Chapter 3b

Contemporary Great Power Geostrategic Dynamics

Competitive Elements and Tool Sets

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The chapter assesses the hard and soft power tools of the three contemporary Great Powers. It focuses on the tools that each has today and is likely to attain in the coming 5 to 7 years, analyzing how each might use these tools to advance its major interests and strategic aims in the five major categories of state interaction: political and diplomatic, ideological, informational, military, and economic. The chapter observes that the tools of competition traditionally associated with one category of interaction in less rivalrous eras will be used more often in other categories in this era of Great Power competition. It assesses that for the foreseeable future, Russia's tool kit makes it an urgent but transient security challenger to the United States, while China's growing power tools make it the true challenger to American national interests and global policy preferences. An assessment of both gross and net power indicators between the United States and China indicates that Beijing's ongoing power transition timeline is longer than some now fear. This allows American and Chinese leaders time to negotiate mutually acceptable changes to contemporary international norms, rules, and institutions in order to prevent what would be a truly unwelcome and destructive direct military clash, should such accommodation be elusive.

Chapter 3a establishes the geostrategic trajectories and primary strategic aims of the three contemporary Great Powers: the United States, China, and Russia. It provides analysis of where their major strategic narratives align and diverge. The chapter also provides an assessment of each state's national interest intensity in specific locations and domains—indicating where its most critical strategic interests come into conflict.

This chapter turns to an evaluation of the tools and main capabilities possessed by each Great Power to advance its general strategic aims and specific strategic goals. It considers the assets the Great Powers bring to their competitive interactions, with a focus on the tools each power now possesses, those likely to be attained in the next 5 to 7 years, and each nation's ability to employ these tools to advance its interests and attain strategic aims. The chapter

first evaluates power as the physical resources that states can draw on to attain strategic interests—their *means*. It then assesses each power's potential to employ these means to attain strategic aims—their *ends*.[1] The chapter briefly addresses the difference between gross power indictors and net power indicators, using net indicators to demonstrate that a power transition between the United States and China may be less imminent than most now imagine. Although the details anticipated from contemporary Great Power competition across many specific regions of the world are provided in chapters that follow, this chapter concludes with an assessment of how current and forecast future power tools of the major Great Powers should be anticipated to interact in major competitive areas from 2020 to 2025.

From Aspirations to Actions: Measuring State Ability to Do What Is to Be Done

As operationalized in the chapter 1 definition, a *Great Power state* has three substantive features: capabilities, behavior, and status attribution by other states in the system.[2] In chapter 3a, we establish the major goals and strategic interests of the three Great Powers and demonstrate that their interests display broad, global foreign policy aims and activities, with China's strategic aims more ambitious and global in reach than Russia's, and that other states in the international system view all three as major players and treat them accordingly. Chapter 3b now turns to an analytical review of the first aspect of our Great Power definition: the power capabilities (tool kits) they possess with which to pursue these strategic interests.

As observed in chapter 2, measuring power is a fraught enterprise and the subject of extensive scholarly debate. Determining what to measure as state power is contentious. So too is determining how to measure even agreed-on categories of state power.

The historic challenge of power assessment is manifested today in the fact that many scholars argue that the United States is in relative *overall decline* given China's rapid economic growth. But this conclusion is far from certain. First, the baseline premise is debatable. Gross domestic product (GDP), the most frequently utilized state power metric, is a narrow basis for making an assessment. GDP was originally designed to measure mid-20th-century manufacturing economies, not those of the 21st century.[3] The more knowledge-based and globalized a country's production, the more GDP underestimates its true size. Thus, GDP likely overvalues China's economic prowess and undervalues American advantage on the cutting edge of economic modernization. A significant amount of China's economic success can be explained by the fact that it started from a low base and took good advantage of "catchup" opportunities, although the country is now trying to move up the value chain and pursue indigenous innovation. While China has been catching up in manufacturing, the United States has been expanding advantage in key industries, in nonindustrial processes, in financial services growth and rent extraction, and (generally) in the quality of higher education.[4] At the same time, the GDP gap between the United States and Russia is growing, and the United States continues to outperform Europe and Japan in economic growth since the end of the late 2000s financial crisis.[5]

Based on these economic considerations and a review of major military factors, some authors argue not only that the conventional wisdom of relative U.S. decline is off base but also that America is actually still a Great Power on the rise.[6] They admit that America's military advantage in 2020 has eroded in locations proximate to Russia and China, such as in

Crimea and the South China Sea, compared to 2000 and that these are now intense strategic interest areas and likely to be contested sternly in Moscow and Beijing. But they assess that with enough at stake and enough political will, the United States still has an unmatched capacity to concentrate overwhelming military in any area of armed hostilities.[7] They argue that the advantage is greater to the extent that America's allies in a given armed conflict zone are willing participants. Their judgment is that America's advantage in this area of hard power deployment/concentration ability will remain robust through 2030.

This chapter cannot grapple with all the details involved in measuring state power. Most scholars measure power in terms of resources, specifically wealth and military assets. They assume these gross power indicators are good enough, serving as "rough but reliable" measures of power, and they are the "best comparable indicators available given data constraints."[8] In general, the chapter acknowledges inherent measurement limitations but mainly utilizes canonical measures of Great Power capabilities. Yet it also moves beyond canonical economic and military factors to consider some other nonstandard power tools important to Great Power strategic influence in the 21st century, such as levels of economic innovation and engagement with private global financial markets; resonance and popular appeal of state ideology, language, and culture; and a consideration of a relatively new approach to understanding national power and comparison of relative state power with an index that better considers net economic and military resources (assets less costs) than historic national capability indicators. The chapter thus focuses on the power factors most germane to the five categories of major state interaction developed in table 2.2, table 3a.1, and reprised in table 3b.1.

> "Since the 1990s, and especially since the 2008 financial crisis, hundreds of books and thousands of articles and reports have asserted that the United States' economic and military edge over other nations is eroding and that the world will soon become multipolar. . . . The main evidence cited for these trends is China's rising GDP and military spending and various statistics that are essentially subcomponents of GDP—most notably, China's massive manufacturing output; volume of exports; trade surplus with the United States; infrastructure spending; consumer spending and large government bureaucracy and scientific establishment. . . . The problem, however, is that these are the same gross indicators that made China look like a superpower during its century of humiliation: in the mid-1800s. . . . China may (today) have the world's biggest economy and military, but it also leads the world in debt; resource consumption; pollution; useless infrastructure and wasted industrial capacity; scientific fraud; internal security spending; border disputes; and populations of invalids, geriatrics, and pensioners. China also uses seven times the input to generate a given level of economic output as the United States and is surrounded by nineteen countries, most of which are hostile toward China, politically unstable, or both."
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> *—Michael Beckley, "The Power of Nations,"* International Security *43, no. 2 (Fall 2018)*

Major Political and Diplomatic Tools

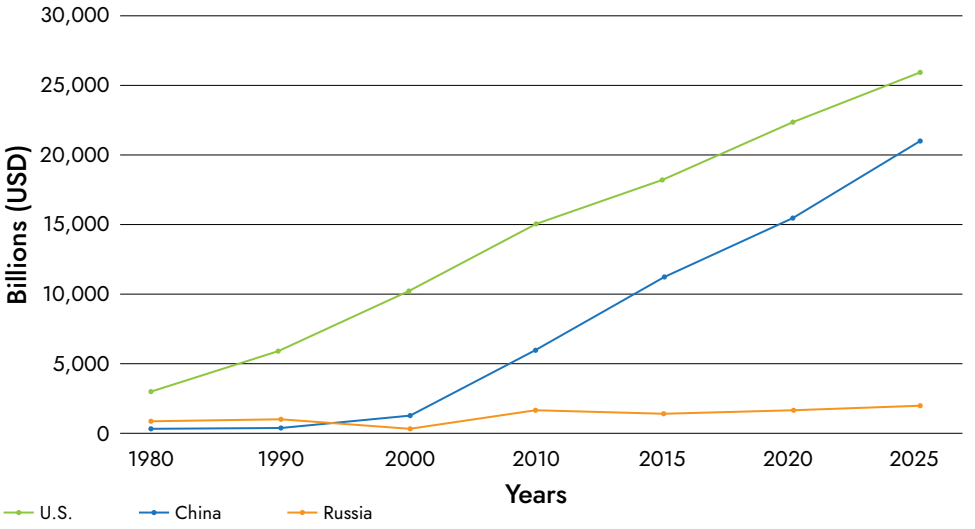
These tools include objective measures of the state's presence in multilateral political institutions and qualitative assessment of its influence in intergovernmental organizations. They

Table 3b.1. A Framework for Assessing the Aspects/Categories of Competition	
Competitive Aspect/Category	**Main Competitive Elements**
Political and Diplomatic	Levels of influence in multilateral institutions, key posts held that control multilateral institutions, and number and strength of political alliances.
Ideological	Values and political systems' appeal.
Informational	The manner and degree of transnational communications: open and transparent vs. closed and restrictive. Extent of denigration of "the other" in mass communications.
Military	Size, posture, and technological edge of armed forces. Cohesion and capacity of military alliances.
Economic	Size, technological breadth, diversity, and resource base of national economy. Innovation ecosystem of national economy, including access to and management of financial capital.

also include a quantitative overview of the state's geopolitical diplomatic presence and its political tools for securing key state partners and multistate alliances.

- Major Ideological Tools: These power factors consist of qualitative assessments regarding the attractiveness of the Great Power's values, narratives, and political system in other states. The trajectory of this soft power attractiveness is best evaluated in geopolitical polling results.
- Major Informational and Communications Capabilities: The qualitative dimensions of this competitive category are more important than the quantitative ones. State power tools include the degree of penetration by key communications technologies in vital geostrategic regions and around the globe. In addition, the state tool kit in this area incorporates the manner in which competitive visions of information pathways and system openness play with Great Power states and those lesser states integrated/integrating in the communications networks.
- Major Military Capabilities: These capabilities include the classical quantitative hard power comparative assessments of available major weapons systems, which are the easiest to measure. This chapter also focuses on military systems and capabilities harnessing emerging commercial technologies from leading-edge commercial areas. Military tools include those with the potential for influence and suasion, such as the cohesion and capacity of military alliances and the manner in which military technology sales and military personnel exchanges work to enhance state aims and potential adversary perspectives.
- Major Economic Tools—Commercial and Financial: Economic power is often understood as the ultimate foundation of military power and a strong influence on the other forms of state power. Here, the canonical economic growth dynamics are measured in nominal GDP, nominal GDP per capita, and level of industrialization. The chapter also considers the amount and impact of outbound direct foreign investment—governmental and private. To properly understand the influence of modern and future economic power factors, financial linkages and innovation potential are described and analyzed with reference to the percentage of global

Figure 3b.1. Comparison of Great Power GDP



Source: Chart generated by authors. Data sources are at the online appendix B of this volume, available at <https://ndupress.ndu.edu/Contemporary-GPC-Dynamics-Matrix/>.

private investment transactions. Additionally, the level and trajectory of economic innovation potential in the state is discussed.

The chapter ends with the use of a relatively new index of net overall power that purports to better capture economic and military capabilities less cost by combining GDP with GDP per capita as well as military capabilities and internal costs—yielding an indicator that better accounts for overall net national size and efficiency.[9]

Great Power Competitive Postures and Tool Sets

U.S. Competitive Posture and Tool Sets

General American Power Factors and Approaches. Nominal U.S. GDP in 2019 was an estimated $22.32 trillion, ahead of China's $15.3 trillion and Russia's $1.7 trillion (see figure 3b.1). America remained the world's top and most dynamic national economy, generating 23.9 percent of global GDP in 2019, far ahead of its nearest competitor, China, with 15.9 percent that year.[10] The U.S. share of the global GDP remains in slow relative decline, but it is anticipated to generate about 21 percent of global GDP in 2035. Given canonical projections in 2020, China's nominal GDP would be about 25 percent of the global total in 2035, surpassing that of the United States in about 2030.[11] The United States is not an export-dependent economy, but about 10 percent of its nominal GDP in 2018 was goods exports ($2.5 trillion). America also is the world's leader in services exports, with $828 billion in 2018 nominal value led by audiovisual technology, banking services, energy, express delivery, information technology, insurance, and telecommunications service industries.[12] Top U.S. export customers in the 2010s were China, Canada, and Mexico, all of which were

Table 3b.2. Percentage Disparity Between Gross and Net Overall Power Factors Using Beckley's Net Power Index

Great Power Rivalries				
	1990	**2000**	**2010**	**2015**
U.S. vs. Russia	10	10	4	5
U.S. vs. China	24	30	35	23
Russia vs. China	32	45	49	37

Note: Values calculated with the formula provided by Michael Beckley and from the data found at tab 2 of the online appendix B of this volume, available at <https://ndupress.ndu.edu/Contemporary-GPC-Dynamics-Matrix/>. The noteworthy "blip" in these comparative gross-to-net power index values beginning in 2010 comes from the revaluation of one of the input Correlates of War (COW) Composite Index of National Capability index values significantly reevaluated in the late 2000s by COW to better account for economic factors.

linked into complex regional and global supply chains accounting for a high percentage of U.S. manufactured exports.[13] Forty-seven percent of the U.S. economy is industrialized (see table 3b.2). Almost 19 percent of American manufactured exports were in the high-technology category in 2018, lower than the 31 percent of China's exports in 2017 but near the global average of 18 percent for 2018.[14] In mid-2018, the United States began a trade war with China, which over its first 18 months had become the most serious disruption in global commerce in nine decades.[15] Analysis of the Sino-U.S. trade war through September 2019 revealed the effort to be a double-edged sword. China's lost export revenue was triple that of the United States ($53 billion to $14.5 billion), but it had not achieved any substantive movement in the Chinese economic behaviors it was seeking to change. Moreover, key sectors of the U.S. economy—exporters of minerals and ores, forestry products, agribusiness, and transportation systems—lost substantial amounts of revenue and were disturbed that China has found alternative global suppliers, meaning potential lasting damage to their export revenues.[16] The "phase one" U.S. trade deal with China announced in January 2020 involved Chinese agreement to lift some retaliatory tariffs and commit to substantial increases in imports from the United States.[17] But trade disruptions due to the novel coronavirus (COVID-19) pandemic of 2020 make it unlikely that China will fulfill those commitments.

> "Those [states] that have the resources to do so will generally try to increase their military capabilities so as to reduce their vulnerability to coercion and attack. . . . Both strong and weak states may also enter into alliances intended to fend off potential enemies, or to overwhelm opposing powers or coalitions. . . . As a state's capabilities grow, . . . rising powers typically attempt not only to secure their borders but also to reach beyond them, taking steps to ensure access to markets, materials, and transportation routes; to protect their citizens far from home and defend their foreign friends and allies; to promulgate their religious or ideological beliefs; and, in general, to have what they consider to be their rightful say in the affairs of their region and of the wider world."
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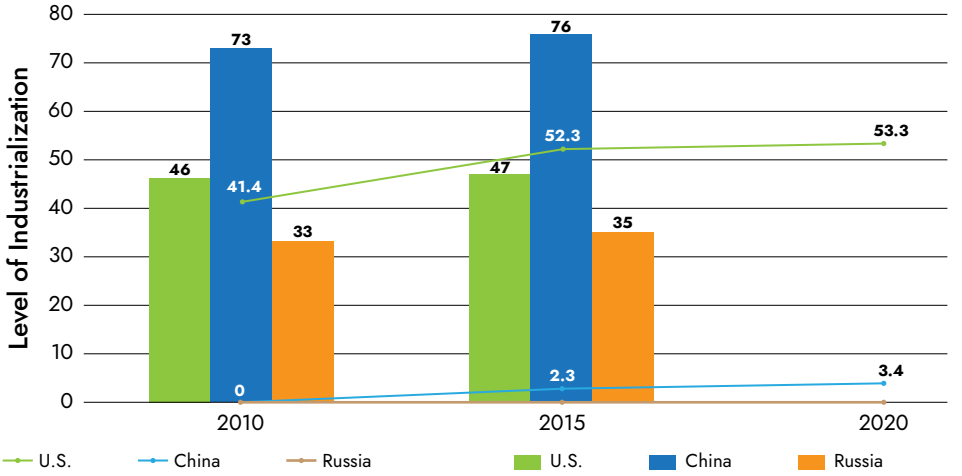
> —*Aaron L. Friedberg,* A Contest for Supremacy *(2012)*

The United States has been ranked in the top dozen innovative countries over the past decade and is expected to remain a global leader as an incubator for innovative manufacturing and services delivery for at

Figure 3b.2. Correlation Between Level of Industrialization and Percentage of Commercial Global Financial Markets



Source: Chart generated by authors. Data sources are at the online appendix B of this volume, available at <https://ndupress.ndu.edu/Contemporary-GPC-Dynamics-Matrix/>.

least the next decade. The United States also has been the dominant nation in private global financial markets for decades, accounting for 53 percent of activity in 2018.[18] China and Russia barely register on this measure of financial activity and corresponding revenue from global commodity and services exchange (see table 3b.2). The U.S. share of commercial financial markets has continued to grow over the past decade, and the anticipated continuation of this trend is a significant future U.S. economic growth advantage not easily accessed by other governments, so long as U.S. financial entities remain attractive compared to other options.[19]

At the same time, U.S. Government management of foreign access—governments and individuals—to America's dominant financial markets is both a power opportunity and a challenge. It gives the United States a unique coercive economic power tool to modify foreign entity behaviors by denying or restricting foreign access to preferred U.S. financial institutions should their behaviors counter American national interests. Sharper than diplomatic censure while gentler than military confrontation, financial sanctions can be appealing as an asymmetric U.S. power tool. The United States has used sanctions with far greater frequency since 2000, especially against known and suspected terrorists and their financing agents during the war on terror.[20] But overuse of financial sanctions can backfire, encouraging U.S.-sanctioned countries and groups to turn to alternative financial arrangements, reducing the effectiveness of the sanctions and straining relations with longstanding U.S. economic partners affected by the secondary impact. Over time, sanctioning can create incentives for friends and foes to develop alternative financial structures and arrangements that can work around U.S. entities and erode American current dominance in commercial financial services.[21]

Another risk to U.S. economic strength and future power standing lies in its level of national debt. As of late 2018, the United States had a nominal total national debt of $21.8

trillion, almost 100 percent of its nominal GDP. About 28 percent of that debt ($6.3 trillion) was held by foreign entities, with the top three holders being China ($1.1 trillion), Japan ($1 trillion), and Brazil ($0.3 trillion).[22] Thus, 72 percent of U.S. total national debt was held by U.S.-based investors, making it more of a domestic than a foreign relations challenge. The risks to U.S. economic standing and military investments would come in the out years if debt continues to grow. Interest on the national debt and spending for mandatory government programs, such as Medicare, could eat an ever-increasing piece of the Federal budget, leaving fewer dollars for the application of U.S. military, diplomatic, and economic power and influence activities around the world. Financing the debt also could drive up interest rates and reduce private investment in economic activity and technological innovation.[23]

The 2020 COVID-19 pandemic will have significant impact on the global economy as a whole, but its impact will not be evenly distributed. The United States could conceivably come out of the pandemic with economic scars that would see atrophy in these significant advantages. However, unless it makes some truly intemperate health or economic policy decisions, it seems more likely that post-COVID-19 America will remain in a relatively similar economic posture with respect to its Great Power rivals.

America's three-decade advantage of military-technological superiority—especially in precision-guided weapons and their sensors, information technology, and space-based networks—can no longer be assumed in this dawning era of Great Power competition. Yet the United States remains demonstrably superior across most major measures of military power. Absent some crushingly ill-considered decisions, America should remain the dominant military state for at least the coming decade. After several years of low-level increases, American military spending grew from $716 billion during fiscal year 2019 to $738 billion for fiscal year 2020. These figures triple the Chinese official defense budget and are 16 times that of Russia. This spending is forecast to slow again into the 2020s as domestic priorities and concerns about U.S. national debt return to political prominence.[24]

The U.S. nuclear arsenal remains below its treaty-limited number of 1,600 warheads, with 1,350 strategic nuclear warheads deployed on 650 land-based intercontinental missiles, 158 strategic bombers, and 18 nuclear submarines. In 2018, the United States launched a program to modernize its nuclear weapons arsenal and delivery systems—especially the overworked, dual-capable strategic bomber fleet—to assure its strategic deterrent value in the face of fast-emerging delivery technologies. The all-volunteer U.S. military consists of approximately 1.29 million Active-duty forces as of 2017: 470,000 active in the Army, 183,000 in the Marine Corps, 320,000 in the Navy, and 313,000 in the Air Force. The United States maintains forces with global reach and operational capability across a full spectrum of military operations.

The Navy is optimized for global presence with 12 top-end aircraft carriers and 12 smaller ones, compared to 1 operational carrier for China (with 2 more on the way) and 1 inoperable carrier in Russia. Its surface fleet features almost 90 frigates and destroyers, most with antiair, antiballistic missile, and antisubmarine capable systems. The Navy has 68 modern submarines, 18 of which are ballistic missile carriers and all of which are nuclear powered and thus capable of extended range and duration operations. Sixty percent of Navy assets and operations took place in the Pacific Ocean during 2018. The combined U.S. aviation fleet constitutes a force with global reach, featuring 2,300 modern fighter aircraft,

2,800 attack aircraft, 1,150 transport aircraft, and over 5,700 total helicopters, including 970 attack helicopters.[25] As of 2017, the United States also has a fleet of 7,500 unmanned aerial systems (UAS), 10 percent of which (786) were strategic-range, mid- and high-altitude, long-endurance intelligence or strike platforms. The United States will spend about $12 billion per year in 2020 and 2021 to retain its lower end UAS fleet while investing in research and development for new strategic UAS technologies to modernize a strategic fleet that has become increasingly vulnerable to the growing number of air defense and electronic warfare capabilities of the Great Powers and other international actors.[26] America's number of troop transports, helicopters, and fighter jets dwarfs those of any other nation, and more than doubles those found in the next largest force, the Chinese military. The Army has engaged in two decades of low-intensity conflict and special operations forces counterinsurgency and counterterrorism operations but retains a fleet of 6,000 technologically sophisticated main battle tanks, 39,000 armored fighting vehicles, and 3,000 artillery and rocket forces—most of which are operational and deployable worldwide.

America's military reach and power capacity are significantly augmented by formal military alliances in Europe and Asia and strategic partnerships with individual nations in the Middle East, South Asia, Africa, and the Americas. These alliances have come under increasing duress in the late 2010s, but their structures remain intact. U.S. military forces have military interoperability with the 28 North Atlantic Treaty Organization (NATO) nations and with two dozen other key allies and strategic partners across the Middle East and the Pacific. Perhaps more significantly, in a 2019 Pew International Survey, a median of 27 percent of respondents in 17 countries named the United States as their state's most dependable partner, while only 6 percent cited China and 4 percent Russia.[27] The United States remains the world's largest arms exporter, with 36 percent of the global total in 2018. Of the 25 countries buying the most weapons from the United States, 10 are either NATO member nations or part of other alliances formed with the United States since the Cold War.[28] With many of its military partners, the United States conducts security assistance and arms sales programs. Annual government-to-government U.S. defense assistance to foreign allies and partners averaged approximately $43 billion per year over the decade of the 2010s, with conspicuous spikes above that in 2012 and 2018.[29] Major partner states for U.S. Government military foreign sales support and security assistance are the states of the Middle East, Israel, Egypt, and Pakistan.

American diplomatic and political assets have been under strain for a decade, but they still provide the United States with unmatched structural power and opportunities to favorably compete with would-be rivals. The United States is a full member of 22 formal international government organizations, including the United Nations Security Council Permanent Five, and the largest voting member of the International Monetary Fund and World Bank, and has been a leading member of the World Trade Organization and World Health Organization.[30] For the past two decades, and especially since 2017, American policymakers have confronted a persistent question: Are the benefits of leadership of post–World War II, cooperative international organizations that help lock in predictable, U.S.-friendly policy orientations and minimize the need for Washington's use of coercive power worth the price of the institutional maintenance costs and the sacrifice of a degree of political autonomy?[31]

Well before the administration of Donald Trump, American skeptics of global institution participation tapped insular and nationalist tendencies in the U.S. public to erode support for participation and maintenance, but national polling in 2018 indicated that a majority of Americans continue to view U.S. international engagement and leadership of global institutions and alliances worth the cost.[32] U.S. leaders, if they choose to do so, have the public support and material resources to reverse the recent accelerated skepticism of U.S. international engagement. The still-dominant U.S. position in many intergovernmental and nongovernmental organizations means it can recover from the domestic political exploitation of ordinary citizens' grievances with "globalism." American influence in longstanding international institutions can be reinvigorated with the political will to sponsor and fund programs that enhance transparency into global institutions and, at the same time, generate domestic policies that do a much better job of compensating aggrieved U.S. national constituencies that consider themselves "losers" from the economic and social adjustments resultant from the international trade, financial flows, migration, technological change, and international legal decisions identified with globalization.[33]

Measures of American ideological resonance and cultural identity are mixed in 2020, but generally remain stronger than those for its main competitors. The years 2017 and 2018 witnessed a sharp decline in international views of the United States and its Presidential leadership. In 2016, a median of 64 percent of international respondents in the Pew Global Attitudes Survey held a favorable view of the United States and had confidence in President Barack Obama to direct America's role in the world. By 2017, only 49 percent viewed the Nation positively and just 22 percent felt confident in President Trump's leadership.[34] Yet a subsequent 2019 Pew survey revealed that despite this decline, many countries still view the United States as the nation their country can most rely on as a dependable ally into the future. The allure of the American Dream—the interdependence of prosperity, individual freedom, and liberal democracy—remains a positive attribute in most corners of the world.[35] While not without backlash, American products, popular culture, and basic individual rights are resonant around the globe. They are well marketed and do not require Americans to be physically present to exert this influence.[36]

Despite some notable erosion in confidence about the American ideal, its global appeal dwarfs that of any other country's narrative and provides a fungible power attribute if applied wisely. The COVID-19 pandemic provides another opportunity for Washington to market this appeal wisely. Equally important, English is the dominant global language for business, industry, and cultural exchange—1.8 billion people speak English, and an increasing number of multinational corporations require English as their common corporate language.[37] Fifty-five of the top 100 universities in the world are in the United States, and despite a decline in international student applications that began in 2012 and accelerated in 2017, revenue generated by American higher education in 2018 was nearly $41 billion—double the value of soybean exports and only modestly below U.S. automobile exports ($53 billion).[38]

In the information dissemination and communications arenas, longstanding American preferences are under duress in 2020. Yet here again, the United States possesses the economic strength and technological know-how to compete favorably, if not perfectly, across the information domain. Global acceptance of the U.S. preference for free and open

communications, including over the Internet and social media networks, has been badly bruised in the decade since 2010. The once dominant U.S.-led Internet Corporation for Assigned Names and Numbers oversight framework and its preference for openness and multi-stakeholder cooperation have encountered political challenges and then technological ones. China, Russia, and a number of other authoritarian states around the world believe that free and open communications on a mass scale present a threat to their national sovereignty and maintenance of domestic political order.[39] They each have developed technologies and protocols to constrain the free flow of information across and within their borders; some, mainly China and Iran, have completely blocked Internet and global telecommunications flows during periods of public unrest or government worry.

The United States today relies primarily on the private sector to project external information about American values and ideals—the core of the liberal capitalist brand.[40] During the Cold War, the U.S. Government invested substantial resources in *public diplomacy*, a term that covered a host of overseas activities—from libraries to lecture tours, art exhibits to world's-fair-style expositions, international visitor programs to radio and television broadcasts meant to undermine Soviet censorship.[41] As conducted by the United States Information Agency and the Department of State's Division of Cultural Relations, these activities sought to convey "a full and fair picture" of America. The Voice of America, Radio Free Europe, Radio Liberty, and Radio Free Asia were all publicly funded efforts to counter propaganda and provide alternative sources of information to oppressed populations.[42] Today, these U.S. public information activities are mostly gone, repurposed for other diplomatic duties, or cash-starved enterprises. The State Department does maintain a Bureau of Educational and Cultural Affairs and a Bureau of Global Public Affairs that perform some similar functions (including Internet and social media outreach), but with significantly less funding and impact than their Cold War–era equivalents.[43]

Instead, America's most successful export, commercial entertainment, has stepped into the void and become far more influential than the remaining public diplomacy activities. Recently, a U.S. political scientist investigated the implications of this privatization of public diplomacy and found it often to be counterproductive: "Instead of showing the interdependence of prosperity, democracy, and freedom, contemporary [American] popular culture tends to single out freedom and portray it in ways that are very entertaining, but often also very alien to the concerns of most people in the world."[44] There is a case to be made for far greater U.S. Government attention to its external information messaging in the era of Great Power competition. America's projection of information during and after the COVID-19 pandemic will provide an opportunity to generate such additional attention. One recent positive step that might be built on was the establishment of the interagency Global Engagement Center in 2016 to coordinate U.S. Government efforts to "recognize, understand, expose, and counter foreign state and nonstate propaganda and disinformation efforts aimed at undermining or influencing the policies, security, or stability of the United States, its allies, and partner nations."[45]

But even if the U.S. Government devoted more resources and attention to external messaging and counter-propaganda activities, it would face a major challenge given Russian and Chinese robust propaganda and domestic censorship activities—including those that block or distort the global Internet. Technology may provide a bit of an answer to this

challenge, for satellites do not currently play a major role in global Internet infrastructure. As addressed in chapter 5, within the next decade, a new generation of satellites could lay the foundations for an "Internet from space." That fast-emerging concept would use thousands of satellites instead of the tens of satellites used in contemporary telecommunications systems today. Laser light could then link these satellites to each other to form a network that would be able to reach remote, isolated, or even blocked regions of the world that today have no or limited access to the Internet.[46] Should America choose leadership in developing these technologies, and those associated with land-based relay stations and handheld phone receptors, Washington may again leverage the advantages of innovation and technology to counter the ongoing balkanization of the Internet and compete to see its norms for telecommunications and information exchange dominate this domain of state-to-state interaction. In turn, this could provide a rejuvenated U.S. public diplomacy with a conduit to project a more realistic, cohesive, and attractive American brand.

Key American Power Tools and Their Strategic Utility. For the period 2020 to 2025 and beyond, the United States remains relatively strong in military hard power and most of the soft power tools necessary to compete favorably in the five major areas of Great Power competition. Washington's military might—while not as dominant as in the early 2000s—is still unmatched in global power projection capacity. Although the relative size of the U.S. economy and its manufacturing base is in decline compared to China, American financial dominance is unchallenged, its innovation dynamism far more robust, and its demographic profile more conducive to long-term economic adaptation and expansion. Combined, its economic power tools—unless self-limited—remain most formidable in modern economic competition.

Core U.S. ideological messages featuring freedom, openness, transparency, and universal human rights resonate in many parts of the world, providing America with an ability to attract other states and individuals to act favorably toward American objectives and interests. Nevertheless, Washington's internal information management has been under duress from outside interference, and its external messaging remains largely a private commercial enterprise without a mandate or the means to compete with other Great Power narrative projections. Moreover, the government's recent uneven policy support for these influential soft power attributes has begun to reduce the decades-long U.S. role as the most influential Great Power in the information and ideological domains. The U.S. response to the 2020 COVID-19 pandemic, and how it is publicized domestically and internationally, will determine if America's advantages in these vital areas are eroded or reinforced.

American political and diplomatic power tools are now and will remain under duress in many specific locations around the globe in the decade of the 2020s. But even these are unlikely to be displaced by Russia or China in the near term.

China's Competitive Posture and Tool Sets

General Chinese Power Factors and Approaches. China's emergence as a global power is the product of its three-decade ascent to economic superpower status. From 1979 to 2018, China's economy grew at an annual rate of 9.4 percent. China became the world's second largest economy, largest manufacturer, largest trader in goods, second largest consumer of commodities, second largest recipient of foreign direct investment (FDI), and

largest holder of foreign exchange reserves.[47] In 2019, China's GDP was second only to that of the United States, at an estimated $15.27 trillion in exchange rate terms (see figure 3b.1). China's percentage of global GDP almost tripled in the decade from 2007 to 2017, moving from 6.18 percent to 15.25 percent.[48] Should China continue annual growth between 5 and 6 percent per year and the U.S. growth per year remain around 2.2 percent, then China's GDP will pass that of the United States between 2030 and 2034.[49] Less optimistic estimates of China's growth rate and the negative implications to productivity from a rapidly aging Chinese population versus that of the United States pushes this crossover point out to beyond 2040, or later—if ever.[50]

China's economic rise has been significantly fueled by export growth, as Western and Asian companies relocated production to tap low-cost Chinese labor. Chinese exports as a percentage of its GDP fell 8 percentage points in the decade from 2007 to 2017, down to 9 percent by 2017. This decline reflects China's increasing reliance on domestic consumption for growth. At the same time, Asian economies tightly coupled to Chinese supply chains, resource-rich countries that export to China, and developed countries selling to China's consumer market are growing more dependent on China.[51]

Manufacturing plays a critical role in the Chinese economy. By 2018, China accounted for 35 percent of global manufacturing output.[52] China's manufacturing base is largely industrialized, with a 73 percent industrialization rate in 2010 and a 76 percent rate in 2015 (see figure 3b.2). Thirty-one percent of China's manufactured exports were high-tech ones in 2017.[53] Most of these exports were originally produced by Western and Asian multinationals using imported components assembled in China, but Chinese firms are moving up the technology chain to produce more of these goods on their own. Sustaining strong economic growth and accelerating China's advantages in high-end manufacturing and cutting-edge technologies are critical objectives of the Chinese Communist Party (CCP). As noted in chapter 3a, these objectives were codified in the 2015 Made in China 2025 10-year economic development plan. China's trade surplus has been as high as 10 percent of GDP but declined to 2.2 percent of GDP (about $336 billion) in 2018. China's trade profile has been put under duress from a trade war with the United States that began in mid-2018, when the Trump administration implemented multiple rounds of tariffs on goods imported from China to force changes in Chinese industrial policies.

This trade war is the most serious disruption in global commerce in nine decades. Although China's losses from a year of this bilateral trade war totaled $53 billion, China found alternative partners for its exports, shifted some imports away from U.S. suppliers in retaliation, and has refused to make the policy changes the United States demanded.[54] As addressed, the phase one bilateral trade deal aimed at easing the trade war signed in January 2020 consisted primarily of Chinese pledges to increase imports of U.S. goods and some modest measures to address U.S. concerns about forced intellectual property transfers.[55] But the economic impacts of COVID-19 make it unclear if China will fulfill those commitments.

Despite policies aimed at stimulating "indigenous innovation," China ranks as the 29th nation in the world for economic innovation, much closer to Russia's 48th-place ranking than America's 5th-place ranking. However, some analysts see Chinese progress. One 2019 study observed that over the past decade, China narrowed the gap with the United States

on 36 indicators of scientific and technological progress and led the United States on some indicators.[56] As of 2015, China accounts for only 2.3 percent of global commercial financial transactions, massively below the American 52.3 percent share and well below Japan and Western European countries (see figure 3b.2). China's trajectory in the innovation and financial markets categories suggest that it will not be immune to challenges over the coming decade in an increasingly service-based and high-tech global economy.[57]

Long a net recipient of foreign direct investment, China became a net exporter of investment capital in 2015. China's Belt and Road Initiative (BRI) investments have driven its outward FDI flows to above $150 billion per year since 2015, while its FDI inflows have remained near $140 billion annually.[58] The China Global Investment Tracker estimates total Chinese outbound FDI at $1.2 trillion from 2005 to 2019 and total Chinese overseas construction projects (often funded by loans from Chinese state banks) at $800 billion. Chinese overseas investment is focused on access to resources (especially oil and natural gas), factories, and infrastructure projects that piggyback on Chinese trade and efforts to acquire advanced technology that will support China's innovation and industrial upgrading from the United States, Europe, and Asia. Overseas construction largely focuses on the energy, telecommunications, and transportation sectors.[59] In addition to direct investment, China has about $3.1 trillion in foreign currency reserves and is one of the two (with Japan) largest holders of U.S. Government securities, with about $1.1 trillion as of January 2020.[60] In addition to economic value, China's state-managed investments generate influence with foreign elites by contributing to economic development in other countries, while at the same time potentially enabling coercion if countries cannot service their loans and become overly indebted to Beijing.[61]

In 2020, China has an increasingly capable military with many instruments of power but does not yet match the United States and Russia. China is competitive in many areas of conventional force and weapons numbers but lags U.S. and Russian forces in several notable areas: overall level of technology, capabilities of individual systems, and power projection capacity. However, the modernization of the People's Liberation Army (PLA) has made impressive progress over the last 15 years toward the goal of being able to "fight and win informationized wars," including a major reorganization in late 2015 that will greatly improve its ability to conduct joint operations.[62]

The PLA Army is the largest of the services, making up about half of the PLA's 2 million soldiers (China also has about 510,000 reservists). The postreform army is organized in a standardized group army-brigade-battalion structure, with each of the 13 group armies equipped with 6 combined-arms operational brigades and 6 specialized support brigades, including artillery, air defense, special operations forces, and army aviation. PLA combined-arms brigades have operational (armored, mechanized infantry, or light infantry) and support battalions. The result is modular, relatively flexible units that can perform multiple functions and deploy by rail or air to fight away from their home garrison.[63] As part of efforts to build a fully mechanized force by 2020, the PLA operates 5,850 main battle tanks, although only about half of these are modern, frontline systems, along with 5,800 infantry fighting vehicles and 3,950 armored personnel carriers.[64] The army also has six amphibious brigades that could be used in an invasion of Taiwan.

The PLA Navy has been upgrading and developing new major combat platforms (surface ships, submarines, and aircraft) that incorporate modern technology, including advanced antiship cruise missiles and advanced surface-to-air missiles. Its best surface platforms, such as the new Type-055 cruiser currently in sea trials, approach U.S. and Russian capability levels, and it is outbuilding the U.S. and Russian navies as it replaces older ships with much more capable modern replacements. The navy currently operates one rebuilt Ukrainian aircraft carrier, is conducting sea trials on an indigenously built carrier, and is building a third flat-deck carrier that can launch aircraft capable of offensive operations. The navy's aircraft carriers, advanced destroyers (28) and frigates (52), replenishment vessels, and amphibious assault ships give it an increasing ability to operate further from China's coast, including into the Western Pacific and Indian Ocean. This capability is necessary to protect China's overseas interests and is reflected in China's new naval doctrine of "near seas defense and far seas protection."[65]

Over the last 20 years, purchases of advanced aircraft from Russia and improvements in the ability of China's aviation industry to produce modern aircraft have significantly enhanced the PLA Air Force's combat capabilities. Although not on technical par with the most advanced U.S. and Russian aircraft, the Chinese air force now operates more than 900 modern fourth-generation fighters such as the J-10 and J-11, has deployed its first squadron of J-20 stealth fighters, and is developing new medium- and long-range stealth bombers to augment its existing force of about 176 H-6 bombers. The air force also controls China's paratrooper corps and transport aircraft, which provide the PLA a degree of strategic mobility. Air force doctrine has shifted from territorial air defense to conducting both offensive and defensive missions, including a growing emphasis on long-range strategic attack and bombing operations over water.[66] China has a growing UAS program that features robust low-altitude, low-endurance systems; three known variants of mid-altitude, long-endurance surveillance or strike drones; and at least one high-altitude, long-endurance UAS that has been observed in the South China Sea and near the disputed Sino-Indian border.[67]

China's Rocket Force, formerly known as the Second Artillery Corps, operates China's intercontinental (about 100), intermediate-range (about 72), and medium-range (about 80) nuclear ballistic missiles and a large conventional force with ballistic and cruise missiles of various ranges that can target Taiwan and U.S. bases throughout the region. It has primary responsibility for deterring a nuclear attack and being prepared to retaliate if deterrence fails. China's nuclear policy calls for a "lean and effective" nuclear force focused on deterring nuclear attack in accordance with China's "no first use" nuclear policy. Accordingly, China has been satisfied with a much smaller nuclear arsenal than the United States and Russia (which both have about 1,600 deployed strategic warheads), although the size has expanded to about 300 deployed warheads as the Rocket Force has increased the number of missiles (including some with multiple warheads) and the navy has deployed four ballistic missile submarines.[68] The Rocket Force probably also controls other strategic capabilities based on missiles, such as China's direct-ascent antisatellite weapons and the antiship ballistic missile versions of the DF-21 and DF-26 missiles.

The PLA performs a range of tasks, including domestic missions such as maintaining political security and social stability, traditional military missions such as nuclear deterrence and protecting China's sovereignty and security, new missions such as protecting

China's economic development and China's interests in space and cyberspace, and nontraditional security missions such as emergency rescue, disaster relief, and international security cooperation. The PLA also supports China's foreign policy and broader strategic objectives by engaging in military diplomacy, with a focus in 2020 on the United States and Russia, and by engaging with the countries on China's periphery in the Pacific region.[69] PLA diplomacy places special emphasis on senior-level visits, exercises with foreign militaries, and naval port calls. In 2018, the PLA conducted more than 60 bilateral and multilateral exercises with foreign militaries.[70]

China has the second largest defense budget. Its estimated $250 billion in expenditures in 2018 was roughly 40 percent of the U.S. base defense expenditure budget of $650 billion, but 4 times higher than Russia's $61.4 billion.[71] China remains a major importer of weapons and military technology, depending on Russia for jet engines, advanced missiles, sensors, and other military systems—although this dependence has declined significantly over time and will probably end in the next decade.[72] China's improved military industrial base makes it a major arms exporter to developing states, particularly in Asia. Between 2008 and 2018, China exported some $15.7 billion worth of conventional weapons across the globe, making it the fifth largest arms supplier in the world—behind the United States, Russia, Germany, and France. The lion's share of these exports—about 75 percent—went to Asia. An additional 20 percent flowed into Africa.[73] China's arms exports niche has historically been medium-cost, medium-capability systems, and its export potential is also limited by the fact that many countries will not procure Chinese arms for political reasons. From 2014 to 2018, China delivered major arms to 53 countries, compared with 32 from 2004 to 2008. Pakistan was the main recipient (37 percent) from 2014 to 2018, as it has been for all 5-year periods since 1991. From 2014 to 2018, China became the largest exporter in the niche market of unmanned combat aerial vehicles, partly because the United States has restrictions on exports of these systems, and Russia has lagged in UAS development.[74]

China's principal military weakness relative to the United States and Russia is its limited power projection capability. China has invested in antiaccess/area-denial capabilities such as advanced diesel submarines, advanced surface-to-air missiles, antiship cruise missiles, and an innovative antiship ballistic missile designed to attack U.S. aircraft carriers. These capabilities raise the costs and risks for U.S. forces operating near China. The PLA's current limitations are partially offset by its geographic location and priority area for strategic focus in the Pacific. The United States, Russia, and other potential military contestants face challenges in projecting power and influence into the Western Pacific and Asia, where the Chinese are most obviously optimizing military capabilities for the coming decade.

However, the PLA's power projection capabilities fall off rapidly with distance, and China lacks allies or a network of overseas bases that could extend its range into other regions.[75] Nevertheless, the PLA is gradually expanding its global reach.[76] China has invested in a range of antisatellite capabilities that could degrade, interfere with, or directly attack U.S. satellites and has extensive cyber capabilities to collect intelligence and attack U.S. military computer networks. The PLA is developing a range of hypersonic weapons (and has deployed the DF-17 medium-range ballistic missile with a hypersonic glide vehicle) and is investing heavily in military applications of artificial intelligence.[77]

China is using its political and diplomatic clout to advance its influence within existing global institutions and by creating alternative ones.[78] In the late 2010s, China was a full member of 15 major intergovernmental organizations and an observer in two dozen others. These numbers were unremarkable and actually only two-thirds the number (22) of formal intergovernmental organization (IGO) memberships held by the United States and Russia at the same time.[79] However, China has been using its influence within the United Nations (UN) system and with other intergovernmental organizations to pick up diplomatic and political "distressed assets" abandoned by the United States and its allies and repurpose them to serve its strategic goals. China is now the second largest funder of the UN (behind the United States) and provides more troops to UN peacekeeping missions than any of the other permanent members of the UN Security Council (UNSC). Over the past decade, Chinese candidates have taken on senior leadership positions at the World Bank, Interpol, the United Nations Industrial Development Organization, the International Telecommunication Union, and the Montreal-based International Civil Aviation Organization. China has also sent military officers to lead UN peacekeeping missions in Western Sahara and Cyprus.

China's pursuit of crucial international organization posts has raised alarm among human rights and free speech advocates who fear Beijing will set back progress on these issues. After a former Chinese official was appointed head of Interpol in 2016, Beijing successfully used Interpol's "red notice" system to pursue critics living abroad. Beijing has also pressed to cut funding for human rights investigators in UN peacekeeping operations. In Geneva, the UN has stifled Chinese human rights advocates from making their case before the world. China's play for leadership of UN Educational, Scientific, and Cultural Organization (UNESCO) revealed that it views the Paris-based organization as more than just an overseer of world heritage sites and educational programs. Beijing also sees UNESCO as a vehicle to regulate the global Internet.[80] In addition, China practiced "lawfare" by leveraging its positions in treaties and regimes to ignore or reinterpret canonical provisions of international agreements when these undercut Beijing's preferences, as with UN Convention on the Law of the Sea provisions involving the right of all ships to innocent passage through its territorial seas.[81]

A second line of effort involves China creating alternative organizations that compete with existing international arrangements. Its BRI and Asian Infrastructure Investment Bank (AIIB) stand out as state-led infrastructure development programs that provide alternatives to multilateral UN development organizations such as the World Bank, International Monetary Fund, and Asian Development Bank. India and the United States rejected the state-led BRI model, and the United States shunned participation in the AIIB for similar reasons. Some argue that China's effort to build a parallel alternative framework for global infrastructure development does not pose a major challenge due to resource limitations and the AIIB's status as a multinational entity relying on standing commercial markets.[82] However, the existence of alternatives undercuts World Bank efforts to incorporate anticorruption, labor, and environmental standards in lending to developing countries. Others note that as BRI reached its 5-year anniversary in late 2018, as many as 14 percent of its projects (accounting for 32 percent of global BRI project value) had run into some kind of trouble. Many BRI projects confront local pushback from performance delays, lack of local workforce participation, and predatory project loan terms—including in states friendly

> "We assess that China's intelligence services will exploit the openness of American society, especially academia and the scientific community, using a variety of means."
>
> —*Daniel R. Coats,* Worldwide Threat Assessment of the U.S. Intelligence Community, *ODNI, January 29, 2019*

to China such as Pakistan, Sri Lanka, and Malaysia.[83] The extent to which China's alternative global institutional framework will gain traction and produce significant leverage for Beijing in the coming decade remains unclear.

China has extensive propaganda and communications tools to get its message out to international audiences, but the content of that message limits its effectiveness. Beijing's ability to craft and disseminate its preferred ideology in a resonant and positive message has been improving over the past decade but still exhibits significant liabilities and shortcomings. China's ideological framework of "a community of common destiny" glosses over conflicts of interest between nations and instead places emphasis on state sovereignty at the expense of human rights and freedoms, which inherently limits appeal. These values resonate with autocratic elites but not so much with ordinary citizens.

China has historically maintained an extensive censorship and propaganda apparatus to get the party's message out and to control and censor competing messages within China. The ruling Communist Party has adapted this apparatus to the Internet age, investing heavily in modern technologies (sometimes called the Great Firewall of China) to ban unwanted information from public view on the Internet and on social media. China has also increasingly pursued an assertive ideological strategy aimed at international audiences. With massive infusions of money—funding advertorials, state-owned newspapers and television networks, sponsored journalistic coverage, and positive messages from coopted boosters—China has been trying to reshape global views of itself by exploiting the vulnerabilities of the international free press and higher education establishments.

Beijing's main means of international influence has been through print, television, and radio. Its pays for Chinese "information supplements" to appear in respected international newspapers like the *Washington Post*. It oversees Xinhua, a state-run global media service that produces CCP-friendly stories for worldwide dissemination in multiple languages and boasts an 11.5-million-follower Twitter account (despite the fact that Twitter access is banned in China). It endorsed the acquisition of Hong Kong's *South China Morning Post* in 2015 by the CEO of the Alibaba Group (e-commerce), who inserted a management team that promised to provide a positive view of China. It generates content from its state-run China Radio International for use by broadcast networks from Norway to Turkey to Australia. It has generously funded a globally positioned China Global Television Network—rebranded in 2016 as the international arm of China Central Television—promising local journalists across the world excellent money and opportunity so long as they tell China's story well. The content emphasizes the generosity of the Chinese people and the benign nature of the Chinese government while amplifying the chaotic and unpredictable nature of Western politics and liberal democracies. Finally, China invested extensively in several hundred Confucius Institutes at universities around the world to promote Chinese language and culture and to promulgate CCP perspectives on an array of international and Chinese-related issues. These have drawn scrutiny in recent years for stipulating that the Chinese government must

approve teachers, events, and speakers at events on Western university campuses, while the Chinese government has refused U.S. State Department efforts to set up American Cultural Centers on Chinese college campuses.[84]

These efforts at information dissemination and image-making have met with uninspiring results. Across 34 countries surveyed, the 2019 Pew Global Attitudes Survey found a median of 40 percent had a favorable opinion of China, compared with a median of 41 percent who had an unfavorable opinion. Asia-Pacific, North America, and Western Europe saw a decline in favorable views of China compared to 2018.[85] But it will be interesting to see how Western European perspectives trend after China's very public assistance to states hard hit by the 2020 COVID-19 pandemic there. Conversely, African views of China are generally positive, averaging 62 percent favorable ratings.[86] Polling results indicate that China's image-making tools are having limited success in the regions of greatest concern—the Asia-Pacific and South Asia. Just one state in the region considers Beijing to be a friend: Pakistan. Even North Korea and Iran have transactional relations with Beijing. The Chinese language also limits the effectiveness of Chinese propaganda efforts. Very few people speak Chinese fluently as a second language around the world, while English is spoken fluently by almost 1.8 billion people, including hundreds of millions across the Indo-Pacific. The language barrier and the heavy role of state censorship has limited China's ability to use music, film, and entertainment as global soft power tools. These also are impediments to China's ability to use education as a source of cultural influence. Although China hosted 492,000 foreign students in 2019 (third most in the world), the quality of Chinese higher education institutions varies widely, and Xi Jinping's efforts to tighten the CCP's ideological grip over college lesson plans are likely to leave a negative impression on foreign visitors.[87]

Key Chinese Power Tools and Their Strategic Utility. China's contemporary overall power rests largely on its status as an economic global giant with growing resources and a steadily improving technology base. Beijing's global economic influence already exceeds that of the United States in some important categories that will continue to expand over the coming 5 to 7 years. Its capital reserves, level of industrialization, and attention toward high-tech innovation and military modernization underpin ongoing efforts both to assume leadership in current international economic and political institutions and to develop new ones more conducive to Beijing's interests. Yet China's projected economic power advantages may not be sustainable in the out years, unless it finds a way to redress weaknesses that may constrain growth, including a fast-aging population, an educational and intellectual culture that constrains innovation, and an undersized presence in financial markets that limits the revenue potential and influence of Chinese financial services.

Beijing is spending far more on military forces than Russia and more than any other country except the United States. If its military spending and investment trends continue, China has the capacity to equal or surpass the U.S. economy and U.S. military forces at some point during the next two decades but not in the coming one. China's emergence as a full superpower is uncertain, and the timing is impossible to predict.[88]

China's military capabilities have grown over the last decade to the point where it can compete with the U.S. military in East Asia and the Western Pacific. Its forces can deny U.S. naval and air forces uncontested access to areas near the Chinese coast, and it can hold

major U.S. air and naval weapons platforms at risk. However, China will be pressed to project power outside the second island chain over the next 5 to 10 years.

China's diplomatic power tools are important but not impressive. Beijing has filled leadership vacuums left by recent American and European withdrawals from international organizations and attempted to use these to advance Chinese national interests and/or change the institutional rules to suit Beijing's preferences.

China displays clear deficiencies in its ideological, cultural, and communications power dynamics. Beijing has no real multilateral political or military alliances, and only one true long-term strategic relationship. It pursues transactional interactions with economic and investment partners often wary of Chinese interests and financial terms. China gets poor ratings and survey responses regarding levels of international respect and trust. Despite an intense effort to improve global messaging, its national narrative focused on state control and social order over individual liberties resonates poorly outside of authoritarian circles. Finally, China continues to demonstrate limited language, cultural, or academic appeal. Beijing's proactive global response to the 2020 COVID-19 pandemic may help overcome these deficiencies and offset criticism that its repressive internal politics hid the problem from the rest of the world for far too long. How this plays out remains to be seen.[89]

China's power tools are skewed toward the economic today but have long-term potential to develop more broadly. China's trade and investment prowess make it a major force in the economic competitive space, and its long-term plan to leverage this economic advantage to develop military, political, informational, and ideological capability is palpable. China's contemporary power factors do not present a current urgent military threat, but in the long term, China's growth and global aspirations make it the most important potential Great Power challenger to the current U.S. global position and to longstanding American/Western values, norms, and institutions.

Russia's Competitive Posture and Tool Sets

General Russian Power Factors and Approaches. In 2020, Russia's application of its power resources to international competition remains as it has been for the prior decade: tactically successful despite severe structural shortcomings. Some analysts assert that Russia has a viable long-term strategy for use of its limited power base, a "raiding" strategic framework.[90] They see an underlying strategic logic behind a decade of Russian activism that includes Moscow's ongoing interventions into Georgia and Ukraine; its ventures into Syria and Libya; its norms-busting interactions with Iran, North Korea, and Venezuela; its ongoing use of cyber tools to disrupt and discredit elections in Europe and the United States; and its tactical rapprochement with China. Yet most strategic observers do not believe Russia has a true international strategy and credit Prime Minister Vladimir Putin with masterfully playing a weak and eroding power base to maximum short-term effect.[91]

Russia's major power factors are not generally positive but do include critical military capabilities. Russian military power tools are a mixed bag. Moscow retains a vast nuclear arsenal, one equal in size to that of the United States, with an estimated, treaty-authorized 1,600 active deployed strategic nuclear warheads.[92] Russian nuclear weapons underpin Moscow's claim to Great Power status and are distributed between an estimated 860 land-based delivery missiles, 10 ballistic missile submarines, and 50 bomber aircraft.[93] Russia is actively

modernizing this nuclear weapons force with new single-warhead and multiple-warhead missiles, a hypersonic glide missile delivery vehicle, new cruise missiles for its bombers, and reportedly new intermediate-range missiles and a rail-mobile missile—both long banned by Cold War–era arms control treaties that have either expired or are not likely to survive in the future.[94] Despite many reported delays and frequent testing challenges, Russian modernization efforts convince many military analysts that Moscow will be able to sustain a secure, second-strike nuclear deterrent at a price far more affordable than the prohibitive costs of developing robust antiballistic missile systems.[95]

Since 2011, Putin's Russia also has modernized its conventional military forces. The modernization has not generated a globally relevant conventional force. In 2019, Russia had 1 million members in its active-duty, conscript-based military, with more than 800,000 of these in ground and aviation units with home-country defense missions rather than deployment-capable ratings. Its navy featured 1 inoperable aircraft carrier, 56 aging submarines in varying states of repair, and a surface fleet heavy on Corvettes and shore patrol craft compared with an American fleet featuring 12 capital aircraft carriers, 68 fully operable submarines, and a surface fleet dominated by more than 90 frigates and destroyers. Russia's air force possessed fewer than 900 fighters compared to the 2,400 in the U.S. Air Force; an attack aircraft fleet of 1,500 that was half that of the United States; helicopter units with only 25 percent of the U.S. military's 5,800; and a transport aircraft fleet of 400, barely more than one-third the size of the U.S. force.[96] In addition, Russia's recent conventional military track record features multiple mishaps and embarrassments that call into question its ability to sustain global reach: Its only aircraft carrier, the geriatric *Admiral Kuznetzov*, suffered debilitating mechanical and safety incidents from 2016 to 2018 that have placed it in dry dock through at least 2021; its vaunted and extremely expensive T-14 Armata main battle tank reportedly failed many operational tests before its prototype broke during rehearsal for the May 2015 Victory Parade in Moscow; and its military aircraft—fighters and transports—began crashing at a regular and alarming rate from 2015 to 2019.[97]

However, since the 2008 Russo-Georgian war, strategically targeted military investments have underwritten a significant and meaningful upgrade of conventional and gray zone Russian military capabilities.[98] Generating a small annual defense budget compared to China and especially the United States, Russia spent 50 percent of its military budget over the decade—a disproportionately large share—on procurement of precision-guided and enhanced conventional strike weapons.[99] It capitalized a new generation of precision-guided munitions, modernized almost 1,000 of its current helicopter fleet of 1,485, and generated 1,000 new or modernized combat aircraft out of a force of 1,500.[100] The Russian military has increased its operational UAS fleet to over 2,000 systems, most of which are tactical and all of which are intelligence and surveillance models, not strike variants. Moscow has budgeted over $10 billion to develop combat UAS programs by 2020, and it has been aggressively developing counter-UAS capabilities featuring electronic warfare, counter-GPS spoofing, and kinetic detect-and-kill systems.[101] These enhanced and modernized systems mesh well with a smaller and more professional and deployable Army and Special Forces military cadre, often intermixed with civilian Russian private military company or mercenary forces.[102] Russia also has built flotillas of small surface ships and diesel-powered submarines in the Black Sea and Caspian Sea—both equipped with long-range, sea-launched cruise missiles—

and a number of cruise missile–carrying frigates. These weapons expand Russia's military strike reach to waters around most of Eurasia.[103] Russia aims to build a similar fleet in the Baltic Sea over the coming decade.

As of 2020, Russia's nominal GDP is only $1.7 trillion compared with $15 trillion for China and $22 trillion for the United States (see figure 3b.1). Russia is a "one crop economy" with a heavy dependence on energy exports (mainly oil and natural gas) that accounted for almost 60 percent of Russian exports and almost all of Moscow's $120 billion trade surplus in 2017.[104] Russia's dependence on energy export revenue is high, but its share of global exports remains low for its size—only 2.6 percent in 2018. Almost 55 percent of Russian exports went to Europe, with another 37 percent going to Asian trading partners, mainly China and South Korea.[105] Russia's level of industrialization hovers in the 30 percent range, well below other modern economies, and has remained relatively unchanged for more than two decades (see figure 3b.2). Russian high-tech manufacturing is subpar and declining, with only 11 percent of its 2018 manufactured exports consisting of high-tech products—just over one-half of America's 19 percent, one-third of China's 31 percent, and well below the global average of 18 percent.[106]

These numbers correspond with Russia's relatively low rankings on two other measures of modern economic performance: level of business innovation and share of global financial market transactions. In 2018, Russia's global innovation ranking was 46 out of 118 countries, relatively unchanged in the last decade, far below other modern economies, and a factor that restrains Moscow's ability to modernize its economy for a fast-changing future. Russia's share of global financial market transactions in 2018 was less than 1/10 of 1 percent—far below all other modern economies and a statistic indicating the inability of Russia—save for a handful of Putin-linked autocrats—to derive profit from the dynamic and expanding elements of the broader global services economy. The political institutions for an effective market economy in Russia are largely missing, its currency (the ruble) is an untrustworthy investment instrument, and robber-baron state capitalism lacks the kind of effective regulation and predictability that generates the trust necessary for economic investment, exchange, or growth.[107] Combined, Russia's trade as well as its financial and innovation limitations bode ill for its ability to generate sustainable tools for successful Great Power competition today or into the future.[108]

Russia fares just as poorly in measures of ideological resonance and cultural identity. It has demonstrated some success in promulgating a message of mistrust for Western institutions and values around the world, modestly increasing Russia's relative stature as an influential state.[109] Russia also has obvious linguistic and cultural affinity in former Soviet states and its "near abroad," especially in Belarus, Central Asia, and Mongolia, but the Russia brand and narrative do not resonate more widely. Only 34 percent of global respondents in a 2018 Pew International Survey had a favorable view of Russia, and 63 percent had no confidence in Vladimir Putin.[110] Few outside Russia speak Russian or watch Russian films or Internet programming in Russian. No Russian universities are ranked in the global top 100. Putin's Russian lifestyle lacks global appeal. Its public health system is weak; average Russian life expectancy is 5 years shorter for men and women than in Europe and a dozen years lower for men than in the United States. Russia's current population of 145 million

is forecast to decline to 121 million by mid-century, calling into question the ability of the Russian social system to support itself.[111]

Despite a negative global image and constrained ideological appeal, Russia does possess and wield several diplomatic and communications power tools to good effect. Putin's Russia has been a member of 22 major intergovernmental organizations for a decade or more (it was expelled from the G7/8 in 2015 after its annexation of Crimea and invasion of eastern Ukraine). Its political IGO affiliations include permanent member status on the UNSC, International Atomic Energy Agency (IAEA), and Interpol.[112] Moscow applies this diplomatic power to advance Russian policy interests and to make its case for recognition of controversial policies. For example, in 2015 Moscow protested listing a Sevastapol nuclear facility as belonging to Ukraine in an annual IAEA report annex, insisting that the facility in the Crimean city be listed as Russian.[113] Putin's Russia also advances its preferred standards of international policing and criminal accountability via Interpol, where in late 2018 the Russian nominee for the president was rejected by Western delegates based on Moscow's history of using Interpol to target Putin's political foes.[114]

In the information and communications space, Putin's Russia has funded and managed three substantive agencies for overt and covert dissemination of its global viewpoints: Russian Television (RT), Sputnik radio, and the Internet Research Agency (IRA). All are funded by the Russian government and work to disseminate propaganda and put out disinformation intended to polarize and confuse non-Russian audiences in a manner aimed to sow mistrust of Western media and institutions.[115] These tools modernize and update techniques used by Soviet Union intelligence agencies during the Cold War, today making the viewpoints of Putin's Russia available in 24 languages, especially English. They also amplify manifestly fake but disturbing stories that are difficult to disprove and create the feeling that no one knows quite what is real.

Relying heavily on the multiplier effect of high-volume retweeting and forwarding of its specious stories, the daily deluge of disinformation produced by RT and Sputnik has a nontrivial societal impact across much of the West and is a tactic that other authoritarian regimes are seeking to replicate.[116] The IRA is the covert social media influence and operation funded by the Russian government that works with Russian military intelligence hacking units to promulgate targeted disinformation and propaganda designed to distort voter perceptions and manipulate participation in democratic elections across Europe and in the United States.[117] At the same time, Putin's Russia has been developing the tools to isolate Russia from the global Internet, passing a 2019 law that allows such a cutoff and testing the technology necessary to operate a Russia-only Intranet.[118]

Russia has attempted to counter a longstanding negative humanitarian image in reply to the COVID-19 pandemic. Moscow sent hard-hit Italy a shipment of pandemic assistance materials in late March 2020, in an apparent effort to contrast itself with the European Union that reportedly sent Italy nothing. It remains to be seen if Putin's humanitarian gesture is remembered as genuine or a publicity ploy, especially since reports from Italy were that 80 percent of what Russia sent was of little use to Italy.[119]

Key Russian Power Tools and Their Strategic Utility. Even though Putin's Russia is in unambiguous relative economic decline compared to the United States and China, Russia in 2020 possesses a geographic expanse, a skilled workforce, and the vast natural resources

to balance against U.S. hegemony and China's rise for at least the coming decade. Its most important power tools are its nuclear weapons, its skills in cyber technology and the promulgation of information/disinformation, and its vast stores of oil and gas. Russia also has a diplomatic gravitas and a limited, modernized military and paramilitary capability necessary for projection of force in selected areas where its most significant strategic interests are engaged.

Russia's limited economic and ideological power attributes and potent but declining military, diplomatic, and communications tools make Moscow most capable of achieving foreign policy outcomes in its near abroad: Eurasia.

Outside Eurasia, the region where Russian diplomatic, military, and communications capability appears to be the most relevant is the Middle East. There, Moscow can use military bases in Syria and Iran to selectively employ its new conventional strike assets—conventional military and contractor ground forces equipped with precision-guided conventional weapons including missiles, rotary and fixed-wing attack aircraft, and conventional long-range cruise missiles launched from land and sea.

Russia's power limitations require it to avoid direct military confrontation with the United States and to seek tactical accommodation with China in areas where Sino-Russian key interests align for the coming decade. For at least the next 5 years, the two will continue to cooperate closely in the UNSC, take similar positions on cyber sovereignty and Internet governance, and use various diplomatic frameworks such as the BRICS (Brazil, Russia, India, China, and South Africa) grouping and the Shanghai Cooperation Organization to coordinate joint security and policy positions. They also should be anticipated to continue arrangements that share nonnuclear military technology and to conduct joint military exercises on a symbolic, limited basis. Despite the Sino-Russian entente, Russia continues to sell arms and provide advanced military technology to countries that have territorial disputes with China, such as Vietnam and India.

Russia's relative power capabilities are heavily concentrated in the military arena, with tools ranging from a formidable nuclear weapons arsenal, to significant conventional military power projection capabilities, and to a successfully employed set of gray zone armed actors. Moscow's information operations potential is equally impressive and unscrupulous, adding to the short-term capacity of Russia to pursue a strategy of disruption against Western institutions and organizations. Yet Russia's economic, ideological, and political power tools are substandard for a durable global power now and are likely to atrophy further over the next 5 years. Its severe limitations in many critical areas of power development and projection make Russia an urgent but not a grave threat to many immediate American/Western competitive interests. They also render it a dubious long-term challenger for Great Power ascendance.

Net Power vs. Gross Power Indicators: A Less Imminent Great Power Transition?

The conclusions reached above about the relative status of American, Chinese, and Russian power attributes today and into the future—a future featuring the disruptive technologies of the fourth industrial revolution (addressed in chapter 4) and increasingly service-based economies—were made from comparison of their gross factors of power—that is, factors of power available for use before any internal "costs" or "taxes" on them from domestic needs

and constraints are factored in. Some political scientists, most notably Michael Beckley of Tufts University, contend that gross power indicators misrepresent actual state power. Beckley believes that one must move beyond gross power factors and calculate the net index of Great Power factors to get a realistic feel for relative state power.

Beckley has generated such a net power index. It focuses on *net power resources*, which he defines as the resources available to a country after subtracting production costs, welfare costs, and security costs. His net power approach captures the fact that countries with large populations and potential domestic challenges will spend most of their gross power resources supporting their people and maintaining domestic stability, leaving fewer net resources available for external use in Great Power competition. Beckley argues that for populous countries such as China, gross power often significantly overstates actual capabilities and net power provides a more accurate assessment. His determination of net power factors can be applied by a comparative index to the U.S.-China, U.S.-Russia, and China-Russia competitive dyads over the past 25 years. Table 3b.2 makes this application and demonstrates the discrepancy between gross power balances between two states and net power balances, measured as a percentage difference in the two calculations.

Low numbers indicate a small gap between gross power factor comparisons (from the Correlates of War Composite Index of National Capability) and net power comparisons, while higher numbers indicate a greater disparity.[120] The calculated numbers for 2015 indicate that the net power disparity between Russia and the United States closely matches the gross power disparity, which validates a large gap in overall power attributes. Conversely, the figures for the United States vs. China and Russia vs. China show large disparities, suggesting that gross power calculations significantly exaggerate China's actual power. The 23 percent gap between U.S. and China net and gross power comparison reflects the high costs China faces in maintaining domestic stability and generating military forces that is not captured in gross power calculations. This difference is similar to the number Beckley calculated in net-vs.-gross power between Germany and Russia in the 1890 to 1917 period, where gross power calculations severely overestimated Russian power. The even higher 37 percent gap for Russia and China in 2015 is similar to the disparity Beckley calculated between Britain and China between 1840 and 1910, a period where Britain's small size misassessed the huge power deficiency that came from China's enormous internal security and societal costs. The implication is that China's contemporary internal challenges and costs again make its gross power indicators exaggerate its actual overall power potential.[121] In turn, the use of a net power comparison indicates that a Great Power transition between the United States and China is far from imminent.

Comparative Insights and Implications: 2020–2025 and Beyond

This detailed review of contemporary Great Power factors and their strategic utility reveals eight major insights.

First, the modern Great Powers—the United States, Russia, and China—will compete across the five categories listed in table 3b.1 in a manner featuring some cooperation and collaboration but with increasing episodes of confrontation, especially over nonmilitary issues. The tools of competition traditionally associated with one category of interaction in a less rivalrous era will be used more and more often to achieve strategic effects in another

> "The competition is likely to be multilayered and interactive. No single theme or model will capture the complex mosaic of global competition, and the intersections among diverse types of competition—how success or failure in one area exacerbates or mitigates others—will be a crucial determinant of relative success."
>
> —*Michael J. Mazarr et al.,* Understanding the Emerging Era of International Competition*, RAND (2018)*

category during Great Power competition. This is both a return to historic dynamics of interstate rivalry and a reason that concepts such as sharp power, gray zone operations, and geoeconomics now appear frequently in the writing and thinking of those today grappling with old geopolitical concepts now made new.

Second, the most important gross power indicators available today and their projections for the next 5 to 10 years clearly indicate that for Washington, Russia is an urgent but transient security risk, while China is the most important—albeit presently less threatening—Great Power challenger to U.S. national interests and global policy preferences. A net power comparison between the United States and China indicates that their power transition timeline is longer than some now fear.

Third, America's military advantage—albeit not what it was in the two-decade period from 1992 to 2014—remains robust. America remains largely unrivaled in the one area that matters most to its military power potential: its ability to deploy effective forces anywhere in the world in the event of a crisis.[122] However, this advantage could be less definitive if China or Russia is able to pick favorable political and geographic ground for a short but decisive military conflict and limit America's ability to bring its full power advantages to bear in a particular setting. This is especially true in the Indo-Pacific region and is addressed in detail in chapter 9.

Fourth—and in alignment with the third insight—neither Russia nor China possesses the power to prevail in a protracted military clash with the United States today or for the foreseeable future. Each knows this and, unless guilty of a serious miscalculation, will seek to avoid a direct military clash with the United States if at all possible, between now and 2025. Washington can leverage this to its advantage while pursuing a strategy that collaborates when possible, competes smartly, and confronts unacceptable behaviors and policy challenges adroitly. American military dominance is an asset in this new era of Great Power competition, but the United States needs to develop new competitive tools in nonmilitary areas. Its current strength gives it the opportunity to wean itself from its post–Cold War addiction to military instruments and develop more fungible capabilities across the diplomatic, ideological, informational, and economic categories of Great Power interaction. Improving America's capacity and ability to wield nonmilitary instruments effectively is necessary to compete effectively in a new era of Great Power rivalry.

Fifth, China today has the economic and communications/information power necessary to compete with the United States (and Russia) for access and influence around the world. Its use of foreign investment through the BRI and the AIIB demonstrates China's ability to win access and influence, at least in the short run. The longer run strategic impact remains uncertain as the downsides of Beijing's ideological message and its often-criticized predatory economics model may not provide sustainable influence in the future. China has the ability to seriously constrain U.S. (or Russian) military activities in East Asia, in

the Western Pacific, in cyberspace, and increasingly in space. These factors suggest that the United States must calibrate a competitive strategy for these regions that leverages U.S. ideological and soft power advantages and seeks to undercut China's economic strengths by highlighting the downsides for its partners.

Sixth, Russia's power factors align well with the short-term, geographically limited strategy it has been pursuing. Moscow has clear military, economic, and communications advantages in its near abroad (Eurasia) and a limited but nontrivial ability to project these tools for influence in the Middle East, the Arctic, and cyberspace. However, Russia's economic, ideological, and political challenges are likely to erode its power tools for influence beyond its near abroad as the decade of the 2020s progresses. A worthy U.S. approach to competition with Russia might optimize soft power and deterrent postures along Russia's immediate periphery combined with more assertive competition (and, where necessary, nonmilitary confrontation) against Moscow's use of global institutions and communications structures to delegitimize openness, transparency, and truth in the rest of the world.

Seventh, the combination of Great Power strategic interests and their current and future power potentials makes it clear that Russia is a dangerous near-term strategic competitor to the United States with the potential to do enormous military damage to America and the world if miscalculation leads to a military clash. China is a less insidious short-term challenger, but it is the Great Power with the strategic interests and the growing power potential to dramatically alter current norms, rules, and procedures preferred for international interactions by the United States and its Western allies. Washington must treat each Great Power accordingly. In the 2020 to 2025 window, Washington must choose whether, where, and how to compete. Put starkly, the United States can contest or confront its Great Power rivals today in accordance with a resolve to sustain its global position and the standing rules, norms, institutions, and alliances of the current international order, or it can abdicate leadership of the global order and allow a much more powerful China to extended its own version of global norms, rules, and institutions. The former course entails risks, but the latter course would not necessarily avoid a military confrontation, especially if the United States comes to view an increasingly Chinese ordered world to be unacceptable.[123]

Finally, past performance is not a guarantee of future results. The United States, China, and Russia each face major internal structural, economic, and demographic challenges.[124] The choices each state's political leadership make about how to address these domestic dynamics as well as their international challenges will determine the future power they will possess and the future policy options they might pursue.

Technology, Innovation, and GPC Considered

The next chapter rounds out this volume's first section dedicated to providing a conceptual framework for understanding a new era of Great Power competition. Major advances in technology have been demonstrated to empower the rise of new states into international preeminence. Emerging powers become dominant because they develop new economic spheres that become leading sectors of the global economy, underpinning the economic vitality and military power of that state in a reordered global hierarchy.[125] At the same time, the diffusion of key technological know-how or inventiveness to other countries has been correlated with Great Power decline.[126] Chapter 4 looks at the Great Powers in context with

the ongoing fourth industrial revolution—one being driven by the rapid emergence and convergence of multiple technologies, including robotics, artificial intelligence, 3D printing, energy, biotechnology, and food production. Chapter 4 considers critical technologies and their meaning for a new era of Great Power competition.

Notes

[1] This distinction from power literature, in particular, can be found in David Baldwin, *Paradoxes of Power* (New York: Bail Blackwell, 1989). The priority focus of this chapter on power-as-material-resources, before consideration of power as the ability-to-realize-ends, aligns with the approach in Stephen G. Brooks and William C. Wohlforth, *America Abroad: The United States' Global Role in the 21st Century* (Oxford: Oxford University Press, 2016).

[2] This operational definition was derived from Thomas J. Volgy et al., "Major Power Status in International Politics," in *Major Powers and the Quest for Status in International Politics: Global and Regional Perspectives*, ed. Thomas J. Volgy et al. (New York: Palgrave Macmillan, 2011), 1–26. Their definition derives from an amalgam of several other classic efforts at defining Great Power status, including the following historic references: J. David Singer and Melvin Small, "Formal Alliances, 1815–1939: A Quantitative Description," *Journal of Peace Research* 3, no. 1 (March 1966); Jack Levy, *War in the Modern Great Power System: 1495–1975* (Lexington: University Press of Kentucky, 1983); John J. Mearsheimer, *The Tragedy of Great Power Politics* (New York: Norton, 2001); and Benjamin O. Fordham, "Who Wants to Be a Major Power? Explaining the Expansion of Foreign Policy Ambition," *Journal of Peace Research* 48, no. 5 (2011), 587–603.

[3] On the basic point of the misleading nature of gross domestic product (GDP) to capture overall national power decline, see Brooks and Wohlforth, *America Abroad*, 14–47.

[4] As an example, the United States realized $127 billion in receipts for the use of intellectual property in 2017, while China only netted $4.8 billion. On the number of America's nonmanufacturing economic advantages underrepresented in GDP and other economic measurements, see Thomas J. Wright, *All Measures Short of War: The Contest for the Twenty-First Century and the Future of American Power* (New Haven: Yale University Press, 2017), 165–168; Brooks and Wohlforth, *America Abroad*, 14–15. For data on comparative revenue from the global use of intellectual property in 2017, see "Charges for the Use of Intellectual Property, Receipts (BOP, Current US$)—China, World, United States, East Asia & Pacific," World Bank, available at <https://data.worldbank.org/indicator/BX.GSR.ROYL.CD?end=2017&locations=CN-1W-US-Z4&start=2000>.

[5] Wright, *All Measures Short of War*, 165.

[6] Ibid., 165–168.

[7] Ibid.

[8] Insight from Michael Beckley, "The Power of Nations: Measuring What Matters," *International Security* 43, no. 2 (Fall 2018), 8–9, who argues for a use of net power indicators (power assets minus power liabilities). For insights on the historic use and defense of gross measures of state power in theory and in practice, see Paul M. Kennedy, *The Rise and Fall of the Great Powers: Economic Change and Military Conflict from 1500 to 2000* (New York: Random House, 1987); John Mearsheimer, *The Tragedy of Great Power Politics* (New York: Norton, 2014), 55–138; Joseph Nye, Jr., *The Future of Power* (New York: PublicAffairs, 2011), 25–81; Ashley J. Tellis et al., *Measuring Power in the Postindustrial Age* (Santa Monica, CA: RAND, 2000), 1–33; Beckley, "The Power of Nations," 8–12.

[9] This new index is based on the premise that while GDP systematically exaggerates the wealth and military capabilities of poor and populous countries—because they tally countries' resources without deducting the costs countries pay to police, protect, and serve their people—thoughtful military studies show that the higher a country's GDP per capita, the more efficiently its military fights in battle. The reason is that a vibrant civilian economy helps a country produce advanced weapons, train skillful military personnel, and manage complex military systems. GDP per capita provides a rough but reliable measure of economic and military efficiency. The new index reduces the distortions described by multiplying GDP and GDP per capita before making power comparisons. See Beckley, "The Power of Nations," 14–19; Michael Beckley, "Economic Development and Military Effectiveness," *Journal of Strategic Studies* 33, no. 1 (February 2010), 43–79.

[10] Jeff Desgardins, "The $86 Trillion World Economy—In One Chart," *World Economic Forum*, September 10, 2019, available at <www.weforum.org/agenda/2019/09/fifteen-countries-represent-three-quarters-total-gdp/>; Rob Smith, "The World's Biggest Economies in 2018," *World Economic Forum*, April 18, 2018, available at <www.weforum.org/agenda/2018/04/the-worlds-biggest-economies-in-2018/>.

[11] Desgardins, "The $86 Trillion World Economy."

[12] "The Benefits of International Trade," U.S. Chamber of Commerce, available at <www.uschamber.com/international/international-policy/benefits-international-trade>.

[13] Ken Roberts, "In Top 10 U.S. Exports for 2017, 3 Countries Keep Popping Up: China, Canada and Mexico," *Forbes*, February 28, 2018, available at <www.forbes.com/sites/kenroberts/2018/02/28/in-top-10-u-s-exports-for-2017-three-countries-keep-popping-up-china-canada-and-mexico/#3965f39860d3>.

[14] World Bank, "High-Technology Exports (% of Manufactured Exports)," available at <https://data.worldbank.org/indicator/TX.VAL.TECH.MF.ZS?view=chart>.

[15] Ken Roberts, "China Trade War Losses at $84 Billion and Counting—Does New Data Suggest Tide Turning Toward U.S.?" *Forbes*, December 16, 2019, available at <www.forbes.com/sites/kenroberts/2019/12/16/china-trade-war-losses-at-84-billion-and-counting—-does-new-data-suggest-tide-turning-toward-us/#35c3b543bd40>. Clearly, the global economic disruption from the 2019–2020 novel coronavirus will eclipse this trade war by quite some margin.

[16] Steve Liesman, "Trade War Losses for the U.S. and China Grow into the Tens of Billions of Dollars," CNBC, November 5, 2019, available at <www.cnbc.com/2019/11/05/trade-losses-for-the-us-china-mount-into-tens-of-billions-of-dollars.html>.

[17] See *Economic and Trade Agreement Between the Government of the United States of America and the Government of the People's Republic of China* (Washington, DC: Office of the U.S. Trade Representative, 2020), available at <https://ustr.gov/sites/default/files/files/agreements/phase%20one%20agreement/Economic_And_Trade_Agreement_Between_The_United_States_And_China_Text.pdf>.

[18] In 2018, U.S. financial markets contributed 7.4 percent ($1.5 trillion) to nominal U.S. GDP. In context, this was equal to the total size of the Russian economy that year. See "Financial

Services Spotlight: The Financial Services Industry in the United States," *Select USA*, n.d., available at <https://www.selectusa.gov/financial-services-industry-united-states>.

[19] Unless otherwise specified by individual note, the economic data cited in this paragraph and the prior one are found in the online appendix B of this volume, available at <https://ndupress.ndu.edu/Contemporary-GPC-Dynamics-Matrix/>.

[20] In 2014, the U.S. Treasury had some 6,000 financial sanctions in place; by late 2018, that number had reached 7,967. See Cathy Gilsinan, "A Boom Time for U.S. Sanctions," *The Atlantic*, May 3, 2019, available at <www.theatlantic.com/politics/archive/2019/05/why-united-states-uses-sanctions-so-much/588625/>.

[21] Ibid.

[22] *Foreign Holdings of Federal Debt*, RS22331 (Washington, DC: Congressional Research Service, July 26, 2019), available at <https://fas.org/sgp/crs/misc/RS22331.pdf>.

[23] Although not without economic pain and political risk, the United States has generated viable plans to reduce national debt and attendant risk to future power. For the most prominent recent one, the so-called Simpson-Bowles Plan, see Kevin Robillard, "Report: New Simpson-Bowles Plan," *Politico*, February 19, 2013, available at <www.politico.com/story/2013/02/report-new-simpson-bowles-plan-087769>.

[24] Mark E. Cancian, "U.S. Military Forces in FY 2020: The Strategic and Budget Context," Center for Strategic and International Studies (CSIS), September 30, 2019, available at <www.csis.org/analysis/us-military-forces-fy-2020-strategic-and-budget-context?gclid=CjwKCAiAuqHwBRAQEiwAD-zr3W5VXp25g3B_08uUJYHBc5_q9z58pywaOs_SZD5HGS-xRlobyECggxoC2dEQAvD_BwE>.

[25] All U.S. military data derived from "Chapter 2: Comparative Defence Statistics," in *The Military Balance* (London: Institute of International Strategic Studies [IISS], 2019).

[26] Zachary Morris, "U.S. Drones: Smaller, Less Capable Drones for the Near Future," *Military Review* (May–June 2018), available at <https://www.armyupress.army.mil/Journals/Military-Review/English-Edition-Archives/May-June-2018/US-Drones-Smaller-Less-Capable-Drones-for-the-Near-Future/>.

[27] Laura Silver, "U.S. Is Seen as Top Ally in Many Countries—But Others View It as a Threat," Pew Research Center, December 5, 2019, available at <www.pewresearch.org/fact-tank/2019/12/05/u-s-is-seen-as-a-top-ally-in-many-countries-but-others-view-it-as-a-threat/>.

[28] Arms transfers from the United States bring security guarantees, which basically entail diplomatic and military assistance in case of troubles. See *SIPRI Yearbook 2019: Armaments, Disarmament and International Security—Summary* (Stockholm: Stockholm International Peace Research Institute [SIPRI], March 2019), 6–9, available at <www.sipri.org/sites/default/files/2019-06/yb19_summary_eng.pdf>.

[29] "U.S. Arms Sales and Defense Trade," fact sheet, Department of State, May 21, 2019, available at <https://www.state.gov/u-s-arms-sales-and-defense-trade/>. Many analysts question the strategic value of military assistance and arms sales programs. For example, see Mara Karlin, "Why Military Assistance Programs Disappoint," *Foreign Affairs* (November/December 2017), <www.brookings.edu/articles/why-military-assistance-programs-disappoint/>.

[30] "Diplomatic Dashboard," available at <http://diplodash.pardee.du.edu/>.

[31] For this conceptualization, see John Ikenberry, "State Power and the Institutional Bargain: America's Ambivalent Economic and Security Multilateralism," in *U.S. Hegemony and International Organizations: The United States and Multilateral Institutions*, ed. Rosemary Foot, S. Neil MacFarlane, and Michael Mastanduno (Oxford: Oxford University Press, 2003).

[32] Dina Smeltz et al., *America Engaged: American Public Opinion and U.S. Foreign Policy* (Chicago: The Chicago Council on Global Affairs, 2018), available at <www.thechicagocouncil.org/sites/default/files/report_ccs18_america-engaged_181002.pdf>.

[33] Stewart M. Patrick, "President Trump and the Future of Global Governance," Council on Foreign Relations, January 31, 2017, available at <www.cfr.org/blog/president-trump-and-future-global-governance>.

[34] Jacob Poushter and Kristen Bialik, "Around the World, Favorability of the U.S. and Confidence in Its President Decline," Pew Research Center, June 26, 2017, available at <www.pewresearch.org/fact-tank/2017/06/26/around-the-world-favorability-of-u-s-and-confidence-in-its-president-decline/>.

[35] See Martha Bayles, "How the World Perceives the New American Dream," *The Atlantic*, October 10, 2015, available at <www.theatlantic.com/international/archive/2015/10/american-dream-world-diplomacy/410080/>. Of note, the international projection of this "dream" has not been pushed by the U.S. Government since the Cold War. See Thomas G. Mahnken, *Forging the Tools of 21st Century Great Power Competition* (Washington, DC: Center for Strategic and Budgetary Assessments, 2020), 30–31, 37.

[36] Lane Crothers, *Globalization and American Popular Culture, Vol. 4* (New York: Rowman and Littlefield, 2017).

[37] Tsedal Neely, "Global Business Speaks English," *Harvard Business Review* (May 2012), available at <https://hbr.org/2012/05/global-business-speaks-english>.

[38] "One of America's Most Vital Exports, Education, Never Goes Abroad, but It Still Faces Threats," *New York Times*, January 3, 2019, available at <www.nytimes.com/2019/01/03/magazine/one-of-americas-most-vital-exports-education-never-goes-abroad-but-it-still-faces-threats.html>.

[39] *China's National Defense in the New Era* (Beijing: The State Council Information Office of the People's Republic of China, July 2019), 5–7; Joel Wuthnow, *Chinese Perspectives on the Belt and Road Initiative: Strategic Rationales, Risks and Implications*, China Strategic Perspectives 12 (Washington, DC: NDU Press, October 2017), 9.

[40] Bayles, "How the World Perceives the New American Dream."

[41] Ibid.; Mahnken, *Forging the Tools of 21st Century Great Power Competition*, 30–31.

[42] Mahnken, *Forging the Tools of 21st Century Great Power Competition*, 31.

[43] As of early 2020, the leadership of this State Department Bureau had no political appointee, indicating its relative stature in American diplomacy. See Bureau of Global Public Affairs (Web site), Under Secretary for Public Diplomacy and Public Affairs, U.S. Department of State, available at <https://www.state.gov/bureaus-offices/under-secretary-for-public-diplomacy-and-public-affairs/bureau-of-global-public-affairs/>.

[44] Bayles, "How the World Perceives the New American Dream."

[45] See Global Engagement Center (Web site), Department of State, available at <https://www.state.gov/bureaus-offices/under-secretary-for-public-diplomacy-and-public-affairs/global-engagement-center/>.

[46] Brandi Vincent, "Laser-Linked Satellites Could Deliver 'Internet from Space,'" *Nextgov*, December 20, 2019, available at <www.nextgov.com/emerging-tech/2019/12/laser-linked-satellites-could-deliver-internet-space/162009/>.

[47] *China and the World in the New Era* (Beijing: The State Council Information Office of the People's Republic of China, September 2019), 4.

[48] Desgardins, "The $86 Trillion World Economy"; Rob Smith, "The World's Biggest Economies in 2018."

[49] Central Intelligence Agency, "China," *World Factbook*, available at <https://www.cia.gov/library/publications/the-world-factbook/geos/ch.html>; Malcolm Scott and Cedric Sam, "Here's How Fast China's Economy Is Catching Up to the U.S.," *Bloomberg*, May 21, 2019, available at <www.bloomberg.com/graphics/2016-us-vs-china-economy/>.

[50] Li Fuxian, "Why Ageing China Won't Overtake the U.S. Economy as the World's Biggest—Now or in the Future," *South China Morning Post* (Hong Kong), March 29, 2019, available at <www.scmp.com/comment/insight-opinion/article/3003524/ageing-china-simply-cannot-overtake-us-economy-worlds>.

[51] Yen Nee Lee, "McKinsey Research Finds the World Becoming More Exposed to China—But Not the Reverse," CNBC, July 21, 2019, available at <www.cnbc.com/2019/07/15/mckinsey-world-has-become-more-exposed-to-china-but-not-the-reverse.html>.

[52] Jonathan Woetzel et al., *China and the World: Inside the Dynamics of a Changing Relationship* (Washington, DC: McKinsey Global Institute, July 2019), i–ii.

[53] World Bank, "High-Technology Exports (% of Manufactured Exports)."

[54] Liesman, "Trade War Losses for the U.S. and China Grow into the Tens of Billions of Dollars."

[55] "What's in the U.S.-China Phase 1 Trade Deal," Reuters, January 15, 2020, available at <www.reuters.com/article/us-usa-trade-china-details-factbox/whats-in-the-us-china-phase-1-trade-deal-idUSKBN1ZE2IF>.

[56] Robert D. Atkinson and Caleb Foote, *Is China Catching Up to the United States in Innovation?* (Washington, DC: Information Technology and Innovation Foundation, April 2019), available at <http://www2.itif.org/2019-china-catching-up-innovation.pdf>.

[57] Unless otherwise specified by individual endnote, the economic data cited in this paragraph is found in the online appendix B of this volume, available at <https://ndupress.ndu.edu/Contemporary-GPC-Dynamics-Matrix/>.

[58] Wayne M. Morrison, *China's Economic Rise: History, Trends, Challenges, and Implications for the United States*, RL33534 (Washington, DC: Congressional Research Service, updated June 25, 2019), 16, available at <https://fas.org/sgp/crs/row/RL33534.pdf>.

[59] Derek Scissors, *China's Global Investing in 2019: Going Out Goes Small* (Washington, DC: American Enterprise Institute, January 2020), available at <www.aei.org/wp-content/uploads/2020/01/Chinas-global-investment-in-2019-1.pdf>.

[60] U.S. Department of the Treasury, "Major Foreign Holders of Treasury Securities," January 2020, available at <https://ticdata.treasury.gov/Publish/mfh.txt>.

[61] In developing countries, China buys political influence through development finance; in emerging and medium-sized economies, China uses state-owned enterprises and investment funds to buy what is on sale; and in large, advanced economies, China uses state-backed funds and Chinese private investors to buy shares in large companies with hopes of both realizing economic gain and reducing skepticism regarding the goals and effects of Chinese investments and global influence. See Frank Mouritz, "China's Economic Coercion," in *China's Global Influence: Perspectives and Recommendations*, ed. Scott D. McDonald and Michael C. Burgoyne (Honolulu: Asia-Pacific Center for Security Studies, 2019), 174–189.

[62] See Phillip C. Saunders et al., eds., *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms* (Washington, DC: NDU Press, 2019).

[63] See Denis Blasko, "The Biggest Loser in Chinese Military Reforms: The PLA Army," in Saunders et al., *Chairman Xi Remakes the PLA*, 357–365.

[64] Reserve, tank, infantry fighting vehicle, and armored personnel carrier numbers are from *The Military Balance 2020* (London: IISS, 2020), 260.

[65] Ship numbers are from *The Military Balance 2020*, 262–263. Also see Andrew Erickson, "Power vs. Distance: China's Global Maritime Interests and Investments in the Far Seas," in *Strategic Asia 2019: China's Expanding Strategic Ambitions*, ed. Ashley J. Tellis, Alison Szalwinski, and Michael Wills (Washington, DC: National Bureau of Asian Research, 2019), 247–277; and Defense Intelligence Agency (DIA), *China Military Power 2019* (Washington, DC: DIA, 2019), appendix B.

[66] Aircraft numbers are from *The Military Balance 2020*, 265; DIA, *China Military Power 2019*, appendix C; also see Richard P. Hallion, Roger Cliff, and Phillip C. Saunders, eds., *The PLA Air Force: Evolving Concepts, Roles, and Capabilities* (Washington, DC: NDU Press, 2012).

[67] Rick Joe, "China's Growing High-End Military Drone Force," *The Diplomat*, November 27, 2019, available at <https://thediplomat.com/2019/11/chinas-growing-high-end-military-drone-force/>.

[68] Intercontinental ballistic missile, intermediate-range ballistic missile, and medium-range ballistic missile numbers are from *The Military Balance 2020*, 259; DIA, *China Military Power 2019*, appendix D; also see David C. Logan, "Making Sense of China's Missile Forces," in Saunders et al., *Chairman Xi Remakes the PLA*, 393–436.

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[70] Ibid., 214–216; also see Phillip C. Saunders, "China's Global Military-Security Interactions," in *China and the World*, ed. David Shambaugh (New York: Oxford University Press, 2020), 181–207.

[71] "Military Expenditure by Country, in Constant (2017) US$ m., 1988–2018," SIPRI Military Expenditure Database, available at <www.sipri.org/sites/default/files/Data%20for%20all%20countries%20from%201988%E2%80%932018%20in%20constant%20%282017%29%20USD%20%28pdf%29.pdf>.

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[75] China has established one overseas logistics support facility in Djibouti but is unlikely to be able to use it to support combat operations.

[76] *Assessment on U.S. Defense Implications of China's Expanding Global Access* (Washington, DC: Department of Defense, December 2018), available at <https://media.defense.gov/2019/Jan/14/2002079292/-1/-1/1/EXPANDING-GLOBAL-ACCESS-REPORT-FINAL.PDF>; see Joel Wuthnow, Phillip C. Saunders, and Ian Burns McCaslin, "PLA Joint Operations in the Far Seas," in *Going Global? The People's Navy in a Time of Strategic Transformation*, ed. Ryan Martinson and Andrew Erickson (Newport, RI: Naval War College Press, forthcoming).

[77] *The Military Balance 2020*, 234.

[78] See Katherine Morton, "China's Global Governance Interactions," in Shambaugh, *China and the World*, 156–180.

[79] "Diplomatic Dashboard."

[80] Since 2017, China has sought to portray itself as a responsible alternative, highlighting its support for international agreements, including the Paris Agreement and the Joint Comprehensive Plan of Action (Iran nuclear deal), and affirming its commitment to the United Nations (UN). President Xi Jinping's January 2017 speech at the UN's European headquarters in Geneva rejected isolationism and trade protectionism and placed Beijing at the center of UN-overseen international affairs. Of note, human rights advocates and other nongovernmental organizations were barred from attending Xi's speech. See Colum Lynch and Elias Groll, "As U.S. Retreats from World Organizations, China Steps In to Fill the Void," *Foreign Policy*, October 6, 2017, available at <https://foreignpolicy.com/2017/10/06/as-u-s-retreats-from-world-organizations-china-steps-in-the-fill-the-void/>.

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[82] See John Ikenberry and Darren J. Lim, *China's Emerging Institutional Statecraft* (Washington, DC: The Brookings Institution, April 2017), available at <www.brookings.edu/wp-content/uploads/2017/04/chinas-emerging-institutional-statecraft.pdf>.

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[110] Ibid.

[111] Angela Dewan, "Russia vs. U.S.: Where Is Life Better?" CNN, March 14, 2018, available at <www.cnn.com/2018/03/14/europe/russia-us-election-compare-intl/index.html>.

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[113] "Russia Wants IAEA to Recognize Crimea's Legal Status," *World Nuclear News*, June 10, 2015, available at <www.world-nuclear-news.org/NP-Russia-wants-IAEA-to-recognise-Crimeas-legal-status-10061501.html>.

[114] Ann M. Simmons, "Russian Is Nominated to Lead Interpol, Alarming Western Officials," *Wall Street Journal*, November 20, 2018, available at <www.wsj.com/articles/russian-is-nominated-to-lead-interpol-alarming-western-officials-1542723109>.

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[120] The Composite Index of National Capability (CINC) is a statistical measure of gross (not net) national power used in the University of Michigan Correlates of War (COW) Project that began in 1963. CINC uses an average of percentages in six different components that represent economic, demographic, and military strength to generate a "CINC number" for relative power. Its six components are total population of a country ratio, urban population of a country ratio, iron and steel production of a country ratio, primary energy consumption ratio, military expenditure ratio, and military personnel ratio. The COW Project is available at <http://www.correlatesofwar.org/data-sets/national-material-capabilities>.

[121] For the historical comparative numbers, see Beckley, "The Power of Nations," 22–25.

[122] This conclusion aligns with that of Wright, *All Measures Short of War*, 166. However, it is modified to focus on U.S. predominance in a "protracted" military clash—the kind that neither Russia nor China would willingly fight today with the United States. The third insight indicates that China or Russia might today prevail in a military clash proximate to their own territory and where America's full power advantages might never be brought to bear.

[123] Here, "unacceptable" relates to the phrase "immutable and untenable" in the fifth major insight of chapter 2's historic review of Great Power competition: "The most reliable indicator of when a clash (war) will erupt is when one or both sides recognize a shift in the relative alignment of economic and military power that is perceived to be immutable and untenable."

[124] Anthony H. Cordesman, *China and the U.S.: Cooperation and/or Conflict: An Experimental Assessment—Part Two: China's Emerging Economic Power*, with Max Molog (Washington, DC: CSIS, October 2019), 3, available at <https://csis-prod.s3.amazonaws.com/s3fs-public/publication/191001_China_Grand_Strategy_Part%202_.pdf>.

[125] See especially, Robert Gilpin, *U.S. Power and the Multinational Corporation: The Political Economy of Foreign Direct Investment* (New York: Basic Books, 1975), 65–68; Robert Gilpin, *War and Change in World Politics* (Cambridge, UK: Cambridge University Press, 1981), 156–185.

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