats to the Communications Supply Chain through FCC Programs, Notice of Proposed Rulemaking,” Federal Communications Commission, March 27, 2018, https://transition.fcc.gov/Daily_Releases/Daily_Business/2018/db0327/DOC-349937A1.pdf.

¹¹ Recent reports warn that drones purchased from Chinese companies to help monitor the security of railroads and power-production facilities could be transmitting information back to China. For more information, see U.S. Immigration and Customs Enforcement, Homeland Security Investigations, “Da Jiang Innovations (DJI) Likely Providing U.S. Critical Infrastructure and Law Enforcement Data to Chinese Government,” August 9, 2017, <https://info.publicintelligence.net/ICE-DJI-China.pdf>.

¹² For example, see Michael Kidd, “Social Network Analysis of DOD Supply Chain Vulnerabilities,” *Small Wars Journal*, May 2019, <https://smallwarsjournal.com/jrnl/art/social-network-analysis-dod-supply-chain-vulnerabilities>; and Chris Nissen et al., “Deliver Uncompromised: A Strategy for Supply Chain Security and Resilience in Response to the Changing Character of War,” MITRE Corporation, August 2018, <https://www.mitre.org/sites/default/files/publications/pr-18-2417-deliver-uncompromised-MITRE-study-26AUG2019.pdf>. For a recent study that uses open-source information to trace the networks of companies through which China acquires components from Western companies for use in its military systems, see Marcel Angliviell de la Beaumelle, Benjamin Spevack, and Devin Thorne, “Open Arms: Evaluating Global Exposure to China’s Defense-Industrial Base,” Center for Advanced Defense Studies, September 26, 2019, <https://static1.squarespace.com/static/566ef8b4d8af107232d5358a/t/5d8b17f10603222cff9d416e/1569396764749/Open+Arms.pdf>. Similar types of analysis could presumably be used to identify potentially problematic Chinese suppliers. Another approach would be to create a new dynamic scoring mechanism to pool data and assign scores indicating the reliability of Chinese or other foreign companies. Such a system could also be used to identify entities that have been involved in intellectual property theft or other violations of U.S. law or international agreements. For further detail, see Charles W. Boustany Jr. and Aaron L. Friedberg, “Answering China’s Economic Challenge: Preserving Power, Enhancing Prosperity,” National Bureau of Asian Research (NBR), NBR Special Report, no. 76, February 2019, 30. NBR is working with experts from a variety of sectors to develop such a system.

In some cases, mitigating risk will also require cultivating alternative sources of supply. Trade agreements with other countries, perhaps combined with continued tariffs on Chinese manufacturers, could help shift productive capacity to safer locations.¹³ Tax breaks, subsidies, procurement guarantees, and other incentives could also be used to ensure that there is sufficient capacity to manufacture select and critical items at secure facilities on U.S. soil.¹⁴

The ownership and handling of data presents another, less tangible source of potential vulnerability to hostile surveillance. Given the extent of the party-state's authority, it would be imprudent to rely on any Chinese company to safeguard the privacy of information under its control, including sensitive information about U.S. citizens. For this reason, the government should carefully scrutinize proposed Chinese investments in U.S. companies that generate or process such data or that transfer it to Chinese entities for processing and storage.¹⁵

*Reducing vulnerability to pressure or disruption.*¹⁶ Over the course of the last several decades the U.S. and Chinese economies have evolved in ways that could complicate the ability of the United States to mobilize and sustain defense production in the event of a confrontation or protracted conflict involving the two countries. In a number of areas, including rare earth minerals, specialized alloys, missile and munition propellants, and printed circuit boards, U.S. manufacturers of arms and other military equipment now depend heavily on inputs imported from China.¹⁷ At least until recently, this situation created few worries on strategic grounds. Reliance on imports was cost-effective and in some cases permitted the United States to avoid the possible adverse environmental effects of domestic production.

The deterioration in U.S.-China relations has cast some of these dependencies in a new and more troubling light. An overt embargo or even unacknowledged delays or interruptions in supply (as happened in 2010, when China delayed the export to Japan of rare earth minerals used in high-end electronic production) could make it difficult for U.S. companies to ramp up defense production. Analysts and officials have also recently raised the disturbing possibility that China could apply pressure by threatening to cut or actually suspending exports of drugs and chemicals needed to fight the spread of infectious disease or treat routine but potentially debilitating medical conditions.¹⁸

¹³ For proposals on how to use trade agreements and government programs (but not tariffs) to encourage the redistribution of manufacturing capacity, see Robert Atkinson, "Trading Up: Why America Must Ditch China and Pursue Better Manufacturing Opportunities," *National Interest*, August 13, 2019, <https://nationalinterest.org/feature/trading-why-america-must-ditch-china-and-pursue-better-manufacturing-opportunities-73256>.

¹⁴ The U.S. Department of Defense already does this for high-end semiconductors through its Trusted Foundry Program. For a basic overview of the program, see John Keller, "IBM to Provide Trusted and Secure Integrated Circuit Manufacturing to U.S. Military in \$275 Million Deal," *Military and Aerospace Electronics*, May 22, 2019, <https://www.militaryaerospace.com/trusted-computing/article/14033702/trusted-integrated-circuit-manufacturing>.

¹⁵ In addition to financial and health-related information, which could be used to spy on specific individuals, large volumes of data derived from genomic sequencing could give Chinese companies an advantage in developing new medications and, conceivably, new types of biological weapons. For more information, see David J. Lynch, "Biotechnology: The U.S.-China Dispute over Genetic Data," *Financial Times*, July 31, 2017.

¹⁶ In addition to the questions discussed here, there are legitimate concerns about the possible strategic implications of capital flows, including both China's purchases of dollar-denominated assets and an impending expansion in U.S. portfolio investment in China. Although they fall outside the scope of this report, these issues are important and warrant further analysis.

¹⁷ For context, see U.S. Department of Defense, "Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resiliency of the United States," report by the Interagency Task Force in Fulfillment of Executive Order 13806, September 2018, 36-37, <https://media.defense.gov/2018/Oct/05/2002048904/-1/-1/1/ASSESSING-AND-STRENGTHENING-THE-MANUFACTURING-AND%20DEFENSE-INDUSTRIAL-BASE-AND-SUPPLY-CHAIN-RESILIENCY.PDF>; and "China's Grip on Electronics Manufacturing Will Be Hard to Break," *Economist*, October 11, 2018, <https://www.economist.com/business/2018/10/11/chinas-grip-on-electronics-manufacturing-will-be-hard-to-break>.

¹⁸ For more information, see Anna G. Eshoo and Adam B. Schiff, "China's Grip on Pharmaceutical Drugs Is a National Security Issue," *Washington Post*, September 10, 2019; and Rosemary Gibson, "Exploring the Growing U.S. Reliance on China's Biotech and Pharmaceutical Products," testimony before the U.S.-China Economic and Security Review Commission, July 31, 2019, <https://www.uscc.gov/sites/default/files/RosemaryGibsonTestimonyUSCCJuly152019.pdf>.

While some instances of import dependence are legitimate grounds for concern, there is also a risk that claims of “defense essentiality” can be deployed to rationalize wide-ranging protectionism.¹⁹ The Trump administration’s use of national security arguments to justify imposing tariffs on steel and aluminum imported from Canada and other U.S. allies and its threat to block European-made auto parts on similar grounds provide ample illustration of this danger. Whatever benefits may be derived from increased tariffs, the relevance to modern defense production of any of the domestic industries protected by these measures is limited at best. If the United States must mobilize for future, high-intensity warfare, it will not be able simply to convert car factories to manufacture tanks or use commercial-grade metals to build high-performance ships and aircraft as it did during World War II.²⁰

Instead of carelessly invoking the national security provisions in U.S. law, policymakers should proceed systematically. Realistic planning scenarios for a range of contingencies (including a protracted conventional war with China) should be used to estimate requirements for the production of arms, equipment, and other necessary items (including drugs) and to identify areas where dependence on Chinese imports could create bottlenecks and shortfalls. In some cases, stockpiling may be adequate to alleviate risk; in others, it should be possible to rely on imports from friends and allies; and in some instances, it may be necessary for the government to work with the private sector to encourage the creation or expansion of domestic capacity.

Slowing technology diffusion. Since at least the end of World War II, the United States has relied on scientific research and technology development to gain and hold an edge over both strategic and commercial competitors. While the U.S. margin has diminished in some areas due to the global diffusion of knowledge and technical competence, it remains an important source of advantage.

China is now engaged in a wide-ranging, ambitious, and well-funded effort to become a scientific and technological, as well as a manufacturing, superpower. The CCP regime is clear about its intentions to close remaining gaps with the United States and the other advanced industrial nations by reducing its dependence on them for cutting-edge technologies and moving closer to the long-sought objective of achieving a high degree of self-reliance.²¹ China’s leaders see rapid technological progress as crucial to attaining all of their broader strategic aims:

- Mastering robotics, artificial intelligence, and the other technologies of the so-called fourth industrial revolution will enable leaps in productivity, offsetting rising labor costs and sustaining rapid economic growth. Through a mix of direct and indirect subsidies, import restrictions, and state-guided mergers, Beijing is also helping build up Chinese “national champions” in key high-tech industrial sectors. As revealed in the Made in China 2025 strategic plan, the goal is not only to dominate the domestic market for many products but to undercut foreign rivals and capture a significant share of their markets, as well as those of third parties.²² Especially where

¹⁹ For the argument that “national security is economic security” and that defense imperatives justify a wide variety of government trade and industrial policies, see Peter Navarro, “America’s Military-Industrial Base Is at Risk,” *New York Times*, October 4, 2018, <https://www.nytimes.com/2018/10/04/opinion/america-military-industrial-base.html>.

²⁰ A recent U.S. Department of Defense report points out: “Wrought aluminum plate, and specifically cold-rolled plate, is essential for armoring U.S. ground combat vehicles, constructing Navy ships, and building military aircraft. Unlike other more common forms of rolled aluminum materials, thick cold-rolled aluminum production capabilities and capacities are unique.” To satisfy its demands, the Department of Defense relies on domestic producers with these specialized capabilities, “as well as capabilities available from ally countries in Europe.” U.S. Department of Defense, “Assessing and Strengthening the Manufacturing and Defense Industrial Base and Supply Chain Resiliency of the United States,” 21.

²¹ For more information, see Gabriel Wildau, “China’s Xi Jinping Revives Maoist Call for ‘Self-Reliance,’” *Financial Times*, November 11, 2018; and Evan A. Feigenbaum, “The Deep Roots and Long Branches of Chinese Technonationalism,” *MacroPolo*, August 12, 2017, <https://macropolo.org/deep-roots-long-branches-chinese-technonationalism>.

²² Jost Wübbeke et al., “Made in China 2025: The Making of a High-Tech Superpower and Consequences for Industrial Countries,” *MERICs Papers on China*, December 2016; and U.S. Chamber of Commerce, “Made in China 2025: Global Ambitions Built on Local Protections,” 2017.

there are first-mover advantages and increasing returns to scale, Chinese firms may be able to gain a lasting edge, shaping technical standards that favor them and to which others will have to adapt, earning large profits, and potentially bankrupting foreign competitors or driving them out of the market.

- Instead of being vulnerable to the threat of denial, China could use its position at the top of the technological ladder and the center of critical supply chains to exert leverage over other countries and potentially disrupt their economies. And instead of continuing to lag behind, the performance of China's weapons and other military systems would equal or exceed those of the United States. In addition to simply closing the gap in existing types of systems, China might be able to leap ahead, developing and deploying entirely new capabilities and perhaps achieving decisive advantages in the event of conflict.²³
- Technology will also provide the CCP regime with new or enhanced means of satisfying its ceaseless thirst for information about its enemies, both foreign and domestic, actual and potential, real and imagined. "Digital authoritarianism" could make possible the nearly ubiquitous surveillance that the twentieth-century totalitarians aspired to but were never able to achieve because of the limits on available technologies.²⁴ Beyond China's borders, the presence of Chinese-manufactured equipment in the IT infrastructure of other countries may permit its intelligence agencies to listen in on the communications of foreign governments, companies, and citizens.

To help speed up technological progress, the CCP regime is using all the instruments of state-led industrial policy, including subsidies and other inducements for commercial innovation, government-funded research and "megaprojects," and the promotion of greater sharing of technology between the civil and military sectors. In addition, as is now widely understood, Beijing has been engaged in a long-term campaign to acquire foreign technology and intellectual property by any means necessary, including some that clearly break national laws (such as cybertheft and traditional industrial and scientific espionage) and others that violate the spirit, if not the letter, of China's international commitments (such as enforced transfer via mandatory joint ventures).²⁵

If the United States wants to retain its edge, it clearly needs to refresh and enhance its traditional strengths in research, development, and innovation. Some of the necessary steps will be outlined in the next section of this report. In addition to enhancing its own capacity for generating new technological advances, however, the United States, preferably in close collaboration with some of its advanced industrial allies, must take steps to slow the pace at which some of these innovations flow back to China. To be clear, the purpose is not to hold China down but rather to ensure that the United States and the other advanced democracies retain a margin of advantage in many, if not all, of the areas that will be critical to generating both future wealth and military power.

²³ For a useful overview, see Elsa B. Kania, "Technology and Innovation in China's Strategy and Global Influence," in *China's Global Influence: Perspectives and Recommendations*, ed. Scott D. McDonald and Michael C. Burgoyne (Honolulu: Daniel K. Inouye Asia-Pacific Center for Security Studies, 2019), 228–48.

²⁴ For context, see "Freedom on the Net 2018: The Rise of Digital Authoritarianism," Freedom House, October 2018, https://freedomhouse.org/sites/default/files/FOTN_2018_Final%20Booklet_11_1_2018.pdf.

²⁵ For overviews of China's technology acquisition and development programs, see Katherine Koleski and Nargizia Salidjanova, "China's Technonationalism Toolbox: A Primer, U.S.-China Economic and Security Review Commission," Issue Brief, March 28, 2018, <https://www.uscc.gov/sites/default/files/Research/China%27s%20Technonationalism.pdf>; Tai Ming Cheung et al., "Planning for Innovation: Understanding China's Plans for Technological, Energy, Industrial, and Defense Development," report prepared for the U.S.-China Economic and Security Review Commission, July 28, 2016, 29–54; and James McGregor, "China's Drive for 'Indigenous Innovation': A Web of Industrial Policies," U.S. Chamber of Commerce, 2010.

In part this will be a matter of strengthening cybersecurity in both the public and private sectors, increasing investments in China-focused scientific and industrial intelligence and counterintelligence capabilities, and stepping up enforcement of U.S. laws against those caught stealing technology and other intellectual property. In recent years, progress has been made on all of these fronts, but much more remains to be done. Efforts to pressure Beijing into abandoning or modifying its most egregious trade and industrial policies should also continue, although, as already discussed, there is reason to be skeptical about the prospects for achieving meaningful results through negotiation.

But the problem here is not merely that China is breaking laws and bending rules. In many respects, it has simply been taking advantage of the opportunities presented by the extraordinary openness of the United States and other Western democracies. That, in turn, is a product of a deliberate decision to try to incorporate China into the liberal international trading system in hopes that doing so would help transform its economic and political systems. The failure of this strategy, coupled with China's enormous size, means that the United States and its advanced industrial allies can no longer afford to treat China as just another normal trading partner.

The questions of how and to what extent to try to limit China's access to technology are complicated by several factors. The first is the now familiar blurring of boundaries between the organs of the party-state, including the PLA, and nominally private Chinese entities and individuals. The still nascent state of "emerging technologies" also makes it difficult, if not impossible, to identify those that will turn out to be useful primarily for military as opposed to commercial applications. Previous regulatory regimes placed considerable emphasis on this distinction and sought to limit restrictions to technologies with obvious military utility. As has already been suggested, however, the evolving rivalry with China extends well beyond the more narrowly defined domain of military competition; it will be a struggle for relative economic gains and technological advantage as well as for military superiority. These considerations argue for taking a broad and inclusive approach to the problem of constricting technology flows. Weighed against them is the possibility that, improperly applied or carried to excess, such restraints could end up doing damage to the innovative capacity of the United States.

Aside from the methods already described, there are three avenues, or apertures, through which technology flows to China from the West: direct investments of various kinds by Chinese entities; the witting, and more or less willing, transfer or export of technology by Western companies to Chinese counterparts; and the movement of people, including students, scientists, and engineers, who come to study or work in the West and then either return or maintain close ties to China. With the exception of some security restrictions and narrowly defined export-control regulations, these apertures have remained essentially open over the course of the last several decades. The Trump administration has taken steps to constrict all three. Here as elsewhere, the question is not whether some defensive measures are necessary but rather how stringent they should be.

Although precise answers lie beyond the scope of this report, a preliminary assessment suggests that the federal government should impose tight restrictions on direct Chinese investment in sensitive areas, while leaving the door as open as possible to Chinese citizens seeking to study and work in the United States. The proper extent of controls on technology exports by U.S. companies to Chinese counterparts will likely fall somewhere in between these two extremes.

Investment. The past decade has seen a dramatic increase in Chinese investment in the United States, including significant growth in technology-intensive sectors such as electronics, robotics,

energy, information technology, and biotechnology. These inflows have come in a variety of forms, including attempts to acquire large companies and small venture-capital investments in start-up firms with promising new ideas. Even when the Chinese companies involved in these transactions are nominally private rather than state-owned enterprises, their activities are often directed, facilitated, subsidized, or funded by organs of the party-state and are clearly intended to serve its industrial policy goals.²⁶ As the 2018 report of the U.S. Trade Representative concludes, “the Chinese government directs and unfairly facilitates the systematic investment in, and acquisition of, U.S. companies and assets by Chinese companies, to obtain cutting-edge technologies and intellectual property and generate large-scale transfer in industries deemed important by state industrial plans.” Through these activities, Beijing seeks “to upgrade its domestic industries and, ultimately, degrade, reduce, or replace U.S. competition in key sectors.”²⁷

The recent strengthening of investment screening procedures under the Foreign Investment Risk Review Modernization Act (FIRRMA), which enables scrutiny of a wider array of possible transactions, is an appropriate, if only partial, response to this threat.²⁸ In addition to actual government intervention, the possibility of investment reviews and a greater awareness on the part of U.S. companies of the potential dangers involved can help reduce the volume of problematic transactions.²⁹ Because Chinese capital makes up only a small fraction of total foreign investment in the United States, and a smaller fraction still of total investment, in the long run these changes are unlikely to have significant negative effects on domestic research and innovation. The fact that U.S. and other Western firms are already tightly constrained from investing in sectors that Beijing deems strategic further reduces the scope for possible losses due to retaliation.³⁰

People. Along with other methods for acquiring technology and intellectual property, the CCP regime has made use of what FBI director Christopher Wray has described as “nontraditional collectors,” including professors, scientists, and students attending U.S. universities or conducting research in conjunction with their counterparts.³¹ Awareness of this possibility has led some to suggest that the United States simply ban visas for all Chinese students.³² Such drastic measures would have a variety of costs, such as depriving colleges and universities of a substantial stream of revenue that may help subsidize the educations of U.S. citizens, sacrificing the benefits that could be derived from upper-level Chinese students in science and engineering fields who choose to live and work in the United States after completing their degrees, damaging the nation’s reputation for

²⁶ For overviews, see Michael Brown and Pavneet Singh, “China’s Technology Transfer Strategy,” Defense Innovation Unit Experimental, January 2018, [https://admin.govexec.com/media/diux_chinatechnologytransferstudy_jan_2018_\(1\).pdf](https://admin.govexec.com/media/diux_chinatechnologytransferstudy_jan_2018_(1).pdf); Office of the U.S. Trade Representative (USTR), “Findings of the Investigation into China’s Acts, Policies, and Practices Related to Technology Transfer, Intellectual Property, and Innovation under Section 301 of the Trade Act of 1974,” March 22, 2018, 62–152; and Sean O’Connor, “How Chinese Companies Facilitate Technology Transfer from the United States,” U.S.-China Economic and Security Review Commission, Staff Research Report, May 6, 2019, <https://www.uscc.gov/sites/default/files/Research/How%20Chinese%20Companies%20Facilitate%20Tech%20Transfer%20from%20the%20US.pdf>.

²⁷ Office of the USTR, “Findings of the Investigation Into China’s Acts, Policies, and Practices,” 65, 150–51.

²⁸ For an overview, see Stephanie Zable, “The Foreign Investment Risk Review Modernization Act of 2018,” *Lawfare*, August 2, 2018, <https://www.lawfareblog.com/foreign-investment-risk-review-modernization-act-2018>. For the recently proposed regulations to implement the new law, see U.S. Department of Treasury, “Proposed CFIUS Regulations to Implement FIRRMA,” Fact Sheet, September 17, 2019, <https://home.treasury.gov/system/files/206/Proposed-FIRRMA-Regulations-FACT-SHEET.pdf>.

²⁹ Rolfe Winkler, “Chinese Cash That Powered Silicon Valley Is Suddenly Toxic,” *Wall Street Journal*, June 11, 2019.

³⁰ “China’s Restrictions on FDI Are Much Stronger than in EU and U.S.,” European Commission, EU Science Hub, July 15, 2019, <https://ec.europa.eu/jrc/en/facts4eufuture/china-report-challenges-and-prospects/stronger-fdi-restrictions>.

³¹ Elizabeth Redden, “The Chinese Student Threat?” *Inside Higher Ed*, February 15, 2018, <https://www.insidehighered.com/news/2018/02/15/fbi-director-testifies-chinese-students-and-intelligence-threats>.

³² Demetri Sevastopulo, “U.S. Considered Ban on Student Visas for Chinese Nationals,” *Financial Times*, October 2, 2018.

openness, and validating CCP propaganda that seeks to cast the United States as the enemy of the Chinese people.³³

As in other areas, the CCP regime seeks to exploit the openness of democratic societies and exercise its ability to control the actions of its citizens in order to enhance its own power. And here too the United States must find defensive measures that are effective without endangering the vitality and the values that they are intended to protect. Defining the true scope of the problem is an important first step. Of the roughly 340,000 Chinese nationals now studying in the United States, only around 15% are doctoral students, while most others are enrolled in secondary school, college, or master's degree programs.³⁴ It is highly unlikely that young people working at these lower levels are receiving training, or have access to information, that could pose an immediate threat to U.S. welfare and security. Provided that they do not violate U.S. laws or academic norms protecting the privacy and freedom of expression of others, these students should continue to be welcomed. Of the remaining students, some upper-level degree candidates are working in fields such as political science, economics, or environmental science that do not generate knowledge of the sort that federal agencies should be seeking to control. Even among students working in science, technology, engineering, and math (STEM) fields, a recent FBI report suggests that it is "mostly post-graduate and post-doctorate researchers" who are likely to be used as nontraditional collectors.³⁵

The government could conceivably impose restrictions of varying degrees of stringency on these more advanced researchers: from denying visas to all those seeking to study science and engineering, to restricting access for those identified as likely to work on certain topics or in specific subfields, to imposing restrictions on their involvement in federally funded research or only on projects funded by the U.S. Department of Defense. An even narrower approach that likely would be more effective is to concentrate on the end users or ultimate beneficiaries of high-level training and collaborative research. Recent work by Alex Joske of the Australian Strategic Policy Institute reveals that in the past decade the PLA has sent several thousand researchers overseas either to complete doctoral degrees or to work as visiting scholars at universities in various Western countries, including the United States. Scientists and engineers working for the PLA and its subsidiary research and educational institutions also have established ongoing relationships with their counterparts in other countries, sometimes publishing papers on topics of joint interest. In some cases, Chinese researchers have been less than candid about their backgrounds and institutional affiliations.³⁶

The dangers here are obvious and the response straightforward. The U.S. government should bar students or researchers that it has reason to believe have ties to the PLA, and it should discourage or, if the U.S. participants receive federal funding, ban outright joint research projects

³³ According to one account, "between 2012 and 2015, 83% of Chinese students who completed doctorates in science and engineering in the U.S. reported plans to stay in the country." Of those who received science, technology, engineering, and math (STEM) degrees in 2005, 90% were still living and working in the United States ten years later. See Philip J. Hanlon and Matthew J. Slaughter, "Chinese Students Help America Innovate," *Wall Street Journal*, November 12, 2018. Regarding the CCP regime's messaging around the issue of student visas, see "A Generational Divide," *Economist*, July 13, 2019.

³⁴ See U.S. Department of Homeland Security, "July 2018 SEVIS by the Numbers Data," Study in the States, July 2018, <https://studyinthestates.dhs.gov/sevis-by-the-numbers/july-2018>.

³⁵ FBI, "China: The Risk to Academia," available at https://www.research.psu.edu/sites/default/files/FBI_Risks_To_Academia.pdf.

³⁶ Alex Joske, "Picking Flowers, Making Honey: The Chinese Military's Collaboration with Foreign Universities," Australian Strategic Policy Institute, Policy Brief, https://s3-ap-southeast-2.amazonaws.com/ad-aspi/2018-10/Picking%20flowers%2C%20making%20honey_0.pdf?H5sGNNaWXqMgTG_2F2yZTQwDw6OyNfH.u.

with PLA-linked institutions.³⁷ Whether through legislation or information sharing that results in heightened awareness, U.S. universities should also be discouraged from accepting funding from or establishing joint research centers with Chinese entities that have direct links to the party-state or a history of intellectual property theft or other violations of U.S. law.³⁸ Furthermore, academic researchers in the United States and other democratic countries should take responsibility for policing themselves and avoiding collaborations with Chinese counterparts that are morally dubious, even if they are not illegal.³⁹

Export controls. In addition to buying or investing in U.S. companies to gain access to their intellectual property, Chinese firms, with the assistance and often at the direction of their government, have sought to compel transfer through a variety of mechanisms, including mandatory joint ventures and licensing agreements.⁴⁰ To counter these practices, Congress has authorized an expansion of export-control regulations beyond existing, narrowly defined limits on items that are obviously dual-use or of direct military utility, including a wide array of so-called emerging and foundational technologies.⁴¹ While the precise parameters of the new regulations have yet to be set, many observers warn that stringent controls could damage the innovative potential of U.S. companies by reducing their sales and profits and thus their investments in R&D. The need to apply for export licenses, possibly including those for “deemed exports” if a company employs foreign nationals from countries of concern, could also slow product development and might even discourage the pursuit of promising new ideas. Worst of all, if similar technologies are available from foreign competitors, tight controls could hurt U.S. firms without effectively slowing China’s progress.⁴²

To mitigate these risks, some experts argue that regulations should be drawn as narrowly as possible and focused only on technologies with direct military application. However, such an approach is likely to prove both impractical and inadequate. Precisely because they are “emerging” and “foundational,” it will be very difficult to identify at an early stage in their development technologies that are primarily useful for military rather than commercial applications. As noted

³⁷ Members of Congress have recently proposed legislation that would bar all PLA-affiliated researchers from entering the United States. For background, see “Rubio Joins Colleagues to Bar Chinese Military Scientists from Entering the U.S.,” Office of Senator Marco Rubio, Press Release, May 14, 2019, <https://www.rubio.senate.gov/public/index.cfm/2019/5/rubio-joins-colleagues-to-bar-chinese-military-scientists-from-entering-the-u-s>.

³⁸ This has already begun to happen as the result of allegations against Huawei. See, for example, Don Lee, “Major U.S. Research Universities Are Cutting Ties with Chinese Telecom Giant Huawei,” *Los Angeles Times*, March 21, 2019.

³⁹ One example that has recently come to light involves a number of collaborations between Western and Chinese scientists helping to develop facial-recognition software that can distinguish ethnic Uighurs from Han Chinese. Charles Rollet, “Authoritarian Tech: Western Academia Helps Build China’s Automated Racism,” Coda Story, August 6, 2019, <https://codastory.com/authoritarian-tech/western-academia-china-automated-racism>.

⁴⁰ These practices are described in detail in Office of the USTR, “Findings of the Investigation Into China’s Acts, Policies, and Practices,” 19–61.

⁴¹ For an overview of the provisions in the new law, see “International Trade Alert: The Export Control Reform Act of 2018 and Possible New Controls on Emerging and Foundational Technologies,” Akin Gump, September 12, 2018, <https://www.akingump.com/images/content/9/7/v2/97168/International-Trade-Alert-09-12-2018-The-Export-Control-Refo.pdf>. Outside of this wider and more formal process of devising new regulations, the U.S. Department of Commerce has also recently imposed restrictions on exports to a variety of named Chinese entities (including both government bureaus and companies) that it claims are “acting contrary to the foreign policy interests of the United States.” These activities have been defined broadly to include the repression of China’s Uighur minority. For reference, see U.S. Department of Commerce, Bureau of Industry and Security, “Addition of Certain Entities to the Entity List,” October 9, 2019, <https://www.federalregister.gov/documents/2019/10/09/2019-22210/addition-of-certain-entities-to-the-entity-list>; and Emily Feng, “Chinese Surveillance Group Faces Crippling U.S. Ban,” *Financial Times*, November 18, 2019.

⁴² For a summary of industry concerns expressed in response to a request for comments by the U.S. Department of Commerce’s Bureau of Industry and Security, see Peter Lichtenbaum, Victor Ban, and Lisa Ann Johnson, “Defining ‘Emerging Technologies’: Industry Weighs In on Potential New Export Controls,” *China Business Review*, April 2019, <https://www.chinabusinessreview.com/defining-emerging-technologies-industry-weighs-in-on-potential-new-export-controls>. For more information, see Stephen Ezell and Caleb Foote, “How Stringent Export Controls on Emerging Technologies Would Harm the U.S. Economy,” Information Technology and Innovation Foundation, May 2019, <https://itif.org/publications/2019/05/20/how-stringent-export-controls-emerging-technologies-would-harm-us-economy>; and James Andrew Lewis, “Emerging Technologies and Managing the Risk of Tech Transfer to China,” Center for Strategic and International Studies, September 2019, <https://www.csis.org/analysis/emerging-technologies-and-managing-risk-tech-transfer-china>.

throughout this report, the various aspects of the intensifying rivalry between China and the United States also cannot easily be divided into distinct spheres. Chinese strategists clearly view economic and technological competition as inseparable parts of a single, overarching struggle for power. And they are correct to do so. As Robert Williams of the Paul Tsai China Center points out: “If America loses its competitive edge in developing and commercializing the technologies of the future, this erosion of U.S. economic power will also diminish the innovation base needed for technological military and intelligence advantage over potential adversaries.”⁴³

Devising a control regime that reduces risks without imposing undue costs will not be easy, but certain approaches can help. The greater the cooperation among the United States and its advanced industrial allies, the more effective export controls are likely to be, and the smaller the number of countries involved, the easier it will be to achieve cooperation. Even in the absence of complete consensus on the strategic challenge from China, growing awareness in both Europe and Asia of the potentially harmful effects of China’s predatory industrial policies has led to greater caution about investment and technology transfer. There are already sectors, such as the equipment for manufacturing high-end semiconductors, where a kind of tacit export-control regime exists, with a handful of companies and governments working in parallel to defend their own interests by fending off Chinese attempts to acquire key technologies.⁴⁴ U.S. officials should begin by identifying the areas where the United States and a handful of friendly countries enjoy a similar edge and could work together, including through intelligence sharing and law-enforcement cooperation, as well as export restrictions, in order to protect this advantage.⁴⁵ Another way of reducing the possible negative effects of new export controls would be to focus on the transfer of skills and technology (e.g., the knowledge and machinery needed to make high-end semiconductors) rather than the export of products (e.g., the semiconductors themselves) that cannot be easily copied or reverse-engineered.⁴⁶

*Self-Strengthening*⁴⁷

Defensive measures alone will obviously be insufficient to retain a meaningful margin of advantage over a dynamic and determined rival. The United States needs to run faster if it wishes to stay ahead, and innovation will therefore be essential to its prospects for success. As important as they undoubtedly are, however, innovation and technological progress are only pieces of a larger picture. **Figure 2** illustrates the elements of a comprehensive program of “self-strengthening” in which the nation will need to engage if it wishes to fend off the most serious strategic challenge since its founding.

Growth. For the United States, as for China, continued economic growth is a necessary precondition to sustained rivalry. Growth creates the resources needed to build and wield the

⁴³ Robert D. Williams, “In the Balance: The Future of America’s National Security and Innovation Ecosystem,” *Lawfare*, November 30, 2018, <https://www.lawfareblog.com/balance-future-americas-national-security-and-innovation-ecosystem>.

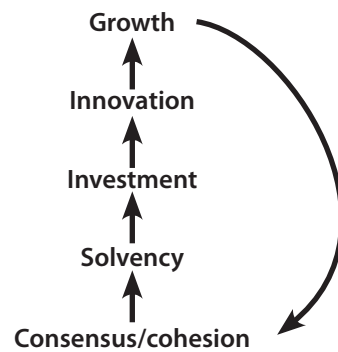
⁴⁴ Shunsuke Tabeta and Kensaku Ihara, “Taiwan Chipmaker UMC’s Pullback Hurts China Self-Sufficiency Plans,” *Nikkei Asian Review*, January 5, 2019.

⁴⁵ Aerospace appears to be one such sector. In addition to its largely unsuccessful attempts to compel Western companies to transfer the technology it needs to develop an indigenous commercial aerospace industry, China has also resorted to industrial espionage. For context, see Richard Aboulaifa, “Opinion: China’s Misguided Grab for Aerospace IP,” *Aviation Week and Space Technology*, March 2, 2018; and Katie Benner, “Chinese Intelligence Officers Accused of Stealing Aerospace Secrets,” *New York Times*, October 30, 2018.

⁴⁶ For further information, see James Andrew Lewis, “Selling to Huawei,” Center for Strategic and International Studies, August 19, 2019, <https://www.csis.org/analysis/selling-huawei>.

⁴⁷ This is a term used to describe China’s efforts to improve its economic, technological, and military capabilities during the second half of the nineteenth century, but it also captures the challenge now confronting the United States.

FIGURE 2 Requirements for long-term competition



various instruments of national power, including military forces, intelligence capabilities, aid, development assistance, and political influence operations. The more rapidly the economy grows, the easier it will be for a government to buy more “guns” without having to sacrifice too much “butter.” Conversely, slower growth will make for more painful trade-offs, which, especially in a democracy, will likely be accompanied by political pressures for cutting defense burdens and curtailing competition.

Innovation. In a modern, advanced economy, innovation is the key to growth. Technological progress enables improvements in productivity, and increases in output per worker drive continued expansion in the total value of goods and services that a nation can produce, as well as in its overall levels of prosperity, or income per capita. Highly innovative societies generally grow faster than those that are less innovative, enhancing both the welfare of their citizens and their ability to generate additional increments of national power. In addition to whatever direct impact it may have on the performance of weapons and other military systems, innovation thus enhances a state’s ability to engage in geopolitical competition with its rivals.

Investment. Innovation, in turn, demands investment, and accelerating the pace of innovation will generally require increasing the volume of investment. Since the turn of the century, China’s investment in innovation (as measured by annual spending on R&D) has been growing at an extraordinarily rapid pace, averaging roughly 18% per year, faster even than the overall rate of economic growth. As a result, China’s R&D expenditures have increased from less than 1% of GDP in 2000 to over 2% today. Its total spending is now roughly 45% of U.S. spending (and 88% if the comparison is made in purchasing power parity terms). If present trends continue, it will likely exceed U.S. spending by 2030.⁴⁸

Although there is not necessarily a one-to-one correspondence between dollars spent and progress achieved, if the United States does not increase its investment in innovation, it risks losing its current advantages over China in both commercial and military competition.⁴⁹ Given the nature of the U.S. system, these investments will have to come from both public and private sources. The government can seek to encourage private-sector investment through modifications in tax and regulatory policy, but these are unlikely to be sufficient in themselves. Without a strong

⁴⁸ James Manyika, William H. McRaven, and Adam Segal, “Innovation and National Security: Keeping Our Edge,” Council on Foreign Relations, Independent Task Force Report, no. 77, 2019, 37.

⁴⁹ For analysis and a set of recommendations, see *ibid.*

financial incentive in the form of federal contracts, private companies will not always have an interest in developing the technologies and applications that government agencies need to perform their missions. Because of their comparatively short time horizons, and the difficulty in capturing for themselves whatever commercial value R&D may produce, private actors are also unlikely to invest in the basic research that has enabled past breakthroughs in scientific knowledge and successive waves of technological progress. Nor do they generally see it as their role to fund educational programs of the sort needed to train new generations of scientists and engineers.

For all these reasons, throughout the Cold War, the federal government spent heavily on scientific education and basic research, as well as the applied research needed to develop weapons, space vehicles, and, in their early forms, jet engines, computers, and microelectronic circuits. Government investment in innovation, measured both as a percentage of GDP and as a fraction of the total federal budget, peaked in the mid-1960s and, with the temporary exception of the late Cold War, has fallen sharply since then.⁵⁰

Major new public investments in basic research and education (especially in STEM programs at both the undergraduate and graduate levels) will be required to accelerate the pace of innovation in the United States. These measures will be expensive, but they are unlikely to prove controversial. More sensitive politically will be adjustments in immigration policy that continue to make it easy and attractive for talented men and women to come to the United States to study, work, and, if they choose, stay, whether as permanent residents or as citizens. Foreign-born workers who earned advanced degrees from U.S. universities now play a disproportionate role in STEM fields. Among other measures of success, they are more likely than their native-born colleagues to file patents that are subsequently commercialized. Maintaining a steady flow of such people will be essential to preserving and strengthening the nation's capacity for innovation.⁵¹

A second topic likely to provoke debate is industrial policy. Since the end of World War II, members of both political parties have generally agreed that it was necessary and appropriate for federal agencies to pay for the applied research and specialized industrial capacity essential to the performance of their missions. More controversial have been occasional proposals that the government use tax breaks, subsidies, and other tools to encourage the development of technologies and products whose purpose was primarily commercial. During the 1980s, for example, advocates (usually Democrats) urged that such action was necessary to bolster U.S. industry and preserve domestic jobs in the face of competition from Japan, while opponents (usually Republicans) argued that the task of “picking winners and losers” should be left to the market.

Growing concerns about both commercial and military competition from China, combined with the rapid development, increasing ubiquity, and obvious importance of an array of dual-use technologies, are shifting the terms of debate on this issue. At least in principle, both Republicans and Democrats now support government funding and public-private partnerships aimed at strengthening “emerging and foundational technologies,” including semiconductors,

⁵⁰ For various measures, see “Historical Trends in Federal R&D,” American Association for the Advancement of Science, <https://www.aaas.org/programs/r-d-budget-and-policy/historical-trends-federal-rd>.

⁵¹ According to one recent study, immigrants account for over half of all STEM workers with doctoral degrees and 40% of those with master's degrees. Gordon H. Hanson and Matthew J. Slaughter, “High-Skilled Immigration and the Rise of STEM Occupations in U.S. Employment,” National Bureau of Economic Research, Working Paper, September 2016, <https://www.nber.org/papers/w22623.pdf>.

quantum computing, and artificial intelligence.⁵² The precise dimensions and exact costs of such programs remain to be worked out, but a number of recent reports and study groups have recommended ambitious and presumably costly “moonshots” as part of an overall program for accelerating innovation. Modeled on the Apollo program, these would involve the selection of “ambitious challenges” to serve as “focal points for industry, government, and academic efforts.”⁵³

Beyond programs designed to accelerate innovation in cutting-edge sectors, there is the question of what actions the government should take to promote specific industries, especially in the manufacturing sector, that would arguably enhance the nation’s welfare in various ways, including the creation of more stable, well-paying jobs.⁵⁴

Solvency. Unless the United States can find a way to address its long-standing fiscal imbalances, it will become increasingly difficult, and perhaps impossible, to sustain a protracted competition with China. All the innovation-promoting measures just described will cost money, and in some cases a great deal of money.⁵⁵ And this is to say nothing of the increases in defense spending that will likely be needed to counter China’s growing military capabilities.

If current trends continue, however, it is difficult to see where the necessary funds can be found. The combination of fast-rising spending on entitlements and healthcare with relatively slow-growing revenues from current taxes means that the federal government will continue to run large deficits and incur more debt. And more debt means higher interest payments, producing still more downward pressure on discretionary spending, including defense and investments in education or research. According to recent projections, by 2029 federal budget outlays will account for an unprecedentedly large share of GDP (23%), debt will stand at the highest level since the end of World War II (93% of GDP), and the government will be spending more on interest (3% of GDP) than defense (2.5% of GDP).⁵⁶

Political consensus and social cohesion. There is no mystery about the policies that would be required to correct these imbalances and to free up the resources needed for an intensified strategic rivalry with China. Members of Congress and the executive branch would need to reach an agreement to slow the growth of federal entitlement spending, raise tax revenues, or (most likely) some combination of the two, and they would also need to achieve consensus on new spending priorities for defense, research, and education.

The budgetary arithmetic of such a reallocation of national resources might be relatively simple, but the political compromises necessary to achieve it are, at this point, virtually impossible

⁵² For initiatives taken by both Democratic and Republican administrations, see President’s Council of Advisors on Science and Technology, “Report to the President: Ensuring Long-Term U.S. Leadership in Semiconductors,” January 2017, https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/PCAST/pcast_ensuring_long-term_us_leadership_in_semiconductors.pdf; National Science and Technology Council, “National Strategic Overview for Quantum Information Science,” September 2018, <https://www.whitehouse.gov/wp-content/uploads/2018/09/National-Strategic-Overview-for-Quantum-Information-Science.pdf>; and White House, “Executive Order on Maintaining American Leadership in Artificial Intelligence,” February 11, 2019.

⁵³ President’s Council of Advisors on Science and Technology, “Report to the President,” 19–20. See also Manyika, McRaven, and Segal, “Innovation and National Security,” 6, 55, 57.

⁵⁴ In an inversion of past patterns, the impetus for many of these proposals comes from the right side of the political spectrum rather than the left. For more information, see U.S. Senate Committee on Small Business and Entrepreneurship, “Made in China 2025 and the Future of American Industry,” February 2019, available at https://www.rubio.senate.gov/public/_cache/files/0acec42a-d4a8-43bd-8608-a3482371f494/262B39A37119D9DCFE023B907F54BF03.02.12.19-final-sbc-project-mic-2025-report.pdf. See also Oren Cass, “Resolved: That America Should Adopt an Industrial Policy” (remarks at the National Conservatism Conference in July 2019), Law and Liberty, July 23, 2019, <https://www.lawliberty.org/2019/07/23/resolved-that-america-should-adopt-an-industrial-policy/>; and Robert D. Atkinson, “The Threat From China Means Conservatives Must Rethink Industrial Policy,” Daily Caller, September 3, 2019, <https://dailycaller.com/2019/09/03/the-threat-from-china-means-conservatives-must-rethink-industrial-policy/>.

⁵⁵ For example, a recent Council on Foreign Relations report calls for boosting federal funding for R&D back to its historical average of 1.1% of GDP per year, or roughly \$230 billion. Manyika, McRaven, and Segal, “Innovation and National Security,” 6.

⁵⁶ For more information on the future national budget, see Congressional Budget Office, “The Budget and Economic Outlook: 2019–2029,” January 2019.

to imagine. Even if, as seems to be happening, the two parties' views on China are converging, it does not appear that they have yet reached a level of consensus or a sense of shared urgency that would enable them to put aside their differences on other issues. Nor is it evident that the concerns now expressed on both sides of the political aisle in Washington are as widely shared in the country as a whole.⁵⁷ The history of the past century suggests that it may take a crisis (e.g., the launch of Sputnik in 1957) or an outright catastrophe (e.g., the attack on Pearl Harbor) to rally the support and mobilize the resources needed to face an external challenge. Absent such a galvanizing event, and in an attempt to reduce the likelihood that one will actually occur, political leaders must do what they can to explain the dangers facing the country and to lay out the steps that must be taken in order to meet them.

Other things being equal, it will be easier to win the support of people who feel that they are benefiting from, and being treated fairly by, the system they are being asked to help defend. In part for this reason, it will be important not only to sustain aggregate growth and promote technological innovation but also to ensure that the benefits are shared more widely than has been the case in recent decades. Because of their potential impact on employment, advances in robotics and artificial intelligence pose a special challenge in this regard. It would be ironic, and potentially tragic, if the technological progress needed to compete effectively against China were to erode the popular support essential to sustaining the effort. One purpose of the broader approaches to industrial policy described above would be to address some of these concerns.⁵⁸

Effective Multilateralism

Even as it takes steps to bolster its defenses and strengthen its economy, the United States should move away from a potentially self-isolating unilateral posture and seek closer cooperation with the other advanced industrial democracies. These are nations with which the United States shares common values and interests and with which it must make common cause in opposing China's predatory economic policies. The goals of this element of U.S. strategy should be fourfold.

First, if they wish to defend their future prosperity, and perhaps ultimately their autonomy and security, the advanced industrial democracies must cooperate more closely in slowing China's systematic and relentless efforts to extract technology and other intellectual property from their economies. It is by now abundantly clear that in many key sectors Beijing intends to use what it acquires to build up national champions that will dominate China's domestic market, excluding foreign competitors, undercutting them on global markets, and potentially driving them out of business altogether. If Chinese entities cannot buy, extort, or steal what they need from one company, they will turn to another until they succeed. Recent cases have demonstrated that communication between U.S. and allied intelligence, counterintelligence, and law-enforcement agencies can be helpful in this regard, but more will be required. Information sharing and potentially more formal cooperation among agencies screening foreign investment would help

⁵⁷ On the possible gap between foreign policy elites and the public, see Richard Fontaine, "Great-Power Competition Is Washington's Top Priority—But Not the Public's," *Foreign Affairs*, September 9, 2019, <https://www.foreignaffairs.com/articles/china/2019-09-09/great-power-competition-washingtons-top-priority-not-publics>. Recent polls, however, do suggest growing public concern about China among both Republican and Democratic voters. For example, see Laura Silver, Kat Devlin, and Christine Huang, "U.S. Views of China Turn Sharply Negative amid Trade Tensions," Pew Research Center, August 13, 2019, <https://www.pewresearch.org/global/2019/08/13/u-s-views-of-china-turn-sharply-negative-amid-trade-tensions>.

⁵⁸ Regarding the links between the economic fortunes of the middle class and U.S. foreign policy more generally, see Karan Bhatia et al., "U.S. Foreign Policy for the Middle Class: Perspectives from Ohio," Carnegie Endowment for International Peace, December 2018, https://carnegieendowment.org/files/USForeignPolicy_Ohio_final.pdf. The potentially severe disruptive effects of automation are described in Karen Harris, Austin Kimson, and Andrew Schwedel, "Labor 2030: The Collision of Demographics, Automation and Inequality," Bain and Company, February 2018, <https://www.bain.com/insights/labor-2030-the-collision-of-demographics-automation-and-inequality>.

further narrow existing gaps. Whether with a small group of like-minded countries or on a case-by-case basis depending on the technologies involved, U.S. officials should also seek common understanding on export restrictions.

Second, as the Huawei case makes clear, the democratic market economies likely face serious security risks if they permit Chinese companies (even those that are not state-owned enterprises) to build portions of their critical infrastructure. The United States should continue to call attention to these dangers and work with other governments that have reached similar assessments to try to persuade those that have not. But Washington should avoid threats or public hectoring of the sort that democratically elected political leaders may feel they have little choice but to reject. Above all, it should work with other governments and both U.S. and foreign companies to develop practical alternatives to what China has to offer. Among its other benefits, such cooperation would help dispel the impression, common in some European capitals, that Washington's objections to Chinese products are merely part of a narrowly nationalist program intended to boost U.S. companies at the expense of all foreign competitors. If the United States fails to bring others with it on this issue, as well as on policies regarding technology diffusion, it risks becoming increasingly isolated, facilitating efforts by Beijing to reshape large portions of the global economy to reflect its own preferences and vision.

A third aim of U.S. policy should be to work together with like-minded partners to create a common front on trade issues and exert the maximum possible aggregate leverage in the hopes of compelling Beijing to abandon its most egregious trade and industrial policies. As revealed by their reactions to the recent flare-up between the United States and China, governments in both Europe and Asia share many of the concerns that have been expressed by the Trump administration and are frustrated by the failure of years of negotiation and gentle pressure to persuade Beijing to change course. While there are undoubtedly differences over tactics and priorities, there is ample overlap in interests and significant potential for cooperation. This potential has not been realized to date primarily because of the Trump administration's practice of either threatening or actually pursuing trade actions against U.S. friends and allies at the same time that it is trying to extract concessions from Beijing. Whatever the merits of the various cases may be, this approach is counterproductive on strategic grounds. While some kind of superficial deal is still possible, the trajectory of trade talks with China over the last eighteen months strongly suggests that U.S. leverage alone will not be sufficient to produce deep and lasting change. Tabling or quickly resolving outstanding disputes with other trading partners and forging a united front to deal with Beijing will not guarantee success, but it could increase the odds.⁵⁹

The fourth and broadest aim of U.S. policy must be to work with friends and allies to rebuild and strengthen a partial liberal trading system, one that does not yet encompass the entire planet, as envisioned at the end of the Cold War, but in which all participants genuinely adhere to the same principles of openness while working together to defend their interests against those who do not. The liberal international economic system developed and guided by U.S. leadership was highly successful in promoting trade, investment, and growth. Yet it has been under mounting strain since the 1970s because of the rise of non-tariff barriers, other forms of protectionism, and rapid changes in technology requiring the development of new standards. Despite efforts at

⁵⁹ For a set of proposals along these lines, see Wendy Cutler, "Strength in Numbers: Collaborative Approaches to Addressing Concerns with China's State-Led Economic Model," Asia Society Policy Institute, April 2019, <https://asiasociety.org/sites/default/files/2019-04/Strength%20in%20Numbers.pdf>.

reform, progress has languished due to the absence of consensus. The integration of China and other nonmarket economies into a system that was not designed to accommodate them has compounded this problem, making it even more intractable.

The legitimacy of U.S. leadership is closely linked to this order and its associated international institutions, and Washington should not abandon efforts to achieve reform. In the meantime, however, U.S. policymakers should focus on achieving regional trade agreements and building consensus around high standards for investment, trade in goods and services, and issues related to information and emerging technologies. This effort should proceed from the recognition that there are three major production hubs in the global economy: North America, the European Union, and Asia, connected by global value chains. The United States should make it a priority to build high-standard trade and investment agreements with the EU and as many market economies as possible in Asia. Enforceable high standards should be the requirement for participation in these agreements. Nonmarket economies that do not meet these standards would face unfavorable terms for participation or potential exclusion. The general approach should be to start with the European and Asian production hubs, and then expand to other willing market economies in other regions.

As a first step, Washington should build on its recent success in negotiating a bilateral trade agreement with Japan to reopen discussion regarding possibly joining the Comprehensive and Progressive Agreement for Trans-Pacific Partnership.⁶⁰ While a number of impediments remain with the EU, a strong transatlantic relationship is indispensable for purposes of shaping a favorable balance of economic power and addressing the impact of emerging technologies on security. The United States should therefore make a renewed commitment to negotiating a major transatlantic trade agreement with Europe. In addition to seeking formal coordination of investment screening, Washington should start discussions with the EU on how to achieve convergence on standards for new and emerging technologies while postponing legacy disputes.

High-standard trade agreements linking the economies of North America, Europe, and parts of Asia would help fuel the growth of all the nations involved, enhancing their collective wealth and power and strengthening their ability to defend shared interests and common values. If China can meet the necessary norms and standards, it too should be able eventually to enjoy the benefits of inclusion. If, as seems more likely, it refuses to change course and remains an outlier, China will find itself at an increasing disadvantage.

As they strengthen their own position with respect to China, the advanced industrial democracies should also cooperate in offsetting some of Beijing's efforts to expand its influence in the developing world via the Belt and Road Initiative. Pooling resources to offer transparent alternatives to the initiative and encouraging investment in economically and environmentally sound infrastructure development projects should have top priority.

A final area in which the democracies should pursue closer cooperation is in building a free and open internet, one that would continue to link their economies and societies while protecting them more effectively against penetration and manipulation by China and other authoritarian powers. China, in particular, has succeeded in building a semipermeable membrane that insulates its own "infosphere" while leaving it free to exploit that of the United States and other democratic powers. This asymmetry has been a source of substantial and continuing strategic and economic benefit to Beijing. Here, too, the United States and its partners need to disengage, at least in part,

⁶⁰ Vivian Salama and Josh Zumbrun, "U.S., Japan Reach Trade Deal on Farm Goods, Digital Trade," *Wall Street Journal*, September 25, 2019.

by establishing some protective barriers between themselves and a rival that sees their openness as a source of weakness and seeks to turn it against them.⁶¹

Taken together, these actions—cooperating with allies to prevent intellectual property theft by China, working with foreign governments to develop alternatives to Chinese companies in constructing critical infrastructure, building a global coalition to exert leverage on China on trade issues, working with allies to reform multilateral institutions, negotiating high-standard plurilateral trade agreements, and maintaining a free and open internet—would apply significant pressure on China to improve its behavior while helping to protect the core of at least a partial rules-based liberal economic order.

Conclusion

The last two years have seen an unprecedented level of focus and a more widespread recognition of the challenges posed by China from the executive branch, Congress, and the public. This increased attention offers a new opportunity to reshape the economic dimension of U.S. strategy toward China in a way that enhances the nation's long-term prosperity and security. But this moment could prove fleeting. Without a comprehensive and clearly articulated strategy, the present, tentative consensus on the need for change could easily dissipate. This report has laid out the main elements of a strategy intended to mitigate the United States' vulnerabilities, bolster its strengths, and put the nation on a path to continued prosperity and security by achieving a partial economic disengagement from China. No single study can address all aspects of such a large and complex set of problems. Nevertheless, if it helps clarify the most important issues, focusing debate and moving discussion forward toward greater agreement and more coordinated action, this report will have served its purpose.

⁶¹ For a proposal along these lines, see Richard A. Clarke and Rob Knake, "The Internet Freedom League," *Foreign Affairs*, September/October 2019, 184–92.

—— TASKFORCE MEMBERS ——

Charles W. Boustany Jr. (co-chair and principal investigator)

Aaron L. Friedberg (co-chair and principal investigator)

George Davidson

Jacqueline Deal

Ashley Dutta (ex officio)

Richard J. Ellings (ex officio)

Stephen Ezell

Roy D. Kamphausen (ex officio)

James Mulvenon

Claire Reade

Nadège Rolland

Julian Snelder

Ashley J. Tellis



Seattle and Washington, D.C.

1414 NE 42ND STREET, SUITE 300
SEATTLE, WASHINGTON 98105 USA
PHONE 206-632-7370, FAX 206-632-7487

1819 L STREET NW, NINTH FLOOR
WASHINGTON, D.C. 20036 USA
PHONE 202-347-9767, FAX 202-347-9766

NBR@NBR.ORG, WWW.NBR.ORG