No Winners in This Game
Assessing the U.S. Playbook for Sanctioning China

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Terminology Notes

The economic domain refers to the economic aspects of a crisis or conflict with China, with the assumption that other domains (e.g., political, cyber, military) may also be implicated in the crisis or conflict. The economic domain includes the trade, investment, and financial ties between two or more countries, which can be targeted to impede or enhance economic activity between them.

The People’s Republic of China (PRC) refers to the Chinese state. The party refers to the Chinese Communist Party (CCP). China refers to the entire country, inclusive of nongovernment and non-party actors. When discussing economic activity, the default term is China, to encompass the range of individuals, firms, and government entities that may be involved.

The real economy refers to the nonfinancial aspects of an economy, including the production and trade in goods and services.

The term sanction refers to any economic measure that is used as a coercive instrument, including financial sanctions, export controls, tariffs, or other restrictions on economic activity with China. Financial sanctions indicates those sanctions that specifically target financial activities.

U.S. partners refers to those international partners that would likely align with the United States in a crisis or conflict with the PRC, including potentially the G7 (including the European Union [EU]) and close security partners, such as Australia. The report does not use the term allies, which has a specific meaning in the security context that is not applicable in the economic context, though there is likely a high degree of overlap between U.S. partners, as that term is used in this report, and U.S. allies.
Sanctioning China represents a challenge more complex than any other in the modern era of sanctions.
Executive Summary

The relationship between the United States and the People’s Republic of China (PRC) is marked by both geopolitical tensions and deep economic linkages. While policymakers may have once believed that economic integration would inject stability into the overall relationship and provide a deterrent to conflict, that idealistic vision has been shaken by Russia’s brutal invasion of Ukraine. No longer can the United States and its partners assume that the PRC’s economic interest in retaining ties to the global economy will override its nationalist impulses. The once unthinkable idea of imposing severe sanctions on China has become a strategic imperative to consider, as one of a range of measures that the United States and its partners may consider if relations with the PRC deteriorate further.

Yet, sanctioning China represents a challenge more complex than any other in the modern era of sanctions. The scale and interconnected nature of China’s economy means that the damage from sanctions will not be contained in China; instead, the negative effects will rebound globally through China’s deep economic ties to nearly every country around the world, including the United States. China has substantial capacity in key economic areas, such as manufacturing, that provide it with important means to retaliate against U.S. sanctions or impose its own economic costs on the United States and its partners.

This report seeks to advance policy debates on how to sanction China, if geopolitical conditions warranted doing so at scale. It builds on prior Center for a New American Security (CNAS) research, including a 2023 report that outlines how the United States currently uses a variety of sanctions tools to manage the strategic relationship with the PRC.1 A key finding of the earlier work is that the United States imposes sanctions at a relatively limited scale compared to the scope of challenges that exist in the bilateral relationship, with the notable exception of an increasing range of technology-related sanctions. A large divide separates the existing level of sanctions on China and the full range of economic measures that the United States may consider. This report attempts to envision that fuller range of economic measures and consider whether the use of sanctions would meaningfully advance U.S. interests during a potential conflict.

The report begins, in chapter 1, with an assessment of the main economic and political characteristics that would determine China’s vulnerability to, and resolve to withstand, sanctions pressure. The concentration of power at the very top of the PRC’s political system, along with a willingness to subordinate economic objectives to political ones, indicate that China may have a high degree of resolve to absorb the costs of sanctions. China’s continued reliance on the U.S.-dominated global financial infrastructure is a key area of vulnerability to sanctions pressure. But, China retains significant economic leverage through its manufacturing relationships, as well as through the importance of its large domestic market to foreign multinational companies. Attempting to impose sanctions that are asymmetrically more painful to China will be a fraught exercise, given the degree to which China is embedded in global supply chains.

In chapter 2, the report examines sanctions actions that the United States and its partners may impose during a conflict scenario, drawing from the sanctions playbook used against Russia and projecting adaptations that would be needed in the China context. The main objective of this analysis is to identify points of asymmetric leverage in the U.S.-China economic relationship, where imposition of a sanction would be more economically damaging to China than to the United States and its partners. The sanctions actions are examined through the lens of an ends-ways-and-means framework, loosely borrowing concepts from the defense community and mapping them into the economic domain. The value in such an exercise is to impose discipline in identifying why a particular economic measure may be taken and what the intended impact would be. It can also enhance the ability to integrate economic actions with those being considered in military or other domains.

The report examines possible actions under three broad categories, based on the objective of the sanctions: technology denial, embargo of commodities and materials, and macroeconomic pressure. The research includes analysis by the CNAS Energy, Economic & Security team of economic data and research interviews with a wide range of sanctions, export controls, macroeconomics, trade and finance, and China experts in the United States, Europe, and Asia. In addition to examining potential sanctions options on a sectoral basis, the report also includes a company-by-company lens to assess the potential impact of sanctioning specific Chinese companies.

The report finds that the U.S. options to impose harsh sanctions on China are severely constrained. U.S. options to deny militarily relevant technology to China are modest, at best. Certain areas, such as maritime capabilities, will be difficult to target due to the nearly
entirely domestic supply chains of China’s main military shipbuilders. Other areas, such as semiconductors, cannot be targeted without running the risk of disruption to critical U.S. supply chains. Overall, efforts to deny technology to China require a longer time horizon to be effective and may have less utility in an immediate run-up period to a potential conflict.

Attempts to use sanctions tools to deny commodities or materials to China will require innovation and the development of new sanctions tools. Key commodities, such as energy, are inherently substitutable and globally available, including from many countries that will likely not align with the United States in a conflict with the PRC. Building on the example of the oil price cap used in the Russia context, the United States and partners will need to consider novel policy approaches that provide positive economic inducements to align with U.S. policies, in addition to using traditional sanctions tools.

The United States has a distinct advantage in sanctions intended to place pressure on China’s economy, based on China’s continued reliance on the U.S. dollar for its trade and financial operations internationally. However, it remains uncertain whether U.S. policymakers would impose the most severe form of macroeconomic pressure sanctions, such as sanctions on China’s central bank and major commercial banks. China’s banks are the largest in the world and play a key role in facilitating China’s international trade. The economic disruption and market instability that would result from heavy sanctions on these banks is unknown but likely enormous.

Chapter 3 describes insights derived from an economic domain strategy game that the CNAS Energy, Economics & Security team conducted to develop insights into how the United States, its partners, and the PRC may use sanctions during a potential conflict scenario. While the research included in chapter 2 focuses on a factual assessment of where economic leverage may exist, the game builds on this factual baseline to explore how that leverage may be most effectively used. A key insight from the games is that limited sanctions may be less likely to alter PRC policies, yet the United States and its partners may hesitate to impose more severe sanctions due to the risky and uncertain impacts of such sanctions on their own economies.

The games and research also highlighted important issues related to the timing and sequencing of sanctions. For sanctions to play a deterrent role, the United States and its partners would need to signal strong, united resolve to impose harsh sanctions well in advance of a conflict. Yet, political resolve to impose sanctions historically only emerges at the moment of crisis. The impact of sanctions is felt only months or years after their imposition, and the harshest measures—which would be akin to acts of economic warfare—would likely not be imposed until a conflict was already under way. These timing dynamics heighten the risk that the PRC will miscalculate the degree of U.S. and partner resolve in a pre-conflict period. The inability to build and message a clear consensus on sanctions in advance of a conflict can seriously undermine their deterrent effect.

In any sanctioning effort, coordination with foreign partners will be critical. The economic games reinforced the need for a broad coalition of sanctioning partners, centered on the G7 economies, to limit the PRC’s ability to evade or retaliate for U.S. sanctions. U.S. sanctions will be porous and ineffective if not reinforced by similar actions from other major economies. Countries in the Global South will be important actors as well, as they can provide alternative markets for China and help buffer the impact of U.S. and partner sanctions.

Chapter 4 outlines a set of institutional, international, and operational recommendations for what the United States and its partners should do now to prepare for a large-scale sanctions effort, should geopolitical conditions deteriorate to a point where such an effort is required. Sanctions, and the threat to impose them, are inherently a question of credibility. The central challenge for the United States and its partners will be to enhance the credibility of their sanctions threat, without inadvertently escalating tensions with the PRC. A theme across the recommendations is the need to deepen the strategic thinking and analytic processes for the development of sanctions options within government. This must be done in three spheres: within the economic agencies, to sharpen the vision for the use of sanctions in a range of potential crisis or conflict scenarios with the PRC; across the interagency, to incorporate economic domain options into an integrated deterrence strategy that truly integrates all instruments of national power, including economic measures; and with key international partners, to lay the groundwork for a coalition of sanctioning economies.
The challenge of sanctioning China at scale is enormously complicated. This report does not address every aspect of this challenge. It should be read as an initial baseline report, with a focus on identifying key points of U.S. economic leverage and providing initial insights into how the United States and its partners can best maximize the modest leverage that they have. The research focuses on the use of economic instruments in the abstract, rather than tying them to a specific crisis or conflict scenario, with the aim of developing insights that would be relevant across a wide range of possible scenarios.

The next phase of research from the Energy, Economics & Security team will apply the insights from this report to specific crisis or conflict scenarios, including considering sanctions packages that may be appropriate for a range of conflicts and the different phases of those conflicts.

Sanctions alone will not deter the PRC from war. However, that does not mean that sanctions have no role in managing tensions with the PRC. The question for policymakers is not whether sanctions will work to deter China, but instead how sanctions can be used to greatest effect as part of a broader strategy that integrates all instruments of national power.

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**Summary of Recommendations**

The United States, working closely with its foreign government partners and the private sector, should take a range of institutional, international, and operational steps to build the credibility of the U.S. sanctions threat and responsibly prepare for potential conflict with China.

**INSTITUTIONAL**

The United States must strengthen its institutional capacity to engage in economic domain conflicts. Specifically, the U.S. government should:

- Develop integrated economic domain strategies to guide the application of economic force in the competition and potential future conflict with the PRC.
- Institutionalize economic domain strategic planning processes across the economic agencies, in the interagency, and with key foreign partners.
- Strengthen sanctions assessment and enforcement capabilities, including through an increase in resourcing for these functions.
- Build surge capacity to implement sanctions in the government, and encourage private sector entities to do the same.
- Maintain regular dialogue with the private sector on geopolitical risks and anticipated sanctions impacts.

**INTERNATIONAL**

The United States and its partners should:

- Engage in coordinated economic domain strategic planning to strengthen capacity in partner governments, build political consensus, and develop possible sanctions actions.
- Share intelligence with each other on Beijing's intentions toward Taiwan or other potential drivers of conflict, with the aim of building consensus on coordinated sanctions efforts.
- Coordinate diplomatic outreach and messaging in crucial deterrence periods to demonstrate alignment and resolve.
- Engage proactively with the Global South on the need for sanctions and support from the United States and partners to mitigate impacts.

**OPERATIONAL**

The United States should undertake economic domain operations on a range of fronts, some that should be implemented now while others focus solely on preparation unless and until a conflict erupts. The United States should:

- Implement a long-term technology denial operation, carefully assessing the net strategic benefit of further restrictions that impact ordinary commercial activities.
- Prepare for commodity embargo operations, including through consideration of novel sanctions structures that account for the commoditized and globally available nature of key products, such as energy.
- Prepare for macroeconomic pressure operations by preserving the essential role of the U.S. dollar in the global financial architecture, exercising restraint on the premature use of financial sanctions, and building credibility of the financial sector sanctions threat.
- Strengthen economic domain defenses by enhancing supply chain resiliency, establishing emergency stimulus mechanisms, and pushing back on the PRC’s trade coercion practices.
- Develop sanctions options for gray-zone actions and scenarios short of conflict.
There are no winners in an economic domain conflict with China.
Introduction

There are no winners in an economic domain conflict with China. Imposing sanctions at scale on China would be devastating, not just for China, but for the U.S. and global economies. China’s economy is the second largest globally, and it is deeply linked with the rest of the world. An abrupt decoupling caused by severe sanctions would almost certainly result in profoundly negative consequences for the United States and other sanctioning countries. China also retains its own important sources of economic leverage, which it could weaponize during a conflict scenario.

It also remains uncertain whether sanctions can materially impact the PRC’s decision-making, particularly when it comes to its self-identified core interests. Should the PRC pursue aggression, such as invasion or blockade against Taiwan, it will likely have accounted for some degree of sanctions costs and would have a high degree of resolve to withstand negative economic shocks in pursuit of its long-held geopolitical ambitions.

Yet, despite these constraints, U.S. policymakers would almost certainly reach for the sanctions tool if a conflict with the PRC appeared imminent. The question is not whether sanctions could work, but rather how to use sanctions most effectively as part of a truly integrated deterrence strategy incorporating instruments of national power across all domains.

This report seeks to contribute to ongoing policy debates on sharpening U.S. economic domain statecraft with respect to the PRC. The probability of conflict is uncertain and may be low in absolute terms. But, the economic consequences of conflict would be immense. Responsible statecraft must both prepare for the worst case, while engaging robustly on all fronts to stabilize relations with the PRC and deter conflict.

The report includes notes of caution throughout as it seeks to put forth options for maximizing the impact of sanctions, while framing actions in the broader context of escalation management. Importantly, one should hope that many of the options included never see the light of day, as they should only be used in the event of an acute crisis or conflict with the PRC and would needlessly escalate tensions if used under current geopolitical conditions.
Any sound sanctions strategy must begin with an understanding of the political and economic factors that will determine China’s vulnerability—or resilience—to sanctions.
Chapter 1: Assessing China as a Sanctions Target

A ny sound sanctions strategy must begin with an understanding of the political and economic factors that will determine China’s vulnerability—or resilience—to sanctions. The structure of China’s economy and its links to the international system will guide the application of sanctions to areas of economic activity in which the United States can inflict the highest degree of asymmetric damage. The ability to inflict damage, in turn, must be weighed against the PRC’s resolve and ability to absorb the impact of sanctions in its pursuit of its core national objectives. This balance of damage and resolve is the basic sanctions equation that the United States must solve for to craft a sanctions strategy that can meaningfully influence PRC actions.

This section outlines, at a high level, the political and economic factors relevant to a sanctions strategy. Certain economic aspects, such as China’s reliance on the U.S. dollar, are also examined in greater detail in later sections of the report. The objective of this section is not to provide an exhaustive account of, for example, China’s economic model. It is instead to make explicit the assumptions and context that inform the development of sanctions strategies later in the report. It also highlights that an effective sanctions strategy may change as these underlying factors evolve.

Political Factors

China’s political system is characterized by authoritarianism and an increasing concentration of power under Xi Jinping personally. Individual freedoms are curtailed, and private firms lack the autonomy that they enjoy in democratic states. The Chinese Communist Party (CCP) has stepped up its interventions across the economy, resulting in a party-state capitalist system in which the lines between the party, state, and economy are increasingly blurred and economic efficiency is subordinated to party aims. China’s tight political control will limit the effectiveness of sanctions strategies intended to create bottom-up pressure within China. China’s observed practice of preferencing political goals over economic efficiency may also indicate high levels of resolve to withstand sanctions pressure. While distinguishing between the political and economic in China is a fraught exercise, this section nonetheless focuses on factors that have a predominantly political nature.

Consolidation of Personal Power within the Chinese Political System

China operates under an authoritarian system led by the CCP, with General Secretary Xi Jinping at the helm. The party has consolidated power in recent years, reshaping governance structures to prioritize party agencies over the state apparatus. Power has been additionally consolidated under Xi Jinping personally, as he has broken norms to maintain his position as president for a third term, purged the leadership of non-loyalists, and enshrined “Xi Jinping” thought into the country’s constitution. At the 20th National Congress of the CCP, Xi Jinping’s associates swept all seven positions on the Politburo Standing Committee, keeping longtime allies (Zhao Leiji and Wang Huning), while elevating associates (Li Qi, Cai Qi, Ding Xuexiang, and Li Xi). Similarly, Xi has increased the number of his associates on the bigger 24-member Politburo from 60 percent to 80 percent. The personalization of power under Xi represents a shift away from prior eras that saw more collective rule among CCP leaders.

While the style of China’s authoritarianism has shifted under Xi, certain weaknesses remain the same. The Chinese system has, for the past two decades, shown a proclivity for aggression in its foreign policy, often in ways that can seem counterproductive. The analysis of China expert Susan Shirk notes the weaknesses of the collective leadership system under Hu Jintao, which led to bureaucratic logrolling and few checks on the actions of the security and military agencies, planting the seeds for overreach in Chinese foreign policy. The trend toward overreach has morphed under Xi Jinping, as collective leadership falls to the wayside and is replaced by an individual center of power under Xi. Fewer checks exist on his personal power, which has replaced the collective as the focal point of political decision-making. As Shirk notes, “There is really nothing left to constrain Xi Jinping’s overreach.” The risk of overreach and aggression in the national security sphere remains unabated, now perhaps heightened by the increasingly personal nature of China’s authoritarianism, in which there are few incentives to act contrary to the views of Xi Jinping.

The increasing concentration of power has also led to a high degree of opacity in China’s political system. External actors have limited ability to discern the intentions of China’s senior political leadership or to understand the drivers of policy changes. The recent dismissals of high-level officials, including former foreign minister Qin Gang, former defense minister Li Shangfu, and two senior leaders of the People’s Liberation Army (PLA) rocket forces, for example, indicate turbulence
within the regime, but external observers lack a clear understanding of why Xi found these moves necessary. The low visibility into China’s political system means that assessments of China’s foreign policy intentions carry a high degree of uncertainty, complicating U.S. efforts to manage tensions and to accurately divine when China may be moving closer to initiating conflict.

CHINA’S PARTY-STATE CAPITALIST MODEL
Within the context of its authoritarian system, the CCP relies on economic development as one source of legitimacy for its political leadership. China’s growth story has been remarkable in many ways. Hundreds of millions of Chinese people were raised out of poverty, and China became the world’s second-largest economy. For years, it could bank on swelling growth rates to provide legitimacy for the party and demonstrate the viability of its political and economic model. Today, however, this unspoken compact is in question, as China faces slowing growth rates and struggles to provide broad-based growth across its population. China under Xi seems unlikely to achieve the structural reforms necessary to spur high growth again. A faltering economy may erode an important base of the CCP’s legitimacy. A return to double-digit growth is not expected, but more importantly, it is not evident that China’s economy can successfully transition to a more healthy and sustainable growth pattern.

China’s economy is heavily influenced by the state and the party. The economic model increasingly shows a blend of the political and the economic, in what scholars have dubbed the party-state capitalism model. The economy is marked by a high degree of intervention by the state, including through mechanisms such as state-owned enterprises (SOEs), preferential access to credit and subsidies, and market access protections for national champions. The party’s intervention in the economy—above and beyond typical forms of state interventions—further amplifies the nonmarket characteristics of China’s economy, as the party has increasingly sought to monitor, influence, and coerce private firm decisions. The party-state capitalist model obviates meaningful distinctions between party, state, and private sector, as the party infuses an increasing number of private sector activities. Rather than confining the role of the state to a defined set of major SOEs or national champions, the party-state capitalist model injects a party role into firms of all sizes and structures.

While the party-state capitalist model has expanded the party’s reach beyond SOEs, these enterprises retain a privileged role within China’s economy. The CCP actively supports SOEs in strategic sectors, including the energy, telecommunications, transportation, and aviation sectors. While the private sector makes up approximately 60 percent of the gross domestic product (GDP) and plays a major role in economic output and employment, its political influence is limited compared to that of the SOEs.

China’s SOEs are consistently found to be a drag on the country’s productivity growth, with resources misallocated to these inefficient, low-productivity enterprises. At the same time, China’s SOEs may benefit from an implicit state guarantee, as they are viewed as too strategically important to be allowed to fail. As a result, these firms are shielded from the competitive pressures and threat of failure that may otherwise spark higher productivity. Meaningful reform to ensure competitive neutrality between SOEs and private firms, including foreign firms operating in China, appears unlikely. The heavy hand of the state indicates a willingness to sacrifice economic gains for political objectives. State intervention is a drag on broader growth objectives, yet it persists even in a time of low growth rates. While the PRC was not the only government to enact harsh pandemic-era lockdown mandates, the severity of its zero-COVID policies was a remarkable example of the PRC’s willingness to subordinate economic growth to other policy objectives. Yet, the PRC shows little indication of backing off its state-dominated model or moving toward a more reform- and market-oriented approach. The persistence of state control in the economy should inform sanctions strategy, as it points to an ongoing vulnerability in the structure of China’s economy.

On the other hand, the PRC’s observed preferences for subordinating economic efficiency to political objectives may provide it with strong resolve to withstand the negative economic consequences of sanctions. The PRC’s observed preferences for subordinating economic efficiency to political objectives may provide it with strong resolve to withstand the negative economic consequences of sanctions. The PRC has a growing range of national interests that can cause conflict with the United States. Reunification with Taiwan ranks foremost among them, representing perhaps the most likely flashpoint for a U.S.-China crisis in the coming years. PRC policies toward Tibet, Xinjiang,
Inner Mongolia, and Hong Kong also implicate PRC interests in national unity. The PRC has shown a record of reacting forcefully when other nations intrude upon these interests and has been willing to use costly trade coercion tactics in response. Whether these tactics have been effective is questionable, as they may more often result in China being seen as an unreliable trading partner. But they nonetheless show the PRC’s willingness to accept negative economic consequences to defend its national interests, a highly salient factor when considering its resolve in future sanctions scenarios. A strong practice of state intervention may also mean that the PRC has the institutional capacity and readiness to take emergency measures to shore up its economy in response to sanctions, including through extraordinary government interventions.

**PARTY CONTROL OVER THE POLITICAL NARRATIVE**

The PRC has a long-standing history of suppressing dissent and limiting freedom of speech and expression. The government maintains strict controls on the media and the internet, as well as public demonstrations. The Chinese government’s response to protests and civil unrest has historically been characterized by a heavy-handed approach aimed at quelling dissent and preserving its grip on power. The political leadership has shown some responsiveness to citizen concerns, most notably in the rollback of the zero-COVID policies.

But such concessions are usually limited and carefully managed to maintain social stability and prevent challenges to the party-state’s authority. It is less clear how responsive the party would be in the context of a conflict involving its stated core interests.

Similarly, private sector firms within China have limited channels for influencing state actions. In sharp contrast to Western democracies, where multinational firms enjoy significant ability to lobby against actions that may hurt their commercial interests, private firms in China have less well-established or independent political influence. In a sanctions context, Chinese firms can be expected to have limited ability to advocate for restraint in state actions, either to refrain from taking the political or military actions that can spark a sanctions response from the United States and its partners or in issuing its own sanctions or retaliatory actions in the economic domain. Private sector pressure on the state is unlikely to influence decision-making in a meaningful way.

In a future conflict scenario, the PRC may seek to leverage its control over the domestic political discourse to shape the narrative around the conflict. For example, in a conflict scenario with Taiwan, the PRC may attempt to obscure its own role in initiating conflict, aiming to make Taipei seem the aggressor and allowing for a pretext for PRC aggression against the island. The PRC may also seek to deflect blame for economic pain caused by sanctions, accusing the United States and other sanctioning countries of engaging in acts of unjustified economic warfare. These efforts at shaping the narrative may also influence the decisions of other states that are considering whether to align with the United States and its partners in imposing sanctions on China.

The PRC’s ability to shape the political narrative means that policymakers should proceed with caution when considering sanctions strategies reliant upon channeling bottom-up pressure on political leadership, as the entire structure of the political system is designed to prevent such a phenomenon. Certain sanctions strategies may be designed to put pressure on a country’s economy to cause discontent and motivate individuals to agitate for policy changes. This requires freely available information on why sanctions are being implemented and who the population ought to blame, as well as formal or informal political institutions that facilitate the conversion of popular sentiment into political change. None of these conditions appear to be readily met in China.

**Economic Factors**

The sheer size of China’s economy makes it a unique sanctions target, along with its degree of interconnection with the rest of the global economy. Over the past three decades, China’s economy has shown remarkable progress in poverty reduction, and the country has emerged as a prominent manufacturing hub. Key features of its domestic economy include a high savings rate and a substantial labor force, contributing significantly to its formidable economic growth. However, China faces serious structural challenges, including mounting debt levels and growing concerns about financial stability. Its closed markets and protectionist tendencies may provide some insulation from sanctions pressure but also create a drag on long-term growth. China is unlikely to return to prior eras of sustained, double-digits growth. This section provides an overview of economic factors relevant for a sanctions strategy, with later sections delving in greater detail into specific areas of economic activity that may be targeted by sanctions.

**CHINA’S SLOWING GROWTH**

By almost any metric, China’s economy is one of the world’s most significant. Its economy is the world’s second largest, and it is one of the world’s largest traders as well as one of the largest destinations for foreign direct investment.
For years, it enjoyed double-digits growth, which in turn fueled global GDP expansion. The International Monetary Fund (IMF) estimates that when China’s growth rate rises by 1 percent, growth in other countries also goes up by 0.3 percent. China’s role as a driver of global growth is in question today, as China’s growth may be below global growth for the first time in over 40 years, with concerning implications for the health of the global economy.

China’s economic growth will be modest in the coming years. Chinese policymakers’ 5-percent growth target for 2023 is lower than the average 9-percent annual GDP growth since China’s era of reform and opening. Actual growth rates over the longer term may be substantially lower. Analysts have projected China’s future growth rates between 2 and 6 percent. Even those with optimistic estimates have reservations about the cyclical and structural factors potentially dampening China’s economic growth. These include property sector headwinds, challenges with local government financing vehicles and subsequent fiscal crunches, weak productivity growth, declining working-age population, and a slowdown in global demand for China’s exports. While Chinese policymakers have enacted certain reforms, it is unclear whether they are committed to reforms necessary to rebalance the economy toward a more sustainable long-term growth trajectory. Further, addressing the long-term drags on growth requires hard structural reforms, which would result in slower short-term growth as the economy rebalances.

China’s explosive growth over the past decades has been largely driven by factors that are no longer available to China. Broadly speaking, China’s growth was fueled by investment and a historically large expansion of credit, which allowed it to grow rapidly despite its shaky economic policy record. However, over time this pattern of growth became unsustainable. After the 2007–2008 financial crisis, China’s banking system expanded in assets by $25 billion, or nearly one-third of global GDP.

This massive expansion in credit was largely allocated to SOEs, property developers, and local government financing vehicles, but these recipients were not investing efficiently, leading to a vicious cycle in which more and more credit was required to generate the same amount of growth. The government undertook a series of reforms starting in 2016 to address the debt accumulatixng in the financial sector, recognizing the systemic risk it presented to China’s economy. While this de-leveraging reduced certain areas of risk, it led to the emergence of new risk in other areas, such as reflation of a property bubble that still looms over China today.

The de-leveraging campaign also did not address the basic structural issues of China’s economy, though it may have laid these more bare by “stripping away the credit growth that had maintained rapid rates of economic expansion, despite the inefficiencies of the state’s role within the economy.”

The de-leveraging campaign did not fully resolve China’s debt issues. China’s debt-to-GDP ratio in February 2023 stood at 273 percent, up from 2008 levels of 140 percent, demonstrating the persistence of the country’s debt challenges. Debt challenges are evident in government budgets as well. China’s government had a deficit of $505 billion in 2022. The deficit is fueled in part by debt interest payments, which have increased more than 270 percent in the past decade, faster than any other budget category. China’s widening budget deficit at both the central and local levels is cause for concern about its long-term financial stability.

All else equal, a China with slowing growth has stronger economic incentives to avoid provoking high levels of U.S. sanctions.

Debt issues are not the only structural challenge facing China. China faces a potential demographic crisis stemming from slowing population growth and the lingering effects of the one-child policy, which have caused an aging population and a smaller labor force. By 2050, a projected 35 percent of China’s population will be aged 65 and above, intensifying pressure on social welfare, reflecting similar trends across Asia. China’s labor force is also projected to decline by 7 percent between 2025 and 2050. The strain on the workforce to support this aging demographic and a reduced influx of young workers may result in a skills shortage, hindering innovation and industry growth. Despite government efforts, such as relaxed birth policies (e.g., two-child allowance enacted in 2016 and three-child policy enacted in 2021), and social policies targeted at increasing mobility (e.g., population registration reforms, or hukou reforms), reversing these trends remains a complex challenge with lasting economic implications.

Weak consumption also complicates China’s efforts to move toward a more sustainable, high-quality growth model. China’s income levels have been recovering post-pandemic. However, structural obstacles such as reliance on low-skilled labor, income inequality, technological displacement, and demographic challenges...
persist, hindering inclusive income growth. To tackle these challenges, Chinese policymakers need to boost market competition, incorporate advanced technologies across sectors, and cultivate a skilled workforce to nurture innovation, although implementing these policies will be a gradual process.

China's structural challenges and slowing growth are not determinative of its ability to withstand sanctions pressure, nor is its overall foreign policy direction, but they are nonetheless important considerations for a sanctions strategy. All else equal, a China with slowing growth has stronger economic incentives to avoid provoking high levels of U.S. sanctions. It also has fewer policy tools at its disposal to mitigate the economic damage of sanctions. For decades, the expansion of credit served as a shock absorber in China’s economy, allowing the party to paper over structural deficiencies and avoid the political consequences of difficult economic reforms. Those days are over. Given the high levels of debt and potential for systemic risk to China’s financial system from more leverage, China will not be able to expand credit with abandon to blunt economic shocks, including those that may result from sanctions. That is not to imply that U.S. sanctions will therefore be able to tank China’s economy. The majority of China’s debt is held domestically, which limits the United States’ ability to attempt to trigger defaults or otherwise directly pressure China via its debt. However, China’s slowing growth and high debt levels are indicative of the constraints that the government may face when mounting an economic defense. Should growth continue to drag over the next 5 to 10 years, this will further constrain China’s ability to build resiliency within its economy and potentially render it more vulnerable to sanctions pressure.

PROTECTED DOMESTIC MARKETS
The PRC retains an economic model that includes a high degree of domestic protectionism, despite the importance of foreign trade and investment to its economy. Foreign firms face a wide range of formal and informal barriers when trying to access China’s domestic market. For example, China’s domestic services market is closed to foreign participation in many key areas, and the U.S. share of China’s services market in general is below the U.S. share of the global services market. Moreover, for the companies that are allowed to participate in the Chinese market, policy measures often mandate these firms to purchase domestic products and services, store data domestically, or transfer technology to Chinese partners, to name a few of a long litany of complaints issued by foreign firms operating in China. To the extent that the PRC maintains protections for domestic industries that would otherwise be attractive sanctions targets, the closed nature of China’s domestic market will constrain the effectiveness of a sanctions strategy. The media and the financial sector stand as two prominent examples of where this protectionism matters.

The PRC maintains a strong system of political and economic control over the media, control that is supported by its limitations on foreign firm participation in the provision of related services in China. U.S. social media companies are in effect banned from the China market. The PRC maintains prohibitions or restrictions on foreign providers of a wide range of internet and communication services, including cloud computing, telecommunications, film production and distribution, and streaming services. It will be difficult for sanctions to penetrate this shield of protectionism to pressure the companies that serve as the main conduits for the digital flow of information within China. Sanctions options may instead be limited to targeting the international operations of the handful of big Chinese tech firms that have a global business model, which will have limited effect on China’s domestic digital infrastructure or communications.

The PRC also maintains a relatively closed financial system, with limited foreign participation in its internal financial markets, and controls on the flows of capital. China’s state-owned banks dominate China’s financial sector overall, accounting for the majority of financial services provided in the domestic market. Foreign financial services providers face significant barriers in China, including foreign equity caps, discriminatory licensing, and cross-border data flow restrictions. The dominance of domestic banks will provide resiliency to the financial sector in the face of sanctions. Sanctions on Chinese banks will result in few if any constraints on their ability to engage in domestic, renminbi (RMB)-denominated transactions. Sanctions forcing foreign financial institutions to exit China may also have muted impact, given their limited market access currently. The global operations of the major banks may be a more fruitful sanctions target, but impacts on China’s domestic economy will result from spillover effects rather than direct hits.

Foreign participation in China’s bond and equity markets is also constrained, though these markets have seen meaningful maturation and opening in recent years. Over the last two decades, China has built up its bond market, growing to $21 trillion as of June 2023, among the world’s largest after the United States and the European Union (EU). Its stock market has seen similar growth, now listing 5,000 firms and another 2,500 in
Hong Kong. As a result, portfolio inflows have begun to account for a greater share of overall capital inflows, at times surpassing foreign direct investment (FDI). However, the level of foreign participation is still small relative to other economies, and further opening remains uncertain. Additionally, China’s capital markets overall are less prominent within its financial system, which is heavily bank-dominated, with capital markets accounting for only 30 percent of corporate finance. These factors may render certain traditional sanctions tools, such as restrictions on U.S. persons’ participation in Chinese bond and equity markets, less impactful overall, though the growing role of foreign investors in new capital flows may be important on the margins.

For an economy of its size, the use of China’s currency internationally is underwhelming, and China conducts most of its trade in other currencies, notably the U.S. dollar.

Aligned with its protected financial sector markets, the PRC operates a system of capital controls, restricting the movement of capital in and out of the country. The familiarity of Chinese economic policymakers with capital controls could be advantageous in a sanctions scenario, as the existing system can be used to prevent capital from fleeing the Chinese market, as has been done in other cases as part of efforts to shore up a heavily sanctioned economy. However, the capital controls also disadvantage China strategically, as they place an upper bound on the ability of the government to internationalize the RMB. For an economy of its size, the use of China’s currency internationally is underwhelming, and China conducts most of its trade in other currencies, notably the U.S. dollar.

As discussed in depth in later sections, the use of the U.S. dollar in international trade and China’s significant holdings of the U.S. dollar as a foreign exchange reserve represent important vulnerabilities for China in a sanctions scenario. China’s policymakers are well aware of this vulnerability, denouncing the weaponization of global financial public goods, such as international financial markets and settlement systems. The PRC has sought to reduce its reliance on Western-dominated financial systems by diversifying its currency holdings, promoting the internationalization of its own currency, and establishing currency swap arrangements with other economies. These efforts may ultimately provide marginal but meaningful routes for China to evade U.S. financial sanctions that leverage the privileged position of the U.S. dollar.

Prominence of Manufacturing

China’s manufacturing sector has long been a global powerhouse and growth driver due to its immense scale and efficiency, accounting for 30 percent of global manufacturing output in 2022. The country’s manufacturing industry spans sectors including electronics, machinery, and vehicles, and increasingly has capacity in other high-tech industries such as electric cars and other new energy vehicles, next-generation information technology and telecommunications, and advanced robotics. China’s ability to mass-produce goods at competitive prices made it a preferred manufacturing destination for many multinational companies, and China has increasingly climbed the value chain to move beyond just final assembly to the manufacture of complex parts and components. For example, in 2020, around a quarter of Apple’s top 200 suppliers were based in China. This trend has shifted at the margins as Vietnam and Malaysia have emerged in recent years as manufacturing destinations and foreign multinationals seek to implement “China + 1” strategies to diversify their supply chains. Nevertheless, trade data show that China has an increasing export share in many low- and high-technology industries, indicating that China will likely remain an essential manufacturer for the world in the near term.

China’s economy has produced major technology companies, with companies such as Huawei and CATL gaining international prominence. The Chinese government’s commitment to technology development, evident in plans like Made in China 2025 and its 14th Five-Year Development Plan, reflects a substantial push for research and development to enable China to climb the value chain in key technology sectors and power broader economic growth. However, China faces challenges in growing its share of certain advanced manufacturing-based technologies, such as semiconductors and aerospace, where its heavy reliance on foreign technology and expertise may hinder its global competitiveness. However, its companies have become global players in other areas, including related to clean energy technologies and internet services and apps.
Successfully targeting China’s manufacturing sectors will require U.S. resilience to the loss of manufactured goods from China.

China has made some strides in developing its services sectors, which accounted for 55 percent of China’s economic output by 2020 compared to 44 percent a decade earlier. In contrast, the services sector of the United States and advanced economies often tops 80 percent. China’s services sector spans finance, telecommunications, retail, health care, and tourism. The rapid growth of China’s middle class has increased domestic demand for services. Further growth in domestic services will be necessary for China to chart a sustainable growth path less reliant on investment, low-cost manufacturing, and export-oriented growth.

The relatively manufacturing-heavy nature of China’s economy raises the prospect of sanctions strategies that include restrictions on the trade of physical goods. However, successfully targeting China’s manufacturing sectors will require U.S. resilience to the loss of manufactured goods from China. While the export revenue is important for China, the United States equally relies on the import of a wide range of manufactured goods from China. This dynamic may provide China with leverage in a sanctions scenario.

MAJOR TRADE AND INVESTMENT PARTNER

China is the largest trader within the World Trade Organization (WTO). It is often the largest bilateral trade partner for the United States, as well as the top trading partner to more than 120 countries in the world, including many in the Indo-Pacific, Africa, and South America, and is the largest external trading partner of the EU. China’s value added trade—a measure of a country’s contribution to goods consumed worldwide—comes out to $2.0 trillion, edging out the United States ($1.7 trillion), and only slightly behind the entire EU ($2.6 trillion). China has also historically been an important investment destination, including for FDI, portfolio flows, and development financing. China had been the world’s second-largest destination for new FDI flows, with more than $189 billion in FDI inflows in 2022, trailing after the United States’ $285 billion in the same year. However, these trends are shifting, as China is experiencing a sharp decline in inbound FDI. According to China’s balance-of-payments data, net FDI flows moved from a positive position of $61 billion from the first half of 2022 to a staggering $61 billion deficit position in the first half of 2023. The decline is a result of souring expectations for the China market, driven partially by concerns of geopolitical risk but also increasing concerns about China’s domestic policies and rising pressure on foreign multinationals. China’s trade with developed nations may track in a similar direction, as governments encourage de-risking and as global demand slumps. Nonetheless, China today is a major partner for many developed and developing countries across a broad range of trade and investment ties.

China’s investments globally have been significant, though this is also a falling trend. According to FDI figures by the Organisation for Economic Co-operation and Development (OECD), China’s outbound FDI (flow) has ranged from $153 billion in 2020 to $145 billion in 2021. China’s FDI has increasingly poured into developing regions of the world. In 2022, more than 80 percent of China’s outbound FDI went to the developing world. Though 2023 is not over, the same trend persists, with 88 percent of China’s FDI going to the developing world.

The PRC has undertaken well-known initiatives to expand its geo-economic influence globally. The Belt and Road Initiative is the PRC’s flagship program aimed at enhancing connectivity and infrastructure development across Asia, Europe, and Africa. Through this program the PRC has established partnerships with many participating countries, giving China access to key resources, markets, and influence. The PRC has actively engaged in bilateral and regional agreements, exemplified by the signing of the Regional Comprehensive Economic Partnership (RCEP) trade deal. This agreement positions China to play a pivotal role in shaping global supply chains, enabling it to exert significant influence over trade dynamics in the region. Moreover, China’s expanding footprint in Africa and Latin America underscores its growing partnerships in the developing world. China now ranks as South America’s top trading partner. In Africa, China similarly is a more important economic player than the United States, as it is the continent’s largest trading partner, and China’s trade with the continent is four times the level of U.S.-Africa trade.

China’s role as a major trade and investment partner presents complications for a sanctions strategy. Beyond its sheer size, China’s economy has important points of connection to nearly every other country in the world. Damage to China from a successful sanctions effort will not be contained to China. Policymakers should expect that sanctions damage will ripple across the globe.
transmitted through China’s trade and investment relationships. If China contracts, so too will the global economy. Developing countries with limited capacity to mitigate the effects of a sanctions-induced economic shock may be particularly hard-hit. In the developed world, sanctions may cause supply shocks across the range of goods for which China is a major producer, depending on the nature of the specific sanctions imposed. China’s major-trader role also provides it with a source of leverage, as it may be able to strategically deny exports of certain goods in retaliation to any U.S. or partner sanctions. China may have less leverage in the investment space, given high levels of U.S. investment screening—and increasingly that of U.S. partners—that have significantly reduced Chinese investments in these jurisdictions.

Summary
China’s unique political and economic characteristics matter deeply for any future sanctions scenario. Its political system is highly opaque, with power increasingly concentrated under Xi Jinping. Politics trumps economics, and the state is highly willing to intervene in the economy under the party-state capitalist model. This leads both to economic inefficiency but also potentially higher levels of resolve in a sanctions scenario. Economically, China has serious structural issues that will constrain its ability to mount a defense against sanctions. But it also has economic ties to much of the rest of the world, heightening the risk of spillover effects from sanctions. U.S. and partner policymakers must account for all these complex dynamics as they contemplate what—if any—sanctions strategies may be effective in the context of a conflict with China. Ultimately, the question of resolve may be a relative one and best understood in comparison to the resolve of the United States and its partners to accept sanctions costs themselves.
Just as ammunition is a finite resource, so are points of economic leverage.
Chapter 2: Building a Strategic Framework for Sanctioning China

Recognizing the difficult challenge that sanctioning China at scale represents, policymakers will need to have a deep understanding of relative U.S. and Chinese points of leverage in the economic domain to develop effective sanctions strategies. As importantly, they will need a robust analytic framework to understand how they can maximize the few points of leverage that the United States and its partners enjoy, while understanding how the PRC may retaliate by weaponizing its own points of economic leverage. Economic domain strategic planning can support both these objectives. This section outlines one possible vision for an economic domain strategic planning framework.

Strategic planning is common practice within the U.S. and international defense communities and plays a critical role to enable long-term planning and preparation for a range of possible future crises or conflicts. The U.S. Department of Defense (DoD) has the institutional capacity and existing processes to develop strategic plans to support national policy objectives, as well as the operational and tactical plans that direct how the U.S. military should act to achieve these national objectives. The strategic planning processes are implemented both within the U.S. armed forces and internationally with key partners, such as NATO. In contrast, economic domain actions tend to be situationally driven and ad hoc, often focused on the tactical use of particular instruments rather than setting out a strategic vision for the economic domain. Sanctions strategies are designed reactively to respond to the crisis of the day. Coordination with allies, as well as with the private sector, is similarly scattershot.

The U.S. national defense strategy calls for integrated deterrence, coordinating actions across all instruments of national power to “convince potential adversaries that the costs of their hostile actions outweigh their benefits.” Under an integrated deterrence approach, economic domain actions are intended to complement actions in the diplomatic, military, cyber, and information domains, providing the United States and its partners with a full suite of tools to deter aggression from potential adversaries. The U.S. national security strategy reiterates the need for integrated deterrence but provides little guidance on how economic domain actions can be strengthened and integrated with other instruments of national power, particularly in times of crisis or conflict. Building an economic domain strategic planning process can address this gap by enhancing the effectiveness of economic statecraft tools and developing concrete actions and plans in the economic domain. These tools, actions, and plans can then be layered into a truly integrated deterrence strategy.

The need for an all-hands-on-deck approach is especially acute when contemplating potential conflict scenarios with the PRC. As U.S. Secretary of State Antony Blinken stated, “China is the only country with both the intent to reshape the international order and, increasingly, the economic, diplomatic, military, and technological power to do it.” The PRC represents the hardest sanctions challenge that the United States has faced in the modern era, given its deep integration with the global economy and capacity to retaliate in the economic domain. Rising to this challenge will require the United States and its partners to start preparing for potential conflict now, while taking steps to deter and de-escalate tensions in parallel. A central part of this preparation must be to bolster economic domain strategic planning and to integrate it with strategic planning processes occurring in other domains.

Ends, Ways, and Means

A core tenet of military strategic planning is the ends-ways-and-means framework. A strategy consists of ends (i.e., the desired end state or objective), ways (courses of action designed to achieve the stated objective), and means (the resources available). An effective strategy will include each of these three components in balance, such that ends are defined in relation to the ways and means available to achieve them. In the military context, a hypothetical strategy could be to support Taiwan’s defense against PRC aggression (ends) by providing arms and training to Taiwan’s military (ways) and defining set levels of arms and soldiers that the United States will commit (means). Translating the ends-ways-and-means framework into the economic domain provides a useful framework for advancing economic domain strategic planning. It can enhance clarity around the strategic purposes of using particular economic instruments, as well as allow for greater integration with strategic planning in other domains, particularly in areas where there are shared ends.

This report lays out one possible articulation of economic domain ends, ways, and means. Economic ends will specify the desired end state between the U.S. economy, its partners’ economies, and that of its adversary. Economic ends are derived from and should be consistent with the broader strategic objectives that the United States has in a conflict. Accordingly, economic ends may not be confined purely to economic activity and
may also relate to the economic support available to an adversary’s military capabilities. Economic ends could, for example, include degradation of the PRC’s ability to financially sustain a military campaign against Taiwan or denial of China’s access to dual-use technologies.

Economic ways are the various methods of applying economic pressure on an adversary. Ways include a range of coercive economic statecraft measures, including financial sanctions, technology export controls, and tariffs. In the PRC context, ways may also include off-book measures, or informal methods of applying pressure on economic actors (e.g., state-instigated but non-mandated consumer boycotts), which the PRC has an extensive track record of using. Nations may also use positive economic ways to solicit support from potential allies or non-aligned states. For example, both the United States and the PRC are able to use development assistance or preferential trade agreements to provide positive incentives for other countries to align with their geopolitical positions.

Means are defined in terms of a country’s relative capacity in an area of strategic economic activity. In the military domain, means are about the number of, for example, soldiers, ammunition, and tanks. In the economic domain, means are most appropriately understood as points of economic leverage that a country holds in an interconnected economy. Means available to the United States could include, for example, the central role of the U.S. dollar in global financial infrastructure or the dominance of U.S. and partner countries in critical areas of the semiconductor supply chain. China’s means could include its dominance in rare-earths processing or consumer electronics manufacturing. As sanctions are applied and economic ties are cut between the United States and its adversary, economic means are spent down. Just as ammunition is a finite resource, so are points of economic leverage.

The ends-ways-and-means framework can be applied at the strategic, operational, and tactical levels. In military strategic planning, strategy is concerned with defining high-level military objectives that align with national policy and holistically relate to the outcome of a conflict. Operations relate to how the military sequences or manages campaigns in order to achieve the strategic objectives. Tactics are the specific maneuvers or fights engaged in during an operation.

An economic domain strategy seeks to define high-level economic objectives that support an integrated national strategy. Economic operations are specific courses of action taken in areas of strategic economic activity or theaters, such as strategic technology trade, international finance, bilateral trade and investment flows, and the physical movement of goods and people. Tactics are the specific actions taken within the context of an economic operation, such as imposing financial sanctions on certain Chinese entities or denying particular export control licenses. The subsequent analysis in this report focuses on the strategic and operational levels of economic domain planning for a potential U.S.-PRC conflict. However, economic domain planners would do well to remember that tactics and operations flow from strategy, rather than seeking to create strategy by assembling an assortment of tactics. This, in turn, would create more holistic economic domain strategies that would be combined with other tools of national power to actualize integrated deterrence.

### Economic Domain Ends, Ways, and Means

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<th>Ends</th>
<th>Ways</th>
<th>Means</th>
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<tr>
<td>Specify the desired end state between the U.S. economy, its partners’ economies, and that of its adversary, and are derived from the broader strategic objectives that the United States has in a conflict.</td>
<td>The various methods of applying economic pressure on an adversary, including a range of coercive economic statecraft measures such as financial sanctions, technology export controls, and tariffs.</td>
<td>Means are defined in terms of the United States’ relative capacity in an area of strategic economic activity.</td>
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### Exploring Economic Domain Strategies and Operations for a U.S.-PRC Conflict

This section applies the end-ways-and-means framework to the economic domain in the context of a potential U.S.-PRC conflict. It focuses on potential economic domain strategies and the operations needed to support these strategies to illuminate the challenges and opportunities that the United States and its partners will face when leveraging the economic domain. The analysis is deliberately agnostic as to the specific crisis or conflict at issue and is instead intended to guide strategic planning on any future crisis or conflict between the United States and the PRC. Rather than providing guidance on the timing or sequencing of sanctions at various phases of a conflict, it focuses on establishing a baseline understanding of economic domain leverage that the United States and its partners have. Following sections of the report examine how this leverage might be utilized, using an economic game developed and run by the CNAS Energy, Economics & Security team. Finally, the recommendations section provides additional thoughts on timing and sequencing.
STRATEGY
The stated U.S. strategic objectives, outlined in the U.S. National Security Strategy, are to deter the PRC from aggression against U.S. allies and partners in the Indo-Pacific region and to help those allies and partners defend themselves. Should a conflict with the PRC be imminent, these strategic objectives would likely sharpen, shifting from deterrence to impairing the PRC’s ability to carry out a military campaign.

If conflict erupts, U.S. and partner efforts may also include a punitive aspect, seeking to impose costs on the PRC for crossing a geopolitical redline.

An economic domain strategy should be embedded within this larger strategic context, complementing and supporting an integrated strategy for managing conflict with the PRC. In advance of a conflict, economic domain strategy would aim to deter the PRC through the signaling of strong, unified U.S. and partner resolve to impose harsh sanctions on the PRC should it cross a geopolitical redline. Should a conflict erupt, the United States would likely seek to impair the PRC’s ability to economically sustain a military campaign, through the denial of a wide range of key technologies, goods, services, and financial capabilities. It may also seek to place pressure on the Chinese economy as a whole as a punitive measure. The deterrence, impairment, and punishment objectives could implicate many of the same areas of economic activity, but would differ significantly in the timing and sequencing of how economic domain operations would be carried out, as well as the intensity of the sanctions at each phase. The same actions may be signaled (or threatened, depending on one’s perspective) in a deterrence phase, then carried out in any later phases.

OPERATIONS
With these high-level strategic objectives—and complexities—in mind, this section analyzes in greater detail the economic domain operations that can be employed by the United States and coordinated with partners. Based on an analysis of past practice, including the sanctions playbook used by the United States and partners in response to Russia’s 2022 invasion of Ukraine, three distinct areas of potential operations emerge: technology denial, embargo of strategic commodities or materials, and macroeconomic pressure. Each of these is focused on a different set of targets and is intended to produce unique effects. Where relevant, PRC abilities to counter U.S. and partner actions are also discussed.

Entity-by-Entity Sanctions Escalation Assessment
The CNAS Energy, Economics & Security research team created a methodology to assess room for further escalation with respect to specific entities, based on the existing levels of sanctions imposed on an entity and that entity’s exposure to sanctions via its international operations. The United States would, for example, have little room to escalate sanctions on an entity that is already subject to heavy sanctions or one that predominantly operates in the Chinese market. In contrast, certain firms may have more significant exposure to sanctions escalation if they engage in higher levels of international sales, procure from foreign suppliers, have overseas subsidiaries, or are listed on foreign stock exchanges.

The sections on economic domain means include tables that show highlights of this analysis for a select group of Chinese firms. In the tables, current sanctions listings indicate whether the company, or in some cases its parent, subsidiaries, or affiliates, is listed on the Specially Designated Nationals and Blocked Persons (SDN) list, the non-SDN Chinese Military-Industrial Complex Companies (CMIC) list, or the Entity List. Assessed foreign exposure indicates international operations that may be targeted through a sanction, drawing largely from Bloomberg as a data source. To address issues of inconsistent data, the CNAS Energy, Economics & Security research team supplemented the data with qualitative research. In certain sectors, there were insufficient data for an entity analysis, and those sectors do not include entity tables.

Further details, assessment of a broader range of entities, and a full explanation of the methodology are included in the appendixes.
### SUMMARY OF ECONOMIC DOMAIN OPERATIONS

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<th>Ends</th>
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<tr>
<td><strong>TECHNOLOGY DENIAL</strong></td>
<td>Includes export controls to deny access to military and dual-use items and certain financial sanctions, such as:</td>
<td>Relative capacity of the United States to further deny access of militarily important technologies to China, assessed as:</td>
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<td>To degrade China’s military capabilities such that sustaining military operations becomes more difficult, including by ensuring that the Chinese military has severely constrained access to Western technologies.</td>
<td>▪ Expansion of end-use, end-user, and list-based export controls on dual-use or commercial technologies</td>
<td>▪ <strong>Military Items</strong>: Limited (arms embargo already in place)</td>
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<td></td>
<td>▪ Expansion of extraterritorial export controls</td>
<td>▪ <strong>Marine</strong>: Limited (extensive shipbuilding capabilities in China, largely domestic supply chains)</td>
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<td></td>
<td>▪ Imposition of financial sanctions on key military and technology organizations and firms</td>
<td>▪ <strong>Aerospace</strong>: Modest (concentrated in dual-use capabilities, relies on European cooperation)</td>
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<td></td>
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<td>▪ <strong>Space</strong>: Modest (higher in particular items if implemented with Europe)</td>
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<td>▪ <strong>Nuclear</strong>: Modest (commercial engagement exists, considerations related to nuclear safety)</td>
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<td>▪ <strong>Semiconductors</strong>: Substantial (but carries high risk of retaliation and supply disruption)</td>
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<td></td>
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<td>▪ <strong>Artificial intelligence (AI)</strong>: Modest (concentrated in AI compute)</td>
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<td>▪ <strong>Quantum technologies</strong>: Limited (PRC entities dominate sector in China)</td>
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<td><strong>EMBARGO OF STRATEGIC COMMODITIES OR MATERIALS</strong></td>
<td>Includes:</td>
<td>Relative capacity of the United States to deny China access to products that are inherently substitutable or globally available, assessed as:</td>
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<td>To degrade China’s military operations through the denial of key resources or inputs.</td>
<td>▪ Traditional sanctions tools, such as financial sanctions on targeted commodity or material firms</td>
<td>▪ <strong>Liquefied natural gas (LNG)</strong>: Substantial (based on U.S. LNG exporter role)</td>
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<td></td>
<td>▪ Novel market mechanisms, to account for globally available nature of commodities and abundance of non-aligned suppliers</td>
<td>▪ <strong>Energy services</strong>: Substantial (concentrated in financial services, traditional energy services)</td>
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<td></td>
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<td>▪ <strong>Coal</strong>: Modest (high Chinese imports from Australia)</td>
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<td>▪ <strong>Oil</strong>: Limited (multiple non-aligned suppliers of oil)</td>
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<td>▪ <strong>Renewable energy</strong>: Limited (high Chinese capacity)</td>
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<td></td>
<td>▪ <strong>Metals and minerals</strong>: Limited (high Chinese capacity)</td>
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<td></td>
<td></td>
<td>▪ <strong>Agriculture</strong>: Substantial (but costly to U.S. exporters)</td>
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<td><strong>MACROECONOMIC PRESSURE</strong></td>
<td>Includes a broad range of trade and financial measures:</td>
<td>Points of leverage in an interconnected economy that enable the targeting of core functions of an adversary’s economy, or otherwise depress prospects for economic growth, assessed as:</td>
</tr>
<tr>
<td>To place sufficient pressure on China’s economic health that it degrades its ability to financially sustain a military campaign. Broadly, to impose costs on China’s economy as a punitive measure.</td>
<td>▪ Financial sanctions, including SDN designations, asset freezes, prohibitions on access to correspondent banks, restrictions on debt and equity</td>
<td>▪ <strong>Foreign exchange reserves</strong>: Substantial (heavy reliance on the U.S. dollar and currencies of key U.S. allies)</td>
</tr>
<tr>
<td></td>
<td>▪ Secondary sanctions</td>
<td>▪ <strong>U.S. dollar-denominated trade</strong>: Substantial (heavy reliance on use of the U.S. dollar for international trade)</td>
</tr>
<tr>
<td></td>
<td>▪ Tariffs or bans on the export of certain goods and services</td>
<td>▪ <strong>International exposure of major banks</strong>: Modest (some exposure paired with heavy domestic orientation)</td>
</tr>
<tr>
<td></td>
<td>▪ Sectoral sanctions</td>
<td>▪ <strong>Debt and equity</strong>: Modest (growing importance of foreign investors on margins of Chinese stock and bond markets; numerous Chinese firms listed overseas)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ <strong>FDI</strong>: Limited (geopolitical and market trends already contracting bilateral FDI flows)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▪ <strong>Bilateral trade</strong>: Modest (large trade flows in nonstrategic goods, anticipated consumer impacts)</td>
</tr>
</tbody>
</table>
Technology Denial

Technology denial operations seek to degrade China’s military capabilities through the denial of certain technologies produced by the United States and its partners. While the United States and its partners have important leverage in certain technology areas, their ability to deny military technology to China is mixed and in some cases quite limited. Technology denial operations can also take an extended period of time to have impact, constraining their usefulness in a shorter-term period of escalation toward conflict. The United States and its partners are already implementing a wide range of technology denial measures, including embargos on the export of arms to China and increasing levels of restrictions on dual-use technologies that have both military and civilian applications.

ENDS

A technology denial operation seeks to degrade China’s military capabilities such that sustaining military operations becomes more difficult, including by ensuring that the Chinese military has severely constrained access to Western technologies. Seeking to destroy the Chinese military is unrealistic. The PRC has made meaningful progress in its military modernization and weapon-of-mass-destruction objectives, despite the existing arms embargo and other export controls maintained by the United States and its partners. Enabling factors include the PRC’s homegrown ability to develop military platforms and military and dual-use items, and its continued access—licit and illicit—to Western dual-use items that may be diverted to military purposes.

WAYS

Tools to degrade China’s military capabilities include the use of export controls to deny access to military and dual-use items, and financial sanctions to deny military-related entities access to global finance.

Export controls are used extensively today in the China context. The United States maintains a strict embargo on the export of military and space items to China, along with prohibitions on a broader range of items destined for military end-use purposes. Licensing policy for dual-use technology exports to China is more restrictive than most other destinations around the world. The United States has extensively used the Entity List (a tool to limit the export of U.S.-origin goods to designated entities) to impose further restrictions on the export of commercial goods to designated Chinese companies. In October 2022, the United States implemented a novel set of export controls aimed at constraining Chinese advances, whether commercial or military, in advanced chips production, AI, and supercomputing (referred to as the “October 7 rules,” which were subsequently updated in October 2023).105

In a conflict with the PRC, existing export controls would be intensified and expanded. The broad categories of likely measures include:

- List-based controls to prohibit the export of specified technologies to China, intensified by expanding the list of dual-use items subject to an export prohibition.
- Entity-based controls to prohibit the export of all U.S.-origin items, whether sensitive or not, to Chinese entities directly supporting China’s military effort, including expansion of the Entity List to cover a wider range of military, industrial, and technology companies.
- End-use controls to prohibit the export of all U.S.-origin items, whether sensitive or not, destined for a military end-use in China.
- Extraterritorial application of list-based, entity-based, and end-use controls through expansion of the foreign direct product and de minimus rules.
- Services controls aimed at preventing U.S. persons from providing support to China’s military or technology capabilities.
- Elimination of exceptions that permit certain items to be exported to China without a license, including exceptions related to commercial air flights and to mass-market encryption used widely in electronics, chips, and software.

In addition to export controls, financial sanctions could be used to support a technology denial operation, targeting specific entities directly engaged in or supporting Chinese military efforts. While a range of financial sanctions can be deployed in a macroeconomic pressure strategy, discussed later, only those financial sanctions imposed on specific military or technology entities would be deployed in a technology denial operation. Full blocking sanctions, which deprive the targeted entity from accessing the U.S. dollar-denominated global financial infrastructure and are implemented by designating the entity as an SDN, are likely most impactful. SDN designations, as the most severe form of financial sanction, are most likely to disrupt a wider range of finance available to military-related entities. Financial sanctions could be considered for the same set of entities that are targeted by entity-based
Long-Term Aspects of Technology Denial Actions

Over the long run, export controls must also be paired with complementary efforts to address alternative routes that China may use to access U.S. and allied technology expertise and capabilities. U.S. investments in China can, in certain contexts, provide important capacity and support to PRC efforts to develop indigenous technologies, including those technologies that the United States prohibits for export to China.\textsuperscript{107} The structure and objective of new authorities to address this problem are a subject of debate in Washington and allied capitals.\textsuperscript{108} Research security and the need to address cooperative research agreements between U.S. academic institutions and Chinese partners to manage risks around sensitive research topics is an ongoing discussion. Addressing these types of risks related to intangible transfers of knowledge is critical in managing the long-term strategic competition with the PRC; however, in the context of actions that can be taken in the immediate run-up to a conflict, they are of limited utility to produce a near-term impairment to PLA capabilities. Actions implemented under a technology denial strategy are more likely to have near-term impact if they focus on disruption to tangible items that have a direct use for PLA capabilities.

In the Russia context, certain partners implemented technology denial measures via their sanctions rather than through export control authorities. Extraterritorial export controls (i.e., the foreign direct product rule) are unique to the United States, and may arise as a point of friction between the United States and partners if not well coordinated in advance.

MEANS

In a technology denial operation, means can be understood as the relative capacity of the United States to further deny access of militarily important technologies to China. Overall, U.S. technology denial means are mixed and concentrated in the long-term denial of commercial or dual-use technologies rather than military technologies. A full accounting of each specific technology that may aid the PLA is beyond the scope of this report. Instead, means are examined in selected and necessarily broad areas of military capability, including examples of key inputs (semiconductors) and emerging technologies (AI and quantum technologies).

Military Items

The U.S. means to further deny military items to China are limited given the high level of existing controls.

The United States and key partners maintain an arms embargo on China and accordingly are already denying China direct access to purely military items, such as missiles and armaments, produced in their jurisdictions. While the United States and its partners should maintain this policy of denial, the ability to further deny access to U.S.- and partner-produced military items is limited by the preexisting arms embargo. U.S. means in a technology denial operation are therefore concentrated in dual-use technologies and inputs that are currently permitted to be exported to China and will necessarily cut deeper into the commercial space to achieve the intended effect.

SANCTIONS ESCALATION FOR CHINESE DEFENSE ENTITIES

<table>
<thead>
<tr>
<th>Entity</th>
<th>Current Sanctions Listings</th>
<th>Assessed Foreign Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHINA NORTH INDUSTRIES GROUP CORPORATION LIMITED (NORINCO GROUP)</td>
<td>Parent and some subsidiaries are on the CMIC list, and at least one subsidiary is on the Entity List.</td>
<td>Low. Limited international sales, operations, or commercial engagement.</td>
</tr>
<tr>
<td>CHINA ELECTRONICS TECHNOLOGY GROUP CORPORATION (CETC)</td>
<td>Parent listed on the CMIC list, and some affiliated research institutions are on the Entity List.</td>
<td>Low. Limited international sales, operations, or commercial engagement.</td>
</tr>
<tr>
<td>CHINA SOUTH INDUSTRIES GROUP CO., LTD.</td>
<td>Parent is on the CMIC list.</td>
<td>Medium. Some exposure through international sales and supply chains.</td>
</tr>
</tbody>
</table>

Sources: Bloomberg, Market Screener, Department of Commerce Entity List, Department of Treasury SDN and non-SDN CMIC lists, CNAS analysis.
The United States may also consider its means to deny technologies and finance to particular entities associated with the PLA. Major Chinese defense entities are already subject to certain U.S. sanctions, though there remains room to escalate through the listing of a broader range of affiliated entities or intensification of listings (including SDN designations) for those entities that have already been designated on some lists. The impact of doing so, however, may be muted as these entities may not have significant foreign exposure.

**Maritime**

The U.S. means to further deny maritime technology to China are limited due to China’s extensive shipbuilding capabilities and the inward-facing supply chains of its largest shipbuilder, China State Shipbuilding Corporate (CSSC).

China is the world’s largest producer of ships by tonnage, enabling its capability across all naval classes. Major Chinese shipbuilders include CSSC, a state-owned enterprise and the world’s largest shipbuilder, along with COSCO SHIPPING Heavy Industry, a subsidiary of the COSCO shipping group (China’s largest state-owned shipping operator). China is “nearly self-sufficient for all shipbuilding needs,” including naval engines, weapons, and electronic systems. China’s domestic value added share in shipbuilding exceeds 80 percent, and it sources more than 90 percent of the primary intermediate inputs (e.g., materials) domestically. China, along with South Korea and Japan, accounts for nearly all commercial ship production. U.S. shipbuilding is limited and the bulk of the orders, measured by value, is primarily for U.S. military purposes.

China’s highly domestic maritime value chain constrains U.S. means in this technology area. Means will be limited to a small number of measures targeting inputs from foreign sources that China uses in its shipbuilding, such as certain navigation components, energy storage, and electrical systems. Commercial shipbuilders, such as Yangzijiang Shipbuilding, may have higher exposure but potentially also less directly relevant capabilities for the PLA Navy. China’s shipping companies may have higher exposure to sanctions, given the inherently international nature of their operations.

**Aerospace**

The U.S. means to further deny aerospace technology to China is modest but concentrated in commercial and dual-use aerospace capabilities, and most effective if implemented in tandem with Europe over the long term.

China fields the largest military aviation force in the region and the third largest in the world. It is increasing its capabilities in uncrewed aerial systems. Chinese military aerospace platforms are developed indigenously, including in some cases with Russian-sourced technologies or designs. China’s military aerospace capabilities are approaching or at parity with those of the United States in certain conflict scenarios.

In contrast, China’s commercial aerospace capabilities lag significantly behind those of the United States and Europe. China has a high reliance on foreign technologies, including for key components such as avionics and engines, and manufacturing capabilities such as tooling. The United States and Europe enjoy strong duopolistic leverage in large civil aircraft (e.g., Boeing and Airbus), engines (Rolls Royce, Pratt and Whitney, GE),

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**SANCTIONS ESCALATION FOR CHINESE SHIPBUILDING AND SHIPPING ENTITIES**

<table>
<thead>
<tr>
<th>Entity</th>
<th>Current Sanctions Listings</th>
<th>Assessed Foreign Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHINA STATE SHIPBUILDING GROUP CO., LTD.</td>
<td>✓ Some subsidiaries are listed on the CMIC list, and some affiliated research institutes are listed on the Entity List.</td>
<td>Low. Limited exposure through some international sales.</td>
</tr>
<tr>
<td>YANGZIJIANG SHIPBUILDING HOLDINGS LIMITED</td>
<td>✗</td>
<td>High. Exposure through international sales, supply chains, exchange listings outside of China, and shares held by foreign investors.</td>
</tr>
<tr>
<td>COSCO SHIPPING HOLDINGS CO., LTD.</td>
<td>✗</td>
<td>High. Exposure through international sales, supply chains, exchange listings outside of China, and shares held by foreign investors for parent and subsidiaries.</td>
</tr>
<tr>
<td>CHINA MERCHANTS GROUP LIMITED</td>
<td>✗</td>
<td>Low. Some exposure through international sales.</td>
</tr>
</tbody>
</table>

*Sources: Bloomberg, Market Screener, Department of Commerce Entity List, Department of Treasury SDN and non-SDN CMIC lists, CNAS analysis.*
and avionics (Honeywell, Collins, Safran, Raytheon). China’s C919, the intended competitor in the large civil aircraft space, relies heavily on foreign technologies, and represents less of a Chinese airplane and more of a “facsimile of a Western plane.” Western firms benefit from design lock-in, meaning that as planes (including the C919) are designed around certain parts and components, it can be cost-prohibitive for manufacturers to swap in substitutes. The reliance on an ongoing stream of parts and components to support existing Chinese commercial aircraft platforms provides a significant point of leverage for the United States and Europe.

Assessing leverage on an entity-by-entity basis, the United States likely has greatest leverage with respect to COMAC, China’s commercial aircraft manufacturer, given its continued reliance on foreign inputs and the absence of any existing sanctions. Sanctioning COMAC may have limited utility in a conflict scenario, given that it is not the entity responsible for PLA aerospace capabilities. The U.S. means in the aerospace sector should be seen as a longer-term advantage, rather than one that can dent PLA aerospace capabilities in a more immediate pre-conflict period. These impacts would have minimal technology denial effect in the immediate run-up period to a conflict. In the short term, the biggest impact may arise from the ability of the United States and Europe to, in effect, ground all of China’s commercial air fleet. This could be achieved through denial of parts and components, denial of servicing support, and prohibitions on the export of finished aircraft to China (including the revocation of license exceptions that permit routine commercial air flights to China). However, this type of effort may be more appropriately classified as a macro-economic pressure operation, as the effect may be more broad-based pressure across the economy rather than immediate denial of technological capabilities important for the PRC’s military air fleet.

Targeting China’s commercial aerospace sector is not without costs. China is projected to become the largest aviation market in numbers of passengers and will account for nearly one of every five projected plane deliveries in the coming years. To the extent that PLA aerospace capabilities depend on spillover effects and technology transfers from the commercial space, denial of commercial aerospace technology can have a long-term corrosive effect on dual-use and military aerospace capabilities. For example, if the PLA is diverting aerospace tooling for military purposes, the denial of all future tooling exports to China can have a substantial impact on military capabilities over the longer term. The U.S. means in the aerospace sector should be seen as a longer-term advantage, rather than one that can dent PLA aerospace capabilities in a more immediate pre-conflict period. These impacts would have minimal technology denial effect in the immediate run-up period to a conflict. In the short term, the biggest impact may arise from the ability of the United States and Europe to, in effect, ground all of China’s commercial air fleet. This could be achieved through denial of parts and components, denial of servicing support, and prohibitions on the export of finished aircraft to China (including the revocation of license exceptions that permit routine commercial air flights to China). However, this type of effort may be more appropriately classified as a macro-economic pressure operation, as the effect may be more broad-based pressure across the economy rather than immediate denial of technological capabilities important for the PRC’s military air fleet.

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Boeing). These impacts could result from loss of export revenue, disruption of supply chains for lower-end aerospace parts produced by China, and forced wind-down of joint ventures and investments with the major state-owned aerospace entities.122

These factors provide the PRC with its own means in the aerospace sector, allowing it to leverage its role as a major buyer in the aerospace market. While it may seek to retain access to Western parts and components, it could halt purchases of new aircraft as a punitive measure. This would be most effective if the United States and Europe were not united, as Airbus could backfill for Boeing sales in China. The PRC is aware of the political and economic importance of Boeing, as seen by its inclusion of purchases of aircraft as part of its commitments to conclude the Trump-era tariff disputes.123

**Space**

The United States has modest means to further deny specific space technologies to China, but its means overall are limited, especially if not paired with European means.

China is an emerging space power, having achieved several space milestones in recent years, including in human spaceflight, lunar and Martian exploration, and rapidly expanding its number of satellite launches. Additionally, China can launch anti-satellite missiles and jam U.S. satellite communications and global positioning system (GPS) capabilities, among other military capabilities.124

The United States retains a lead in space capabilities overall, but its means to leverage this advantage in a technology denial operation is limited due to the longstanding separation between the U.S. and Chinese space sectors.125 Chinese capabilities in space have evolved largely in isolation from the United States, due to U.S. policy to treat space items as military items, denying China’s ability to acquire dual-use space technologies from U.S. producers.126 This policy is in sharp contrast with that of U.S. partners, specifically Europe, who control space items as dual-use and take a more permissive approach to exports to China. Access to European technology has contributed significantly to China’s space advancements.127 A notable case study is the BeiDou satellite navigation system, developed as an alternative to the U.S. GPS. Exports from European space companies and collaboration with the European Galileo system, also seen as a potential alternative to GPS, kickstarted BeiDou and provided China with access to key technologies.128 Today, the BeiDou system is capable of providing “high-accuracy” prevision, navigation, and timing capabilities in support of the PRC military’s weapons delivery systems, as well as supporting commercial users globally.129

U.S. means to deny space technologies will center on prohibiting the export of the small number of commercial technologies currently exportable to China for safety-in-flight reasons.130 More importantly, the United States can significantly enhance its means through joint action with Europe, which provides key space technologies and expertise to China.

**Nuclear**

The United States may have modest means to further deny China’s access to dual-use nuclear technologies, but this must be balanced with the need to maintain certain exports for nuclear safety purposes.

China’s nuclear capabilities are modernized and growing in both civilian and military areas.131 The previous purpose of the PRC nuclear arsenal was to achieve limited deterrence, wherein the PLA maintained a small nuclear force sufficient to deter a nuclear attack. With modernization of its nuclear arsenal, China’s commitment to a primarily defensive rather than offensive policy has become more ambiguous.132

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**SANCTIONS ESCALATION FOR CHINESE NUCLEAR ENTITIES**

<table>
<thead>
<tr>
<th>Entity</th>
<th>Current Sanctions Listings</th>
<th>Assessed Foreign Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHINA NATIONAL NUCLEAR CORPORATION</td>
<td>✓ Entity on the CMIC list, and subsidiary on the Entity List.</td>
<td>Low/uncertain.</td>
</tr>
<tr>
<td>CHINA GENERAL NUCLEAR POWER CORPORATION</td>
<td>✓ Entity on the CMIC list, and subsidiary on the Entity List.</td>
<td>Low/uncertain.</td>
</tr>
<tr>
<td>CHINA NUCLEAR ENGINEERING &amp; CONSTRUCTION CORPORATION LIMITED</td>
<td>✓ Parent on the CMIC list.</td>
<td>Low. Limited international sales, operations, or commercial engagement.</td>
</tr>
</tbody>
</table>

Sources: Bloomberg, Market Screener, Department of Commerce Entity List, Department of Treasury SDN, and non-SDN CMIC lists, CNAS analysis.
China’s civilian nuclear capabilities are advancing, with growing domestic capabilities to design and build nuclear reactors but with a historical reliance on foreign technologies.\textsuperscript{133} China’s civilian nuclear capabilities were developed with significant investment and technology transfer from Western firms.\textsuperscript{134} Foreign suppliers of technology include Russia, France, and the United States, including Westinghouse (USA), which previously partnered extensively with Chinese entities to tap into the growing China market for nuclear power.\textsuperscript{135}

The United States has begun to list certain entities, or their affiliates or subsidiaries, on the sanctions lists. The impact of these actions and room for further escalation is uncertain, in part due to low visibility into the supply chains of these entities.

\textbf{Semiconductors}

U.S. means to further deny China’s access to semiconductors are substantial but carry significant risk of retaliation and unintended consequences. Leveraging means in the semiconductor sector can have exponential impacts (both positive and negative), as chips are a critical component of military platforms, critical infrastructure, and day-to-day economic operations.

The United States has strong market power in key nodes of the semiconductor value chain, including semiconductor manufacturing equipment or tooling, and electronic design automation (EDA) software, both key inputs for the production of highly complex, advanced chips.\textsuperscript{136} These choke-point technologies were the centerpiece of the October 7 rules, which cut off exports of advanced tooling to China, among other actions. The United States also leverages these choke points to extend the reach of its export controls extraterritorially, controlling certain designated types of chips made anywhere in the world if produced using U.S. tooling or EDA software. While enforcement of these novel and complex rules can be difficult, the potential reach is significant, as they could (in theory, at least) be expanded to capture most chips made globally.\textsuperscript{137} Additionally, the United States and its partners surpass China’s chip capabilities in advanced logic chip production, with only two companies currently able to produce logic chips at the cutting edge (TSMC of Taiwan and Samsung of South Korea). While China had been growing in the memory chip segment, the listing of its leading memory chip firm, YMTC, on the Entity List may hamper further growth, leaving two South Korean and one U.S. firm as the market leaders. Entity List designations have also been used to target a broad range of emerging national champions in China’s chips sector, including YMTC, SMIC, and HiSilicon.

While the United States enjoys significant means in the chips sector, its ability to further deny China access to chips technology hinges on the cooperation of key partners. The Netherlands and Japan are critical to effect a meaningful tooling choke point, as evidenced by the U.S. administration’s intense diplomatic efforts to bring them on board with the October 7 rules.\textsuperscript{139} Looking across the chips’ value chain from raw materials to finished items, many partners hold key roles, including in chemicals (Japan), design (United Kingdom [UK]), legacy chips

\textbf{SANCTIONS ESCALATION FOR CHINESE SEMICONDUCTOR ENTITIES}

<table>
<thead>
<tr>
<th>Entity</th>
<th>Current Sanctions Listings</th>
<th>Assessed Foreign Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEMICONDUCTOR MANUFACTURING INTERNATIONAL CORPORATION (SMIC)</td>
<td>✓ Listed on CMIC and Entity Lists.*</td>
<td>Medium. Exposure through international sales, supply chains, and exchange listings.</td>
</tr>
<tr>
<td>HISILICON TECHNOLOGIES CO., LTD. (UBO: HUAWEI TECHNOLOGIES CO., LTD.)</td>
<td>✓ HiSilicon is listed on the Entity List with application of a foreign direct product rule, along with multiple other affiliates or subsidiaries of Huawei; Huawei is listed on the CMIC list.</td>
<td>Low/Uncertain. Exposure concentrated in international supply chains, may have additional exposure via sales. Parent (Huawei) may have higher exposure via international sales.</td>
</tr>
<tr>
<td>YANGTZE MEMORY TECHNOLOGIES CO., LTD. (YMTC)</td>
<td>✓ Listed on Entity List.</td>
<td>Low/Uncertain. Exposure concentrated in international supply chains; likely higher for certain products (i.e., tooling).</td>
</tr>
<tr>
<td>UNISOC (SHANGHAI) TECHNOLOGIES CO., LTD. (UBO: TSINGHUA UNIGROUP CO., LTD.)</td>
<td>×</td>
<td>Low. Exposure concentrated in international supply chains; likely higher for certain products (i.e., tooling).</td>
</tr>
<tr>
<td>NAURA TECHNOLOGY GROUP CO., LTD.</td>
<td>×</td>
<td>Low. Exposure concentrated in international supply chains.</td>
</tr>
</tbody>
</table>

Sources: Bloomberg, Market Screener, The China Project, Department of Commerce Entity List, Department of Treasury SDN and non-SDN CMIC lists, CNAS analysis.

* SMIC objected to its inclusion in the CMIC list.\textsuperscript{138}
(Europe), fabrication (Taiwan, South Korea), and packaging of the final chip (Southeast Asia), to name a few. The United States holds approximately half of the global chips market by value across all segments, but it manufactures just over 10 percent of the world's chips. The ongoing domestic investments in the chips sector may partially mitigate this risk, but they are highly unlikely to displace the key role that Taiwan and South Korea play in global fabrication capabilities and will take years to fully implement.

U.S. means in the chips sector are not fully asymmetrical, as China holds a key role in certain aspects of the global value chain. China does not yet have capacity in cutting-edge fabrication (5 nanometers [nm] and below), and the October 7 rules cut it off from the tooling generally used to produce chips generations behind that (14 nm and below). China has shown some ability to advance its fabrication capabilities despite these rules, as evidenced by the release of a Huawei smartphone incorporating a 7 nm chip produced by SMIC, though its ability to make continually more advanced chips in large quantities remains uncertain. Additionally, China’s share of legacy chip production has been increasing, and an unintended consequence of the October 7 rules may be to accelerate investments into these segments. A growing China share of the legacy chips market presents its own challenges, as Chinese investment—including those made on nonmarket principles—may crowd out other competitors. Legacy chips are used throughout the digital economy, critical infrastructure capabilities, and military platforms, and China’s increasing role in the global market for legacy chips creates a new set of supply chain resiliency concerns. China leads the world in chips assembly, packaging, and testing, with its top firms taking up almost 40 percent of the global market. It also is the biggest semiconductor importer, buying more than $350 billion worth of chips in 2020, though this number has declined due to controls and geopolitical headwinds. China has a critical role in downstream industries, serving as the world’s powerhouse for electronics assembly. These factors provide the PRC with powerful means to retaliate against U.S. and allied measures by denying access to consumer electronics, as well as chips that are lower end but nonetheless important for the functioning of the digital economy.

The essential role of Taiwan in global chip supply presents a further complicating dynamic. Both the United States and China are highly reliant on Taiwan’s unique fabrication capabilities, which account for 90 percent of leading production and more than 60 percent of all chip production globally. The disruption of physical movement of goods in or out of Taiwan can have a massive impact on global chips supply chains, even absent any sanctions or direct military confrontation. Conservative estimates note that a minimum of $2 trillion of economic activity would be at risk from an embargo of Taiwan, much of that driven by the impacts to global chips supply chains. In a conflict scenario, the United States may seek to deny China’s access to Taiwan’s chip capacity, including through extraterritorial export controls that forbid the export of Taiwan-produced chips to China. However, this strategy is high risk, as China’s incentives to protect the physical integrity of Taiwan’s chip facilities and supporting infrastructure are diminished if they fear losing access to the island’s capacity. Sanctions, disruption of trade routes, and kinetic action may all lead to degradation of Taiwan’s chips capacity, with potentially massive downstream effects on the global economy.

**Artificial Intelligence**

The United States has modest means to further deny certain AI technologies to China, primarily through denial of AI computing hardware and infrastructure. AI capabilities are driven by a country’s access to computing power, the availability of large amounts of training data, and the ingenuity of its engineers to develop and train AI models. Certain of these compute, data, and talent areas are more amenable to controls than others. The United States has begun to implement export controls in computing power, where it has arguably the strongest means. The October 7 rules directly targeted China’s access to high-end AI chips, which currently represent another important choke-point technology given the market dominance of U.S. firms (i.e., Nvidia). These rules were tightened in updates released in October 2023, capturing a broader range of AI chips, and further action may address China’s access to cloud computing infrastructure that can provide similar capabilities.

The U.S. means over AI chips is particularly important given the pace of development in AI, where larger and more powerful models require doubling of compute power every six months. Other areas of the AI competition are more balanced, though the United States arguably maintains the edge in talent and innovation. Should China retain its dependence on U.S. advanced AI chips, the United States will have a powerful technology denial option in the event of a conflict, though this must be balanced by the value that the PRC military derives today from more advanced AI capabilities, including in troublesome areas such as hypersonic missile flight projections.
Quantum Technologies
The U.S. means to further deny quantum technologies are limited, due to the internally focused, highly state-dominated nature of China’s quantum technology ecosystem.

Chinese capacity is largely concentrated in government-funded laboratories, including notably the Hefei National Laboratory, which the United States has placed on the Entity List. To the extent that private firms are engaged in China’s quantum technology development, it tends to be concentrated within large commercial technology firms, such as Alibaba, and to a lesser extent start-ups, which tend to have low levels of capitalization. Quantum technologies remain in early stages, with distinct military applications yet to be proven in most cases. Differing methods of scaling and commercializing quantum technology capabilities are still being assessed, and supply chains have not yet matured to the point where specific suppliers have clear market power that could be leveraged by governments in a sanctioning scenario.

Embargo of Strategic Commodities or Materials
Commodities and materials can present unique challenges for sanctioning countries, given the globally available and easily substitutable nature of many of these goods. Seeking to deny these goods to China will require intense diplomacy and a range of innovative tools, going beyond traditional sanctions tools, to create market incentives for non-aligned countries to participate in any U.S. effort. In certain markets, such as critical minerals, sanctions would likely be ineffective entirely, as China holds a dominant market share.

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Ways related to commodities and materials will vary based on the underlying market structure of the product. Commodities by definition tend to be globally available and easily substitutable. This fungibility stands in contrast to certain critical minerals, the production of which is concentrated and represents choke points that can be leveraged (usually by China). While traditional sanctions tools will remain important, they must be complemented by novel approaches to address the economic realities of the particular commodity or material at issue.

Traditional Sanctions Tools
Traditional sanctions tools include financial sanctions on major commodity or materials firms, which in China largely means SOEs as the major producers and traders of commodities. They may also include freezing assets, prohibiting the use of the U.S. correspondent banking system, or prohibiting U.S. persons from purchasing debt or equity of the designated entities, all of which are actions intended to constrain the ability of the commodity or materials firm to engage in international economic activity. These tools would be most effective for Chinese firms with international exposure through overseas operations or cross-border trading.

The United States may also seek to target the range of commercial activities that support commodities or materials trade, focusing on the financial services that support this trade. This can include prohibitions on the provision of insurance for ships transporting commodities or materials, exploiting a stronger point of U.S. and allied leverage in financial services. The United States may also consider secondary sanctions on any foreign entity that engages in a commercial transaction with a Chinese commodity or materials firm, though such an extraterritorial action may be controversial.

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The objective of a commodity or materials embargo operation is to degrade China’s military operations through the denial of key resources or inputs, such as energy, metals, minerals, or agriculture. A commodity or materials embargo may also be used as part of an operation to place pressure on the economy as a whole, with the theoretical distinction that such an operation could differ in how it is targeted and the metrics of success. If the objective is to deny China’s military critical commodities or materials, the operation will target primarily military entities, encompassing civilian activity only to the extent necessary to prevent diversion. In contrast, a broader pressure operation would deny commodities or materials to the entire Chinese economy. In practice, given a high risk of diversion to military purposes during an active conflict, a commodity or materials embargo operation will likely require broad coverage across the economy to have the desired effect on the military.

Certain materials markets—such as minerals and metals—present distinct challenges for the United States and its partners, as China possesses substantial leverage due to its dominant position in global extraction and processing. In these markets, ends may be more defensive in nature, such as seeking to assure U.S. supply, and the disadvantageous market structure may render sanctions-based approaches ineffective. Indeed, the United States may have to try to break an embargo rather than being the one to implement it for certain critical minerals or metals. The analysis of ways and means for a commodity or materials embargo in this section focuses on offensive actions that the United States can take in its areas of leverage. The U.S. vulnerability in critical minerals and metals, though, will be an important element of an economic defense posture, as explored in the recommendations section.
Export controls may be used to prohibit the export of commercial goods to designated sectors or entities, extending their use beyond the standard export controls on military or dual-use goods. For example, the United States imposed export controls on energy equipment in the Russia context, even though energy production equipment is typically not viewed as a dual-use item. Export controls would be most effective in hampering Chinese productive capacity but would have less impact on the ability of China to buy or sell commodities on global markets.

A full embargo on the trade of commodities or certain materials may also be considered, with a ban on sales to China for commodities or materials for which it is a net importer. However, a ban would be highly risky, and in the energy sector could lead to severe negative consequences for global markets.

Novel Market Mechanisms
The globally available, easily substitutable nature of commodities complicates efforts to deny China these resources. In the energy sector, for example, it may be naïve to expect that major producers in the Middle East or elsewhere would align with U.S. sanctions, particularly if doing so would have negative commercial impacts. It may be more viable to secure buy-in if the United States can create incentives, rather than punishments, for alignment with the United States. The oil price cap currently being used in the Russia context is a good example of a novel market mechanism: it is designed to keep Russian energy on the market while depriving Russia of energy revenues and creating an incentive (i.e., cheaper oil) for non-aligned states. China is a net energy importer, and a novel market mechanism would be flipped to create incentives to deny China’s purchases—rather than sales—of energy. Such mechanisms are untested in this context, however, and would require intense diplomacy to successfully implement.

Means
Commodity or material embargo means are the relative capacity of the United States to deny China access to products that are inherently substitutable or globally available. These means vary significantly based on natural resource endowments, global market structures, and regulatory permissiveness.

Energy
The United States has modest means to deny China energy resources, but these means vary considerably across energy markets. Means to deny oil, as the primary energy source for military purposes, are particularly weak when using only economic tools. The United States may have more leverage in other energy areas, such as LNG, but impacts would be concentrated in economic rather than military areas.

China’s domestic demand for energy is high, and China maintains a diversified source of energy supply. The United States has strongest means in the LNG market. China is a major buyer of LNG from the United States (11 percent of its total LNG imports) and Australia (39 percent) and would have difficulty in the near term replacing these LNG sources, given the volume of purchases and constraints imposed by existing LNG transport infrastructure. Alternative sources include Qatar (11 percent). Shifts in Russia’s export production capacity and supporting infrastructure will be a key determinant in how easily China can tap into alternative LNG sources to replace U.S. and Australian volumes.

The United States also has strong means in the services supporting the energy sector. U.S. and UK firms dominate the market for shipping insurance, a means that is currently leveraged to implement the oil price cap in the Russia context. While China and Russia are undertaking efforts to shift away from the U.S. dollar, energy trade today is largely denominated in U.S. dollars, giving the United States an opening to deploy a wide range of financial sector tools to target China’s cross-border energy transactions. For example, the United States houses 19 of the top 100 global energy lenders, whereas only three are based in China. U.S. and partner countries are also market leaders in traditional energy services, such as LNG liquefaction technology and unconventional fuel extraction. The United States could deny the direct sale of these services to Chinese entities, hampering the production capacity of Chinese firms at home and abroad, as well as extending similar prohibitions to any energy company that exported energy to China, depressing China’s ability to buy energy on the global market.

The United States, working with partners, has modest means in coal. China imports high volumes of coal and produces it domestically. Australia is an important source of coal, accounting for 48 percent of China’s imports in 2020. This trade volume has dropped, however, in the wake of a political dispute between the two countries, resulting in the PBC barring certain imports from Australia, including coal, as a trade coercion tactic. While trade has resumed, Australian coal producers had already shifted distribution channels, and bilateral trade volumes are anticipated to be lower than before. By mid-2023, coal made up 55 percent of China’s total...
primary energy consumption, with petroleum following at 19 percent, natural gas at 9 percent, hydropower at 8 percent, non-hydro renewables at 7 percent, and nuclear at 2 percent.\textsuperscript{168} China is working toward carbon neutrality by 2060, a goal that largely depends on cutting the amount of coal used; however, recent power rationing and droughts limiting hydropower have caused policymakers to take a slower, more cautious approach to phasing out coal power. This energy breakdown demonstrates China’s reliance on coal and a vulnerability due to an import dependency.

U.S. means in oil are weak. The bulk of Chinese oil imports come from the 14 members of the Organization of the Petroleum Exporting Countries (OPEC), with imports split between Saudi Arabia (18 percent), other Gulf Cooperation Council members (17 percent), Iraq (11 percent), Iran (6 percent), and Russia (16 percent).\textsuperscript{169} Given the weak means, U.S. options to deny oil imports will require sanctions targeted at supporting services (e.g., shipping insurance), as well as novel market mechanisms to create incentives for Gulf states to align with the U.S. sanctions. It is difficult to foresee any scenario in which Russia and Iran align with the United States, and these countries are likely to maintain or increase oil sales to China during a conflict.

A further complication in denying oil to China is that China is the largest exporter of refined fuel products globally, holding 17 percent of global refining capacity, and is the only country that can increase its capacity to a meaningful degree.\textsuperscript{170} With many developed economies reducing refinery capacity due to environmental concerns, most new refinery capacity is in emerging economies. Cutting off crude exports to China might not only hurt China but also put greater pressure on global supplies of refined products, such as diesel. This scenario might be particularly challenging for Europe, which is highly reliant on diesel fuels.

The United States has low means in renewable energy. China is currently the primary manufacturer of the technologies necessary to produce renewable energy, and dominates the processing of critical minerals needed for batteries and polysilicon used in solar panels.\textsuperscript{171} U.S. production capacity is growing, including because of the Inflation Reduction Act incentives, but is low and highly dependent on imports from China. Given these dependencies, China has strong means to target the United States in renewable energy.

On an entity-by-entity basis, the United States may have means to target China’s major state-owned energy companies. These entities have a low level of existing sanctions and some level of international activity, indicating room for escalation. As with any sanctions in the energy sector, however, the effect on China’s access to energy must be balanced with potential disruptions in global energy markets.

### SANCTIONS ESCALATION FOR CHINESE ENERGY ENTITIES

<table>
<thead>
<tr>
<th>Entity</th>
<th>Current Sanctions Listings</th>
<th>Assessed Foreign Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHINA PETROCHEMICAL CORPORATION</td>
<td>X</td>
<td>Low.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some exposure from foreign investors.</td>
</tr>
<tr>
<td>CHINA NATIONAL PETROLEUM CORPORATION</td>
<td>X</td>
<td>Medium.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Some exposure from foreign sales, suppliers, and investors.</td>
</tr>
<tr>
<td>CNOOC LIMITED</td>
<td>✓</td>
<td>Medium.</td>
</tr>
<tr>
<td></td>
<td>Parent and some subsidiaries on CMIC list; a subsidiary on the Entity List.\textsuperscript{*}</td>
<td>Some exposure from foreign sales, suppliers.</td>
</tr>
</tbody>
</table>

\textsuperscript{*} CNOOC objected to its inclusion on U.S. sanctions lists.\textsuperscript{172}

Sources: Bloomberg, Market Screener, Department of Commerce Entity List, Department of Treasury SDN and non-SDN CMIC lists, CNAS analysis.
Chinese dominance over most critical nodes of metal and mineral supply chains leaves the United States with limited means to deny China access to these products. The United States, and most of the world, depends on China for critical mineral and metal extraction and processing. These minerals and metals are necessary for a range of technologies including electric vehicles, semiconductors, jet engines, and quantum computing.\(^{173}\) Although many mineral and metal deposits are located beyond China’s borders, Beijing has strategically executed mining contracts with countries that house some of the largest reserves. For example, Chinese companies own or co-own 15 of the 19 cobalt mines in the Democratic Republic of Congo (DRC), home to almost half of the world’s known cobalt supply.\(^{174}\) Comparatively, Freeport-McMoRan was the last U.S. company mining cobalt in the DRC and sold its copper-cobalt mine to China Molybdenum Co. in 2020, furthering Chinese control over cobalt.\(^{175}\) China is the world leader in critical mineral mining, accounting for 60 percent of global production.\(^{176}\) This dominant position in mining exists across many minerals and metals. Although alternative deposits of minerals and metals exist in the United States and partner countries, it can take up to 10 years to operationalize a mine, which includes exploration, permitting, and construction, making it difficult for the United States and its partners to quickly diminish dependency on China.\(^{177}\)

The United States, working with allies, has slightly higher capabilities in the processing of certain key minerals and metals. While China dominates processing, in some cases it relies on imports of the raw materials. Lithium is a prime example of China’s dominant yet potentially unstable position in mineral and metals processing. China is the world’s largest lithium processor, but it lags Australia and Chile in production of raw lithium.\(^{178}\) Australia and Chile, respectively, account for 47 percent and 30 percent of global lithium production, while China accounts for 13 percent.\(^{179}\) This imbalance of domestic lithium supply, production, and processing capabilities renders China reliant on lithium imports, leaving it vulnerable if Australia, Chile, or other countries enhance their processing capacity and shift their dependence away from Chinese-processed lithium. This phenomenon is replicated with cobalt, nickel, and many other critical minerals, metals, and rare earths.\(^{180}\)

However, taking advantage of this potential leverage requires a significant shift in the willingness of more nations to permit processing domestically.

### Metals and Minerals

### Agriculture

The United States has substantial means in agricultural commodities, but using them comes at a high domestic cost.

As China’s economy and population grew over the past several decades, so too did the demand for food. China is increasingly reliant on food imports, with Brazil and the United States accounting for approximately 21 and 17 percent, respectively, of China’s total food imports in 2021.\(^{181}\) China does not have sufficient high-quality land and water to accommodate a large increase in agricultural output, influencing some of its attempts to secure farmland and fishing waters beyond its borders and rendering it reliant on imports to meet its food security needs.

U.S. agricultural exports to China were more than $36 billion in 2022, making China the largest export market for U.S. farmers. In recent years, the United States has seen record export values—driven by higher prices—across a range of agricultural products destined for China, including soybeans, corn, beef, chicken meat, tree nuts, and sorghum. For certain products, such as soybeans and feedstock, China accounts for half of the global export market for U.S. farmers.\(^{182}\) Canada, Mexico, and Japan are the next highest agricultural providers to China, making up 16, 14, and 8 percent of the market share, respectively.\(^{183}\)

Agricultural products have been targeted in prior disputes between the United States and the PRC, reflecting the politically sensitive nature of this trade. During the Trump-era tariff wars, the PRC imposed retaliatory tariffs on a large swath of agricultural goods.\(^{184}\) Agriculture was also a priority area in the trade agreement that the two sides negotiated to halt the tariff escalation, with the PRC committing to increase its purchases of U.S. agricultural goods and lower non-tariff barriers for U.S. exports.\(^{185}\) This history raises questions about whether the United States would have the political resolve to leverage its means in the agricultural sector, given the high cost to an important domestic political constituency. In 2021, Brazil surpassed the United States as the largest agricultural exporter to China.\(^{186}\) Should China continue to find substitutes for U.S. agricultural products, the balance of means may shift to China, as the commercial costs to the United States would be greater than the damage to China from the disruption of the bilateral trade in agriculture.

Efforts to deny food to China may also lead to humanitarian concerns and international backlash, a dynamic explored later in the report.
Macroeconomic Pressure

The United States and its partners have substantial means to implement macroeconomic pressure operations, derived in large part from the dominance of the U.S. dollar in the global financial architecture. However, a high-intensity macroeconomic pressure operation carries significant risk for the U.S. and global economies. The costs of cutting China out of the global economy may be prohibitive, given the degree of interdependence that China has with the U.S. and global economies.

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The objective of macroeconomic pressure operations is to place sufficient pressure on China’s economic health that it degrades its ability to financially sustain a military campaign. Such operations may also have punitive objectives, seeking to impose costs on China in response to aggression. A macroeconomic pressure strategy is inherently indirect and broad-based. Rather than seeking to disrupt particular actors or capabilities, it is intended to depress economic activity across the board and to impair the PRC’s capacity to engage in basic economic management functions.

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The United States and its partners have a well-developed set of macroeconomic pressure tools, which fall predominantly in the financial sector but can also encompass a broader range of trade measures and sectoral sanctions. Certain tools, such as financial sanctions, may also be used to support other strategic ends, depending on the nature of the target and the intended effect of the action. For example, financial sanctions imposed on specific firms supporting China’s military modernization would be classified in this methodology as falling under a technology denial operation, whereas financial sanctions imposed on the People’s Bank of China (PBOC) would be considered part of a macroeconomic pressure operation.

Financial Sanctions

Financial sanctions are among the most oft-used and powerful ways that the United States has to exert macroeconomic pressure. These sanctions can take a range of forms, based on the entity or activity targeted and the intended severity of the measure. Most of the financial sanctions leverage the privileged position of the United States in the global financial infrastructure, which is explored in more detail in the following analysis of macroeconomic pressure means. To be precise, this report uses the terminology financial sanctions to refer to those financial sanctions targeting financial infrastructure or institutions specifically. To date, the United States has exercised restraint in using financial sanctions against Chinese targets, with notable exceptions related to human rights or support for Iran. The United States has not imposed financial sector sanctions.

The most severe form of financial sanctions is to designate an individual or an entity as an SDN, which freezes the designated individual’s or entity’s assets held within the United States or under the possession or control of any U.S. person (e.g., assets held by U.S. banks outside the United States) and generally prohibits U.S. persons from dealing with the targeted individual or entity. An SDN designation is akin to being excluded from the global financial infrastructure, severely constraining the target’s ability to conduct licit transactions outside of their domestic market. Less-severe sanctions can include prohibitions on accessing U.S. correspondent banks, which serve as key intermediaries for processing transactions between jurisdictions, and denying access to the Society for Worldwide Interbank Financial Transactions (SWIFT) financial messaging system, which does not process payments but instead provides for efficient communications between banks. Both latter options introduce friction into China’s ability to engage in international transactions efficiently and at scale.

Additional measures can include debt and equity restrictions, in which U.S. persons are prohibited from transactions or dealings in debt and equity of identified entities or in targeted sectors. Direct investments by U.S. persons into China may also be considered to deprive the Chinese economy of foreign financing. Investment restrictions in a macroeconomic pressure strategy would likely cut across the entire Chinese economy. This stands in contrast to the ongoing discussion in the United States about a new outbound investment controls mechanism, which is likely to target specific technology sectors of high national security importance.

Secondary Sanctions

Secondary sanctions are an extraterritorial tool used to extend the reach of U.S. sanctions. While sanctions usually hinge on the involvement of a U.S. person in a transaction, secondary sanctions do not require that a transaction have a U.S. nexus. Instead, secondary sanctions are used to disincentivize all commercial transactions with a targeted entity, by threatening to deny persons access to the U.S. financial system and U.S. market if they transact with the targeted person. This allows secondary sanctions to reach commercial
transactions involving only foreign parties, including those transactions that may be legal in the home jurisdiction of the transacting parties. The extraordinary reach of secondary sanctions has made them a controversial tool with U.S. partners, who chafe at the imposition of U.S. authorities within their jurisdiction.

**Trade Measures**

Trade measures include the use of tariffs or other restrictions to alter the supply or demand for goods or services, relying on market forces to divert economic activity in a manner harmful for China. One example is revocation of China’s permanent normal trade relations status, and a corresponding revocation of the most-favored-nation benefits that the United States accords to China under the WTO. This option does not forbid trade with China, but it does raise tariffs across the board on the import of Chinese goods, which may make such goods less competitive in the U.S. market, depending on the price elasticity of the good and availability of substitutable goods. Tariff-based trade measures inherently focus more on goods rather than services. At more extreme levels, trade measures can include a partial or full embargo on the bilateral trade of goods and services.

The United States has imposed a range of trade measures on China in recent years, most notably through the multiple rounds of tariffs resulting from the U.S. investigation into China’s unfair trade practices. Notably, even in the Russia context, the United States and allies have not imposed a full trade embargo, indicating the economic and political difficulties in implementing this severe sanction against a larger economy.

**Sectoral Sanctions**

Sectoral sanctions target U.S. persons’ engagement in key sectors that are critical for the overall health of China’s economy. Sectoral sanctions can take the form of broad prohibitions on transactions involving a sector, as well as financial sanctions targeting specific entities in the sector as well as export controls constraining the export of technology important for the current operation or future growth of the sector. These tools were used in the Russia context, for example, in a long-running attempt to deprive Russia of the benefits it derives from the energy sector, which accounts for a large chunk of its economy. Sectoral sanctions have not yet been used as a macroeconomic pressure tool in the China context.

**Means**

Macroeconomic pressure means are points of leverage in an interconnected economy that enable the targeting of core functions of an adversary’s economy or otherwise depress prospects for economic growth. The United States enjoys substantial macroeconomic pressure means, in large part due to the dominance of the U.S. dollar in global financial infrastructure and its role as a major trading partner for China.

**Foreign Exchange Reserves**

The United States has substantial means to impact the PRC’s foreign exchange reserves, with important caveats.

Central banks hold foreign exchange reserves to facilitate a range of economic objectives, including facilitation of international trade. China, as a major exporting economy, receives foreign currencies as Chinese goods are sold abroad and paid for in foreign currencies. Those foreign currencies can be used by China to finance imports or can accumulate as reserves. Reserves can be used to manage the overall supply of money in an economy (i.e., conduct monetary policy), for financial stability purposes, or to manage (or manipulate) the value of the RMB. Constraints on access to foreign currencies can subsequently constrain the ability of central bankers to pursue these types of macroeconomic objectives.

The U.S. dollar is the dominant currency used for foreign exchange reserves around the world, including by China. Economic actors view the U.S. dollar as a safe haven asset, based on the credibility of the U.S. government, the deep and liquid nature of U.S. capital markets, and the stability provided by a rule-of-law political system. The U.S. dollar’s privileged status has been reinforced even in uncertain times, such as the 2007–2008 financial crisis when the U.S. financial system itself was in crisis and demand for the U.S. dollar rose as investors flocked to safety. While the overall proportion of the U.S. dollar in global foreign exchange reserves has fallen over the past two decades, it still accounts for the majority of reserves. The currencies of major U.S. allies, notably the Euro, account for most of the non-U.S. dollar reserves.

The PRC holds a substantial share of U.S. dollars in its foreign exchange reserves. Of the PRC’s officially declared $3.2 trillion in foreign exchange reserves held by the PBOC, the U.S. dollar accounts for $1.8 trillion (or approximately 56 percent), held in Treasury bonds, other agency bonds, and U.S. dollar-denominated holdings. Combined, the currencies of G7 economies account for around 89 percent of the PRC’s foreign exchange holdings, highlighting the magnified impact that coordinated sanctions can have in a macroeconomic pressure strategy. This enables the United States to immobilize these assets through sanctions on the PBOC, and...
G7 economies can take comparable actions to freeze reserves held in their currencies. To intensify the impact on the PRC’s foreign exchange capabilities, sanctions would also need to target the reserves held by major Chinese banks, in addition to the PBOC. Some analysts have projected that the PRC may hold double the amount of its declared foreign exchange reserves, if accounting for all financial institutions that report to the PBOC.\(^{198}\) Additionally, the quality of data reporting from the PRC may hamper full visibility into the extent and composition of their holdings.

Sanctions that target foreign exchange reserves impact China’s existing stock of foreign currencies. China will, however, continue to receive new inflows of foreign currency so long as it continues to trade with the rest of the world. This distinction between stocks and flows has been problematic in the Russia case, as Russia’s continued energy trade has maintained a steady flow of currency into Russia’s coffers even in the context of G7 sanctions on the Russian central bank, although sanctions constrain Russia’s ability to use these accumulating stockpiles of currencies.\(^{199}\) This indicates that financial sanctions on China’s central bank and major financial institutions would need to be paired with trade restrictions to most effectively deny China access to foreign exchange assets.

The PRC has certain means to retaliate or preempt U.S. sanctions on its central bank and financial institutions, primarily through leveraging its holdings of U.S. Treasuries and other agency bonds. China accounts for 5.3 percent of outstanding U.S. debt, including short-term and long-term securities.\(^{200}\) The PRC could seek to rapidly dump these holdings, with the goal of creating volatility in the market for U.S. debt. However, the United States, acting through the Federal Reserve, would likely have sufficient capacity to sterilize the effects of any attempted dumping actions, including through the purchase of excess debt on the open market.\(^{201}\) For context, during the pandemic-era quantitative easing efforts, Fed interventions doubled the size of assets held from $4.2 trillion to $8.8 trillion, indicating an ability to intervene at a scale necessary to smooth disruptions caused by PRC attempts to dump its $1.8 trillion in official holdings.\(^{202}\) U.S. sanctions on the PBOC may also constrain the PRC’s ability to legally engage in the transactions necessary to dump. The PRC could seek to gain a first-mover advantage by dumping in advance of central bank sanctions being imposed, should it view such sanctions as imminent. The PRC may be unlikely to dump all of its holdings at once, and its actions to dump would impose costs on itself, as the value of its retained holdings would degrade because of any dumping attempt.

However, even without concrete acts by the PRC to dump its holdings, the absence of China as a purchaser of U.S. debt may have serious implications for the United States, both in the near and long term. The United States is issuing historically large amounts of debt, and it relies on China, among other sources, to be a reliable purchaser of that debt. Simply by abstaining from further purchases, China can cause significant disruption in the market for U.S. debt. Faced with fewer buyers, the United States may be forced to increase its yields, an action that would constrain its monetary flexibility and one that may be difficult to implement in times of already high interest rates. However, this scenario may be counteracted by a tendency for investors to flee to U.S. dollar-based assets in times of crisis, which could drive demand back up. These dynamics could be playing out against the backdrop of an active crisis between the United States and the PRC, which would further disrupt markets across the board and complicate efforts to develop reliable economic projections. While the Fed may be able to intervene in the short term to stabilize markets, it may have a harder task in replacing China as a debt purchaser over the longer haul.
Financial sanctions on the PBOC and major Chinese financial institutions may cause other unintended consequences as well, including impacting the value of the RMB.\footnote{Sanctions on a central bank can lead to rapid depreciation of a currency, as the currency becomes more illiquid and unattractive for transacting parties.} Sanctions on a central bank can lead to rapid depreciation of a currency, as the currency becomes more illiquid and unattractive for transacting parties. In the Russia case, President Biden proudly touted the fall of the ruble’s value to less than a penny, though the ruble has since regained ground.\footnote{In the China case, a weaker RMB can serve to make China’s exports more competitive on global markets, undercutting the broader macroeconomic pressure objectives of a sanctions operation. This dynamic underscores the need to pair financial sector sanctions with corresponding trade measures to achieve maximal effect. To the extent that other central banks hold RMB, sanctions on the PBOC would create complications for its own macroeconomic management, though this issue is likely small in scale.} The United States has substantial means to leverage the role of the U.S. dollar in international trade.

Around half of international trade, 40 percent of international payments, and half of all cross-border loans and debt securities transactions are conducted in U.S. dollars.\footnote{Even for trade not denominated in U.S. dollars, the U.S. dollar may still play a facilitating role as it is involved in 88 percent of all foreign currency exchange transactions (e.g., swapping a Euro for a yen may be implemented by first swapping a Euro for a U.S. dollar, then swapping the U.S. dollar for a yen).} These numbers rise for certain strategic areas, such as energy trade, which is almost entirely denominated in U.S. dollars.\footnote{The U.S. dollar benefits from strong network effects, becoming more valuable the more economic actors use it.} The PRC has laid the groundwork for financial instruments and pipelines to provide alternatives to existing traditional financial systems. This includes the Cross-border Interbank Payment System (CIPS) and China’s central bank digital currency known as the e-CNY (i.e., electronic Chinese Yuan). CIPS is a payment system that allows participating onshore and offshore banks access to China’s domestic interbank clearing and settlement system—China National Advanced Payment System—and facilitates clearing and settlement of RMB transactions.

However, financial institutions can also indirectly access the Chinese market through correspondent banks with direct CIPS access. While CIPS may resemble the primary cross-border financial network SWIFT, there are key differences. Unlike SWIFT, which serves as a global financial messaging system, CIPS is primarily an RMB clearing and settlement mechanism. CIPS has its own financial messaging system, but it is nascent and not widely used to compete with SWIFT. SWIFT processes 40 times as many transactions as CIPS, and boasts more than 11,000 participants worldwide compared to CIPS’ 1,300.\footnote{The e-CNY is at early stages of dissemination, with outstanding e-CNY issued standing at $2 billion—or less than 1 percent of RMB cash and cash equivalents in circulation—at the end of 2022.} Given the small scale of the CIPS pipeline and outstanding e-CNY, neither pose a significant threat of sanctions evasion at this juncture. Moreover, the usability and appeal of alternative rails and instruments like CIPS and e-CNY hinge on the attractiveness of the RMB.\footnote{The PRC maintains strict control over capital outflows, aiming to retain a substantial portion of capital (including household savings) within its borders to strategically invest in key sectors. When addressing concerns of capital flight and potential disruptions to financial stability, the PRC remains cautious about relaxing capital controls.} The RMB is much less convertible compared to the U.S. dollar or the Euro, as China restricts the open trading of its currency. This limitation makes holding RMB significantly less practical than other reserve assets.\footnote{Additionally, the PRC maintains strict control over capital outflows, aiming to retain a substantial portion of capital (including household savings) within its borders to strategically invest in key sectors. When addressing concerns of capital flight and potential disruptions to financial stability, the PRC remains cautious about relaxing capital controls.} Developing countries, however, may be more willing, and the PRC has seen willingness of these countries to engage in exploration of alternative financial systems using the RMB, which would provide an important means to continue trade under U.S. sanctions pressure even if it did not present a threat to the overall dominance of the U.S. dollar.

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In 2023, French energy major Total and Chinese SOE CNOOC announced the first-ever LNG deal settled in RMB.\footnote{In 2023, French energy major Total and Chinese SOE CNOOC announced the first-ever LNG deal settled in RMB.} Due to sanctions on Russia, two-thirds of Russia-China bilateral trade is now settled in RMB or rubles.\footnote{These efforts constitute a small fraction of China’s overall trading relationships, and it is highly unlikely that G7 economies would agree to similar measures for large portions of their bilateral trade with China. Developing countries, however, may be more willing, and the PRC has seen willingness of these countries to engage in exploration of alternative financial systems using the RMB, which would provide an important means to continue trade under U.S. sanctions pressure even if it did not present a threat to the overall dominance of the U.S. dollar.} These efforts constitute a small fraction of China’s overall trading relationships, and it is highly unlikely that G7 economies would agree to similar measures for large portions of their bilateral trade with China. Developing countries, however, may be more willing, and the PRC has seen willingness of these countries to engage in exploration of alternative financial systems using the RMB, which would provide an important means to continue trade under U.S. sanctions pressure even if it did not present a threat to the overall dominance of the U.S. dollar.
There remains the possibility, however, that these financial innovations can provide routes for sanctions evasion if expanded, which the PRC would have a strong incentive to do if it were under severe sanctions.

**International Exposure of State-Owned Banks**

The United States has modest means to impact China’s major state-owned banks by leveraging the international exposure of these banks.

The six largest state-owned commercial banks (the Big Six) are the biggest players in the Chinese banking sector and some of the biggest financial institutions in the world.216 The Big Six banks have total assets of $22 trillion, total liability of $21 trillion, with disclosed U.S. dollar holdings only at $68 billion as of 2022. The Big Six had a total of $1.7 trillion in foreign exchange exposure, which is a proxy of financial institutions’ international activities.217 Five of the Big Six (with the exception of the Postal Savings Bank of China) have international operations through direct subsidiaries and branches in locations outside of China, as well as their own substantial foreign exchange operations. However, despite the large volume of international activity these banks conduct, it remains only a fraction of their overall operations. For example, the Industrial and Commercial Bank of China (ICBC), the world’s largest bank, has $447 billion in overseas assets, but this accounts for less than 10 percent of its total assets.218 While the international operations of the banks lead to a certain degree of sanctions exposure, sanctions have a limited ability to reach the domestic operations that constitute the bulk of bank activity, constraining the impact of financial sector sanctions.

Sanctions exposure of other categories of Chinese financial institutions is low or uncertain. China’s sovereign wealth funds, such as the China Investment Corporation (CIC), likely have some exposure through their foreign exchange operations. Joint-stock banks, which occupy a lower rung in China’s overall banking system, are mostly domestic-facing, limiting the ability to directly impact them through sanctions. The policy banks that China uses to engage in development finance, China Development Bank and the Export-Import Bank, likely have higher exposure due to the nature of their operations, though this may also mean that spillover effects of targeting these banks would be high for the developing world.

Sanctions on the major Chinese banks may also lead to a broader range of spillover effects, which can amplify the impact of these sanctions beyond just the banks. These banks play an important role in facilitating trade, and sanctions will constrain their ability to finance trade or otherwise support the cross-border transactions necessary for China’s role as a major trader. Consequently, just as sanctions on the PBOC would likely lead to substantial real economy spillover effects, so too would sanctions on the big banks.

### SANCTIONS ESCALATION FOR CHINESE STATE-OWNED BANKS

<table>
<thead>
<tr>
<th>Bank Category</th>
<th>Total Assets (billion $USD)</th>
<th>Total Liabilities (billion $USD)</th>
<th>Current Sanctions Listings</th>
<th>Assessed Foreign Exposure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BIG SIX BANKS</strong></td>
<td>$22,489</td>
<td>$20,638</td>
<td>✗</td>
<td>Medium.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>— The Big Six banks have international operations, foreign exchange exposure, and a limited number of shares held by foreign investors; in general, this exposure is dwarfed by the size of domestic operations.</td>
<td></td>
</tr>
<tr>
<td><strong>MAJOR SOVEREIGN WEALTH FUNDS</strong></td>
<td>$1,020</td>
<td>Unavailable</td>
<td>✗</td>
<td>Uncertain.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>— Potential exposure through foreign exchange holdings and overseas investments.</td>
<td></td>
</tr>
<tr>
<td><strong>JOINT-STOCK BANKS</strong></td>
<td>$12,311</td>
<td>$7,094</td>
<td>✗</td>
<td>Low.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>— Operations are dominantly focused domestically.</td>
<td></td>
</tr>
<tr>
<td><strong>POLICY BANKS</strong></td>
<td>$4,558</td>
<td>$4,251</td>
<td>✗</td>
<td>Uncertain.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>— Potentially high exposure due to external-facing nature of development finance banks.</td>
<td></td>
</tr>
</tbody>
</table>

Sources: Bloomberg, Market Screener, Department of Commerce Entity List, Department of Treasury SDN and non-SDN CMIC lists, bank annual reports, CNAS analysis.
Debt and Equity Financing

The United States has modest means to degrade China’s financial capabilities through debt and equity restrictions. Even though the Chinese stock and bond markets are substantial at $12 trillion and $21 trillion, respectively (trailing the United States, which boasts a $46 trillion stock market and a $52 trillion bond market), both are primarily domestic-facing. Total foreign investment of Chinese stocks is around 4 percent of the total stock market capitalization. The bond market is also domestically oriented, where 9 percent of China’s government bonds was owned by foreign investors in 2021. Foreign investors have gained increasing access to new issuances, and monthly data from early 2022 indicate foreign investors purchased roughly 40 to 50 percent of newly issued bonds from China. However, the overall holdings of foreign investors remain low, reflecting a potential constraint on the use of sanctions to target China’s financial capabilities through debt and equity restrictions.

Historically, Chinese firms have sought listings on international exchanges. As of January 2023, more than 250 Chinese firms are listed on major U.S. exchanges with a total market capitalization of over $1 trillion. In addition, China has been actively pursuing alternative listing avenues with European stock exchanges, exemplified by mechanisms like the China-Swiss Stock Connect program, which connects the Swiss capital market to the Shanghai and Shenzhen exchanges. The United States previously sought to de-list Chinese firms due to transparency concerns and could again seek to target access to U.S. exchanges as part of a future sanctions effort.

Foreign Direct Investment

The United States has limited means to target FDI flows in and out of China. FDI has been an important driver for China’s economic growth, and U.S. investors have been active in China. The U.S. direct investment position in China grew from $60 billion in 2013 to $118 billion in 2021. Annual FDI flows from the United States to China ranged from a low of $3 billion in the pandemic era to $11 billion in 2014. While U.S. FDI is not negligible, the total FDI flows into China in 2021 were $181 billion, and flows into the Hong Kong Special Administration Region accounted for an additional $141 billion, reflecting that China has historically had wide access to a wide range of FDI sources other than the United States.

Recent data, however, indicate that China’s access to FDI may be dropping precipitously. FDI in the first quarter of 2023 dropped to $20 billion, down from $100 billion in the same period in 2022, according to one measure. China’s own actions may further degrade foreign investor interest in the country, reducing the amount of new FDI flows. China’s zero-COVID policies shook investor confidence in the stability of the Chinese market. Harassment of Western due-diligence firms and the economic coercion of Micron, a U.S. semiconductor firm subjected to a sham cybersecurity investigation, indicate a higher level of risk for Western multinationals in China. These firms are increasingly implementing a China + 1 strategy, in which they attempt to diversify supply chains away from China or otherwise separate their operations in China from the rest of their global operations. In extreme scenarios, foreign firms may also have to worry about expropriation of their assets in China. As China’s access to FDI dries up, so too do U.S. means to leverage this area of economic activity in a sanctions scenario.

The United States may also seek to limit Chinese FDI in the United States, though such actions may have negligible impact given the scrutiny already provided to Chinese investors under U.S. investment screening by the Committee on Foreign Investment in the United States (CFIUS). Since peaking in 2016 at $27 billion, Chinese FDI had fallen steadily to $294 million by 2021. Chinese FDI has shown consistent declines that are more pronounced than other countries, and failed to rebound after the pandemic.

Bilateral Trade

The United States has modest means to put macroeconomic pressure on China via restrictions on bilateral trade. China is one of the world’s largest traders and represents a major trading partner for the United States and its partners. Under a macroeconomic pressure operation, restrictions on trade would be aimed at the largest trade flows, in contrast with a technology denial operation or commodity embargo operation, both of which would prioritize restrictions based on the nature of the good and its relevance to military capabilities. The largest flows of U.S. imports of Chinese goods include machinery, electronics (including smartphones), toys and consumer goods, apparel, chemicals, and pharmaceuticals. Blocking or otherwise restricting the flow of these goods to the United States could have a meaningful impact on the export-dependent areas of China’s economy. However, this is not without consequence to the United States, which relies on China as its largest supplier of goods imports. U.S. consumers are likely to be hard-hit through any trade restrictions, as prices for consumer goods suffer severe shocks, potentially leading to inflationary effects. In certain cases, such as pharmaceuticals, restrictions may also have undesired health and safety impacts, as U.S. consumers face dangerous shortages in critical medicines.
Sanctions on Elites

In a conflict scenario, the United States would likely impose sanctions on officials and leaders within China’s elite political circles, up to and including President Xi. These sanctions can include financial sanctions, freezing the assets of the sanctioned individuals that are held within the United States or controlled by U.S. institutions abroad, and travel restrictions, preventing the entry of the sanctioned individuals into the United States or other sanctioning countries. In addition, the United States and its partners could widen the scope of elite sanctions to include the family or close associates of targeted officials. Personal sanctions of this nature have been used widely in the Russia context, for example, with sanctions implemented on President Putin, most of Russia’s political elite, and multiple Russian oligarchs.236

The objective of these personal sanctions is political and diplomatic in nature, rather than economic. Although the assets of the sanctioned individuals may be substantial, the direct connection between these assets and China’s ability to sustain a military campaign is likely indirect at best. It is also unclear how effective personal sanctions would be, given the concentration of political power within China and the authoritarian nature of China’s political system. For these reasons, this report does not include a more fulsome assessment of elite sanctions options.

The United States may also seek to impose restrictions on U.S. goods exports to China, including those goods that are not strategic. Top U.S. exports to China include agricultural products, semiconductors, mineral fuels, optical and medical instruments, chemicals, medicine, and aerospace products and parts.232 Exports totaled more than $150 billion in 2022.233 Certain of these would likely be targeted in other types of sanctions operations, including restrictions on semiconductors and aerospace exports in a technology denial operation and restrictions on oil and gas export under a commodity embargo operation. Other products, such as agriculture, may be controversial to target if doing so could lead to food insecurity in China or globally. The ability to leverage U.S. exports of nonstrategic goods is further constrained by the importance of the China market for U.S. exporters. China is the largest export market for the United States outside of North America, and U.S. exports to China support more than one million U.S. jobs, according to one business association study.234 In some areas, China’s ability to diversify its imports may outpace the United States’ ability to find alternative markets for its exports.235

Restrictions on trade in services may also be considered. The United States runs a services trade surplus with China, although this trade is smaller than the trade in goods as an absolute matter, with U.S. services exports to China at approximately $40 billion in 2021.236 Major service export categories include travel, education, and intellectual property (IP) licensing and royalties. Travel and education would likely be impacted in a conflict scenario regardless of any sanctions, given disruptions to the physical movement of people. Licensing and royalties may be difficult to target in the short-term, as Chinese entities may be able to retain access to licensed IP even without paying the requisite fees.

It is unclear how impactful or asymmetric trade measures will be in a macroeconomic pressure context. While China can be deprived of certain export-derived revenue, trade measures will equally feel biting to U.S. and global consumers. Export-dependent sectors in the United States will be hard-hit as well. China has already shown a high degree of resilience to existing trade measures, including the tariffs imposed as a result of the Trump-era investigation into China’s IP practices, which remain in place today. China has largely failed to comply with the terms of the agreement to end the tariff war, either on its commitments to purchase set levels of goods or to implement structural reforms to key areas of its economy.237 While there may be more of a case for restricting trade in strategic goods, including under a technology denial operation, it is less clear that restricting trade in nonstrategic goods and services provides an asymmetric advantage to the United States.

Summary

The analysis of the economic domain operations most likely to be employed should a hypothetical conflict with China occur shows that the U.S. economic domain posture is not as strong as U.S. policymakers may wish it to be. The United States does enjoy leverage in key technology areas and in the financial sector. Yet use of this leverage does not offer a clear path to economic domain victory, as each point of leverage carries a high risk of spillover costs for the U.S. and global economies. In other areas, such as legacy chips and critical minerals, China enjoys economic domain means that outpace those of the United States. Holistically, U.S. economic domain leverage is a mixed bag. Preserving leverage in areas of U.S. asymmetric strength, such as the centrality of the U.S dollar in global financial architecture, takes on critical importance when the overall economic domain toolkit is limited. Similarly, coordination with U.S. partners around the world will be essential to amplify the effect of any economic domain operations and minimize China’s options for evasion.
The game envisioned a potential crisis between the United States and the PRC over an anticipated PRC invasion of Taiwan in 2030.
Chapter 3: Locked Horns: An Economic Domain Strategy Game

The CNAS Energy, Economics & Security research team designed an economic domain strategy game to examine how countries may use economic domain measures in the lead-up to a conflict with the PRC. Earlier sections of this report examined relative economic domain leverage through a factual examination of economic ties between the United States, China, and the world. The game provides another perspective on the question of leverage, by examining how key economic actors might attempt to exploit areas of economic leverage in a dynamic scenario. This section describes the game design and key insights drawn from trends in behavior observed from the two instances the game was conducted for this analysis. As with any game, the insights derived should not be taken as predictive. Rather, the objectives of using a game are to observe interactive dynamics and develop new insights on how key actors may behave under certain conditions as a complement to a broader research effort examining economic domain actions. As such, the insights derived from the Locked Horn games are paired with additional research to enhance their validity.

Game Design and Adjudication

Locked Horns was an economic domain strategy game designed to examine the use of maximal sanctions against the PRC, the corresponding impact on China, and repercussions on the United States, its partners, and the global economy. It deliberately constructed a best case scenario for imposition of sanctions, assuming healthy U.S. and partner economies and stable political leadership across the G7. The design was structured to de-emphasize known issues in sanctions implementation, such as the lack of clear intelligence or difficulty in coordination between the United States and other major economies. The intent was to understand how far up a sanctions escalation ladder players would be willing to go, if given clear instructions to use economic domain measures while also mitigating the impacts of sanctions on their own economies. The game was run once in Washington, DC, and once in Brussels, Belgium.

The game featured three teams: the United States, the PRC, and a team of U.S. partners. In DC, this latter team was composed of the G7 and other close allies, such as Australia. In Brussels, it was centered on European states, with actions of other close partners assumed to align with the United States or otherwise determined by the game adjudicators. The teams represented a high-level interagency working group or equivalent structure for each economy or group of economies. Players included experts in macroeconomics, trade and investment, finance, sanctions and export controls, China’s domestic and foreign policy, and geopolitics. The game instructed the United States and the G7/Europe teams to coordinate with each other and with other key economic actors, reducing the coordination challenges that persist in real life.

The game envisioned a potential crisis between the United States and the PRC over an anticipated PRC invasion of Taiwan in 2030. The scenario started six months prior to the invasion, then moved to six weeks, and finally to a move immediately prior to conflict. All turns occurred in advance of a direct military confrontation with the PRC to isolate the game from the significant economic impacts of war. At the six-month mark, the U.S. and G7/Europe teams had clear intelligence that the PRC intended to act on Taiwan in the near term, though the exact nature of the action remained ambiguous. At six weeks, under the game script, the PRC had taken obvious steps to prepare for an embargo or invasion, and the United States and its partners had begun to mobilize military assets to the region. At one day in advance of conflict, the game script included a PRC declaration of an air and maritime embargo, and U.S. naval ships were projected to breach the embargo shortly. The timeline represented a balancing act between a longer time frame, where sanctions and economic coercion may have more time to work but PRC intentions would be more ambiguous, and a shorter-term run-up to conflict, where intentions may be clearer but time to achieve impact is shortened.

Player actions were constrained to measures exclusively within the economic domain, including financial sanctions, export controls, trade and tariff measures, and sanctions on elites and individuals. Players were given a sanctions action list, including many of the options described in this report, but were encouraged to engage in free play in addition to considering the provided options. The U.S. and G7/Europe teams had clear intelligence about the PRC’s intent to invade and strong direction from their leaders to use economic measures to deter the PRC or, if deterrence failed, to impair the PRC’s ability to sustain an invasion. The PRC team was directed to use economic domain measures to divide the United States from its partners, attack U.S. and partner economies, and defend China’s economic and political stability. All teams were directed to mitigate impacts on their own economy. Teams were permitted to engage in diplomacy related to coordination or messaging of economic measures, but were not permitted to negotiate a peace settlement. The game adjudicators scripted or determined actions of other relevant stakeholders.
LOCKED HORNS GAME BOARD

THE ECONOMIC DOMAIN PROJECT

AT CNAS

FINANCE

INDUSTRIAL GOODS

FINANCE

INDUSTRIAL GOODS

FINANCE

INDUSTRIAL GOODS

FINANCE

INDUSTRIAL GOODS

CONSUMER GOODS

SERVICES

CONSUMER GOODS

SERVICES

CONSUMER GOODS

SERVICES

CONSUMER GOODS

SERVICES

07+ TRADED SECTORS

Dual-Use Technology

Energy

Agriculture & Commodities

Consumer Goods

Services

Trade & Logistics

CHINA TRADED SECTORS

Dual-Use Technology

Energy

Agriculture & Commodities

Consumer Goods

Services

Trade & Logistics

U.S. TRADED SECTORS

Dual-Use Technology

Energy

Agriculture & Commodities

Consumer Goods

Services

Trade & Logistics

KEY

DESTROYED

HIGH DAMAGE

MEDIUM DAMAGE

LOW DAMAGE

TRACK MARKER

IMPORTS

EXPORTS
Actions taken by each team were submitted to the adjudicators after each turn. The adjudicators then determined the combined economic impacts of all actions, based on subject matter expertise and a qualitative estimate of likely impacts. The adjudicators briefed the impacts to teams after the adjudication of each turn and supplemented the narrative by placing markers on the Locked Horns game board, which included a visual representation of each country’s domestic economy and its traded sectors. The board was used to show a range of impacts at a very high level of abstraction. Importantly, there was no way to win on the board, as the board was primarily used to visually represent the adjudication narrative rather than to display specific quantitative metrics or underlying game models.

**Key Insights**

**Maximal, coordinated sanctions are relatively more likely to alter PRC decision-making but may carry prohibitively high degrees of risk and uncertainty.**

Targeted sanctions may be unlikely to deter the PRC from engaging in aggressive acts toward its regional neighbors or to impair its ability to sustain a military campaign. In the games, players discounted sanctions intended to impact critical but limited economic activities, and instead moved quickly up the escalation ladder toward more maximal options, such as a full trade embargo. Players also discounted the use of sanctions on Chinese elites, viewing pressure on elites as an ineffective pathway to effect change in the PRC’s political system, which has become increasingly centralized and personalistic under General Secretary Xi Jinping. In real-world conditions, the PRC likely has ample capacity to evade actions lower on the sanctions escalation ladder. In China’s state-dominated financial sector, for example, if only a handful of banks are sanctioned, PRC officials could easily develop alternate routes to process transactions. The existing use of sacrificial banks reinforces this assessment, as the PRC has demonstrated capability to engage in a certain level of financial sector segmentation because of sanctions. The PRC has also shown resilience to existing coercive statecraft measures, such as the tariffs imposed during the Trump administration. To achieve the desired effect, sanctions would need to put sufficient pressure on the Chinese economy as a whole so that state capacity to respond and mitigate the impacts is overwhelmed.

In a real-world conflict, maximal sanctions are relatively more likely to be effective under certain conditions, including a coordinated effort between the United States and other major economies, and the willingness of the sanctions coalition to accept negative impacts to their own economies. Using a coordinated, maximal approach in the games, the U.S. and G7/Europe teams were able to box the PRC teams into a defensive posture economically. The PRC teams had limited ability to counter the most severe actions, such as imposition of financial sanctions on all of its major banks, and was primarily focused on emergency measures to shore up its domestic economy.

The degree of partner alignment with the United States will be a critical variable in any future sanctions scenario. While the U.S. and G7/Europe teams were directed to act in concert in the games, the degree of alignment is less assured in real-world conditions. Alignment on sanctions would also depend on how the conflict began, and the PRC would likely attempt to shape narratives to minimize its role as an aggressor, complicating efforts to build a political consensus among the United States and its partners. Based on current signals from key partner countries, it is likely that the United States would impose the most stringent sanctions on the PRC, and consequently suffer the most severe decoupling effects. Other G7 countries may align with the United States, but potentially at a lower level of intensity and breadth in the economic measures imposed. Such a scenario would result in sanctions that are porous, providing China with multiple options to evade U.S. sanctions or conduct illicit transactions that fall outside the legal scope of U.S. measures. In this scenario, China may retain substantial ability to engage in international commerce to support its economy, would likely scale up efforts to develop alternative financial architecture, and may find receptive partners in emerging economies (e.g., Brazil). Firms in developed countries may seek legal ways to continue to economically engage with China, albeit at a lower level than previously, as the sanctions risk and broader geopolitical risk may be perceived as exponentially higher than before the conflict.

While the use of maximal sanctions showed some effectiveness in the games, this approach carries a high degree of risk and uncertainty if used under real-world conditions. Maximal sanctions in the games included a full trade embargo and full blocking sanctions on China’s financial sector. Such actions may lead to a rapid and near complete decoupling of China and the sanctioning countries, disrupting some of the world’s largest trade, investment, and financial relationships. Players anticipated strong recessionary effects across the global economy, given the scale of economic activity disrupted and China’s interconnectedness with the global economy. This is consistent with existing research projecting the
high costs associated with certain of the more severe sanctions options. The cost of full-scale financial sector sanctions, for example, could run close to $7 trillion, according to research from the Atlantic Council and the Rhodium Group. Importantly, costs would not be limited to impacts on China’s economy. To impose maximal sanctions, U.S. and partner governments must be willing to accept significant costs to their own economies.

Maximal sanctions may also create heightened levels of uncertainty, as policymakers rarely have full knowledge of the value chains that will be disrupted under a sweeping sanctions regime. In the Russia context, for example, research interviews with private sector compliance officials consistently surfaced concerns about unintended consequences of the sanctions, as well as difficulties in interpreting multiple, overlapping sanctions actions across dozens of sanctioning jurisdictions. This is in the context of sanctions that are severe, but have stopped short of a full embargo and that are levied against a much smaller economy. Unanticipated consequences would likely be higher in the China case. The risk and uncertainty associated with maximal sanctions would likely be a key constraint that could prevent U.S. and partner governments from imposing the harshest form of sanctions, a theme that came up consistently during the games and in research interviews. U.S. and partner governments are in a conundrum, knowing that limited sanctions may fail to achieve their political objectives but fearing the outcome of the maximal sanctions approach that has a higher chance of impact.

In real-world conditions, the PRC has limited ability to use economic measures to directly counteract a financial sector attack, though the United States should not become complacent about its advantage in the financial sector. Chinese alternatives to U.S. dollar-based financial architecture exist but would need to see exponential growth and adoption before they could be used as a meaningful replacement across all of China’s financial sector. The PRC’s capital controls and non-convertibility of the RMB are serious constraints on the true internationalization of the RMB, recent reports of certain RMB-denominated transactions notwithstanding. The PRC’s central bank digital currency (CBDC), the e-CNY, is among the more advanced CBDC systems globally, but is still used in only a small fraction of China’s domestic payment transactions. This is in the context of sanctions that are severe, but have stopped short of a full embargo and that are levied against a much smaller economy. Unanticipated consequences would likely be higher in the China case. The risk and uncertainty associated with maximal sanctions would likely be a key constraint that could prevent U.S. and partner governments from imposing the harshest form of sanctions, a theme that came up consistently during the games and in research interviews. U.S. and partner governments are in a conundrum, knowing that limited sanctions may fail to achieve their political objectives but fearing the outcome of the maximal sanctions approach that has a higher chance of impact.

U.S. leverage is highest in the financial sector, but using this leverage likely leads to large spillover effects in the real economy.

In the games, a clear consensus emerged around the use of a macroeconomic pressure strategy centered on financial sector sanctions. This included full blocking financial sanctions on the PBOC and the major Chinese banks, freezing their foreign exchange reserves, limiting their access to the U.S. dollar, and expelling them from large portions of the global financial infrastructure. The U.S. and G7/Europe player actions reflected a common assessment in the sanctions community that the essential role of the U.S. dollar in global finance provides the United States with a distinct, asymmetric advantage. The PRC teams anticipated financial sanctions but did not view China as having sufficient means to effectively counter a coordinated effort by the U.S. and G7/Europe teams, given China’s reliance on U.S.-dominated financial infrastructure.

The PRC’s ability to attack U.S. and partner economies using financial sector actions may also be limited. The PRC could target Western financial institutions operating in China, as part of efforts to use multinationals with commercial exposure to China as a leverage point, a tactic used frequently by the PRC teams during game play. However, doing so would not have the same sort of multiplying, network effect as U.S. actions in the financial sector, due to the asymmetric advantage that the United States enjoys in the U.S.-dominated global financial infrastructure. U.S. financial institutions would probably feel the pain from loss of the China market, but could likely continue the rest of their global operations. In real-world conditions, however, the PRC would not be limited to only economic tools and may seek to use other measures (e.g., cyberattacks) to retaliate for U.S. sanctions.
and partner sanctions. The use of non-economic tools was not permitted during the Locked Horns game, and it remains possible that the PRC’s ability to defend or retaliate against financial sector sanctions is more substantial when it has a full suite of tools at its disposal.

The PRC may seek to dump its holdings of U.S. debt, including Treasuries and other agency bonds. China holds approximately 5 percent of all outstanding U.S. government debt.246 While dumping may lead to short-term stress in Treasury markets, the Federal Reserve likely has sufficient authority and capability to intervene to stabilize the market, including by purchasing excess Treasuries on the market. The United States may also be able to foreclose dumping actions by issuing a sanction that prevents counterparties from engaging in transactions with the PBOC that would be necessary for it to dump. Longer-term effects may be more damaging, if markets view the PRC as an unreliable source of U.S. debt-purchasing in the future.

While the United States and its partners enjoy a clear and asymmetric advantage in the financial sector, using maximal financial sanctions will likely have large spillover effects in the real economy. Finance supports a country’s ability to engage in international trade, providing the necessary financial services and support for cross-border transactions. In China, these financial services are provided predominantly by Chinese banks.247 By making all cross-border transactions with a Chinese bank potentially illegal, the United States and its partners can severely limit the ability of Chinese entities to engage in international trade. The effects of financial sector sanctions would be felt across China’s domestic manufacturing sectors, and spill over to its exports markets around the world, including in the United States. This makes the financial sector approach a blunt instrument, impacting not just finance but potentially disrupting the flow of goods globally. While the impact may be more asymmetrically adverse for China, the loss of goods exports from China will likely have negative impacts for the sanctioning economies as well. This effect will likely be amplified if financial sanctions are paired with direct restrictions on trade, which may be necessary to avoid an unintended consequence in which the value of the RMB drops and makes Chinese exports more competitive globally, as previously discussed.

A consideration for U.S. and partner governments will be whether to create carve-outs to financial sector sanctions to mitigate damage from spillover effects. Even during a conflict, certain trade with China may be desirable, such as the export of critical goods to the U.S. and partner economies for which there may not be easily available substitutes (e.g., pharmaceutical precursors, consumer electronics) or trade for humanitarian purposes (e.g., food and medicine). In the Russia context, for example, carve-outs have permitted continued energy trade and trade for humanitarian purposes. However, in practice it may be difficult to create protected areas of commercial activity, as Western banks have a well-documented tendency to over-comply with sanctions and may be more likely to shun the China market entirely once sanctions are imposed. PRC retaliation may also limit the effectiveness of carve-outs, as it has an incentive to target those goods that the United States may wish to exempt from sanctions. Policymakers may have to accept that many supply chains will simply break because of high-intensity financial sector sanctions. If these sorts of real economy effects accumulate, the sanctioning countries may face difficulty in sustaining a financial sector attack over time.

Chinese leverage is highest in the real economy and through control over access to its domestic market, but using this leverage may backfire.

The PRC holds meaningful leverage in the real economy, based on its role as a global manufacturing powerhouse and its integration into global value chains. The PRC’s leverage in the real economy may be deployed broadly across categories or in a more targeted manner to put pressure on critical pain points. During the games, the PRC teams halted—or threatened to halt—trade in a range of physical goods made in China, including consumer goods, pharmaceutical ingredients, and critical minerals. The PRC teams also used the presence of foreign multinationals in China to exert pressure, through harassment of executives, exit visa restrictions, fabricated regulatory investigations, and informal threats. The PRC teams’ actions reflect that China’s economy is driven by the physical manufacture and trade in goods, which contrasts to the U.S. services-driven economy and consequently the U.S. teams’ more services-heavy sanctions strategy. The PRC teams’ choices reflected the prevalence of foreign investment and foreign multinationals operating in the domestic Chinese market.

The PRC teams’ actions were broadly consistent with the PRC’s observed real-world behavior. The PRC regularly uses punitive trade measures to coerce countries or firms to align with its geopolitical priorities, leveraging its role as a major trading partner for many countries. A non-exhaustive list of recent examples includes Lithuania (deleted from the PRC’s customs books), Australia (exports of wine, barley, and coal halted), the
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National Basketball Association (NBA) (boycott of NBA games televised in China), clothing retailers (boycott of Western clothing companies), and South Korea (boycott of tourism and shopping). In recent months, the PRC has stepped up its trade coercion against the United States in a notable escalation, as the PRC had previously been more restrained in targeting the United States directly. In a likely tit-for-tat retaliation for the October 7 export controls, which included designation of China’s memory chips champion YMTC on the Entity List, the PRC has used a fabricated cybersecurity investigation into Micron, the leading U.S. memory chips company, to severely constrain its sales in China. The PRC also restricted the export of gallium and germanium, two materials used in the production of certain chips and solar panels, following the Dutch government’s announcement that it would align its export controls on advanced semiconductor manufacturing equipment with those of the United States and Japan. This comes on top of the designations of Lockheed Martin and Raytheon, two major U.S. defense contractors, on the PRC’s unreliable entities list following U.S. Entity List designations of six Chinese companies involved in constructing the PRC spy balloon that flew over the United States in early 2023.

Harassment of foreign multinational firms and executives in China in the game is also consistent with real-world trends. The PRC has cracked down on foreign due-diligence and consulting firms operating in China, raiding their offices on national security grounds. Foreign firms have been forced to issue apologies when attempting to comply with U.S. law related to preventing forced labor in their supply chains. The PRC previously held two Canadian nationals, Michael Korvig and Michael Spavor, for three years on false pretenses in retaliation for Canada’s assistance in the arrest of Meng Wanzhou, a Huawei executive facing U.S. charges of sanctions evasion. The U.S. State Department now advises travelers to China to “reconsider travel” due to the heightened risk of unlawful detention and arbitrary enforcement of the law.

In both game play and in real-world conditions, the aggressive use of these tactics shows a risk of backfiring for the PRC. The U.S. and G7/Europe teams, when coordinating with each other, maintained or intensified their sanctions actions when faced with PRC team retaliation, rather than backing off, perhaps reflecting the shared leverage of their economies working together. Recent Center for Strategic & International Studies (CSIS) research assessed, on the basis of eight case studies examined, that the PRC’s coercive measures are simply “not very effective,” causing countries to view China as an unreliable economic partner and seeking to diversify away from China. The use of coercion has cost the PRC important strategic initiatives, such as when Europe froze consideration of its bilateral investment agreement with the PRC after the PRC imposed sanctions on multiple members of the European Parliament. Harder to measure, however, is the chilling effect that the PRC’s coercive practices have and the degree to which states refrain from taking actions that would prompt retaliation. This sort of effect may not show up in research, as it is hard to measure actions not taken, but should not be ignored.

Private sector decisions represent an important variable. Firms face a different set of incentives than governments, and these incentives will shift sharply as geopolitical conditions worsen. Under normal circumstances, firms may be more willing to respond to PRC pressure, as they face more direct costs from the coercion and may seek to maintain access to a commercially significant market. Firms also do not hold the same strategic burdens as governments that must attempt to deter coercion across the board, providing them with more flexibility to act in their limited self-interest rather than in the long-term national interest. However, if the China market becomes unviable due to the imposition—or signaling—of maximal sanctions, firms may pivot quickly and exit the market faster than sanctions would legally require. The Russia case is illustrative, as firms engaged in substantial self-sanctioning behavior, due to heightened perceptions of future risk (i.e., anticipating future sanctions) or in response to public sentiment against Russia and its war on Ukraine. Foreign firms’ perceptions of the China market have become increasingly pessimistic in recent years. While the overall trading relationship between the United States and China remains robust, FDI in China has been declining in what may an early indicator of firm sensitivity to heightened risk in the market, as firms’ long-term belief in the viability of the China market is less certain. Continued PRC pressure on Western firms and U.S-China tensions will likely intensify this trend, making investment ties more fragile and potentially enabling more swift self-sanctioning behavior should a crisis erupt.

Leveraging the real economy advantage may also backfire on China if its actions threaten the supply of goods important for health and safety. In the games, the PRC teams attempted to withhold active pharmaceutical agreements to deter the U.S. and G7/Europe teams from supporting Taiwan militarily. This move provoked strong
condemnation from other teams, as they anticipated it would lead to shortages of critical medicines globally, including in the developing world. This hypothetical example highlights an existing gap in international rules and norms for coercive economic statecraft. The United States typically refrains from sanctions restrictions on food and medicine due to humanitarian concerns and the risk that such restrictions would have significant impacts on civilians. However, there is no sanctions equivalent to the Geneva Convention, which sets rules around the conduct of war with the aim of protecting noncombatants. An aggressive sanctions strategy can have devastating effects across an economy, making the development of rules and norms to mitigate civilian impacts that much more necessary. Absent international standards, governments will make their own determinations of the strategic benefit of sanctions likely to have high humanitarian costs.

The asymmetric nature of a sanction may be ambiguous or insufficient to justify taking the action.

Asymmetry is an important goal in implementing sanctions, as countries seek to take actions that harm the target’s economy more than their own. An underappreciated dynamic, however, may be that even asymmetric actions can carry severe costs, which may be prohibitive. For example, a sanctions strategy that leads China’s economy to contract by 20 percent and the U.S. economy to contract by 10 percent may well be seen as too costly for the United States, despite its asymmetry. In the games, the U.S. and G7/Europe teams pursued maximal sanctions strategies that likely fit this dynamic, such as a full trade embargo or sweeping sanctions on China’s major banks and the PBOC. While the impact on China’s economy would likely be severe, the spillover effects on U.S. and partner economies were assessed to be substantial, causing players to doubt whether governments would take such heavy sanctions actions in real life. Similar tensions can be seen in current debates over de-risking economic ties with China, as governments and experts assess the economic impact of increasing levels of restrictions on trade and investment with China.

While asymmetry is an essential objective for a sanctioning government, it may also be ambiguous in certain cases. In the games, for example, the U.S. and PRC teams contemplated restrictions on the large volume of bilateral agricultural trade. For the PRC, the value was in targeting a large and politically sensitive source of U.S. exports, one that the PRC has been willing to target in prior trade disputes. For the United States, prohibiting agricultural exports can put pressure on China’s economy overall. Yet, it was not clear in the games which side gained a meaningful advantage by targeting this trade, as lost export revenue was weighed against disrupted food supply chains. Once countries move outside of targeting strategic trade (e.g., chips, energy) and toward restrictions on non-sensitive goods trade, this ambiguity in asymmetry is likely to become more pronounced.

The interactions in the games related to agricultural trade also highlighted the trade-offs between economic impact and political advantage, similar to the dynamics observed on pharmaceutical goods. Aggressive efforts to deny China agricultural products could place pressure on China’s economy, particularly if the United States is able to mitigate the effects on U.S. farmers, including through actions such as direct support to farmers. However, in the games this raised important humanitarian considerations, as restrictions on food would likely have broad impacts on China’s civilian population. To the extent that real-world restrictions would disrupt global food supply chains, they may also lead to food insecurity in other areas of the world, including in countries not involved in the conflict. These dynamics may lead to a backlash against U.S. actions, and the political, diplomatic, and moral costs of these types of restrictions must be weighed against the strategic benefits to determine whether such actions are truly asymmetric.

Targeting commodities trade may require novel sanctions approaches as well as integrated planning with military options.

In the games, the U.S. and G7/Europe teams sought to restrain China’s access to commodities, specifically energy, which was seen as crucial for both military operations and for the health of the Chinese economy. Denying China access to energy in the games, however, was difficult, reflecting the real-world structure of global energy markets. While the United States is a net exporter of certain energy products to China, China overall has a diversified base of energy supply, including from countries, such as Russia and Middle Eastern producers, that are highly unlikely to align with U.S. sanctions. The U.S. and G7/Europe teams created a new sanctions policy designed to create market incentives for halting energy trade with China, reflecting their assessment that a blunt approach based on traditional sanctions tools may be ineffective.
Novel market mechanisms have a real-world precedent in the Russia context. The United States and its partners leveraged their dominance in shipping insurance to implement a price cap on Russian energy exports, prohibiting Western firms from insuring ships that carried energy sold at prices higher than the determined cap. While the effectiveness of the price cap is debated, it nonetheless presents an important example for how new policies could potentially create incentives for non-aligned states to conduct market activities in a manner consistent with U.S. objectives. In the China context, the objective would be to create a market incentive for oil producers, primarily Middle Eastern countries, to deny oil to China, while maintaining the stability of prices in the global market. Prohibiting oil sales to China—or more precisely, using U.S. and partner country sanctions to prohibit the insurance of ships transporting oil to China—would likely disrupt global markets by causing oversupply in non-China markets. To avoid a sharp decline in prices as a result of the oversupply, the United States and partner countries could develop price supports or minimum prices for the sale of oil. The combination of insurance-based shipping sanctions and positive price support incentives may be a plausible way to align economic incentives with the U.S. sanctions strategy, though further research would be required to validate this concept. The U.S. and Europe/G7 teams experimented with this idea during the games, highlighting the need for policy innovations to strengthen U.S. options in the energy sector.

Timing matters.

The scenario in the games occurred over a period of six months, which may not cover the entire time span in which impacts of economic domain actions are felt. This time frame constrained actions that countries may want to take early in a deterrence phase under real-world conditions, such as long-term efforts to deny key technologies to China’s military. In the games, players attempted to build resiliency in critical supply chains, but the timing constraints imposed in the games limited meaningful insights into the effectiveness of such efforts. The games’ time frame also limited player visibility into the long-term impacts of their actions, both on their sanctions target and on their own economies.

In the real world, sanctions can take months or years to result in the intended impact, creating an undesirable lag between imposition and impact. The extent of the time lag may differ based on the type of sanction implemented. Technology sanctions work by depriving China’s technological ecosystems of key expertise and inputs over months or years. Energy embargo efforts would be expected to have similar time lags, as China may be able to rely on stockpiles for an initial period of conflict. Certain elements of a macroeconomic pressure operation may have near-term disruptive effects, as basic economic functions of the PRC are impeded, and immediate market reactions can build pressure on the PRC. However, overall degradation of the Chinese economy, including a contraction in China’s GDP, may take months or years to occur. Impacts may therefore be more psychological than practical early on after a measure is imposed.

The games also highlighted a further challenge related to timing, which is the need to signal clear and unified resolve to impose harsh sanctions early in a potential run-up to conflict when such signaling may still influence PRC decision-making. Even in a game designed to push players toward maximal sanctions, the U.S. and G7/Europe teams resisted actions that would be seen as firing the first shot. Signaling of sanctions was used much more heavily than the actual imposition of measures in early turns. In real-world conditions, early signaling would likely be vague, as the political consensus on exact measures would be subject to ongoing negotiation among partners. Challenges with clear signaling will be compounded if the United States and its partners do not have clear intelligence on PRC intentions, and the PRC will likely try to increase uncertainty through gray-zone tactics, further muddying the ability of the United States and partner governments to determine what actions justify a severe response.
In the real world, the inability of the United States and its partners to develop an early, coordinated message on sanctions would heighten the risk that the PRC miscalculates or underestimates U.S. and partners’ sanctions intent in a pre-conflict period. PRC officials are well aware of U.S. and partner sanctions practices and of China’s own vulnerabilities to sanctions, particularly in the financial sector. The PRC could reasonably assess that the United States and its partners may not be willing to accept costs associated with maximal sanctions, or that U.S. partners may not fully align with the United States on the scope and severity of a sanctions strategy. The PRC could assess, for example, that Taiwan does not carry the same urgency for Europeans as a war on Europe’s doorstep and that Europeans may not view forced unification of Taiwan as a similarly clear violation of international law as Russia’s invasion of Ukraine. Consensus on a strong, coordinated set of sanctions may arrive too late to meaningfully impact a march toward war.

The timing disconnect between signaling, imposition, and impact of sanctions raises important questions for policymakers. First, it heightens the importance of building strong resolve well in advance of a conflict, to mitigate the risk that the PRC underestimates U.S. and partner resolve. Policymakers must also consider whether certain sanctions operations could or should be implemented in advance of a conflict, either to demonstrate resolve or to impact China’s capabilities and therefore its decision-making. For example, policymakers might consider the value of warning-shot sanctions implemented on certain of Chinese banks, to demonstrate resolve to escalate actions in the financial sector. Doing so may be risky, particularly if China is able to withstand the impact or develop evasion routes.

Preemptive sanctions run counter to traditional sanctions practice and the idea of strategic ambiguity, in which countries signal strong intent but leave themselves flexibility in implementation of specific measures. Preemptive sanctions also may carry high risk of escalation, as the sanctioning countries’ actions will be high on the escalation ladder early on in a crisis and can only ratchet up from there. In the games, this dynamic (along with a game design focused on maximal measures) was part of what forced the U.S. and G7/Europe teams to full embargos, as they felt a need to continue escalating after taking strong measures in middle turns. Preemptive sanctions may also backfire if markets price in the full effect of maximal sanctions as soon as the United States and partner governments impose sanctions lower on the escalation ladder. Markets may have good reason to assess that escalation will increase, based on how far up the escalation ladder the G7 progressed against Russia. Early, negative market reactions may constrain the United States and partners from taking further actions that would lead to additional market chaos and loss in value.

A final tension related to the timing of sanctions is the concept of conditionality. There exists a stark disconnect between sanctions theory and practice, with theory framing sanctions as a coercive tool intended to change behavior and requiring an off-ramp for the sanctions to incentivize that change. In practice, sanctions are often permanent rather than conditional and are more punitive in nature. This is particularly true if sanctions are not imposed until after a redline is crossed (e.g., a country is invaded), as it becomes politically impossible to consider sanctions removal at that point. It is difficult, for example, to contemplate any substantial sanctions relief for Russia, even in the context of a negotiated settlement. The sticky nature of sanctions undermines their coercive value, as changes in behavior do not lead to sanctions relief. In one game, the U.S. and Europe teams experimented with a new form of conditional sanctions, imposed in advance of a conflict but with a clear off-ramp if the PRC team refrained from aggression toward Taiwan. New sanctions approaches that are implemented preemptively and with genuine conditionality may merit further consideration by policymakers to enhance the coercive nature of these tools.

Resiliency is a core element of preparing for sanctions conflict.

In early turns of the games, all country teams attempted to take defensive actions aimed at mitigating the anticipated effects of conflict and sanctions on their domestic economies. Actions included stockpiling critical goods, incentives to diversify supply chains, directives to SOEs or private firms on the allocation of goods and capital, macroeconomic support, and subsidies to impacted economic actors. Under the six-month time frame provided in the game, these types of efforts would be unlikely to succeed, but the player actions reflected a perceived urgency around the need for stronger economic resiliency. As the COVID-19 pandemic demonstrated, supply chains can take months or years to build, even for relatively uncomplicated goods such as surgical masks. More complicated products, such as chips, have timelines that measure in decades, not days. Once a conflict is imminent, it is likely too late to meaningfully adjust the structure and location of complex, globalized supply chains. Efforts to stockpile goods may also
face difficulty, as all countries would seek to do so, likely leading to broad disruptions in global supply in the run-up to a conflict. The United States should also expect that it would not be able to stockpile goods from China, as China would have a clear strategic incentive to prevent this.

In the games, all country teams attempted to provide broad support to their economies. In some instances, actions may have been modeled on the type of supports offered during the COVID-19 pandemic, with a range of fiscal stimulus across the economy paired with direct payments to impacted citizens or companies. The U.S. and G7/Europe mitigation measures were intended to address the effects of PRC retaliation, as well as the anticipated recessionary effects that the conflict would have on all economies. In a real-world scenario, these types of support would likely be required across all sectors of the economy, given the breadth of economic activity that would likely be disrupted. It is highly unlikely that government interventions could fully compensate for the costs of sanctions, PRC retaliation, and loss of the China market, but policymakers may nonetheless want to consider redoubling efforts related to economic resiliency well in advance of any potential conflict.

Divergences emerged in how the U.S. teams and the G7/Europe teams viewed resiliency. The G7/Europe teams placed a greater emphasis on global resiliency, highlighting the anticipated impact of the conflict on the developing world, in addition to their own economies. The underlying rationale for this emphasis may not be well understood in the United States. For example, certain participants expressed concern that sanctions could halt Chinese investments in Africa, sparking an economic crisis and leading to increased migration flows to Europe. The G7/Europe teams also expressed a much stronger degree of comfort with the concept of building resilience as opposed to preparing for economic war, emphasizing the political and de-escalatory benefits of this rhetorical difference. This bears out in real-world interactions, where U.S. and partners have been able to advance dialogue on economic security and resiliency objectives, with varying degrees of political willingness to call out concerns with the PRC specifically. The G7 Leader Statement on Economic Resiliency and Economic Security is a good example of how political progress can be made to build resiliency against unfair PRC economic practices as they exist today, while also building the groundwork for more robust cooperation in the event of a crisis.269

Summary

Insights from the Locked Horn game highlight the complexity and variety of challenges associated with sanctioning China at scale. More than technical questions, constraints on the effective use of sanctions will arise from fundamental issues of U.S. credibility and resolve, along with that of U.S. partners. While the United States likely has more economic domain leverage on balance, particularly when acting in concert with the G7 and other major economies, how it plays its strategic hand will matter greatly in persuading the PRC that economic costs associated with conflict are not worth it.
Defeating Russia in the economic domain, as well as on the battlefield, is one of the single most important things that the United States and partners can do to deter the PRC.
Chapter 4: Recommendations

INFUSED THROUGHOUT THIS REPORT is a lingering doubt about the credibility of U.S. threats to impose sanctions at scale on the PRC. These recommendations focus on actions to take in the PRC context, but it is equally important to recognize that the PRC is watching U.S. and partner actions elsewhere as it comes to its own judgments on credibility. The ability of the United States and partners to sustain a robust sanctions posture against Russia is critical to enhance the credibility of sanctions threats made against the PRC in the future. The United States and partners must continue to step up efforts to enforce sanctions imposed on Russia and to address the remaining energy sector dependencies that Europe has on Russia. Defeating Russia in the economic domain, as well as on the battlefield, is one of the single most important things that the United States and partners can do to deter the PRC. While recommendations related to Russia sanctions are outside the scope of this report, the ongoing war and sanctions effort is an unavoidable context that policymakers must account for when attempting to build U.S. and partner credibility in any future economic domain conflict.

Enhancing the United States’ and partners’ economic domain posture with respect to the PRC requires a wide range of actions in institutional, international, and operational areas. The United States must pursue these actions in the mindset of escalation management, recognizing that war with the PRC is a tragic outcome and that it must balance preparation with concrete steps to stabilize relations with the PRC. With that in mind, some of the execution can and should be done now, including where necessary to build preparedness and resiliency, whereas other areas should only be implemented if a conflict erupts. Policymakers should not wait until a conflict becomes more likely or even imminent to begin preparations. Deterrence, preparedness, and resiliency are all long-term endeavors. These recommendations are intended to guide U.S. and partner efforts to build necessary institutional capacity for effective engagement in an economic domain conflict with the PRC and to strengthen diplomatic efforts needed to build a strong sanctioning coalition. The recommendations also lay out specific steps that the United States and partners can take in the key operational areas (technology denial, commodity and materials embargos, macroeconomic pressure, and economic defense), accounting for the differing policy objectives and implementation timelines for each type of operation.

Institutional
The United States must strengthen its institutional capacity to engage in economic domain conflicts. Specifically, the U.S. government should:

- Develop integrated economic domain strategies to guide the application of economic force in the competition and potential future conflict with the PRC.
- Institutionalize economic domain strategic planning processes across the economic agencies, in the interagency, and with key foreign partners.
- Strengthen sanctions assessment and enforcement capabilities, including through an increase in resourcing for these functions.
- Build surge capacity to implement sanctions in the government, and encourage private sector entities to do the same.
- Maintain regular dialogue with the private sector on geopolitical risks and anticipated sanctions impacts.

DEVELOP INTEGRATED ECONOMIC DOMAIN STRATEGIES

The U.S. government—led by the Departments of the Treasury, State, and Commerce—should develop integrated economic domain strategies that establish fundamental principles for the use of economic leverage in the competition and potential future conflict with the PRC. The use of economic domain measures is an increasingly prominent aspect of U.S. foreign policy and needs to be given the same sort of analytic rigor as the deployment of military force. The development of economic domain strategies should be based on a detailed assessment of past economic domain conflicts to derive insights into the most effective application of economic leverage in the context of a major state-to-state conflict. These assessments should then be applied to the PRC challenge to guide the development of economic domain options for a wide range of potential crisis or conflict scenarios. The U.S. Department of Treasury has taken initial steps to develop a sanctions strategy with its 2021 sanctions review, though this was limited to one agency. More needs to be done to develop strategies across the full suite of economic domain tools, to integrate economic strategies across the interagency and with key foreign partners, and to develop precision about how economic tools should be used to address specific crisis and conflict scenarios.
One key takeaway from Russia's war in Ukraine, which the Locked Horns games reinforced, is that sanctions are unlikely to act as a deterrent once Beijing has made the political determination to engage in acts of aggression. Sanctions may be more effective in degrading PRC capabilities and political will to engage in conflict over a longer time horizon, rather than used as a short-term deterrent when conflict already appears imminent. Recognizing these dynamics, economic domain strategies should emphasize the timing and sequencing of sanctions, and how economic domain measures can complement or strengthen other instruments of national power. For example, sanctions may be most useful and appropriate in weakening key PRC capacities in a prolonged deterrence phase when military actions are not authorized. When there is an active conflict, sanctions may transition to a supporting role for military actions. Economic domain strategies should reflect these various phases of conflict or prelude to conflict, calibrating the use of sanctions to each phase and allowing for more effective integration of economic tools into an integrated interagency strategy.

Economic domain strategies should guide U.S. exploitation of its asymmetric leverage, such as the dominance of the U.S. dollar in international trade, and assess under what geopolitical conditions it makes sense to deploy this leverage. They should also account for the different economic natures of certain markets to craft more effective sanctions measures. For example, sanctions imposed on globally available commodities should look dramatically different from those imposed on choke-point technologies. Strategies should preference strong action in areas of U.S. asymmetric advantage, while creating incentives to shape market forces in areas where the United States does not enjoy asymmetry. They should include guidance on what tools are most effective in each of these various market conditions.

Economic domain strategies should account for the critical role of partners in increasing the effectiveness of sanctions, as well as the need to garner broader international support for the legitimacy of U.S. and partner sanctions. The PRC retains substantial means to resist or evade a unilateral approach to sanctions because of its economy’s deep ties to economies around the globe. Reaching more of China’s international economic activity will necessitate a coalition of sanctions partners, and economic domain strategies should prioritize those sanctions that can secure the broadest base of international support. Establishing a sanctions coalition can enhance the effectiveness of sanctions, as well as reinforce a message of unity and resolve of the United States and its partners.

Strategies should weigh the strategic benefits of extraterritorial measures (e.g., secondary sanctions and foreign direct product and \textit{de minimus} rules governing technology flows) against the diplomatic cost and additional enforcement burden that these tools entail. Extraterritorial rules force foreign firms to choose between the United States and China or risk losing access to the U.S. market. Many major foreign multinationals would probably choose the United States, but they may also engage in hedging behavior, such as designing out U.S. technology from their supply chains and production processes over time. Unilateral, extraterritorial tools are completely untested in a sanctions context of this magnitude, with prior cases including small economies such as those of Iran and Cuba and—to a lesser extent—certain chip export controls for China. It is highly unlikely that the United States would seek to take enforcement actions (i.e., impose sanctions) against European firms violating extraterritorial rules, as doing so would risk a diplomatic rupture at a moment when the United States needs to demonstrate a united front. This would make the extraterritorial tools leaky, unreliable, and highly risky.

Developing clear principles on how the United States will use—or not use—sanctions in a manner that reinforces international rules and norms is a key way in which the United States can enhance the legitimacy of its economic domain actions.

Economic domain strategies should envision constraints on the use of economic leverage. This may include principles of restraint in particular scenarios to preserve leverage or to avoid creating structural incentives for potential adversaries to de-risk their economies from the United States. It should also include restraint for moral or humanitarian purposes with consideration for sanctions that have heavy civilian impacts, such as those that impact the supply of food or medicine. Developing clear principles on how the United States will use—or not use—sanctions in a manner that reinforces international rules and norms is a key way in which the United States can enhance the legitimacy of its economic domain actions.
An economic domain strategy would have a focus on sanctions as an offensive element, but it must equally consider economic defense. Significant sanctions on China would inevitably have spillover effects on the U.S. and global economies, which should be accounted for when developing offensive sanctions strategies and mitigated through the development of defensive economic measures. Economic domain strategies should guide development and implementation of measures to build resiliency of the U.S. and global economies, as well as establishment of emergency response measures that would be used to stimulate the economy and buffer the impact of sanctions and conflict with the PRC.

INSTITUTIONALIZE AN ECONOMIC DOMAIN STRATEGIC PLANNING PROCESS

The U.S. government should establish a strategic planning process in the economic domain, as an institutional construct to support the regular development and updating of economic domain strategies. The development of sanctions actions today tends to be ad hoc and situationally driven, rather than the result of a deliberative strategic planning process that projects future scenarios and develops sanctions strategies accordingly. An economic domain strategic planning process would enable advance planning, facilitate integration of the economic domain into a broader integrated deterrence posture, and bolster diplomatic efforts to build a coalition of sanctioning economies. The ends-ways-and-means framework in this report is one example of the type of planning frameworks that the government could develop.

The United States and its partners are using sanctions at a scale unprecedented for the age of globalization.

The strategic planning process should consider how sanctions strategies will be integrated into planning across military, diplomatic, and other domains, including through information-sharing and regular gaming exercises to test possible sanctions strategies in the context of broader strategies that include military and other dimensions as well. The strategic planning function should also continually assess key areas of U.S. vulnerabilities and asymmetric advantage, based on evolving geoeconomic and geopolitical circumstances. A core tenet of this preparation should be to recognize the unique challenge that China poses given its size and integration into the global economy, and to develop bespoke sanctions strategies that account for these challenges.

Organizationally, the Departments of Treasury and State should play a key role in running a strategic planning process, drawing on both agencies’ expertise and experience in implementing sanctions. The Department of Commerce will also need to engage strongly, given the prominence of export controls in likely sanctions strategies. The strategic planning process should align with National Security Council (NSC) strategic planning and the DoD’s war-planning efforts, in support of an ongoing interagency dialogue on integrated deterrence efforts. The intelligence community should provide intelligence assessments in support of these efforts. The NSC should have an overarching coordination role, ensuring that these efforts receive adequate resourcing and high-level political support. U.S. partners and the private sector should have a role in this process, as noted in later recommendations, given their critical roles in sanctions efforts.

STRENGTHEN SANCTIONS ASSESSMENT AND ENFORCEMENT

The United States and its partners are using sanctions at a scale unprecedented for the age of globalization. Financial sanctions have been implemented on a wide range of targets, including those of increasingly large size such as Russia. U.S. export control policy has also transformed dramatically in recent years, shifting from a limited instrument aimed at preventing the accumulation of weapons to a broad set of policies used to manage the strategic and technology competition with China. Novel uses of certain sanctions tools, such as the foreign direct product rule and secondary financial sanctions, extend the application of U.S. policy around the globe in unprecedented ways. As these tools become continually more complex and far-reaching, the need for robust monitoring of their effectiveness grows as well. Similarly, the expansion of sanctions leads to an urgent need to grow enforcement capabilities alongside the rapid pace of implementation of new measures on paper.

Sanctions on China would represent a further milestone in the evolution of economic statecraft, but even today evidence is emerging about the unintended consequences and ineffectiveness of existing sanctions. Recent examples demonstrate the difficulty in implementing sanctions that bite. Despite years of living under U.S. export controls, Huawei and SMIC have teamed up to
release a smartphone using 7-nm chip technology, which is near the cutting edge.\textsuperscript{271} Plenty of chips continue to make their way to Russia, despite a global ban on the shipment of any chips made using U.S. technology, and Russia continues to derive critical revenue from its energy trade despite U.S. and partner efforts.\textsuperscript{272} These cases may reflect the hard truth that sanctions face an upper bound of effectiveness against a determined adversary. Alternatively, it may be the case that enforcement has lagged and that a continued push to identify and punish sanctions violations can strengthen their effectiveness. A detailed understanding of why sanctions were constrained in their effectiveness is critical to setting reasonable policy objectives for their future use.

The U.S. government has begun to address these issues, including through the establishment of a dedicated economics office at the Department of Treasury tasked with assessing the effectiveness of financial sanctions. More can be done. The Department of Commerce should establish a similar office to assess the effectiveness of export controls, as well as their unintended consequences. Both offices should conduct regular assessments of major sanctions programs to develop lessons learned for future implementation, as well as provide support to ongoing enforcement efforts. Higher levels of staffing and budgetary resources are needed for assessment and enforcement functions in all agencies with sanctions responsibilities, particularly Treasury, State, and Commerce. As one longtime export control official noted, “We spend 100 percent of our time on Russia sanctions, another 100 percent on China, and the other 100 percent on everything else.”\textsuperscript{273} As these departments carry an increasing share of the U.S. foreign policy burden, their resources should be scaled to match their mandate.

BUILD SANCTIONS SURGE CAPACITY IN GOVERNMENT AND THE PRIVATE SECTOR

An economic conflict with the PRC will cause massive amounts of commercial disruption. While the United States and its partners can and should strengthen their analytic efforts to project potential disruptions, in reality it will be impossible for them to fully anticipate all secondary and tertiary effects globally. Implementing sanctions at scale requires the government to have surge capacity institutionally, with plans and resources to quickly increase the number of officials responsible for implementing sanctions, tracking and responding to unanticipated disruptions, liaising with and responding to questions from the private sector, and coordinating actions with foreign government partners. Private sector entities should prepare for a similar surge, as firms are ultimately the first line of compliance for sanctions efforts. Both government and private sector entities are beginning to contemplate possible crisis or conflict scenarios, but will need to take further concrete steps to mobilize personnel and resources if intense sanctions seem likely.

Maintain ongoing dialogue with the private sector

The U.S. and partner governments must maintain an ongoing dialogue with the private sector on assessments of China-related geopolitical risk. Firms today are in a difficult position, attempting to diversify away from China and build resilience, while not having complete information on when or how tensions may tip over into conflict. Questions about the degree and scope of de-risking, the evolution of supply chains, and the future of sanctions, export controls, outbound investment controls, and other economic restrictions have major implications for business and trade relationships. China remains an essential market for many industries, especially those firms that produce or sell in China for the domestic Chinese market rather than exporting. Firms are required to comply with an increasing range of restrictions on their economic engagement with China, but there will also remain an immense amount of commercial activity that lawfully continues and where the private sector will be forced to come to its own judgments on future geopolitical risk. Regular dialogue and information-sharing between the government and the private sector is critical to informing the long-term plans that the private sector has for the China market. It can also support government efforts to gain visibility into complex global value chains and better understand the potential effects of sanctions options under consideration.

International

The United States and its international partners must intensify efforts to align economic domain approaches. They must also strengthen relationships with key countries in the Global South that are likely to experience negative effects from any future economic domain conflict. Doing so will allow for more impactful sanctions, reduce available evasion routes, and increase burden-sharing with other partners.
The United States and its partners should:

- Engage in coordinated economic domain strategic planning to strengthen capacity in partner governments, build political consensus, and develop possible sanctions actions.

- Prioritize collection and sharing of intelligence on Beijing’s intentions toward Taiwan or other potential drivers of conflict, with the aim of building consensus on coordinated sanctions efforts.

- Coordinate diplomatic outreach and messaging in crucial deterrence periods to demonstrate alignment and resolve.

- Engage proactively with the Global South on the need for sanctions and support from the United States and partners to mitigate impacts.

**ENGAGE IN COORDINATED ECONOMIC DOMAIN STRATEGIC PLANNING EFFORTS, INCLUDING TO BUILD CAPACITY IN PARTNER GOVERNMENTS**

International partners should strengthen their domestic processes for engaging in economic domain strategic planning. Similar to the recommendations for the U.S. government, partner governments should enhance the ability of their economic agencies to have clear strategic plans for the use of economic measures and to coordinate these efforts within their own interagency processes. The need for increased resourcing for economic domain functions is likely even more acute in partner governments, which tend to have smaller staffs than the United States and often rely on U.S. analytic capabilities to inform their decision-making. Sanctions officials in partner governments are already working at full capacity implementing sanctions on Russia and would require significantly more capacity to engage in planning and implementation of sanctions on China.

As domestic capacity is built, the United States and its partners must coordinate strategic planning efforts with each other. This can include coordinated analysis of potential sanctions packages, as well as scenario exercises or similar efforts to examine how the partners may most effectively sequence sanctions in potential crisis or conflict scenarios. Work with partners can help identify where there are disagreements or differences in approach that need to be addressed before a conflict appears imminent. It can facilitate the imposition of coordinated packages quickly as a crisis escalates and allow for detailed conversation on a sector-by-sector basis. Recognizing that political resolve to impose sanctions tends to arrive only at the moment of conflict, a coordinated planning process can nonetheless build important institutional connections and develop sets of options for policymakers to consider once the political conditions are right to do so.

Coordinated planning efforts and a degree of public visibility about such efforts may also serve as an important deterrent. In a run-up to conflict, there is a high risk that the PRC will miscalculate U.S. and partner resolve to impose sanctions. The full extent of unified resolve may not become apparent to the PRC until it crosses a redline and the full suite of sanctions are imposed. It may also not be apparent to the United States and partners themselves, as history shows that sanctions resolve is crystallized most clearly once conflict has arrived. While the United States and partners likely cannot completely avoid these issues, a deliberative planning process is one step to address certain elements of the complexities around resolve and signaling during a deterrence phase. Track two dialogues with nongovernment participants represent a similar option to advance coordinated thinking on sanctions with partners.

**PRIORITIZE COLLECTION AND SHARING OF INTELLIGENCE ON BEIJING’S INTENTIONS TOWARD TAIWAN AND OTHER POTENTIAL DRIVERS OF CONFLICT**

The United States and its partners should prioritize the collection and sharing of intelligence regarding PRC intentions toward Taiwan or other potential drivers of conflict, as well as declassification of certain intelligence that can strengthen the public case for taking strong economic domain actions. Intelligence-sharing was deployed to great effect in the Russia case, and it will be critical to build a political consensus among the major economies to accept the inevitable economic costs of imposing heavy sanctions on China. It should also inform the development of sanctions strategies calibrated to various phases of a crisis or conflict, allowing for greater alignment between the sanctions imposed by the United States and those of its partners.

Intelligence-sharing need not wait until there is evidence of a move to conflict. Rather, by sharing information on the PRC’s current views and activities, the United States can help to begin to build a shared base of understanding, which in turn can help build resolve and trust among key partners now, rather than trying to
do so just before a conflict. This takes on heightened importance given the increasingly opaque nature of the PRC political system, which complicates the task of building a shared understanding of PRC intentions. Where possible, intelligence efforts should focus on distinguishing between gray-zone tactics that the PRC employs and more aggressive actions, such as intent to increase troop readiness, which could signal a potentially more significant step.

**COORDINATE DIPLOMATIC OUTREACH AND MESSAGING**

The United States and its partners have not always been unified in their approach to the PRC. For example, French President Macron suggested, in an interview following a state visit to China in April 2023, that France pursues “strategic autonomy” distinct from the path taken by the United States toward the PRC. Germany also has significant economic ties with China and has historically been reluctant to take steps that would jeopardize those relationships. This mixed messaging provides an opening to the PRC to try to divide a potential sanctions coalition, and makes it more difficult to fulsomely engage in necessary coordination between the international partners.

There are signs that the United States and Europe are coming closer together, including the notable move by the U.S. government to publicly state its policy of de-risking rather than decoupling from China, which aligns more fully with EU stated objectives. U.S. alignment on economic domain issues with key Asian partners, including Japan, is also maturing. Notably, the G7 issued a leaders’ statement on economic resiliency and security under Japan’s leadership, which implicitly addresses concerns related to the PRC even as it contains no explicit reference to the PRC. It will be important to intensify these political efforts, while also coordinating on implementation of specific policies in support of the political agreements.

These efforts at coordinated messaging will take on additional urgency if a conflict appears more likely. The international partners must work closely together to ensure alignment of their positions as they signal their willingness and resolve to use economic domain measures to deter the PRC from acts of aggression. To overcome the risk that the PRC will miscalculate U.S. and partner resolve, the United States and its partners must engage in deliberate and coordinated diplomacy well in advance of a potential conflict if they seek to influence the PRC’s decision-making.

**ENGAGE PROACTIVELY WITH THE GLOBAL SOUTH**

Engagement with the Global South will be critical to reinforce the effectiveness and legitimacy of sanctions imposed by the United States and its partners. China is the top trading partner for more than 120 markets around the world, including South Africa and Kenya in Africa, Brazil in South America, and Vietnam in Asia. Many of these markets have come to rely on China as a major economic partner and are less likely to view its current practices as a threat to their own interests. At the same time, these are the very markets that would be disproportionately impacted if there were a conflict, since they have less capacity to withstand an economic shock and cannot easily replace China as a trading partner should its economy become damaged during a conflict.

The United States and its partners should conduct outreach early and often to these and similar countries to reinforce the United States’ and partners’ commitment to supporting them through bilateral engagement, as well as through established multilateral institutions where appropriate. A strategy focused on PRC concerns would likely backfire given differing views toward the threat (or opportunities) that the PRC poses in markets across the Global South. Instead, the United States and its partners should focus on strengthening ties and trade relationships as a goal in and of itself, and demonstrate the value of the West and Western-led multilateral institutions as a viable alternative to the PRC. Though it is important to be realistic in how much this soft power outreach can impact attitudes, should it come to conflict with the PRC, such efforts could help win support among key countries—or at least minimize outright disapproval and willingness to actively support the PRC, including through sanctions evasion efforts.

**Operational**

Earlier sections of this report analyzed potential sanctions operations through an ends-ways-and-means framework, attempting to identify those economic areas where the United States and partners can exert meaningful leverage over China. The report identified three main types of sanctions operations: technology denial, commodity and materials embargo, and macroeconomic pressure. This section offers recommendations for how the United States, working with its partners, can best position itself to successfully implement each type of operation, including critical considerations for which steps must be implemented immediately and which should only be implemented during an actual conflict.
period. Recognizing the high costs of any economic domain conflict, these recommendations also address the need for economic defense operations.

The United States, working with its partners, should:

- **Implement long-term technology denial operations**, carefully assessing the net strategic benefit of further restrictions that impact ordinary commercial activities.
- **Prepare for commodity embargo operations**, including through consideration of novel sanctions structures that account for the commoditized and globally available nature of key products, such as energy.
- **Prepare for macroeconomic pressure operations** by preserving the essential role of the U.S. dollar in global financial architecture, exercising restraint on the premature use of financial sanctions, and building credibility of the financial sector sanctions threat.
- **Strengthen economic domain defenses** by enhancing supply chain resiliency, establishing emergency stimulus mechanisms, and pushing back on the PRC’s trade coercion practices.
- **Develop sanctions options** for gray-zone actions and scenarios short of conflict.

**IMPLEMENT LONG-TERM TECHNOLOGY DENIAL OPERATIONS**

Technology denial operations require a longer time horizon to take effect, with impact measured in years rather than days. This is particularly true given that the United States and key partners already maintain an arms embargo and heavy export controls on China, and thus any further measures will be targeted at slowing China’s advances in dual-use technologies over time. In this context, long-term technology denial operations will necessarily cut deeper into the commercial space, as the United States and its partners cast a wider net of controls over a broader range of technologies and the innovation and manufacturing ecosystems that support their indigenous development in China. If successful, long-term technology denial operations can degrade China’s technological capabilities, supporting deterrence through degradation. The United States and its partners are already in the process of implementing technology denial operations against China, and the following recommendations provide guidance on how these operations should continue.

**Continually assess viability of export controls on emerging and established technologies**

The United States and its partners must continually assess the net strategic benefits of additional export controls on dual-use technologies. The U.S. October 7 export controls set a new benchmark by targeting certain technology ecosystems that indirectly support China’s ability to modernize its military and implementing broad-based controls that restrict China from receiving U.S. items or support related to advanced chips production, AI, and supercomputing. These controls were notable in that they drew a line in the sand, aiming to slow China’s overall development in these key technology ecosystems regardless of whether advances were intended for commercial or military purposes. The United States justified the measures by arguing that China’s military-civil fusion policies complicate any approach that attempts to distinguish between military and commercial applications, effectively declaring any advancement in key technology areas in China a de facto threat to U.S. interests. New U.S. outbound investment controls are a complementary effort, intended to implement a mirror process of denying China the capital and expertise to develop these same technology ecosystems. Key partners in Europe and Asia have implemented or are considering similar export and investment control policies.

These and potentially similar measures are future-looking and meant to degrade the technological capabilities of China’s military over time, and therefore should be prioritized in the short term as a key element of U.S. strategy. Yet new controls must be considered carefully, as the securitization of a wider range of commercial technologies heightens the likelihood of unintended consequences, including escalating tensions with the PRC and adverse impacts on U.S. technological competitiveness. The relative weighting of these factors can and should change as the United States gains further clarity on the PRC’s intentions toward Taiwan, with the potential benefits of new controls receiving more weight if the PRC’s posture becomes more aggressive. The United States and partners should continually assess the net benefit of controls in a wide range of technology ecosystems—including emerging areas such as AI as well as established technologies such as aerospace—where China’s technology ecosystems benefit from continued U.S. and partner engagement. Importantly, these steps should prioritize a narrowly tailored set of technologies that are of highest national security concern, which are more easily defensible and the denial of which can have a deterrent effect.
Exercise restraint on financial sanctions for technology denial purposes

To date, the United States has shown a marked preference for technology export controls, rather than financial sanctions, in its efforts to slow China’s advances in national security–relevant technologies. Analysis earlier in this paper showed that the United States and its partners have ample room to escalate the use of financial sanctions, including for Chinese entities that may be developing national security–relevant technologies. However, even under a more aggressive technology denial strategy, maintaining a general posture of restraint in the use of financial sanctions is important to retain scarce leverage over the PRC.

Prepared for commodity embargo operations

In contrast to technology denial operations, commodity embargo operations should only be implemented at the point of conflict. However, the United States and its partners can take concrete steps now to prepare for such operations.

Assess possibility of novel market mechanisms

The United States and its partners should begin work now on frameworks to deny China access to global energy commodities in the case of conflict, including both traditional sanctions and the possibility of novel market mechanisms, such as those explored during the Locked Horn games. For both crude oil and LNG, where China is the biggest individual global importer for both, any framework would need to balance global energy stability with impairment to China’s access. This would require a careful analysis of what a loss of China’s ability to import would do to energy markets, and whether steps could be taken to negate these effects through a combination of replacing Chinese imports with demand elsewhere or by reducing supply. Policymakers would need to consider what market incentives could be put in place to effect this behavioral change should a conflict occur, including by potentially targeting those entities supporting the facilitation of this trade such as shipowners and insurers, in addition to producers and consumers. The United States and its partners could also commit to increasing imports into strategic oil reserves or reducing their own production in the case of a conflict.

Prepare an energy embargo strategy that encompasses economic and non-economic actions

While this research highlighted the importance of planning across domains for a wide range of activities, this need was particularly pronounced in the commodities space. The United States and its partners will face difficulty in denying China’s access to energy using economic tools alone, given the presence of alternative suppliers such as Russia. To maximize denial capabilities, the United States will need an escalation ladder that combines economic measures, including those that can be used in pre-conflict stages of a crisis, with military actions, should the United States make the political decision to engage in direct engagement with China’s military forces.

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Because the United States and its partners have refrained from financial sanctions to date, the use of financial sanctions has arguably become a de facto focal point, in which the United States and its partners refrain from issuing full blocking financial sanctions and the PRC refrains from taking actions that would politically necessitate such an action. Even in instances where a severe response could plausibly be expected, such as the flight of a Chinese spy balloon over the United States, the administration exercised restraint in its response, which focused on export control restrictions rather than SDN designations. While this practice of restraint may be criticized, it is also plausible that it has helped manage tensions with the PRC in a manner that avoids further deterioration in relations. The United States has established a practice of using SDN designations to respond to the PRC’s human rights abuses and support of Iran, but has otherwise shown a preference for other tools. Use of full blocking financial sanctions to achieve new policy objectives, including technology denial, in the future could be interpreted by the PRC as an escalatory act that necessitates a strong response. It is unlikely that the benefit of full blocking financial sanctions for technology denial purposes outweighs the risk of escalation under current geopolitical circumstances, though this assessment may shift if security conditions deteriorate.
Macroeconomic pressure operations should only be implemented during an acute crisis or conflict period—and if the PRC refrains from aggression, hopefully not at all. Macroeconomic pressure is necessarily broad in its scope and would rightly be seen as an act of aggression if implemented before the PRC crossed a geopolitical redline. However, there are steps that the United States and its partners can take now to prepare for macroeconomic pressure operations, including preserving key points of asymmetric leverage that they currently enjoy. Importantly, the United States and its partners must bolster the credibility of the financial sanctions threat so that they can persuasively signal their intent to deploy such measures as part of a deterrence effort.

**Preserve China’s engagement with current financial architecture**

One of the strongest points of asymmetric leverage for the United States and its partners is in the financial sector, and this leverage must be treated as the precious resource that it is. Premature efforts to use financial sanctions on the PRC in advance of conflict run a high risk of undermining the United States’ and partners’ economic domain leverage. To date, the benefits to the PRC of using the U.S. dollar vastly outweigh sanctions risk, in part because the use of U.S. dollar-based sanctions against the PRC has been limited. This creates a meaningful dependence that is difficult for the PRC to overcome, particularly because the majority of its largest trading partners also transact in U.S. dollars. It also means that access to the U.S. dollar is akin to an international public good, and revoking access prematurely could be seen by the international community as an act of U.S. aggression, undercutting support for the United States. Maintaining China’s engagement with the U.S. dollar-based financial architecture is prudent, both in terms of managing escalation risks today while retaining a significant point of leverage over the PRC.

The PRC recognizes its dependence on the U.S. dollar and the associated vulnerabilities that causes. It has begun to take steps to mitigate these vulnerabilities, including through RMB-based settlements in key sectors, such as energy, and development of a CBDC that can be used to settle cross-border transactions outside the existing infrastructure. While these efforts are nascent and unlikely to pose a threat in the short term, the PRC is nevertheless making gains, and U.S. dominance over the long term should not be taken for granted. The United States and its partners should continue to monitor these developments and determine whether any merit a response or counteraction.

**Build credibility on financial sector sanctions**

While the United States and its partners undoubtedly hold strong leverage in the financial sector, use of severe financial sector sanctions carries a high degree of risk and uncertainty. Cutting China’s financial institutions—which are some of the largest in the world—out of the global financial infrastructure will have large spillover effects in the real economy and will also have uncertain but likely large effects on the stability of the global financial system. These risks may lead the PRC to assess that the United States will not have the stomach to impose the most stringent form of sanctions on Chinese banks, or that it will not be able to secure support from other countries to join in on such sanctions, allowing the PRC sufficient room to evade the U.S. measures. If the PRC doubts U.S. credibility, the deterrent effect of threatening financial sector sanctions will be undermined.

**MACROECONOMIC PRESSURE OPERATIONS**

The United States and its partners should strengthen efforts related to financial technology innovation. In the United States, this can build off the administration’s 2022 Comprehensive Framework for Responsible Development of Digital Assets, which included a range of initiatives to pursue to balance responsible financial technology innovation with financial stability and national security priorities. With appropriate regulatory frameworks, certain financial technologies may be able to reinforce the central role of the U.S. dollar and blunt attempts to weaken or bypass its use through the development of alternative financial pipelines. Importantly, the United States and its partners must continue to track the evolution of the eCNY and its use on a cross-border basis, engaging proactively in international standards setting for cross-border CBDC settlement.

**Maintain the centrality of the U.S. dollar in global financial infrastructure**

The United States should actively work to preserve the conditions that make the U.S. dollar and U.S. capital markets attractive, and therefore allow for the effectiveness of sanctions. To shore up and strengthen the U.S. asymmetric advantage in the financial sector, the executive branch should prioritize working with partners on Capitol Hill and in financial regulatory agencies to emphasize the need for continued credibility and stability in U.S. markets, both for its own sake and to maintain U.S. financial sanctions power. Self-inflicted damage, such as failure to pay U.S. government debts or government shutdowns, only serve to dent investor faith in U.S. credibility and can weaken U.S. financial sanctions strengths over time.

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The PRC recognizes its dependence on the U.S. dollar and the associated vulnerabilities that causes. It has begun to take steps to mitigate these vulnerabilities, including through RMB-based settlements in key sectors, such as energy, and development of a CBDC that can be used to settle cross-border transactions outside the existing infrastructure. While these efforts are nascent and unlikely to pose a threat in the short term, the PRC is nevertheless making gains, and U.S. dominance over the long term should not be taken for granted. The United States and its partners should continue to monitor these developments and determine whether any merit a response or counteraction.

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While the United States and its partners undoubtedly hold strong leverage in the financial sector, use of severe financial sector sanctions carries a high degree of risk and uncertainty. Cutting China’s financial institutions—which are some of the largest in the world—out of the global financial infrastructure will have large spillover effects in the real economy and will also have uncertain but likely large effects on the stability of the global financial system. These risks may lead the PRC to assess that the United States will not have the stomach to impose the most stringent form of sanctions on Chinese banks, or that it will not be able to secure support from other countries to join in on such sanctions, allowing the PRC sufficient room to evade the U.S. measures. If the PRC doubts U.S. credibility, the deterrent effect of threatening financial sector sanctions will be undermined.
As a first step toward building credibility, the United States and its partners should further analyze the effects of large-scale financial sector sanctions on China, working with private sector financial institutions to develop a nuanced understanding of the full consequences of such sanctions. Based on the findings of such analysis, they should develop operational plans to mitigate the impacts of the sanctions on the U.S., partner, and global economies, and inject stability into global markets in the event of conflict.

Building credibility may also require the use of financial sector sanctions in advance of conflict in certain, carefully circumscribed scenarios. Critically, given the previous argument about the risks of premature use of financial sector sanctions, such use must be done in direct response to clear PRC provocations and escalation rather than having the United States act as a first-mover. For example, the United States and partners could consider imposing financial sanctions on a predetermined slate of PRC military companies during specific gray-zone scenarios. Additionally, the United States and its partners could consider whether to impose financial sector sanctions on one or more of the smaller Chinese financial institutions during this phase, such as one of the 12 national joint-stock banks. These banks are not among the systemically large institutions in China and so risk of spillover would be less, though they are large enough that placing blocking sanctions on one or more would send a serious message of U.S. and partner resolve. To be clear, conditions today do not warrant the use of financial sector sanctions, and only a marked escalation in PRC aggression that indicated a progression toward conflict would justify U.S. use of the escalatory financial sector sanctions options.

**Premature efforts to use financial sanctions on the PRC in advance of conflict run a high risk of undermining the United States’ and partners’ economic domain leverage.**

Any level of financial sector sanctions would cause negative reactions in markets. The sanctions would need to be combined with careful messaging that the United States would not intend to target larger Chinese banks unless the PRC moved further toward conflict. The United States and partners should identify specific redlines in a given conflict that would trigger more intense sanctions, and make clear their intentions with the PRC and the world before that redline was crossed.

### BUILD ECONOMIC DEFENSE OPERATIONS

In addition to preparing for offensive sanctions operations, the United States and its partners must build up their economic defenses, primarily through resiliency. Strengthened economic resiliency will enable the United States and its partners to establish a deterrence-through-resilience posture, as a more resilient economy will be better able to withstand an economic conflict with the PRC. Economic defense and resiliency, however, should not be equated with protectionism or a call for broad decoupling with China. Instead, the United States and its partners should focus on economic diversification and preparedness, along with revived efforts to build open and integrated markets with each other.

**Build resiliency in key supply chains**

The United States has begun the process of identifying weaknesses in its supply chains coming out of the aftermath of the COVID-19 pandemic and the war in Ukraine. For example, the 2021 *Executive Order on America’s Supply Chains* called for a review of supply chain vulnerabilities across key sectors such as semiconductors, and instructed agencies across the U.S. government to submit reports after 100 days and again after one year, detailing areas under their jurisdiction most at risk. Though this review was broader than just China, it provides a good foundation in understanding where the United States is most vulnerable in its supply chains connected to China.

Officials should assess the results of this work specifically as it relates to China, and determine whether additional reviews are necessary. They should then undertake a whole-of-government effort to address these deficiencies, including detailing short-, medium-, and long-term efforts that can be undertaken to fill these gaps. Importantly, this will require close coordination with the private sector, which manages most of the supply chain and can be mobilized to support government initiatives. The CHIPS and Science Act of 2022 provides for incentives for the private sector to invest domestically to address semiconductor and related science, technology, engineering, and mathematics (STEM) issues. The Inflation Reduction Act has provisions to allow for greater investment domestically in clean energy. The United States should assess the impact of these laws related to China supply chain vulnerabilities and determine what additional steps can be taken. The executive branch should also establish a dedicated office or function, likely within the Department of Commerce, that has the institutional responsibility for coordinating supply chain resiliency work across the government.
Similar to the United States, should work closely with partners, in the G7 and elsewhere, to address resiliency risks related to the PRC. The G7 took the important step of committing to addressing supply chain and economic resiliency risks at the most recent G7 summit in Japan, which includes a pledge to coordinate and communicate efforts. Though this statement is not specifically focused on the PRC, it represents a good starting point to coordinate on related concerns in this context.

* Negotiate economic security agreements with partners*

As the United States prioritizes resiliency in its economic policy, it will need new structures for its economic engagement with its partners. Traditional free-trade agreements appear to be out of vogue, and current structures for dialogue—such as the Indo-Pacific Economic Framework—lack ambition and urgency. The administration, in close coordination with Congress, should pursue a new approach to its trade policies and legal architecture through the negotiation of economic security agreements with key partners. Rather than attempting to negotiate across all sectors, economic security agreements can be negotiated on a sector-by-sector basis, allowing for a more rapid pace of negotiations and integration of policy tools in a manner specific to the market structure, resiliency priorities, and national security concerns for a given sector.

* Economic defense and resiliency should not be equated with protectionism or a call for broad decoupling with China.*

Economic security agreements should include commitments and cooperation on the range of issues that China presents, including those that have not traditionally been included in free-trade agreements. This includes cooperation and alignment of policies on export controls, investment controls, and other restrictions placed on economic activity on national security grounds. Doing so will enhance the bite of these measures, while avoiding competitive disadvantages for U.S. firms subject to higher levels of controls than their international competitors. Subsidies should be on the table for similar reasons, allowing for discussion and agreement on best practices for subsidies, as well as loosely coordinating the provision of subsidies in critical sectors to avoid a subsidy race to the bottom. Importantly, the economic security agreements should include market access negotiations, both on tariff lines as well as non-tariff barriers, recognizing that this is an ambitious goal. De-risking from China will inherently mean some measure of lost market access for U.S. and partner firms. To continue to scale and grow, these firms will need greater access elsewhere. Meaningful market access negotiations can encourage the integration and openness of markets with close partners, partially compensating for reduced access in China. These must be paired with strong commitments on labor and environment, continuing the long-standing U.S. practice of using trade agreements to raise global standards on labor and environment.

The United States should prioritize economic security agreements with the EU, the UK, Japan, South Korea, and Australia, as key partners that are increasingly aligned with U.S. economic security goals and that are major players in global technology competition. India should also be top of the list, and the United States should aim to reduce stubborn and long-standing trade barriers and encourage the growth of India as a real alternative for companies seeking to de-risk from China. Similarly, Association of Southeast Asian Nations (ASEAN) countries should be considered for closer economic engagement given their critical role in the Indo-Pacific, along with countries that have already demonstrated a willingness to engage with the United States through prior trade agreement processes.

* Develop emergency stimulus mechanisms and response*

The United States should identify legal and financial mechanisms that could be used to inject emergency financial stimulus or other support into the economy in the event of a conflict with the PRC, and create new mechanisms if needed. This could include central bank measures like cutting the federal funds rate and backstopping financial markets, as well as sector-specific support to industries impacted by supply chain disruptions stemming from a conflict. The government should also develop plans and mechanisms to provide direct support to workers and consumers, both of whom are likely to be negatively impacted through disruptions to trade with China.

Previous research from CNAS provided a range of recommendations for “emergency response industrial policy,” which is intended to “enable the government to surge industrial capacity during times of crisis, including to respond to supply chain disruptions for critical goods.” This included a recommendation related to the Defense Production Act (DPA) authorities as the primary mechanism through which the government can surge funding, as well as the need to establish DPA-like funding authorities for nondefense sectors. While these types of funding mechanisms will not come close to compensating for an abrupt and wide-ranging rupture of economic ties with China, they can serve an
important role in mitigating some of the economic impacts on the United States.

This effort should be mirrored at the international level, with the United States working with key allies and partners to identify broader vulnerabilities across financial markets and key industries, and to develop coordination mechanisms in the economic domain that can be activated in the event of a conflict to mitigate negative impacts. The G7 will likely have an important role to play in coordinating emergency response measures across economies, similar to the critical role that it played in the 2007–2008 financial crisis.

Importantly, this process should include support for countries across the Global South, which will be significantly impacted in the event of a conflict with the PRC. This would require dedicated support from multilateral development institutions as well as from individual countries in the West, a process that cannot be easily turned on when a crisis has already begun. Therefore, planning should happen now based on when such support would be needed, how it would be accessed and disbursed, and what would be prioritized. This should be accompanied by ongoing diplomatic engagement. This preparation will have political as well as financial dimensions, as the PRC is a major development lender and a participant in international financial institutions. U.S. planning will need to provide for the smooth functioning of these institutions in the event of a U.S.-PRC rupture, as well as backfilling of development assistance that the PRC may no longer be able to provide under future sanctions scenarios.

Intensify efforts to combat the PRC’s trade coercion now

The PRC readily uses trade coercion to punish countries that are not strictly aligned with its geopolitical preferences. Insights from the CNAS economic games indicate that the use of such tactics may increase dramatically in a conflict scenario, potentially having a chilling effect on the willingness of countries to join a sanctioning coalition. This is a problem that the United States and its partners can start to address now through the development of a robust set of policy tools and coordination mechanisms to blunt the impact of PRC’s trade coercion. The most effective strategies will likely include direct economic support to the targeted country and a coordinated international effort to name and shame PRC’s practices. There may be cases where the deployment of counter-tariffs on China or preferential market access for the targeted country may be warranted, though this will have to be assessed on a case-by-case basis. Congress should build on prior legislative efforts and provide the executive branch with the full set of legal authorities that should be in a response toolkit, along with conducting oversight to ensure that the executive branch is effectively using these tools. The United States and its partners will need to strengthen their own domestic authorities to counter trade coercion while also building the coordination mechanisms that can enable them to have a joint and expeditious response to future instances of coercion.

Develop sanctions options to respond to the PRC’s gray-zone tactics and crisis scenarios that are short of direct conflict

The use of sanctions is not binary, nor is the path to conflict. If and when the PRC escalates geopolitical tensions, the United States and its partners should have a range of sanctions options that can be deployed in a responsive and proportionate manner. Sanctions options should include responses to the PRC’s use of gray-zone tactics, which are short of direct provocation and often include efforts to deny attribution. As the United States and its partners seek to prevent these tactics from normalizing behavior that fundamentally undermines the security environment, sanctions should be considered as part of an integrated response package. The most appropriate sanctions measures would be those directly related to the Chinese entities or technologies involved in the objectionable behavior.

An immediate step that the United States and its partners should take is to develop sanctions packages for plausible scenarios short of direct conflict, and pursue diplomatic engagement to build a coordinated response among a wide range of countries. This may include SDN designations, if escalation to this level of severe sanction is warranted by the geopolitical conditions. A coordinated action that shows resolve to use economic measures of an unprecedented nature can play a meaningful role in an overall strategy to deter further PRC aggression. For example, in the Taiwan context, the United States and its partners should consider SDN designations on military or military technology-related entities as part of an overall response to Chinese acts of aggression that fall short of a full-on invasion or embargo. While restraint on the use of financial sanctions under current conditions is generally advisable to preserve this crucial area of U.S. leverage, the limited and targeted use of SDN designations may be appropriate to counter deteriorating security conditions and send a clear signal of resolve.

Much of this report focuses on the question whether the United States and its partners can impose maximal sanctions on the PRC. Yet, a fundamental paradox with
the concept of maximal sanctions is that such sanctions will likely only be used in the context of a conflict that is itself economically devastating. If the United States and the PRC are engaged in a military conflict and American lives have been lost, then it may be relatively easier to build political consensus for maximal sanctions. Yet, the utility of such sanctions then becomes less clear, as the sanctions come into play well past the point of serving a deterrent purpose and at a moment when the cost of the military actions may dwarf the cost of sanctions. This emphasizes the need to consider, and perhaps prioritize, the use of sanctions in earlier phases of a crisis or conflict, when PRC actions are still being determined and the impact of sanctions may be relatively more pronounced in the absence of kinetic impacts.
There are no silver bullets, and there will be no winners in an economic domain conflict with the PRC.
Conclusion

IMPOSING SANCTIONS ON CHINA WILL BE COSTLY. There are no silver bullets, and there will be no winners in an economic domain conflict with the PRC. Despite these complications, it remains in the United States’ best interest to constantly explore how it can strengthen its economic domain posture, so that economic measures can be put on the table as part of a broader strategic approach to deterring conflict—and if necessary, impairing the ability of the PRC to sustain a campaign of military aggression. This report seeks to contribute to that ongoing policy work, providing one framework to consider the strategic benefits and costs of economic domain actions.

The report offers an initial assessment of where the United States can exploit its leverage in the economic domain, with the troubling assessment that U.S. leverage is weaker than may be desired. In particular, certain sanctions options, such as sanctions on major Chinese financial institutions, may not be pursued out of a concern over the impacts on the U.S. and global economies. Further research is needed to identify the full breadth of potential impacts from these types of high-risk sanctions options, with the aim of developing insight into how close the United States and partners can approach a maximalist sanctions approach while responsibly managing impacts on their own economies.

Further research is also needed on the diplomatic aspects of a sanctioning effort. The report finds that coordinated action with key foreign partners will enable a stronger sanctions posture, but it remains unclear how aligned the G7 and other key partners will be with the United States. While there may be high-level political alignment, it is less certain that sanctions packages from U.S partners will match the U.S. approach in scope and severity. Recognizing that resolve often crystallizes at the moment that conflict is imminent, there is nonetheless a great deal of work that can be done now to strengthen alignment with key international partners.

The Global South will play a critical role in any potential conflict with the PRC, an area where this report only scratches the surface. Additional research can provide more insights into the consequences of a sanctions conflict on the Global South, which relies heavily on China for trade and investment and which can also be an important source of economic support for China should sanctions sever China’s ties with the United States and partners. Further work is needed to develop enduring approaches for strengthening U.S. ties to the Global South, both for their own sake and for the benefits this will have in managing the competition and potential conflict with the PRC.

The United States should not seek conflict with the PRC. Actions taken in the economic domain should aim to deter conflict and de-escalate tensions, which is an inherently difficult balance to strike. Deepening strategic analysis of the economic domain will be critical to arrive at the right balance. Doing so can prepare the United States for a range of possible future scenarios, and position it to make the most effective use of economic tools in its pursuit of international peace and security.
Appendixes
APPENDIX 1:
Further Analysis of Sanctions Escalation on an Entity-by-Entity Basis

<table>
<thead>
<tr>
<th>Entity</th>
<th>Presence on Sanctions Lists</th>
<th>Foreign Exposure</th>
<th>AVAILABLE SHARES HELD BY FOREIGN INVESTORS</th>
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Sources: Bloomberg, Market Screener, Department of Commerce Entity List, Department of Treasury SDN and non-SDN CMIC lists, CNAS analysis.
### SHIPBUILDING AND SHIPPING SECTOR

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**Sources:** Bloomberg, Market Screener, Department of Commerce Entity List, Department of Treasury SDN and non-SDN CMIC lists, CNAS analysis.

### NUCLEAR SECTOR

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**Sources:** Bloomberg, Market Screener, Department of Commerce Entity List, Department of Treasury SDN and non-SDN CMIC lists, CNAS analysis.
## Aerospace and Space Sector

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Sources: Bloomberg, Market Screener, Department of Commerce Entity List, Department of Treasury SDN and non-SDN CMIC lists, CNAS analysis.
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Sources: Bloomberg, Market Screener, The China Project, Department of Commerce Entity List, Department of Treasury SDN and non-SDN CMIC lists, CNAS analysis.
* SMIC objected to its inclusion on the CMIC List (see endnote 138).
## FINANCIAL SECTOR

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<th>USD ASSETS AS % OF TOTAL ASSETS</th>
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<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>Medium</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>China Construction Bank (CCB)</td>
<td>$4,741</td>
<td>$4,347</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>Medium</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Agricultural Bank of China (ABC)</td>
<td>$4,649</td>
<td>$4,282</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>Medium</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Bank of Communications (BCM)</td>
<td>$1,780</td>
<td>$1,638</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>Medium</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Bank of China (BOC)</td>
<td>$3,962</td>
<td>$3,610</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>Medium</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Postal Savings Bank of China (PSBC)</td>
<td>$3,962</td>
<td>$3,610</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>Medium</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>MAJOR SOVEREIGN WEALTH FUNDS</td>
<td>$1,020</td>
<td>Unavailable</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>Uncertain</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>China Investment Corporation (CIC)</td>
<td>$1,350</td>
<td>$105</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>Unavailable</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>SAFE Investment Company</td>
<td>$1,020</td>
<td>Unavailable</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>Unavailable</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>12 JOINT-STOCK BANKS</td>
<td>$12,311</td>
<td>$7,094</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>Low</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Everbright Bank</td>
<td>$3</td>
<td>$3</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>Medium</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>China Merchants Bank</td>
<td>$1,389</td>
<td>$1,032</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>Medium</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>Others</td>
<td>$10,919</td>
<td>$6,059</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>Low</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>3 POLICY BANKS</td>
<td>$4,558</td>
<td>$4,251</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
<td>Uncertain, potentially high</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Financial Sector

### Foreign Exposure

<table>
<thead>
<tr>
<th>Total FX Exposure as % of Total Liability</th>
<th>Foreign Exchange Listing</th>
<th>Available Shares Held by Foreign Investors</th>
<th>International Operations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Five of the Big Six banks have foreign exchange exposure around 8–10% of total exposure.</td>
<td>All Big Six banks are listed in exchanges overseas.</td>
<td>More than 80% of the shares in all Big Six banks are held by domestic investors.</td>
<td>Five of the Big Six banks operate overseas branches, but these are only a fraction of their overall operations.</td>
</tr>
</tbody>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>✓</td>
<td>✗</td>
<td>ICBC is the world's biggest bank. It had $455 billion in overseas assets in 2021, accounting for 8.2% of ICBC's total assets. As of 2018, it operated 426 subsidiaries in 47 countries. ICBC is a leading institution in facilitating foreign exchange transactions, along with the Bank of China.</td>
</tr>
<tr>
<td>9%</td>
<td>✓</td>
<td>✗</td>
<td>CCB operates overseas branches, including in Tokyo, Seoul, Frankfurt, Singapore, and New York.</td>
</tr>
<tr>
<td>8%</td>
<td>✓</td>
<td>✗</td>
<td>ABC operates branches abroad, including in New York, though relatively fewer than the other Chinese state-owned commercial banks. It had only $331 million in net foreign exchange exposure in 2022.</td>
</tr>
<tr>
<td>9%</td>
<td>✓</td>
<td>✗</td>
<td>BCM has 23 overseas branches, including in New York, London, Singapore, Frankfurt, Luxembourg, and Sydney, and has set up overseas banking service networks in 126 countries. It had $142 billion in foreign exchange exposure in 2022.</td>
</tr>
<tr>
<td>10%</td>
<td>✓</td>
<td>✗</td>
<td>The BOC operates internationally in 57 countries. It is China's main foreign exchange bank and was the first to facilitate RMB transactions in the United States. It signed an 2016 MOU with the Federal Reserve Board for the New York branch of the BOC to serve as the clearing bank for the RMB in the United States.</td>
</tr>
<tr>
<td>0%</td>
<td>✓</td>
<td>✗</td>
<td>Postal Savings Bank is a domestically oriented state-owned commercial bank. It does not have substantial international presence.</td>
</tr>
</tbody>
</table>

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Unavailable</td>
<td>Unavailable</td>
<td>Unavailable</td>
<td>China's sovereign wealth funds invest in strategic assets overseas, including to support political initiatives such as the Belt and Road Initiative (BRI).</td>
</tr>
<tr>
<td>Unavailable</td>
<td>Unavailable</td>
<td>Unavailable</td>
<td>CIC manages a significant portion of China's foreign exchange reserves (approximately ⅓ of the total as of 2021). CIC typically invests in technology and natural resources.</td>
</tr>
<tr>
<td>Unavailable</td>
<td>Unavailable</td>
<td>Unavailable</td>
<td>SAFE Investment Company was the State Administration of Foreign Exchangers' (SAFE) first-ever subsidiary, established before the handover of Hong Kong to the PRC. It received initial capital of $20 billion to support and promote the development of Hong Kong's financial markets. SAFE investments support BRI and other infrastructure investments.</td>
</tr>
</tbody>
</table>

### Joint-stock banks

1 joint-stock bank has significant foreign exchange exposure (>10% of total exposure). 6 joint-stock banks are listed in exchanges overseas. 1 joint-stock bank has >20% of its shares held by foreign investors. Joint-stock banks are owned and controlled by shareholders, including corporations and the Chinese state. The PRC often has a strategic or controlling interest through state-owned investment or holding companies. Most of these banks are more domestically focused and have limited international exposure, with the exception of Everbright Bank and China Merchants Bank.

<p>| | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>68%</td>
<td>✓</td>
<td>✗</td>
<td>Everbright Bank has 1,310 domestic branches and has overseas presence in Luxembourg, Sydney, Tokyo, and Seoul.</td>
</tr>
<tr>
<td>13%</td>
<td>✓</td>
<td>✗</td>
<td>China Merchants Bank is China's first joint-stock commercial bank and was one of the first Chinese banks to obtain an operating license in the United States (New York). China Merchants Bank has 143 domestic branches and 8 overseas branches and offices.</td>
</tr>
<tr>
<td>✗</td>
<td></td>
<td></td>
<td>These other joint-stock banks are more domestically focused and have limited international exposure.</td>
</tr>
<tr>
<td>Unavailable</td>
<td>Unavailable</td>
<td>Unavailable</td>
<td>China has three policy banks—China Development Bank (CDB), Export-Import Bank of China (CEXIM), and Agricultural Development Bank of China (ADB). ADB is more domestic as it supports the Chinese agricultural sector across provinces and regions. CDB and CEXIM are key players in financing China's investment activities abroad. Notably, CDB and CEXIM has funded many BRI projects, with CEXIM being the top lender Africa in 2022.</td>
</tr>
</tbody>
</table>
## ENERGY SECTOR

<table>
<thead>
<tr>
<th>Entity</th>
<th>Presence on Sanctions Lists</th>
<th>Foreign Exposure</th>
<th>AVAILABLE SHARES HELD BY FOREIGN INVESTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CMIC</td>
<td>SDN</td>
<td>ENTITY LIST</td>
</tr>
<tr>
<td>CHINA PETROCHEMICAL CORPORATION</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>CHINA NATIONAL PETROLEUM CORPORATION</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>CNOOC LIMITED*</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>TONGWEI GROUP CO., LTD.</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>LONGI GREEN ENERGY TECHNOLOGY CO., LTD.</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>JINKOSOLAR HOLDING COMPANY LIMITED</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>FORTUNE SOLAR HOLDINGS LTD.</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>JA SOLAR TECHNOLOGY CO., LTD.</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>GUANGHUI ENERGY CO., LTD.</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
<tr>
<td>TCL ZHONGHUAU RENEWABLE ENERGY CO., LTD.</td>
<td>✗</td>
<td>✗</td>
<td>✗</td>
</tr>
</tbody>
</table>

Sources: Bloomberg, Market Screener, Department of Commerce Entity List, Department of Treasury SDN and non-SDN CMIC lists, CNAS analysis.

* CNOOC objected to its inclusion on U.S. sanction lists (see endnote 172).
APPENDIX 2:
Methodology Note for Tables on Sanctions Escalation by Entity

The CNAS Energy, Economics & Research team created a methodology to assess room for further escalation with respect to specific entities, based on the existing levels of sanctions imposed on an entity and that entity’s exposure to sanctions via its international operations. The United States would, for example, have little room to escalate sanctions on an entity that is already subject to heavy sanctions or one that is predominantly focused on the Chinese market. In contrast, certain firms may have more significant exposure to sanctions escalation if they engage in higher levels of international sales, procure from foreign suppliers, have overseas subsidiaries, or are listed on foreign stock exchanges.

Selected companies were assessed by the following metrics: presence on existing U.S. sanctions lists and potential for sanctions exposure internationally. Researchers used presence on existing U.S. sanctions lists to reflect those entities that the U.S. government has already identified national security and foreign policy concerns with, as well as to show where there is more or less room to escalate through the use of entity-based sanctions in the future. Researchers then used the potential international exposure metrics as a proxy for anticipated vulnerability to sanctions and potential impact should particular entities be listed on U.S. sanctions lists in the future. Together, the metrics indicate which entities could be prioritized in future sanctions scenarios, due to room for escalation combined with potential impact.

Selection of entities for analysis: Companies were chosen for analysis by (1) overall revenue (in the top 10 ranked companies in Bloomberg data); (2) presence on the non-SDN Chinese Military-Industrial Complex Companies (CMIC) List or the Department of State Fact Sheet “Communist Chinese Military Companies Listed under E.O. 13959 Have More Than 1,100 Subsidiaries”;292 (3) reference in the DoD’s 2022 Report on Military and Security Developments Involving the People’s Republic of China;293 or (4) operation in a sector with potential military or national security relevance. In the semiconductor table, researchers additionally used a list of top semiconductor firms developed by the China Project.294

Analysis of current sanctions listings: To indicate presence on existing U.S. sanctions lists, researchers used the Office of Foreign Assets Control (OFAC) SDN List, the OFAC non-SDN CMIC List, and the Bureau of Industry and Security Entity List.

Analysis of assessed foreign exposure: To indicate potential foreign exposure, which was used as a proxy for potential sanctions exposure, researchers noted the following criteria:
- overseas domicile—“yes” indicates that the entity is based overseas and “no” indicates that the entity is based in China (Bloomberg).
- foreign sales—“yes” indicates that the entity has more than 20 percent of its total sales made overseas and “no” indicates that over 80 percent of sales are domestic (Market Screener).
- foreign supply chains—“yes” indicates that the entity’s supply chain is more than 20 percent overseas and “no” indicates that over 80 percent of supply chains are domestic (Bloomberg).
- foreign exchange listing—“yes” indicates that the entity is listed on any international exchange outside of China and Hong Kong and “no” indicates that the entity is listed only on Chinese exchanges (Bloomberg).
- available shares held by foreign investors—“yes” indicates that foreign investors hold more than 20 percent of the available shares and “no” indicates that more than 80 percent of shares are held by Chinese investors. Note: This does not indicate percentage of total equity ownership, only those shares that are available to the public or approved financial institutions (Bloomberg).

Researchers then created an overall metric of assessed foreign exposure that aggregates the five foreign exposure metrics to assign each entity a ranking of low, medium, or high foreign exposure. Low indicates zero or one metrics that indicate exposure, medium is two to three, and high is four or more. In certain cases, researchers applied a subjective assessment to the ranking to account for variables such as differing exposure between a parent entity and subsidiaries or among subsidiaries.

OTHER NOTES
- These metrics include Hong Kong when referring to China.
- The table metrics use the parent-level entity name, but reflect underlying analysis that includes subsidiaries on which there is available data.
- In many cases, the available data were inconsistent or incomplete. To address this, the research team supplemented the data with qualitative research, which is noted in the tables where relevant.
- All data were gathered or updated in September 2023. The tables do not reflect sanctions designations or market developments after that date.
- The names of the entities were pulled from Bloomberg, with minor style adjustments made for consistency in Co. and Ltd. abbreviations.
- Where possible, the report notes if a sanctioned entity has made a public statement or response to their designation on one of the sanctions lists. The report includes the full text of the statement in the endnotes.
APPENDIX 3:
Methodology Note for Composition of China’s Foreign Exchange Reserves

<table>
<thead>
<tr>
<th>Chinese Holdings of Foreign Assets</th>
<th>Amount of Holding</th>
<th>% of China’s Official Reserves</th>
</tr>
</thead>
<tbody>
<tr>
<td>UNITED STATES (U.S.) ASSETS</td>
<td>$1.8 trillion</td>
<td>56.3%</td>
</tr>
<tr>
<td>EURO ASSETS</td>
<td>$633 billion</td>
<td>19.8%</td>
</tr>
<tr>
<td>JAPANESE ASSETS</td>
<td>$184 billion</td>
<td>5.7%</td>
</tr>
<tr>
<td>UNITED KINGDOM (UK) ASSETS</td>
<td>$155 billion</td>
<td>4.8%</td>
</tr>
<tr>
<td>CANADIAN ASSETS</td>
<td>$78 billion</td>
<td>2.4%</td>
</tr>
<tr>
<td>SOUTH KOREAN ASSETS</td>
<td>$10 billion</td>
<td>0.3%</td>
</tr>
<tr>
<td>AUSTRALIAN ASSETS</td>
<td>$6.3 billion</td>
<td>0.2%</td>
</tr>
<tr>
<td>OTHER ASSETS</td>
<td>$333.7 billion</td>
<td>10.4%</td>
</tr>
<tr>
<td><strong>Total Official Reserves</strong></td>
<td><strong>$3.2 trillion</strong></td>
<td></td>
</tr>
</tbody>
</table>

Fully accounting for China’s reserves using publicly available data remains a challenge due to the lack of transparency from the People’s Bank of China (PBOC) regarding allocation and the limited disclosure of the sources of inward investment by many foreign economies. As of the third quarter of 2022, China’s foreign exchange reserves amounted to $3.2 trillion, as reported by the State Administration of Foreign Exchange under the PBOC.\(^{295}\) The CNAS research team located additional data on China’s holdings of foreign assets from national statistical websites or the International Monetary Fund’s (IMF) Coordinated Portfolio Investment Survey, or by backing out an estimation of China’s holdings of assets with weights from global percentage of asset holdings using the IMF’s Currency Composition of Official Foreign Exchange Reserves (COFER) database. The Other Assets category denotes assets that are not captured by the CNAS research team due to lack of available data. Data does not include Hong Kong.

The CNAS research team estimates that China’s holdings of foreign assets include:

**U.S. assets:** China’s official holdings of U.S. assets can be ascertained with the Treasury International Capital (TIC) dataset, with foreign holdings of U.S. securities data reported most recently as of February 28, 2023 (for data up to June 2022). China held $1.47 trillion in U.S. portfolio assets (equities, short-term debt securities, and long-term debt securities) as of June 2022. Additionally, Belgium has a large number of custodial accounts, and researchers make the simplifying assumption that all of the Belgium holdings can be attributed to China.\(^{296}\) According to TIC, Belgium custodial holdings of U.S. assets amounted to $319 billion. This totals up to $1.8 trillion in U.S. assets, which makes up an estimated 56 percent of China’s total official foreign reserves.\(^{297}\)

**Euro assets** (estimated): The Eurozone does not report portfolio liabilities to foreign holders. The CNAS team therefore estimated China’s holdings of Euro assets by looking at the IMF’s COFER dataset, which reports global allocations of foreign exchange holdings. Approximately 19.8% of all global foreign exchange holdings are held in Euro assets. From there, the CNAS research team estimated that $633 billion out of China’s $3.2 trillion officially reported foreign exchange holdings are in Euro assets. This is assuming China’s holdings of Euro assets are comparable to global holdings of Euro assets.\(^{298}\)

**Japanese assets:** According to the IMF’s Coordinated Portfolio Investment Survey (CPIS) dataset “Table 4: Reported Portfolio Investment Liabilities by Economy of Nonresident Holder,” as of August 2023, China owned $184 billion in Japanese short-term debt securities, long-term debt securities, and equity, which makes up an estimated 5.7 percent of China’s total official foreign reserves.\(^{299}\)
UK assets (estimated): The UK does not report portfolio liabilities to foreign holders. The CNAS team therefore estimated China’s holdings of UK assets by looking at the IMF’s COFER dataset, which reports global allocations of foreign exchange holdings. Approximately 4.8% of all global foreign exchange holdings are held in UK assets. From there, the CNAS research team estimated that $155 billion out of China’s $3.2 trillion officially reported foreign exchange holdings are in UK assets. This is assuming China’s holdings of UK assets are comparable to global holdings of UK assets.300

Canadian assets: Canada only reports limited information on portfolio liabilities to foreign holders. The CNAS team therefore estimated China’s holdings of Canadian assets by looking at the IMF’s COFER dataset, which reports global allocations of foreign exchange holdings. Approximately 2.4% of all global foreign exchange holdings are held in Canadian assets. From there, the CNAS research team estimated that $78 billion out of China’s $3.2 trillion officially reported foreign exchange holdings are in Canadian assets. This is assuming China’s holdings of Canadian assets are comparable to global holdings of Canadian assets.301

South Korean assets: South Korea’s Financial Supervisory Service publishes foreign holdings of South Korean securities. According to its monthly report, China holds about $10 billion of South Korean assets as of October 2023. This number is incomplete, as the Financial Services Commission only posts equity holdings by country and does not disclose bond holdings by country. This makes up an estimated 0.3 percent of China’s total official foreign reserves.302

Australian assets: According to the IMF’s CPIS dataset “Table 4: Reported Portfolio Investment Liabilities by Economy of Nonresident Holder,” as of August 2023, China holds $6.3 billion in Australian short-term debt securities, long-term debt securities, and equity. This makes up an estimated 0.2 percent of China’s total official foreign reserves.303
No Winners in This Game: Assessing the U.S. Playbook for Sanctioning China


2. This framing borrows from Richard Nephew’s discussion of sanctions implementation as the imposition of sanctions “pain” balanced against the target’s “resolve” to accept, reject, or resist the impact of the sanctions. Richard Nephew, The Art of Sanctions: A View from the Field (New York: Columbia University Press, 2018).


17. Pearson, Rithmire, and Tsai, “Party-State Capitalism in China.”


22. 2021 Report to Congress on China’s WTO Compliance; People's Republic of China: 2022 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for the People’s Republic of China.


35. OECD, “China”; “Major Banks Cut China 2023 GDP Forecasts as Recovery Falters.”


43. People’s Republic of China: 2022 Article IV Consultation-Press Release; Staff Report; and Statement by the Executive Director for the People’s Republic of China.
52. Wright, Grasping Shadows: The Politics of China’s Deleveraging Campaign.
54. 2021 Report to Congress on China’s WTO Compliance.
55. 2021 Report to Congress on China’s WTO Compliance.
56. 2021 Report to Congress on China’s WTO Compliance.


76. “Unpacking China’s GDP.”


78. 2021 Report to Congress on China’s WTO Compliance, 56.


82. According to the United States Conference on Trade and Development (UNCTAD), China’s FDI inflows in 2022 was $189 billion. It is the second biggest in terms of FDI flows, following the United States’ $285 billion in the same year. See more at Global Foreign Direct Investment Flows over the Last 30 Years,” UNCTAD, May 5, 2023, https://unctad.org/data-visualization/global-foreign-direct-investment-flows-over-last-30-years.


88. China Global Investment Tracker.


103. The United States maintains export control regimes to govern the export of military items, dual-use items, nuclear items, and chemical and biological weapons. Export controls can take four primary forms: list-based controls, which control specified technologies destined for export anywhere in the world; end-use controls, which regulate the export of items for particular end uses, such as military end uses; end-user controls, which tighten restrictions for designation end users; and controls on the activities of U.S. persons related to dual-use and military items.

104. Kilcrease and Frazer, Sanctions by the Numbers: SDN, CMIC, and Entity List Designations on China.


120. Aboulafia, “If China Arms Russia, the U.S. Should Kill China’s Aircraft Industry.”


138. “Announcement of SMIC,” SMIC, December 4, 2020, https://www.smics.com/en/site/news_read/7801. “On 4 December 2020, the company noticed that the company was added to the list of Chinese military companies by the United States Department of Defense. After the company was included in the list of Chinese military companies, United States persons will be restricted in their dealings in the company’s traded securities, or any securities that are derivative underlying such securities: all United States persons will not be allowed to purchase the company’s securities for 60 days commencing on 4 December 2020, Beijing time. After 365 days therefrom, all United States persons will not be allowed to deal in the company’s securities. For the specific regulatory restrictions, please refer to the Executive Order issued by the President of the United States of America dated 12 November 2020. There is no major impact on the company’s operation after being added to the Chinese military companies list. The company reiterates that it is an international enterprise operating independently with stakeholders such as investors and customers all over the world. The company has long been fully compliant with all rules and laws, operating in compliance with the relevant laws and regulations of jurisdictions where it performs its businesses. The company’s services and products are all for civilian and commercial end-uses and are not involved in any military application. The company strongly opposes the decision of United States Department of Defense, which reflects a fundamental misunderstanding by the United States Department of Defense regarding the end-uses of the company’s business and technology. The company will continue to carry out proactive communication with the relevant United States government departments.”


141. Building Resilient Supply Chains, Revitalizing American Manufacturing, and Fostering Broad-Based Growth: 100-Day Reviews under Executive Order 14017.


153. Scharre, “America Can Win the AI Race.”


156. The author thanks Rachel Ziemba, CNAS Adjunct Senior Fellow, for research and analysis in support of this section.


158. Kilcrease, Bartlett, and Wong, Sanctions by the Numbers: Economic Measures against Russia Following Its 2022 Invasion of Ukraine.


160. The author thanks Eddie Fishman, CNAS Adjunct Senior Fellow, for suggesting this concept.


167. “China’s Coking Coal Imports from Australia Forecast Sharply Lower in 2023.”


“Xu Keqiang leads Hong Kong-listed CNOOC, a unit of China’s major state-owned oil producer, China National Offshore Oil Corp. The parent group, which is unlisted, was alleged to have ties to China’s military by the administration of former President Donald Trump, leading to sanctions against the group late last year.”
“We think there is a misunderstanding about CNOOC with regard to sanctions by the U.S.,” Xu told reporters on Thursday at an online briefing on its annual business strategy and development plan.

China National Offshore Oil Corp. holds a majority of the shares in the listed unit and has the same acronym. Xu, who doubles as a board member of the parent company, is the highest ranking official from the state oil company to publicly speak to Western media since the company was penalized.

Xu said he was ‘astounded’ and ‘regretful’ over the decision made by the Trump administration. He said he was willing to engage in an ‘effective communication with the U.S. government, in order to promptly eliminate misunderstanding and swiftly shift out from the sanction.”


No Winners in This Game: Assessing the U.S. Playbook for Sanctioning China


187. David O’Sullivan, interview by European Commission, February 28, 2023, https://ec.europa.eu/newsroom/fisma/items/778510/en. See, for example, O’Sullivan’s rhetoric around sanctions on Russia, which have both degradation and punitive aims.

188. Kilcrease and Frazer, Sanctions by the Numbers: SDN, CMIC, and Entity List Designations on China.


200. Total U.S. debt outstanding is $34.81 trillion ($32.71 trillion in Treasurries, and $2.1 trillion in Agencies), China’s $1.8 trillion holding (of treasurries and agencies) makes up a non-negligible 5.2% of U.S. debt outstanding. See sources here: “What is the National Debt?,” FiscalData, accessed September 13, 2023, https://fiscaldata.treasury.gov/americas-finance-guide/national-debt/#:~:text=The%20national%20debt%20is%20an%20accumulated%20debt%20owed%20to%20the%20people%20and%20the%20government%20over%20time%20and%20the%20government%20has%20the%20right%20to%20collect%20taxes%20in%20order%20to%20repay%20the%20debt%20owed%20to%20them%20and%20to%20provide%20services%20to%20the%20public. See appendix 3 for additional details on China’s holdings of U.S. dollar-denominated assets.


216. These banks include the Industrial and Commercial Bank of China (ICBC), China Construction Bank (CCB), Agricultural Bank of China (ABC), Bank of Communications (BCM), Bank of China (BOC), and Postal Savings Bank of China. ICBC, CCB, ABC, and BOC were the original commercial banks spun out of the PBOC and are sometimes referred to as the Big Four. This report includes BCM and Postal Savings Bank of China as well, reflecting the importance of these banks to China’s financial sector today, consistent with practice of other analysts. See, for example, Kroeber, *China’s Economy: What Everyone Needs to Know*.

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