

**HEARING ON CHINA'S STOCKPILING AND MOBILIZATION  
MEASURES FOR COMPETITION AND CONFLICT**

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**HEARING**  
**BEFORE THE**  
**U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION**  
**ONE HUNDRED EIGHTEENTH CONGRESS**  
**SECOND SESSION**

THURSDAY, JUNE 13, 2024

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**U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION**  
**WASHINGTON: 2024**

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# HEARING ON CHINA'S STOCKPILING AND MOBILIZATION MEASURES FOR COMPETITION AND CONFLICT

THURSDAY, JULY 13, 2024

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U.S.-CHINA ECONOMIC AND SECURITY REVIEW COMMISSION

*Washington, DC*

The Commission met via videoconference at 9:30 a.m., Commissioner Cliff Sims and Commissioner Carte P. Goodwin (Hearing Co-Chairs) presiding.

## OPENING STATEMENT OF COMMISSIONER CLIFF SIMS HEARING CO-CHAIR

COMMISSIONER SIMS: Good morning and welcome to the sixth hearing of the U.S. China Economic and Security Review Commission's 2024 annual report cycle. Thank you all for joining us today.

I would like to remind everyone that the testimonies from our witnesses are available on the Commission's website, [uscc.gov](https://uscc.gov), where a transcript of today's hearing will also be posted.

Today's hearing takes place amid rising geopolitical tensions in East Asia and across the world. My time in the Office of the Director of National Intelligence made it clear to me and many of my colleagues that China's leadership intends to dominate the world militarily, economically, and technologically.

Increasing challenges to these ambitions, both domestically and globally, have compelled the Chinese Communist Party to prepare Chinese society for so-called worst case and extreme scenarios. This directive is filtering down through all levels of the party state from the halls of power in Beijing to party cells in towns, villages, and companies across China.

The Party's paranoia and lack of confidence in its own legitimacy cause it to imagine hostile foreign forces behind any domestic threat to its absolute power. The CCP is actively cultivating a siege mentality throughout Chinese society, further tightening its control over daily life.

CCP General Secretary Xi Jinping has exhorted the People's Liberation Army, party leaders, and the Chinese people to "dare to struggle," a Maoist phrase that suggests preparing for conflict, and to improve its ability to mobilize military and civilian resources in wartime.

This enhanced capacity to mobilize has implications for the most acute threat of China breaking the peace, a military invasion of Taiwan. Various U.S. military and intelligence leaders differ on their estimates of when the PLA will be ready for war, with some stating that it could be as soon as next year.

As a result, we are entering a perilous moment with China's capabilities rising to meet its leaders' stated commitment to unifying Taiwan with the mainland, even by force, if coercion and threats fail.

Against this backdrop, it is of supreme importance that we develop a deep understanding of China's preparations for conflict and can discern when they are preparing to make a move. Understanding China's vulnerabilities and strengths will enhance U.S. leaders' ability to make well informed decisions that promotes peace and prosperity, as we do not want war. But in the event that China makes an unprovoked, unjust, and ill-advised decision to break the peace, we must be able to win.

To our distinguished witnesses, thank you for joining us to discuss these important issues. We look forward to hearing from each of you.

I will now turn the floor over to my colleague and Co-Chair for this hearing, Commissioner Goodwin.

**PREPARED STATEMENT OF COMMISSIONER CLIFF SIMS  
HEARING CO-CHAIR**



## Hearing on “China’s Stockpiling and Mobilization Measures for Conflict and Competition”

June 13, 2024

### Opening Statement of Commissioner Cliff Sims

Good morning, and welcome to the sixth hearing of the U.S.-China Economic and Security Review Commission’s 2024 Annual Report cycle. Thank you all for joining us today. I would like to remind everyone watching that the testimonies from our witnesses are available on the Commission’s website, [uscc.gov](https://uscc.gov), where a transcript of today’s hearing will also be posted.

Today’s hearing takes place amid rising geopolitical tensions in East Asia and across the world. My time in the Office of the Director of National Intelligence made it clear to me and many of my colleagues that China’s leadership intends to dominate the world militarily, economically, and technologically. Increasing challenges to these ambitions – both domestically and globally – have compelled the Chinese Communist Party to prepare Chinese society for so-called “worst-case” and “extreme” scenarios.

This directive is filtering down through all levels of the Party-state, from the halls of power in Beijing to Party cell meetings in towns, villages, and companies across China. The Party’s paranoia and lack of confidence in its own legitimacy cause it to imagine “hostile foreign forces” behind any domestic threat to its absolute power. The CCP is actively cultivating a siege mentality throughout Chinese society, further tightening its control over daily life.

CCP General Secretary Xi Jinping has exhorted the People’s Liberation Army (PLA), Party leaders, and the Chinese people to “dare to struggle”-- a Maoist phrase that suggests preparing for conflict – and to improve its ability to mobilize military and civilian resources in wartime. This enhanced capacity to mobilize has implications for the most acute threat of China breaking the peace: a military invasion of Taiwan. Various U.S. military and intelligence leaders differ on their estimates of when the PLA will be “ready” for war, with some stating it could be as soon as next year.\* As a result, we are entering a perilous moment, with China’s capabilities rising to meet its leaders’ stated commitment to “unifying” Taiwan with the Mainland, even by force if coercion and threats fail.

Against this backdrop, it is of supreme importance that we develop a deep understanding of China’s preparations for conflict and can discern when they are preparing to make a move. Understanding China’s vulnerabilities and strengths will enhance U.S. leaders’ ability to make well-informed decisions that

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\* Former U.S. Indo-Pacific Command Commander John Aquilino and current Commander Samuel Paparo have both recently said publicly that the PLA will be capable of invading Taiwan by 2027. Air Force General Mike Minihan wrote a memo in January 2023 predicting that China could invade Taiwan as early as 2025. John C. Aquilino, written testimony for U.S. House of Representatives Armed Services Committee, Hearing on U.S. Military Posture and National Security Challenges in The Indo-Pacific Region, March 20, 2024; Courtney Kube and Mosheh Gains, “Air Force general predicts war with China in 2025, tells officers to prep by firing 'a clip' at a target, and 'aim for the head,’” *NBC News*, January 27, 2023.



promote peace and prosperity, as we do not want war. But in the event that China makes an unprovoked, unjust, and ill-advised decision to break the peace, we must be able to win.

To our distinguished witnesses, thank you for joining us to discuss these important issues. We look forward to hearing from each of you.

I will now turn the floor over to my colleague and co-chair for this hearing, Commissioner Goodwin.

## **OPENING STATEMENT OF COMMISSIONER CARTE P. GOODWIN HEARING CO-CHAIR**

COMMISSIONER GOODWIN: Thank you, Commissioner Sims, and good morning. I would also like to extend my appreciation to everyone for joining us here this morning and thank our witnesses for the time and effort that they have put into their testimony.

Efforts to harden the Chinese economy are another aspect of China's preparations for a potential conflict or crisis with the United States. Stockpiles and dramatic shifts in production are longstanding historic indicators of significant action. Indeed, during the Cold War, the U.S. intelligence community maintained a watch committee to provide early warning of hostile actions by the Soviet Union.

It did so, in part, through scrutiny of a range of economic indicators. The committee tracked the buildup of strategic reserves and monitored it for abnormal activity. Today, we ask, what economic indicators should a similarly interested China watcher track? Our hearing will focus on three primary economic dimensions: food, energy, and finance.

Limited arable land, stagnant productivity growth, and environmental challenges have constrained Beijing's capacity to feed its 1.4 billion people. This runs counter to China's decades long efforts to achieve self-sufficiency in staple foods.

Chinese energy consumption faces similar challenges. China is dependent on imports for coal, natural gas, and oil, which together account for approximately 80 percent of its primary energy usage.

For policymakers in Beijing, reliance on foreign oil is particularly alarming. Its centrality to industry and combat systems means a prolonged disruption to suppliers could be disastrous.

In response, Chinese officials have embarked on a series of initiatives to stockpile food and energy. Coupled with efforts to reduce demand, China continues to strive for self-reliance. Although they are unlikely to achieve this in the short term, shifts in China's stockpiles and resource use can be an important signal of an impending crisis.

Unlike the Soviet Union, Chinese trade and finance is also deeply dependent on the global financial system, and particularly, the U.S. dollar. Decades of intense globalization have linked the Chinese economy with global markets and finance. This has been central to China's rapid economic growth, but has also created deep dependencies, which in a crisis scenario could become vulnerabilities.

With our witnesses today, we will explore these contradictions.

Again, I want to thank everyone for joining us to discuss these important issues, and we look forward to hearing from each of you.

Before I turn it back over to Commissioner Sims to introduce our first panel, I want to remind everyone in our audience that witness testimonies and the hearing transcript will be available on our website at [uscc.gov](http://uscc.gov).

Thank you.

**PREPARED STATEMENT OF COMMISSIONER CARTE P. GOODWIN  
HEARING CO-CHAIR**



## **Hearing: China's Stockpiling and Mobilization Measures for Competition and Conflict**

**June 13, 2024**

### **Opening Statement of Commissioner Carte Goodwin**

Thank you, Commissioner Sims. Good morning. I would like to thank everyone for joining us and thank our witnesses for the time and effort they have put into their testimonies.

Efforts to harden the Chinese economy are another aspect of China's preparations for a potential conflict or crisis with the United States. Stockpiles and dramatic shifts in production are longstanding, historic indicators of significant action. Indeed, during the Cold War the United States Intelligence Community maintained a "Watch Committee" to provide an early warning of hostile actions by the Soviet Union. It did so, in part, through the unrelenting scrutiny of a range of economic indicators. The committee tracked the build-up of the Soviet State Strategic Reserves and monitored it for abnormal activity. Today we ask what economic indicators should a similarly interested China watcher track?

Our hearing will focus on three primary economic dimensions: food, energy, and finance. Limited arable land, stagnant productivity growth, and environmental problems have constrained Beijing's capacity to feed its 1.4 billion people. This runs counter to China's decades-long efforts to achieve self-sufficiency in staple foods.

Chinese energy consumption faces similar constraints. China is dependent on imports for coal, natural gas, and oil, which together account for approximately 80% of its primary energy usage. For policy makers in Beijing, reliance on foreign oil is particularly alarming. Its centrality to industry and combat systems mean a prolonged disruption to suppliers could be disastrous.

In response, Chinese officials have embarked on a series of initiatives to stockpile food and energy. Coupled with efforts to reduce demand, China continues to strive for self-reliance. Although they are unlikely to achieve this in the short term, shifts in China's stockpiles and resource use can be an important signal of an impending crisis.

Unlike the Soviet Union, Chinese trade and finance is also deeply dependent on the global financial system, and particularly the U.S. dollar. Decades of intense globalization have linked the Chinese economy with global markets and finance. This has been central to China's rapid economic growth. But, it has also created deep dependencies, which, in a crisis scenario, could become vulnerabilities. With our expert witnesses, we will explore these contradictions.

Thank you for joining us to discuss these important issues. We look forward to hearing from each of you.

Before we introduce our first panel, I would like to remind our audience that witness testimonies and the hearing transcript is available on our website, [uscc.gov](https://uscc.gov).

## **PANEL I INTRODUCTION BY COMMISSIONER CLIFF SIMS**

COMMISSIONER SIMS: All right. Our first panel will examine the CCP's efforts to prepare its society for intensified competition with the United States.

We'll start with Manoj Kewalramani, a China studies fellow and Chairperson of the Indo-Pacific Studies Programme at the Takshashila Institute. Mr. Kewalramani will discuss the senior leadership's rhetoric about the challenges they believe China faces and the potential use of propaganda campaigns to create a rally around the flag effect in the lead up to war.

Next, we'll have Katja Drinhausen, head of the Chinese Politics and Society Program at Mercator Institute of China Studies. Ms. Drinhausen will address the ideological framework underlying the increased focus on national security, the institutional and legal reforms which put the framework into practice, and its impacts on Chinese society.

Finally, we will hear from Dr. Lauri Paltemaa, a Professor of East Asian Contemporary History and Politics, and Director of the Center for East Asian Studies at the University of Turku, Finland. Dr. Paltemaa will address the mechanism of Chinese emergency response systems and the systems' performance in crises.

Thank you all very much for your testimony. The Commission is looking forward to your remarks.

I ask that everyone keep your opening statements to seven minutes.

And with that, Mr. Kewalramani, we'll start with you.

**OPENING STATEMENT OF MANOJ KEWALRAMANI, CHAIR OF THE  
INDO-PACIFIC RESEARCH PROGRAMME AND CHINA STUDIES FELLOW AT  
THE TAKSHASHILA INSTITUTION**

MR. KEWALRAMANI: Thank you so much, Commissioner Sims.

Hearing co-chairs Commissioner Sims and Commissioner Goodwin, thank you so much for the opportunity to address the Commission today. It's indeed a pleasure and a privilege to do so.

My written testimony provides a detailed assessment on the questions related to the PRC's perspectives on security, competition, and conflict. I will, however, limit my remarks to four specific points.

First, I contend that there has been a significant division in the Communist Party's leadership's strategic assessment of its security environment over the past five years. This is evident through the remarks of General Secretary Xi Jinping at the 19th Party Congress of 2017 and the 20th Party Congress of 2022.

In 2017, Xi had stressed that, despite profound and complex changes taking place in the world, China was still in an important period of strategic opportunity for development. The prospects, and I quote, "are bright, but the challenges are severe." Unquote.

In contrast, in 2022, he warned of "high winds, choppy waters, and even dangerous storms," arguing that China had entered a period of development in which strategic opportunities, risks, and challenges are concurrent and uncertainties and unforeseen factors were rising.

This reassessment is, indeed, reflective of mounting domestic challenges related to party governance and legitimacy, economic policy, and adapting to technological changes, as it is with the aggravation of nontraditional security threats like food security, energy security, and climate change.

However, my view is that this revision in the strategic assessment is predominantly a product of the PRC's rapidly worsening external environment, particularly its deepening competition with the United States. The Chinese leadership increasingly appears to believe that the U.S. is pursuing a policy of "all around containment," a threat that is multifaceted and long term in nature.

Second, the PRC's response to these challenges has resulted in increased securitization of policy across a range of domains. This is encapsulated in the comprehensive or overall national security concept.

The implications of this concept are evident in legislative changes enacted in the past few years. Every endeavor of economic and human engagement has, therefore, been passed through this lens of national security.

That said, Xi Jinping's demands from officials' encounters have often been contradictory. While he has done national security as the bedrock of national rejuvenation, he has also called on officials to achieve a dynamic balance between development and security when it comes to policymaking.

A product of this often has been policy flux, mixed messaging, and poor implementation, which have had adverse effects for people and businesses. The dichotomy between pursuing self-reliance and a policy of opening up to attract foreign capital, technology, and talent is an example of this sort of contradictory and confused situation.

The third point that I'd like to make is that intensified security challenges have not necessarily meant that the PRC is simply approaching choices from a defensive position. At one level, the leadership has been calling on officials to develop "bottom line thinking" or prepare for worst case scenarios.

This implies determining certain minimum standards, minimum conditions of thresholds that must not be breached or must not be compromised in the course of a particular event taking place. Doing so establishes red lines and helps people prepare for predictable risks and challenges.

This approach is complemented by what Commissioner Sims said and what Xi calls "extreme case scenario thinking." This encompasses contemplating extreme unforeseeable scenarios in order to prepare for them. Chinese writings on this concept underscore its utility to think through the outcomes of proactive or assertive policy measures that China might take, particularly in connection with its core interests, such as Taiwan or maritime and territorial disputes, or even key development issues.

The final point that I'd like to make is that, under the comprehensive national security concept, the Party has identified the people as the basic force of national security. Achieving the goal of national rejuvenation, therefore, it is argued, demands a whole of society effort and significant sacrifices for, again to quote Xi, this goal "will not be achieved by simply beating drums and gongs."

Consequently, there has been a tremendous effort to mobilize all segments of society from scientists and academics to private businesses and even ordinary citizens. To do so, the Party has resorted to reinforcement of Marxism and nationalism and emphasis on patriotism and strengthening ideological and security education.

The adoption of concepts such as mass line, the "Fengqiao experience," and policies regarding patriotic education, national security education, and national defense education are indicative of this.

At the heart of all of this is an effort to strengthen Party control over all aspects of society in order to boost regime security and guide China towards a future that is determined by the Party leadership, in particular, by Xi Jinping.

It assists Xi Jinping in his continued control of the Party if he's able to maintain his legitimacy of rule by connecting directly with the masses and mobilizing the masses directly, particularly since his anti-corruption campaign has alienated significant number of the elite.

Of course, the narrative of a hostile United States committed to denying China its right to development is extremely useful to this end. I would, therefore, like to make the following two recommendations for the Commission's consideration:

First, Congress should support sustained and systematic studies into the PRC's changing red lines, particularly in the context of Taiwan and its territories and maritime disputes.

It should also support the establishment of dialogs with allies and partners on the PRC's escalatory and conflict management behaviors. Such a process would facilitate a more nuanced understanding of the PRC's evolving and evidently more risk tolerant approach to the use of force. It should also help identify effective mitigation strategies that others have adopted.

Second, deeper people to people exchanges are an asset for the United States in its strategic competition with the PRC. Policies and actions that alienate the Chinese populace only serve to strength the Communist Party's domestic narrative and legitimacy. U.S. policy must, therefore, aim to facilitate student exchanges, quality interactions, and tourism.

With that, I'd like to conclude my remarks. Thank you so much.

COMMISSIONER SIMS: Thank you.  
Next, we'll have Ms. Drinhausen.



**PREPARED STATEMENT OF MANOJ KEWALRAMANI, CHAIR OF THE  
INDO-PACIFIC RESEARCH PROGRAMME AND CHINA STUDIES FELLOW AT  
THE TAKSHASHILA INSTITUTION**

**TESTIMONY BEFORE THE U.S.-CHINA ECONOMIC AND SECURITY REVIEW  
COMMISSION**

Hearing on: "China's Stockpiling and Mobilization Measures for Competition and  
Conflict"

Manoj Kewalramani

Fellow - China Studies & Chair Indo - Pacific Studies Programme,  
The Takshashila Institution

June 13, 2024

Commissioner Cliff Sims, Vice Chair Reva Price, and members of the Commission and staff, thank you very much for your invitation to testify today. It is indeed a pleasure and privilege to present my views before the Commission. My testimony addresses specific questions related to the People's Republic of China's (PRC) perspectives on security, competition and conflict.

***1. Describe the CCP senior leadership's perception of the domestic and foreign security risks and challenges that China is facing. Has there been a significant change in CCP perception of the security environment in recent years? What are the internal and external events which precipitated this changed perception?***

An assessment of speeches by senior leaders, official media discourse, analytical writing and government policies indicate a significant revision in the Chinese leadership's view on internal and external security risks and challenges under Xi Jinping. Since the 2008 financial crisis, Chinese scholars and leadership have argued that great changes have been afoot in the international order. This idea has been encapsulated in the phrase "profound changes unseen in a century" (百年未有的大变局).

Soon after Xi Jinping took charge as General Secretary, this idea became embedded in the Party's official discourse. For instance, barely two months after taking over as Foreign Minister in March 2013, Wang Yi told a forum at Tsinghua University that the world was "undergoing changes as never seen before."<sup>1</sup> This, he concluded, demanded that China engage in "major-country diplomacy with Chinese characteristics." A year later, at the Central Conference on Work Relating to Foreign Affairs in November 2014, Xi Jinping told the gathered officials that China's "relations with the rest of the world are going through profound changes."<sup>2</sup> He assessed that "all factors considered, we can see that China is still in an important period of strategic opportunity for its development endeavor in

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<sup>1</sup> "Exploring the Path of Major-Country Diplomacy With Chinese Characteristics," Ministry of Foreign Affairs of the People's Republic of China, 27 June 2013,

[https://www.fmprc.gov.cn/mfa\\_eng/wjb\\_663304/wjbz\\_663308/2461\\_663310/201306/t20130627\\_468425.html](https://www.fmprc.gov.cn/mfa_eng/wjb_663304/wjbz_663308/2461_663310/201306/t20130627_468425.html).

<sup>2</sup> "The Central Conference on Work Relating to Foreign Affairs," Ministry of Foreign Affairs of the People's Republic of China, November 29, 2014,

[https://www.fmprc.gov.cn/eng/wjb\\_663304/zzjg\\_663340/xws\\_665282/xgxw\\_665284/201412/t20141201\\_600270.html](https://www.fmprc.gov.cn/eng/wjb_663304/zzjg_663340/xws_665282/xgxw_665284/201412/t20141201_600270.html)

which much can be accomplished. Our biggest opportunity lies in China's steady development and the growth in its strength. On the other hand, we should be mindful of various risks and challenges and skillfully defuse potential crises and turn them into opportunities for China's development."<sup>3</sup>

This fairly optimistic viewpoint was reiterated at the 19th Party Congress. In his speech to the quinquennial meeting in 2017, Xi offered the following strategic assessment:

"Both China and the world are in the midst of profound and complex changes. China is still in an important period of strategic opportunity for development; the prospects are bright but the challenges are severe. All comrades must aim high and look far, be alert to dangers even in times of calm, have the courage to pursue reform and break new ground, and never become hardened to change or inactive."<sup>4</sup>

It was at this meeting that Xi also announced a historical shift in the principal contradiction facing Chinese society, from one between "the ever-growing material and cultural needs of the people and backward social production" to one between "unbalanced and inadequate development and the people's ever-growing needs for a better life." This underscored the need for fundamental changes in economic policy, to achieve higher-quality growth as opposed to rapid growth. Such a shift requires structural alterations to China's political economy.

Subsequent official discourse has argued that China continues to suffer from inadequate development.<sup>5</sup> There is a need for reform to break through market barriers, monopolies and local protectionism. The country's innovation capability does not meet the requirements of high-quality development. Agricultural foundation and capacity does not suffice the objectives of food security. Environmental protection still faces significant limitations. Finally, the gap between urban and rural development, income inequality, and issues of local government debt, property market stability, and employment and livelihood present political, social and economic security challenges. Moreover, while changes need to be made with determination, these need to be well-calibrated and will take a long time to achieve.

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<sup>3</sup> "The Central Conference on Work Relating to Foreign Affairs," Ministry of Foreign Affairs of the People's Republic of China, November 29, 2014, [https://www.fmprc.gov.cn/eng/wjb\\_663304/zjzg\\_663340/xws\\_665282/xgxw\\_665284/201412/t20141201\\_600270.html](https://www.fmprc.gov.cn/eng/wjb_663304/zjzg_663340/xws_665282/xgxw_665284/201412/t20141201_600270.html)

<sup>4</sup> Xi Jinping, "Secure a Decisive Victory in Building a Moderately Prosperous Society in All Respects and Strive for the Great Success of Socialism with Chinese Characteristics for a New Era" (speech, 19th National Congress of the Communist Party of China, Beijing, October 18, 2017), China Daily, [https://www.chinadaily.com.cn/china/19thcpnationalcongress/2017-11/04/content\\_34115212.htm](https://www.chinadaily.com.cn/china/19thcpnationalcongress/2017-11/04/content_34115212.htm)

<sup>5</sup> Ren Lixuan, "Deeply implement the new development concept (deeply study and implement Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era)," People's Daily, May 11, 2021 [http://paper.people.com.cn/rmrb/html/2021-05/11/nw.D110000renmrb\\_20210511\\_1-15.htm](http://paper.people.com.cn/rmrb/html/2021-05/11/nw.D110000renmrb_20210511_1-15.htm); Xi Jinping, "The whole party must fully, accurately and comprehensively implement the new development concept, Quishi, August 15, 2022, [http://www.qstheory.cn/dukan/qs/2022-08/15/c\\_1128913644.htm](http://www.qstheory.cn/dukan/qs/2022-08/15/c_1128913644.htm)

In Xi's own words, "the rejuvenation of the Chinese nation will be no easy task. It will not be achieved by simply beating drums and gongs. We cannot overcome all the risks and challenges we face on the way forward without a true fighting spirit."<sup>6</sup> Consequently, the leadership has argued that there must be greater central-local and inter-departmental coordination to ensure that policies do not pull in different directions, owing to regional and/ or bureaucratic imperatives. The needs of reform, therefore, are such that there must be greater central planning, centralization of authority, and control over implementation, "mainstream public opinion" and private enterprises. Aligning one's actions to central goals and plans has since been elevated as an indication of political discipline. Unfortunately, for Beijing, doing so has evidently inhibited local drive, creativity and innovation, while also fuelling youth discontent. Consequently, there has been greater friction within the Party system. This is evident in the continuing ferocity of the anti-corruption campaign. It is also reflected in the call to "attach great importance" ideological and political work related to the youth<sup>7</sup> and the frustration repeatedly expressed by top leaders, complaining about cadres' political sensitivity and acuity, lack of purpose and lack of spirit of taking responsibility and struggle skills.<sup>8</sup>

Five years later, in October 2022, at the 20th Party Congress, Xi's broad strategic assessment was significantly revised. He argued that China had "entered a period of development in which strategic opportunities, risks, and challenges are concurrent and uncertainties and unforeseen factors are rising. Various 'black swan' and 'gray rhino' events may occur at any time. We must therefore be more mindful of potential dangers, be prepared to deal with worst-case scenarios, and be ready to withstand high winds, choppy waters, and even dangerous storms."

While domestic challenges persist, this revision is predominantly a product of a rapidly worsening external environment. The Communist Party increasingly appears to believe that the challenges that it faces are not momentary in nature. For instance, in a speech to provincial and ministerial-level officials in July 2022, Xi Jinping warned that party members "must stay vigilant against the long-term nature of the tests confronting the

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<sup>6</sup> "Ensure the Two Upholds in Central Party and Government Departments," Quishi, July 09, 2019, [http://en.qstheory.cn/2022-01/21/c\\_696676.htm](http://en.qstheory.cn/2022-01/21/c_696676.htm). Also see: "Deeply understand the decisive significance of the 'two establishments' (deeply study and implement Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era)," People's Daily, September 20, 2022, [http://paper.people.com.cn/rmrb/html/2022-09/20/nw.D110000renmrb\\_20220920\\_1-11.htm](http://paper.people.com.cn/rmrb/html/2022-09/20/nw.D110000renmrb_20220920_1-11.htm).

<sup>7</sup> "Xi Jinping: Beware of 'black swans' and guard against 'gray rhinos'", People's Daily, January 22, 2019, [http://paper.people.com.cn/rmrbhwb/html/2019-01/22/content\\_1905265.htm](http://paper.people.com.cn/rmrbhwb/html/2019-01/22/content_1905265.htm)

<sup>8</sup> Chen Xi, "Building a high-quality cadre team capable of shouldering the heavy responsibility of national rejuvenation (earnestly studying, publicizing and implementing the spirit of the 20th CPC National Congress)," People's Daily, November 23, 2022, [http://paper.people.com.cn/rmrb/html/2022-11/23/nw.D110000renmrb\\_20221123\\_1-06.htm](http://paper.people.com.cn/rmrb/html/2022-11/23/nw.D110000renmrb_20221123_1-06.htm)

<sup>9</sup> Xi Jinping, "Hold High the Great Banner of Socialism with Chinese Characteristics and Strive in Unity to Build a Modern Socialist Country in All Respects" (speech: 20th National Congress of CPC, Beijing, October 18, 2022) Nikkei Asia, <https://asia.nikkei.com/Politics/China-s-party-congress/Transcript-President-Xi-Jinping-s-report-to-China-s-2022-party-congress>.

Party as they relate to governance, reform and opening up, the market economy, and the external environment.”<sup>10</sup> He also cautioned them “against the dangers of losing drive, lacking competence, becoming disengaged from the people, and succumbing to inaction and corruption.”

Likewise, at the 2023 Central Foreign Affairs Conference, Xi reiterated that the world was in a period of “turbulence and transformation,” and called on officials to demonstrate “fighting spirit” and “reject all acts of power politics and bullying.”<sup>11</sup>

A few months after the 20th Party Congress, during the Two Sessions in March 2023, Xi was blunt in stating that China’s external environment had become increasingly uncertain and unpredictable. He accused the US of pursuing “all-round containment and suppression of China.”<sup>12</sup> This was a rare direct charge by Xi. Amid this challenge, he called to “maintain resolve” and “optimise and adjust tactics in a timely manner while maintaining strategic focus.”<sup>13</sup>

Following this, in May 2023, the first meeting of the 20th Central National Security Commission (CNSC) concurred with the earlier grim assessment. The meeting called for adherence to “bottom-line thinking” and “extreme-case thinking” (底线思维和极限思维) in order to be prepared to withstand “high winds, choppy waters, and even dangerous storms.”<sup>14</sup> This, in itself, is an indicator of the leadership’s belief in the long-term and protracted nature of the challenges that China faces. In addition, the CNSC meeting demanded measures to support the building of the “new development pattern with a new security pattern” and shape a favourable external security environment.

### ***Conceptualising National Security:***

Official discourse contends that in current times, “the connotation and scope of national security are richer and broader than ever before...The key to the overall national security concept is the term ‘overall’, highlighting the concept of ‘big security’ (大安全), which includes several domains such as politics, military, territory, economy, culture, society, technology, cyberspace, ecology, resources, nuclear security, finance, biology, space, deep sea, polar regions, artificial

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<sup>10</sup> “Xi stresses efforts to write new chapter in building modern socialist country in all respects,” Xinhua, July 28, 2022, <https://english.news.cn/20220728/8ab59143f6c142858453e9a7c55dc74d/c.html>

<sup>11</sup> “Central conference on work relating to foreign affairs held in Beijing,” Xinhua, December 28, 2023, <https://english.news.cn/20231228/903c6a4b54334e66967d968b1495277c/c.html>

<sup>12</sup> “Correctly guide the healthy and high-quality development of the private economy,” *People’s Daily*, March 07, 2023, [http://paper.people.com.cn/rmrb/html/2023-03/07/nw.D110000renmrb\\_20230307\\_1-01.htm](http://paper.people.com.cn/rmrb/html/2023-03/07/nw.D110000renmrb_20230307_1-01.htm)

<sup>13</sup> Ibid

<sup>14</sup> “Xi Jinping presided over the first meeting of the 20th Central National Security Commission and stressed Accelerate the modernization of national security system and capabilities to safeguard the new development pattern with a new security pattern,” *People’s Daily*, May 31, 2023, [http://paper.people.com.cn/rmrb/html/2023-05/31/nw.D110000renmrb\\_20230531\\_1-01.htm](http://paper.people.com.cn/rmrb/html/2023-05/31/nw.D110000renmrb_20230531_1-01.htm)

intelligence, and overseas interests, and continues to expand with the development of society.”<sup>15</sup> In other words, security is increasingly becoming a dominant consideration for policy-making across all domains.

This idea of “big security” is encapsulated in the Comprehensive National Security Concept. First articulated in 2014, this concept has since evolved to become an all-encompassing security governance framework. In 2017, the Comprehensive National Security Concept was incorporated into the basic strategy for upholding and developing socialism with Chinese characteristics in the new era.<sup>16</sup> The concept has also formed the basis for the creation of a National Security Strategy (2021–2025).

In late 2020, the Party outlined 10 requirements for pursuing a comprehensive approach to national security.<sup>17</sup> This emphasised the need to ensure the “absolute leadership of the Party” over national security work. It also called for recognising the “organic unity of political security, people’s security, and the supremacy of national interests”. Under this concept, political security has been defined as the fundamental task, economic security as the foundation, military, technological, cultural, and social security as important pillars, and international security as a support.<sup>18</sup> Chen Yixin, who heads the Ministry of State Security, has since described political security as “the lifeline of national security”, entailing the “security of the state’s power, system, and ideology.”<sup>19</sup> Meanwhile, the people have been termed “the basic force of national security.”<sup>20</sup> This conceptualisation of people’s security has implications for grassroots governance, dispute management, national security propaganda and education, and anti-subversion and anti-espionage work, with the aims being to mobilise people, contain threats and generate regime legitimacy.

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<sup>15</sup> “A strong foundation for a great cause for generations to come (Questions and answers on the study of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era (41)),” People’s Daily, September 13, 2021, [http://paper.people.com.cn/rmrb/html/2021-09/13/nw.D110000renmrb\\_20210913\\_2-05.htm](http://paper.people.com.cn/rmrb/html/2021-09/13/nw.D110000renmrb_20210913_2-05.htm)

<sup>16</sup> “Fully Implement the Overall National Security Outlook,” Center for Strategic and International Studies (*Interpret: China Series*), <https://interpret.csis.org/translations/fully-implement-the-overall-national-security-outlook/>

<sup>17</sup> “Xi Jinping emphasized at the 26th Collective Study Session of the Political Bureau of the CPC Central Committee that we must adhere to systematic thinking and build a comprehensive security framework to provide strong guarantees for building a modern socialist country,” CCTV 13, December 12, 2020, <https://tv.cctv.com/2020/12/12/VIDESfzRHZ8Kluo3GxMPnMzp201212.shtml?spm=C31267.PFsKSaKh6QQC.S71105.3>

<sup>18</sup> Xi Jinping, “Hold High the Great Banner of Socialism with Chinese Characteristics and Strive in Unity to Build a Modern Socialist Country in All Respects” (speech: 20th National Congress of CPC, Beijing, October 18, 2022) Nikkei Asia, <https://asia.nikkei.com/Politics/China-s-party-congress/Transcript-President-Xi-Jinping-s-report-to-China-s-2022-party-congress>.

<sup>19</sup> Chen Yixin, “Fully Implement the Overall National Security Outlook,” CSIS Interpret, trans. , April 15, 2024, <https://interpret.csis.org/translations/fully-implement-the-overall-national-security-outlook/>

<sup>20</sup> “Xi Jinping emphasized at the 26th Collective Study Session of the Political Bureau of the CPC Central Committee that we must adhere to systematic thinking and build a comprehensive security framework to provide strong guarantees for building a modern socialist country,” CCTV 13, December 12, 2020, <https://tv.cctv.com/2020/12/12/VIDESfzRHZ8Kluo3GxMPnMzp201212.shtml?spm=C31267.PFsKSaKh6QQC.S71105.3>

Another key conclusion arrived at was the need to achieve “a dynamic balance between development and security” while giving greater consideration to security factors when it comes to development issues.<sup>21</sup> In his speech at the 20th Party Congress, Xi defined national security as “the bedrock of national rejuvenation” and social stability as “a prerequisite for building a strong and prosperous China.”<sup>22</sup> This, however, does not clarify how one must prioritise security without strangling development. The past few years have shown that this remains a fundamental tension within the Chinese policy ecosystem. In fact, if one considers the discourse around de-risking among the G7 countries and others like Australia and India, this doesn’t appear to be a challenge that is entirely unique to China.

This is not to say that there aren’t certain peculiarities of the Chinese Party-state system that aggravate this tension. In the top-down Party-state system, actors across different levels of the Party-state system interpret the leader’s directives according to their specific contexts, and bureaucratic and political objectives. Therefore, officials across central ministries, provincial leaderships and at local levels have interpreted the Comprehensive National Security Concept as it applies to them. They then engage in making difficult decisions on policy prioritisation. However, given the degree of centralisation under Xi, interpretation and prioritisation have become politically fraught tasks. Consequently, in recent times, there has been significant flux in policymaking. China’s 2021 electricity crisis is an example of this.<sup>23</sup>

Finally, perhaps the most significant implication of the Comprehensive National Security Concept has been seen in Chinese legislation. Over the past few years, there have been significant legislative changes, with security becoming the driver for revising old laws and drafting new ones. Since the 19th Party Congress, legislative changes have covered a range of areas, such as economic security, resource security, nuclear security, ecological security, information security, ideological security and the protection of overseas

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<sup>21</sup> Ibid

<sup>22</sup> Xi Jinping, “Hold High the Great Banner of Socialism with Chinese Characteristics and Strive in Unity to Build a Modern Socialist Country in All Respects” (speech: 20th National Congress of CPC, Beijing, October 18, 2022) Nikkei Asia, <https://asia.nikkei.com/Politics/China-s-party-congress/Transcript-President-Xi-Jinping-s-report-to-China-s-2022-party-congress>.

<sup>23</sup> See: “China’s Energy Plans and Practices,” *Report from the ‘Hearing on ‘China’s Energy Plans and Practices’*, section 2, Chapter 3, US-China economic and Security Review Commission, November 2022, [https://www.uscc.gov/sites/default/files/2022-11/Chapter\\_2\\_Section\\_3--Chinas\\_Energy\\_Plans\\_and\\_Practices.pdf](https://www.uscc.gov/sites/default/files/2022-11/Chapter_2_Section_3--Chinas_Energy_Plans_and_Practices.pdf); also see: Vincent Ni et al., “Low-carbon ambitions must not interfere with ‘normal life’, says Xi Jinping,” *The Guardian*, 26 January 2022, <https://www.theguardian.com/world/2022/jan/26/xi-jinping-warns-chinas-low-carbon-ambitions-must-not-interfere-with-normal-life>



interests.<sup>24</sup> The legislative agenda outlined at the National People's Congress session in 2024 indicates that this trend is likely to persist.<sup>25</sup>

### ***What's Driving This Thinking?:***

From Beijing's perspective, the world today is "far from being tranquil".<sup>26</sup> Rather, a new era of turbulence and volatility is unfolding. This "great transformation" engenders a "great state of disorder."<sup>27</sup> What this implies is that the international balance of power is undergoing "unprecedented" and "revolutionary changes."<sup>28</sup>

These are reflected in:

- the rise of developing countries and emerging economies amid intensifying geopolitical competition with the West;
- shifts in patterns of globalisation and the emergence of protectionism, populism and unilateralism;
- the rapid developments taking place in scientific and technological domains;
- the emergence of a cascade of conflicts such as Russian invasion of Ukraine and the war in Gaza and the potential for spillovers impacting China's overseas interests; and
- the aggravation of non-traditional threats like terrorism, food, climate and energy security, and biosecurity following the pandemic.

These are increasingly viewed as long-term challenges, which require concerted policy actions. Within this backdrop, Beijing appears to believe that while the West continues to enjoy relative superiority, the gravity of geopolitical and geoeconomic power is shifting toward the East.<sup>29</sup>

Amid all this, the Chinese leadership contends that four critical deficits have emerged, which infuse greater instability. Xi Jinping has repeatedly characterised the world as being plagued by the deficits of development, peace, governance and trust. In order to

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<sup>24</sup> Li Zhanshu, "REPORT ON THE WORK OF THE STANDING COMMITTEE OF THE NATIONAL PEOPLE'S CONGRESS," Standing Committee of the National People's Congress, 7 March 2023, [https://npcobserver.com/wp-content/uploads/2023/03/NPCSC-2023-Work-Report\\_En.pdf](https://npcobserver.com/wp-content/uploads/2023/03/NPCSC-2023-Work-Report_En.pdf)

<sup>25</sup> Zhao Leji, "REPORT ON THE WORK OF THE STANDING COMMITTEE OF THE NATIONAL PEOPLE'S CONGRESS," Standing Committee of the National People's Congress, 8 March 2024, [https://npcobserver.com/wp-content/uploads/2024/03/2024-NPCSC-Work-Report\\_ZH.pdf](https://npcobserver.com/wp-content/uploads/2024/03/2024-NPCSC-Work-Report_ZH.pdf)

<sup>26</sup> Xi Jinping, "Address to the Davos Agenda (speech: World Economic Forum, Davos, January 17, 2022)," WEF, <https://www.weforum.org/agenda/2022/01/address-chinese-president-xi-jinping-2022-world-economic-forum-virtual-session/>

<sup>27</sup> "□国复兴开□□□□国□现□□□对□①)," *People's Daily*, 13 September 2023, [http://paper.people.com.cn/rmrb/html/2023-09/13/nw.D110000renmrb\\_20230913\\_1-07.htm](http://paper.people.com.cn/rmrb/html/2023-09/13/nw.D110000renmrb_20230913_1-07.htm).

<sup>28</sup> "□间□□开□□□习□□□时□□国□□□会□义□□学习问□④)," *People's Daily*, 22 July 2021, [http://paper.people.com.cn/rmrb/html/2021-07/22/nw.D110000renmrb\\_20210722\\_1-05.htm](http://paper.people.com.cn/rmrb/html/2021-07/22/nw.D110000renmrb_20210722_1-05.htm).

<sup>29</sup> Chris Buckley, "'The East Is Rising': Xi Maps Out China's Post-Covid Ascent," *New York Times*, 3 March 2021, <https://www.nytimes.com/2021/03/03/world/asia/xi-china-congress.html>.



address these, he has called for reforming global governance to reflect “fairness and reasonableness”, “consultation and understanding”, “joint efforts and mutual assistance” and “mutual benefit and win-win cooperation.”<sup>30</sup> This proactive intervention, from Beijing’s perspective, is necessitated because China’s future development and security interests are dependent on its external environment.

In fact, there appears to be a persistent debate within the Chinese policy-making ecosystem around balancing the desire to mitigate vulnerabilities and potential threats of containment through self-reliance, while continuing to expand external economic and security engagements. On the one hand, amid an increasingly hostile external environment, there have been calls to pursue self-reliance as a strategic objective. Yet, it is also evident that China’s prosperity and future growth are linked to deeper economic and political engagement with the outside world. This dilemma was expressed by Xi Jinping in his address at the Central Party school in February 2023, where he argued that pursuing Chinese-style modernisation required the correct handling of “a series of important relations, such as top-level design and practical exploration, strategy and tactics, integrity and innovation, efficiency and fairness, vitality and order, self-reliance and self-improvement and opening up.”<sup>31</sup>

Therefore, considering the “complex and severe” nature of the external environment that necessitates pursuing a delicate balancing act, “struggle” is expected to be the key theme for China in the new era.<sup>32</sup>

The objective of this struggle is to leverage systemic strengths and opportunities while overcoming weaknesses and countering the threats that China faces. Domestically, risks and challenges persist in the fields of politics, ideology, economy, science and core technologies, social governance, and party building.<sup>33</sup> These were encapsulated in Xi’s speech at the 20<sup>th</sup> Party Congress, which drew a “grand blueprint” for addressing them.<sup>34</sup> This blueprint has essentially laid greater emphasis on central planning and control, strengthened ideological conformity, and narrowing of individual freedoms and private sector autonomy.

Externally, the belief is that the threats that China faces are structural and long-term in nature. Chief among them is the intensifying systemic competition with the US. From Beijing’s perspective, the principal contradiction in the world today is the “struggle

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<sup>30</sup> “Xi outlines 4-pronged proposal on global governance,” *Xinhua*, 27 March 2019, [http://www.xinhuanet.com/english/europe/2019-03/27/c\\_137925702.htm](http://www.xinhuanet.com/english/europe/2019-03/27/c_137925702.htm).

<sup>31</sup> “□□□□□□□□进□国□现□□,” *People’s Daily*, 8 February 2023, [http://paper.people.com.cn/rmrb/html/2023-02/08/nw.D110000renmrb\\_20230208\\_1-01.htm](http://paper.people.com.cn/rmrb/html/2023-02/08/nw.D110000renmrb_20230208_1-01.htm).

<sup>32</sup> “□□□□□□□□间□习□□□□时□□国□□□□会□义□□学习问□(12),” *People’s Daily*, 3 August 2021, [http://paper.people.com.cn/rmrb/html/2021-08/03/nw.D110000renmrb\\_20210803\\_1-05.htm](http://paper.people.com.cn/rmrb/html/2021-08/03/nw.D110000renmrb_20210803_1-05.htm).

<sup>33</sup> Ibid

<sup>34</sup> “□国复兴开□□□□国□现□□□□对□①),” *People’s Daily*, 13 September 2023, [http://paper.people.com.cn/rmrb/html/2023-09/13/nw.D110000renmrb\\_20230913\\_1-07.htm](http://paper.people.com.cn/rmrb/html/2023-09/13/nw.D110000renmrb_20230913_1-07.htm).

between development and containment of development, and between global justice and power politics.”<sup>35</sup> In other words, Beijing believes that Washington is pursuing a strategy of containment. In fact, over the past decade, Beijing has grown increasingly suspicious of American intentions. It believes that the real purpose behind the US-led alliance system, its crafting of the Indo-Pacific as a strategic construct, the expansion of the scope of national security to cover economic and technological domains, and advocacy of democracy, freedom, human rights and universal values is to perpetuate American hegemony, while stymying China’s development and global influence, with the end goal being to overthrow China’s leadership and its socialist system.<sup>36</sup>

This, from the Chinese perspective, is evident in US assertion in the South China Sea, its engagement with Taiwan, its politicisation and securitisation of economic and trade issues, and efforts to coordinate policy positions with allies and partners. Chinese officials have repeatedly criticised American discourse on “rules-based order” and US alliances and partnerships as “sinister” efforts to create “small circles/ exclusive cliques” with the aim to “disrupt regional peace and stability.”<sup>37</sup> This has become routine rhetoric in Chinese engagement with foreign diplomats and leaders. The Chinese leadership appears concerned that American policies are potentially shaping the incentives of middle powers and developing countries, who in turn would be forced to recalibrate their ties with China. This would undermine China’s development and security environment, and potentially result in regime instability for the Communist Party.<sup>38</sup>

Consequently, there has been a strong emphasis on ideological conformity at home along with increased securitisation of economic and trade policies and expanded Party-state control. In addition, Chinese foreign policy has become far more proactive in expanding external engagement and using a toolkit of carrots and sticks to shape the incentives and perceptions of other actors. From the Chinese leadership’s perspective, it is not merely the responsibility of a major power but also a political imperative to offer Chinese solutions and propositions to address the deficits facing the world and shape a favourable external environment. The concept of a community of shared future for mankind,

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<sup>35</sup> “□□□□ 瞩□□□ 谊□□□□□□□□,” *People’s Daily*, 23 March 2023, [http://paper.people.com.cn/rmrb/html/2023-03/23/nw.D110000renmrb\\_20230323\\_4-01.htm](http://paper.people.com.cn/rmrb/html/2023-03/23/nw.D110000renmrb_20230323_4-01.htm).

<sup>36</sup> ““□□□□” 谱华□□ 习□□□ 时□□ 国□□□ 会□ 义□□ 学习问□□ 34)),” *People’s Daily*, 2 September 2021, [http://paper.people.com.cn/rmrb/html/2021-09/02/nw.D110000renmrb\\_20210902\\_1-05.htm](http://paper.people.com.cn/rmrb/html/2021-09/02/nw.D110000renmrb_20210902_1-05.htm).

<sup>37</sup> Wang Yi, State Councilor and Foreign Minister of the People’s Republic of China, [https://www.mfa.gov.cn/eng/wjlb\\_663304/zzjg\\_663340/xws\\_665282/xgxw\\_665284/202203/t20220308\\_10649559.html](https://www.mfa.gov.cn/eng/wjlb_663304/zzjg_663340/xws_665282/xgxw_665284/202203/t20220308_10649559.html), March 07, 2022; Li Qiang, “Speech at 18th East Asia Summit” (speech: Jakarta, September 07, 2023), *People’s Daily*, [http://paper.people.com.cn/rmrb/html/2023-09/08/nw.D110000renmrb\\_20230908\\_2-03.htm](http://paper.people.com.cn/rmrb/html/2023-09/08/nw.D110000renmrb_20230908_2-03.htm)

<sup>38</sup> “Studying and Implementing Xi Jinping Thought on Diplomacy in a Deep-going Way and Opening up New Horizons in China’s External Work,” Ministry of Foreign Affairs of the People’s Republic of China, 16 May 2022, [https://www.fmprc.gov.cn/mfa\\_eng/wjdt\\_665385/zyjh\\_665391/202205/t20220516\\_10686371.html](https://www.fmprc.gov.cn/mfa_eng/wjdt_665385/zyjh_665391/202205/t20220516_10686371.html).

supported by the three global initiatives (GDI, GSI and GCI), has been articulated within this context.<sup>39</sup>

It is important to highlight that Beijing does believe that it has significant advantages when it comes to the strategic competition with the US. These include China's centrality to key industrial supply chains and strong domestic industrial base; the size of China's domestic market and its increasing salience to international businesses; the country's expanding innovation ecosystem and R&D capabilities; and the Party-state's mobilisational and governance capabilities. In contrast, in the Chinese conception, Western democracies appear to be struggling with internal strife, political polarisation, economic stagnation, industrial weakness and weakened international credibility.

**II. Has there been a significant change or escalation in the Chinese leadership's rhetoric about prolonged competition or crisis preparation directed at the Chinese public? What does General Secretary Xi Jinping mean by "worst -case and extreme scenarios"? How are these different from the "black swan" and "gray rhino" events to which he and other CCP leaders have previously alluded? Is there any way for observers to determine what kind of crises the CCP leadership is most concerned about?**

The explanation above addresses the first part of this question. So let me discuss the rest of the parts below.

The idea of maintaining "bottom-line thinking" (底线思维) has long been part of Chinese discourse with regard to policy-planning and implementation. However, applying "extreme-case thinking" (极限思维) has gained greater currency since the May 2023 CNSC meeting. Both bottom-line thinking and extreme-case thinking are very different from "Black Swan" and "Gray Rhino" events. The former are mental models for planning and preparedness; the latter refer to events with differing levels of probabilities of occurrence and nature of impacts.

Gray rhino events are high-impact and high-probability events, which are the product of problems that are bubbling under the surface and that tend to go unaddressed.<sup>40</sup> Even if one can see these challenges from a distance, one can potentially be caught off-guard as they evolve into an immediate crisis. In fact, Xi has rather frequently called on officials to respond to "low-probability events with a high-probability thinking and firmly guard

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<sup>39</sup> Manoj Kewalramani, *China as Rising Norm Entrepreneur: Examining GDI, GSI and GCI*, (Singapore: ISEAS – Yusof Ishak Institute, 2024), Issue 02, [https://www.iseas.edu.sg/wp-content/uploads/2024/01/TRS2\\_24.pdf](https://www.iseas.edu.sg/wp-content/uploads/2024/01/TRS2_24.pdf)

<sup>40</sup> "Going head-to-head with the 'black swan', the 'gray rhino' has recently become popular!," Xinhua News Agency, July 19, 2017. [http://www.xinhuanet.com/world/2017-07/19/c\\_129659332.htm](http://www.xinhuanet.com/world/2017-07/19/c_129659332.htm)

against systemic risks.”<sup>41</sup> Economic inequality leading to populism in the West and a backlash against economic globalisation or the subprime mortgage crisis of 2007-08 are examples of gray rhino events.<sup>42</sup> One can apply this to the Chinese context too, when thinking about the recent policy push behind the concept of common prosperity (共同富裕).

Black swan events, on the other hand, are difficult to predict and tend to have a low probability of occurrence. However, once they occur, they have a significant impact and can trigger negative chain reactions. Chinese state media has described the COVID-19 pandemic as a black swan event for China, and a gray rhino event for the US and others.<sup>43</sup>

Meanwhile, bottom-line thinking and extreme-case thinking are approaches to plan and prepare for black swan and gray rhino events. In fact, Chinese writings following the May 2023 CNSC meeting provide a rather neat explanation of the two approaches. Amid increasing unpredictability and uncertainty, both are described as “important ideological” tools in order to strengthen risk-preparedness, sense of vigilance, crisis awareness, and combat readiness.<sup>44</sup> They are distinct yet interconnected in that they help plan for worst-case scenarios, and encourage adopting proactive measures.

Extreme-case thinking is defined as a method of thinking that pushes problems or phenomena under study to their extreme states for consideration. In other words, it is about figuring out what one should do and what can be done in extreme situations. Chinese discourse classifies “extreme pressure” (极限施压) — a term associated with US policy with regard to China since 2019<sup>45</sup> — in the external environment as a key driver for exploring extreme-case thinking.<sup>46</sup> This is because extreme-case thinking allows one to distil the “essence of a problem” and think about what is and what isn’t within one’s capabilities. Consequently, extreme-case thinking permits “one to see farther and take further action than others.”<sup>47</sup>

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<sup>41</sup> “A strong foundation for a great cause for generations to come (Questions and answers on the study of Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era (42)),” People’s Daily, September 14, 2021, [http://paper.people.com.cn/rmrb/html/2021-09/14/nw.D110000renmrb\\_20210914\\_1-05.htm](http://paper.people.com.cn/rmrb/html/2021-09/14/nw.D110000renmrb_20210914_1-05.htm)

<sup>42</sup> “Increase your knowledge | What are ‘black swans’ and ‘gray rhinos,’ Communist Party Member Network, February 22, 2019, <https://www.12371.cn/2019/02/22/ARTI1550792853562500.shtml>

<sup>43</sup> “Daily observations in the fight against the epidemic | Is the new coronavirus epidemic a ‘black swan’ or a ‘gray rhino’?” CCTV, March 24, 2020, <http://m.news.cctv.com/2020/03/24/ARTIwQTazROGKvFz2DXn8fni200324.shtml>

<sup>44</sup> Zhang Mengsong, “Strengthening the Army Forum | Adhere to bottom line thinking and extreme thinking,” Ministry of National Defence of People’s Republic of China, November 05, 2023, <http://www.mod.gov.cn/gfbw/qwfb/16264530.html>

<sup>45</sup> “The top ten new words in Chinese media in 2019 are released, including night economy, extreme pressure, etc.,” China News, December 16, 2019, <https://www.chinanews.com.cn/gn/2019/12-16/9034981.shtml>

<sup>46</sup> Xu Wenxiu, “Why emphasize extreme thinking?” China Communist Party News Network, June 07, 2023, <http://theory.people.com.cn/n1/2023/0607/c40531-40007959.html>

<sup>47</sup> Ibid.

In contrast, bottom -line thinking is about striving for the best-case outcomes while preparing for the worst. Engaging in bottom-line thinking requires one to determine certain minimum standards, conditions or thresholds that must not be breached or compromised in the course of a development. One can apply this approach to the foreign policy domain through the establishment of clear red lines. Of late, the Communist Party has increasingly attempted to do so with regard to the Taiwan issue. For instance, in March 2024, Foreign Minister Wang Yi stated that “China’s policy is quite clear—we will continue to strive for peaceful reunification with the greatest sincerity. China’s bottom line is also quite clear—we will never allow Taiwan to be separated from the motherland. Whoever engage(s) in ‘Taiwan independence’ on the island will be held accountable by history.”<sup>48</sup>

Likewise, one can apply this approach to the reform of a certain sector of the economy or to disaster prevention and preparedness.<sup>49</sup> For instance, the Chinese leadership has talked about building a “new type of power system with new energy as the mainstay.” However, this transition has not been a smooth process, with the electricity crisis of 2021 being a case in point. Officials have, therefore, repeatedly stressed that “the safe supply of electricity is the bottom line for building the new power system as well as a significant task.”<sup>50</sup> A breach of this bottom line is considered a political failure. Another example is the reform of China’s financial and banking sector, where the bottom line has been defined as “preventing systemic and regional financial risks.”<sup>51</sup> This creates room for innovation and incentives for policy action so long as they do not breach the bottom line.

The table below offers a point-by-point distinction between these two approaches.

Sr. No	Extreme - case thinking	Bottom -line thinking
1	A method that pushes the problems or things under study to the extreme state. Thereafter, one must ponder what actions can be adopted and how one must deal with the situation.	A method to ensure that one has an understanding of worst - case scenarios and is prepared for the worst while striving for the best - case outcomes.
2	This is useful to contemplate and prepare for unforeseeable risks and challenges	This is used in the context of predictable risks and challenges.

<sup>48</sup> Ministry of Foreign Affairs of the People’s Republic of China, “Wang Yi: All People of Chinese Descent Should Jointly Oppose “Taiwan Independence” and Support Peaceful Reunification,” March 07, 2024, [https://www.mfa.gov.cn/eng/zxxx\\_662805/202403/t20240308\\_11256422.html](https://www.mfa.gov.cn/eng/zxxx_662805/202403/t20240308_11256422.html)

<sup>49</sup> [http://www.cdtzb.gov.cn/cdstzb/yaowenTitle/2022-08/15/content\\_b9a2c6ae0c0440d7a864d847edbb66de.shtml](http://www.cdtzb.gov.cn/cdstzb/yaowenTitle/2022-08/15/content_b9a2c6ae0c0440d7a864d847edbb66de.shtml)

<sup>50</sup> The State Council Information Office, People’s Republic of China, “China’s Renewable Energy Development, April 02, 2021, [http://english.scio.gov.cn/m/pressroom/2021-04/02/content\\_77372602\\_7.htm](http://english.scio.gov.cn/m/pressroom/2021-04/02/content_77372602_7.htm)

<sup>51</sup> “‘China Asset Management Analysis’ The government emphasizes bottom-line thinking, and shadow banking still has vitality in the turbulent times,” *Reuters*, April 23, 2013, <https://www.reuters.com/article/idUSL3S0D4DH5/>

Sr. No	Extreme - case thinking	Bottom -line thinking
3	This method focuses on the “upper limit”, i.e., proactively considering the worst and most extreme scenarios. The goal is to build a “more comprehensive ‘toolkit’ for deterring and defeating the enemy”.	Bottom -line thinking focuses on the “lower limit”, which refers to predetermined minimum standards, conditions, and thresholds that cannot be breached.
4	Extreme - case thinking is about responding to and handling problems after they occur.	Bottom -line thinking is about prioritising proactive preparation and prevention.
5	Extreme-case thinking is useful to plan for efforts needed to recover from a seemingly impossible/desperate situation. (绝处逢生)	Bottom-line thinking is about learning to survive and thrive amid hardships. (生于忧患)

Three key points emerge when analysing Chinese discourse around these approaches.

First, bottom-lines need not necessarily be very precise. Doing so can limit scope of policy innovation.<sup>52</sup> Moreover, bottom lines are not necessarily fixed in perpetuity.<sup>53</sup> These can change depending on the situation. This makes intuitive sense. When circumstances change, so do thresholds. In terms of foreign policy and security issues, it can, therefore, be useful to further study Chinese behaviour and specific responses to situations in order to assess at which point the proverbial rubber is likely to hit the road.

Second, extreme-case thinking is not just about preparing for the worst from a defensive position. It is also a useful tool to think through the outcomes of proactive or assertive actions that China might take. For instance, while bottom-line thinking is about answering the question “what should I do” (我要如何), extreme-case thinking also answers the question “what will he/the other do” (他要如何).<sup>54</sup> In that sense, it is about playing out scenarios of reactions to Chinese moves, functioning as a type of crisis and conflict simulation. Xi’s reference to this, and subsequent discourse, are indicative of not just increased threat perception but also a desire to proactively use the military instrument to deter and achieve favourable outcomes or to “create opportunities and seize chances.”<sup>55</sup> This is particularly needed in the context of competition with the US, protecting China’s core interests, and to deal with provocations from foreign “hostile

<sup>52</sup> “Adhere to bottom line thinking and extreme thinking,” *Banner Network*, August 15, 2023, <http://www.qizhiwang.org.cn/n1/2023/0815/c457283-40057098.html>

<sup>53</sup> Deng Yuwen, “What does Xi Jinping’s ‘Extreme Thinking’ Mean?,” *DW News*, June 14, 2023, <https://www.dw.com/zh/客座评论习近平的极限思维是什么意思/a-65909139>

<sup>54</sup> Zhou Shuhui, “Talk about bottomline thinking and extreme-case thinking,” *Xinxiang Review Issue 15* (2023), <https://www.cnxxpl.com/content/646742/97/12933529.html>

<sup>55</sup> Yang Sicong, “Dialectically apply bottom-line thinking & extreme-case Thinking”, *PLA Daily*, July 13, 2023, [http://www.81.cn/szb\\_223187/szbqxq/index.html?paperName=jfjb&paperDate=2023-07-14&paperNumber=07&articleid=910552](http://www.81.cn/szb_223187/szbqxq/index.html?paperName=jfjb&paperDate=2023-07-14&paperNumber=07&articleid=910552)



forces” and “arms races across neighbouring countries”.<sup>56</sup> Some analysts have compared extreme-case thinking to the Maoist concept of alternating between fighting and dialogue (打打谈谈).<sup>57</sup> In essence, this entails a certain level of brinkmanship, although Chinese scholars seem to decry that term. Instead, some prefer defining provocative actions as “capability-based realist diplomatic methods” (基于能力的现实主义外交手法).<sup>58</sup>

Finally, Chinese writings seem to indicate that extreme-case thinking is needed to shed the sense of paralysis and laxity among cadres.<sup>59</sup> They contend that a prolonged period of peace has created a sense of illusion about the harsh realities and ignorance of hidden complexities, leaving cadres stricken with ‘soft bone disease’ (软骨病).<sup>60</sup> This is a message that Xi and other senior officials have delivered repeatedly over the years.<sup>61</sup> For instance, in a speech published earlier this year, Xi was quoted as saying:

“After decades of peaceful rule, many party members and cadres have not experienced the test of life and death, lacking the tempering of brutal struggles and harsh environments ... They love to seek comfort and enjoyment, rest on their laurels and become complacent. They will panic and lose their confidence easily amid the great struggle with many new historical characteristics.”<sup>62</sup>

Consequently, extreme-case thinking is viewed as a necessary tool to cultivate fighting spirit and struggle skills (斗争精神和斗争本领) and garner practical experience in dealing with critical moments, emergencies and severe challenges.

### **III. What specific concepts, issues, or ideas are being communicated to the Chinese public to create the sense that China must prepare for imminent hardships or conflict?**

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<sup>56</sup> Li Mengyun and Bai Shuchao, “Correctly grasp the five dimensions of extreme-case thinking,” *China Youth Daily*, September 05, 2023, [https://zqb.cyol.com/html/2023-09/05/nw.D110000zgqnb\\_20230905\\_2-10.htm](https://zqb.cyol.com/html/2023-09/05/nw.D110000zgqnb_20230905_2-10.htm)

<sup>57</sup> Zhu Yi, “As the US and China resume high-level talks, observers say Xi Jinping’s ‘extreme-case thinking’ may lead to ‘grey zone conflicts,’” VOA, June 27, 2023, <https://www.voachinese.com/a/xi-jinping-urges-to-prepare-china-for-the-extreme-scenarios-20230626/7153536.html>

<sup>58</sup> Li Kaisheng, “The dialectical approach to handling Sino-US relations from the perspective of bottom-line thinking and extreme-case thinking,” Shanghai Academy of Social Sciences, July 06, 2023, <https://www.sass.org.cn/2023/0706/c1201a550299/page.htm>

<sup>59</sup> Xu Wenxiu, “Why emphasize extreme thinking?” *China Communist Party News Network*, June 07, 2023, <http://theory.people.com.cn/n1/2023/0607/c40531-40007959.html>

<sup>60</sup> Li Mengyun and Bai Shuchao, “Correctly grasp the five dimensions of extreme thinking,” *China Youth Daily*, September 05, 2023, [https://zqb.cyol.com/html/2023-09/05/nw.D110000zgqnb\\_20230905\\_2-10.htm](https://zqb.cyol.com/html/2023-09/05/nw.D110000zgqnb_20230905_2-10.htm)

<sup>61</sup> For instance, see Chen Xi, “Building a high-quality cadre team capable of shouldering the heavy responsibility of national rejuvenation (earnestly studying, publicizing and implementing the spirit of the 20th CPC National Congress),” *People’s Daily*, November 23, 2022, [http://paper.people.com.cn/rmrb/html/2022-11/23/nw.D110000renmrb\\_20221123\\_1-06.htm](http://paper.people.com.cn/rmrb/html/2022-11/23/nw.D110000renmrb_20221123_1-06.htm)

<sup>62</sup> Willian Zheng, “China officials unprepared for struggle, Xi Jinping told CCDI ahead of ‘lying flat’ campaign,” *SCMP*, March 16, 2024, <https://www.scmp.com/news/china/politics/article/3255597/china-officials-unprepared-struggle-xi-jinping-told-ccdi-ahead-lying-flat-campaign>

What impact, if any, has this rhetoric had on the Chinese public's perceptions or activities?

What role does the CCP see the Chinese public playing in national security writ large? Have there been recent changes to grassroots organizations that seek to monitor, control, and mobilize the Chinese public? Why is the CCP now invoking Maoist concepts such as the “Fengqiao Experience” and the “Chaoyang Masses”? c. Why have CCP authorities increased their messaging about espionage, and what kind of role would they like to enlist the Chinese public in countering it?

As mentioned above, under the Comprehensive National Security Concept, the people have been identified as “the basic force of national security.” This is an important framework to understand the Communist Party of China’s (CPC) conceptualisation of popular legitimacy. The pre-Xi era social contract was believed to be a rather straightforward trade-off between political loyalty and economic opportunity. The Party demanded the former while promising the latter to the people. This has fundamentally changed under Xi Jinping. The change in the principal contradiction facing Chinese society at the 19th Party Congress was an acknowledgement of this.

The need to transition the country’s economic model, meet the people’s enhanced expectations of quality of life, and maintain regime security in the process, particularly amid mounting external challenges and internal discord, has resulted in greater emphasis on the role of the people in security maintenance. In essence, this is an effort to co-opt the masses to bolster the CPC’s ability to monitor and govern them.

In an essay in April 2024, Minister of State Security Chen Yixin identified the five key tasks of national security as anti-subversion, anti-hegemony, anti-separatism, anti-terrorism, and anti-espionage work.<sup>63</sup> In the context of national security, he articulated the significance of the role of the people as follows:

*“The mass line is the lifeline and fundamental work route of our Party. At its core, national security work is about safeguarding the interests of the people, and must rely closely on the people... We must always regard the people as the foundational force of national security, enhance the national security awareness of all citizens, solidify the people’s defense line of national security, expand effective ways for the masses to participate in national security governance, and build an impregnable wall for maintaining national security.”*<sup>64</sup>

This co-option of the masses has acquired greater salience given Xi Jinping’s centralisation of power, which has been deemed a necessity owing to the peculiar

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<sup>63</sup> “Fully Implement the Overall National Security Outlook,” Center for Strategic and International Studies (*Interpret: China Series*), <https://interpret.csis.org/translations/fully-implement-the-overall-national-security-outlook/>

<sup>64</sup> Ibid



challenges of this era. Since the 19th Party Congress, Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era has been elevated as the “fundamental guideline for the country’s “political and social life,” which must be “adhered to and continuously developed for a long time.”<sup>65</sup> The locus of truth and guideline for policy making, therefore, are now Xi’s ideas and vision for the future. Everyone is, consequently, required to acknowledge the significance of the ‘Two Establishments’ (两个确立) and work to achieve the ‘Two Safeguards’ (两个维护).<sup>66</sup>

As much as this grants Xi unparalleled authority, it also engenders tremendous risk. This is because it weakens the logic of diffusion of accountability, which has historically been important for the resilience of the Party-state system. The CPC’s handling of the COVID-19 pandemic offers a useful case study in this regard. For the longest time, the central leadership was able to evade accountability with regard to its handling of the outbreak and the criticism related to the zero-COVID policy.<sup>67</sup> This strategy, however, delivered diminishing returns over time. It eventually collapsed under the weight of its contradictions amid the outbreak of the “A4” or “White Paper” protests in November 2022.<sup>68</sup>

The Chinese Dream of national rejuvenation, achieved through Chinese-style modernisation, is at the heart of Xi’s vision for the country. As per the CPC leadership, achieving this objective demands a whole-of-society effort, which in turn requires strengthening the Party’s comprehensive control and mobilisational capabilities. This appears to be an article of faith for Xi Jinping. He has repeatedly underscored that the “Party is the highest force of political leadership, and that upholding the centralized, unified leadership of the Party Central Committee is the highest political principle.”<sup>69</sup> This must be constantly upheld and strengthened, while forging a “firmer sense of purpose, fortitude, and self-belief in the whole Party and the Chinese people so that we cannot be swayed by fallacies, deterred by intimidation, or cowed by pressure.”<sup>70</sup>

Consequently, over the years, Xi has leveraged key Maoist ideas, starting with the nurturing of a cult of personality around himself and the mass line campaign. The mass

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<sup>65</sup> “习近□□领□□□习□□□时□□国□□□会□义□□学习问□□),” *People’s Daily*, 19 July 2021, [http://paper.people.com.cn/rmrb/html/2021-07/19/nw.D110000renmrb\\_20210719\\_1-05.htm](http://paper.people.com.cn/rmrb/html/2021-07/19/nw.D110000renmrb_20210719_1-05.htm)

<sup>66</sup> The Two Establishments refers to the establishment of Xi Jinping as the “core” leader of the Communist Party’s Central Committee and the entire party, along with the establishment of Xi Jinping Thought on Socialism with Chinese characteristics for a new era as the Party’s guiding ideology. The Two Safeguards refer to the tasks of safeguarding Xi’s position as the core of the Party’s Central Committee and the entire Party, along with safeguarding the centralised and unified leadership of the Party’s Central Committee.

<sup>67</sup> Manoj Kewalramani, “*Smokeless War: China’s Quest for Global Primacy*,” Bloomsbury: New Delhi, June 2021, <https://www.manojkewalramani.com/books>

<sup>68</sup> Kin-man Chan, “Unwritten Endings: Revolutionary Potential of China’s A4 Protest,” *Sociologica*, Volume 17, Issue 1 (2023), Department of Sociology, National Chengchi University of Taiwan, <https://sociologica.unibo.it/article/view/16877/16620> (pp. 57-66)

<sup>69</sup> Zhao Bing, “习□□战□□垒□实执□□□,” *People’s Daily*, 10 October 2022, [http://paper.people.com.cn/rmrb/html/2022-10/10/nw.D110000renmrb\\_20221010\\_3-01.htm](http://paper.people.com.cn/rmrb/html/2022-10/10/nw.D110000renmrb_20221010_3-01.htm)

<sup>70</sup> Ibid

line approach flows from the logic that in order to govern and ensure security, the Party “must rely closely on the people.” Mass line work under Xi has entailed work to not only rectify unhealthy practices among cadres<sup>71</sup> and crack down on corruption but also to build deeper links between the Party and the people, mobilise the masses, ensure policy implementation, improve governance and boost popular legitimacy. These efforts have evidently maintained Xi’s popularity with the masses.<sup>72</sup> This is politically critical for Xi, considering that his consolidation of power and the anti-corruption campaign has likely alienated significant segments of the Party elite.

The revival and adaptation of ideas like the Fengqiao Experience or Chaoyang Masses are part of this process. These fall under the ambit of the broader ‘Safe China Initiative’ (平安中国)<sup>73</sup>, and provide models of community-based risk prevention and control.

The former refers to a particular system of social and political governance championed by Mao Zedong during the 1960s. The approach entailed mobilising local people to target “reactionaries” and “class enemies.”<sup>74</sup> It was named after Fengqiao Township in Zhejiang Province. As early as 2013, Xi Jinping had called to uphold and develop the Fengqiao Experience. Under Xi, this model has been adapted to co-opting the masses to assist the Party in governing them. It is, in fact, described as an important approach to build a “law-based society” and ensure “law-based governance.”<sup>75</sup> The goal “is to consolidate frontline platforms for ensuring social stability.”<sup>76</sup> While there is no one-size-fits-all model that has been universally applied across the country, the primary approach appears to entail developing a system of mediation and dispute and conflict resolution at the local levels. This has been done by leveraging the Party’s grassroots governance mechanisms, including the establishment of conflict and dispute resolution and mediation centres,

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<sup>71</sup> These include behaviours such as privilege-seeking, inaction, perfunctory efforts, etc. Xi has on occasion criticised the attitude of cadres being ‘Mr. Nice Guy’ (□□□□) and not standing up or working hard when required. See, Xin Shi Hong, “‘□□□□’并□□真□□□□ (□□论坛),” *CPC News*, 13 September 2021, <http://dangjian.people.com.cn/n1/2021/0913/c117092-32224814.html>

<sup>72</sup> “China’s leaders are less popular than they might think,” *The Economist*, 16 January 2023, <https://www.economist.com/china/2024/01/16/chinas-leaders-are-less-popular-than-they-might-think>. Also note this assessment by Xi at the 20th Party Congress: “The Party’s new theory for the new era has been embraced by the people, the core socialist values are resonating with the public, fine traditional Chinese culture is undergoing creative transformation and development, cultural programs are flourishing, and the online environment has seen continuous improvement. All this has brought overarching and fundamental changes in China’s ideological landscape.”

<sup>73</sup> Xi Hanming, “□设□□□□□□□国,” *Quishi (theory series)*, 12 January 2023, [http://www.qstheory.cn/dukan/hqwg/2023-01/12/c\\_1129277576.htm](http://www.qstheory.cn/dukan/hqwg/2023-01/12/c_1129277576.htm)

<sup>74</sup> “Fengqiao Experience,” China Media Project (*The CMP Dictionary series*), 16 April 2021, [https://chinamediaproject.org/the\\_ccp\\_dictionary/fengqiao-experience/](https://chinamediaproject.org/the_ccp_dictionary/fengqiao-experience/)

<sup>75</sup> Qian Hongdao, “坚□□发□□□时’枫桥经验,” *CPC News*, 10 January 2024, <http://theory.people.com.cn/n1/2024/0110/c40531-40155874.html>

<sup>76</sup> Wan Jianwu, “The Fengqiao Model: A Gold Standard for Chinese Governance,” *Qiushi Journal* (March 2024), [http://en.qstheory.cn/2024-03/11/c\\_969275.htm](http://en.qstheory.cn/2024-03/11/c_969275.htm)

connected with the police, courts, procuratorates, industry bodies, etc.<sup>77</sup> These grassroots organisations are expected to boost risk awareness and enable preemptive action by the Party, ensuring that individual or community issues do not escalate further. These could be environmental issues, labour disputes, marriage and family issues, intellectual property matters, and so on.<sup>78</sup> Another objective of this experiment appears to be to reduce cost and case-loads for China's courts by ensuring that conflicts and disputes are resolved through mediation.<sup>79</sup>

Like the Fengqiao Experience, the term Chaoyang Masses also refers to the concept of community mobilisation to assist the Party in security and governance. Specifically, the term relates to a network of community volunteers and public informants from Chaoyang district in Beijing. But, as the China Media Project's Dictionary explains, over time, "the term has gradually come to stand in more generally for such forms of mass mobilization for the public security (political security) objectives of the Chinese Communist Party."<sup>80</sup> These groups seek to monitor and crack down on illegal, immoral or politically sensitive activities. During a tour in Beijing in 2017, Xi Jinping had specifically praised groups like the 'Chaoyang Masses' and 'Xicheng Aunties', arguing that a "people's city is built by the people and governed by the people...wherever there are more red armbands, there is more safety and more peace of mind."<sup>81</sup> Public tip-offs have also been critical in several high-profile cases involving celebrities, prostitution and drug scandals in the past few years.<sup>82</sup> In essence, this return to popularity of this concept is a product of the revival of

<sup>77</sup> Dominik Mierzejewski, "The Zhejiang Model: Old-New Tools for Managing Contradictions and Creating Win-Win Outcomes in Center-Local Governance," *China Brief*, Volume 22, Issue 19 (October 2022), The Jamestown Foundation, <https://jamestown.org/program/the-zhejiang-model-old-new-tools-for-managing-contradictions-and-creating-win-win-outcomes-in-center-local-governance/>

<sup>78</sup> For example, see this May 2024 report by the Nankai District Justice Bureau in Tianjin: "坚□□发□□时□"枫桥经验"□□□□调□□□□级□," Nankai District Justice Bureau, 15 May 2024,

[https://www.tjnk.gov.cn/NKQZF/XXDT856/bmdt/202405/t20240515\\_6626006.html](https://www.tjnk.gov.cn/NKQZF/XXDT856/bmdt/202405/t20240515_6626006.html)

<sup>79</sup> For instance, in 2023, China's courts mediated 11.998 million disputes through people's mediation, administrative mediation, and industry-specific mediation organizations. See: "WHAT'S NEW IN THE 2024 SUPREME PEOPLE'S COURT REPORT TO THE NATIONAL PEOPLE'S CONGRESS?," Supreme People's Court Monitor, 28 May 2024, <https://supremepeoplescourtmonitor.com/2024/05/28/whats-new-in-the-2024-supreme-peoples-court-report-to-the-national-peoples-congress/>; also see: Ministry of Justice of the People's Republic of China, "坚□□发□□时□"枫桥经验"□□□□纠纷预□□□□□□□□论研讨会论□选□," 29 December 2023,

[https://www.moj.gov.cn/pub/sfbgw/zwgkztzl/2023zt/231105fqjyxsj/231105fqjyxsj\\_zxyfqjy/202401/t20240111\\_493424.html](https://www.moj.gov.cn/pub/sfbgw/zwgkztzl/2023zt/231105fqjyxsj/231105fqjyxsj_zxyfqjy/202401/t20240111_493424.html); An example on Zhejiang's deployment of the 'Fengqiao Experience' can be perused here: National Public Complaints and Proposals Administration, "□□践□□时□"枫桥经验"□□进"诉□□□"□□□□□□□□□□诉讼□□□□□□□□□□纠纷," 4 February 2021, [https://www.gjxfj.gov.cn/2021-02/04/c\\_1211011147.htm](https://www.gjxfj.gov.cn/2021-02/04/c_1211011147.htm)

<sup>80</sup> Stella Chen, "Chaoyang Masses," China Media Project (*The CMP Dictionary Series*), 1 November 2021, [https://chinamediaproject.org/the\\_ccp\\_dictionary/chaoyang-masses/](https://chinamediaproject.org/the_ccp_dictionary/chaoyang-masses/)

<sup>81</sup> Bai Yu et al., "□国为□么□"□阳□众"□□□妈"?," *People.com.cn*, 28 October 2019, <http://politics.people.com.cn/n1/2019/1028/c429377-31422853.html>

<sup>82</sup> Jiang Zhen, "□□阳□众'□处□□, □□国□还□□□□□会?," *VOA*, 10 November 2021, <https://www.voachinese.com/a/Beijings-neighborhood-police-is-turning-China-police-state-or-safe-country-20211109/6305887.html>

the citizen -informant culture under Xi Jinping. The consequences for this in terms of China's engagement with foreign firms and states is discussed further below.

In terms of the architecture of grassroots control and governance, the Party has doubled down on the Leninist system. A review of Party-building work published prior to the 20th Party Congress informed that Xi Jinping had “personally planned, deployed, and promoted grassroots Party organisation construction” since the 19th Party Congress.<sup>83</sup> It contended that grassroots Party organisations had been moulded into “strong fighting bastions” in order to “promote the Party’s propositions, implement its decisions, lead grassroots governance, unite and mobilize the masses, and drive reform and development.” This organisational system functions seamlessly, engendering top-down control “like the body directs the arm, like the arm directs the fingers” (如身使臂，如臂使指).<sup>84</sup> In all, there are an estimated 4.9 million grassroots Party organizations. A White Paper published by the government in December 2021, titled ‘China: Democracy That Works’<sup>85</sup> also informed that as of 2020, all 503,000 administrative villages in China had established villagers committees, and all the 112,000 urban communities had established residents committees. There are 2.81 million primary-level trade unions in the country, covering 6.55 million enterprises and public institutions. In addition, a total of 3.14 million enterprises, including 2.94 million private enterprises, have established employee congresses. Independent research shows that as of 2021, there were around 1.53 million party cells across the private sector, and a significant number of them contribute financially to Party activities.<sup>86</sup> In times of need, temporary organisations are also established. For instance, during the COVID-19 pandemic, around 244,000 temporary Party organizations were established.<sup>87</sup> This grassroots governance architecture is critical to ensure mobilisation, implementation, stability and compliance.

Further, there are three broad tools that the Party-state has adopted under Xi in this regard, i.e., reinforcement of Marxism and nationalism, emphasis on patriotism, and strengthening ideological and security education.

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<sup>83</sup> Zhao Bing, “战时体制，” *People’s Daily*, 10 October 2022, [http://paper.people.com.cn/rmrb/html/2022-10/10/nw.D110000renmrb\\_20221010\\_3-01.htm](http://paper.people.com.cn/rmrb/html/2022-10/10/nw.D110000renmrb_20221010_3-01.htm)

<sup>84</sup> Ibid. Also see: “为国设，复兴组织证，” *People’s Daily*, 28 June 2023, [http://paper.people.com.cn/rmrb/html/2023-06/28/nw.D110000renmrb\\_20230628\\_6-01.htm](http://paper.people.com.cn/rmrb/html/2023-06/28/nw.D110000renmrb_20230628_6-01.htm)

<sup>85</sup> “Full Text: China: Democracy That Works,” *ChinaDaily*, 4 December 2021, <https://www.chinadaily.com.cn/a/202112/04/WS61ab0795a310cdd39bc7957e.html>

<sup>86</sup> Scott Kennedy and Ilaria Mazzocco, “Can Chinese Firms Be Truly Private?,” Center for Strategic and International Studies (Big Data China series), 7 February 2023, <https://bigdatachina.csis.org/can-chinese-firms-be-truly-private/>

<sup>87</sup> “为国设，复兴组织证，” *People’s Daily*, 28 June 2023, [http://paper.people.com.cn/rmrb/html/2023-06/28/nw.D110000renmrb\\_20230628\\_6-01.htm](http://paper.people.com.cn/rmrb/html/2023-06/28/nw.D110000renmrb_20230628_6-01.htm)

Progressively through the years, Xi's speeches, official documents and media discourse have underscored the significance of Marxism to China's development and future.<sup>88</sup> It has been deemed as the “true scripture” (真经) of the Communists and “BeiDou” (北斗 navigational guide) for the cause of socialism.<sup>89</sup> Failure to adhere to it will lead to ideological and cultural confusion, damaging the cause of the Party and the people.<sup>90</sup> Xi Jinping's thought has been defined as contemporary and 21st Century Marxism. Integrating Marxist ideology with China's national conditions and traditional culture, i.e., two integrations (两个结合), has been deemed as “the strongest assurance” for China's success going forward.<sup>91</sup> These efforts, coupled with the repudiation of what the Party argues are Western systems of governance and constructs of universal values, are aimed at cultivating a sense of exceptionalism, while legitimising Party rule. This is reflected in the concept of four self-confidences and the goal of Chinese-style modernisation, which is defined as “socialist modernization pursued under the leadership of the CPC” that disproves “the myth that modernization equals westernization”.<sup>92</sup>

In addition, as competition with the West has intensified, Beijing has further sought stoke nationalism in order to mobilise the masses, to buttress regime security.<sup>93</sup> In doing so, it has resorted to propaganda evoking the horrors of colonialism and contending that the US-led West is fundamentally attempting to retard China's progress through a policy of pressure and containment. Consequently, it is imperative that cadres and the masses rally around the Party, and the core leader, to forge together into a “piece of hard steel” (一块坚硬的钢铁).

This pitch for Party-centred patriotism is not simply being articulated in the context of competition with the US. In fact, Xi seems to have positioned patriotism as the panacea

<sup>88</sup> The third ‘history resolution’ captures the core concepts: “Full text of the Chinese Communist Party's new resolution on history,” *Nikkei Asia*, 19 November 2021, <https://asia.nikkei.com/Politics/Full-text-of-the-Chinese-Communist-Party-s-new-resolution-on-history>

<sup>89</sup> “‘谱华’习‘时’国‘会’义‘学习’ (33),” *People's Daily*, 1 September 2021, [http://paper.people.com.cn/rmrb/html/2021-09/01/nw.D110000renmrb\\_20210901\\_1-05.htm](http://paper.people.com.cn/rmrb/html/2021-09/01/nw.D110000renmrb_20210901_1-05.htm)

<sup>90</sup> Ibid

<sup>91</sup> See: Theoretical Study Group Under the Executive Council of the Institute of Party History and Literature of the CPC Central Committee, “The ‘Two Integrations’: the Only Path and Strongest Assurance for Our Success,” *Qiushi Journal* (July-August 2023), [http://en.qstheory.cn/2023-09/13/c\\_918762.htm](http://en.qstheory.cn/2023-09/13/c_918762.htm); also see: “‘两个结合’‘义’,” *People's Daily*, 7 June 2023, [http://paper.people.com.cn/rmrb/html/2023-06/07/nw.D110000renmrb\\_20230607\\_2-01.htm](http://paper.people.com.cn/rmrb/html/2023-06/07/nw.D110000renmrb_20230607_2-01.htm)

<sup>92</sup> The four confidences refer to having confidence in the socialist path, theory, system, and culture. See: Full text | Chinese Modernization: The Way Forward,” *Xinhua*, 4 May 2024, <https://english.news.cn/20240504/ae50c03d5f544ae8a651f146c08e5be9/c.html>; on Chinese-style modernisation, see Xi's remarks from February 2023: “习‘学习’贯彻‘研讨’‘开’‘发’‘讲话’‘调’‘进’‘国’‘现’,” *People.com.cn*, 7 February 2023, <http://politics.people.com.cn/n1/2023/0207/c1024-32619489.html>

<sup>93</sup> Wenna Zeng and Colin Sparks, “Popular nationalism: Global Times and the US–China trade war,” *the International Communication Gazette*, Volume 82, Issue 1 (2022), <https://journals.sagepub.com/doi/pdf/10.1177/1748048519880723> (pp. 26-41)



for China's developmental challenges — a necessary ingredient to achieve national rejuvenation. From cadres to private entrepreneurs<sup>94</sup>, the youth, factory workers<sup>95</sup> and scientists,<sup>96</sup> the Party has called on everyone to align their dreams with the Chinese Dream of national rejuvenation. Individual or private sector aspirations, therefore, are inconsequential. What matters is the strategic objective determined by the central leadership.

With regard to the youth, in particular, Xi has called for “core socialist values” to become part of the curriculum, along with emphasising the need to strengthen patriotism and “ambition to strengthen the country”.<sup>97</sup> He has termed cultivating “socialist builders and successors” as the “fundamental task” of the Communist Youth League (CYL).<sup>98</sup> The message for the youth is to strengthen their ideals and beliefs, be prepared for difficult times and to “eat bitterness” (吃苦), and cultivate the grit to endure hardship, for a “knife needs to be sharpened against a stone” and the new era “belongs to strugglers”.<sup>99</sup> Xi's own personal story of tumult and hardships during the seven years spent in Shaanxi amid the Cultural Revolution is often used as an example for the youth to follow. Official discourse has also criticised those who seek to lie flat (躺平), succumb to involution (内卷) or adopt a detached “Buddha-like approach” (佛系).<sup>100</sup> Instead, they are urged to embrace struggle in order to develop into good youth of the new era (新时代好青年).

A few policy changes in this context are important to note. In 2015, a new hotline was set up for people to offer tip-offs with regard to espionage. A year later, the Party started marking April 15 as National Security Education Day. Every year on this day, thematic propaganda and awareness activities are held across the country. From 2019 onward, China's security agencies have also been honouring individuals who are deemed to have made contributions in reporting activities related to national security.<sup>101</sup> China's security apparatus believes that “extensive participation and joint prevention by the people” is necessary “to build a solid national security and people's defense line against

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<sup>94</sup> “(习权发)习业谈会讲话,” *Xinhua*, 21 July 2023,

[http://www.xinhuanet.com/politics/2020-07/21/c\\_1126267575.htm](http://www.xinhuanet.com/politics/2020-07/21/c_1126267575.htm)

<sup>95</sup> “组织动员亿万职工积极为国设复兴伟业,” *Qiushi (Theory Series)*, 30 April

2024, [http://www.qstheory.cn/dukan/qs/2024-04/30/c\\_1130136105.htm](http://www.qstheory.cn/dukan/qs/2024-04/30/c_1130136105.htm)

<sup>96</sup> “学设为国汇,” *People's Daily*, 27 May 2024,

[http://paper.people.com.cn/rmrb/html/2024-05/27/nw.D110000renmrb\\_20240527\\_7-01.htm](http://paper.people.com.cn/rmrb/html/2024-05/27/nw.D110000renmrb_20240527_7-01.htm)

<sup>97</sup> “让青献焕发绚丽,” *People's Daily*, 4 May 2021, [http://paper.people.com.cn/rmrb/html/2021-05/04/nw.D110000renmrb\\_20210504\\_1-01.htm](http://paper.people.com.cn/rmrb/html/2021-05/04/nw.D110000renmrb_20210504_1-01.htm)

<sup>98</sup> Yang Hao, “青团为国设会闭,” *People's Daily*, 23 June 2023,

[http://paper.people.com.cn/rmrb/html/2021-05/04/nw.D110000renmrb\\_20210504\\_1-01.htm](http://paper.people.com.cn/rmrb/html/2021-05/04/nw.D110000renmrb_20210504_1-01.htm)

<sup>99</sup> “青团时,习:对',” *People.com.cn*, 5 May 2023,

<http://politics.people.com.cn/n1/2023/0505/c1001-32679282.html>

<sup>100</sup> “总书记时青,” *People's Daily*, 4 May 2023, [http://paper.people.com.cn/rmrb/html/2023-05/04/nw.D110000renmrb\\_20230504\\_2-01.htm](http://paper.people.com.cn/rmrb/html/2023-05/04/nw.D110000renmrb_20230504_2-01.htm)

<sup>101</sup> Hu Yuwei et al., “Unrevealed moments behind forefront battles of national security officers in safeguarding China's borders,” *Global Times*, 9 January 2024, <https://www.globaltimes.cn/page/202401/1305065.shtml>

In addition, in November 2019, the Party and government issued the implementation guidelines for patriotic education in the new era. This document stressed on cultivating a sense of “loving the party, loving the country, loving socialism”, ensuring that the youth “inherit the revolutionary tradition, carry forward the revolutionary spirit, and pass on the red gene”, “arming” everyone with Xi Jinping Thought on Socialism with Chinese Characteristics for a New Era.<sup>104</sup> This document eventually formed the basis for the new Patriotic Education Law, which came into effect on January 1, 2024.

In 2022, a new guideline was issued for enhancing and improving national defence education in the new era. The document called to strengthen national defence education for leading cadres, organise special training on national defence education for leading cadres at the provincial and ministerial, bureau and departmental and county levels, and carry out national defence training for heads of enterprises, institutions, universities, primary and secondary schools, and various media organisations.<sup>106</sup> Likewise for students, the document calls for cultivating love for national defense through various measures, such as screening of defence-themed movies, competitions and sports events. It also calls to promote national role models and create literary and artistic works that “reflect the patriotism and strength of the armed forces.”<sup>107</sup> The month of September, annually

107 Ibid.

celebrated as the 'National Defense Education Month', is now designated for such activities.

**IV. The Commission is mandated to make policy recommendations to Congress based on its hearings and other research. What are your recommendations for Congressional action related to the topic of your testimony?**

I would like to make the following two recommendations for the Commission's consideration.

First, Congress should support sustained and systematic studies to understand the PRC's changing red -lines, particularly in context of the Taiwan issue and its territorial and maritime disputes. It should also support the establishment of dialogues with allies and partners on PRC's escalatory and conflict management behaviours. Such a process would facilitate a more nuanced understanding of the PRC's evolving —and evidently more risk - tolerant —approach to the use of force. It would also help identify effective mitigation strategies.

Second, deeper people -to -people exchanges are an asset for the United States in its strategic competition with the PRC. Policies and actions that alienate the Chinese populace only serve to strengthen the Communist Party's domestic narrative and legitimacy. US policy must, therefore, facilitate student exchanges, scholarly interactions and tourism. There is ample evidence to suggest that Beijing is keen on prioritising such exchanges too.



## **OPENING STATEMENT KATJA DRINHAUSEN, HEAD OF THE POLITICS AND SOCIETY PROGRAM, MERCATOR INSTITUTE FOR CHINA STUDIES (MERICS)**

MS. DRINHAUSEN: Thank you, co-chairs Goodwin and Sims and the members of the Commission. I'm very honored to be here and speaking today.

In the few points, I will follow the remarks of Manoj Kewalramani who really gave a good introduction into the topic and raised many points that I will agree with in my testimony. But I personally will want to focus on three key points.

Noting first that, within the fundamental shift that Xi Jinping has brought about with this new comprehensive national security outlook, as my previous speaker so eloquently said, Xi Jinping is trying to strike a balance between security and development, talking about integration and balancing. But, at the core of it, security comes first. I think this is something that we've very clearly seen in the past few years. And this fundamentally sets him apart from Deng Xiaoping, who just decades ago saw development as the precondition for leadership.

And what we see now under Xi Jinping is a Party that sees itself faced with a multitude of risks, both domestic, but also international not just against the regime, but against China's overall national and development interests.

And this outlook is reflected in the makeup of the growing risk of security areas that fall under the concept of comprehensive national security that Xi Jinping coined, then, shortly after stepping into power.

We now have a list that has grown from 11 to 20 and covers areas such as political, military, territorial security, but also much of the economic, financial, technological, cyber, and increasingly national security, but also the security of China's overseas interests reaching into the seas, into the deep sea, into space.

And looking at the expanding list not just of the official canon, but types of security that are used in formulating plans for regions, for different ministries. We can see that this is a growing universe of national security terminology that really shapes and guides officials in their day to day work.

Now, the CCP, as Manoj said, is feeling that it is in strategic competition with the U.S. And one of its key concerns, in addition to domestic challenges with power, is Western containment. And again, this is something that we can see not just in the policy's language around worst-case scenarios and the need for preparedness, but especially in the present apparatus to advance Xi Jinping's quest for comprehensive national security.

And this is really my second point. What we see today is a very well-established legal canon apparatus with a long list of national security focused laws on counterterrorism, managing foreign NGOs, intelligence, and territorial sanctions. And as a key development in the past year, the anti-espionage law and the new state secrets law have shifted what can be considered offenses under Chinese law that affect not just Chinese citizens working with international organizations, but international companies alike.

Xi has also executed continental institutional changes by establishing the Central National Security Commission and really putting it atop of a nationwide and a demonstration spanning system of Party conditions that can now coordinate across ministries, across thematic portfolios.

We see at the same time the rise of officials with a security background, mostly in domestic security, but also focusing on technological security and the economy, as part of a whole team around Xi Jinping steering China's policy today.

The third pillar, in addition to laws and institutions that this effort really stands on, is public mobilization. And there, we have seen this great appeal to the general public to participate in constant monitoring of the situation in internal threat detection, but also in threat prevention. And this is a particularly strong focus of recent campaigns around foreign espionage, where the Ministry of State Security really steps into the forefront and into a very new role, a very new public role, as a security actor within China.

I'm noting all of these changes because the new patriotic education law, as well as new national defense education law, will institutionalize and consolidate these efforts to really open laws across society. And why, in particular, the important development to watch in the coming years will be to what extent this will be put into action in the foreign ports effort of the emergence of militia entities in companies, something that has already been reported in the international media. And so, the complete crisis preparedness on the ground.

Thirdly, a point I want to make is that what we see happening reflects a massive strategic effort, but at the same time it has come with serious side effects.

Just to give a few examples, the zero COVID policy was once held out as proof that Xi's concept of comprehensive national security is working and was only possible through continued mass mobilization. But it led to huge economic losses, protests, and sustained damages to public confidence in China.

Similarly, China's focus on self-reliance, use of economic coercion against countries such as Australia, Japan, Sweden, Lithuania has been a key factor in driving the U.S., EU, and countries internationally to take measures to de risk threats emanating from China.

And yet, this has not led to a rethinking in Beijing. It goes to show, really, that, at least for now, Beijing's willingness to endure a high level of costs and continues to call on all actors in state, in society, and the public sector to be ready to struggle.

And there are a few takeaways and points I want to make here, some echoing what Manoj Kewalramani has already said. So, looking at the time, I'll be focused maybe on the last one in more detail.

The first one is really to observe and understand what is happening in China, especially when it comes to more concrete crisis preparedness.

The second one is to track and strategically monitor the weaknesses emanating from the concept to a national security approach.

And last, but not least, it's important to learn from China's over securitization, especially where at times the country's interest in the long run, and really determine what are our goals in terms of both engaging with, but also containing risks emanating from China. What is the price we are willing to pay? And really try not to follow down the same rabbit hole of over securitization.

Thank you.

COMMISSIONER SIMS: Thank you, Ms. Drinhausen.

And last, to get us started here, we'll have Dr. Paltemaa.

## **OPENING STATEMENT OF LAURI PALTEMAA, PROFESSOR, CENTER FOR EAST ASIAN STUDIES, UNIVERSITY OF TURKU**

DR. PALTEMAA: Dear Commissioners and other panelists, good morning to you all. It's my pleasure to be invited to offer my testimony before the Commission today. My testimony will be about China's emergency management system and its recent developments.

As we all know, China suffers from almost all known types of natural disasters. Each year, the lives of tens of millions of Chinese are affected by natural disasters and thousands are injured or even lose their lives in them.

During the past decade, yearly economic losses from natural disasters have varied around one half to 1 percent of the GDP. China has real and pressing reasons to improve its emergency management system, as it has been constantly doing.

Historically, managing disasters has always been seen as a, or even "the," central task of Chinese governments. Already the Confucian notion of the "mandate of heaven" is connected to a ruler's legitimacy to disasters closely together.

Even today, General Secretary Xi Jinping has issued a series of important instructions on emergency management. Further, under the concept of comprehensive security, all sectors of governance, including emergency management, are included in safeguarding and strengthening both internal and external security, in this order.

The importance of emergency management was demonstrated by the anti COVID 19 fight. Chinese authorities responded to the epidemic with an extensive campaign. Their formidable party state resources were focused on suppressing the epidemic nationwide. This meant mobilizing the public administration, the Party, and the private sector resources to meet the single purpose. The campaign failed at its ultimate purpose, but provided an opportunity to practice large scale social mobilization. This is one of the key modes of disaster management in China.

Apart from the technique of social mobilization, China, of course, has its professional emergency management administration. Here, the development trend has been towards a more centralized, professionalized, and standardized system.

The most significant change in this respect has been the establishment of the Ministry of Emergency Management, MEM, in 2018. At the same time, while major disasters are regarded as a major threat to regime security, the local nature of most disasters makes managing them a local task.

Notwithstanding the rhetoric of its importance, emergency management receives less funding than agencies dealing with harder security issues. Emergency management's dependency on local funding makes its implementation uneven and erratic in places.

When trying to understand China's emergency management system, one needs to understand the nature of the party state. China's emergency response law of 2007 makes the State Council responsible for leading the response to serious disasters. The State Council can form an ad hoc state emergency response command body, or usually called headquarters.

Importantly, however, behind the State Council's headquarters, there will always be a more authoritative ad hoc CCP leadership small group established to manage the crisis. This happened, also, during the COVID 19 crisis. The Party, therefore, leads and coordinates emergency management campaigns, and emergency authorities do not have their own authority in China.

The People's Liberation Army, PLA, is obliged to participate in emergency response and coordinating its activities with the responsible levels of civilian government. The PLA has designated units in military regions assigned to rapid emergency response. In emergency response, these military forces are to be used as the spearhead, acting quickly in dangers and demanding situations.

Closely following them, the China Fire Rescue, CFR, forces form the main professional rescue force. Nevertheless, in China, all citizens, legal persons, and other organizations are obliged by law to participate in emergency responses.

Further, China actually has a dual system of emergency management. Parallel to the MEM system, there is the China Civil Air Defense Office, CCAD, which has overlapping functions with the MEM, but it is a civilian military organization led by the State Council and the Central Military Commission together.

CCAD's tasks include activities that enable the population to withstand war related distresses, natural disasters, and manmade accidents. In peacetime, local civil air defense organizations are obliged to assist emergency management authorities. However, at the same time, the CCAD directs and manages the building and maintaining of air raid shelters and a warning system, a project that is ongoing as we speak.

In the past 10 years, development priorities of the emergency management system have included centralization and improving central local coordination, building more professional rapid action emergency response forces, standardization, building up emergency material reserves, and increased usage of high-tech equipment and solutions. This, one must note, is an ongoing process.

A key goal has been to establish central and local emergency management command centers with permanent staff and facilities in order to improve the combat readiness of rescue forces by implementing what is called a quasi-military management style on emergency management.

The plan has been to place the CFR forces directly under this emergency management command centers' command as a strictly disciplined force that is organized in a quasi-military manner to quasi active service.

The MEM has also promoted stockpiling of emergency supplies and equipment through building emergency storages at all administrative levels, as well as mapping out so-called capacity reserving enterprises for producing materials during emergencies.

Further, improving the planning and layout of emergency centers is one of the national goals. For example, the aim has been to build comprehensive emergency shelters which can function as emergency command facilities in key cities, as well as disaster prone areas and key counties. And this project as such is still going on.

I end this with a few short recommendations.

As recommendations, first, I'd like to note that engagements with Chinese emergency management, such as offering disaster aid and exchange of information of natural disasters, might offer openings for dialog through disaster diplomacy.

Second, at the same time, following the development of emergency management and civil defense systems and the tone this work takes is also advisable, as it could offer some warnings relative to things someday to detect.

Thank you.

**OPENING STATEMENT OF LAURI PALTEMAA, PROFESSOR, CENTER FOR  
EAST ASIAN STUDIES, UNIVERSITY OF TURKU**

## Testimony before the U.S.-China Economic and Security Review Commission

Hearing on *“China’s Stockpiling and Mobilization Measures for Competition and Conflict”*

Thursday, June 13th, 2024

Prof. Lauri Paltemaa  
Centre for East Asian Studies  
University of Turku  
Finland

This testimony has been written with an aim to describe China’s emergency management system that handles natural and man-made disasters. The testimony will briefly outline the situation and history of natural disasters in China and then move on to describe the emergency management system, its main features and current development trends. The testimony ends with short recommendations to the Commission.

### Introduction: China and Disasters

China suffers from almost all known types of natural disasters. Its geographic location renders it vulnerable to the caprices of the monsoon climate with cyclical droughts and floods. Typhoons ravage its southern and eastern coasts regularly. China is located on a border area between number of tectonic plates and active fault lines, which causes continental earthquakes that range from frequent smaller ones to more rare mega scale events. Altogether, there are over 100 types of various natural hazards present and only major active volcanoes are missing in China. This creates considerable risks to the Chinese population. More than half the population and 70 % of the major cities are situated in areas where serious natural disasters can occur. For example, floods can threaten two-thirds of China’s land area and all the country’s provinces have been struck at least once by earthquakes of magnitude five or more on the Richter scale. Each year, the lives of tens of millions of Chinese are affected by natural disasters and thousands are injured or even killed by them. During the past decade, yearly economic losses from natural disasters have varied around 0.5 – 1 % of the GDP.<sup>1</sup> With the climate change, especially meteorological hazards are also becoming more frequent and destructive. Urbanization and industrialization further have made disasters more costly, complex, and difficult to manage.<sup>2</sup> China therefore has pressing and legitimate reasons to strengthen its ability to manage natural disasters.

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<sup>1</sup> Natural Disasters Challenges in China: Key Trends and Insights, World Bank August 2020, <https://www.gfdrr.org/en/feature-story/natural-disaster-challenges-china-key-trends-and-insights>

<sup>2</sup> The Ministry of Emergency Management (2021): *National Emergency Management System Plan during the 14th Five-Year Plan Period*

## The CCP and Disasters: Legitimacy, Concepts, and Principles

Historically, managing disasters has always been seen as a, or even *the*, central task of Chinese governments. Already the founding myths of the first Chinese states in the Yellow River basin dating back some 4000 years mention ‘taming the waters’, i.e. controlling floods, as the principal source of legitimacy for the ruler. The Confucian notion of the mandate of heaven (*tianming*) saw that the heaven displayed its displeasure on the ruler’s immoral conduct through natural disasters, that could also be used as justification for rebellion and revolution against the immoral ruler or dynasty (changing the mandate, *geming*).<sup>3</sup>

Even today, emergency management is a central concern to the leaders of the Chinese Communist Party (CCP). During his reign, General Secretary Xi Jinping has issued a series of ‘important instructions’ on emergency management.<sup>4</sup> Further, under the concept of comprehensive (national) security that has been promoted under Xi Jinping, all sectors of governance are included in safeguarding and strengthening both internal (regime) and external (national) security, in this order.<sup>5</sup> Following this, also the Ministry of Emergency Management (MEM) declares to be pursuing a ‘holistic approach’ to national security, while upholding the Party’s leadership role in the emergency management work.<sup>6</sup> The 2007 Emergency Response Law notes that the emergency management’s purpose is to maintain the national security, public safety, environment safety, and social order.

The Covid-19 pandemic provides a good example how Chinese authorities respond to a large-scale natural disaster. During the Corona crisis, the authorities sought to bring the epidemic under control through a long term and extensive “dynamic zero” epidemic suppression *campaign*. In such a campaign, the party-state typically focuses its resources to solve a singular issue or threat and mobilizes the public administration, the party, and private sector resources to meet this purpose. In this case, it meant enforcing strict quarantines and regular testing for infections affecting the whole population. The campaign was never officially ended, but it did so *de facto* at the end of 2022 after failing to suppress the Corona virus. The campaign caused protests and economic dislocation, which still affect Chinese economy today.

Other recent large-scale disasters include with wide scale local mobilization include the North China floods in 2023 around Beijing, Tianjin, and Hebei and the spring 2024 large floods in Southern China. Both cases affected millions of people and caused economic damages measured in billions of RMB.

As managing disasters is regarded as one of the government’s key obligations to the people, mismanaging disasters have direct consequences to social stability and the legitimacy of the ruling party. Disasters are therefore regarded as a major threat to regime security. At the same time, while the Covid-19 epidemic was an exception, the usually local nature of most disasters makes also

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<sup>3</sup> Lauri Paltemaa: *Managing Famine, Flood and Earthquake in China: Tianjin 1958-1985*. London: Routledge 2016

<sup>4</sup> Ministry of Emergency Management: Press conference on reform and development of emergency management in the new era, China.org.cn, September 12, 2022, [http://english.scio.gov.cn/m/pressroom/2022-09/12/content\\_78415784.htm](http://english.scio.gov.cn/m/pressroom/2022-09/12/content_78415784.htm)

<sup>5</sup> Joel Wuthnow (2022): Securitisation and Governance in the Xi Jinping Era, in *CPC Futures - The New Era of Socialism with Chinese Characteristics*, Edited by Frank N. Pieke and Bert Hofman, NUS Press Singapore, 2022, 149-156; Tai Ming Cheung (2022): The Rise of the Chinese Techno-Security State, in *CPC Futures - The New Era of Socialism with Chinese Characteristics*, Edited by Frank N. Pieke and Bert Hofman, NUS Press Singapore, 2022, 165-174.

<sup>6</sup> The Ministry of Emergency Management (2021): *National Emergency Management System Plan during the 14th Five-Year Plan Period*, p. 35



managing them mostly a local problem. Notwithstanding the rhetoric, emergency management also receives less funding than agencies dealing with 'harder' security issues, such as the police and the military. Emergency management's dependence on local funding makes its implementation uneven and erratic in places.<sup>7</sup>

## The Chinese Emergency Management System

China's overall governance system is regarded as fragmented and complex. Emergency management is no exception to this rule. However, in the recent years there has been a clear aim to centralization, regularization, and standardization of emergency management administration from the central government all the way down to the grass roots level. The most significant change in this respect has been the establishment of the Ministry of Emergency Management (MEM), which was founded in the larger central government overhaul in 2018 bringing together a number of previously existing emergency management offices and commissions under the same centralized administrative roof.<sup>8</sup> The MEM is a cabinet-level executive department of the State Council of China responsible for emergency management, work safety, and emergency rescue in the country. The MEM is a civilian organization but coordinates its activities with the army which has legal obligation to participate in emergency rescue. Currently the MEM is headed by minister Wang Xiangxi who is also a member of the Central Committee of the CCP, which is typical for cabinet level ministers.

Conceptually, the Emergency Response Law of 2007 divides emergencies into four levels: The especially serious ones, serious, large, and ordinary, or red, orange, yellow and blue respectively.<sup>9</sup> The geographic scope and seriousness of the disaster affects the level of the government unit primarily responsible for response. The level is decided by the party leaders and is essentially a political decision. In this context, larger and more urgent a disaster is, large mobilization measures usually follow.

In the red, or especially serious, emergency incidents, the State Council is the responsible for leading the response, which usually has been tasked to the Prime Minister. A state of emergency can be declared by the Standing Committee of the National People's Congress or the State Council, but these are ultimately decisions by the CCP and are extremely rare. For example, this was not done during the Covid-19 epidemic. Nevertheless, in declaring an emergency as especially serious, the State Council can form an *ad hoc* state emergency response command body, and can form command headquarters, and often dispatches task groups to guide emergency management in localities.<sup>10</sup> This way, the localities have enough authority to command resources for the work from provincial and/or central governments, but the central government is also kept aware of the real situation in the localities. Importantly, behind the State Council command body there will always be a more authoritative *ad hoc* CCP leadership small group (*lingdao xiaozu*) established to manage the crisis. It consists of party secretaries of the bureaus, bodies, and organizations that participate in emergency management, such as construction, transportation, health, railway, and police bureaus and authorities. The party therefore leads and coordinates emergency management campaigns

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<sup>7</sup> Lauri Paltemaa: China's Changing Disaster Management Regime, *China Information*, 31(3) 2017, 284-303.

<sup>8</sup> The Ministry of Emergency Management (2021): *National Emergency Management System Plan during the 14th Five-Year Plan Period*.

<sup>9</sup> The Emergency Response Law of the People's Republic of China (2007), <https://www.lawinfochina.com/display.aspx?looktype=3&lib=law&Cgid=96791>

<sup>10</sup> Ibid.



behind the command headquarters, and emergency authorities do not have their own authority, but they derive it from the authorization by the party. This happened for example during the Covid19 crisis, when Xi Jinping took leadership of the anti-covid campaign through a central CCP leadership small group.

The military is obligated to participate in emergency response and coordinates its activities with the responsible levels of government. The People's Liberation Army (PLA) also has designated units in military regions assigned to rapid emergency response and which often have access to air transportation. In practice, army representatives will take part in local leadership small group work and local command headquarters, while also having its own command structure. In China, citizens, legal persons, and other organizations are obligated by law to participate in the emergency responses.<sup>11</sup> During the Mao-era this could mean that large numbers of citizens were mobilized to disaster prevention and search and rescue operations with little notice or training. During the reform period, this mass mobilization practice has been used to a lesser extent, and disaster management campaigns have become more based on the mobilization of all sectors of public administration, the CCP members as well as state-owned and private companies in a form of more managed campaign mobilization.<sup>12</sup> The law stipulates the county level as the lowest administrative level responsible for setting up a separate emergency management system, but in practice building permanent emergency management structures has been expanded to the lowest (*shequ*/village) administrative level in an on-going long term project to develop local response capabilities that started in the mid-2010s and still continues.<sup>13</sup>

Conceptually, the 'first response' to natural hazards is regarded as local responsibility, which is not surprising. In the current emergency response concept, the military forces are to be used as the 'spearhead' acting quickly and being used in dangerous and demanding situations. Closely following them, the China Fire Rescue (CFR) forces forms the main professional rescue force, while the other professional rescue teams such as fire brigades in state-owned companies act as a supplementary forces, and non-governmental search and rescue groups are regarded as auxiliary forces in emergency work.<sup>14</sup>

Declaring a 'period of warning' and then a 'period for organizing the emergency response' operations gives in principle wide powers to local governments (their command bodies) to order mobilization of rescue teams, evacuations, deploying and requisitioning rescue materials and shelters, strengthening public security measures, ordering local entities to cease operations for avoiding damages, traffic controls, quarantines, as well as organizing citizens to attend the emergency response rescue and operations, etc. Operations command bodies may requisition equipment, facilities, premises, transportation vehicles, and other materials from companies and individuals and require organizations that provide medical, transportation, and other public services to assist emergency work.<sup>15</sup>

In addition, the propaganda authorities participate actively in emergency management. Chinese emergency management is always accompanied with wide use of propaganda, censorship, and

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<sup>11</sup> The Emergency Response Law of the People's Republic of China (2007)

<sup>12</sup> Perry, E. J. (2011). "From Mass Campaigns to Managed Campaigns: "Constructing a New Socialist Countryside"". In *Mao's Invisible Hand*. Leiden, The Netherlands: Harvard University Asia Center, 30-61.

<sup>13</sup> Paltemaa 2017

<sup>14</sup> The Ministry of Emergency Management (2021): *National Emergency Management System Plan during the 14th Five-Year Plan Period*

<sup>15</sup> The Emergency Response Law of the People's Republic of China (2007)

monitoring of news and online debates about disasters and large-scale accidents when they occur. Crisis communication in China is therefore not only, or even primarily, about helping the population to cope with the emergency situations, but rather about managing popular opinions and sentiments through controlling information and the narrative about the disaster.<sup>16</sup> Such narratives always contain praise for the emergency management efforts by the party for its unerring leadership, extolling the exemplary behavior of soldiers, work units and chosen individuals, silencing or obfuscating any discussions about culpability or mistakes by the authorities as well as include reminders to people to be thankful for the government's relief aid, while stressing that people have to primarily rely on their own efforts in coping with the situation. Hiding real casualty and damage figures is typical as is the practice to fade out news coverage of disasters after a while. Moreover, Chinese disaster news coverage will never provide the big picture or scrutinize party-state activities critically.

### The Civil Air Defense System

It is good to note that China has a dual system for emergency management. Parallel to the MEM, but smaller and organizationally less powerful (not a cabinet ministry, but a separate office), there is the China Civil Air Defense Office (CCAD), which has overlapping functions with the MEM, but is a civilian-military organization. Internationally, merging civil defense with emergency management is common and happens also in the FEMA system. In China, this is referred to as 'the combination of air defense and disaster prevention'. However, as noted, the two organizations in charge of these matters are administratively separate.

The law stipulates that the State Council and the Central Military Commission lead the national civil air defense work together. This includes activities that enable the population to withstand war-related distress, natural disasters, and man-made accidents.<sup>17</sup> The MEM and the CCAD therefore have overlapping jurisdiction. In peacetime, local civil air defense organizations are obligated to assist emergency management authorities during natural disasters. However, at the same time the CCAD directs and manages the building and maintaining bomb shelters, which can also be used during peace time as emergency shelters during such hazards as storms, earthquakes, or dangerous temperatures. Such facilities also offer command posts for disasters command bodies. Local governments are obligated by law to plan civil air defense and construct shelters, including underground storage spaces for emergency materials. Further, all civilian buildings large enough should have basements that can be used as shelters if needed. It is difficult to say how well these regulations have been implemented, however, since the sanctions for neglecting these obligations are low and building shelters is relatively expensive. Building emergency / bomb shelters for emergency management command bodies is nevertheless an on-going project.<sup>18</sup>

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<sup>16</sup> Bin Xu, *The Politics of Compassion – The Sichuan Earthquake and Civic Engagement in China*. Stanford University Press, Stanford (2017); Christian P. Sorce, *Shaken Authority -China's Communist Party and the 2008 Sichuan Earthquake*. Cornell University Press, Cornell (2017).

<sup>17</sup> People's Air Defense Law of the People's Republic of China (1999)

<sup>18</sup> See for example 国家人防办唐玉俊副主任调研指导济南市人民防空工作, 2022-06-19, <https://baijiahao.baidu.com/s?id=1736031204852658931&wfr=spider&for=pc>

## Current Trends of the Development of Emergency Management System

In the past ten years, China's emergency management system has been developed in a number of fields. Development priorities have included centralization of disaster management and improving center-local coordination, building more professional rapid action emergency response forces, standardization, building up emergency material reserves, grass-roots organization building, and increased usage of high-tech equipment and solutions in emergency work. In addition to this, constructing emergency shelters has been an on-going process.<sup>19</sup>

*Centralization and center-local coordination:* Establishing the MEM in 2018 aimed at fostering a more systematic, integrated, and coordinated emergency management. Its goal was to establish unified and permanent national emergency command structure with regular professional staff and ability to deliver quick response as well as more efficient coordination among different administrative levels and units.

The *National Emergency Management System Plan during the 14th Five-Year Plan* indicates how one of the main goals of emergency management reforms has been to establish permanent central and local emergency management command centers. First on the central level, and then on provincial and lower administrative levels. The county level is envisioned to establish mobile command centers, while the grassroots will have 'comprehensive emergency rescue service stations'. Through the improved permanent command structure, the aim is to improve the 'combat readiness' of rescue forces by implementing what is called a 'quasi-military management style' on emergency management. Of these centers, at least the National Emergency Command Headquarters has been established.

*Professionalization:* The plan is to expand the professional rescue services directly under the command of the emergency command headquarters. These forces are called the China Fire and Rescue, CFR, which consist of the Chinese People's Armed Police Force (CAPF) Fire Fighting Force and CAPF Forest Fire Force. The plan calls for further expansion of these forces in provinces and localities under the unified leadership and command by respective emergency command headquarters aiming at having at hand rapidly deployable strictly disciplined force that is organized in a quasi-military manner to quasi-active service. Nevertheless, the MEM complains that in reality there is still an acute shortage of such emergency forces, especially that of the CFR.

*Standardization:* The MEM aims to standardize emergency management practices, technical specifications and parameters of emergency equipment, signs, and supplies. As a good example of this are the recently issued emergency signs which the localities and unit should use to mark and guide people in emergency situations (see image 1 below).

*Improving material preparedness:* the MEM has also promoted ensuring access to emergency supplies and equipment through building emergency storages. The plan has been to improve the system for disaster relief material reserves at the central, provincial, city, county, and township levels as well as mapping out and having necessary capacity of emergency production by private and state-owned companies (so called capacity reserving enterprises). There exist 20 central relief supply reserve bases and in 2020-2025 the goal has been to build or expand 35 more 'comprehensive relief supplies warehouses' and seven more 'comprehensive national reserve bases' in transportation hubs, densely populated areas, and areas prone to serious disasters. Local

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<sup>19</sup> The data in the discussion below are based on the Ministry of Emergency Management (2021): *National Emergency Management System Plan during the 14th Five-Year Plan Period*

governments have also been encouraged to establish their own emergency supply reserves, especially in the central and western regions, and economically underdeveloped high-risk areas. Transportation of relief supplies is to rely on 'large backbone logistics enterprises' including aviation and high-speed rail. Emergency management-related industries and enterprises have been guided to produce emergency management -related products such as protective materials, emergency communication products, emergency broadcasting systems, and transportation products such as all-terrain rescue vehicles and large-span pontoon bridges. An additional goal is constructing an emergency communication network that integrates air, space, land, and sea channels to improve emergency communications capabilities under extreme conditions.

*Building emergency shelters:* The national emergency management plan states that improving the planning and layout of emergency shelters is one of the national goals 2020-2025. This includes building emergency shelters and improving the fortification levels of major facilities to better withstand meteorological and geological hazards. In key cities as well as disaster-prone areas and key counties the aim is the build 'comprehensive emergency shelters' which can functions as emergency command facilities and better enable exercises, stockpiling material reserves, and helping the resettlement of disaster victims.

Constructing emergency / bomb shelters as also a task of the CCAD, which also has an on-going shelter construction programme. A somber reminder of the issues involved in this is given in a 2022 news article on the completion of the construction of the new underground command center of the Jinan Civil Air Defense Office in Shandong Province. In the opening ceremony, Tang Yujun, the Deputy Director of the National Civil Air Defense Office, declared that the completion promoted "the continuous deepening of preparations for war and military struggle preparations for civil air defense." Through this, he further declared, "The command system [of civil air defense] has been gradually improved ... and the ability to win has been significantly improved."<sup>20</sup> It is good to note that such militant tone is not common in purely emergency management-related articles or news releases. Coordination between emergency management and civil defense can also be seen for example in how emergency signs have been standardized by the MEM including ones for emergency / bomb shelters (see image 1).

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<sup>20</sup> 国家人防办唐玉俊副主任调研指导济南市人民防空工作, 2022-06-19,  
<https://baijiahao.baidu.com/s?id=1736031204852658931&wfr=spider&for=pc>



Image 1: Example of national standardized signs for emergency shelters 2024.<sup>21</sup>

### The Impact of the Covid-19 Epidemic

The emergency response to the Covid-19 crisis was largely the responsibility of the National Health Commission but emergency management authorities participated in implementing the campaign for example by providing equipment and helping with logistics. It has been argued that the Covid-19 crisis started partly due to inability of the early health warning system to fulfil its functions.<sup>22</sup> Although the draconian quarantine and testing measures failed to suppress the epidemic in the end, the event has to be seen as a demonstration of the great power the Chinese style campaign-based emergency management possesses. The anti-Covid-19 campaign further provided an exercise in nation-wide mobilization that had not happened since the Mao-era and showed that the party is capable of mobilizing the public sector, CCP members, and private companies to a long-lasting campaign if there is political will. This said, the long-drawn-out campaign depleted local revenues and inflicted damage to CCP's and Xi Jinping's legitimacy.

It is difficult to determine yet if the Covid-19 campaign changed emergency management permanently and how. By diverting attention and resources to maintaining the 'dynamic zero', it may actually have delayed reaching of some of the reforms and development targets that China's emergency management currently has, as listed above. It also depleted local governments' revenues, which combined with the economic trouble created by the bursting of the housing bubble cannot but affect negatively local ability to respond to emergencies.

### Policy Recommendations

China has rational and pressing reasons to improve and strengthen its civilian emergency management system. In the past ten years or so, the emergency management system has been strengthened on all levels of administration and this development continues. The main concern has

<sup>21</sup> Ministry of Emergency Management (2024): 应急避难场所标志, GB/T 44014-2024

<sup>22</sup> Zhenze Huang (2022): China's 'Fragmented Authoritarianism' During the COVID-19 Pandemic, *The Diplomat* June 25, 2022, <https://thediplomat.com/2022/06/chinas-fragmented-authoritarianism-during-the-covid-19-pandemic/>

undoubtedly been to be better able to manage frequently occurring natural disasters, diminish the human and material losses incurred by them, and create more resilient society in general. However, the emergency management capabilities that are needed to build societal resilience such as improved crisis management organization, clearer command channels and responsibilities, and more permanent and professional rescue forces, as well as many forms of material preparations from stockpiling to constructing emergency shelters are often directly usable in civil defense as well. Nevertheless, one also needs to keep in mind that in China local variation in emergency management is large and the implementation of plans and policies is usually less impressive than the plans themselves.

As recommendations, first, I'd like to note that engagements with Chinese emergency management such as offering disaster aid and exchange of information on natural hazards might offer openings for dialogue. Although no one wants disasters to happen, due to China's geological and meteorological endowments it is unfortunately likely that the future holds many disasters for her. Using these as opportunities for disaster diplomacy might be prudent. Second, at the same time, following the development of emergency management and civil defense and the tone this work takes is also advisable.

## PANEL I QUESTION AND ANSWER

COMMISSIONER SIMS: Thank you all for your prepared testimony. We're going to enter into a period now of Q&A. It will be five minutes each. We'll do it in alphabetical order, but I would take the prerogative of the Chair to ask the first question.

And I'd like to ask this of each of you, and maybe we'll just go in the same order that we just gave prepared testimony.

I would love to hear from each of you your perspective on what type of indicators could we expect from the CCP, from the central government, from the security apparatus there, to telegraph that we may be entering into a period of conflict, and specifically, related to Taiwan. What kind of indicators would each of you anticipate that we could see that might telegraph that?

MR. KEWALRAMANI: Thank you so much for the question. I can go first.

I think that from a narrative and a propaganda perspective, I think one of the first things that we'll start seeing is that over a period of time you're likely to see demonization of groups of Taiwanese people, and understanding that there is a significant cost to civilian life that is likely to take place.

I say this because I think in a lot of Chinese propaganda, even at this point of time, all the rhetoric has changed since the new Taiwanese administration has taken charge. Still, there is an opening for dialog. There is an opening of trying to engage with political forces in Taiwan which the Party believes are conducive to its objectives.

But I think that you're likely to see that sort of shift where you're likely to see a closing of dialog and a suggestion that everything has been tried and a demonization of those who potentially are likely to lose their life.

I'll stop with that to give others the opportunity to answer.

MS. DRINHAUSEN: Thank you for this question.

In addition to the language emanating from Beijing, both in top level documents and in propaganda, I would really look at the grassroots, at the national security education campaigns, at the trainings, at quizzes, at low key events, really at kind of the lowest tiers of society to prepare citizens, especially those in less economically privileged situations.

As far as the middle class maybe with different targeted messaging for harder times to come. Because this would be quite a significant development in the future to be considered, the economic downturn and pressure that China has been under, partly as a consequence of and in terms of community focused COVID drive.

DR. PALTEMAA: Yes, I have to agree with both the previous speakers about the importance of following what's happening in the grassroots.

Concerning emergency management, I would assume that, if China will make a decision that it is going to invade, it would try to or we would need to look into how people are preparing at the grassroots levels; also, in terms of very concrete matters of emergency management. They could have trainings on evacuations or how to take shelter, or just first aid for a population, and especially in the regions around Taiwan, Fujian, Qidong, and Fujian. These provinces, what would be happening there in the grassroots? And if this emergency management rhetoric starts to talk more about external threats or enemies, this would be very obvious, obviously, but following what's happening there would be a key to this.

COMMISSIONER SIMS: I want to follow up with you, Ms. Drinhausen. One of the things that you said really stuck out to me, and it was about preparing I don't remember exactly



how you said it but, you know, kind of middle class, lower class, working class people in China to struggle, starting using that message around “struggle.”

And my question is, considering we’re already hearing this type of language all the way to the top, Xi Jinping and how he talks about it, are you suggesting some of that messaging is kind of already happening? Or is that more focused on an elite audience right now, and they haven’t yet started talking to the people that you’re referencing here, if that makes sense?

MS. DRINHAUSEN: Yes. Thank you for that great follow-up question.

It’s somewhat difficult to answer because struggle and appeals to struggle are such kind of a fundamental part of the CCP’s vocabulary and has been for a long time. So, the appeal to be ready to struggle is something that we have seen growing and mentioning in published documents and speeches, including in grassroots campaigns and outreach, over the past five years and almost from the beginning of Xi Jinping’s term.

So, it’s quite difficult to determine if it’s struggle or being ready to struggle for internal hardships as part of the economic downturn or if it’s part of the struggle for military conflict. And that’s where I think Manoj Kewalramani’s suggestion on really focusing on demonization, of targeting that willingness to struggle to a certain topic or potentially emerging crisis is going to be key.

MR. KEWALRAMANI: Commissioners, can I add onto that point, please?

COMMISSIONER SIMS: Yes, quickly, please. Yes.

MR. KEWALRAMANI: Yes. So, I agree and I think that I would contend that, in fact, what we’re hearing currently has not much to do with conflict in the Taiwan Strait, this language of struggle. I think it has much more to do with the changing development environment and the shifting economic model and the challenges associated with that.

COMMISSIONER SIMS: Thank you for that.

All right. We’ll start our alphabetical order with our esteemed Commission Chair, Commissioner Cleveland.

COMMISSIONER GLAS: Robin, you’re on mute.

CHAIRMAN CLEVELAND: You would think I would learn that by now. Sorry.

Ms. Drinhausen, you said in the context you were talking about COVID and these policies of addressing self-reliance and economic coercion, or having economic consequences, and although Xi has called on all to join the struggle, we should be monitoring weaknesses to his approach, not just these demands. Could you elaborate a little on what you perceive the weaknesses to be?

MS. DRINHAUSEN: Yes, I would be happy to, because I think it’s just as important to not overestimate China, as it may be risky to underestimate and its capabilities.

That is, here with that point, it was really thinking about issue areas, about policy areas, where there was a clear national security directive formulated, essentially, by the leadership. And in the age of COVID, it was the war against COVID and zero COVID, absolute containment of the virus and being able to pull that off as part of systemic competition.

In terms of economic coercion against Europe, the goal was really kind of externalizing China’s kind of discourse demands on Taiwan and on other issues. Right?

So, there was in every case and I go into more detail in some of the written testimony we have many cases where there is quite a single-minded security area outlined that is, then, implemented in a way that is certainly not comprehensive, but where, actually, this kind of over focus on one security goal leads to really, really fateful after effects.



And in these two cases, I think it's particularly notable because there are too often underlying causes for the economic conundrum that the Chinese Communist Party finds itself right? ahead of a key economic policy meeting.

CHAIRMAN CLEVELAND: If there was a widespread message that was viewed as credible that COVID, in fact, did start in the Wuhan lab there was a long piece on this in The Washington Post this weekend if there was that information disseminated in China in some meaningful way, what would the impact be on the leadership's sense of stability?

MS. DRINHAUSEN: Yes, I can start it and I'm sure others can actually add to that question.

I do not think that this would hurt the leadership's credibility at this point because this is something they have been preparing for in terms of the public opinion crisis. And they have been preparing for that for years by really establishing, including in state media, doubts about the origin or, actually, working on the uncertainty that the virus originated anywhere but in China and, as likely, in the United States. And so, I do believe, yes, to some extent, this would really fit into the Party's narrative of the world, and especially of the U.S., being out to get China.

CHAIRMAN CLEVELAND: Interesting. Okay.

DR. PALTEMAA: If I may add to that, if there were that scenario, that people would really get to know this, it would certainly aid the Party led narrative. However, it would be silenced totally and censored and labeled as fake news. It would never make circulation in China in the first place. So, it's a very theoretical question.

CHAIRMAN CLEVELAND: It's a theoretical question if we're looking at mobilization within China. It's not theoretical if we're looking at China's desire or ambitions for mobilization of support in the south and around the world.

And so, you know, if we singularly focus our message on China, then, yes, I think you're probably right it's a wall that's impenetrable. But the question is how well the message is communicated to people that China views as allies or potential allies.

DR. PALTEMAA: That is a very good question. Of course, if you put it that way, China cannot, of course, control the international narrative of its disasters. That's very clear. But it does have hold there, especially in Africa, very trained journalists and offers the news for free

CHAIRMAN CLEVELAND: Right.

DR. PALTEMAA: or for the African press, for example.

CHAIRMAN CLEVELAND: Yes.

MR. KEWALRAMANI: If I could just add to that, I think in that case the message matters as much as the messenger. It would depend on who is delivering that message, who is releasing that information, and who is behind that information, and its credibility, consequently. I think if it's the U.S. which is the messenger, you're likely to see a very vitriolic campaign demonizing the U.S.

CHAIRMAN CLEVELAND: Agree.

I have another question if there's a follow-up round. Thank you.

COMMISSIONER SIMS: Great.

Next, we have the pride of Princeton himself, Commissioner Friedberg.

CHAIRMAN CLEVELAND: You're on mute.

COMMISSIONER SIMS: Oh, we're 0 for 2 on unmuting now.

COMMISSIONER FRIEDBERG: Well, I pushed the wrong button, but thank you.

Mr. Kewalramani, I want to start with you and ask a question of you, and perhaps also Ms. Drinhausen.

You made the point that there's clearly a connection between the internal and external, the perception of internal threat and external threat on the part of leadership.

To what extent do you believe that the leadership is currently stressing external threats primarily for the purpose of strengthening its control over the population, which it seems is facing a variety of challenges, including COVID, economic slowdowns, and so on, versus, as it might appear from the outside, mobilizing the population in order, actually, to prepare to do something about what they might perceive as external threats, like emanating from Taiwan? Which of these is really most important in your view in explaining what's going on?

And as I said, perhaps I could start with you, and then, get Ms. Drinhausen's view.

MR. KEWALRAMANI: Thank you so much for the question. My view is that I think there is a genuine belief that the external environment has worsened, and that's impacting how the Party is communicating domestically.

I think Xi Jinping's statement last year during the two sessions, where he name checked the U.S., I think that was deliberate. It was also a recognition because it sends a message to the entire system that the top leadership is making this assessment public for everybody to know. So, I think, to me, that signifies that there is a genuine sense that this is a strategic, long term challenge and we need to mobilize society.

Also, in terms of policies across the West of de risking, I think that's sort of also led the system to believe that this is a long-term strategic issue and we need to mobilize all resources domestically. I don't think it's simply about creating a red herring to mobilize people to bolster regime legitimacy.

MS. DRINHAUSEN: If I can answer that point, I do think there is one important thing to understand, which is that kind of there is, you know, from the start, a very close link between the internal threats that the government is hearing and external threat perception. And with external threat perception, the leadership generally, you know, if you mention that, the leadership will think not about all of the wealth, but especially about Western countries and, of course, the most the U.S. Whereas, other parts of the world, especially the low south we can generalize here for simplicity are seen as potential allies in China's struggle, not just domestically, but globally.

But, with that kind of close connection between the U.S. as an external actor, you see repeating patterns in internal messaging and threat description. Because when the Chinese leadership talks about subversion, secession, threats to the leadership, pretty much in every text and in Xi Jinping's own books and writings about national security, you will find the reference to this being Western permeation, Western hopes to destabilize China.

Because part of the basic logic is that the CCP itself cannot be the one that has triggered public unrest and pushback against its policies. So, starting from that logic, I do think this explains why the leadership is behaving the way it does and, in a way, kind of turning this into a self-fulfilling prophecy by hating external actors as a threat, and out of the deep-seated belief, in parts of its own origin story.

And then, following up with its own actions and counter actions and from international players that lead down into a spiral that has, for example, led to the European Union just imposing tariffs on Chinese electric vehicles challenging China's development and security interests in a sense.

COMMISSIONER FRIEDBERG: Dr. Paltemaa, do you have a view on this, the relative weight of internal versus external threats in the perceptions of the leadership?

DR. PALTEMAA: I have to concur with Dr. Drinhausen there, that the Chinese Communist Party has an extremely conspiratory world view. So, there is always a conspiracy

going on against them. Maybe because there's always conspiracy going on in the Party itself, well, that's their world view. So, why wouldn't others act like they are doing?

But, then, I think that external threats are maybe a step lower in importance than internal ones. Because China is a very self-censored system and a country, and they have so much of their own problems, that these external problems just come to add to them, but, certainly, in connection, as has been argued here.

COMMISSIONER FRIEDBERG: Thank you very much.

COMMISSIONER SIMS: Commissioner Glas?

COMMISSIONER GLAS: Many thanks to the witnesses today.

And, Dr. Paltemaa, I wanted to start with you about the development of an emergency management system and get your opinion.

Do you think the development of such a system is a result that internally within the Party they actually think that their COVID response, there were failures there? Meaning I know what they're projecting publicly, that they had this wrestled; they had quick action. But just wondering what you think the thought process was internally.

And then, what do you think the failures of that kind of system in China could be? Meaning, what are the vulnerabilities? So, when we look at centralization of some of the military decision making, there's failures in that when it's deployed in the field because people don't feel empowered.

And as we're thinking about threats and conflicts, and things like that, you know, what are some things that we should just kind of keep in mind that could be failings in the system that they may be creating; that they are creating?

And anyone else who wants to answer that, too.

DR. PALTEMAA: Well, I thank you for the question.

I'll start with just learning that Chinese practice is that everything they just kind of forbid that it even happens. They will come together and they will try to learn and make conclusions about what went wrong and what to learn.

But in this case it's difficult because it was a signature campaign by Xi Jinping and a great leader is never wrong. So, it's doubtful that they actually learned the right things.

They would learn how to improve their health early warning system, for example, that failed in the beginning. They would learn maybe about the logistics, about supplying current aid to people, and these kinds of things, technical things.

But they would not learn about the basic problem, which is the fact that the leader can never be wrong. And that's something the system cannot really self-correct.

As to the weaknesses, well, there is pretty much the weakness that, if the system goes wrong, it will continue going wrong until there is a correction from the very top. So, it is very top centered, a top down system, and it is not that flexible in responding to many emergencies. Localities may not have incentives, actually, to inform the higher levels about emergencies because that's bad for their evaluation, for example.

So, there are very many problems with this political framework, but the professionalism, at the same time, is there.

COMMISSIONER GLAS: Thank you. Any additional comments from our other panelists?

MS. DRINHAUSEN: If I may, maybe one point to that.

To turn it around, I do think it's also important to look at the strength and that the Party has discovered itself in a sense, especially in relation to COVID 19. One was the ability to

sustain such mobilization, and even though at some point it did reach the pressure point and protests erupted.

But the protests themselves were a learning moment as to how well the kind of coercive course of apparatus consciousness. They're talking about the surveillance state, the public and state security apparatus, and how quick they were in both containing protests and identifying protestors and intimidating them for month, and really kind of containing then, to some extent, the narrative damage if a loss of confidence lingers. So, to some extent, that kind of fateful pandemic has been a learning experience for them, despite kind of the costs they have incurred.

COMMISSIONER GLAS: Thank you.

COMMISSIONER SIMS: All right. Next, we have our hearing co-chair, Commissioner Goodwin.

COMMISSIONER GOODWIN: Thank you, Commissioner Sims.

Mr. Kewalramani and Ms. Drinhausen, I suppose this question would be directed to the two of you. And I wanted to talk a little bit more about the comprehensive national security concept.

Later today, we're going to hear from a witness who, among other things, will testify that Xi presides over a bureaucracy that simply is not, or at least has not, been conditioned, prepared, or incentivized to focus on security issues. And instead, has been focused and incentivized to focus on development and economic growth. That dynamic that I suspect is even more pronounced on the provincial and local levels.

I would love to hear your reaction to that and invite you to talk a little bit about the challenges that the PRC faces in implementing this concept internally and trying to strike that dynamic balance between security and development, given that dynamic within its own bureaucracy.

MR. KEWALRAMANI: So, I can go first.

So, I think that there is a fundamental shift that has taken place which is much more pronounced in the last three or four years where security has been prioritized over development. While there is this talk about the need to have a balance between the two of them, security has clearly won out. And again, his speech at the 20th Party Congress emphasizes that with significant focus on security across all domains.

Also, the legislative changes that Ms. Drinhausen talked about, those clearly indicate that the priority of any economic engagement, you are looking at security first.

Even the upcoming third plenary session, which is expected next month, if you look at the Commission for Comprehensively Deepening Reforms that met recently, there's a confused messaging across the ecosystem. So, in that situation, what provincial and local level officials are going to look at is who is being rewarded under what conditions for what outcomes.

And increasingly, what you're seeing is that people who are able to ensure security, who are able to ensure that, are being rewarded. If you look at the outcomes of National Security Education Day, the propaganda around that, and the key studies that the Party has publicized, it's, essentially, around how Chinese enterprises and Chinese corporate actors, how they engage with foreigners and how they protect and preserve economic resources, whether it is data with regard to the environment; data with regard to food, grains, and germ plasm, and so on and so forth.

So, to me, I think the structure has moved to incentivize security and it's no longer emphasizing development in the way it does. That doesn't mean that development isn't necessary. The primary focus, however, is security.

MS. DRINHAUSEN: If I can add to the incentive structures for local officials, I do think it's really helpful for everyone to take a look at the long list of different types of security, and then, think about all the different types of security that are accommodated in a kind of sector or region-specific manner.

You know, for example, different security focus is policy security and, for in Mongolia, resource security for the northeastern part of China. Right? And the same for different industries.

So, as an official, you have to discover an expanding list of security types where you need to catch up, always be on the lookout. And to some extent, that is dispersing attention and joint focus away from longer term, I would say, sustainable security and of the economic system, of society, to performative security. And so, hitting the easiest targets in terms of being able to show for security maintenance efforts.

So, this is certainly a weakness of the system, and in case of a larger crisis or more critical emerging crisis, it would be, also, very interesting to see how the Central National Security Commission and, for example, the Political and Legal Affairs Commission interact. Because, on paper, they have a relatively formal relationship with the latter responding and feeding information to the former, but in terms of the political personnel of the basis of power, obviously, the more established Political and Legal Affairs Commission is in a stronger place.

Maybe at one point, discussing new advantages and weaknesses, though, that shouldn't be underestimated. All these outreach and education efforts do create new patterns of communication, new networks, but bring people together around the topic of national security. Right? And to some extent, if the messaging is a cause, a mission statement, and structures are streamlined, that is a valuable asset in any type of emergency scenario.

COMMISSIONER GOODWIN: Thank you.

COMMISSIONER SIMS: Commissioner Helberg?

COMMISSIONER HELBERG: Thank you to the co-chairs for the hearing and thank you to the witnesses for their testimonies.

I'm going to start with Mr. Kewalramani.

In your testimony, you noted that after COVID, the Chinese Communist Party began to increasingly use advanced technologies to monitor and control its people. Can you elaborate a little bit more on the kinds of new technologies they are using to do so?

MR. KEWALRAMANI: Unfortunately, that's not part of my testimony. I have a feeling that's Katja's testimony.

MS. DRINHAUSEN: That wasn't part of my testimony, but it is certainly part of my research for four years. And I did point kind of to the establishment of these different new capabilities in the public security apparatus before.

So, in terms of use of technology, I mean, I think it's well known that the Chinese government has established almost nationwide coverage through cameras that are able to track not just the location itself, but also patterns of movement, which are, then, summarized, evaluated in data centers. Certainly, in follow-up, that information is continuously tracked and saved especially.

But it does give in present situations a very good window into what is happening, and that was a key way how the government was able to contain protests so quickly and so much less forcibly in terms of images going around the world, as were done in 1989.

So, seeing groups coming together in places and being able to disperse them quickly and strategically is part of the capability, I suppose. I mean, there is online communication, tracking



on top of that, and kind of many other pillars of the surveillance state that would deserve or have already enjoyed a separate hearing, but I hope this is informative for that.

COMMISSIONER HELBERG: Yes. Is it fair to say that China is seeking to harden its technology sector against U.S. influence as part of the mobilization steps it's taking?

MR. KEWALRAMANI: Yes. If I could comment on that, yes, I think that that is fair to say.

I think if you look at legislation with regard to data security for one; if you look at the focus on technological self-reliance; the focus on creation of national labs; the restrictions also, the selective sort of approval of certain kinds of investments, I think that there is an effort to try and firewall, if one would, while it's still trying to maintain a certain degree of linkages.

Because, of course, you need access to certain kinds of technologies, certain kinds of products, access to talent, and access to capital.

So, I think that there is an effort to try and firewall and define where exactly can you firewall, while trying to remain open. And that, I think, is a fundamental contradiction of any leader's policy in any country where you are trying to maintain, define what kind of risks are you going to firewall yourself against, while trying to remain open.

So, I think this is a dynamic effort that is continuing. And to my mind, it's leaning towards greater firewalling at the cost of economic opportunities.

COMMISSIONER HELBERG: Do any of the other witnesses want to comment on that question?

MS. DRINHAUSEN: Maybe if I can just add one point?

I do think it is helpful to look at the compliance of the national security concept in a way as a curating system or as an implementing guideline on how China should manage, and not just its governance, but also its international engagement.

And then, you do see all of these strategic priorities playing out in terms of which companies to let into the country; where China still needs investment, development, collaboration; which ones to shut out, but, certainly, which types of information will China let continue to cross the international data borders. Right?

And so, if it's going to be there streaming into China, certainly not. If it's Chinese digital service providers and companies going out, as they're doing quite successfully, or have in the past done quite successfully, that's quite a different story. So, kind of the level of permeation that is allowed in that thinking is unbalanced and part of the problem, but it is kind of the outlook with which the Party tries to manage its relations.

COMMISSIONER HELBERG: Thank you. Mr. Kewalramani, do mobilization steps include efforts to accelerate the development of strategic technologies needed to fight and win wars like autonomous robotic systems, like drones for example?

MR. KEWALRAMANI: Yes, indeed, they do. I think there has been a call for developing, particularly when it comes to emerging technologies, we try not to not only have self-reliance but also develop capabilities that can leapfrog where the technology is currently in the West. And for that, I think a whole of society effort is currently underway.

I think that has repeatedly called on academicians, technologists, to basically be patriotic and focus on that. There's been a greater emphasis on that across society. There has been greater recognition, therefore, for people who have worked in some of those domains, which are seen as strategically significant, particularly from a conflict perspective also.

So, yes, I would agree with that assessment.

COMMISSIONER HELBERG: Are you able to comment on the kinds of technologies in particular that they deem strategic for mobilization? And that will be my last question because I know we're a bit over time.

MR. KEWALRAMANI: I think, very broadly, I do think that things, certain things are strategic in nature, so certain kinds of missile systems. But along with that, also, technologies that can give you asymmetric advantages, such as cyber related technology, quantum technologies, and, of course, drones, not just drones but underwater vehicles also, unmanned underwater vehicles, and those kind of things. I think that's been the focus predominantly.

COMMISSIONER HELBERG: Thank you very much. I appreciate your time.

COMMISSIONER SIMS: Commissioner Kuiken.

COMMISSIONER KUIKEN: Thank you, Commissioner Sims. And thank you to the witnesses. It was wonderful testimony. I really appreciate it and appreciate the written testimony, as well.

One of the things as I'm listening this morning to you, you know, we're talking about all the actions they are going to take. We sort of haven't talked about what military or sort of deception operations might look like to distract the West, distract others, from seeing these preparations.

Let's just have each of you sort of comment on sort of what deception would look like in this environment and what's sort of the indications and warnings of it, in your mind, would be.

MR. KEWALRAMANI: That's a really difficult question. Thank you so much for it. Let me hazard an attempt on it. I think that you're likely to see tremendous effort, at least from a narrative point of view, you're likely to see tremendous effort to try and position China as essentially being cornered into taking certain kinds of actions. This would not be the first choice. This would be the last sort of roll of the dice, and that's why you have to do some of these things.

At the same time, you're likely to see extensive diplomacy to try and project an effort to build a consensus across particularly friendly countries or countries that look at China in a favorable light but also with, I think, western nations. There will be an effort to try and build some sort of an understanding of what sort of red lines have been crossed and how those can potentially be addressed.

There will be an effort to try and mask mobilization, particularly through preexisting drills and preplanned drills. If I could just go back to the experience of India in 2020 of a country locked in a standoff with China in Eastern Ladakh along the boundaries, and that mobilization happened following what was a planned routine drill and then a turn by a certain number of troops.

So I think that it's those kinds of activities that one is likely to see where the effort will be to try and conceal within normal operations, but I think the effort will be also accompanied by extensive diplomacy. That would be my sort of brief guess.

MS. DRINHAUSEN: I maybe have one point to add to that because this is truly a difficult question to answer, and it is less to the strategic strategies that were taken regarding the, I think, quite important overall environment that the Chinese government is currently creating or have created in the past few years when it comes to, you know, building up our insights, our knowledge, our understanding of what is happening in China.

I think you hear about the new anti-espionage law in terms of really discouraging international actors, not just intelligence agents, but really researchers, consultancies and so forth, to look into what's happening in China with sources on the ground. We have seen quite a

bit of government information disappearing for various reasons. We have seen, you know, China's, for example, academic platforms and databases being partially scrubbed of what was available for example, under the concept of progressive national security.

So this is certainly not only targeted at kind of a military conflict. At least for the moment, China is much more concerned about economic containment than about a military conflict. But it does serve the same goals in the long run, which is making it very difficult and just time intensive, resource intensive, to gain really well funded research insights inside central China that kind of right sized development, especially at a time work, for example, civil preparedness trainings can equally serve disaster prevention and response as they can be used in cases of military conflict. So this kind of dual use of many of the measures that we see, I think, makes it very hard to pinpoint.

DR. PALTEMAA: Just noted that's exactly, in case of civil preparedness, they would do exactly what they are doing. They would just do more of it and call it better emergency preparedness because it is really interchangeable. Most of the skills and most of the results is that you put in this could, in time of external crises, be turned into forces for mobilization, organization, material, and other training.

As for deception, I mean, the classical term is deception is to appear weak when you are strong. So, I mean, in this case, how would that turn out in a Taiwan scenario. They would call on for negotiations and call off their military and crews and send them to then strike when the moment is right, you know. You can think about these kind of scenarios.

COMMISSIONER KUIKEN: Thank you. Commissioner Sims, if it's all right, I'm just going to throw in one last question, and I'll be done.

COMMISSIONER SIMS: Please do, yes.

COMMISSIONER KUIKEN: In the propaganda space, we talked a lot about sort of drills and some of these other things. My sort of assessment is one of the reasons they did this, you know, aside from there's a lot of reasons we did the crack down on technical companies, but one of the reasons was to ensure their compliance in sort of following orders from the government.

The propaganda space seems to be sort of a leading indicator for me and their use of it. How should we evaluate technology companies' compliance with the government's request, and then how should we assess whether or not the government would use, you know, WeChat and these other platforms to sort of amplifier up the feelings of the population?

MR. KEWALRAMANI: I think that some metrics, just to look how technology companies are complying, firstly, I mean, from a consumer technical point of view, particularly a social media point of view, WeChat and companies like that, I think one would look at what kind of censorship is taking place, what kind of conversations are being permitted at a certain point of time. I think that's a fair indicator of compliance from them.

In terms of other kinds of technologies, sort of cutting-edge technologies that China wants to build, I think looking at where the money is being invested by even companies who may not be necessarily focusing on, the traditional business models might not necessarily be, say, semiconductors or certain other kinds of technologies, but they're bidding for those projects and they're being awarded those projects by the government, particularly on nationally strategically important projects. I think that's a good model to understand where the finances are going, where investments are shifting, to try and figure out whether there is a greater compliance because a lot of these domains the Chinese Communist Party wants technology companies to focus on may not necessarily be profitable in the short run. In a free market, you might not necessarily see companies making those large bets.



So, therefore, I think that, looking at that in terms of where money is being invested sorry. Can you hear me?

COMMISSIONER MILLER: Yes, you're back.

MR. KEWALRAMANI: Yes. So certain baselines that have been changed by China, particularly when it comes to Taiwan, in the last few years since House Speaker Pelosi's visit and since recently since Lai Ching te's speech, I think the shifting goes through enormous set of operations where China, you know, occupies Taiwan's trade, it encircles the island. I think, if that becomes normal course of procedure, it becomes easier to suddenly move from there to an invasion.

So I think that denying them the normalcy of those kinds of actions is really important. I'll stop with that.

COMMISSIONER SIMS: Commissioner Miller.

COMMISSIONER MILLER: Thank you. And thank you to all the witnesses for your testimony. They were very extensive and, thus, very helpful.

We're an American commission, and, like most Americans, we have a very U.S. centric view of the world and our adversaries and potential conflict. So when we think of conflict, we typically think, if U.S. China, we probably think it likely relates to Taiwan. But what would you say has been the Party's view in terms of the statements they put out, the rhetoric in terms of adversaries that are not the U.S.? I mean, how much focus has there been, for instance, on Vietnam in the South China Sea? There's a lot of fireworks going on around the Philippines related to Second Thomas Shoal and other issues of the South China Sea. Obviously, there's been problems with India on the border.

How much of this rhetoric is focused sort of narrowly on the U.S. and all the bad things it's doing versus here are all the other security problems. You know, we're getting ready for conflict, but the conflicts are diverse and there's a lot of bad actors and maybe calling any of these countries out by names, how much do we see that outside of just calling out, you know, America specifically. I'd be interested in the thoughts from any of the panelists on this issue.

MR. KEWALRAMANI: Sure. If I can go first, I think that, in general, most of the criticism, and often is, and most of the focus is on the United States, and these other actors are usually clubbed in, particularly in the context of the kind of role that they play in U.S. policy with regard to China.

One of the challenges of the Chinese policy ecosystem and reflective in propaganda is that they don't necessarily tend to ascribe agency to a lot of the countries in the region, including India. And that, to me, is obviously a very flawed perspective. But I think the world view is so U.S. centric and the paranoia is so U.S. centric that they don't necessarily tend to ascribe a lot of agency to these actors.

You have seen, at least I have noticed, when it comes to India, when it comes to the Philippines, when it comes to Vietnam, in case of specific flare ups, you've seen a focus on them. You've seen certain kinds of criticism, but it's nowhere compared to, say, the focus on the United States. And it is episodic. With regard to India, I think it's intensified and it's not so much episodic anymore. It's far more strategic. But with other actors, I think it's episodic, and I think it's also a reflection of the role that PRC presently plays in the domestic politics of some of these countries where, essentially, there's a situation where there are different groups and the PRC is trying to influence certain groups domestically. And as the governments change, they tend to view them far more favorably and the discourse sort of goes away. That's obviously not the case with, say, the United States or India.

MS. DRINHAUSEN: I have one point to this and be very brief about it. I do think we see the same pattern of really neglecting the agency of any other actor than the United States, which has always created kind of the main driver behind them ultimately depends on kind of areas that China endures in a surprising long list of global interactions.

Europe really stands out here, as well, because, I mean, looking just a few years back, the bilateral relations between countries but also you and China, overall, were in quite a good state and both had kind of securitization and punitive measures against individual European member states on various issues where really it also brought about a change within the U.S. policy, United States policies.

But key messaging from China, if you look at, you know, the Ministry of Foreign Affairs, of other kind of informal actors going out, at least officially, very often it appears to not follow down the path of the United States in terms of treatment of any other issue and exercising your strategic harmony with workers in China. And I think this positioning is really important to understand that, if you work with China, you are pragmatic, you will still have economic benefits if you kind of don't really declare yourself as part of the enemy camp.

DR. PALTEMAA: I have to concur. And from European perspective, we treat it as an appendix American foreign policy part of Chinese most of the time. Why they are calling for more independent foreign policy for you and European countries, they, at the same time, think that we are basically just playing the American game and, thereby, their main target is really America. I just have to agree with both of those statements. He already heard that the other players are not really given full agency, and Chinese seem to be reading the global politics and geopolitics through perspective of what America is doing and how to counter American activities, also when we are talking about EUROPE, which is very frustrating here in Europe certainly.

COMMISSIONER MILLER: Okay. I see my time has been gobbled up, so I'll stop there.

COMMISSIONER SIMS: Next, we have our Commission Vice Chair, Ms. Price.

VICE CHAIR PRICE: Thank you. And thank you all for participating today. This is a very, very interesting conversation.

I want to go back to some of your recommendations and give you a chance to expand on them just a little bit. So maybe we could start with Mr. Kewalramani. You particularly were looking at people to people programs. Why don't you start? Just expand on what you were talking about in your testimony.

MR. KEWALRAMANI: Thank you so much for the opportunity to do that. The sense that I get when I'm tracking Chinese discourse and, obviously, public opinion, the sense you get is that the Party has been successful in particular over the last four to five years, particularly since the COVID 19 pandemic, to reinforce the idea that the United States is a bad actor and its intentions are to deny Chinese people their right to development, as opposed to anything else. And that obviously strikes at the heart of a society, which, despite the claims of elevation of absolute power, this still has significant challenges economically. And I think the Party has been able to successfully make that case to the people.

So I think that the more, particularly in the world that we live in, which is the information age, where there's really no domestic politics, you know. There's a very thin line between domestic and foreign policy. And what you see is that it bolsters legitimacy for the Party to be far more repressive. It justifies the kind of actions that it wants to take to keep the people, to mobilize people, and it further underscores the identity of the United States as fundamentally a bad actor intent on denying China its right to development.

Therefore, in that context, as you have fewer engagements, as you have fewer opportunities for people to talk to each other and for ordinary people to engage, it gives the party the right to make the case that it wants to make. And, therefore, my recommendation is that there should be more opportunities, particularly the pandemic disallowed, to try and engage with ordinary people, with scholars, with academics, and the United States should not back away from that.

For example, when Chinese students are visiting America, they should be welcome. I understand that there are security concerns, but the balance between security and being open is something that even the United States needs to maintain.

VICE CHAIR PRICE: Thank you very much. Mr. Paltemaa, why don't you go next, or Dr. Paltemaa.

DR. PALTEMAA: Yes. Professor. Anyhow, my recommendation is about disaster diplomacy in case, and this actually connects very well to people to people diplomacy. China suffers from so many of different kind of natural disasters, and there will be big events in the future. Unfortunately, we don't know when and where, but it is going to happen. And, in international politics, these are occasions where you can try, if you have the political will, to establish more rapport, in this case with Chinese, through aid and basically engaging with them in these serious situations. It will build good will towards America, and it would good will towards America and it could open channels also to Chinese government.

But, in general, international disaster management relies on exchanges of information about, for example, wildfires or floodings, and we have extensive satellite systems and information systems. Exchanges of this kind of information is quite low tier but, nevertheless, a concrete example where countries can work together and show good will with little expenses but, nevertheless, probably quite efficiently in terms of creating good will.

VICE CHAIR PRICE: Thank you. And Ms. Drinhausen?

MS. DRINHAUSEN: Yes. I would like to add one point somewhat related to people to people. They're making the point that the Chinese Communist Party, you know, which sounds like a big scary and very ambiguous entity, ultimate it's also made up of individuals, of leaders who are shaped by their world views, a world view that really is, to some extent, as we've heard today, paranoid while, at the same time, in confidence in its own abilities. But it is also made of people that want to have a certain sense of predictability.

And so I do think, in formulating and implementing protective measures against risks that the U.S. and others identify as emanating from China, be they economic, technological, or otherwise, it is really important to stay in communication with the Chinese side about what the goals are, what the extent will be. To some extent, also what the end and off ramp will be in terms of putting very specific conditions to the measures taken and explaining not just to China but also to a global audience why they are taken and why they're not taken. That is our assessment with many of the measures that China has implemented.

VICE CHAIR PRICE: I think I'll end there. Thank you all very much.

COMMISSIONER SIMS: Commissioner Schriver.

COMMISSIONER SCHRIVER: Thank you. And let me add my thanks to the witnesses. This has been a really interesting discussion. I want to go back to a point, I think, at least two, maybe all of you, made, which really the center of gravity here in this campaign, if you will, from Xi Jinping is the people of China and preparedness. And, you know, this may be unknowable, but one wonders, you know, how much of this is really effective.

The people who live in authoritarian systems are oftentimes the most sophisticated consumers of propaganda and of authoritarian messaging, and one could imagine a fair amount of eye rolling if the amount of Xi Jinping thought being taught is being increased in certain environments. But I do wonder, you know, there's a difference between preparing a society for struggle and economic pressure and coercion and moving to war footing.

And so this could be unknowable, but, you know, is there a risk here that, if Xi gives any indication to these very sophisticated consumers of information that he's moving to a war footing, that this would create risks for him?

And second question related to that, are there opportunities for us? You know, Commissioner Cleveland asked about the truth of COVID origin, but it strikes me that there's a number of ways we could inject information. For example, if Xi is the one moving to a war footing and what does that mean for a PLA that's comprised entirely of only children. The only son they were allowed to have is potentially going to be sent to war for a Xi Jinping vanity project.

So I welcome any response from the witnesses on sort of these issues of effectiveness, risk, if the public perceives move to war footing, and what opportunities there might be for us in this environment. And I didn't direct it at anybody. We can go in the order of the witnesses if people have comments.

MR. KEWALRAMANI: Sure. Thank you so much for the question. I do think there are significant risks, and I think, therefore, you're seeing the Party's communication, say, most recently on Taiwan. As aggressive as it is, it is also nuance. It's leaving doors open. It's providing an explanation to the public as to what are the challenges, why has the situation changed and what is prompting a far more assertive tone.

I don't think the Chinese Communist Party, as much as I've argued that it's far more risk tolerant and far more inclined to use force, I don't think it is trigger happy because I think it still sees tremendous drawbacks in doing that from an economic point of view but also I'm not necessarily sure that there is confidence of continued public support for a misadventure.

I think the COVID 19 pandemic and the protests that happened towards the end of their zero COVID policy are indicators of this, that there are moments in which circumstances can be out of and for even the most sophisticated surveillance system of repression. So I think I'm not sure they're necessarily as confident about that and as sanguine about that. And, therefore, you're seeing also when it comes to economic policy, when it comes to issues of property and the property real estate market, you're seeing far more caution, particularly to ensure that, while corporate entities might suffer losses, the people don't necessarily lose out because that's a key concern.

So to pull it back to military conflict, I think we're far away from that.

MS. DRINHAUSEN: Yes. I would certainly go with that assessment, but I would also like to add two points. First, about the sophistication of the recipients of the official messaging, I do think it's really, at least today with the technological kind of shielding of the Chinese domestic information space, it's really important to distinguish between the sophistication regarding domestic messaging, whereas, in the case of COVID, the population can quite neatly identify the reality gap between propaganda and what they're experiencing every day.

But this is very different when it comes to the international environment when state media, when all social media around you create, essentially, a mirror universe. As someone who spends a lot of time in Chinese media and sources, it's really quite a coherent kind of world and world view in terms of how international events are reported. It's very hard to distinguish where

kind of the inaccuracies are. You're much more likely to take that for fact simply because you do not have anything to contrast that against anymore, and there's power in that.

And maybe to add one point in terms of the ability to kind of stay the course or compel citizens to stay the course, I do think it's going to be quite important and informative to look at the benefit of Hong Kong where the Party has a very free and open society which is 5 years ago the streets were full of people demonstrating for their rights has very effectively used kind of the political legal course and apparatus with laws with new institutions to actually quite fundamentally change a very free liberal society in a short amount of time.

COMMISSIONER SIMS: Thank you. Commissioner Wessel.

COMMISSIONER WESSEL: Yes. Thank you. Thank you to our chair and co-chair for arranging this important hearing and to all our witnesses. I want to follow up on Commissioner Schriver's question and others, maybe from a slightly different perspective and to go back to part of the title of the hearing, which is looking at mobilization measures.

Starting with you, Ms. Drinhausen, what I heard from you was a series of laws, regulations, and actions taken over the last couple of years to prepare for war and mobilizing the legal infrastructure, as well as the opportunity to message to the public. Looking back at past conflicts, including the recent conflict in Ukraine, there are indicators that, you know, led up to a conflict and telegraphed it.

What specific actions do you think or what specific gaps do you think there may still be in the legal and regulatory infrastructure that need to be filled, if any? What kind of messaging would you expect and at what pace and this is for all the panelists that would be delivered to the public and what kind of time frame do you think would be necessary to get to a war footing where execution of a conflict with Taiwan most likely would have the kind of public support that Xi would want?

Ms. Drinhausen, can we start with you?

MS. DRINHAUSEN: Yes. Very happy to answer this question. But to pick up on the question itself, the measures I described that happened, implemented since 2014 really, I do think the main focus was not to prepare for war. I do think they established a system maybe directed initially at containing domestic dissent protests, which is the first thing that Xi Jinping put his attention to, then shifted to controlling the economic policies here.

Now, the attention of the Chinese Communist Party and leadership is shifting to the international sphere and China's global interests, including territorial interests in the immediate vicinity because of the capabilities or it feels like it. So maybe just to put that a bit more into perspective.

What I do think this has done, though, is create, as you described, a system that can come in quite usefully in case of a military conflict. And what I would, especially with a view towards a Taiwan scenario, be looking out for.

Also, in terms of indicators, it's really the approach that the Chinese government has taken in Hong Kong, establishing laws, regulation, enforcing those, establishing kind of jurisdiction, as we've seen with, you know, entering vessels in the Taiwan space and so on, because this codification of Party interests and then causing them has a key part of the MO of Xi Jinping in his approach to governance.

COMMISSIONER WESSEL: But just to pull on that thank you for that. But, you know, you talked about and mentioned specifically the national security law, the espionage law, et cetera, and aren't those the kind of laws you would want to have in place as tools to enter a conflict? And, again, are there any gaps that you think need to be filled, or is the legal and



regulatory structure in place? That does not mean they're ready to attack, that does not mean that, you know, there are not other mobilization efforts needed. But are there any questions in terms of that infrastructure, the central command, et cetera?

MS. DRINHAUSEN: I mean, one area where I would expect to see more potentially legislation but also policies is really in regards to resources. But I do think that the hearing in the afternoon will address these questions because, when it comes to securing society, that hasn't been achieved, when it comes to building capabilities and kind of a quite tight legal system that has been issued, but it's also about making sure that China has the adequate resources it needs going forward.

COMMISSIONER WESSEL: Okay. Other witnesses, any comments?

DR. PALTEMAA: If I may very shortly. I think no legal niceties would ever stop China's Communist Party to mobilize if needed because it has all the political authority to do it. However, having a good legal framework would make it more prepared and, therefore, might be more efficient.

COMMISSIONER WESSEL: So do you see any gaps in the legal framework or

DR. PALTEMAA: I'm not really an expert on that, but then I wouldn't really expect that they would build a legal framework before they would act because that is something that's a political strategy and always serving a little bit different function in China. They are about designating tasks to different agencies, not so much creating authority to the ruling party, which is ruling anyhow.

COMMISSIONER WESSEL: Thank you. Any other comments? If not, then I will yield my time, or I'm over my time, so I have no time to yield.

(Laughter.)

COMMISSIONER SIMS: Well, it looks like we have just a few minutes here before we wrap up this panel, if we want to do a couple of more questions. I believe Chairman Cleveland said you had a follow up, so maybe we'll start with you. And if we have one or two others, maybe we can get to those, as well.

CHAIRMAN CLEVELAND: Thank you. Really helpful hearing in my view. I think, Ms. Drinhausen, you mentioned the passage of a new patriotic education law and a new education, two different pieces of legislation, and that that will have an impact on the public sentiment and potentially mobilization. Could you elaborate on that, please?

MS. DRINHAUSEN: Yes, I'd be happy to. And, also, it allows me to build on the point that the last speaker just made, which is that laws may serve kind of a consolidating and legitimizing function. So we have already seen kind of the public security focused education campaigns, patriotic education, and so forth, in universities over time. Now that this has been, more or less, established, laws usually function to seal in practices that have been established and serve as a foundation to expand on them.

So I do not think that it's a change in terms of how the government approaches public opinion, but it's a short commitment to the course that was taken. So what we can expect is to see more of the same with, most likely, just an expansion of resources available with more standardized curricula and outreach kind of guidelines for the task of actually bringing comprehensive national security to the citizens.

CHAIRMAN CLEVELAND: That's it. Thank you.

COMMISSIONER SIMS: Any others who would like to ask follow up?

CHAIRMAN CLEVELAND: I think, Leland, did you --

COMMISSIONER MILLER: I had one. I don't want to stretch us over. But, you know, one of the issues that we're dealing with is trying to separate signals from the noise. And, you know, we have been, I think the testimony does a very good job in terms of documenting what we have seen and what we can read from that. There is a bitterness campaign, the same type of thing that we saw in 1940s and '50s over land ownership and in 1960 over class struggle. So we are becoming attuned to certain signals that suggest that China is getting more unified, getting more serious about potential conflict.

I am wondering what signals we should be looking at going forward. Obviously, we just saw four American teachers get attacked. I don't think that's a signal of anything the Chinese government has done. They have actually been censoring it. But we do expect things to get tenser and tenser on the ground in China, whether it's foreign businesses that have usually been insulated from geopolitical tensions, maybe, you know, food brands or hotel chains or maybe Track II delegations, which go, go, go, and then, all of sudden, we see less of them coming here and we're invited less over there.

What are the signals we should be looking at for the next several years going forward that suggest maybe worse tidings ahead? And this is for any of the panelists.

MR. KEWALRAMANI: I mean, if I can take a crack at that, I think you have identified some of them very clearly. I think that if you see a refusal to try and engage and a closing of the Chinese, you know, accessibility to the mainland. What we've seen in the last few years is this sort of mixed signal where, at one level, China is sort of offering visa free opportunities to a newer range of countries while, at the same time, its engagement of substantive issues is declining and has declined. From an Indian experience also, I can say that I think it's declined.

So I think that we need to focus on both of those aspects, whether ordinary people have access to the country and the nature of that access, at the same time whether there is substantive engagement at different levels of government because I think that, once a system closes in on itself, it becomes far more dangerous in some ways in terms of how it's preparing for potential conflict. The more engaged China is, the less of the possibility or the probability of conflict.

So I think those are the kinds of signals that I would look at.

COMMISSIONER MILLER: Thank you. Anyone else?

MS. DRINHAUSEN: Not just tracking the signals but maybe how to interpret them or build kind of a tracking systematic effort that helps, you know, better understand what capabilities the moment has built because many of the things we have touched upon today, like disaster preparedness, like all the internal kind of feel good messages around national security, they serve, they can serve very different functions. They can just be there, they can be there for a case of domestic crisis, they can be there for international conflict.

So I do think it's good to look at what's happening, first and foremost, in an instrumental way what's the package that the Chinese government is building. And then really think about what has been good in the set of scenarios. So what can this be used for in case A, what can this be used in case B, because, to some extent, that helps to not over interpret and right size the efforts that are happening within China while being prepared, being thinking about the potential uses that they can have in case the situation deteriorates.

DR. PALTEMAA: Well, following what China is really doing with its conflicts, whether the activities are getting harder or softer, talking about the Philippines, India, Japan, the South China Sea in general. This, I would think, would be a very good indicator of not long term, they would be rather short term or, at best, midterm indicators, but these would be something that, well, I'm sure you are already following.

And then there this is this question of propaganda which we already heard a lot. What is its tone, what is its content, where is it directed to, and whom is it directed to, maybe even who is allowed to be talking, is the Global Times trashing entire American, or have they been silenced for some reason. There are very many indicators that you should follow also there.

COMMISSIONER MILLER: Thank you all very much.

COMMISSIONER SIMS: Thank you all for your testimony. We'll go into a period now of about a ten-minute recess, and we'll reconvene at 11:20 a.m. Eastern. Thanks.

(Whereupon, the above entitled matter went off the record at 11:11 a.m. and then went back on the record at 11:22 a.m.)



## **PANEL II INTRODUCTION BY COMMISSIONER CARTE P. GOODWIN**

COMMISSIONER GOODWIN: Welcome back for the second panel of today's hearings, which will examine China's efforts to materially and financially prepare its economy for a conflict scenario, including the imposition of broad trade restrictions or severe sanction.

We will begin with Dr. Gustavo Ferreira, Senior Agricultural Economist with USDA and Civil Affairs Agriculture Officer in the U.S. Army Reserve. Dr. Ferreira will assess China's dependence on foreign agriculture and efforts to build domestic food supply.

Next, we're happy to welcome back Gabe Collins, Baker Botts Fellow, Energy and Environmental Regulatory Affairs at Rice University's Baker Institute. Mr. Collins will assess Beijing's strategic energy reserves and their reliance on global energy imports.

Finally, we'll hear from Dr. Zoe Liu, Maurice R. Greenberg Fellow for China Studies at the Council on Foreign Relations. Dr. Liu will detail China's efforts to sanctions proof its economy.

Thanks again to all the witnesses for your testimony. The Commission is very much looking forward to your remarks. I'll remind all the witnesses to please try to limit their remarks to seven minutes. And, Dr. Ferreira, we'll begin with you.

**OPENING STATEMENT OF GUSTAVO FERREIRA, SENIOR AGRICULTURAL  
ECONOMIST, U.S. DEPARTMENT OF AGRICULTURE, AND U.S. ARMY RESERVE  
OFFICER**

DR. FERREIRA: Thank you. Good morning, Commissioners and staff. Thank you very much for inviting me to this hearing today. Please note that I am not here today on behalf of the U.S. Department of Agriculture or the Department of Defense, and I am speaking only for myself.

My testimony discusses the intersect between food security and national security in the People's Republic of China with specific focus on grains. This issue is of the highest importance for the PRC and the PRC's government; and, therefore, it should warrant our attention here in the United States. This is because the ruling class in this country has been extremely sensitive about ensuring food security for its population, given the precedence of famines and food crises that trigger political instability and regime collapse.

While the PRC is the largest food producer in the world and has made remarkable progress in the food security space, the country also faces growing challenges to feed its population of 1.4 billion people. Furthermore, recent events, such as the African swine fever outbreaks or the war in Ukraine, reveal fragilities in the PRC food system.

One must understand that the term food security translate literally to grain security in the Chinese language. Not surprisingly, the nation established self-sufficient targets in 95 percent or higher for rice, corn, and wheat. Despite early successes, self-sufficient rates for some food products fell below those targets. And in the early 2000s, the PRC's imports of grains and oilseeds began to soar to unprecedented levels.

The country is now the world's largest buyer of key agricultural commodities. As an illustrated example, in the year 2000, the PRC's combined imports of corn, wheat, rice, and soybeans were just above 10 million metric tons. Fast forward to 2023, and those same imports surge to 140 million metric tons. This 1200 percent increase was mostly driven by soybeans, as the PRC now accounts for about 60 percent of the world's soybeans imports, mostly supplied by the United States and Brazil.

Early on, the United States was the PRC's top soybean supplier. But in the past 15 years, Brazil gradually claimed that title.

As a response to this growing import dependency, General Secretary Xi Jinping made food security a national priority, and, under his leadership, the PRC is now employing a multi prong approach to tackle this issue.

Some of the main policies that I would like to highlight here include significant increases in public investment in agriculture, research, and development with the goal of boosting agricultural production in the domestic seed industry. Another one is the diversification of the PRC pool of agricultural suppliers to mitigate geopolitical risk with the United States.

Also, a noticeable expansion of grain stockpiles, and, because of its importance, this issue merits a more detailed discussion. The PRC now maintains large stockpiles of selected grains, but these are state secret. Therefore, outsiders can only speculate about their location, true size, and quality. Nevertheless, official communications state that the PRC has built nearly 700 metric tons of grain storage capacity. Furthermore, USDA data provide evidence that the PRC has amassed very large commodity stockpiles. As an example, in 2023, the PRC alone accounted for 67 percent of the world's corn stocks and nearly 60 percent of the world's rice stocks.

Another important unknown here has to do with the question of how long these strategic reserves will last in the event of a conflict of major disruptions to trade. Anecdotal evidence seems to indicate that the PRC has somewhere between one to two years' worth of stocks. However, there are also questions about the conditions of those stockpiles, given the complexities and the difficulty associated with maintaining the quality of so much grain over time.

Despite its effort to improve its food security status, the PRC faces significant challenge in the future, and I would like to highlight a few. First, the loss and shortage of farmland into a rapid urbanization, widespread pollution, and uses of land for other nonagricultural purpose. Second, climate change and its effects on agricultural production not only in the PRC but also in main supplier nations. Third, a decrease availability of agricultural labor, which constrain ongoing efforts to expand domestic agricultural production. And the last one, water scarcity. The United Nations assessed that the PRC is now facing extreme water shortages due to growing demands for the agriculture sector, rapid urbanization, and pervasive pollution of water sources. Climate change will only worsen water shortage in the PRC.

The bottom line is that it is very difficult for outsiders to discern whether the PRC's actions to improve its food security are just a government reaction to this structural challenge or another step in the preparation for conflict. Nevertheless, U.S. observers should attempt to identify and monitor developments in the PRC's food and agricultural space, especially those that deviate from normal market signals that could be part of a large political calculus.

An example of such indicator would be the noticeable search in soybean and soybean imports in the context of very low profit margins with Chinese hog farms or decreasing domestic demand for pork meat.

Our main policy recommendations focus on improving our ability to better assess a true food security situation in the PRC. To achieve that, I propose a close interagency collaboration between non-Title 10 and 50 federal agencies that have technical expertise in agriculture and trade, and the intelligence community, which could collect new information in data related to the PRC's food security space. Such cooperation could yield important wins, such as the identification of early food related indicators that may signal potential preparation for conflict.

Lastly, if the United States is too effectively leverage the PRC's dependency on food imports as part of a broad economic statecraft, it would need to work closely with other global agricultural powerhouses, such as Brazil, Argentina, Australia, or Ukraine. This will involve strengthening our economic and diplomatic ties with these nations and perhaps even begin to design compensation mechanisms that would incentivize these nations to use agriculture trade to pressure the PRC in the event of a conflict.

With that, I conclude my testimony. Thank you.

COMMISSIONER GOODWIN: Thank you, Dr. Ferreira. Mr. Collins.

**PREPARED STATEMENT OF GUSTAVO FERREIRA, SENIOR AGRICULTURAL  
ECONOMIST, U.S. DEPARTMENT OF AGRICULTURE, AND U.S. ARMY RESERVE  
OFFICER**

**China's Stockpiling and Mobilization Measures for Competition and Conflict**  
**Panel II: China's Approach to Self-Sufficiency, Stockpiling and Sanctions Preparedness**  
**Testimony before the U.S. – China Economic and Security Review Commission**

**Dr. Gustavo F. C. Ferreira**

**U.S. Department of Agriculture & U.S. Army Reserves**

**June 1, 2024**

**Disclaimers**

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**I. Introduction**

The People's Republic of China (PRC) is the largest food producer in the world, and agriculture has played a pivotal role in its emergence as a global economic powerhouse. Chinese economic transformation throughout the twentieth century was sparked by agrarian reforms (e.g., the “Household Responsibility System”) that transferred rights and the responsibility for profits and losses to individual farmers. These policy changes resulted in dramatic improvements in agricultural production and laid the foundations for the Chinese industrial revolution. As a testament to that success, the PRC has achieved high levels of food self-sufficiency in major crops such as rice and wheat.<sup>1</sup> More recently, agricultural trade and investments have become important components of PRC’s diplomacy and its Belt and Road Initiative.<sup>2</sup>

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<sup>1</sup> Kai Cui and Sharon P. Shoemaker, “A Look at Food Security in China,” NPJ Science of Food 2, no. 4 (20 February 2018), <https://doi.org/10.1038/s41538-018-0012-x>.

<sup>2</sup> Fred Gale, James Hansen, and Michael Jewison, China’s Growing Demand for Agricultural Imports, Economic Information Bulletin No. 136 (Washington, DC: U.S. Department of Agriculture, February 2015), accessed 7 March 2022, <https://www.ers.usda.gov/publications/pub-details/?pubid=43940>.

Despite this remarkable progress, Chinese authorities are increasingly challenged to feed their 1.4 billion people. Recent events such as the COVID-19 pandemic, several outbreaks of African swine fever, floods and droughts sweeping multiple regions, and the war in Ukraine all have revealed some of the fragilities of the PRC's food systems.<sup>3</sup> For instance, these events caused pork prices (the main source of protein for Chinese population) to spike and the imports of grains and oilseeds to soar to unprecedented levels. The PRC is now the world's largest buyer of key agricultural commodities such as corn and soybeans – it accounts for nearly 60 percent of global soybean export flows.<sup>4</sup>

These developments are in clear contrast with China's decades-long efforts to develop and implement policies aimed at grain self-sufficiency. The Chinese Communist Party (CCP) is seeking to curve international dependency by supporting domestic agricultural production, investing in agricultural research, stockpiling large grain reserves, launching campaigns against food waste (i.e., "Clean Plate Campaign"), and providing guidance for livestock producers to reduce corn and soybean volumes in livestock rations among others policies.<sup>5</sup> In addition, the PRC is diversifying its pool of suppliers of major imported commodities to mitigate geopolitical risks with the United States.

Despite these concerted efforts, these self-sufficiency goals are threatened by demographic pressures, growing urbanization, climate change, land and water scarcity, changing diets, livestock diseases, and extensive pollution. This written testimony seeks to address a list of questions presented by the U.S. – China Economic and Security Review Commission that touch on these issues. The questions were organized and clustered by common themes under the sections below. The questions can be found at the beginning of each section and were highlighted (in blue) for added visibility.

- The PRC's dependency on agricultural imports.
- The PRC's policies to reduce dependency on agricultural imports.
- Challenges for the PRC to achieve overall food self-sufficiency.
- The PRC's Grain Stockpiles.
- Indicators of preparation for conflict.
- Potential global impacts associated with the PRC achieving food self-sufficiency.
- Policy recommendations.

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<sup>3</sup> Orange Wang, "China Food Security: How's It Going and Why's It Important?," China Macro Economy, 29 November 2020, accessed 13 May 2021, <https://www.scmp.com/economy/china-economy/article/3111623/china-food-security-hows-it-going-and-whys-it-important>.

<sup>4</sup> "China Confident It Can Replace US Soybeans with Supplies from South America," MercoPress, 11 July 2018, accessed 27 April 2022, <https://en.mercopress.com/2018/07/11/china-confident-it-can-replace-us-soybeans-with-supplies-from-south-america>.

<sup>5</sup> Eva Dou, "China's Mealtime Appeal amid Food Supply Worries: Don't Take More than You Can Eat," Washington Post (website), 5 October 2020, accessed 21 June 2021, [https://www.washingtonpost.com/world/asia\\_pacific/china-food-shortage-clean-plate/2020/10/02/578daa0e-0223-11eb-b92e-029676f9e9bec\\_story.html](https://www.washingtonpost.com/world/asia_pacific/china-food-shortage-clean-plate/2020/10/02/578daa0e-0223-11eb-b92e-029676f9e9bec_story.html).

It is important to recognize that some of the questions in this testimony cannot be fully addressed. Questions about the reliability of PRC's official agricultural statistics and internal political pressures makes it difficult to accurately assess the state of food security in that country. While the complexities and nuances of these issues prevent us from being able to paint the full picture with a few simple brushstrokes, this testimony shares observations and analyses that might shed some light on these issues.

## II. The PRC's dependency on agricultural imports

- How import-dependent is China on agricultural products? Who are China's largest food suppliers, and has China taken any steps to reduce dependency or diversify its agricultural suppliers?
- China depends on the United States for a number of agricultural imports, such as in soybeans. In addition, China has committed to purchasing more agricultural products from the United States as part of the 2020 Phase One Trade Deal. To what extent is China taking these and other political considerations into account as it seeks to increase its domestic productive capacity in agriculture?

Grains are essential to the PRC's national food security because they are a main source of human food, animal feed, and raw materials for processed food products. In fact, the term "food security" translates literally to "grain security" in the Chinese language. Thus, grain self-sufficiency has been at the heart of long-term Chinese food security plans, with established targets at 95 percent or higher for rice, wheat, and corn.<sup>6</sup> When combined, these commodities account for 99 percent of Chinese grain production.<sup>7</sup> Thanks to government market interventions (e.g., subsidies or prices incentives) and large-scale investments in agricultural R&D and infrastructure, the PRC achieved high levels of grain self-sufficiency throughout the 1980s and 1990s.<sup>8</sup> The PRC also established national grain stockpiles in 1990 and a system that coordinates central state and provincial grain reserves. It must be highlighted that these strategic reserves are a state secret, and outsiders have little information about their true size and quality.

Despite earlier successes, self-sufficiency rate of certain foods fell below the 95 percent target in the early 2000s and agricultural imports began to surge. Past concerns about national food security led the Chinese government to commission studies looking at changing food consumption patterns starting in the 1980s. Those studies predicted important deficits in key food products such as grains, meats, and vegetable oils by the end of the twentieth century.

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<sup>6</sup> Kai Cui and Sharon P. Shoemaker, "A Look at Food Security in China," *NPJ Science of Food* 2, no. 4 (20 February 2018), <https://doi.org/10.1038/s41538-018-0012-x>.

<sup>7</sup> Yong-sheng Wang, "The Challenges and Strategies of Food Security under Rapid Urbanization in China," *Sustainability* 11, no. 2 (2019): 542, <https://doi.org/10.3390/su11020542>.

<sup>8</sup> Funing Zhong and Jing Zhu, "Food Security in China from a Global Perspective," *Choices* 32, no. 2 (2017), accessed 7 March 2022, <https://ideas.repec.org/a/ags/aaeach/257826.html>.



A seminal study, published almost 20 years ago, argued that grain production in the PRC would stagnate due to limited arable land, lack of important productivity gains, water insufficiency, and environmental problems. The same study predicted that the PRC would have to import 200 million tons of grain by 2020.<sup>9</sup> Interestingly, in that same year, the PRC's combined imports of corn, soybeans, wheat, rice, and sorghum already totaled 150 million metric tons.

Today, meal imports (through meal and seed) account for about 90 percent of the PRC's domestic consumption whereas for vegetable oil imports (through vegetable oil and seed), that share is about 80 percent of domestic consumption. In recent years, the PRC began to import more meal - at the expense of seeds from alternative suppliers such as Russia, Ukraine, and Canada. The following section highlights and discusses the PRC's dependency on key grain imports, with a specific emphasis on soybeans.

### *Soybeans*

The PRC's annual imports have increased significantly over time and now range between 100 and 120 million metric tons (see figure 1). At the same time, and despite new policies and incentives, domestic soybean production has increased modestly to just above 120 million metric tons. As a result of this supply and demand imbalance, the PRC now accounts for about 60 percent of worldwide soybean imports. Such large volumes are necessary to meet its domestic demand for animal protein and edible oils. Nevertheless, some pundits believe that the PRC's soybean imports may have reached their highest point given the nation's ongoing efforts to increase domestic soybean production and diversify feed rations for its livestock sector.

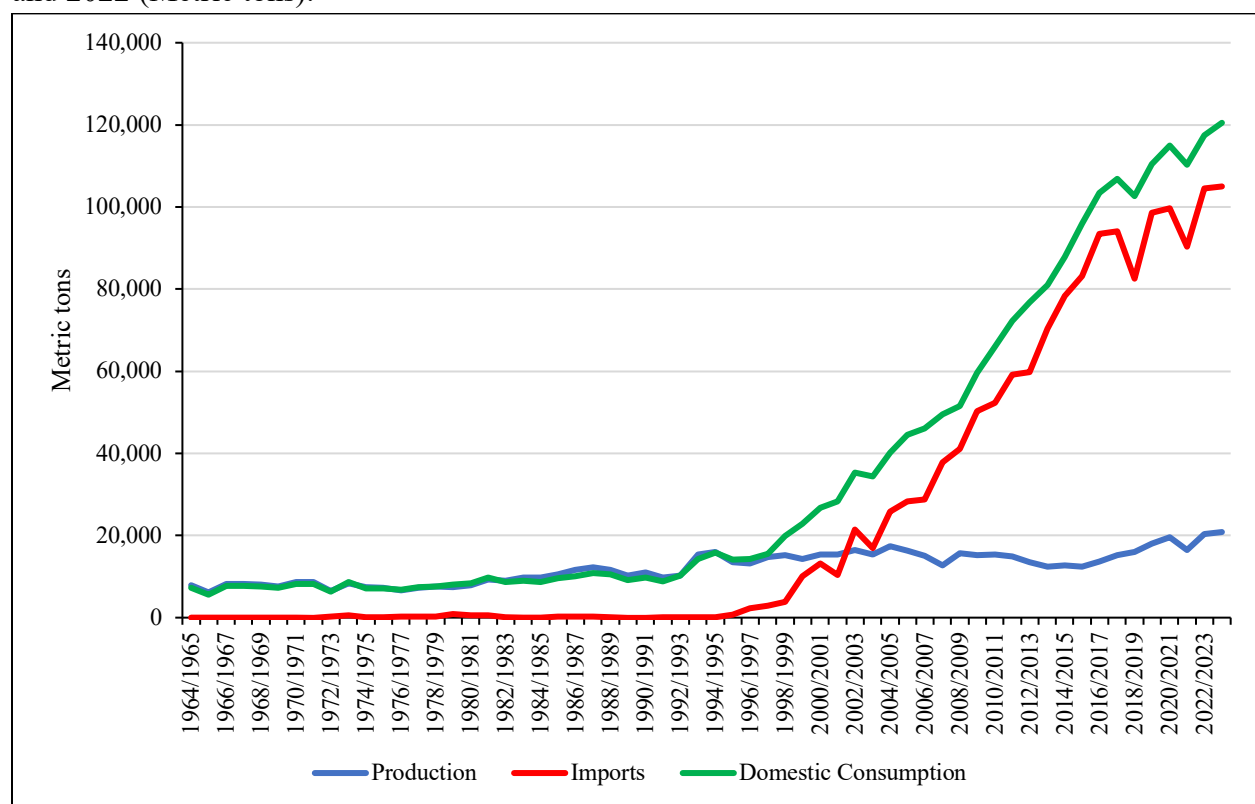
The PRC mainly imports soybeans from Brazil and the United States, which are in different hemispheres and therefore have different crop cycles. Brazilian farmers usually plant soybeans in September and October and harvest the crop from January to March. In contrast, Most U.S. soybeans are planted in May and early June and harvested in late September and October. For many years, The United States was the PRC's top soybean supplier, but in the past 15 years Brazil gradually claimed that title. As a result, in 2023, 73 percent of total Brazilian soybean exports went to the PRC in comparison to a 55 percent share in the United States. For additional context, during the U.S.-China trade war, Chinese purchases of U.S. soybeans plummeted in 2018 following the implementation of 25 percent retaliatory tariff put in place by the PRC. As a result, the PRC's share of Brazilian soybean exports peaked at 82 percent in 2018 whereas the U.S. share reached a record low at 18 percent.

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<sup>9</sup> Lester R. Brown, *Who Will Feed China? Wake-up for a Small Planet* (New York: W. W. Norton, 1995).

Another important consideration is that, with favorable weather conditions, production in South America could supply the PRC with all its annual soybean import needs, although at a higher cost. While such strategy would help the PRC mitigate geopolitical risks with the United States, it would also create a new risk. More specifically, the PRC would become entirely dependent on weather and crop conditions in the Southern hemisphere which seems problematic given that this region has been impacted by significant weather events in recent years. For example, in 2022, Argentina endured widespread drought conditions that caused significant declines in corn and soybean production that year. Nevertheless, the PRC is expected to continue importing more soybeans from Brazil than the United States for price competitiveness and geopolitical reasons.

**Figure 1.** Soybeans production, domestic consumption, and imports in the PRC between 1960 and 2022 (Metric tons).



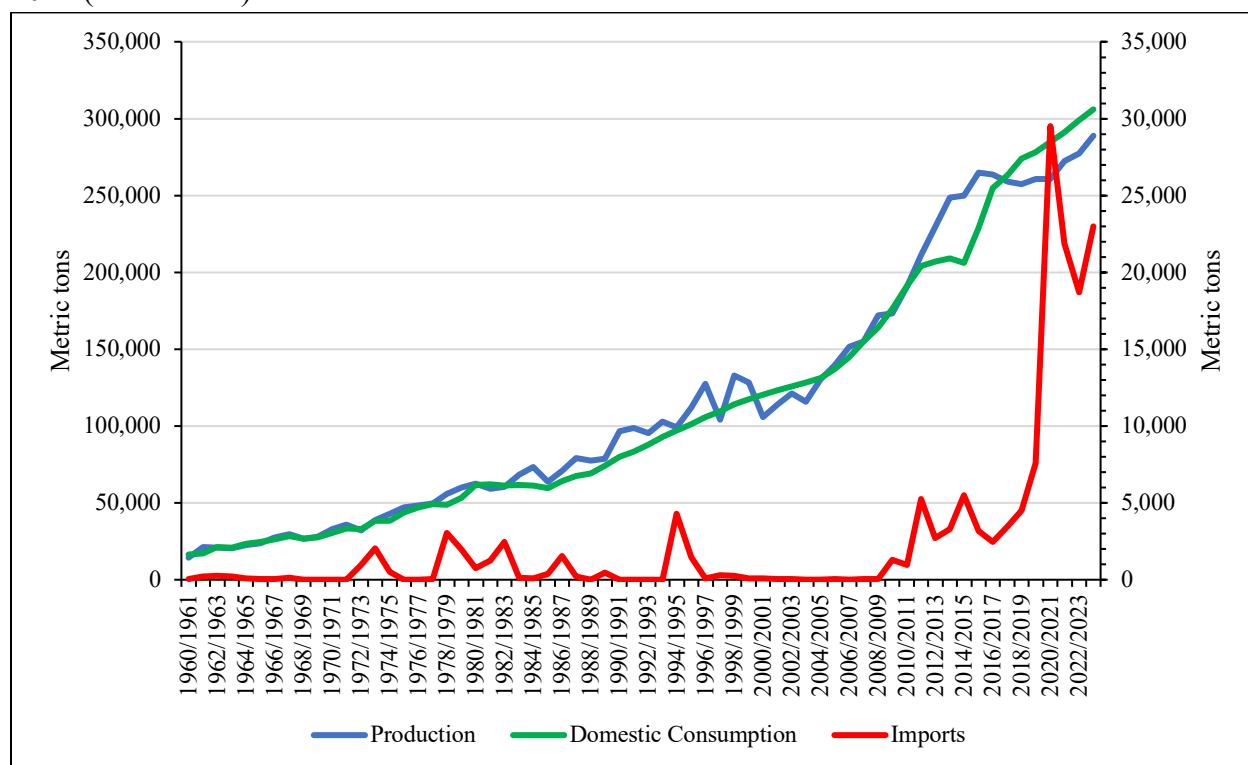
Source: U.S. Department of Agriculture.

## Corn

The PRC is the second largest corn producer in the world and has achieved very high rates of self-sufficiency in this crop. Concurrently, the PRC also became a major corn importer as demand for feed and processed foods continues to grow in that country. In 2021, the PRC was the world's largest corn importer when it purchased nearly 30 million metric tons of this commodity (see figure 2) - mostly from the United States, Brazil, and Ukraine with the latter accounting for one third of that volume.

This surge in imports represented 10 percent of the PRC's domestic corn consumption. It is important to note that the Chinese authorities must manage its annual volume of corn imports – typically between 25 and 30 million tons. This is to prevent imports from outcompeting and undermining domestic corn producers.

**Figure 2.** Corn production, domestic consumption, and imports in the PRC between 1960 and 2022 (Metric tons).



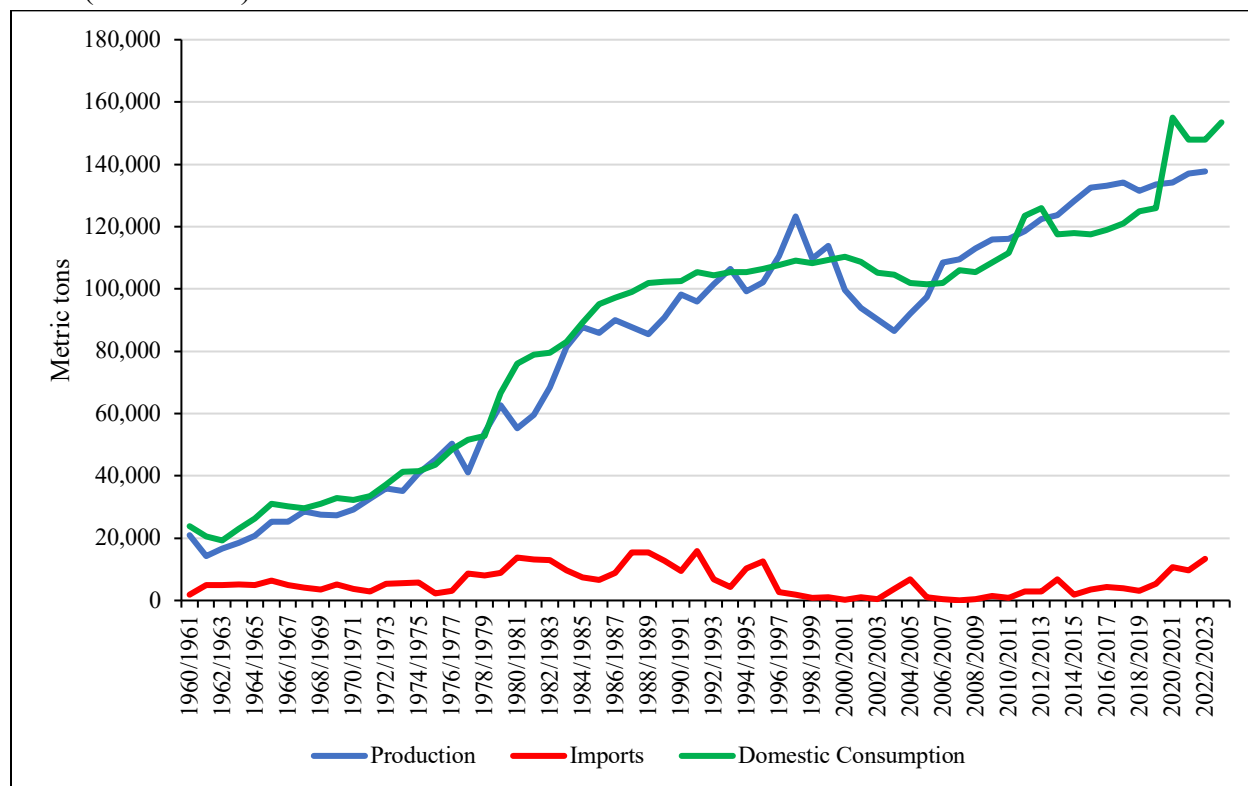
Source: U.S. Department of Agriculture.

## Wheat

In 2023, the PRC was the world's largest wheat producer, and the country has achieved very high levels of self-sufficiency with this commodity. This is reflected in figure 3 where the PRC's wheat production has consistently met much of the domestic demand which kept wheat imports relatively low and stable for many years; however, and despite having import quotas for wheat, the PRC recently began to import growing volumes of wheat from countries such as Australia, Canada, and the United States. After the trade war with the United States, the PRC found alternative wheat suppliers that include Russia and Central Asian nations such as Kazakhstan.

To cement this diversification effort, the PRC and Russia signed a \$26 billion agreement in 2023 which opened the Chinese market to Russian food exports to include 70 million tons of grain, legumes and oilseeds over the next 12 years. This contract and the lifting of numerous sanitary restrictions in 2022 also opened Russian wheat exports to the Chinese market.<sup>10</sup> In the near future, wheat exports are expected to account for the majority of Russian grain exports to the PRC.

**Figure 3.** Wheat production, domestic consumption, and imports in the PRC between 1960 and 2022 (Metric tons).



Source: U.S. Department of Agriculture.

<sup>10</sup> "Russia, China expand agricultural trade," *World Grain*, 8 November, 2023.  
<https://www.world-grain.com/articles/19248-russia-china-expand-agricultural-trade>

## II. The PRC's policies to reduce dependency on agricultural imports

- What policies are the government implementing in pursuit of these goals, and what are the motivations driving these policies?

The PRC's political class has been extremely sensitive about the importance of ensuring food security for its population given the historical precedents of famines and food crises triggering political instability and regime collapse in China. To address these concerns, the PRC has been developing and implementing a series of policies aimed at improving its capacity of ensuring food security and food price stability over years via stable grain output coupled with sufficient grain inventories and imports. President Xi Jinping made food security a national priority and recurrently stresses its strategic importance. Under his leadership, the PRC is employing a multipronged approach to improve food security and reduce its dependency on vegetable protein sources, mostly soybean meal and vegetable oil imports. More specifically, in the Five-Year Agricultural Plan, which runs through 2027, the PRC made increasing self-sufficiency in soybeans and other grains and oilseeds a national priority. This section discusses some of the PRC's ongoing efforts to reduce its dependence on agricultural imports and strengthen its food self-sufficiency.

### *Examples of policies fomenting food security*

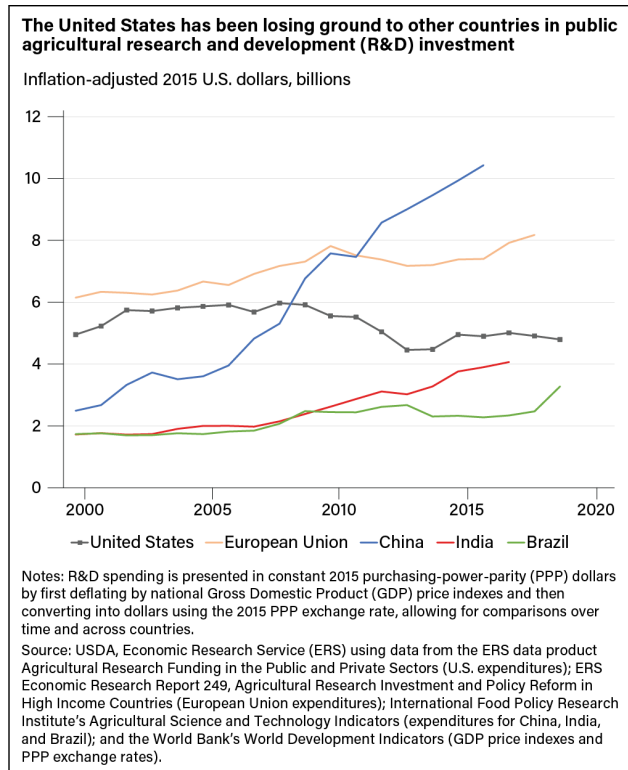
China's State Council issued a circular on February 11, 2022, announcing a plan to "advance agricultural and rural modernization during the 14th Five-Year Plan period (2021-2025)." The latter policy was designed to guarantee a steady supply of grain and other staple agricultural products by 2025. This is to be achieved via the stabilization of grain acreage and farmland above the self-instituted red line of 120 million hectares and by the optimization of grain species.<sup>11</sup>

### *Public investment in agricultural research and development*

The PRC is increasing its public investment in agricultural research and development to strengthen scientific and technological support for modern agriculture, to improve abilities for agricultural equipment research and application, and to boost development of its seed industry. The latter has been an area of great focus given that PRC's seed industry remains far behind its counterparts in the United States and other major agricultural producing countries. To close that gap, the PRC is seeking to improve its seed technology through more investments in genome editing capabilities and enhancing national and regional breeding capacity for crops and livestock.

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<sup>11</sup> Chris Lyddon, "Food security emerges as top priority for China," *World Grain*, 14 August 2023. <https://www.world-grain.com/articles/18900-food-security-emerges-as-top-priority-for-china>



Source: USDA

### *Diversification of food rations*

Food security concerns are driving the PRC to cut soybean meal use in animal feed. This was codified in 2023 in a three-year action plan to reduce soybean meal rations use in animal feed from 14.5 percent in 2022 to less than 13 percent by 2025. There is also a push for the makers of feed rations to incorporate alternative oilseeds such as rapeseed or sunflower seed which could be imported from countries such as Canada or Ukraine. Such efforts could reduce the PRC's soybean imports down to 82 million metric tons by 2025, according to some experts; however, there is also a limit as to how much soybeans can be reduced in the feed ration formulas due to its protein content.<sup>12</sup>

### *Diversification of supplying nations*

The PRC has made public that, in the long-term, it will seek to diversify its agricultural importer portfolio, especially away from the United States. As previously discussed, the most visible example of this has been the rise of Brazil as the world's largest soybean producer and the PRC's top supplier of this commodity. From 2019-2023, 73 percent of all Brazil's exports were sold to the PRC whereas that same share declined to 51 percent for the United States.

<sup>12</sup> Dominique Patton, "Food security drives China to cut soybean use in animal feed," *Reuters*, April 14, 2023. <https://www.reuters.com/world/china/china-food-security-law-comes-into-force-aims-absolute-self-sufficiency-2024-05-31/>

The PRC has also significantly increased its imports of feed grains and wheat from the central Asian countries and others along the Belt and Road initiative.<sup>13</sup> Very recently, the PRC authorized the import of two genetically modified (GMO) corn varieties grown in Argentina. This decision will further diversify the PRC's corn supplying portfolio and will open new export opportunities for Argentinean corn producers.<sup>14</sup>

#### **IV. Challenges for the PRC to achieve overall food self-sufficiency**

- What are the greatest challenges China faces in attaining its goals in stockpiling, self-sufficiency, and overall agricultural security?
- Given China's changing demographics and rising levels of education, does China have the labor force it needs to attain self-sufficiency in agricultural production?
- In the event of a protracted crisis where a portion of the labor force is unavailable to farm, would China be able to maintain the level of agricultural productivity necessary to sustain self-sufficiency? If so, for how long? If not, what may the government do to fill in the gap in production?
- To what extent do China's current challenges with environmental pollution limit its ability to attain self-sufficiency in agriculture and water management?

Despite the growing policy focus on improving the PRC's food security status, the country faces serious structural issues and unpredictable shocks that may undermine those efforts. This section discusses such challenges and the PRC's ability to address those problems in the long run.

##### *Loss and shortages of arable land*

Despite being the third largest nation in the world, the PRC falls behind other major food producing countries in terms of the availability of arable land. Rapid urbanization, pollution, and uses of land for other purposes have all contributed to a rapid decline of agricultural land in the PRC. Between 2013 and 2019, the PRC reported a decline of over 5 percent of its arable land, largely attributed to destructive farming practices and local governments repurposing agricultural land for infrastructure and real estate.<sup>15</sup>

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<sup>13</sup> Chris Lyddon, "Food security emerges as top priority for China," *World Grain*, 14 August 2023.

<https://www.world-grain.com/articles/18900-food-security-emerges-as-top-priority-for-china>

<sup>14</sup> Farm Journal AgWeb "Argentina on Track to Start Corn Exports to China in July," May 28, 2024

<https://www.agweb.com/markets/pro-farmer-analysis/argentina-track-start-corn-exports-china-july#:~:text=Meanwhile%2C%20China%20authorized%20the%20import,were%20awaiting%20certification%20for%20importation>

<sup>15</sup> Jinxia Wanga et al., "Growing Water Scarcity, Food Security and Government Responses in China," *Global Food Security* 14 (2017): 9–17, <https://doi.org/10.1016/j.gfs.2017.01.003>.



The pollution rate in the country's farmland soil is estimated at 10 percent, and about 2.5 percent of that land cannot be cultivated due to excessive contamination with heavy metals.<sup>16</sup> As a result, it is estimated that the country has a domestic planting area shortage of 90 million hectares. This farmland shortage is expected to worsen and will further undermine the PRC's goals of food self-sufficiency. Due to its severity, this issue captured the attention of the Chinese political class and Xi expressed concerns over the fast degradation of the nation's farmland. As a response, the Central Document No. 1 from 2019 set out a "farmland red line" policy with a target of preserving at least 120 million hectares of farmland - an area slightly larger than Sweden.<sup>17</sup> In pursuit of this goal, the PRC has introduced farmland restoration measures, crop rotation practices, and fallow land systems.

Additionally, Chinese authorities created a strategy for "reclaiming" farmland by reverting agricultural land that had been repurposed for industry, real estate, and infrastructure. In addition, the National High-Standard Farmland Construction Plan (2021–2030) laid out a national plan for enhancement of farmland quality. Furthermore, the CCP accepted a growing reliance on imported soybeans to free up millions of cropland acres for other higher yielding crops.

Despite these efforts, as environmentalist and pundits had predicted, production growth for rice, wheat, and corn has slowed down during the last decade mostly due to decreases in area planted. It remains unclear whether central and local authorities will be successful in protecting farmland against alternative and more lucrative uses.

### *Climate change*

Due to climate change, the PRC will face increases in the frequency, duration, and intensity of extreme weather events such as droughts and severe flooding. These weather shocks will impact agricultural production in the PRC and in its main supplying countries and present risks to the country's food security both in the short term and long term. As an illustrative example, the summer in 2022 was the country's driest and hottest since consistent records began being kept in 1961. During that year, severe droughts impacted the Yangtze River Basin which produces two-thirds of the nation's rice - the most widely consumed staple in the country.<sup>18</sup> Academic research presented evidence that shifting climate patterns coupled with ozone pollution accounted for yield losses of 10 percent in the PRC. Between 1981 and 2010, this amounted to annual losses of 55 million tons of crops.<sup>19</sup>

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<sup>16</sup> Wang, "The Challenges and Strategies of Food Security"; Bishwajit Ghose, "Food Security and Food Self-Sufficiency in China: From Past to 2050," *Food and Energy Security* 3, no. 3 (2014): 86–95, <https://doi.org/10.1002/fes3.48>.

<sup>17</sup> Zongyuan Zoe Liu, "China Increasingly Relies on Imported Food. That's a Problem," *Council on Foreign Relations*, January 25, 2023, <https://www.cfr.org/article/china-increasingly-relies-imported-food-thats-problem>

<sup>18</sup> Genevieve Donnellon-May and Zhang Hongzhou, "What Do We Really Know About China's Food Security?" *The Diplomat*, February 07, 2023, <https://thediplomat.com/2023/02/what-do-we-really-know-about-chinas-food-security/>

<sup>19</sup> Tian Hanqin et al., "Climate extremes and ozone pollution: a growing threat to China's food security," *Ecosystem Health and Sustainability* 2, no. 1 (2016).

The climate risk has been exacerbated by the growing geographic concentration of global production of key agricultural commodities. In this context, we could see global stocks plummeting and prices surging when adverse weather simultaneously impacts crop production in various major producers of a particular commodity (e.g., major floods impacting soybean crops in Argentina and Brazil or severe droughts disrupting wheat production in Russia and Australia). In response to these growing threats to its food security, the PRC has focused on building resiliency within its agricultural sector by: funding very large public investments seeking to mitigate the negative impacts of climate change, promoting more sustainable agricultural practices, encouraging farmers to switch to crops that cope better with adverse weather conditions, etc.<sup>20</sup>

### *Labor shortages*

As the PRC continues economic transition, labor force will continue to migrate out of rural regions toward more urban and industrial areas as people search for higher pay jobs. A decreased availability of agricultural laborers could become a constraint in the country's effort to increase its agricultural production. The PRC aspires to overcome this growing constraint by fomenting technological innovations in agriculture (e.g., farming drones, application of AI, etc.) as well as an increasing mechanization in farming operations. The PRC's government has also introduced a series of subsidies and fiscal incentives (i.e., abolition of taxes on agriculture) to turn farming into a more lucrative and appealing economic activity. As birth rates decline and rural-urban migration continues to flow, the labor pool in farming areas will continue to shrink and it is not clear whether the PRC will succeed in reversing this trend.

### *Water and land pollution*

The PRC's agricultural sector became heavily dependent on irrigation after important public investments over the last five decades to expand irrigated crop areas. Today, half of the cultivated land is irrigated and between 70 and 90 percent of Chinese grain, cotton, and vegetable production comes from this irrigated land. However, the sustainability of the current agricultural model is now in question due to widespread water scarcity.<sup>21</sup> Irrigation agriculture accounts for 60 percent of the PRC's total water demand and is characterized by inefficient delivery—30 to 40 percent efficiency versus 70 to 80 percent in developed countries.

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<sup>20</sup> Kevin Dong, Mallie Prytherch, Lily McElwee, Patricia Kim, Jude Blanchette, and Ryan Hass, "China's Food Security: Key Challenges and Emerging Policy Responses," Center for Strategic and International Studies, March 15, 2024.

<https://www.csis.org/analysis/chinas-food-security-key-challenges-and-emerging-policy-responses>

<sup>21</sup> Jinxia Wanga et al., "Growing Water Scarcity, Food Security and Government Responses in China," *Global Food Security* 14 (2017): 9–17, <https://doi.org/10.1016/j.gfs.2017.01.003>.

Another problem is that PRC's freshwater resources are geographically unevenly distributed, with 80 percent of the water resources concentrated in southern provinces; the northern part of the country is expected to run dry within thirty years. This spells trouble for food security because the northern provinces account for 65 percent of the country's cultivated land and 50 percent of the country's grain production.

The groundwater water table in the PRC has fallen steadily or has been contaminated following over forty years of excessive water withdrawals. In addition, there have been significant declines of the river runoff across the six major river basins. The United Nations concluded that the PRC is facing extreme water shortages and the underlying causes behind this water crisis include growing demands from the agricultural sector, rapid urbanization, and pervasive pollution of water sources. Climate change will likely worsen water scarcity in all river basins in northern provinces and some river basins in the south. If not addressed, water scarcity will endanger irrigated agricultural production of wheat and rice—productivity of these two crops in rainfed areas is much lower than yields from irrigated operations.

The PRC authorities are trying to address these problems with significant investments in water-saving technologies, enhancement of agricultural irrigation systems, and very large projects such as the South-North Water Diversion project; however, progress is impossible to monitor and some of the larger water projects are plagued with delays, disputes between provincial governments, and questions about their long-term environmental impacts.

### *Food Waste*

In line with what occurs in developed economies, food waste is also a growing problem in the PRC. Due to inefficiencies, it is estimated that between 14 and 18 percent of Chinese total grain production is lost along different stages of the supply chain—production, processing, and distribution or transportation. The CCP has been tackling this issue and launched a national campaign last year in which President Xi Jinping asked people not to waste food. Chinese authorities are also encouraging families to preserve food stocks that could be interpreted as setting the stage for a scenario in which they may need to implement stringent measures to secure food supplies.

## **V. The PRC's Grain Stockpiles**

- In which agricultural commodities is China seeking to stockpile and bolster self-sufficiency, and why? What are current agricultural stockpiles volumes and domestic production levels, and how much would these levels need to increase to meet the government's goals, if at all? Is this attainable?

The PRC routinely maintains large stockpiles of selected grains, but these are a state secret, and outsiders can only speculate about their location, true size, and quality. Official communications state that the PRC has built nearly 700 million metric tons of grain storage capacity<sup>22</sup>; however, some experts argue that Chinese officials might not know exactly how much grain is stored at any given time because of the difficulty of tracking these stockpiles.

Another important unknown has to do with how long these strategic reserves would sustain the PRC in the event of a conflict or major trade disruptions. It is not possible to accurately estimate that, but anecdotal evidence indicates that the PRC has somewhere between one to two years' worth of stocks of key agricultural commodities.

Another critical function of these stockpiles is to stabilize domestic prices of key agricultural commodities. For instance, Chinese authorities might release stockpiles into the market when facing upward price pressures in one specific commodity (e.g., corn prices shot upward in 2020 and they sold excess wheat stocks to feed companies). In other instances, the PRC stockpiled too much of a commodity and had to release stocks (to the domestic and export markets) in a gradual manner to avoid crashing domestic prices. The observed reality is that, in recent years, the PRC achieved food price stability amid major disruptive shocks such as the COVID-19 outbreak and the war in Ukraine. In contrast many other nations such as the United States and the European Union have been grappling with persistent food inflation.

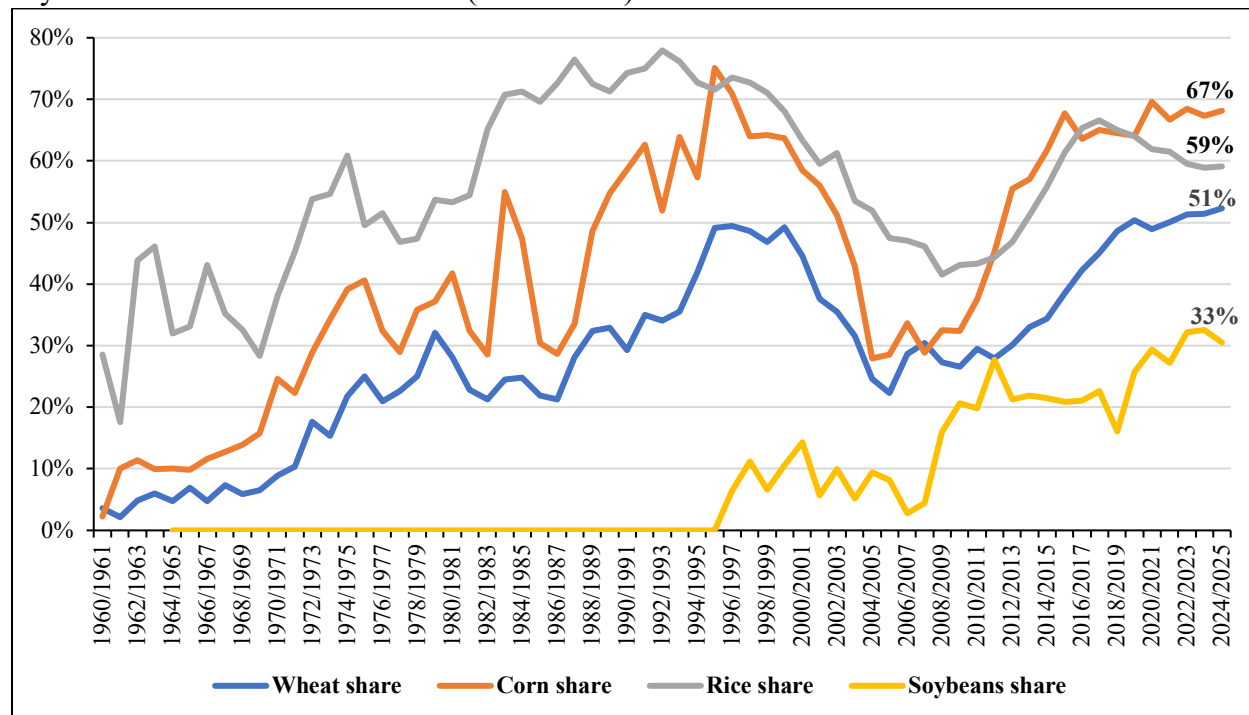
The USDA Production, Supply and Distribution (PS&D) data supports the idea that the PRC has amassed very large commodity stockpiles. An analysis of PS&D ending stock numbers indicate that PRC now accounts for significant and growing shares of the world's grain reserves. For instance, in the 2023/24 season, the PRC accounted for 67 percent of the world's corn ending stocks and nearly 60 of the world's rice stocks (see figure 4).

The observed growth in commodity stock levels should be explained by either increases in domestic production, larger imports, or a combination of both. According to Chinese officials these massive stockpiles have been supported by bumper crops for 19 years in a row. More specifically, with few exceptions, the China Statistical Yearbook has been reporting annual increases in domestic grain production. However, some pundits question such claims and point out that the PRC's fast-growing imports are indicative of its inability to keep up with expanding domestic consumption. Some studies argue that the actual domestic grain production is significantly lower than what is officially reported due to: (i) government subsidies to the major grain-producing counties that created incentives for over-reporting production; and (ii) the higher risk of data manipulation and misreporting at the lower administration level.

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<sup>22</sup> Cui Can, "Official: China's ability to safeguard food security enhanced," *The State Council Information Office of the People's Republic of China*, China SCIO, May 11, 2023. [http://english.scio.gov.cn/m/pressroom/2023-05/11/content\\_85284741.htm#:~:text=China%20has%20been%20improving%20its,operation%2C%20an%20official%20said%20Thursday](http://english.scio.gov.cn/m/pressroom/2023-05/11/content_85284741.htm#:~:text=China%20has%20been%20improving%20its,operation%2C%20an%20official%20said%20Thursday).

**Figure 4.** The PRC's share of the world's annual ending stocks for wheat, corn, rice, and soybeans from 1960/61 to 2024/25 (Metric tons).



Source: USDA

There are also concerns about the accuracy and reliability of grain reserves data due to lack of transparency and recent arrests and investigations associated with corruption – note that the current Agriculture Minister Tang Renjian is now under investigation by the anti-graft agency for “serious violations” of the law. In addition, there are also questions about the quality of the grain reserves. That is because such massive stocks require a very large grain storage infrastructure and complex management to ensure the quality of those stored commodities.<sup>23</sup>

## VI. Indicators of preparation for conflict

- To what extent can outside observers distinguish between preparations for conflict and preparations for other types of non-security related crises (such as a natural disaster) in the agricultural sector? Are there certain metrics that would conclusively indicate China is preparing for a conflict?

<sup>23</sup> Genevieve Donnellon-May and Zhang Hongzhou, “What Do We Really Know About China’s Food Security?” *The Diplomat*, February 07, 2023. <https://thediplomat.com/2023/02/what-do-we-really-know-about-chinas-food-security/>

There has been a clear effort by Chinese officials to reduce the nation's high dependency on imported soybeans and overall oils/oilseeds; however, it is very difficult to discern whether this is just a government's reaction to this vulnerability or another step in the preparations for conflict. Furthermore, reliability issues with the PRC's official agricultural data makes it hard to judge the state of its food security situation and the true calculus behind some recent agricultural policies. Despite the obstacles, U.S. observers should identify and monitor unusual/unexpected developments that deviate from normal market considerations. Below are some examples of possible indicators:

- A significant and prolonged surge in soybeans and soymeal imports that goes counter to market signals. An example of such scenario would be a surge in soybean and soybean meal imports in a context of very low profit margins for Chinese hog farms, reduction in hog herd sizes or contracting demand for pork meat amongst Chinese consumers.
- Another example would be PRC purchasing large volumes of U.S. soybeans in the months following soybean harvest season in South America, which stretches from January to June. This is because during those months, the PRC normally gets most of its soybean imports from Brazil, Argentina, and Paraguay as they become more price competitive than U.S. soybeans.
- The PRC's population is no longer growing or might have started to decline; however, as more families move up to the middle class, demand for meat and dairy will likely continue to increase in coming years. To meet this growing demand, the PRC will have to increase its livestock and dairy production or resort to more imports. In that context, increases in imports of oilseeds (for poultry and hogs) and feed grains (for beef and dairy operations) that are not matched by proportional increases in livestock production could point to an expansion of strategic grain reserves beyond their current levels. If detected, such trend should warrant closer monitoring and analyses.
- The United States and its allies should also watch for unusual surges in the PRC's imports of food products with longer shelf lives. For example, Chinese imports of dairy products have grown dramatically in recent years, and milk powder accounts for half of those imports, mostly originating from New Zealand. It must be noted that milk powder is widely used to produce infant formula and other milk products. Chinese consumers became increasingly suspicious of domestic milk products after a series of deadly food contamination scandals involving infant formula. If the PRC anticipates a conflict to disrupts its dairy imports, it is reasonable to expect the share of milk powder to increase at the expenses of other fresh dairy product imports because of its extended shelf live. Another possible course of action would be for the PRC to expand its domestic dairy production. However, this would only increase the need for more imported animal feed.

- The PRC is also a large exporter of certain agri-food commodities such as fish and seafood, vegetables, fruits, nuts, and vegetable oils, among others. Food products account for nearly 7 percent of the total volume of Chinese exports and 2.5 percent of their value. Gradual or sudden decreases in Chinese traditional agricultural exports that are not explained by market factors could indicate a redirection of exports toward stockpiling the national strategic food reserves.
- In the past, the PRC resorted to imports when domestic commodity prices for specific grains were high relative to global prices. For instance, when adverse weather conditions impacted the 2021 Chinese corn crop, domestic prices soared, and the PRC imported record levels of corn from the United States and other countries. Therefore, noticeable increases in commodity imports in a context of low domestic prices would go against economic logic and should warrant close monitoring as they could be motivated by nonmarket factors.
- Another relevant indicator would be a significant and counterintuitive shift in the PRC's food imports portfolio. Bulk commodities and grains continue to account for the largest share of the nation's agricultural imports. However, rising income levels of Chinese households has transformed their tastes and sparked a demand for higher value imported foods such as wine, coffee, and tea. A sudden decrease in imports of luxury and value-added food products coupled with unusual surges of staple food imports could represent an effort to build reserves that cover basic nutritional needs during conflict at the expenses of luxury food products. Another example would be an increase in imports of specific types of wheat that are used in certain breads and processed goods that may not be typically grown in the PRC.

#### 5. [How might China's targeted agricultural stockpile volumes and domestic production increase in the lead up to a period of higher activity, such as in a conflict or crisis scenario?](#)

It is unlikely that stockpiles will reveal obvious information about preparations for conflict because it is hard to assess the true rationale behind observed increases in stock levels (e.g., demand-driven or price opportunistic build up versus preparations for possible embargos and trade disruption). Moreover, food supply for military is top secret in the PRC.

Soybeans present a good case study that illustrates this issue. Every year, the PRC imports very large volumes of soybeans (105,000 metric tons in 2022/23 crop year) to be crushed for soybean meal and soybean oil. Those soybeans that are not crushed in any given year, are assumed to go into stocks. However, due to lack of accurate data, it is no longer possible to fully track soybean crushing pace in the PRC. As a result, it is difficult to accurately estimate the volume of soybeans being stockpiled.



Despite the unknowns and lack of reliable data, the PRC has increased its stocks of major commodities to very high levels in recent years (see figure 1). Thus, it is important to continue monitoring stockpile levels in the upcoming years and contrast them against ongoing supply and demand conditions.

## **VII. Potential global impacts associated with the PRC achieving food self-sufficiency**

- What could be the global economic impact of China's pursuit or achievement of self-sufficiency in agriculture? What would be the social and political impacts?

As previously stated, it is highly unlikely that the PRC will ever achieve self-sufficiency in a number of agricultural products. However, if ever materialized, such scenario would certainly reshape global agricultural markets and therefore warrants discussion.

The most significant impact would be the loss of the PRC as a primary destination market for many food product exports produced by global agricultural powerhouses such as the United States, Brazil, Argentina, Australia, New Zealand, Paraguay, among others. Some of these nations' macroeconomic stability are very dependent on their agricultural export sector for tax revenues and foreign currency. For instance, soybeans are now Brazil's primary agricultural export commodity by volume, accounting for more than 60 percent of the soybeans grown domestically. Furthermore, exports from the soybean complex (i.e., soybeans, soybean oil, and soybean meal) reached \$67.3 billion in 2023, which represented 40 percent of Brazil's total export revenue.<sup>24</sup>

For the United States, the loss of one its main export destination market would completely reshape its agricultural sector as farmers would have to find alternative markets or switch crops and farming activities. As an example, following the U.S.-China trade war, the United States began to pursue alternative markets for its soybeans. This diversification efforts have resulted in important increases in U.S. soybean exports to other markets such as Egypt, Mexico, Japan, Indonesia, Taiwan, and Bangladesh. Interestingly, Brazil continues to become more dependent on the Chinese market.

Another possible strategy to soften the loss of the PRC export market would involve policies and private investments that result in higher use of feedstocks and other agricultural products by other parts of the U.S. economy (e.g., energy sector). It is important to note that the U.S. soybean crush capacity has experienced rapid and steady growth since 2021 to meet an increasing demand for soybean oil, particularly from the renewable diesel sector.

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<sup>24</sup> Colussi, J., G. Schnitkey, J. Janzen and N. Paulson. "The United States, Brazil, and China Soybean Triangle: A 20-Year Analysis." *farmdoc daily* (14):35, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, February 20, 2024.

An important caveat is that such impacts would not be felt immediately by the agricultural exporting nations as it would take many years for the PRC to achieve food self-sufficiency. For some agricultural products those goals are unlikely to be ever achieved (e.g., soybeans and other oilseeds). The slow progress by the PRC would give nations time to adjust their agricultural policies, traders to seek new markets, and farmers to change their crops.

## **VIII. Policy recommendations**

- [The Commission is mandated to make policy recommendations to Congress based on its hearings and other research. What are your recommendations for Congressional action related to the topic of your testimony?](#)

The opacity and dearth of reliable data on food production and stockpiling makes it very difficult for outsiders to depict an accurate picture of the food security situation in the PRC. As a result, it is very difficult for U.S. analysts to assess whether actions and in the PRC's agricultural space (i.e., increase in commodity imports, changes in trade patterns, new agricultural policies) are simply market driven, politically motivated, or in a worst-case scenario, a preparation step toward conflict.

This is a blind spot that would require close interagency collaboration between federal government agencies with the specific technical expertise (e.g., U.S. Department of Agriculture) and the intelligence community (IC) which could collect new information and data. Such cooperation could yield the following results:

- 1) The identification and monitoring of indicators and metrics in the agricultural space that may signal potential preparations for a conflict by the PRC.
- 2) The joint analysis and interpretation of collected data and intelligence.

The creation of such working groups would require new authorizations and appropriated funding. Dedicated funding should support the deployment of federal government agencies' subject matter experts (SMEs) to work closely with the IC - as a core part of their work rather than as an additional duty.

If the United States is to effectively exploit the PRC's dependency on food import as part of broader economic statecraft, it will need to work closely with other countries to forge an effective coalition against the PRC in the event of a conflict. That is because a trade embargo or a naval blockade might not be sufficient or feasible options for the United States to truly disrupt critical Chinese imports such as animal feeds. Thus, the United States must strengthen its economic and diplomatic ties with other global agricultural powerhouses such as Brazil, Argentina, or Ukraine and perhaps even begin to design compensation mechanisms that would incentivize these nations to temporarily forego their agricultural exports to the PRC in the case of conflict. Such conversations should involve the participation of a broad set of stakeholders such

as the State Department, U.S. Department of Agriculture, the Office of U.S. Trade Representative, academic experts, industry groups, among others.

## **OPENING STATEMENT OF GABE COLLINS, BAKER BOTTS FELLOW ENERGY & ENVIRONMENTAL AFFAIRS, BAKER INSTITUTE**

MR. COLLINS: Dear committee members, it is a great honor to testify this morning. And to the audience, thank you for participating in this vital process. It's great to be here with you. Energy production and storage trends are an important signal that a country may be preparing to engage in warfare. Consider the case of Nazi Germany which, despite a global depression, increased its coal production nearly twofold between Hitler's taking power in 1933 and the invasion of Poland in 1939. Energy activities retrospectively show that Berlin was on war economy footing years before it marched troops in the Rhineland and Austria in the Sudetenland or invaded Poland.

In an uncomfortable historical echo, the Chinese Communist Party has escalated the militants of its rhetoric and actions over the past decade while Chinese firms have engaged in a massive energy infrastructure build out implicating coal, oil, and natural gas. It is beans, bullets, and black oil on an unprecedented scale. China has undertaken world class efforts on all three fronts, but I will restrict my remarks today to energy, the black oil aspect.

China relies upon three import exposed energy commodities for approximately 80 percent of its total primary energy usage. Coal underpins China's massive world leading energy system, which is about 1.6 times larger than that of the United States and accounts for about 56 percent of primary energy use. Oil follows at approximately 17 percent of total primary energy use and propels most of China's goods transportation activity, particularly outside of the rail system. Natural gas comes in third place at about 9 percent of the total energy use in China.

China now imports about 70 percent of its crude oil, the core fuel for modern maneuver warfare. Furthermore, PRC oil companies, despite spending more than a trillion dollars in capital over the past two decades, have still not been able to drill their way out of the trend of rising oil import dependency. It is perhaps then unsurprising that, of the three core fossil fuels, PRC entities have most heavily focused on oil storage. China's oil consumption has, roughly, doubled since 2005 while storage capacity has tripled. China's total crude storage tank capacity is now likely north of 1.8 billion barrels. That's about 30 percent larger than total U.S. oil storage capacity, even though the U.S. still consumes about 25 percent more oil than China does.

Data from BreakWave Advisors, Kayrros, and Ursa Space Systems suggests that, between 2016 and early 2024, China's total above ground crude oil inventory has ranged from 850 million to a bit over one billion barrels. This number includes multiple above ground strategic petroleum reserve sites with a total storage capacity of approximately 200 million barrels of crude oil. China also now has operational underground crude oil storage facilities at Huangdao, Jinzhou, Zhanjiang, and Huizhou, which between them could store at least 100 million barrels of additional oil.

BreakWave's analysis indicates that, over the past two years, Sinopec, PetroChina, and CNOOC, which collectively control the lion's share of crude oil tank capacity, have typically utilized from 55 to 65 percent of their tanks total volume. Above ground tanks can, in many cases, store 80 percent of their nameplate capacity, suggesting that China could have nearly 300 million barrels of additional headroom across its oil storage complex if it chose to maximally stockpile ahead of an expected contingency. That's enough oil to run a modern air sea ground military for well over a year, among other uses.

So what are some strategic warning signals we can potentially watch for from the energy space as it pertains to China? Signal number one: a significant upward departure from the trailing

three year and five-year average above ground crude oil storage utilization rates. Above ground tank storage capacity utilization beyond 65 percent should be treated as a yellow flag justifying deeper scrutiny.

Signal number two: construction of more underground crude oil storage facilities. Signal number three: greater levels of tanker activity at a given oil port than visible above ground storage capacity would justify based on refinery runs and inventory measurements. This could be a proxy indicator of nearby underground facilities being filled.

Signal number four: construction of new overland oil pipelines from Russia and/or Central Asia or expansions of existing overland oil pipelines. Signal number five: increased activity at refined product storage depots within 500 miles of Taiwan. One way to do this would be to use satellite monitoring of volatile organic compound emissions.

Signal number six: expansion of coal inventories beyond their trailing three year and five-year average levels. As more Chinese coal plants begin to use covered coal sheds, this may require synthetic aperture radar monitoring of power plants' rail connections, as well as the stockpiles at coal mines themselves.

Signal number seven: PRC attempts to interfere with synthetic aperture radar measurement in the facility of known or suspected energy storage facilities.

Policy recommendations for Congress. One, immediately fund intensified observation and analysis of current and suspected PRC energy storage locations, particularly for crude oil but also coal and natural gas. Key agencies involved might include the National Geospatial Intelligence Agency and the Departments of Energy, Commerce, State, and Treasury. Maximize the use of commercial off the shelf data and technology to accelerate the effort and ensure that it stays at the cutting edge of remote sensing technology while also optimizing the cost to taxpayers.

Congress should also fund unclassified efforts by academic researchers focused on Chinese energy infrastructure, how it's managed, and how it might be used to facilitate and prepare for intensified malign activities and, in a worst case, warfare. Such efforts should feed an economic warning fusion center that provides advice across cabinet level agencies, the intelligence community, and the Defense Department with a particular focus on U.S. Indo Pacific Command.

For an annual expenditure that would likely approximate the cost of a few missiles, the U.S. government would hereby gain a set of insights into PRC energy stockpiling and strategic energy sector behaviors that could help it better anticipate coming kinetic conflict, should General Secretary Xi Jinping choose war.

Thank you for the opportunity to testify today. I welcome your questions.

COMMISSIONER GOODWIN: Thank you, Mr. Collins. Dr. Liu.

**PREPARED STATEMENT OF GABE COLLINS, BAKER BOTTS FELLOW ENERGY  
& ENVIRONMENTAL AFFAIRS, BAKER INSTITUTE**

## Energy Stockpiling as A China Strategic Warning Indicator

***Gabriel Collins, J.D., Fellow in Energy & Environmental Regulatory Affairs,  
Rice University's Baker Institute for Public Policy, Center for Energy Studies<sup>1</sup>***

*Testimony to U.S.-China Economic and Security Review Commission Hearing on "China's Stockpiling and Mobilization Measures for Competition and Conflict," 13 June 2024*

### **Executive Summary**

- Energy production and stockpile buildups often precede great power industrial wars. Nazi Germany increased its coal production nearly two-fold between Hitler's taking power in 1933 and the invasion of Poland in 1939.
- China is building surge production capabilities for coal and storage capacity for oil that each could be interpreted as exceeding "normal" commercial parameters. The NDRC seeks the capacity to rapidly augment coal production at the rate of 300 million tonnes per year by 2030, with a lesser amount operational by 2027.
- PRC policymakers greenlighted a coal mine [capacity expansion](#) of an additional 300 million tonnes in 2022—almost the annual production of the [entire European Union](#). That's enough coal to fill a train of [standard rail hopper cars](#) that would wrap around the [entire Equator](#), plus enough left to stretch from Washington DC to Los Angeles.
- China's total crude storage tank capacity is now somewhere a bit north of 1.8 billion barrels—about 30% larger than total U.S. storage capacity, even though the US still consumes about 25% more oil than China does.<sup>2</sup>
- Between 2016 and early 2024, China's total observed aboveground crude oil inventory has ranged from 850 million to a bit over 1 billion barrels.
- This number includes multiple aboveground strategic petroleum reserve sites with a total storage capacity of approximately 200 million barrels of crude oil.<sup>3</sup> China also has operational underground crude oil storage facilities at Huangdao, Jinzhou, Zhanjiang, and Huizhou, which between them could store at least 100 million additional barrels.<sup>4</sup>
- China could have nearly 300 million barrels of additional "headroom" across its oil storage complex if it chose to maximally stockpile ahead of an expected contingency.
- Sections IV and V of this Testimony outline specific warning signals to watch for, as well as recommendations for Congress. Creating an effective China-focused Energy Strategic Warning system would likely cost less than \$25 million per year and could be scaled to monitor other regions as well for a range of climate, energy, and national security issues.

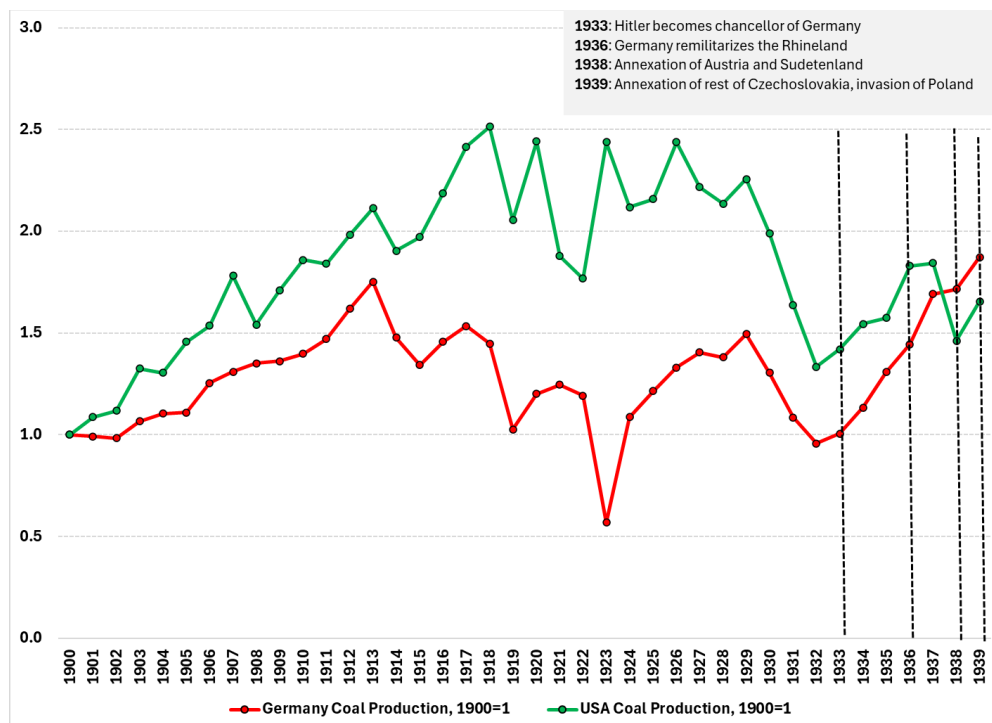


## I. Introduction: Beans, Bullets, Black Oil, and Modern Warfare

Energy production and storage trends are an important signal that a country may be preparing to engage in warfare. Such data often hide in plain sight. Pinpointing “*where to look, how to look at it, and how to assess what we see*” is therefore critical. This analysis looks through the lens of “*how might a war initiator prepare its energy system and stockpile energy goods in advance of kinetic conflict or activities that materially raise the risk of kinetic war?*” It seeks to identify energy stockpiling activities that offer the most reliable strategic warning indicators and how those might be tracked.

Consider the case of Nazi Germany, which increased its coal production nearly two-fold between Hitler’s taking power in 1933 and the invasion of Poland in 1939 (**Exhibit 1**). During the same period, the world’s largest industrial economy, the United States, operated on market principles and its coal output trajectory significantly lagged that of an increasingly belligerent Third Reich. Energy activities showed that Berlin was on war economy footing years before it marched troops into the Rhineland, annexed Austria and the Sudetenland, and invaded Poland.

**Exhibit 1: German and US Coal Production, Index (1900 = 1)**



Source: NBER, Federal Reserve Bank of St. Louis, Author’s Analysis

Similarly, the behavior of Chinese energy producers, traders, and transporters, who operate under increasingly intensive state supervision, could yield clues about the PRC’s intent to

potentially engage in armed conflict. Prospective belligerents may augment energy production and stockpile energy resources for several reasons. First, if they are significantly import-dependent--as China is for crude oil and natural gas--they need a cushion to help them sustain their industrial metabolism during a blockade or embargo. Second, even if they have abundant domestic resources (coal, in China's case) the rate of consumption at the intense, high-maneuver early phases of a war can exceed the ramp rate of domestic producers and logistics networks.

Third, under either scenario, the greater the stockpile relative to expected demand, the more resilient the party's supply position is. "Just in time" peacetime inventory management strategies please investors for their financial leanness but mean that even a handful of enemy strikes can seriously crimp supply. Finally, pre-conflict stockpiling is also likely to favor operational locations such as ports and airbases nearest the expected fight. As an illustrative example, if the PRC is preparing to invade Taiwan, it likely would stage diesel, gasoline, and jet fuel in Southeast China, not in Xinjiang or along the Bohai Gulf. Similarly, crude stockpiles would likely build nationwide, but with special intensity near refineries with the most robust product pipeline linkages to areas nearest the physical battlespace.

### **I. Energy & Modern Warfare**

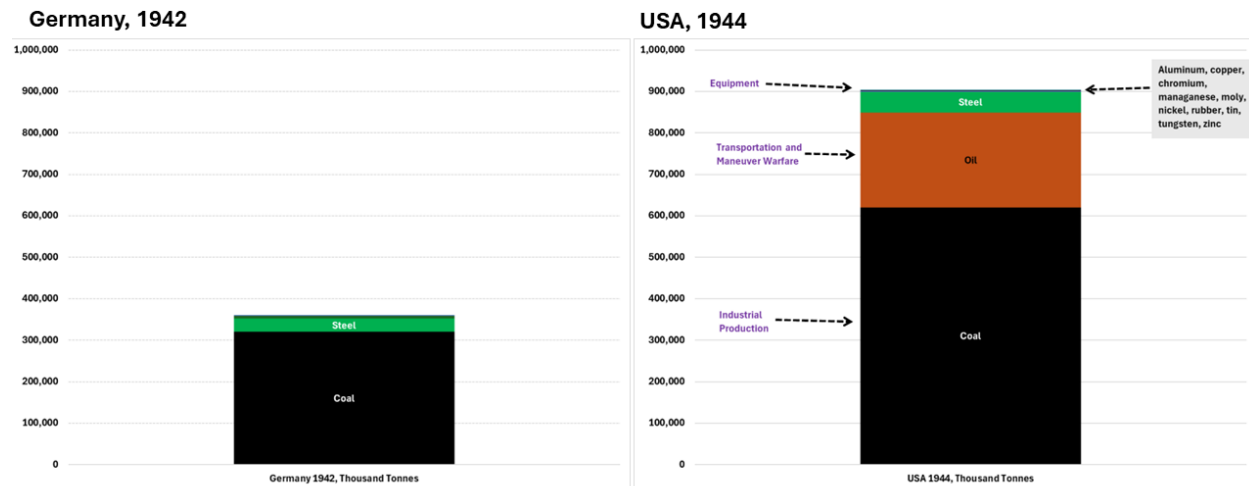
Energy matters greatly in a new era of industrial warfare. Russia's massive strike campaign against Ukraine's electricity and gas systems affirms their strategic importance to Kyiv's warfighting capacity. The Ukraine War's combat dynamics also suggest that past and present share more similarities than one might expect. Killing technologies have evolved dramatically over the past 80 years, but the physical raw material balances needed to sustain industrial war have not changed substantially.

In the maritime domain, a modern DDG-51 destroyer consumes approximately as much fuel as a similarly sized World War II light cruiser under many operating regimes.<sup>5</sup> Other machines have become far more fuel intensive. A P-51 Mustang takes off at a fuel flow rate of 120 gallons per hour, while an F-16 Viper with afterburner engaged for the same takeoff could burn approximately 130 gallons in a single minute.<sup>6</sup>

Platforms sailing, flying, or driving in the battlespace are only part of the equation. The energy demands of an economy at total war can be phenomenal. Energy is vital to produce metals and materials to arm warriors, to grow the food that sustains them, to move goods around, and to fuel the overall homefront economic activity necessary to stay in a prolonged fight. In summary, while energy abundance does not by itself ensure victory, it is an essential prerequisite. Snapshots of German war material needs in 1942 (when its material position was peaking) and US raw material usage in 1944 as its war effort reached full swing illustrate energy's comprehensive importance (**Exhibit 2**).

It bears noting that coal deliveries to consumers in Germany rose from 189 million tonnes in 1938/1939 to a peak of 250 million tonnes in 1942/1943.<sup>7</sup> German Armaments Minister Albert Speer captured the core issue well with his 1944 remark that “*coal is the starting point for everything necessary in war.*”<sup>8</sup>

## Exhibit 2: German and American Consumption of Key Raw Materials During Year of Peak War Production Effort (‘000 Tonnes)

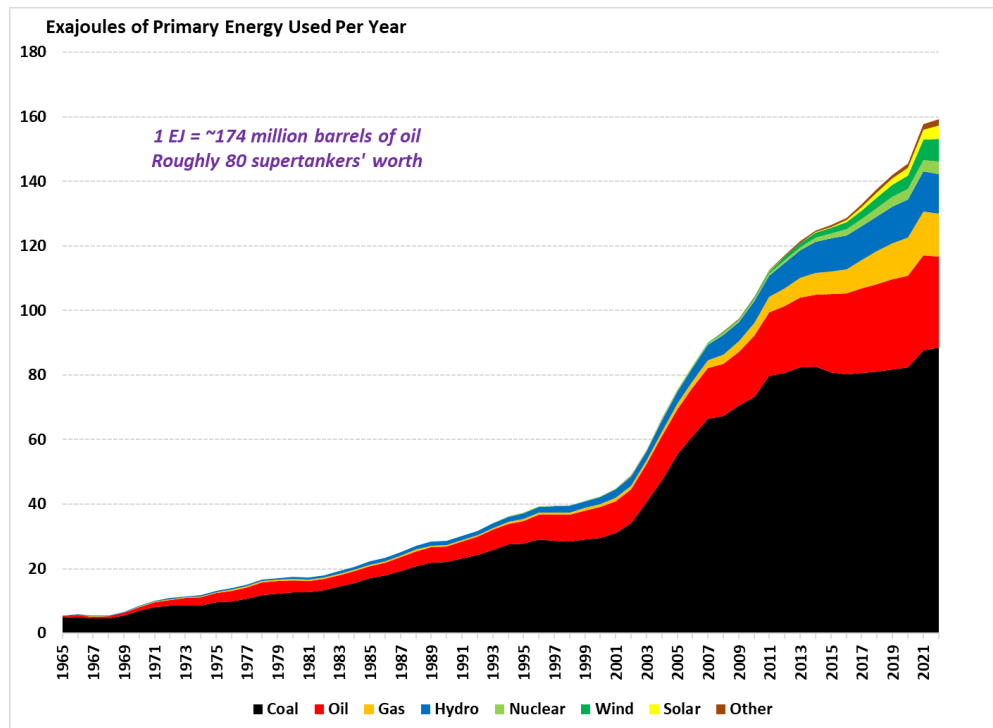


Source: Rohstoffverbrauch 1942 : Vergleich. 1943. 1 p. NARA T78 R146; DEIGHTON, Len. Blood, Tears and Folly : An Objective Look at World War II. New York, NY : Castle Books, 1999. 653 p. ISBN 0-7858-1114-1 (via Panzerworld); USGS, Author’s Analysis

## II. How is China Stockpiling Energy Resources?

China relies upon three import-exposed energy commodities for approximately 80% of its total primary energy usage. Coal underpins China’s massive, world-leading energy system (1.6 times larger than that of the United States), accounting for about 56% of primary energy use (**Exhibit 3**). Oil follows at approximately 17% of total primary energy use—and propels most of the country’s goods transportation activity aside from the rail system. Natural gas comes in third place, at about 9% of the total energy used in China.

### Exhibit 3: China Primary Energy Usage, By Source (Exajoules)



Source: Energy Institute Statistical Yearbook of World Energy 2023, Author's Analysis

Chinese firms have over the past decade engaged in a massive energy infrastructure buildout implicating all three core hydrocarbon energy resources. Yet of the three, oil provokes the deepest concerns. As such, I will briefly engage coal and natural gas, along with the inventory management measures Beijing supports for those two resources, and then delve deeper into oil, the item for which PRC energy security anxieties are most acute and the energy source which powers the fighting instruments of a modern industrial war machine.

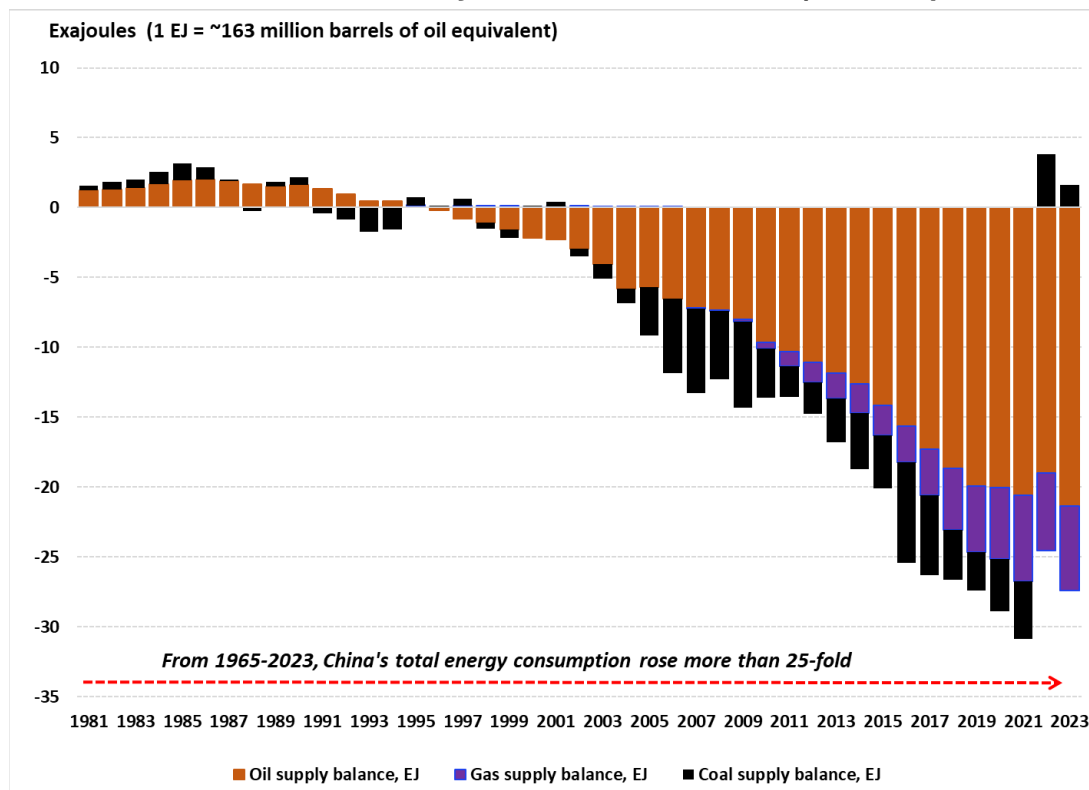
#### A. Coal Strategic Reserve Initiatives

The Chinese government's approach to coal stockpiling is production oriented. China's rich domestic coal reserves allow it to throttle production up in response to energy supply shortfalls, as it did with an approximately 25% production increase between early 2021 and early 2023. Such strategically transformational expansions of energy production are rare in the modern world. The only globally-impactful examples I could locate in the past century were (1) Nazi Germany's explosive expansion of coal production as it girded for war in the mid-to-late 1930s, (2) Saudi Arabia's oil ramp up from 1965 into the 1973 Oil Embargo, (3)

the United States during the mid-2010s Shale Oil & Gas Boom, and (4) China's post-COVID coal production increases.<sup>9</sup>

China's domestic coal production juggernaut has been the country's primary fossil energy bright spot, with a turn to net supply surplus relative to demand over the past two years (**Exhibit 4**). Oil import dependence has risen sharply in the past 20 years. Natural gas import exposure is significant but has been held in place by aggressive domestic drilling efforts and perhaps most importantly, the fact that gas is secondary to coal as a source of process heat and can be substituted with coal, hydro, nuclear, and renewables (to some degree) as an electricity generation resource.

#### Exhibit 4: China Self-Sufficiency For Coal, Gas, and Oil (*Consumption – Production*)



Source: Energy Institute Statistical Yearbook of World Energy 2023, Author's Analysis

China in some months now stockpiles around 200 million tonnes of coal at major power plants, an approximately 30-day supply. Recognizing coal's foundational importance to the country's energy supply, social stability, and industrial production, the NDRC in April 2024 published a strategy for establishing a system of "dispatchable coal reserves."<sup>10</sup> While the idea's parameters are still taking shape, the NDRC seeks the capacity to rapidly augment coal production at the rate of 300 million tonnes per year by 2030, with a lesser amount

operational by 2027. General Secretary Xi Jinping has said in the past that China seeks to have coal consumption peak around 2025-2026.<sup>11</sup> How much higher that figure will be than the 2023 level of more than 4.6 billion tonnes of domestic coal consumption remains to be seen.

The number is huge, but the predicate steps are already underway. PRC policymakers greenlighted a coal mine [capacity expansion](#) of an additional 300 million tonnes in 2022—almost the annual production of the [entire European Union](#). That's enough coal to fill a train of [standard rail hopper cars](#) that would wrap around the [entire Equator](#), plus enough left to stretch from Washington DC to Los Angeles.<sup>12</sup>

## **B. Natural Gas Stockpile Strategic Initiatives**

China is rapidly expanding its natural gas storage capacity. Cedigaz's latest Underground Gas Storage in the World report estimates that Chinese firms operate 21.3 billion cubic meters (BCM) of working underground gas storage capacity plus an additional 8.1 BCM of tank storage at liquefied natural gas import facilities. Cedigaz forecasts that the country's gas storage capacity could rise to 80 BCM of working gas capacity by 2030. As such, China gas storage could increase more than 2.5-fold, while overall gas consumption grows by something closer to half (from just under 400 BCM in 2023 to a range forecasted between 550 and 600 BCM in 2030).<sup>13</sup>

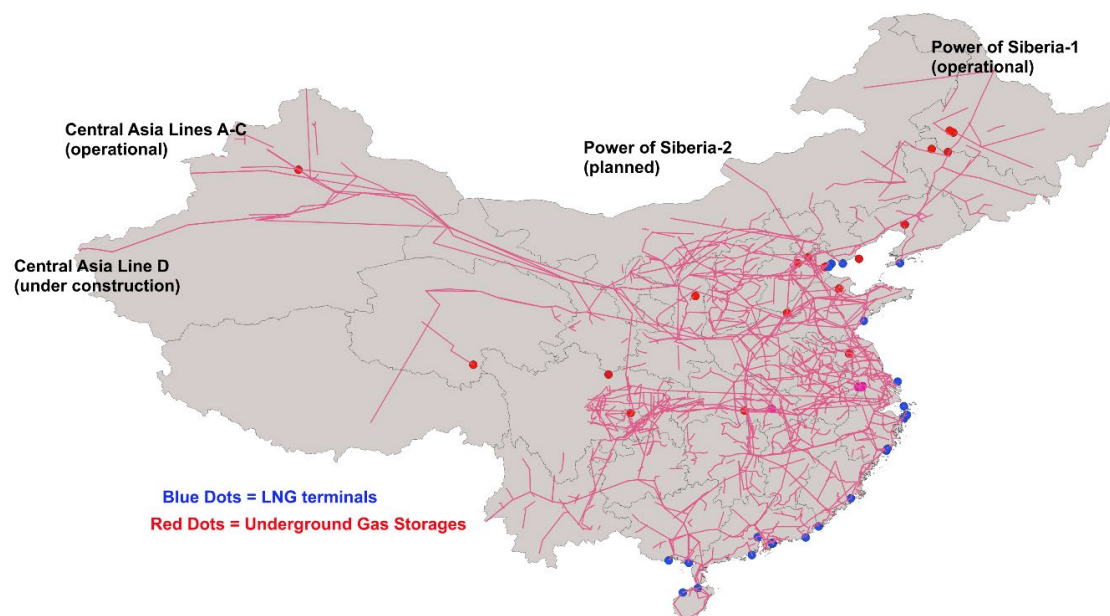
For comparison, Russia's Gazprom, the world's single largest gas producing firm operates approximately 75 billion cubic meters of working UGS capacity.<sup>14</sup> EIA data show that as of November 2023, the US had about 125 BCM of working underground gas storage capacity relative to nearly 900 BCM of annual gas consumption—the world's largest.<sup>15</sup>

Chinese policymakers appear to perceive natural gas storage as more of a market management tool than an explicit security instrument the way crude oil stocks are sometimes viewed. For instance, the Party's "2023 Energy Work Guiding Opinion" (2023年能源工作指导意见) emphasizes the importance of developing LNG import facilities and underground gas storage at key locations including Daqing, Chongqing, Henan (Pingdingshan), and Jiangsu (Huaian) but places these activities under a subheading of "bolstering energy system regulation capacity" (提高能源系统调节能力).<sup>16</sup>

To put the market management incentives in perspective, consider the following example: for much of the past decade, China has increasingly turned to spot market LNG imports to help balance the load in winter and avoid gas shortages. Spot LNG in Asia can cost \$15 or more per MMBTU during the winter months.<sup>17</sup> Pipeline gas from Turkmenistan costs closer

to \$8.45/MMBTU while that from Russia in 2022 priced at approximately \$7.30/MMBTU.<sup>18</sup> As such, by storing up gas volumes during warmer months (facilitated by renewable and coal use) allows China to potentially halve the cost of meeting spikes in gas demand during cold snaps that drive up gas demand.

### Exhibit 5: China Gas Storage Map vs. National Gas Pipeline Network



Source: CEDIGAZ, GADM, GEM GGIT, GEM Wiki, Author's Analysis

### C. Oil Strategic Storage Initiatives

Highly energy-dense liquid fuels offer the only means to reliably power aerial and ground combat systems on a sustained basis and at a high-performance level. The same holds for naval platforms unless they are nuclear-powered. Simple chemistry and physics underpin these realities: JP-5 jet fuel has more than 20 times the “usable” energy per kg of mass that a lithium-ion battery does.<sup>19</sup> While we may be able to eventually synthesize non-oil liquid fuels at acceptable cost and scale, crude oil is the only industrial-scale building block to



produce the millions of barrels per day of fuels and myriad chemical items needed to sustain modern economies and industrial warfare.

History illuminates the stakes.<sup>1</sup> After World War I, the head of Great Britain's upper house of Parliament quipped that the Allies "*floated to victory on a wave of oil.*"<sup>20</sup> World War II similarly saw Allied oil abundance help overwhelm and defeat the oil-starved Axis Powers. For its part, China lacks domestic resources, cannot create new ones through application of its industrial prowess, cannot control events abroad in producing regions, and is vulnerable to naval blockades that could curtail its oil imports and in a worst case, crimp the country's transport system and industrial base.<sup>21</sup>

Interviews conducted around a decade ago highlight the different views of oil within the PRC relative to other energy sources. PRC energy technocrats noted that electricity supply "*problems can be solved by ourselves,*" but that "*oil imports are different...If our oil imports are cut off, it affects the whole nation, not just certain provinces, and we no longer maintain zili gensheng (self-reliance).*"<sup>22</sup> Reliance on oil imports appears to be especially jarring for a PRC leadership that appears to have concluded that the world is heading into a potentially prolonged period of chaos.<sup>23</sup> While the author has not yet located Chinese sources saying so, it is reasonable to believe that tightened U.S. export controls on semiconductors and related technologies plus emerging discussions of restrictions on LNG and refined products trade with China further stoke leaders' anxiety about the U.S. potentially exploiting Chinese oil import dependence.<sup>24</sup>

Beijing's oil security response to date emphasizes four core elements: (1) maintaining larger oil inventories, (2) intensified domestic drilling, (3) managing fuel demand through price, and (4) seeking to become an "electrostate" that substitutes electrons for oil (e.g., EVs for ICE cars).<sup>25</sup> This testimony will not further discuss Chinese firms' domestic drilling efforts because they appear to emphasize "running harder to stay in place" and do not appear poised to materially reduce China's substantial oil import dependency (on the order of 70% of consumption vice 30% for the United States). It will focus on stockpiling as well as the related measures of electrification, and potentially, the PRC's ability to use Russia and to a lesser extent, Kazakhstan, as "virtual stockpiles" from which cross-border pipelines could

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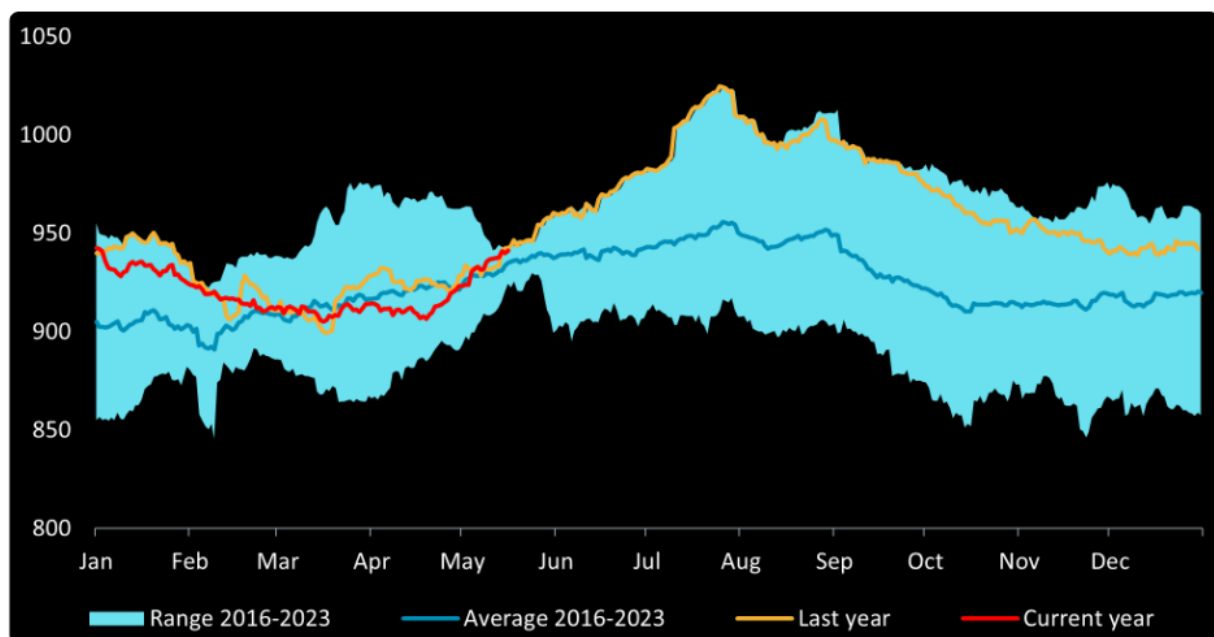
<sup>1</sup> The next several paragraphs draw substantially upon the author's recent research essay for the National Bureau of Asia Research, Gabriel Collins, "Energy as a Strategic Space for China: Words and Actions Point to a Competitive Future," National Bureau of Asian Research, 28 February 2024, <https://strategicspace.nbr.org/energy-as-a-strategic-space-for-china-words-and-actions-point-to-a-competitive-future/>

be rapidly expanded in a crisis to extend the coverage provided by oil already stored within the PRC.

#### i. China's Oil Storage Buildout

Commercial data provider BreakWave Advisors estimated that as of late May 2024, China had about 942 million barrels of crude oil stored in aboveground tanks onshore.<sup>26</sup> The company's data, which tracks with estimates the author has located from competitor firms Kayrros and Ursa Space Systems, suggest that between 2016 and early 2024, China's total aboveground crude oil inventory has ranged from 850 million to a bit over 1 billion barrels (**Exhibit 6**). This number includes strategic petroleum reserve sites with a total storage capacity of approximately 300 million barrels of crude oil.<sup>27</sup>

**Exhibit 6: Estimated China Onshore Crude Oil Inventories (Aboveground Tanks Only), Million Barrels**



*China onshore crude inventories (aboveground tanks only, mb)*

Source: BreakWave Advisors

The estimates cited above generally use synthetic aperture radar on satellites to measure the rise and fall of floating storage lids on large crude oil tanks and then base estimates of storage volumes on these observable tank levels. Kayrros data suggest that China's total crude storage capacity is now somewhere a bit north of 1.8 billion barrels—about 30% larger than total U.S. storage capacity even though the U.S. still consumes about 25% more oil than China does.<sup>28</sup>

Combining commercial firms' data with our own Baker Institute China Energy Map shows that oil storage capacity tends to cluster around oil ports capable of accepting very large crude carriers (VLCCs).<sup>29</sup> Shandong, Zhejiang, Liaoning, and Guangdong provinces host the largest volumes of oil storage capacity. The Greater Shanghai Area and Shandong are the country's most critical oil import and storage zones, with more than 500 million barrels of storage capacity between them.

BreakWave's analysis indicates that over the past two years, China's Big 3 (Sinopec, PetroChina, and CNOOC), which control the lion's share of crude oil tank capacity, have typically utilized from 55% to 65% of their tanks' volume. Aboveground tanks can in many cases store 80% of their nameplate capacity, suggesting that China could have nearly 300 million barrels of additional "headroom" across its oil storage complex if it chose to maximally stockpile ahead of an expected contingency.<sup>30</sup>

China's outsized oil storage expansion rate—in which capacity roughly tripled since 2005 while the country's oil consumption doubled—has profound strategic implications. Consider the following simple model of how stocks + rationing + cessation of oil product exports + expanded overland imports + synthetic fuels can dramatically enhance China's ability to weather an oil blockade.<sup>31</sup> Key assumptions include:

- On the first day, China holds combined commercial and strategic crude-oil stocks of 1,440 million barrels in storage tanks and underground caverns (80% of 1.8 MB capacity and about 40% greater than peak storage used – Exhibit 6).
- The country's refinery runs of crude oil—a proxy for oil products demand—are 16 million bpd.
- Exports of refined products ceases
- Rationing rapidly reduces non-military demand for oil products relative to pre-conflict levels.
- China imports a baseline volume of six hundred thousand barrels per day of crude from Russia and four hundred thousand barrels per day from Kazakhstan by pipeline.
- The 440 kbd Myanmar–China pipeline is interdicted and unable to supply crude.
- Russia and Kazakhstan surge railborne crude supplies by a combined total of four hundred thousand barrels per day.
- In addition to pipeline and rail supplies, Russia and Kazakhstan provide 150 kbd of crude overland, by truck.
- Starting on Month-8 of the blockade/supply interruption, Russia acts as a "virtual stockpile" and surges crude oil supplies with additional pipelines bringing 1,000 kbd

of oil that enter service beginning in Month 8 of the crisis. (i.e. the flows now exported through the port of Nakhodka are instead directed south into China overland)

- The bottom line is that with a large stockpile, aggressive rationing, and secondary fuel supply measures, China could endure for between 2-to-4 years before crude oil stocks ran out (**Exhibit 7**). In terms of sensitivity, each incremental 100 million barrels of storage adds approximately 2 months of endurance time in the “no additional overland supplies” scenario and closer to 6 months when augmented with Russian overland pipeline expansions.

#### Exhibit 7: China Oil Blockade Endurance Model

				Implied Stockpile Life, Months
Beginning Crude Oil Stocks, '000 bbl	1,440,000		No Emergency Pipeline From Russia	
Baseline Refinery Runs, '000 bpd	16,000		Initial crude oil stockpile drawdown rate without seaborne imports and no rationing, '000 bpd	-9,229
Refinery Runs @ 35% Rationing, '000 bpd	10,400		Draw rate with 35% demand rationing, '000 bpd	-3,629
Refinery Runs @ 40% Rationing, '000 bpd	9,600		Draw rate with 40% demand rationing, '000 bpd	-2,829
Refinery Runs @ 45% Rationing, '000 bpd	8,800		Draw rate with 45% demand rationing, '000 bpd	-2,029
Methanol and Fuel Extenders, '000 bpd	971		Emergency Pipeline From Russia Enters Service on 8th Month of Blockade	
Domestic Production, '000 bpd	4,250		Drawdown rate with no seaborne crude imports once supplementary emergency pipeline built (no rationing), '000 bpd	-8,229
Existing Pipeline Potential Supplies From Russia & Kazakhstan, '000 bpd	1,000		Draw rate with 35% demand rationing, '000 bpd	-2,629
Rail and Truck-borne Supplies From Russia & Kazakhstan, '000 bpd	550		Draw rate with 40% demand rationing, '000 bpd	-1,829
Emergency Supplementary Pipeline from Russia, '000 bpd	1,000		Draw rate with 45% demand rationing, '000 bpd	-1,029

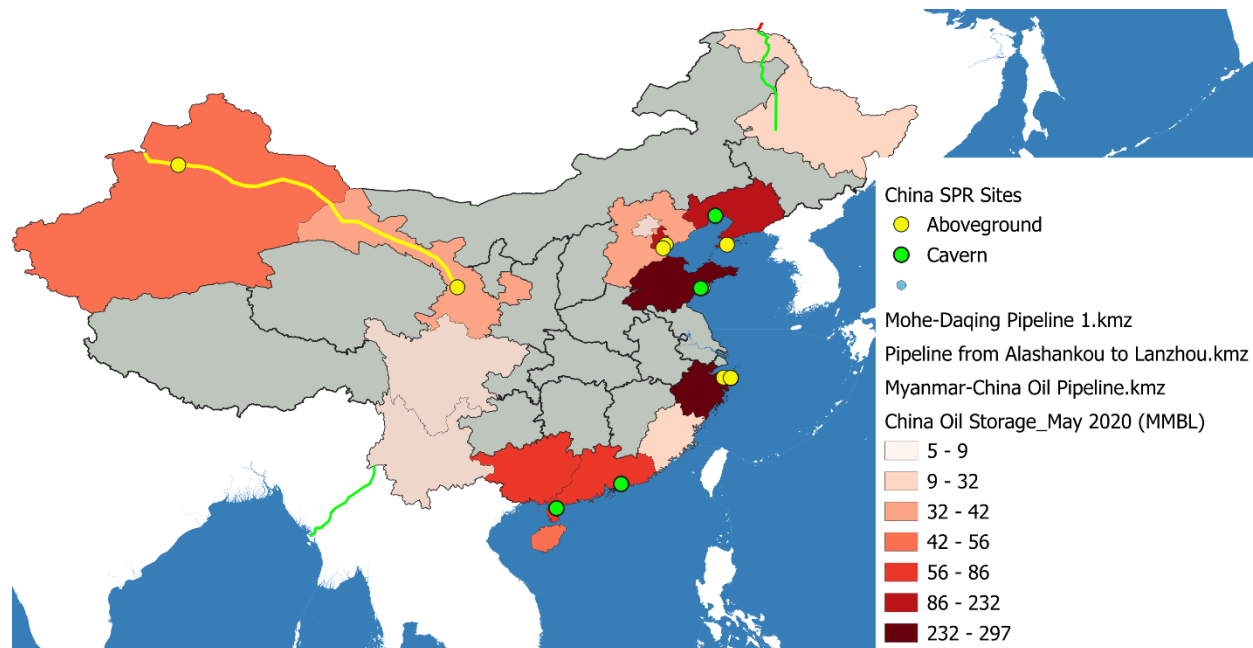
#### ii. Oil Stockpile Governance in China

China's SPR was born through roughly a decade of debate between “build” and “don't build” factions. As China's oil import dependency continued rising alongside skyrocketing oil demand in the early 2000s, the “builders” won the debate and construction of the first sites commenced in 2004.<sup>32</sup> The Phase I SPR sites—located at Zhenhai, Zhoushan, Huangdao, and Dalian—can collectively store about 103 million barrels of oil and were filled and operational by year-end 2009. Phase 2, which can store roughly 200 million additional barrels of crude, was filled and online by year-end 2019.<sup>33</sup>

Various Phase 3 SPR sites are under consideration across China amidst a crude oil storage buildout, that, as referenced above, has already made the country the world's largest single holder of oil storage capacity. **Exhibit 8** (below) shows existing SPR sites relative to overall

provincial oil storage capacity as of mid-2020. The map is constrained by data limitations, but provides a directionally accurate view, as the roughly 500 million barrels of incremental oil storage capacity added in recent years has tended to cluster around the storage zones that were dominant in 2020.

**Exhibit 8: China SPR Sites vs. Total Oil Storage, By Province** (*thick yellow and green lines are operational overland oil pipelines*)



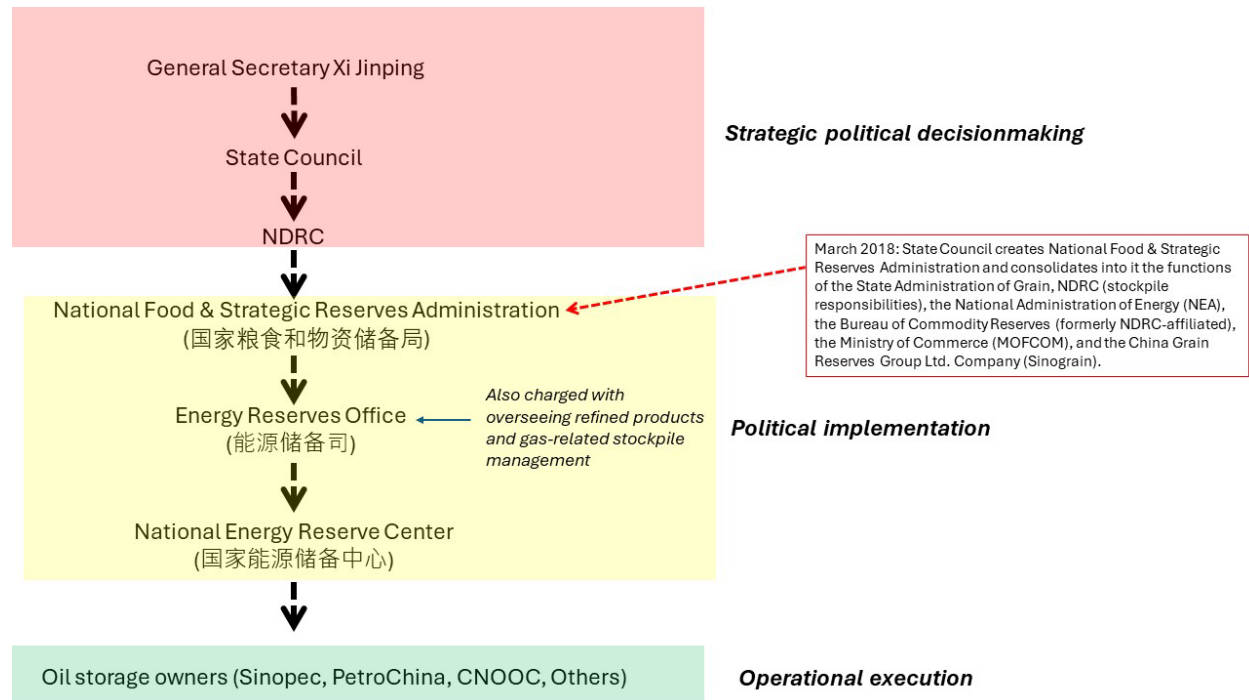
Source: Baker Institute China Energy Map, OIES, Reuters, Ursa Space Systems, Author's Analysis

China's SPR management incorporates three basic levels (**Exhibit 9**). At the highest level, strategic political decisionmaking, sits the National Development and Reform Council (NDRC), which is in turn subject to the State Council and General Secretary Xi Jinping.<sup>34</sup> The second level, political implementation, involves the National Food and Strategic Reserves Administration (国家粮食和物资储备局), within which the Energy Reserves Office (能源储备司) and National Energy Reserve Center (国家能源储备中心) sit.

The Energy Reserves Office oversees regular reserve operations, supervision, and data collection for crude oil, refined oil products, and natural gas.<sup>35</sup> The National Energy Reserve Center is classified as directly subordinate to the main National Food and Strategic Reserves Administration core divisions (直属联系单位), of which the Energy Reserves Office is one. Official PRC government websites do not conclusively show a specific direct command chain between the Energy Reserves Office and National Energy Reserve Center, but such a

bureaucratic flow line likely exists. The third level of SPR management are the companies that manage storage and conduct operational execution.

### Exhibit 9: China SPR Governance Structure



Source: NDRC, National Food and Strategic Reserves Administration

In 2018, China consolidated functions of several entities charged with energy, food, and materials stockpiling into the National Food and Strategic Reserves Administration.<sup>36</sup> Previously, the National Energy Administration (subordinate to the NDRC) oversaw China's SPR. The re-organization suggests that China's leadership may want to centralize strategic stockpile management. If this is indeed the case, it would fit with General Secretary Xi Jinping's broader proclivity toward centralization and consolidation of authority.

Energy stockpiling's new place may also reflect that the PRC government is, in relative terms, more preoccupied with food security than with energy, since the country has demonstrated the ability in recent years to surge coal production in response to energy shortages, is not facing acute gas supply shortfalls, and now, hosts the world's largest oil storage infrastructure. China also leads the world in transport electrification efforts designed to offset crude oil dependency.

### iii. **Stockpile Management in Practice**

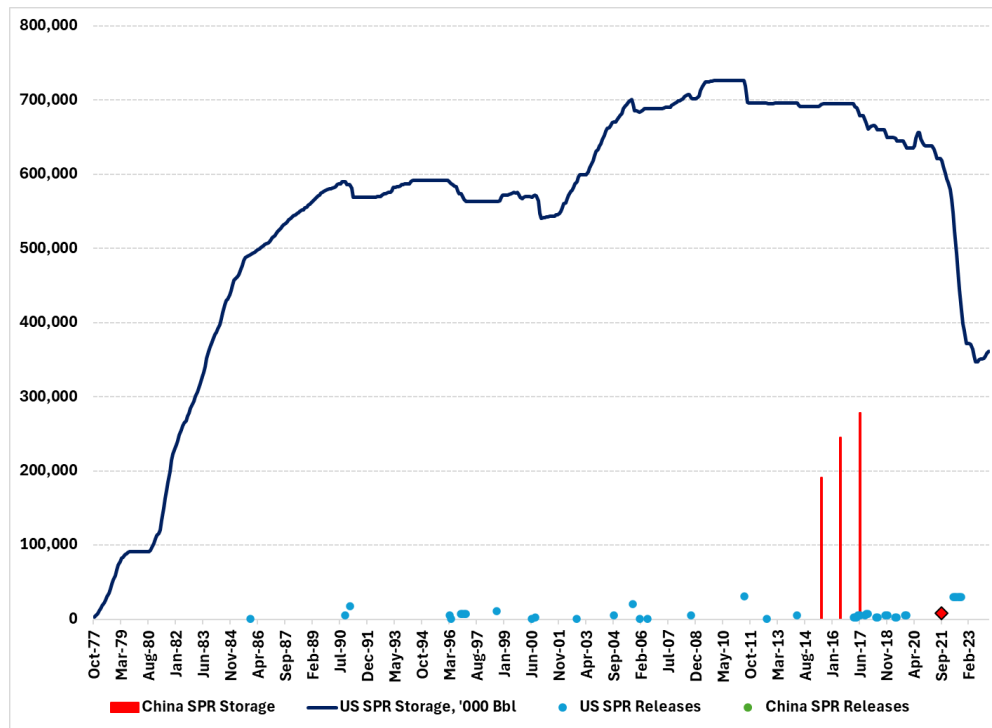
Unlike the United States and other OECD countries, which generally clearly delineate between “commercial” and “strategic” crude oil storage, China’s system has been ambiguous since its inception. Nine clearly demarcated SPR bases exist, but often sit adjacent to far larger commercial tank capacity. The stocks share access to common pipeline infrastructure and refineries. The “commercial” crude oil stocks also appear to be managed more conservatively than those in the US, where stock levels may swing 25% in the span of 18 months as participants react to market conditions—a fluctuation range nearly twice as large as that seen in PRC commercial crude oil stocks data published by BreakWave Advisors (**Exhibit 6, above**).

China has thus far largely operated its SPR under a “fill and hold” philosophy, conducting a single test sale of 7.38 million barrels from the Dalian SPR facility in September 2021.<sup>37</sup> Given this limited operational history and Chinese energy reserve operators’ general secrecy (to the point that almost no employees have LinkedIn profiles), it is instructive to look at US SPR management practices to get a glimpse of how management practices could evolve moving forward.

For most of its history, the US has released oil from its SPR for three reasons: (1) periodic small test sales to keep operational mechanisms “well oiled”, (2) smaller emergency releases to help ensure supplies to refiners in the event of logistical disruptions [ship collisions, pipeline problems, or hurricanes], and (3) responses to war shocks [Gulf War I and 2011 Libya War]. In 2022, the US SPR was for the first time used for large-scale price management as President Biden ordered a million barrel per day release of oil over a six month period.<sup>38</sup>



## Exhibit 10: US and China SPR Levels and Releases

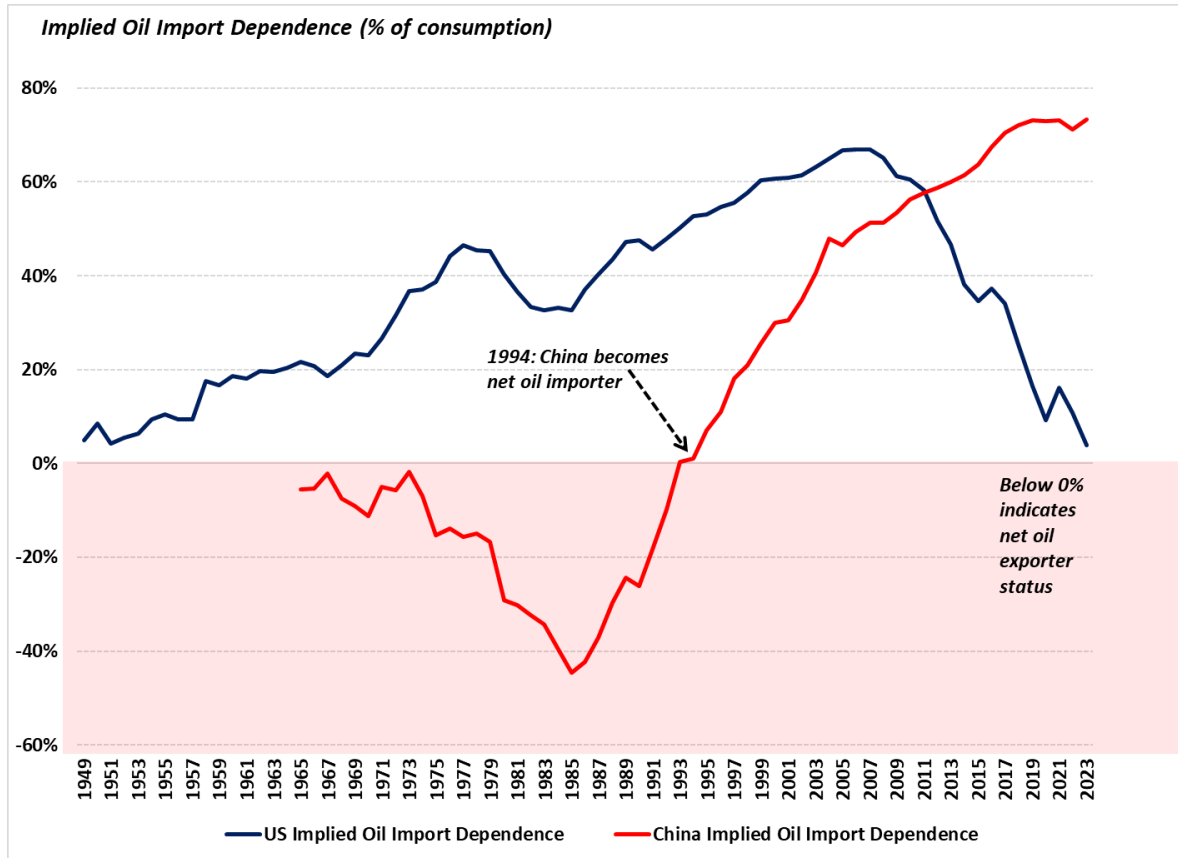


Source: EIA, OIES, Reuters, Author's Analysis

China's single small SPR release over its nearly 20-year operational history lends credence to PRC officials' 2006 statement that the country would not use the SPR for price management. Washington managed its SPR conservatively for much of the past 40 years, only shifting to more activist footing when a domestic production boom made the US nearly self-sufficient in crude oil (**Exhibit 11**).

One reasonable conclusion from the evolving American SPR management approach is that deep oil import dependence = conservative SPR management, while oil abundance = adoption of a more activist, trading mindset. In China's case, one could imagine a future in 15-20 years where electrification and other demand management efforts reduce oil dependence sufficiently that the country's massive oil storage and refining base becomes a global scale trading asset. But in the meantime, it is a strategic sector integral to the PRC's ability to compete economically during peacetime, and in a worst-case scenario, sustain the PLA during Great Power industrial warfare.

### Exhibit 11: US and China Implied Oil Import Dependency (Proportion of Demand not covered by Domestic Production)



Source: EIA, NBS China, Author's Analysis

#### iv. Stretching the Stockpile: China's Emerging Electrostare

As the author stated in 2022:

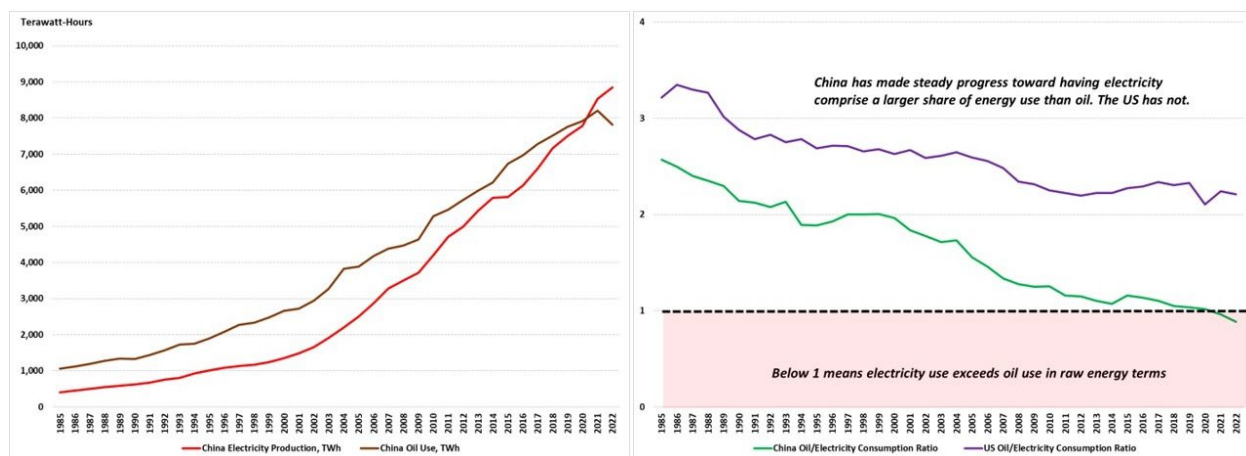
*"...the past 20 years make one thing increasingly clear: unlike the United States, China is not going to drill its way to lower crude oil and natural gas import dependence. Between 2000 and 2013, China's "Big 3" (PetroChina, Sinopec, and CNOOC) ramped up their combined annual capital investment, which peaked in 2013 at about seven times the 2000 level and declined subsequently...But for both commodities, import dependency steadily deepened because domestic production simply could not keep pace with demand growth despite cumulative nominal expenditures of more than \$1 trillion USD."*<sup>39</sup>

Chinese leaders have not given up on domestic drilling. But they are proportionally wagering much more on finding new technological pathways that leverage China's massive industrial base and human talent to redefine the country's energy reality. They are building an electrostate where oil usage is increasingly supplanted by electrical locomotion able to derive power not just from oil and gas, but instead from coal, uranium, hydro, wind, solar, and any other fuel that can spin a dynamo or displace electrons from a photovoltaic cell

Being a PetroState requires acceptance of deep exposure to global oil/nat gas commodity markets that can only be partially hedged with domestic output. Electrostates, in contrast, leverage techno-industrial excellence to create optionality between many fuels/power sources rather than dependence on a few. This is a key reason why China-Russia negotiations for a second pipeline from Siberia are proceeding slowly: Beijing does not acutely need Russian gas because it is one of many sources in the country's evolving energy portfolio (underpinned by abundant domestic coal).<sup>40</sup>

PRC-based firms are securing globally influential positions on both higher-value added industrial chains for alternative energy goods like batteries and electric vehicles (underpinned by of the world's largest coal-fired electricity generation infrastructure) while also exerting deep, intentional influence over physical supplies of energy raw materials. The PRC as a matter of high-level policy also simultaneously seeks commanding positions astride global energy data flows that can give PRC parastatal firms competitive advantages, stifle competitors, and improve strategic visibility into ally and adversary economies alike.<sup>41</sup>

## Exhibit 12: China Electricity Production Versus Oil Consumption



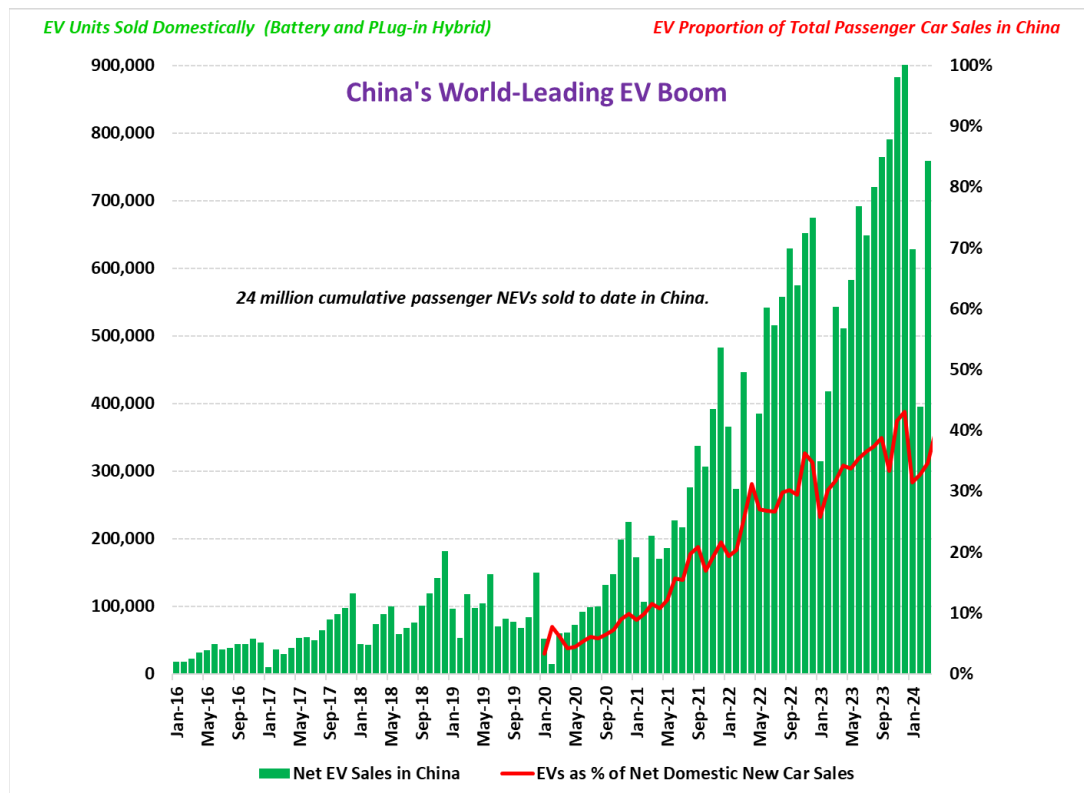
Source: Energy Institute Statistical Yearbook 2023, Gasunie (conversion), Author's Analysis

Transport electrification and the associated value chains are the product of decades of effort that after what are likely hundreds of billions of dollars in collective investments are now finally able to scale. EVs began to receive much more policy attention in China during the

early 2000s, including from the 863 Program (State High-Tech Development Plan), presaging their role in the Made in China 2025 plan roughly a decade later.<sup>42</sup> Official focus intensified with the 2007 appointment of Wan Gang as Minister of Science and Technology. Dr. Wan was a German-trained former Audi executive who the New York Times characterized as “a passionate advocate of electric cars,” was appointed by then-Premier Wen Jiabao, and attracted strong support from China’s national security community, which perceived the country’s rapidly rising oil imports as a strategic vulnerability.<sup>43</sup>

Bracketed by security actors concerned about oil import dependence and techno-industrialists seeking new economic advantages, China’s EV sector has blossomed, with battery EVs and plug-in hybrids accounting for over 1/3 of new vehicles sold in China thus far in 2024, with more than 24 million passenger EVs sold to date (**Exhibit 13**).<sup>44</sup>

### Exhibit 13: PRC Domestic Electric Vehicle Sales (Battery and Plug-in Hybrids)



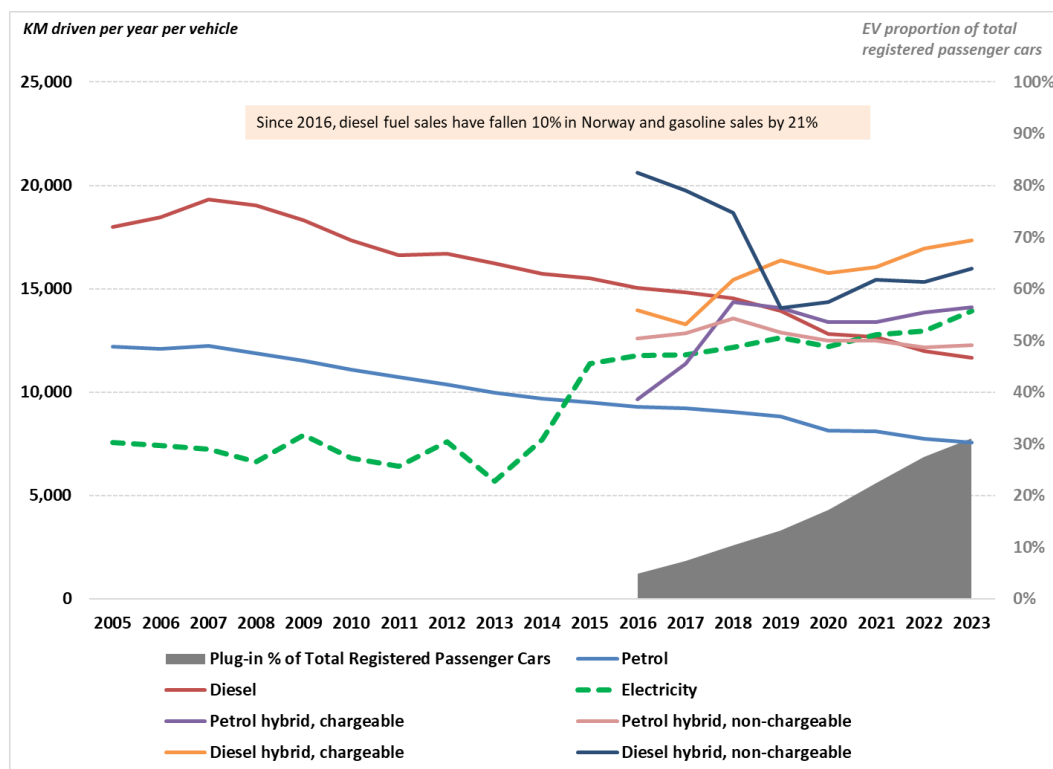
Source: CAAM, Author’s Analysis

By the end of 2024, about 10% of China’s passenger vehicle fleet is likely to be substantially electrified (either pure battery or plug-in hybrid). The existing fleet penetration of EVs and prospective growth rates moving forward suggest their growing presence is already reducing future motor fuel demand growth potential. How long until EVs potentially begin to outright reduce China’s oil demand? Short answer: we do not know but can look to examples from

markets like Norway with substantially larger EV shares to get a sense as to when tipping points could come.

Norway has one of the world's most aggressive EV subsidy programs, including disincentives to own standard internal combustion engine cars. In many months, EVs now account for 70-80% of new passenger car sales, twice the EV share in China. As a result, EVs have grown from about 5% of the registered passenger car fleet in 2016 to 31% in 2023 (**Exhibit 14**). EVs are also clearly evolving into true “daily driver” vehicles in Norway, with annual vehicle distance travelled now on par with legacy diesel and gasoline-powered cars.

#### Exhibit 14: Annual Distance Travelled For Passenger cars in Norway vs. EV Fleet Share



Source: Statistics Norway, Author's Analysis

The combination of greater fleet share plus rising use appears to be impacting transport oil usage in Norway. Between 2016 and 2023, diesel fuel sales declined by 10% while gasoline sales fell by 21%. While China would need to roughly triple EVs' fleet share to reach Norwegian levels and ensure that owners make them primary use vehicles, if it gets there, the Norwegian experience suggests gasoline and diesel fuel demand could be reduced meaningfully. But China's oil substitution efforts are chasing a moving target, because unlike Norway, China's vehicle fleet continues to grow and more than 60% of new vehicles sold each month are still gasoline and diesel-powered and thus build in future oil demand. The

precise number of EVs needed to tip China onto a path of actual declines in oil usage remains unclear but is likely massive and could (depending on ICE vehicle fleet increases) exceed 80 million EVs. If China can move away from oil for heavier transport like trucks, ships, and aircraft via electrification or synthetic fuels, the impacts could be even larger.<sup>45</sup>

### **III. Lessons From Recent Wars**

The Committee asks us about recent events and the lessons they might hold for PRC officials in charge of the energy security and energy stockpiling portfolios. Two primary lessons jump out. First, for energy storage infrastructure, underground = survivable. Russia's strike campaign against Ukrainian underground gas storage infrastructure has been far less impactful thus far than attacks on exposed power grid and generation assets. Second, in perhaps the most graphic display of how using the "fourth dimension" of underground facilitates wartime survival, Hamas has retained a meaningful degree of military capability and continues fighting despite an Israeli air campaign whose strike density is among the most intense in history.<sup>46</sup>

Chinese energy planners were already working to expand underground storage for both crude oil and natural gas and the two ongoing wars will likely intensify the push given the lesson that going underground supercharges survivability. Underground oil storage also frees up surface land for other uses in high value, crowded coastal zones, has lower operational costs over time, and enjoy longer service life and a lower maintenance burden. Chinese firms are working to build underground gas storage in salt domes near Jintan in Jiangsu Province. Chinese sources have previously discussed storing crude oil in that area but it is unclear whether firms are presently seeking to build underground salt dome crude storage there now.<sup>47</sup>

The war in Ukraine repeatedly demonstrates the vulnerability of aboveground oil and refined product storage tanks to strikes from drones, cruise missiles, and other munitions, where a warhead of even a few pounds' size can trigger catastrophic fires.<sup>48</sup> Some of China's already in service underground oil storages sit under as much as 100 meters of earth and rock, placing them below the reach of nearly every strike munition deployed by any military globally including the United States.<sup>49</sup> China already has operational underground crude oil storage facilities at Huangdao, Jinzhou, Zhanjiang, and Huizhou, which between them could store at least 100 million barrels.<sup>50</sup>

Efforts to take a greater proportion of oil storage underground are likely to accelerate. China National Petroleum Corporation (CNPC) announced the launch of a special "Mined Cavern Underground Oil Storage Laboratory" in 2023, pointing to a long-term commitment to expanding underground oil storage in China.<sup>51</sup> The June 2023 launch followed a roughly 4-



year creation period. Standing up such a dedicated laboratory during a time in which PRC energy policymaking has become increasingly securitized suggests underground oil storage construction may accelerate in coming years, including the possibility that as older above ground tank capacity is retired from service, it could be replaced by underground capacity. Indeed, at least one Chinese engineering journal notes that above ground crude oil tanks typically have a 25-year service life, meaning that several hundred million barrels of storage built between 2000 and 2005 could be nearing replacement age.<sup>52</sup>

Corporate actors to watch in the China underground oil storage construction space include Beijing Central Tunnel Engineering Corporation (北京中隧隧道工程有限公司), China Railway Tunnel Group Limited (中铁隧道集团), and Beijing New Oriental Star Engineering Investigation and Design Company Limited (北京东方新星勘察设计有限公司). Geographical areas to watch for underground storage facility construction center on existing areas where favorable topography (rock mountains) intersects with significant refining, pipeline, and oil import infrastructure. Areas fitting this description include Ningbo/Zhoushan, the Guangdong coastline, portions of Shandong near Rizhao and Qingdao, and Dalian.

#### **Exhibit 15: Zhanjiang Oil Storage Caverns Under Construction in 2016**



Source: Beijing Central Tunnel Engineering Limited Company



Second, for a country with geographically constrained maritime approaches, being able to expand overland supplies facilitates strategic endurance. In Ukraine's case, Russia and Belarus (a Russian province in all but formal name) supplied over 60% of Ukraine's refined oil product imports prior to the 2022 invasion, accounting for a substantial proportion of domestic demand.<sup>53</sup> Once Russia started the war, these supply chains became physically and politically untenable. Furthermore, Russian forces sought to blockade Ukraine's Black Sea coast and deny maritime commerce, precluding a potential alternative supply pathway. In response, Ukraine had to rapidly re-orient its oil product procurement channels to obtain fuel from adjacent and nearby European Union members such as Bulgaria, Poland, Romania, and Slovakia.<sup>54</sup>

In China's case, its maritime oil imports are substantial, are geographically constrained by the First Island Chain, and could be interdicted more deeply and for a longer period than Ukraine's given that the U.S. and its allies field far more competent navies than Russia does. While Ukraine in the words of a local energy expert "*bought all the fuel tank trucks that were available in Europe*"<sup>55</sup> to rebuild fuel supply chains, China's much larger fuel needs would demand pipeline expansion to replace some quotient of lost seaborne crude oil imports.

So how might such a stratagem be executed?<sup>56</sup> China was able to build the initial Russia-to-China pipeline at an average rate of approximately 1.6 km per day, and has built crude oil pipelines in Western China at rates approaching 2.25 km/day.<sup>57</sup> The Jinzhou-Zhengzhou oil products line was welded at an average rate of 3.6 km/day.<sup>58</sup> In a time of national emergency, pipelines can potentially be built much more quickly as builders would likely marshal a much larger proportional share of their equipment and manpower for a select few "national priority" projects than would be the case under normal conditions.

Perhaps the closest historical analogy comes from the American construction of the "Big Inch" oil pipeline during WWII. The Big Inch enabled the secure overland movement of crude oil from Texas oilfields to East Coast refineries. Oil had formerly been moved from the Gulf of Mexico in coastwise tankers, but German submarine attacks jeopardized this maritime supply line and forced the U.S. to find alternative routes. At 1,254 miles long (2,000 km), the Big Inch covered roughly twice the distance a line from the Russian border to Daqing would and construction crews managed to complete it in just 350 days: an average construction rate of nearly 6km per day.<sup>59</sup> Against that backdrop, it is not inconceivable that a 1,000 km pipeline from Russia capable of moving as much as a million barrels per day into the Daqing area could be built in 6 months or possibly less.<sup>60</sup>

#### IV. Strategic Warning Signals to Watch For

**Warning Signal #1:** Significant upward departure from the trailing 3-year and 5-year average aboveground crude oil storage utilization rates. Aboveground tank storage capacity utilization beyond 65% should be treated as a “yellow flag” justifying deeper scrutiny.

**Warning Signal #2:** Construction of more underground crude oil storage facilities. This will require techniques including monitoring of tunneling equipment firms’ activities in the PRC, vehicle traffic observation in areas of interest using space-based synthetic aperture radar, and potentially, satellite-based gravimetric surveys, potentially facilitated by AI-driven data processing to bring down currently coarse spatial resolution. Volatile organic compound emissions in areas they would not normally be expected could also alert observers to the presence of underground oil storage caverns.<sup>lxi</sup>

**Warning Signal #3:** Greater levels of tanker activity than visible aboveground storage capacity would justify based on the trend of PRC refiners’ and oil storage operators’ typically conservative management practices. This is a proxy indicator of nearby underground facilities being filled.

**Warning Signal #4:** Construction of new overland oil pipelines from Russia and/or Central Asia or expansions of existing oil pipelines.

**Warning Signal #5:** Increased activity at refined product storage depots within 500 miles of Taiwan. One way to do this would be to use satellite monitoring of volatile organic compound emissions.<sup>lxii</sup>

**Warning Signal #6:** Expansion of coal inventories beyond their trailing 3-year and 5-year average levels. As more Chinese coal plants adopt covered coal sheds, this will require synthetic aperture radar monitoring of power plants’ rail connections as well as stockpiles at coal mines themselves.

**Warning Signal #7:** PRC attempts to interfere with synthetic aperture radar measurement in the vicinity of known or suspected energy storage facilities.

## **V. Policy Recommendations for Congress**

- 1) Immediately fund intensified observation and analysis of current and suspected PRC energy storage locations, particularly for crude oil, but also coal and natural gas. Key agencies would include the National Geospatial-Intelligence Agency, Department of Energy, Department of Commerce, State Department, and Department of the Treasury.
  - a. Maximize the use of commercial, off the shelf data and technology to accelerate the effort and ensure that it stays at the cutting edge of remote sensing technology while optimizing cost to taxpayers.
  - b. A substantial part of the funds should support purchase of data from commercial entities with high-quality space-based energy data such as Ursa Space Systems and Vortexa, as well as synthetic aperture radar specialists such as Capella Space Systems. Planet Labs and Maxar provide high quality electro-optical imagery. Government-owned low earth orbit satellite networks could provide additional data.
  - c. Congress should also fund UNCLASSIFIED efforts by academic researchers focused on Chinese energy infrastructure, how it is managed, and how it might be used to facilitate and prepare for intensified malign activities and in a worst case, warfare.
    - i. Key action items should include: comprehensively mapping China's energy infrastructure, mapping the associated human decisionmaking network, and identifying points of maximum intelligence & warning value. The core objective should be maximal, frequently updated energy domain awareness across the PRC at the lowest possible classification level.
  - d. Congress should also fund access to substantial AI compute capacity as well as funds to engage AI experts and data scientists from academic institutions and industry to help USG personnel working the energy warning issue wring maximum analytical value from their information streams.
- 2) Such efforts should feed an Economic Warning Fusion Center that provides advice across Cabinet-level agencies, the intelligence community, and the Defense Department, with particular focus on Indo-Pacific Command.
- 3) For an annual expenditure that would likely approximate the cost of a few missiles, the US Government would gain a set of insights into PRC energy stockpiling and strategic energy sector behaviors that would help it better anticipate coming kinetic conflict, should General Secretary Xi Jinping choose war.

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<sup>24</sup> Gabriel Collins and Steven R. Miles, “Is the US Preparing to Ban Future LNG Sales to China?” (Houston: Rice University's Baker Institute for Public Policy, April 25, 2024), <https://doi.org/10.25613/TA53-BN97>; Gabriel Collins and Steven R. Miles, “Is the U.S. Preparing to Ban Future LNG Sales to China?,” *Foreign Policy*, 23 April 2024, <https://foreignpolicy.com/2024/04/23/united-states-ban-lng-sales-china/>

<sup>25</sup> Ibid.

<sup>26</sup> Emma Li, “China Builds Crude Stock Amidst Turnaround Peak, Hope for New Quotas,” BreakWave Advisors, 24 May 2024, <https://www.breakwaveadvisors.com/insights/2024/5/24/china-builds-crude-stock-amidst-turnaround-peak-hope-for-new-quotas>

<sup>27</sup> Michal Meidan, “China’s SPR release: a test of mechanisms rather than a show of market might,” OIES, September 2021, <https://www.oxfordenergy.org/wpcms/wp-content/uploads/2021/09/Chinas-SPR-release.pdf>

<sup>28</sup> “The Global Oil Picture,” Kayros, World Fuel Oil & Green Marine Summit, May 2024, [https://axelrodenergyprojects.com/wp-content/uploads/2024/05/The-Global-Oil-Picture\\_Antoine-Halff\\_Kayros.pdf](https://axelrodenergyprojects.com/wp-content/uploads/2024/05/The-Global-Oil-Picture_Antoine-Halff_Kayros.pdf); Working and Net Available Shell Storage Capacity, EIA, <https://www.eia.gov/petroleum/storagecapacity/> (accessed 27 May 2024)

<sup>29</sup> “Open-Source Mapping of China's Energy Infrastructure,” Baker Institute for Public Policy, Center for Energy Studies, <https://www.bakerinstitute.org/open-source-mapping-chinas-energy-infrastructure>

<sup>30</sup> Michael Lynch, “Some Clarity On Oil Storage Capacity Estimates,” *Forbes*, 5 May 2020, <https://www.forbes.com/sites/michaelynch/2020/05/05/some-clarity-on-oil-storage-capacity-estimates/?sh=46b9d123589f>



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<sup>32</sup> Gabriel Collins, 'China Fills First SPR Site, Faces Oil, Pipeline Issues', Oil and Gas Journal, 20 August 2007, <https://www.ogj.com/refining-processing/article/17228284/china-fills-first-spr-site-faces-oil-pipeline-issues>

<sup>33</sup> Michal Meidan, "China's SPR release: a test of mechanisms rather than a show of market might," OIES, September 2021, <https://www.oxfordenergy.org/wpcms/wp-content/uploads/2021/09/Chinas-SPR-release.pdf>

<sup>34</sup> Collins, OGJ (24). See also Liutong Zhang and Kang Wu, "China Works to Double SPR Capacity by 2013," Oil & Gas Journal, 4 October 2010, <https://www.ogj.com/home/article/17209178/china-works-to-double-spr-capacity-by-2013>

<sup>35</sup> 能源储备司 ("Energy Reserves Office"), <http://www.lswz.gov.cn/html/sjzz/nycbs/index.shtml>

<sup>36</sup> Michael Ward, "China Outlines the Responsibilities of the State Administration of Grain and Reserves," 26 October 2018, USDA Foreign Agricultural Service, [https://apps.fas.usda.gov/newgainapi/api/report/downloadreportbyfilename?filename=China%20Establishes%20State%20Administration%20of%20Grain%20and%20Reserves\\_Beijing\\_China%20-%20Peoples%20Republic%20of\\_10-25-2018.pdf](https://apps.fas.usda.gov/newgainapi/api/report/downloadreportbyfilename?filename=China%20Establishes%20State%20Administration%20of%20Grain%20and%20Reserves_Beijing_China%20-%20Peoples%20Republic%20of_10-25-2018.pdf)

<sup>37</sup> 国家石油储备中心关于开展2021年第一批国家储备原油竞价交易的公告 ("Announcement by the National Oil Reserve Center Regarding the First Batch of National Reserve Crude Oil Bidding Transactions in 2021."), National Food and Materials Reserve Administration, 14 September 2021, [http://www.lswz.gov.cn/html/tzgg/2021-09/14/content\\_267508.shtml](http://www.lswz.gov.cn/html/tzgg/2021-09/14/content_267508.shtml)

<sup>38</sup> "FACT SHEET: Department of Energy Releases New Notice of Sale as Gasoline Prices Continue to Fall," 26 July 2022, The White House, <https://www.whitehouse.gov/briefing-room/statements-releases/2022/07/26/fact-sheet-department-of-energy-releases-new-notice-of-sale-as-gasoline-prices-continue-to-fall/>; "DOE Announces Second Emergency Notice of Sale of Crude Oil From The Strategic Petroleum Reserve to Address Putin's Energy Price Hike," Department of Energy, 1 April 2022, <https://www.energy.gov/articles/doe-announces-second-emergency-notice-sale-crude-oil-strategic-petroleum-reserve-address>

<sup>39</sup> Gabriel B. Collins, "China's Energy Import Dependency: Potential Impacts on Sourcing Practices, Infrastructure Decisions, and Military Posture," testimony at hearing on "China's Energy Plans and Practices," U.S.-China Economic and Security Review Commission, 17 March 2022. [https://www.uscc.gov/sites/default/files/2022-03/Gabriel\\_Collins\\_Testimony.pdf](https://www.uscc.gov/sites/default/files/2022-03/Gabriel_Collins_Testimony.pdf)

<sup>40</sup> David Fickling, "Face It, Putin: China Is Just Not That Into Your Gas Pipeline," Bloomberg, 20 May 2024, <https://www.bloomberg.com/opinion/articles/2024-05-20/xi-putin-china-is-just-not-that-into-russia-s-gas-pipeline>

<sup>41</sup> Collins, Gabriel and Jack Bianchi. 2023. China's LOGINK Logistics Platform and Its Strategic Potential for Economic, Political, and Military Power Projection. Report no. 04.25.23. Rice University's Baker Institute for Public Policy, Houston, Texas. <https://doi.org/10.25613/DAEV-F661>.

<sup>42</sup> Much happened during this period, but our paper does not go into great detail because key policy measures are already ably covered by other analysts. See, for instance: Howell, Sabrina, Lee, Henry, and Heal, Adam. "Leapfrogging or Stalling Out? Electric Vehicles in China." Discussion Paper, Belfer Center for Science and International Affairs, Harvard Kennedy School. May 2014. <https://www.belfercenter.org/publication/leapfrogging-or-stalling-out-electric-vehicles-china>

<sup>43</sup> Keith Bradsher, "G.M.'s Electric Car Push Could Put China in the Driver's Seat," The New York Times, 29 January 2021, <https://www.nytimes.com/2021/01/29/business/gm-china-electric-cars.html>

<sup>44</sup> The Made in China 2025 concept specifically names “new energy vehicles” as one of 10 priority sectors. The State Council’s New Energy Vehicle Development Plan 2021-2035 articulates EV development and market penetration in holistic terms, noting that policymakers aim to encourage broad collaboration and synergistic activities invoking not just the auto industry, but also the energy, transport, and IT sectors. Transport electrification, however, allows China an opportunity to harness industrial prowess and a unique hardware + software domestic tech development ecosystem to gain technological first mover advantage, and have a real shot at becoming the prime global market shaper in a manner that was simply never possible with petroleum-based transport fuels and technologies. See Max J. Zenglein and Anna Holzmann, “Evolving Made in China 2025: China’s industrial policy in the quest for global tech leadership,” MERICS Papers on China, Mercator Institute, July 2018, <https://www.merics.org/en/papers-on-china/evolving-made-in-china-2025>, 《新能源汽车产业发展规划（2021—2035年）》，国办发〔2020〕39号，2 November 2020, [http://www.gov.cn/zhengce/content/2020-11/02/content\\_5556716.htm](http://www.gov.cn/zhengce/content/2020-11/02/content_5556716.htm)

<sup>45</sup> Gabriel Collins, “Oil Was A Strategic Prize In 1940. It Likely Will Be In 2040 As Well.,” Forbes, 6 April 2020, <https://www.forbes.com/sites/thebakersinstitute/2020/04/06/oil-was-a-strategic-prize-in-1940-it-likely-will-be-in-2040-as-well/?sh=1bc03be46967>

<sup>46</sup> Israel’s Strikes on Gaza Are Some of the Most Intense This Century, New York Times, 25 October 2023, <https://www.nytimes.com/2023/10/25/world/middleeast/israel-gaza-airstrikes.html>

<sup>47</sup> Collins, Gabriel. (2007). China fills first SPR site, faces oil, pipeline issues. Oil and Gas Journal. 105. 20-29. <https://www.ogj.com/refining-processing/article/17228284/china-fills-first-spr-site-faces-oil-pipeline-issues>

<sup>48</sup> This is the concept of “bringing the detonator” where even a small warhead can initiate catastrophic secondary fires and explosions that ultimately destroy the target. T.X. Hammes, “Cheap Technology Will Challenge U.S. Tactical Dominance,” Joint Force Quarterly 81, 29 March 2016, <https://ndupress.ndu.edu/Media/News/News-Article-View/Article/702039/cheap-technology-will-challenge-us-tactical-dominance/>

<sup>49</sup> <http://www.bjtunnel.com/proinfo/430.html>

<sup>50</sup> Ma, K., Zhuang, D., Argilaga, A. et al. A New Approach to Identifying Preferential Seepage Channels for Underground Water-Sealed Oil Storage Cavern During Construction. Rock Mech Rock Eng 56, 6395–6410 (2023). <https://doi.org/10.1007/s00603-023-03384-2>, Yi Li, Yi-Feng Chen, Gui-Jing Zhang, Ye Liu, Chuang-Bing Zhou, A numerical procedure for modeling the seepage field of water-sealed underground oil and gas storage caverns, Tunnelling and Underground Space Technology, Volume 66, 2017, Pages 56-63, ISSN 0886-7798, <https://doi.org/10.1016/j.tust.2017.04.002>, Yutao Li, Bin Zhang, Lei Wang, Yiguo Xue, Hanxun Wang, Lei Shi, Zhenhua Peng, Junyan Li, Key issues in water sealing performance of underground oil storage caverns: Advances and perspectives, Journal of Rock Mechanics and Geotechnical Engineering, Volume 15, Issue 10, 2023, Pages 2787-2802, ISSN 1674-7755, <https://doi.org/10.1016/j.jrmge.2022.12.017>.

<sup>51</sup> China Oil Rock Cavern Underground Storage Engineering Laboratory Investment, CNPC, 21 November 2023, <http://news.cnpc.com.cn/system/2023/11/21/030117895.shtml>

<sup>52</sup> <https://www.engineering.org.cn/ch/article/19236/detail>

<sup>53</sup> <https://oec.world/en/profile/country/ukr?yearlyTradeFlowSelector=flow1&yearSelector1=2021>

<sup>54</sup> <https://www.reuters.com/business/energy/ukraine-fuel-imports-jump-fill-domestic-needs-ministry-2022-09-02/>

<sup>55</sup> Howard Altman, “Ukraine Bought ‘All The Gas Trucks Available In Europe’ To Keep Fueled (Updated),” The War Zone, 15 February 2023, <https://www.twz.com/ukraine-bought-all-the-gas-trucks-available-in-europe-to-keep-fueled>

<sup>56</sup> This section draws heavily upon Collins, Gabriel (2018) "A Maritime Oil Blockade Against China—Tactically Tempting but Strategically Flawed," Naval War College Review: Vol. 71: No. 2, Article 6.

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Available at: <https://digital-commons.usnwc.edu/nwc-review/vol71/iss2/6>

<sup>57</sup> From author's database of Chinese pipeline construction projects, available upon request.

<sup>58</sup> Ibid.

<sup>59</sup> "Big Inch Pipelines of WWII," American Oil & Gas Historical Society, <http://aoghs.org/petroleum-in-war/oil-pipelines/>

<sup>60</sup> 1000 km/4 km/d

<sup>lxi</sup> Tang, Dong, Huixiang Jian, Min Song, and Zhongming Jiang. 2023. "Migration of Leaked Oil Vapor in Underground Water-Sealed Oil Storage Cavern Considering the Influence of Fractures" *Journal of Marine Science and Engineering* 11, no. 6: 1248. <https://doi.org/10.3390/jmse11061248>; "TEMPO: A New Era of Air Quality Monitoring from Space," EPA, 19 May 2020, <https://www.epa.gov/sciencematters/tempo-new-era-air-quality-monitoring-space>

<sup>lxii</sup> Yang, Hongling et al. "Volatile organic compounds (VOCs) emissions from internal floating-roof tank in oil depots in Beijing: Influencing factors and emission reduction strategies analysis." *The Science of the total environment* vol. 916 (2024): 170222. doi:10.1016/j.scitotenv.2024.170222

**OPENING STATEMENT OF ZONGYUAN ZOE LIU,  
MAURICE R. GREENBERG FELLOW FOR CHINA STUDIES, COUNCIL ON  
FOREIGN RELATIONS**

DR. LIU: Hearing co-chairs Commissioner Sims and Commissioner Goodwin, Commission members, and staff, thank you for the opportunity to speak today. I also commend the Commission for calling a hearing on this critical subject. My testimony today will focus on China's efforts to counter the weaponization of the U.S. led international trade and financial system.

To mitigate China's perceived vulnerabilities, China has pursued both defensive measures and offensive measures. And I also wanted to say that China's economic growth has slow down and its domestic economic woes will not stop the Communist Party of China and the Chinese government from fortifying defense against potential Western financial sanctions. Such determination is driven by two primary factors: the perception of U.S. containment necessitating the pursuit of self-sufficiency and the Chinese President Xi Jinping's prioritization of enhancing China's financial security as integral to national security, as well as his aspirations to build up China's financial power.

Now, let me begin with the defensive measures. On the defense side, the Chinese government has pursued three primary strategies to fortify the Chinese economy against potential sanctions by diluting the U.S. dollar's centrality and developing an alternative system. As a result, the renminbi has become the largest cross border settlement currency between Xinjiang and Hong Kong for four consecutive years. In 2023, cross border settlement amount exceeded \$52.3 trillion, which marks an increase of nearly a quarter year on year. And in December 2023, the share used in global payment and settlement reached over 4 percent, which marks an increase of over two percentage point throughout only through the course of a year.

Now, the three strategies. The first strategy is that China has supported and promoted regional and multilateral currency and a financial corporation through regional or non-Western partnerships, noteworthy the Shanghai Cooperation Organization and the BRICS. Secondly, since the 2007 to 2008 global financial crisis, the Chinese government has also put resources into developing and expanding Chinese infrastructure called the Cross Border Interbank Payment System. And, in fact, even before the West collective sanction of Russia, China's CIPS system has already been perceived as an alternative to the system on which the U.S. dollar dominates.

Thirdly, China also aims to improve the renminbi's role in global commodities pricing, especially in the transition to clean energy. And in the medium term, China aims to capitalize on the current energy transition to cultivate a national gas and maintain the petro dollar. In the medium to long run, China could also leverage its dominance in critical mineral supply chains and its partnership with mineral rich countries.

Now, on the offensive side, in the worst-case scenario of a military conflict or financial war, Beijing would probably not confine itself to financial defense but could respond with two detrimental retaliatory measures. First, China could strategically leverage its critical status in global supply chains and it could impose export controls on some controlled items. And, in fact, through 2020, China has been strengthening its export control regulatory framework by introducing the export control law.

Secondly, China could also deny foreign access to critical infrastructure, especially ports around the world controlled by Chinese state-owned enterprises or state affiliated entities. My research found that, domestically, China has more shipping ports than any other country in the

world. Globally, China invested in over 100 port projects, which include 73 in Asia, 33 in Africa, 11 in Europe, 9 in South America, 9 in North America, and 5 in Oceania. Ten port projects with majority Chinese ownerships have physical potential for naval use.

Now, I encourage the U.S. China Commission and members of Congress to consider the following policy recommendations to strengthen U.S. financial leadership and keep China embedded, rather than excluded, in the U.S. led system. First, Congress should consider developing mechanisms to offset the potential impact of the Rebuilding Economic Prosperity and Opportunity for Ukrainians Act. In fact, this morning, G7 also reportedly to have reached a deal to give Ukraine \$50 billion in loans back to back frozen Russian central bank reserves. While such actions may be seen as optimal solution under current geopolitical circumstances, it could undermine trust in the dollar-based system. To mitigate this risk, Congress can consider empowering the U.S. International Development Corporation and offer a credible alternative to China's state led effort in development finance that aims to advance the renminbi based financial system.

Second, Congress may also want to consider measures to update U.S. law to combat the illicit use of digital asset which is critical for U.S. national security. Part of the reason is also because the availability of digital asset and their interchangeability with other assets offer new ways to bypass financial sanctions.

Thirdly, Congress should also strengthen U.S. critical mineral supply chain security and resilience to support continued U.S. leadership in a decarbonized global economic system.

And I am happy to answer any questions. Thank you.

COMMISSIONER GOODWIN: Thank you very much, Doctor.

**PREPARED STATEMENT OF ZONGYUAN ZOE LIU,  
MAURICE R. GREENBERG FELLOW FOR CHINA STUDIES, COUNCIL ON  
FOREIGN RELATIONS**

# Hearing on “China’s Stockpiling and Mobilization Measures for Competition and Conflict”

Prepared statement by

**Zongyuan Zoe Liu**

*Maurice R. Greenberg Fellow for China Studies  
Council on Foreign Relations*

Before the

**U.S.-China Economic and Security Review Commission**

*2<sup>nd</sup> Session, 118th Congress*

Hearing co-chairs Commissioner Cliff Sims and Commissioner Carte Goodwin, commission members, and staff, thank you for the opportunity to speak with you today. I commend the commission for calling a hearing on this critical subject. My testimony today will focus on China’s attempts to develop an antidote to the West’s weaponization of the existing U.S.-led international trade and financial system against China.

The escalation of U.S.-China trade tension since 2018 and G7’s sanctions against Russian entities and individuals since 2022, notably the freezing of Russian foreign exchange reserves, have prompted China’s policymaking community to strategize immunizing the Chinese economy against Western sanctions and strengthen China’s financial security. Despite Western pressure and sanctions against Russia, China continues trading with Russia. During Russian President Putin’s visit to Beijing in April 2024, Chinese President Xi Jinping and President Putin strengthened their solidarity.

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While criticizing Western sanctions against Russia as having no legal basis, Beijing has been pragmatically evaluating the danger of China's reliance on Western countries for strategic industrial inputs and technology. Unabated U.S.-China geopolitical tensions and Western governments' industrial policies to incentivize firms to reduce supply chain dependence on China have diminished trade between China and the West and fueled concerns among Chinese policymakers and academics about further intended decoupling. The Chinese government has accelerated its development of an anti-sanction policy framework and an alternative global system to prevent China from falling victim to Western sanctions like Russia did.

China's economic growth slowdown and domestic economic wounds will not stop the Communist Party of China and the Chinese government from fortifying defense against potential Western financial sanctions. Such determination is driven by two primary factors: first, the perception of U.S. containment necessitates China's self-sufficiency and strengthened defense against forced decoupling; second, Chinese President Xi prioritizes enhancing China's financial security as integral to national security and aspires to build up China's financial prowess.

## **I. China's Perceived Necessity to Sanction-Proof the Chinese Economy**

In the eyes of Chinese leaders and policymakers, the punitive economic retaliation against Russia by the United States and its allies reveals that global supply chains and the U.S.-led global financial system can be weaponized against China in extreme geopolitical scenarios. However, the economic war against Russia to punish President Putin's invasion of Ukraine is not the only factor that raises Chinese policymakers' concerns about the potential threat of trade and financial weaponization against China. Shortly after President Biden took office, Chinese observers already concluded that the Biden administration's China policy would feature containment, creating demand for China's pursuit of economic and technological self-sufficiency.

One year into the Biden administration – that was before the West's collective sanctions to punish President Putin's war against Ukraine – Chinese academics and state media perceived U.S. policy towards China as containment. For example, in June 2021, Zhang Monan, a chief researcher at China Center for International Economic Exchanges, a public policy think tank operating under the National Development and Reform Commission, observed that “Biden's China containment policy will go further than Trump.”<sup>1</sup> In August, the Bureau of Development and Planning of China Academy of Sciences wrote, “The focus of the U.S. Innovation and Competition Act of 2021 is to contain and compete with China in science and technology, centered on digital technologies such as semiconductors and 5G.”<sup>2</sup> Also in August, Xinhua, China's leading state media, quoting Chinese academics, described the trips to Southeast Asia by senior officials in the Biden administration, such as Secretary of Defense Austin and Vice President Kamala Harris, as “the United States seeking to woo Southeast Asia to contain China”<sup>3</sup> with quotes from Chinese academics. In January 2022, the Chongyang Institute for Financial Studies at Renmin University published an article arguing that containing China has become a “new normal” in U.S. policymaking calculations.<sup>4</sup>

In this context, Chinese policymakers have become convinced that the United States is determined to implement a full-fledged strategy of containment against China before the West's punitive sanctions against Russian individuals and entities following President Putin's war against Ukraine. Naturally, Chinese officials, academics, and media rhetoric increasingly talk of self-reliance and are preparing for a forced decoupling from the United States. Fang

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<sup>1</sup> “Zhang Monan: Biden's China Containment Policy Will go Further Than Trump's” (张茉楠：拜登的遏华政策将比特朗普走得更远), fisnet.com, June 30, 2021, <http://comment.cfisnet.com/2021/0630/1323271.html>.

<sup>2</sup> “Science & Technology Policy & Consulting: The American Innovation and Competitiveness Act of 2021 Targets Technology Competition with China,” Bureau of Development and Planning of China Academy of Sciences, August 5, 2021, [http://www.casid.cn/zkcg/ydkb/kjczyzxb/2021/zczxb\\_202108/202110/P020211009319571471401.pdf](http://www.casid.cn/zkcg/ydkb/kjczyzxb/2021/zczxb_202108/202110/P020211009319571471401.pdf).

<sup>3</sup> “The U.S.'s Attempt to win Over Southeast Asia to Contain China is Unlikely to Succeed” (美国拉拢东南亚 遏华图谋难得逞), Xinhuanet, August 21, 2021, [http://www.xinhuanet.com/world/2021-08/21/c\\_1127783060.htm](http://www.xinhuanet.com/world/2021-08/21/c_1127783060.htm).

<sup>4</sup> “Cai Tongjuan: The New Normal of U.S. Containment of China Has Emerged. How Should China Respond?” *Chongyang Institute for Financial Studies, Renmin University*, January 25, 2022, <http://rdcy.ruc.edu.cn/zw/zl/0254c474c1d8424c98ec5fa2465c00bd.htm>.

Xinghai, a vice chairman of the China Securities Regulatory Commission, proposed accelerating the yuan's internationalization to prepare for the risk of forced financial decoupling.<sup>5</sup> Even the more moderate voices have acknowledged the profound changes in U.S.-China relations behind the “decoupling theory” and called for China to “prepare for the worst but strive for the best.”<sup>6</sup> Under the leadership of President Xi, the Communist Party of China made “independence and self-reliance” a centerpiece in the landmark Historic Resolution enacted in 2021.<sup>7</sup> On February 25, 2022, one day after President Putin's invasion of Ukraine, the *People's Daily* published an editorial that wrote, “Independence and self-reliance ensure that the cause of the Party and the people will continue to move from victory to victory.”<sup>8</sup>

Beijing views the Biden administration's regional arrangements in the Indo-Pacific region as destabilizing and undermining China's interests. For Beijing, the Indo-Pacific Economic Framework for Prosperity is the economic mirror of the Quadrilateral Security Dialogue and AUKUS, two U.S.-led security pacts that Beijing regards as anti-China coalitions. In May 2022, as President Biden embarked on his first trip to Asia since taking office to visit Korea and Japan, Xinhua characterized U.S. policies towards the Indo-Pacific region as “exhibiting new features of an integrated China containment policy across multiple dimensions” (美遏华战略呈现多领域一体布局的新特征).<sup>9</sup> In June, the Ministry of Foreign Affairs characterized America's China policy as an attempt at “comprehensive containment and suppression of China” in a statement entitled “Fallacies and Truth in America's Perception of China” (美国对华认知中的谬误和事实真相).<sup>10</sup>

Beijing also views America's industrial policies, such as the CHIPS Act and the Inflation Reduction Act, and U.S. trade and investment restrictions from export controls to inbound and outbound investment screenings as tools of economic and technological containment against China. *Global Times* criticized U.S. chip export restrictions as aiming to “suppress and contain the rise of Chinese technology to preserve U.S. hegemony” and quoted expert opinions saying “domestic production in related industries has already become an industry consensus in China.”<sup>11</sup> Researchers at the Bank of China Research Institute and China Institutes of Contemporary International Relations commented that America's “yard and fence harm global supply chains” and that “U.S. industrial policies have China as the primary target of containment and suppression.”<sup>12</sup> With the ongoing hot war in Europe and a cold war in economic and technology competition, a Shanghai-based academic argued that “the peace dividend is over”—hence, “it is time that China prepare for a full decoupling.”<sup>13</sup>

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<sup>5</sup> “Fang Xinghai: China Must be Prepared for the Risk of Being Cut Off From the U.S. Dollar Payment System” (方星海：中国必须为被切断美元支付体系的风险做好准备), *The Chinese American Professors and Professionals Network*, July 2, 2020, <http://scholarsupdate.hi2net.com/news.asp?NewsID=27803>.

<sup>6</sup> “Observations and Reflections on the Current Sino-U.S. ‘Decoupling Theory’” (对当前中美“脱钩论”的观察与思考), *People's Forum Academic Frontiers*, May 29 2020, <http://www.rmlt.com.cn/2020/0529/581929.shtml>.

<sup>7</sup> “Full Text: Resolution of the CPC Central Committee on the Major Achievements and Historical Experience of the Party Over the Past Century,” *The State Council of the People's Republic of China*, Updated November 16, 2021, [https://english.www.gov.cn/policies/latestreleases/202111/16/content\\_WS6193a935c6d0df57f98e50b0.html](https://english.www.gov.cn/policies/latestreleases/202111/16/content_WS6193a935c6d0df57f98e50b0.html).

<sup>8</sup> “Adhere to Independence and Self-Reliance to Open up the Road Ahead (Special Topic for Deep Reflection)” (坚持独立自主开拓前进道路（专题深思）), *People's Daily Online*, February 25, 2022, <http://hb.people.com.cn/n2/2022/0225/c194063-35148981.html>.

<sup>9</sup> “The United States' Containment of China Has a New Feature of a Multi-Field Integrated Layout” (美国遏华呈多领域一体布局新特征), *Xinhuanet*, May 20, 2022, [http://www.xinhuanet.com/world/2022-05/20/c\\_1211649146.htm](http://www.xinhuanet.com/world/2022-05/20/c_1211649146.htm).

<sup>10</sup> “The Fallacies and Truths in the U.S.'s Perception of China” (美国对华认知中的谬误和事实真相), *Ministry of Foreign Affairs News*, June 19, 2022, [https://www.mfa.gov.cn/wjbxw\\_new/202206/t20220619\\_10706065.shtml](https://www.mfa.gov.cn/wjbxw_new/202206/t20220619_10706065.shtml).

<sup>11</sup> “Tearing Off the Mask of Free Competition and Curbing China's Technological Development, how Many ‘Devils’ are Hidden in the U.S. ‘Chips Act?’” (撕下自由竞争面具，遏制中国技术发展，美“芯片法案”藏着多少“魔鬼”?), *Global Times*, August 15, 2022, <https://world.huanqiu.com/article/49FvK8I1mg9>.

<sup>12</sup> “American-Style ‘Guardrails’ Harm to the Global Industrial Chain” (美式“护栏”：全球产业链之害), *China Trade Remedies Information*, Ministry of Commerce People's Republic of China, September 28, 2022, <https://cacs.mofcom.gov.cn/article/flfwpt/jydy/cgal/202209/174513.html>.

<sup>13</sup> “The Peace Dividend Has Ended, and it is Time for China to Prepare for a Comprehensive Decoupling”: Thoughts of a Shanghai Professor” (“和平红利已终结，中国到了不得不准备全面脱钩的时候”：一位上海教授的思考), *NetEase*, June 2, 2022, <https://www.163.com/dy/article/H8T28O5Q052100BV.html>.

Chinese scholars and policymakers are ideologically prepared for a forced decoupling from the West despite knowing that decoupling undermines China's interests. They have debated the necessity of reforming the dollar-based global financial system and diversifying away from dollar assets overseas. The Chinese government has taken concrete steps to develop the renminbi's pricing power in major global commodities. The People's Bank of China and its affiliates have been working on developing an alternative financial system with the digital renminbi at the center. China's legislatures have designed an anti-sanctions regulatory framework to deter and penalize cooperation with foreign sanctions against Chinese entities and individuals. Besides these defensive measures, the Chinese state has also identified offensive retaliatory measures by weaponizing China's critical position in global supply chains.

## II. Chinese President Xi Jinping's Emphasis on Financial Security and Financial Power

Since President Xi Jinping came to power in 2013, he has repeatedly emphasized worst-case scenario thinking to "prevent macro-risks that may delay or interrupt the process of the great rejuvenation of the Chinese nation."<sup>14</sup> From Xi's vantage point, China's state-owned financial institutions and enterprises must inoculate themselves in advance against more disastrous international sanctions that might be levied against them in the event of a military conflict with the West over Taiwan. That concern has only grown more urgent after China witnessed the collective sanctions imposed by the West on Russian entities and individuals to punish President Vladimir Putin for his war against Ukraine.

Financial security is a core aspect of President Xi's "Comprehensive National Security." When addressing a Politburo study group in April 2017, Xi Jinping, as the General Secretary of the Party, emphasized that "financial security is an important part of national security. Protecting financial security is strategic and fundamental to China's overall economic and social development."<sup>15</sup> However, it is important to note that President Xi did not invent financial security as national security. In fact, financial security has become an indispensable part of China's national security discourse since the 1997 Asian financial crisis. Addressing the National Finance Work Conference in November 1997, President Jiang Zemin stressed that "ensuring financial security, efficiency, and stability is a basic prerequisite for the sustained rapid development of the national economy."<sup>16</sup> Jiang warned, "If the financial system is unstable, it would inevitably affect economic and social stability." Jiang's speech reflected the normative impact of the Asian financial crisis on the conceptualization of national security, financial governance, and financial risk management among the third generation of the Communist Party of China's (CPC) leadership. Awakened by the severity of the crisis, CPC leaders realized for the first time that national security could not be narrowly defined only by military competencies and defense capabilities but must also include financial security.

Under President Xi's leadership, defending China's financial security means not only managing market risks but also geopolitical risks. Developing alternative systems to hedge sanction risk and reduce China's strategic vulnerabilities due to its dependence on the U.S. dollar in international trade and investment has become a priority of the CPC. At the October 2023 Central Finance Work Conference, Xi reiterated that "preventing and managing risk is a perpetual theme of financial work" and elaborated on the geopolitical challenges to China's financial security.<sup>17</sup> He observed that "a small number of countries treat finance as tools for geopolitical games. They repeatedly played with currency hegemony and frequently wielded the big stick of financial sanctions. ... All these have presented new challenges to

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<sup>14</sup> "General Secretary Xi Jinping on Bottom-Line Thinking" (习近平总书记论底线思维), *China Communist Party News Network*, August 22, 2023, <http://theory.people.com.cn/n1/2023/0822/c40531-40061461.html>.

<sup>15</sup> "Financial Security is an Important Part of National Security" (金融安全是国家安全的重要组成部分), *China Communist Party News Network*, April 28, 2017, <http://theory.people.com.cn/n1/2017/0428/c40531-29244246.html>.

<sup>16</sup> "Jiang Zemin: Deepen Financial Reform and Guard Against Financial Risks" (江泽民：深化金融改革，防范金融风险), *Selected Works of Jiang Zemin Volume 2* (江泽民文选第二卷), November 19, 1997, <http://www.reformdata.org/1997/1119/5723.shtml>.

<sup>17</sup> "The Ministry of State Security Issued a Statement: Be a Firm Guardian of Financial Security" (国安部公号发文：做金融安全的坚定守护者), *Caixin*, November 3, 2023, <https://china.caixin.com/2023-11-03/102124204.html>.

maintaining financial security under the new situation.”

President Xi’s recent speech suggests that he views improving the renminbi’s international status as an indispensable component of strengthening China’s financial security. In January 2024, President Xi urged leading cadres at provincial and ministerial levels to strengthen China’s financial power and listed “powerful currency” as the top priority among several core financial factors.<sup>18</sup> He called on Chinese officials to promote China-governed financial infrastructures that are safe and efficient to improve China’s financial autonomy.

### **III. China’s Strategies to Reduce its Strategic Vulnerability to the Dollar Hegemony**

In response to Chinese policymakers’ anxieties over the country’s financial security, China in recent years has accelerated its development of an alternative global financial system independent of the dollar to fortify its economy against potential sanctions. The Chinese government has pursued three primary strategies to push for reforming the existing U.S.-led system while developing an alternative. One strategy has been to support and expand regional and multilateral currency and financial cooperation through various non-Western partnerships. The second strategy has been to increase the broader use of the renminbi in international trade and investment while promoting renminbi-based international financial infrastructure. The third strategy is to improve the renminbi’s role in global commodities pricing, especially in the context of the clean energy transition.

#### **1. Promote Regional and Multilateral Currency and Financial Cooperation**

The 1997 Asian financial crisis drove demand for a regional currency arrangement to address short-term liquidity difficulty for regional members and reduce reliance on the International Monetary Fund (IMF). Japanese finance authorities proposed establishing an Asian Monetary Fund (AMF) but failed due to the U.S. government’s opposition. In May 2000, ASEAN+3 (China, Japan, and South Korea) managed to launch the Chiang Mai Initiative (CMI), the first regional currency swap arrangement, as an incremental step and laid the foundation for continued regional currency cooperation.<sup>19</sup> The CMI is composed of the ASEAN Swap Arrangement among ASEAN countries and a network of bilateral swap arrangements among ASEAN+3 countries.

A decade later, in May 2008 amid the 2007-2008 global financial crisis, ASEAN+3 (China, Japan, and South Korea) finance ministers agreed to establish a regional foreign exchange reserves pool with a minimum amount of \$80 billion,<sup>20</sup> which later increased to \$120 billion<sup>21</sup> with China and Japan each contributing \$38.4 billion (each 32%) and South Korea \$19.2 billion (16%).<sup>22</sup> In December 2009, an Asian regional foreign exchange reserves pool was launched, a step closer to an AMF. In March 2010, ASEAN+3 finance ministers and central bank governors meeting clarified that countries could implement local currencies – U.S. dollar swaps in the \$120 billion collective regional foreign exchange reserves pool. In May 2012, the size of the regional foreign exchange reserves pool increased to \$240 billion.

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<sup>18</sup> Xi Jinping Delivered an Important Speech at the Opening Ceremony of the Seminar for Provincial and Ministerial-Level Leading Cadres on Promoting High-Quality Financial Development” (习近平在省部级主要领导干部推动金融高质量发展专题研讨班开班式上发表重要讲话), *The State Council of the People’s Republic of China*, January 16, 2024, [https://www.gov.cn/yaowen/liebiao/202401/content\\_6926302.htm](https://www.gov.cn/yaowen/liebiao/202401/content_6926302.htm).

<sup>19</sup> Chalongphob Sussangkarn, “The Chiang Mai Initiative Multilateralization: Origin, Development and Outlook” (ADB Working Paper 230, Tokyo: Asian Development Bank Institute, July 2010), <https://www.adb.org/sites/default/files/publication/156085/adb-wp230.pdf>.

<sup>20</sup> “China, Japan, South Korea and ASEAN Jointly Pledge US\$80 Billion to Combat Financial Risks” (中日韩和东盟 800 亿美元共御金融风险), *Sina News*, May 6, 2008, <https://news.sina.com.cn/o/2008-05-06/074813836007s.shtml>.

<sup>21</sup> “The ASEAN+China, Japan and South Korea (10+3) Special Finance Ministers’ Meeting was Held in Thailand on the 22<sup>nd</sup>” (东盟+中日韩 (10+3)特别财长会议 22 日在泰国举行), *The Central People’s Government of the Republic of China*, February 24, 2009, [https://www.gov.cn/gzdt/2009-02/24/content\\_1241525.htm](https://www.gov.cn/gzdt/2009-02/24/content_1241525.htm).

<sup>22</sup> “The Forty-Second Annual Meeting of the Board of Governors of the Asian Development Bank: Summary of Proceedings,” Document No. BG42-1, *Asian Development Bank*, May 2009, <https://www.adb.org/sites/default/files/institutional-document/771541/annual-meeting-2009-proceedings.pdf>.



In dealing with the economic shocks of the COVID-19 pandemic, at the G20 meeting in February 2022, PBoC Governor Yi Gang said that China would work with Asian countries to promote the use of local currencies in trade and investment to strengthen regional financial security and resilience against external shocks.<sup>23</sup> In June, the PBOC and the Bank for International Settlement launched an RMB Regional Liquidity Arrangement,<sup>24</sup> with the participation of Bank Indonesia, the Central Bank of Malaysia, the Hong Kong Monetary Authority, the Monetary Authority of Singapore, and the Central Bank of Chile. This arrangement has since become an additional liquidity support for participating central banks in times of market volatility.

The Chinese government has actively cooperated with non-Western multilateral partnerships, such as the Shanghai Cooperation Organization (SCO)<sup>25</sup> and BRICS,<sup>26</sup> to develop a non-dollar-based financial system and promote the use of local currencies in trade and investment. Following the West's punitive sanctions against Russian entities and individuals to punish Putin's war against Ukraine, the Chinese government has sought to capitalize on concerns among members of the Global South over the West's sanctions, especially the freezing of Russian reserves. An important agenda behind China's support of the expansion of non-Western regional and multilateral partnerships, such as the SCO and BRICS, has been to accelerate the expansion of a non-dollar-based system. For example, at the September 2022 SCO Summit, Chinese President Xi Jinping proposed<sup>27</sup> to expand the shares of local currency settlements to promote regional integration, strengthen the development of local-currency cross-border payment and settlement systems, and promote the establishment of an SCO development bank. SCO members agreed on a "roadmap" to expand trade in local currencies.<sup>28</sup> Iran – whose regime has been coping with severe Western sanctions and firmly in favor of de-dollarization– has joined the SCO as its ninth full member. Iranian President Ebrahim Raisi made it clear that Tehran sees SCO membership as a way to help thwart American unilateralism and bypass sanctions.<sup>29</sup>

China's expressed interest in using the SCO framework to promote the use of local currency for bilateral trade and settlement already emerged before the launch of the Belt and Road Initiative in 2013. Following the 2007-2008 global financial crisis, promoting the use of local currencies in bilateral trade has become an important issue in China's partnership with SCO members, which has received support from SCO members. For example, at the 2012 SCO Business Forum, Vice Premier Wang Qishan stressed that SCO members should promote using local currencies in trade settlement, advance bilateral currency swaps, strengthen regional financial cooperation, and develop new financing models.<sup>30</sup>

## 2. Promote the cross-border use of renminbi and renminbi-based financial infrastructure

Besides collaborating with regional and multilateral groups to pursue the development of a non-dollar-based system,

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<sup>23</sup> "China to Work With Asian Nations to Grow Use of Local Currencies in Trade," *Reuters*, February 15, 2022, <https://www.reuters.com/world/china/china-work-with-asian-peers-boost-use-local-currencies-trade-2022-02-16/>.

<sup>24</sup> "BIS Announces Renminbi Liquidity Arrangement," *Bank for International Settlements*, June 25, 2022, <https://www.bis.org/press/p220625.htm>.

<sup>25</sup> Zongyuan Zoe Liu, "China Is Quietly Trying to Dethrone the Dollar," *Foreign Policy*, September 21, 2022, <https://foreignpolicy.com/2022/09/21/china-yuan-us-dollar-sco-currency/>.

<sup>26</sup> Zongyuan Zoe Liu and Mihaela Papa, *Can BRICS De-dollarize the Global Financial System?* (Cambridge University Press, February 2022), <https://www.cambridge.org/core/elements/can-brics-dedollarize-the-global-financial-system/0AEF98D2F232072409E9556620AE09B0>.

<sup>27</sup> "Xi Jinping's Speech at the 22nd Meeting of the Council of Heads of State of the Shanghai Cooperation Organization" (习近平在上海合作组织成员国元首理事会第二十二次会议上的讲话 (全文)), *Xinhua News Agency*, September 16, 2022, [https://www.gov.cn/xinwen/2022-09/16/content\\_5710294.htm](https://www.gov.cn/xinwen/2022-09/16/content_5710294.htm).

<sup>28</sup> "China-Led SCO Bloc Agrees to Expand Trade in National Currencies," *Reuters*, September 16, 2022, <https://www.reuters.com/markets/commodities/china-led-sco-bloc-agrees-expand-trade-national-currencies-2022-09-16/>.

<sup>29</sup> "Iran Can Thwart U.S. Sanctions Via Shanghai Organization," *Iran International*, September 16, 2022, <https://www.iranintl.com/en/202209162127>.

<sup>30</sup> "Wang Qishan Attended the Opening Ceremony of the Shanghai Cooperation Organization Business Forum and Delivered a Speech" (王岐山出席上海合作组织工商论坛开幕式并致辞), *The Central People's Government of the People's Republic of China*, June 6, 2012, [https://www.gov.cn/jdhd/2012-06/06/content\\_2154772.htm](https://www.gov.cn/jdhd/2012-06/06/content_2154772.htm).

the Chinese government also attempted to improve the cross-border use of renminbi since the 2007-2008 global financial crisis. In July 2009, Chinese financial regulators and central government agencies promulgated “Administrative Rules on Pilot Program of Renminbi Settlement of Cross-border Trade Transactions,” allowing qualified Chinese enterprises designated by the state to settle cross-border trade in renminbi.<sup>31</sup> The Rules marked China officially taking the first step to promote greater international use of the renminbi, with the goal of ultimately establishing the Chinese currency as an international reserve currency alongside the U.S. dollar and the euro.

The Chinese government has put resources into developing renminbi-based financial infrastructure to facilitate the cross-border use of the renminbi. Launched in 2015, CIPS has become a proprietary financial infrastructure that could allow sanctioned entities to plumb into global markets, although dodging sanctions was not the original motivation for its introduction. Initially developed as a critical piece of financial infrastructure to promote yuan internationalization,<sup>32</sup> the Shanghai-based CIPS is increasingly seen as China’s alternative to SWIFT<sup>33</sup> even before Russian banks were recently kicked off SWIFT. CIPS allows global banks to clear cross-border renminbi transactions onshore instead of through offshore renminbi clearing banks, providing a one-stop alternative to the combination of the SWIFT messaging system and the New York-based Clearing House Interbank Payments System. However, CIPS is not a complete departure from SWIFT and still uses SWIFT’s standards to connect with the global system. It has adopted the ISO 2022 international payments messaging standard in order to make it interoperable with other payment systems as well as with correspondent banks around the world.<sup>34</sup> The adoption of the existing cross-border messaging standards serves China’s interest in making CIPS a critical piece of financial infrastructure to promote the international use of the renminbi. According to the CIPS website, CIPS currently has 139 direct participants, 100 of which are in Asia, 23 in Europe, 6 in Africa, 5 in Oceania, 3 in North America, and 2 in South America.<sup>35</sup> In 2023, CIPS’s annual business volume reached RMB123 trillion.<sup>36</sup> By January 2024, CIPS’s average daily transaction volume reached RMB666.8 billion (\$93.6 billion).<sup>37</sup>

The Chinese state has accelerated the development of alternative financial infrastructure as a hedging strategy due to mounting concerns over being isolated from the U.S.-led global financial system as tensions between the United States and China have escalated since 2018. The PBoC has cooperated with SWIFT to get localized services, which in theory could mitigate the impact of sanctions. In August 2019, SWIFT set up a wholly foreign-owned unit in Beijing that uses renminbi for its services and products in China and provides the Chinese financial community with localized and customized services.<sup>38</sup> In January 2021, the PBoC and SWIFT launched a €10 million (\$12 million) joint venture named Finance Gateway Information Services (FGIS),<sup>39</sup> shortly after the United States, the European Union, U.K., and Canada sanctioned several Chinese officials for human rights abuses against the Uyghurs. FGIS will build a local network for financial messaging services and establish a localized data warehouse to store, monitor, and analyze cross-border payment messaging information.<sup>40</sup> Notably, the CIPS and Digital Currency Research Institute are FGIS

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<sup>31</sup> “The People’s Bank of China, the Ministry of Finance, the State Administration of Taxation, the China Banking Regulatory Commission Announcement [2009] No. 10” (中国人民银行 财政部 商务部 海关总署国家税务总局 中国银行业监督管理委员会公告 (2009) 第 10 号), *The Central People’s Government of the People’s Republic of China*, July 2, 2009, [https://www.gov.cn/jwqk/2009-07/02/content\\_1355475.htm](https://www.gov.cn/jwqk/2009-07/02/content_1355475.htm).

<sup>32</sup> “Report on the Internationalization of the RMB (2015)” (人民币国际化报告 (2015 年)), *People’s Bank of China*, June 2015, [http://www.pbc.gov.cn/eportal/fileDir/image\\_public/UserFiles/goutongjiaoliu/upload/File/人民币国际化报告 \(2015 年\).pdf](http://www.pbc.gov.cn/eportal/fileDir/image_public/UserFiles/goutongjiaoliu/upload/File/人民币国际化报告 (2015 年).pdf).

<sup>33</sup> “China’s Fledgling Cross-Border Payments System Grows Its Reach,” *Bloomberg*, September 22, 2021, <https://www.bloomberg.com/news/articles/2021-09-22/china-s-fledgling-cross-border-payments-system-grows-its-reach?embedded-checkout=true>.

<sup>34</sup> “CIPS Accelerates the Internationalization of the RMB,” *Swift*, October 28, 2016, <https://www.swift.com/news-events/news/cips-accelerates-internationalisation-rmb>.

<sup>35</sup> “CIPS Global Services,” *CIPS*, 2024, <https://www.cips.com.cn/>.

<sup>36</sup> “Cross-Border Interbank Payment System,” *CIPS*, 2024, <https://www.cips.com.cn/en/index/index.html>.

<sup>37</sup> *Ibid.*

<sup>38</sup> “SWIFT Opens Wholly Owned Subsidiary in China,” *China Daily*, August 9, 2019, <https://www.chinadaily.com.cn/a/201908/09/WS5d4d268da310cf3e35564de4.html>.

<sup>39</sup> “PBoC JV with Swift May Signal Bid to Boost Digital Yuan’s Reach,” *Asia Financial*, February 10, 2021, <https://www.asiafinancial.com/pboc-jv-with-swift-may-signal-bid-to-boost-digital-yuans-reach>.

<sup>40</sup> “PBoC, SWIFT to Establish Cross-Border Payment Stability,” *Regulation Asia*, March 25, 2021, <https://www.regulationasia.com/pboc-swift-to-establish-cross-border-payment-stability/>.

shareholders. Their presence suggests that FGIS is empowered to promote the use of digital yuan in cross-border transactions. Once materialized, this could be another damage control mechanism if major Chinese banks were de-SWIFTed.

It is currently unclear whether a localized messaging network combined with a localized data warehouse would be sufficient to achieve netting settlement services for cross-border payments and thereby help China circumvent U.S. sanctions. However, the participating Chinese shareholders can reveal the technical potential of this joint venture. Apart from SWIFT's €5.5 million investment for a 55% stake, the joint venture's primary Chinese shareholder is China National Clearing Center, which invested €3.4 million euros for a 34% stake. Other Chinese shareholders include CIPS (Cross-border Interbank Payment System), DCRI (Digital Currency Research Institute), and PCAC (Payment & Clearing Association of China, an industry self-regulatory agency under the PBoC).<sup>41</sup> The participation of CIPS and DCRI accentuates the potential of the joint venture to promote a renminbi-based financial system and boost the cross-border use of the digital renminbi.

In January 2023, the Ministry of Commerce and the PBoC jointly issued a policy notice to encourage Chinese firms engaging in international trade and investment to use renminbi in their cross-border settlement and investment.<sup>42</sup> The policy notice also encouraged Chinese banks to extend overseas renminbi loans. Over thirty countries have started to use the renminbi for cross-border trade and settlement.<sup>43</sup> Major Chinese oil suppliers, such as Russia, Angola, Venezuela, Iran, and Nigeria, now accept renminbi in their oil trade with China.

### 3. Improve the renminbi's commodities pricing power.

Although China has laid down the renminbi-based financial infrastructure for the international use of the renminbi and has achieved settling commodities trade using the renminbi with over thirty countries,<sup>44</sup> the renminbi's commodities pricing power remains limited. The major commodity pricing centers are in New York, Chicago, and London, with the U.S. dollar dominating about 90 percent of the pricing of major commodities in global markets.<sup>45</sup> Chinese policymakers have publicly expressed their concerns about the renminbi's limited pricing power over commodities.<sup>46</sup>

Chinese policymakers are right to consider improving renminbi's pricing power in global commodities markets as an essential component to boost China's financial power. China is the world's largest consumer of fossil fuels<sup>47</sup> and dominates the supply chains of several highly sought-after critical minerals deemed critical for the clean energy transition, such as cobalt and rare earth minerals, which cannot be easily substituted by other materials using existing technology in the clean energy transition. Making the renminbi the pricing currency of major commodities powering the global economy is a crucial step to constructing a renminbi-based global commodities trading system, which could

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<sup>41</sup> "PBoC JV with Swift may signal bid to boost digital yuan's reach," *Asia Financial*, February 10, 2021, <https://www.asiafinancial.com/pboc-jv-with-swift-may-signal-bid-to-boost-digital-yuans-reach>.

<sup>42</sup> "The Ministry of Commerce and the People's Bank of China Jointly Issued the, 'Notice on Further Supporting Foreign Trade Enterprises to Expand the Cross-Border Use of RMB and Promote Trade and Investment Facilitation' (商务部 中国人民银行联合印发《关于进一步支持外贸企业扩大人民币跨境使用 促进贸易投资便利化的通知》), *Macprudential Policy Bureau of the People's Bank of China*, January 11, 2023, <http://www.pbc.gov.cn/huobizhengceersi/214481/214511/3406535/4763611/index.html>.

<sup>43</sup> "Major Good News! More Than 30 Countries Have Started Using RMB for Settlement. Do You Know Which Countries They Are?" (关注 | 重大利好! 30 多国启用“人民币”结算, 你知道都是哪些国家吗?), *InvestGo.cn*, March 31, 2023, <https://www.investgo.cn/article/yw/zctz/202303/662141.html>.

<sup>44</sup> Ibid.

<sup>45</sup> "The Evolution of Global Commodity Pricing Mechanism and China's Countermeasures" (全球大宗商品定价机制演进 及中国对策), *Bank of China*, July 16, 2021, <https://pic.bankofchina.com/bocappd/rareport/202107/P020210716602228280859.pdf>.

<sup>46</sup> Xingqiang Liu, "Why Don't We Have Global Commodity Pricing Power?" (为什么我们没有全球商品定价权?), *China Economic Weekly*, no. 50 (2010), [http://paper.people.com.cn/zgjzk/html/2010-12/27/content\\_710445.htm?div=-1](http://paper.people.com.cn/zgjzk/html/2010-12/27/content_710445.htm?div=-1).

<sup>47</sup> David Stanway, "China Climate Envoy Says Phasing Out Fossil Fuels 'Unrealistic'," *Reuters*, September 22, 2023, [http://paper.people.com.cn/zgjzk/html/2010-12/27/content\\_710445.htm?div=-1](http://paper.people.com.cn/zgjzk/html/2010-12/27/content_710445.htm?div=-1).



reduce China's economic and geopolitical vulnerabilities in the global resources trade, elevate China's influence in the global financial system, and strengthen China's financial security. In this context, improving the role of the renminbi in global commodities pricing is not just a critical step towards renminbi internationalization but also an essential condition to reduce China's strategic vulnerabilities.

In this context, China has developed several commodities trading platforms, such as the renminbi-denominated futures market and commodity exchanges. For example, China launched renminbi-denominated oil futures in 2018<sup>48</sup> and copper futures in 2020<sup>49</sup> on the Shanghai International Energy Exchange. It also launched the Ganzhou Rare Metal Exchange in 2019,<sup>50</sup> where China's renminbi currency is used to quote prices for spot trading of tungsten, rare earth products,<sup>51</sup> and critical minerals (like cobalt) that are essential to the clean energy transition. The Shanghai crude oil futures market has already risen to the third-biggest oil futures market by trading volume,<sup>52</sup> behind West Texas Intermediate and Brent, but it is surpassing comparable offerings traded in Singapore and Dubai by a significant margin.

The commodities trading platforms and financial instruments provide marketplaces for the emergence of a renminbi-based commodities trading and settlement system. When addressing the China-Gulf Cooperation Council (GCC) Summit in December 2022, Chinese President Xi Jinping emphasized that China and members of the GCC should deepen cooperation in using the renminbi in oil and natural gas trading and settlement through the Shanghai Petroleum and Natural Gas Exchange (SHPGX).<sup>53</sup> The recent expansion of BRICS supported by China, especially the inclusion of commodities majors such as UAE and Iran, opens up new avenues for members to pursue the use of local currency in commodities pricing and trading. This expansion allows China opportunities to boost the renminbi's commodities pricing power and erode the U.S. dollar's dominance in global commodities markets.

Since Xi's speech, Chinese national oil and gas companies have accelerated initiatives to use the renminbi, instead of the U.S. dollar, in their international fossil fuels transactions through SHPGX. In March 2023, China National Offshore Oil Corporation — known as CNOOC, China's largest offshore oil and gas field operator — used the renminbi to complete the transaction of importing 65,000 metric tons of liquefied natural gas (LNG) from TotalEnergies SE, a French multinational oil and gas company, through SHPGX.<sup>54</sup> The LNG was produced in the United Arab Emirates, a member of the GCC, carried by a Liberian-flagged LNG tanker Mraweh,<sup>55</sup> and finished unloading in May<sup>56</sup> at the CNOOC Guangdong Dapeng LNG receiving station. This transaction was the world's first cross-border LNG trade settled using the renminbi. Since then, CNOOC has executed more renminbi-settled transactions using the renminbi through SHPGX.<sup>57</sup> In October, PetroChina, the largest oil and gas producer and distributor in China, settled a purchase of one million barrels of crude oil using the digital renminbi through SHPGX,

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<sup>48</sup> "China Launches Crude Oil Futures Trading," *XinhuaNet*, March 26, 2018, [http://www.xinhuanet.com/english/2018-03/26/c\\_137065815.htm](http://www.xinhuanet.com/english/2018-03/26/c_137065815.htm).

<sup>49</sup> Tom Daly, Mai Nguyen, and Emily Chow, "China's New Copper Futures Add Another Card to Global Yuan Deck," *Reuters*, November 17, 2020, <https://www.reuters.com/article/china-derivatives-copper/rpt-chinas-new-copper-futures-add-another-card-to-global-yuan-deck-idUKL1N2130GE/>.

<sup>50</sup> "China's First Rare Earth Exchange Opens in Ganzhou" (全国首家稀交所赣州开业), *XinhuaNet*, January 2, 2020, [http://m.xinhuanet.com/jx/2020-01/02/c\\_1125413757.htm](http://m.xinhuanet.com/jx/2020-01/02/c_1125413757.htm).

<sup>51</sup> "Ganzhou Rare Metal Exchange," *gzrme.com*, 2024, <https://www.gzrme.com/#/ResourceDocuments>.

<sup>52</sup> "2023 RMB Internationalization Report," *People's Bank of China*, <http://www.pbc.gov.cn/en/3688241/3688636/3828468/4756463/5163932/2023120819545781941.pdf>.

<sup>53</sup> "Xi Jinping's Keynote Speech at the China-Gulf Cooperation Council Summit" (习近平在中国—海湾阿拉伯国家合作委员会峰会上的主旨讲话), *The State Council of the People's Republic of China*, December 10, 2022, [https://www.gov.cn/xinwen/2022-12/10/content\\_5731130.htm](https://www.gov.cn/xinwen/2022-12/10/content_5731130.htm).

<sup>54</sup> "China's First Cross-Border LNG Shipment, Settled in Yuan, Completes Offloading," *Global Times*, May 16, 2023, <https://www.globaltimes.cn/page/202305/1290796.shtml>.

<sup>55</sup> "Mraweh," *Marine Traffic*, accessed May 2024, <https://www.marinetraffic.com/en/ais/details/ships/shipid:752790/mmsi:636010457/imo:9074638/vessel:MRAWEH>.

<sup>56</sup> Zheng Xin, "China's First Yuan-Settled LNG Trade Unloaded From UAE," *China Daily*, updated May 16, 2023, <https://www.chinadaily.com.cn/a/202305/16/WS646369f3a310b6054fad34c2.html>.

<sup>57</sup> "Chinese Major CNOOC and French Energy Company Engie Settle LNG Trade in Yuan on Shanghai Exchange," *LNG Journal*, October 18, 2023, <https://lngjournal.com/index.php/latest-news-mainmenu-47/item/109586-chinese-major-cnooc-and-french-energy-company-and-utility-engie-settle-lng-trade-in-yuan-on-shanghai-exchange>.

marking the first cross-border oil transaction using the country's central bank's digital currency.<sup>58</sup>

In the near-to medium-term, China could capitalize on the current energy transition to cultivate a “gas-yuan,” emulating the petrodollar. Just as oil-producing countries depend on dollar revenues that aren't freely spendable elsewhere, gas-producing ones such as Russia and Iran could be dependent on the renminbi. In China's “World Energy Development Report (2017),” Chinese scholars proposed the concept of gas-yuan. Given the fragmented nature of global natural gas markets and China's leverage as a leading buyer, the emergence of the gas-yuan is not a pipe dream. Russia, Iran, and China collectively produce more natural gas than the United States<sup>59</sup> and they all have non-dollar financial infrastructure in place. China has become the world's largest LNG importer.<sup>60</sup> Iran, which shares the world's biggest gas field with Qatar, is reviving its previously sanction-stalled LNG export plan<sup>61</sup> as the E.U. attempts to cut its dependence on Russian gas as a punishment for President Putin's invasion of Ukraine. Although China has not provided material support to Russia or bluntly helped Russia dodge Western sanctions, China's natural gas imports from Russia more than doubled in 2022 from 2021.<sup>62</sup> The collective revisionist geoeconomic power of China, Russia, and Iran arguably is much stronger than that of the OPEC. Higher global demand for natural gas as a transition fuel towards Net Zero and the decoupling of gas prices from oil prices also provide a benign macro condition for the emergence of a gas-yuan.

In the medium-to-long run, China could also leverage its dominance in critical mineral supply chains and its partnership with mineral-rich countries as the global economy transitions from hydrocarbon-dependent to mineral-dependent. SCO members include major hydrocarbon and minerals exporters in Central Asia like Kazakhstan and Uzbekistan, Russia and its newest member, Iran.<sup>63</sup> SCO also includes major commodities importers like China and India. Two of the world's five largest lithium producers — China and Brazil — are members of BRICS. Iran, a member of both SCO and BRICS, announced last February the discovery of its first lithium deposits,<sup>64</sup> estimated to be the world's second-largest after Chile.<sup>65</sup> Iran already possesses<sup>66</sup> the world's largest proven<sup>67</sup> zinc reserves that are extractable using existing technology, the fifty-largest copper deposits,<sup>68</sup> the 10th-largest uranium reserves, and the 10th-largest iron ore reserves.<sup>69</sup> The Iranian regime has been coping with severe Western sanctions for decades and is firmly in favor of de-dollarization.

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<sup>58</sup> Shi Jing, “Crude Oil Deal in e-CNY Marks Breakthrough,” *China Daily*, October 21, 2023, <https://global.chinadaily.com.cn/a/202310/21/WS65330f53a31090682a5e9ddb.html>.

<sup>59</sup> “Natural Gas Production,” *World Energy & Climate Statistics—Yearbook 2023*, 2023, <https://yearbook.enerdata.net/natural-gas/world-natural-gas-production-statistics.html>.

<sup>60</sup> Keefe Borden, “China Becomes World's Largest LNG Importer,” *Compressor Tech*<sup>2</sup>, December 20, 2021, <https://www.compressortech2.com/news/china-becomes-world-s-largest-lng-importer/8017084.article>.

<sup>61</sup> Patrick Sykes, “Iran Revives LNG Export Plan as World Scrambles for Natural Gas,” *Bloomberg*, March 15, 2022, <https://www.bloomberg.com/news/articles/2022-03-15/iran-revives-lng-export-plan-as-world-scrambles-for-natural-gas?embedded-checkout=true>.

<sup>62</sup> “China's Gas Imports From Russia Double in 2022 Amid Ukraine Crisis,” *Kyodo News*, January 20, 2023, <https://english.kyodonews.net/news/2023/01/7c9c6997d76f-chinas-gas-imports-from-russia-double-in-2022-amid-ukraine-crisis.html>.

<sup>63</sup> Sudhi Ranjan Sen, “Iran Joins SCO, the China-Founded Regional Security Grouping,” *Bloomberg*, July 4, 2023, <https://www.bloomberg.com/news/articles/2023-07-04/iran-joins-sco-the-china-founded-regional-security-grouping?ref=51J26SiN&embedded-checkout=true>.

<sup>64</sup> Kit Million Ross, “Iran Claims to Have Discovered 8.5 Million-Ton Lithium Deposit,” *Mining Technology*, March 7, 2023, <https://www.mining-technology.com/news/iran-discovers-major-lithium-deposit/>.

<sup>65</sup> “These Countries Are Driving Lithium Production,” *McKinsey & Company*, May 25, 2022, <https://www.mckinsey.com/featured-insights/sustainable-inclusive-growth/chart-of-the-day/these-countries-are-driving-lithium-production>.

<sup>66</sup> “Iran's Mineral Output: 258m Tons in 10 Months,” *Financial Tribune*, February 5, 2017, <https://financialtribune.com/articles/economy-business-and-markets/58965/iran-s-mineral-output-258m-tons-in-10-months#:~:text=According%20to%20the%20United%20States,7%25%20of%20global%20mineral%20reserves>.

<sup>67</sup> “Proven and Probable Reserves,” *Cameco*, last updated December 31, 2023, <https://www.cameco.com/invest/overview/reserves-resources/proven-probable#:~:text=About%20mineral%20reserves&text=proven%20reserves%3A%20the%20economically%20mineable,a%20high%20degree%20of%20confidence>.

<sup>68</sup> “China-U.S. Futures: Pathways to Peaceful Coexistence” (panel discussion moderated by Ker Gibbs), *International House at UC Berkeley*, accessed May 2024, <https://ihouse.berkeley.edu/china-us-futures-pathways-peaceful-coexistence>.

<sup>69</sup> “2015 Minerals Yearbook: Iran [Advance Release],” *U.S. Geological Survey*, September 2018, <https://d9-wret.s3.us-west-2.amazonaws.com/assets/palladium/production/mineral-pubs/country/2015/myb3-2015-ir.pdf>.

As a non-Western group of countries, SCO potentially represents a potent coalition of exporters and importers of commodities centered around using the renminbi to finance the entire commodities lifecycle from production to trade to consumption. Similarly, the expansion of BRICS to oil-rich nations bolsters the group's collective economic power and influence on the clean energy transition despite introducing greater internal complexity among its members, such as regional rivalries in the Middle East, China's rivalry with India as well as rising populism and its subsequent political unpredictability in Latin America. SCO and BRICS now share overlapping members with similar incentives for using local currencies in international trade settlement and investment. This configuration facilitates formal and informal policy efforts to implement incremental de-dollarization initiatives in energy and commodities markets, with the potential to scale up, making the two major non-Western groups attractive platforms for China to create an alternative financial system as the world moves beyond hydrocarbon.

#### **IV. China's Anti-Sanctions Regulatory Framework**

Besides developing a renminbi-based financial system to reduce its vulnerabilities to Western financial sanctions, the Chinese government has also developed anti-foreign sanctions regulatory framework to provide domestic legal basis to weaponize access to Chinese market. From Norwegian salmon, Philippine bananas, to Australian lamb, the Chinese government has often resorted to importing restrictions to punish foreign governments for their violation of what China deems as its core national interests. Escalating tensions with the United States since 2018 have led China to establish domestic legal foundations to restrict market access should foreign entities choose to comply with foreign sanctions and hurt China's interests. In October 2018, China enacted its International Criminal Judicial Assistance Law (ICJAL) as a blocking statute to prohibit entities located in China from unilaterally cooperating with foreign civil and criminal investigations without the consent of the Chinese government.<sup>70</sup> Specifically, Article 4 of the ICJAL states that "the international criminal judicial assistance shall not damage the sovereignty, security and social public interests of the People's Republic of China, and shall not violate the basic principles of the laws of the People's Republic of China." This provides a broad spectrum of legal basis for Chinese entities not complying with foreign investigations.

The Chinese government further weaponized access to the Chinese market by establishing the Provisions of the Unreliable Entity List, or UEL Provisions, an export controls framework issued by the Ministry of Commerce of China (MOFCOM) on September 19, 2020.<sup>71</sup> MOFCOM published the UEL Provisions the next day after the U.S. Department of Commerce implemented an Executive Order to restrict the use of WeChat and TikTok, two Chinese-owned apps, in the United States. MOFCOM first announced the establishment of such an entity list on May 31, 2019, ten days following the U.S. Department of Commerce added Huawei to its entity list. The timing of these events suggests that China's entity list is designed in response to foreign actions.

In January 2021, MOFCOM issued another sanction blocking statute, Rules on Counteracting Unjustified Extra-Territorial Application of Foreign Legislation and Other Measures, or the Extra-territorial Rules, as a countermeasure to the U.S. long-arm jurisdictions.<sup>72</sup> The Rules empower aggrieved parties to report damages to MOFCOM and sue for compensation in Chinese courts. The Rules also grant Chinese authorities certain powers to block the extraterritorial application of foreign laws if deemed as unjustifiably prohibiting or restricting Chinese individuals or entities from engaging in "normal economic, trade, and related activities" with foreign entities, especially secondary

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<sup>70</sup> "International Criminal Judicial Assistance Law of the People's Republic of China" (中华人民共和国国际刑事司法协助法), *The National People's Congress of the People's Republic of China*, October 26, 2018, [http://www.npc.gov.cn/zgrdw/npc/xinwen/2018-10/26/content\\_2064576.htm](http://www.npc.gov.cn/zgrdw/npc/xinwen/2018-10/26/content_2064576.htm).

<sup>71</sup> "Ministry of Commerce Order No. 4 of 2020 on the Unreliable Entity List" (商务部令 2020 年第 4 号 不可靠实体清单规定), *Ministry of Commerce of the People's Republic of China*, September 19, 2020, <http://www.mofcom.gov.cn/article/b/fwzl/202009/20200903002593.shtml>.

<sup>72</sup> "MOFCOM Order No. 1 of 2021 on Rules on Counteracting Unjustified Extra-Territorial Application of Foreign Legislation and Other Measures," *Ministry of Commerce of the People's Republic of China*, January 9, 2021, <http://english.mofcom.gov.cn/article/policyrelease/announcement/202101/20210103029708.shtml>.

sanctions and export controls. According to the Rules, the Working Mechanism, which is comprised of MOFCOM, the National Development and Reform Commission, and other relevant Chinese authorities, is in charge of determining whether the extraterritorial application of a reported foreign law or measure is unjustified.

Within five months of the issuance of the Rules, the Standing Committee of the National People's Congress enacted China's Anti-Foreign Sanctions Law.<sup>73</sup> This Law leans heavily towards countermeasures rather than blocking, as evidenced by the fact that eleven out of the twelve articles in the Law are dedicated to specifying the content, standard, and legal responsibilities of countermeasures. The Law introduces a new sanctions list known as the Countermeasure List. The Ministry of Foreign Affairs and other relevant ministries have the discretion to identify foreign entities to put on this list. This legislation came in response to the United States, E.U., and U.K. sanctioning more Chinese individuals and entities over concerns of human rights violations in Xinjian or ties to China's military and surveillance activities.

Altogether, China's anti-sanctions regulatory framework is designed to deter and penalize cooperation with foreign actions perceived to be detrimental to Chinese business and national interests. As the enforcement of these statutes continues to flesh out, the Chinese state can force foreign companies to choose either the Chinese market or Western markets.

## **V. China's Retaliatory Capacity Through Export Controls and Controls of Overseas Ports**

Strengthening the international role of the renminbi, developing an alternative financial system, and building an anti-sanctions regulatory framework are defensive in nature. If China were forced to decouple from the dollar-based global system, such defensive measures could provide some relief for China but cannot fully immunize China from collective Western sanctions. However, in the worst-case scenario of a financial war, Beijing would not confine itself to financial defense. It would likely retaliate against Western sanctions with offensive measures. Beijing could respond with two detrimental retaliatory measures: China could impose export controls on some controlled items, including but not limited to rare earth minerals; it could also deny foreign access to critical infrastructure, especially ports, around the world controlled by China.

In October 2020, China promulgated its Export Control Law.<sup>74</sup> The ECL is the first Chinese law that establishes a comprehensive and integrated export control regulatory regime to protect China's national security and interests. It has a provision on "reciprocal measures," which states that China may take reciprocal measures against any country or region whose abuse of export control measures endangers China's national security and interests as assessed by Chinese government agencies. In December 2021, the State Council published a white paper on China's Export Control that states the government strives to build an export control system commensurate with China's international status and in line with the state's national security and interests.<sup>75</sup> The ECL and the follow-up white paper suggest that Chinese policymakers have formed a more mature view of how to strategically leverage China's critical status in global supply chains to protect China's national interests and retaliate against foreign restraints when necessary.

China's export control framework may give the Chinese government a new opening to restrict rare earth exports under a national security exception to WTO rules against restraints on free trade. Deng Xiaoping said in 1992 that

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<sup>73</sup> "Anti-Foreign Sanctions Law of the People's Republic of China" (中华人民共和国反外国制裁法), *The National People's Congress of the People's Republic of China*, June 10, 2021, [http://www.npc.gov.cn/npc/c2/c30834/202106/t20210610\\_311892.html](http://www.npc.gov.cn/npc/c2/c30834/202106/t20210610_311892.html).

<sup>74</sup> "The Export Control Law Passed the Third Review and Will be Implemented on December 1 This Year" (出口管制法三审通过 今年 12 月 1 日起施行), *The National People's Congress of the People's Republic of China*, October 17, 2020, [http://www.npc.gov.cn/npc/c2/c30834/202010/t20201017\\_308292.html](http://www.npc.gov.cn/npc/c2/c30834/202010/t20201017_308292.html).

<sup>75</sup> "China's Export Controls" (中国的出口管制), *Information Office of the State Council of the People's Republic of China*, December 29, 2021, [https://www.gov.cn/zhengce/2021-12/29/content\\_5665104.htm](https://www.gov.cn/zhengce/2021-12/29/content_5665104.htm).



“the Middle East has oil; China has rare earths.” China produces 60 percent of all rare earth elements used as components in high-tech devices and controls about 80 percent of the global supply. China has also maintained a near-monopoly over the complex refining process, controlling about four-fifths of global rare earth refining capacity. Beginning in 2007, China has set rare earths production limits, export quotas, and cut down the number of export enterprises to meet diverse policy objectives ranging from reducing pollution and increasing fiscal revenue to the development of processing sectors. Beijing believed these restrictions were justified under the WTO’s General Agreement on Tariffs and Trade Article XX on General Exceptions for the conservation of exhaustible natural resources and the protection of human health. However, the WTO ruled in July 2011 that China violated international trade rules by restricting the exportation of raw materials, refuting Beijing’s claim that these restrictions were based on environmental grounds. China rejected the WTO ruling, arguing that it was unfair and subjective, exposing the insufficient representation of developing countries in the WTO and its inability to understand developing nations’ problems. The ECL could provide a legal foundation to empower the Chinese government to ban exports of rare earths and refining technology to countries or corporations it views as a threat to China’s national security. If isolated from the US-led global financial system, China could possibly retaliate by restricting exports of rare earths that are crucial for the manufacture of high-tech consumer electronics and sophisticated American weaponries, including F-35 fighter jets, to the United States and U.S. allies. China supplied [80 percent](#) of U.S. rare earth imports between 2014 and 2017.<sup>76</sup> Beijing reportedly has been exploring such an option in 2019, following deteriorating Sino-US relations and an emerging technology war between the two countries. Imposing export control over certain rare earths has been a frequently used tool in China’s economic statecraft repository. The reported threat of retaliation against the United States mirrors China’s ban of rare earths exports to Japan in 2010 following the detention of a Chinese fishing boat captain who rammed Japanese patrol boats in disputed waters near the Senkaku/Diaoyu Island.

Besides its dominance over rare earths, China’s critical position in global supply chains also rests on its emergence as a leading commercial maritime power. Domestically, China has more shipping ports than any other country in the world. Globally, China invested in 101 port projects by 2019, including 37 in Asia, 33 in Africa, 11 in Europe, 9 in South America, 6 in North America, and 5 in Oceania.<sup>77</sup> Three Chinese port operators, COSCO Shipping Ports, China Merchants Port Holdings, and Qingdao Port International Development, had already held stakes in 16 European ports as of 2018.<sup>78</sup> Chinese port operators controlled 10 percent of European shipping throughput in 2021.<sup>79</sup> COSCO, a leading ports operator in the world that carries one-tenth of global seaborne trade with its one-eighteenth of the entirety of global shipping capacity, has stakes in some of the world’s largest ports, including a 67 percent stake in the Piraeus Port Authority. It owns 100 percent of Piraeus Terminal, 85.5 percent of Zeebrugge Terminal, 51 percent of Valencia Terminal, and minority shares in several other European ports. To date, central-government-owned port operators, such as COSCO Shipping Port and CMPort, and central-government-owned constructors and builders, such as China Communications Construction Group and its subsidiaries, remain the primary participants in overseas port projects investment and construction, sometimes with financial participation from Chinese sovereign funds such as China Investment Corporation and policy banks such as Export-Import Bank of China and China Development Bank.

Besides investing in commercial ports, China has also pursued a strategic strongpoint approach to developing dual-use port facilities, which has been a cause for concern in the West. Chinese naval deployments have followed Chinese

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<sup>76</sup> “China’s Rare Earth Supplies Could Be Vital Bargaining Chip in U.S. Trade War,” *Reuters*, May 30, 2019, <https://www.reuters.com/article/idUSKCN1SS2WL/#:~:text=China%20hosts%20most%20of%20the,the%20U.S.%20Geological%20Survey%20showed>.

<sup>77</sup> Zongyuan Zoe Liu, “Tracking China’s Control of Overseas Ports,” *Council on Foreign Relations*, November 6, 2023, [https://www.cfr.org/tracker/china-overseas-ports?utm\\_source=tw&utm\\_medium=social\\_owned](https://www.cfr.org/tracker/china-overseas-ports?utm_source=tw&utm_medium=social_owned).

<sup>78</sup> Joanna Kakissis, “Chinese Firms Now Hold Stakes in Over a Dozen European Ports,” *National Public Radio*, October 9, 2018, <https://www.npr.org/2018/10/09/642587456/chinese-firms-now-hold-stakes-in-over-a-dozen-european-ports>.

<sup>79</sup> Jacob Mardell, “COSCO Takes Stake in Hamburg Port Terminal,” *MERICs*, September 30, 2021, <https://meric.org/en/tracker/cosco-takes-stake-hamburg-port-terminal>.

investments in the ports of Djibouti, Sri Lanka, and Pakistan. While there is no public record of China's plan to turn European ports into Beijing's military bases, a Chinese navy fleet's visit to Greece's Piraeus port in 2017 did raise the eyebrows of some European policymakers. Chinese port acquisitions grant the Chinese government greater control over global shipping and commercial flows, which may pose risks to the ability of foreign governments to secure supply chains.

## **VI. Assess China's Existing Ability to Defend Against Financial Sanctions and Issues for Congress to Consider**

Despite China's intention to hedge against sanction risk, plenty of evidence suggests that China does not have the capability to fully neutralize Western sanctions. The renminbi is far from being a global currency, let alone posing a credible threat to the dollar's hegemonic power. China's proprietary financial infrastructure has limited international coverage compared with SWIFT. Additionally, China's CIPS still relies on interoperability and integration with SWIFT if it wants broader participation of leading global financial institutions. China's anti-sanctions regulatory regime could force Western companies to choose either China or the West. However, it lacks concrete enforcement mechanisms. Finally, the PLA does not have combat experience commensurate with China's prominent commercial maritime power.

While China has been attempting to mobilize a de-dollarization coalition to defend against the dollar-based system weaponized against China through non-Western partnerships such as SCO and BRICS, such a coalition at present remains a vision and cannot provide China with substantive material support to mitigate Western financial sanctions, especially secondary sanctions. The reason is that commodity-exporting countries from which China imports resources to fuel its economy depend on the dollar-based system to price and trade their commodity exports. Their banks remain reliant on the SWIFT-CHIPS system for international payment settlements. However, the basic infrastructure for mitigating sanctions has come into existence. If China could expand the renminbi-based financial infrastructure to cover its major trading partners and convince them to use the renminbi for cross-border settlements, its ability to shelter the Chinese economy from Western financial sanctions would be much higher.

Chinese policymakers have witnessed that Europe's dependence on Russian energy has not prevented the European Union from sanctioning Russia for Putin's invasion of Ukraine. Therefore, from Beijing's vantage point, the West's dependence on China may not stop the United States and its allies from slapping stringent sanctions on the Communist Party of China and Chinese entities in reaction to dramatic events, such as a militarized conflict over Taiwan or in the South China Sea. Beijing views that the risk of Western sanctions against China may increase if the West reduces its economic dependence on China.

Members of the U.S. Congress need to consider that if China and the West were to engage in economic warfare within the next decade, the cost to the entire global markets would be enormous. The United States would not be exempted from the losses. According to a U.S. Chamber of Commerce-Rhodium Group [report](#), if half of the U.S. investment in China were abandoned, it would cost American companies \$25 billion annually in lost profits, on top of a \$500 billion hit to the U.S. gross domestic product.<sup>80</sup>

Members of the U.S. Congress also need to consider that supply chain diversification cannot be achieved overnight, and hastened policies to bring manufacturing back to America cannot achieve its desired goals but raise inflationary pressure at home while increasing protectionist concerns among U.S. allies and partners. It takes time and effort for people to move houses; supply chain diversification is much more complicated than moving houses. If the United States and China were pulled into a financial war before Western companies could be sufficiently independent of

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<sup>80</sup> Daniel H. Rosen and Lauren Gloudeman, "Understanding U.S.-China Decoupling: Macro Trends and Industry Impacts," *Rhodium Group*, February 17, 2021, <https://rhg.com/research/us-china-decoupling/>.

Chinese suppliers and markets, the costs to U.S. companies and American consumers would be enormous, disrupt American people's ordinary lives, and end globalization. While it is hard to determine whose loss would be greater, a forced decoupling of China from the existing global system would put a definitive end to globalization.

I encourage the U.S.-China Commission and members of the U.S. Congress to consider the following policy recommendations aiming at strengthening U.S. financial leadership and keeping China embedded in the U.S.-led system so that the U.S. government can maintain the credibility of its financial deterrence in the long term.

First, Congress should develop mechanisms to offset the potential negative impact of the Rebuilding Economic Prosperity and Opportunity for Ukrainians Act (REPO Act), passed by Congress and signed into law by President Biden, on the role of the U.S. dollar. The REPO Act specified conditions in which the President may confiscate Russian official assets subject to the jurisdiction of the United States to provide aid for Ukraine. While seizing Russian assets for Ukraine aid may be seen as an optimal solution given the current geopolitical circumstances, the cost of unilateral or coordinated confiscation of Russian official assets by the U.S. government with its allies to support Ukraine is likely to lead to diminished trust in the U.S. dollar-based system as well as decreased U.S. leverage over foreign rivals in the long run. To mitigate the negative consequences, Congress should consider legislative measures to strengthen the use of the U.S. dollar in international trade and investment. To this end, Congress can consider empowering the U.S. International Development Finance Cooperation (DFC) in its ability to work with a broader range of partners and countries rather than limiting it to a restricted set of low- and lower-middle-income countries. By expanding the countries and regions where DFC can work, the United States can offer a credible alternative to China's state-led development finance that aims to advance a renminbi-based financial system.

Second, while currently there is no evidence to suggest that China can credibly augment the rudimentary renminbi-based financial infrastructure to be a full-fledged alternative to the dollar-based system, China and its partners that are concerned about Western sanctions will continue deepening their de-dollarization cooperation via new technological means and platforms, such as block-chain based central bank digital currencies. Additionally, the availability of digital assets such as cryptocurrencies and their exchangeability with other assets offer new mechanisms to bypass financial sanctions. Congress should consider legislation to enhance scrutiny of crypto asset transactions, especially stablecoins, to prevent them from being used by foreign entities and individuals to circumvent sanctions. The Financial Innovation and Technology for the 21st Century Act [passed](#) by the U.S. House of Representatives made good progress in establishing regulatory oversight of the digital asset markets in the United States.<sup>81</sup> However, as it stands now, the regulation does not include clear rules on monitoring and restricting the illegal use of digital assets and cryptocurrencies for sanction evasion. Updating U.S. law to combat the illicit use of digital assets is critical for U.S. national security and for maintaining the credibility of U.S. government financial statecraft in the long term.

Third, Congress needs to consider strengthening U.S. critical minerals supply chain security and resilience to support the continued U.S. leadership in a decarbonized global economic system. China currently dominates the refining and processing of key mineral resources critical for the clean energy transition. China has in the past weaponized its dominant position in rare earths minerals and rare earth processing technology to retaliate against territorial disputes and export controls, which makes U.S. dependence on China for mineral resources a national security concern. The United States depends on China for over half of its supply of 25 mineral commodities,<sup>82</sup> making the U.S. economy and industries vulnerable to supply disruptions stemming from China, especially in times of geopolitical tension. As the global economy continues to move beyond hydrocarbon, China's dominance in critical minerals supply chains combined with the Chinese government's attempts to increase the renminbi's pricing power in mineral resources markets could dilute the dollar's centrality in a decarbonized global economy. So far, the United States has taken

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<sup>81</sup> "H.R.4763 - 118th Congress (2023-2024): Financial Innovation and Technology for the 21st Century Act," Congress.gov, May 22, 2024, <https://www.congress.gov/bill/118th-congress/house-bill/4763>.

<sup>82</sup> Zongyuan Zoe Liu, "Critical Minerals and the New Cold War," *The Diplomat*, October 1, 2023, <https://thediplomat.com/2023/09/critical-minerals-and-the-new-cold-war/>.



substantive measures to secure critical mineral supply chains by forging minilateral partnerships in the Indo-Pacific region through the Quadrilateral Security Dialogue, commonly known as the Quad, comprising the United States, Australia, India, and Japan. The Indo-Pacific Economic Framework for Prosperity, as outlined by the White House,<sup>83</sup> also put on its agenda the assurance of critical minerals access as a means to counter China's dominance. In addition, the Biden administration has launched a broader multilateral Minerals Security Partnership (MSP) with critical partners to "friend-shore" critical mineral supply chains. These initiatives are necessary but insufficient to boost domestic supply and secure diversified access to overseas supply in a timely manner. Congress needs to consider streamlining the permitting and licensing process and setting timelines to ensure the timely development of critical mineral projects at home. Congress also needs to consider expanding funding for research and development on alternatives and mineral resource recycling technologies.

Last, Congress may wish to consider China-related legislative measures across the whole spectrum of geoeconomic competition with China to allow fair competition, avoid costly conflict, and prevent unintended escalation. A motivating factor for China to develop an alternative system to hedge against Western sanctions originates from Chinese leaders' perceived insecurity and vulnerability in the U.S.-led global system. It is in the interest of U.S. national security and the American people that Congress takes punitive measures against the Chinese government's unfair practices. However, an overreliance on "sticks" to punish China without offering any "carrots" to incentivize China to behave as a responsible stakeholder in the U.S.-led global system would likely only encourage China to pursue an alternative international trade and finance system further. Congress may wish to supplement its existing laws on China with issue-specific legislative measures that encourage U.S.-China cooperation in areas that do not pose national security risks to the United States while also creating jobs and bringing tangible socioeconomic benefits to communities across the United States. Three areas worth Congress's consideration include environment and climate change cooperation, food security cooperation, and disaster relief cooperation. Neither the United States nor China can effectively deal with the worldwide challenges of climate change, food security, and disaster relief. The U.S. government cannot stop the Chinese government from developing an alternative trade and financial system to defend against Western sanction risk. The U.S. government also cannot make macroeconomic policy decisions for China. However, the U.S. government and members of Congress can take measures to encourage China to stay embedded in the U.S.-led global financial system rather than incentivizing China and its partners to divert trade settlements and financial flows outside of the dollar-based system.

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<sup>83</sup> "Statement on Indo-Pacific Economic Framework for Prosperity," *The White House*, May 23, 2022, <https://www.whitehouse.gov/briefing-room/statements-releases/2022/05/23/statement-on-indo-pacific-economic-framework-for-prosperity/>.

## PANEL II QUESTION AND ANSWER

COMMISSIONER GOODWIN: I'm going to follow the lead of my hearing co-chair and also exercise the prerogative of the chair to kick off the questioning here for our second panel.

Mr. Collins, I have a couple of questions for you. You identified the construction of new overland pipelines from Russia or Central Asia as being one of the warning signals. Just curious now what the composition of their natural gas imports, how it can be broken down between that delivery of those overland pipelines versus delivered to LNG terminals.

MR. COLLINS: I don't have the exact spreadsheet in front of me, but the bottom line is it's maritime dominant at this point. I believe they can take on the order of 55 billion cubic meters a year through the existing lines coming from Central Asia. They are working on a fourth. There's three lines in service right now, lines A through CFPB. Line D is under construction, but it doesn't necessarily look like they are trying to set a world speed record with that. I think there's price negotiations going on, but the line, at least nominally, is under construction now, which is intent to finish it at some point moving forward.

They have the power of Siberia 1 pipeline coming in from Russia. I believe the nameplate capacity on that is targeted to be about 38 billion cubic meters a year. Last year, I think they took 23 BCM through that pipeline, so it's still far from fully utilized. And there's negotiations going on right now over the power of Siberia 2 pipeline, which I'd have to check and see what at least the initial expected nameplate is, but it seems like the price negotiations have hung up there, that the Chinese want a very low price and the Russians want a higher one.

But the total amount of the inbound LNG capacity, at this point, I think is something that it's well above 100 BCM a year. I was thinking it's 130 to 140 of capacity, so they're building over land in maritime, but they're still pretty heavily maritime oriented, and they import about 40 percent of their gas use overall.

COMMISSIONER GOODWIN: Okay. Shifting gears, in your written testimony you talked about strategy, and it was just announced by the NDRC, I think last month, for establishing a system of dispatchable coal reserves with the goal of being able to quickly ramp up coal production on demand and as needed.

The focus of your testimony was stockpiling as a strategic warning indicator, and my question is should we view the establishment of a system of serves or production controls differently than traditional stockpiling, or do you view them all in the same bucket?

MR. COLLINS: That's a phenomenal question. So coal and gas and oil, they're part of a common energy complex, but I chose, and my written testimony, as you point out, reflects that, I chose to treat them differently because coal and its role in energy security and the role that oil plays in energy security in China are viewed very differently because coal, at the end of the day, is an engineering and infrastructure problem, and I think this dispatchable reserve base reflects that where they say, look, we'll accept what's effectively a capital loss to try to build this large and not necessarily consistently used capacity so we have that ability to surge in the event of a whole number of challenges. It may not be necessarily something that's a security contingency. It could be for future heat waves. It could be for future winter storms, like what we saw in 2008. It basically enhances their energy resilience because it's so fundamental to their system.

Oil is something that's viewed as more of a resource problem, and it's more overtly securitized because they are acutely aware that the vast majority of their imports come by sea and, at least in theory, could be subject to interdiction by the U.S. or its allies. So those are going

to be treated and viewed somewhat differently, and that's why we, I think, see the policies and approaches we've seen thus far.

COMMISSIONER GOODWIN: That's helpful. Just real quick, I know I'm almost out of time, what's the impact, I guess staying in the coal sector, what's the impact of all these efforts on the market? You mentioned that coal, the total energy use, it makes up about 56 percent, but electricity generation is much higher, predominantly coal. Demand is certainly going up, you know, the objective being to put another tens of millions of plug in electric vehicles on the road in the coming years underpinned, as you said in your testimony, by China's coal fired electric infrastructure.

So given those dynamics, what's the impact of these production controls, establishment of reserves, and stockpiling on the market, especially given some of the volatility we have seen in the coal fired power generation market over just the last three or four years?

MR. COLLINS: Correct. And, again, another great question. So when you look at the coal space in China, in some ways, when you think about what might be in the mind of policymakers thinking about a dual circulation strategy where they basically bring key inputs much more substantially under their control and they use that to facilitate higher value added interactions through exports and other things with the outside world, the coal sector is really a microcosm of that because China has become so big and you have such a large domestic capacity, and now we're building even this surge production capability. I think, in some ways, it almost becomes its own special market that, certainly, they'll still deal with the global coal market. You still see exports from Indonesia and Australia and places like that. But I think we see more of that lean on the metallurgical coal side.

As far as thermal coal, it's really its own universe at this point. And they'll take volumes from the global market to the extent that they need them, but the way I have increasingly viewed this surge capacity in some of the domestic investment is they really want to push as much of that out as possible and just maximally domesticize the coal system.

COMMISSIONER GOODWIN: Thank you very much. Going in reverse alphabetical order, we'll start with Mr. Wessel.

COMMISSIONER WESSEL: It's the one benefit of having a last name starting with a W on this Commission.

Thank you all for being here. If I could get a fairly quick answer to my first question because I have some others, but, as we look at the potential lesson or one of the lessons from Russia's invasion of Ukraine, I think it surprised a lot of people as to the duration or the durability of the conflict. Have either of the first two witnesses seen an acceleration of stockpiling and other activities resulting from the duration of that, meaning that they think that the ability to sustain sanctions or that a conflict could be of greater duration that they have to plan for more stockpiles?

Mr. Ferreira, can you start?

DR. FERREIRA: Sure. Thank you for your great question. Yes. I mean, the conflict in Ukraine brought agriculture issues front and center and, specifically, you know, the strategic importance of trade of grains and oilseeds. And it caught China right in the middle of an effort to expand its pool of suppliers. Ukraine was regarded as a key actor in their strategy, so that threw a kink in that plan.

But what it did, it didn't alter the course in terms of stockpiling and increasing food, self-reliance in the food space. I think it just accelerated. It really earmarked the Chinese authority about the perils of this food supply change, especially in an environment where some

commodities are literally in the hands of two three producers globally, and it takes one to be knocked out of the system to, you know, bring a lot of external shocks to the markets.

So, yes, so I'll say it just confirmed the course and the need for certain policies that are in place.

COMMISSIONER WESSEL: Mr. Collins.

MR. COLLINS: And I would echo that answer. I guess, to give you somewhat text and analogies, if you think of the Chinese energy system writ large as a Forward F 250 diesel pick up truck, what the war did is it caused them to dial up the turbo boost by a few pounds per square inch. That engine was already running, and it was full, but it's definitely given incentive to accelerate the efforts to try to insulate themselves both from unintended impacts of conflicts elsewhere in the world, as well as seeing how Russia has become the subject of, you know, such draconian sanctions and things, you know, the position of dependency and vulnerability they'd rather hedge against.

COMMISSIONER WESSEL: Okay. Mr. Collins, a follow up question to your signal five, which was the question of identifying, I guess it was jet oil and other fuels in proximity to Taiwan. Is there any current reporting that you're aware of that would indicate sufficient capabilities to execute on a Taiwan contingency, or do we not know?

MR. COLLINS: I mean, I think, you know, tell me if I'm doing a litigator deconstruction of the question that you view as inappropriate, and I'll stop. But if we're looking at energy capacity to execute in terms of making sure there's enough marine fuel for ships, if they decided to move enough jet fuel for aircraft, if we look at the example of what's happened in both Russia and especially Ukraine where they basically created the largest truck fleet in Europe, if you look at interview accounts, to keep their military effort supplied with fuel, China's would be a lot more fuel intensive because it's more mechanized. But I think, in terms of just supplying a military operation, at this point, there's infrastructure there that could do that.

If you're talking about, you know, sort of the broader war effort, that's a much deeper military question, and there's a lot more sub issues with that. But from a narrow energy perspective, I think the basic answer at this point is likely yes.

COMMISSIONER WESSEL: Thank you. If there is a second round because, Ms. Liu, Dr. Liu, I have some questions, as well. But my time is up.

COMMISSIONER GOODWIN: Great. Commissioner Sims.

COMMISSIONER SIMS: Thank you. Thank you all for your testimony. I have kind of a three-part question, and you each can take it in whatever direction you would like to go. I would love to hear, given that the context of this hearing is about China's preparations for, you know, extreme scenarios, perhaps conflict, what is your assessment of their biggest weakness in terms of preparation? Second, what do you believe they assess as their biggest weakness in terms of preparation if you think those are different than your own assessment? And then how aggressively do you see them moving to mitigate those weaknesses?

Dr. Liu, since you didn't get in on the last one, maybe we'll start with you and then go to Mr. Collins and Mr. Ferreira.

DR. LIU: Thank you, Commissioner Sims, for your question. My assessment of China's own assessment of its biggest vulnerability in a Taiwan contingency is the social mobilization of the PLA. And the reason I say this is because, right now, more than 80 percent of the PLA combat forces are what's called a one child generation, and this one child generation not only has the responsibility of raising three children, they also have to raise their, you know, parents on

both sides. So from that point of view, it is extremely difficult for the government to convince the moms, the grandma, the grandpa, this is a great idea.

Now, on the other hand, China's demographic trends is already on the decline. So from that point of view, the Taiwan contingency with the demographic aspect is very much a perceived vulnerability. And I have seen the Chinese government trying to mitigate that by mobilizing its women, and this is recently, there is this TikTok video going viral on the internet, which is China's very first female battleship captain. The interviewer asked her a question, you know, are you afraid of going to war? Her response is, yes, I am afraid and I am afraid that the government does not send me to war.

Thank you for the question.

COMMISSIONER SIMS: Mr. Collins.

MR. COLLINS: So, this time, I'll reverse. I'll start with the more philosophical, and then I'll give you the narrow energy response. So at the philosophical level, I think what Dr. Liu is saying is it's certainly something we watch. When you think of the U.S., you know, for all of our other foibles, we get involved in military operations fairly frequently. We have, you know, sometimes almost societal level crises it seems like, you know, every 10 or 15 years now. And so even if we're viewed as chaotic, we have been out on the football field and we have shown that we can take hits and we're resilient and we find ways to recover. And I think maybe one of the paradoxes of the relative, at least, outward impression of order that we see from China is there's not the same level of that kind of testing, so we don't really know how things would go until it actually happens.

On the more narrow energy front, if we look at kind of the four big areas. You have renewables, which I put in their own category because they're intermittent and they have to be backed up by battery and fossil resources. Those are set aside. Coal, they're working very aggressively, as we've already discussed, to make sure that they can ensure energy abundance and avoid shortages. Natural gas, they're basically working to bring inventory and stockpile coverage levels up to something closer to what you might see in the United States or Europe. Oil, I think, is the most acute vulnerability. This is my own assessment, but I think, when you delve into the Chinese writings and, in particular, where you look at where their actual emphasis has been expressed through action, it's been on the oil and oil storage sector.

COMMISSIONER SIMS: Mr. Ferreira.

DR. FERREIRA: For the food security space, the Achilles' heel for the PRC truly is the dependency on imported oilseeds. The thing is, in terms of, you know, in terms of how the PRC government is approaching this, first, it has to be acknowledged that we don't know the size of their stockpiles, as I stated before. It's a state secret. But even from conversations with colleagues, even the central government probably does not even know the true size of those stockpiles. I mean, they're scattered across the provinces. There's issues with data and accuracy of data and reliability of some provisional data.

So in terms of how to address this issue, the PRC knows there's no quick solution to it. And, actually, the way they address it is just like they're eating the elephant one bite at a time, but none of those solutions will ever, you know, unlikely will fix the issue.

And I give you an example. So South America itself has enough, produces enough soybeans to supply the annual needs to China. However, that will put them in a very precarious situation because they will literally depend on the weather and crop conditions on one part of the world, rather than having a diversified pool of suppliers. So they're aware of it, so they're



approaching this issue with multiple layers of policies and angles to it but an understanding that there is no way they're going to overcome this fundamental weakness.

COMMISSIONER SIMS: Thank you.

COMMISSIONER GOODWIN: Great. Commissioner Schriver.

COMMISSIONER SCHRIVER: Thank you. And let me add my thanks to the witnesses. This is really a fascinating discussion spurred by your excellent statements, so thank you.

You know, it occurs to me that really the only way there's war in Asia is offensive PLA action. I mean, it's absurd to think Japan is not going to attack China, Philippine is not going to attack China, Taiwan is not going to attack. I know they'll wrap it all up in defensive sovereignty and core interests and the like, but these moves towards resilience really strike me as, you know, objectively moves towards preparation for offensive military action. And so, for my mind, that creates a challenge for us to ensure that deterrence holds.

And so I don't know if this gets outside of your remit in terms of deterrence theory and all that, but I'm wondering if you have an opinion in each of the areas you addressed. Are there things we should be doing to demonstrate further that we can hold them at risk? Should we be exercising blocking the Malacca Strait? Should we be talking to Ukraine, who can't be very happy with China right now, given their backing of Russia, about what a collaboration on a food security initiative might look and so I think you get the point.

Are these potentially valuable tools for us in terms of a deterrence strategy, or, in your opinion, would it only fuel more paranoia and then we'd start to move on your indicators, and we're sort of in a different kind of security dilemma in that regard? And start anywhere.

MR. COLLINS: If you want, I'm happy to sort of take a first crack at that. Yes. So it really gets into that fundamental dilemma of how can I lean far enough forward to deter you but not so far forward that it makes you want to go ahead and launch and initiate conflict or somehow intensify that spiral.

When we look at the energy side, I think you have to really bifurcate it. If we're looking at the electricity system, that one is very well insulated because of the coal, renewables, and hydro intersection. I mean, you get marginal contributions from natural gas. Oil doesn't really factor into that.

Anything that holds the electricity system at risk is, I think, by nature, going to be fairly escalatory because it either will require kinetic action within PRC borders or destructive cyber actions. And, you know, it's something where we would obviously be not only would it be escalatory in and of itself, but it would expose us to retaliatory action potentially of a very similar nature.

When you think about oil, and I think this also touches on the food question to some extent, too, because so much comes by sea, there's a couple of different ways to look at that one if you're thinking about the rungs on the escalation ladder as you try to show, okay, what can we hold credibly at risk. If you think about using mines to close waterways and potentially curtail imports that way, that's one that's probably medium escalation. But when you're looking at, for instance, refining and storage of crude oil, particularly if you're trying to accelerate the outcome of whatever pressure that you're exerting or at least you want to show that that's something that you could actually do, that, again, brings you back into the territory of having, into the realm of having to plan your strikes on the Chinese mainland, which, you know, I know there is a very robust in D.C. and elsewhere now on this. But it's one, again, that you get into fairly high escalation territory quickly, and we also have to comprehend, and I say this sitting down on the

Gulf Coast here, that we, ourselves, have real vulnerabilities that they have increasing capabilities to exploit, as well, and we have to be cognizant of that.

COMMISSIONER SCHRIVER: Thank you.

DR. LIU: I can quickly pick up on that. I would also want to say that deterrence really we need a long term deterrence, and that means we need, as a country, to have long term exposure so that we can have leverage in the long run. And right now, a lot of China's perceived insecurity, in a way, is very much can be said as an overreaction to a lot of the defensive measures that the United States is taking.

So I do think that punitive measures against China's unfair practices are necessary and indispensable. But over reliance on sticks to punish China perhaps would fuel their additional paranoia.

But thank you very much, Commissioner Schriver, for your excellent question. That's totally legitimate.

COMMISSIONER SCHRIVER: Mr. Chair, if there's time, I'd like to hear if Mr. Ferreira has any.

DR. FERREIRA: Sure. In the agriculture space, I think remaining a reliable and affordable supply of food products to the PRC is probably the best deterrence that we can design. We are intrinsically connected by this massive trade, and a conflict with the PRC obviously would result in the loss of that market and will have significant structure shocks into our culture sector.

Now, if we want to be proactive and prepare ourselves and lean forward, we'll have to start designing policies of what to do with those surplus. We already, after the trade war, we've already started to diversify our exports to markets away from the PRC, and we've been fairly successful in finding new buyers for our products. But it's something that we had to be forward thinking about if that scenario materializes, so our farmers and rural communities are not caught off guard.

MR. COLLINS: Commissioners, I just had a ten second supplement, if you'll allow me, that I realized I had left off. I think we have to distinguish between basic commodities like food and energy goods and higher end things like semiconductors, AI algorithms, and those types of goods that could empower the Chinese in a competition with us. We have to remember that, during the Cold War, even during the deepest, darkest parts, we traded grain with the Soviet Union to a significant degree, and we still won that competition. There's a lot to be said for an abundance agenda that leverages our food and energy production capabilities here as a key part of our competitive strategy.

COMMISSIONER GOODWIN: Great. Thank you. Vice Chair Price.

VICE CHAIR PRICE: Yes. And thank you all for your participation today. This is very, very interesting. And my first question was actually just answered by Mr. Ferreira, so I'm going to go on.

A quick question to Mr. Collins. You gave us a list of warning signals, and you began to answer Commissioner Wessel with regard to one. But on your whole list, do you see a place where we should be very focused right now?

MR. COLLINS: Certainly. So I'm going to glance quickly at it here, so I can give you a reasonably productive response. I think if you're taking all of this and you're trying to distill, okay, what should action item number one be that, you know, we start on, proverbially speaking, the minute we get off the call here. Really taking an integrated remote sensing-based view of some of the energy inventory management practices, especially to the extent that we can go back



in time. There is great satellite data, and to put in a plug for Ursa Space Systems who I have worked with before. We did a study back before the pandemic where we looked at the overland pipelines and the accompanying tank storage facilities to get a sense of how those were managed in response to flows, to changes in global oil prices, and so forth. I think a much more comprehensive set of analysis like that using remotely obtained data that the PRC government is not able to easily obstruct or cut off flows of to give us a good basic domain awareness. That's a critical first step because, until you have a baseline, it's hard to really know what might be a deviation worth worrying about and what's not.

VICE CHAIR PRICE: Thank you. Dr. Liu, a question about China and evading sanctions from Iran. So China is buying oil from Iran, evading U.S. sanctions. How do you see or do you see a direction around this or a way we should proceed so that they're not undermining our goals of those sanctions?

DR. LIU: Thank you very much, Vice Chair Price, for your question. Yes. And with regard to specifically China enabling sanctions evasion, I would say it's not necessarily the big Chinese banks because the big ICBC Bank of China, those are very much plugged into the U.S. led global financial system.

However, there are more than 2,000 small and medium sized Chinese banks inside China that are not plugged into the SWIFT system. In other words, they do not necessarily have the pre-established connections with the U.S. dollar-based system. From that point of view, if they never had it, there is no fear of losing it.

So by this extension, I think, from a U.S. perspective, on the one hand, we need to closely work with our allies to strengthen our secondary sections and send a clear signal to China that is not just the existing system important banks that are subject to U.S. sanctions but we are also going to put a close eye on monitoring the transaction flows of smaller and medium sized Chinese banks.

Thank you very much, Vice Chair Price, for your question.

VICE CHAIR PRICE: Can you just expand on that a little bit, unless anyone else wants to jump in on that matter of evading U.S. sanctions? Do we really have those kinds of if we could find other ways for secondary sanctions, do we have the capacity to really impact on those banks?

DR. LIU: Right now, for the limit for us to exercise sanctions or secondary sanctions is really about the transparency and information availability. So in order for us to understand how China conducts, especially domestic banks, how they are facilitating transactions across border, there are a lot of things that can be done through the U.S. Treasury part, in particular there are several working groups that have already established between Treasury and the Ministry of Finance, so we can press the Chinese government to give us more information in terms of the transaction level information at the smaller banks' perspective.

And then, secondly, what we can do is to strengthen our monitoring of smaller banks in particular in some specific regions. One such example would be Jangseong and, in particular, with regard to collective sanction against Russia for two reasons. The first reason is that, even since the West issued collective sanctions against the Putin regime, the local party chief in Jangseong province, they issued a statement saying that China would, Jangseong would continue open up to the north, meaning Russia. And, secondly, Jangseong Bank is one of the smaller banks, small and regional banks, that joined China's CIPS, early joiners.

So, from that point of view, what we can do is to have our banks, once we detect this kind of monitoring local government level statement, once we detect this kind of overt statement

supportive of Russia, Iran, or North Korea, our banks could potentially cut our support through these banks.

VICE CHAIR PRICE: Thank you very, very much.

COMMISSIONER GOODWIN: Thank you. Commissioner Miller.

COMMISSIONER MILLER: Thank you. And thank you all for your excellent testimonies. Dr. Liu, I have always been a big fan of your commentaries, and this testimony today is no different. But I would like to push you on one aspect. You talk about the petro yuan and something very closely related to it, which is what you call the gas yuan, the denomination of these energy commodities in the yuan instead of the dollar.

The problem historically with the petro yuan and one would think the gas yuan is that nobody wants it. If you're a Saudi or an Emiratis prince, you don't want to have your wealth in a currency like the yuan that has no liquidity. You want to have it in the dollar.

Now, it's easy, of course, to assume that maybe Russia or Iran or someone else might be a captive market. But I'm very curious as to what you see as sort of the best-case scenario for a gas yuan, not that it can exist but are we talking about something that is looked at on the margins, like adding more incremental share of the Canadian dollar or the Australian dollar? You'll take a nibble of it, but you don't want more. What's the high upside scenario for a gas yuan or petro yuan in your estimation?

DR. LIU: Thank you, Mr. Miller, for your excellent question. The difference between petro yuan versus natural gas yuan is that any particular why China actually would put more attention developing natural gas yuan instead of petro yuan is specifically because, right now, 80 percent of the global economy is powered by hydrocarbon and oil in particular, and oil is traded in one global market. It doesn't matter where we trade. It can be a Singapore, Hong Kong, Dubai, Texas, or London, there is only one global market.

However, natural gas market is very much fragmented. And for a long period of time, Asia had the so-called Asian premium, meaning Asian natural gas prices have always been much higher than the United States. And on top of that, Asia, so far, does not have a regional natural gas pricing hub or trading hub. So from that perspective, if China were able to be one of the region's, the largest natural gas importer and, on top of that, China has already developed a natural gas trading future using renminbi. And if China could basically create a consumers market and power that, couple that with a pricing mechanism, it is very likely that China can basically capitalize on this energy transition. And on top of that, natural gas is considered as a sort of green transitional gas.

I hope that answer your question. Thank you.

COMMISSIONER MILLER: Thank you. And let's keep talking yuan then. Here's something a little bit provocative. I think that we, as U.S. policymakers, are often asked about the digital yuan, but I guess my question is why should we even care about it? Obviously, there are some implications with money laundering sanctions of Asians. Those are real, of course. But the problem with an international yuan has always been that a closed capital account means the Chinese government cannot allow the yuan too much liquidity. It can't allow it, or it will lose to gold in quantity, or it will lose control of the financial system. So why do we think that the digital yuan will be treated any differently?

DR. LIU: Thank you, Mr. Miller, for this excellent question. I really do not think the digital yuan would be any different, except that it runs on a totally different financial infrastructure. The connection between CIPS in itself is not only a messaging but also settlement system. And on top of that, with the support of SWIFT and NBIS, China is essentially

establishing a domestic transaction data center, meaning the data is going to be stored inside China. From that point of view, as well as the Chinese does not give us any transparency, there is limited method for us to know it.

And then, compiled with CIPS with digital, again, it basically means faster transaction at lower cost, so it basically augments the attractiveness of the renminbi for its trading partners.

And I would 100 percent agree with you in terms of the limited attractiveness for Chinese trading partners to hold the renminbi as a reserve currency. I do think that trying to broaden the use of renminbi as trade and settlement currency is much easier than making renminbi a reserve currency. However, considering China as the world giant Amazon or, sorry, say like a Costco, and, basically, what the Chinese government has done by offering, or the PBLC has done by offering tons of renminbi currency swaps, it basically offers a store credit for all its trading partners. Now, limited in nature of store credit is that you can only shop at that store. But as long as trade can be executed, that basically mitigate a lot of the sanctions that may cut China away from the international liquidities market.

COMMISSIONER MILLER: Great. It looks like I'm out of time. Dr. Liu, thank you for your responses.

COMMISSIONER GOODWIN: Thank you. Commissioner Kuiken.

COMMISSIONER KUIKEN: Dr. Liu, let's keep talking about digital currency for a second. So what could the U.S. do with respect to the U.S. dollar on the digital front that would potentially change the dynamics with respect to the items you were just talking to Leland about?

DR. LIU: Thank you very much, Commissioner Kuiken, for your question. I do think that, in many ways, the United States or the dollar system is already very much digitized. It's just that here in our country, we are not a country, we are not a system that prides government intervention. Instead, our private sector have already actually driving the innovation.

I'll give you one example, which is now I am doing this testimony from Germany. It does not matter where I go, I can use my U.S. credit card attached to my phone, and I can just pay from that point of view. Now, this is not a central bank digital currency, but I am paying in U.S. dollars. So from that point of view, I think the United States, for us, we should focus on doing what we are good at doing, meaning empowering our private sector rather than making ourselves to, you know, mimicking what the Chinese government has been doing. In a way, I think we are basically in a position to copy the Chinese model, and that may not necessarily work to our benefit.

And on top of that, I do think it is necessary for Congress to consider legislating measures to regulate the transaction of digital currency, in particular stablecoins. And the reason is because stablecoins, there is a lot of evidence suggesting that stablecoins have not only been used in money laundering but also be used for bypassing sanctions.

COMMISSIONER KUIKEN: That's helpful. Thank you. Let me ask Gustavo and Gabe essentially the same question but with respect to your areas of expertise. So as I was listening to both of you, you know, talk about sort of the end product, I was trying to think about the inputs and the things that we need and require to maintain the industries that you were talking about.

So in the agricultural industry, right, we obviously need seed, fertilizer, and a variety of other things to maintain that market and sort of produce those goods. Who sort of owns the supply chain, I guess, for that, and how should we think about that with respect to China and then our own strengths and weaknesses? And then same question for you, Gabe, but obviously with respect to the energy industry, whether it's coal or crude.

DR. FERREIRA: Thank you, Commissioner Kuiken. Excellent question. When it comes to food and agriculture, really it's a tale of two markets.

So when it comes to inputs, the U.S. has a clear dominance in seeds. This is something that the PRC is very aware of. They're well behind the technology level that the few producers have both in the U.S., Brazil, Europe. So that's something that really they're investing very heavily and focused to try to close that gap, sometimes through just sheer research but sometimes through illicit methods, such as stealing seeds from other countries.

But on the other flip side, we do depend and we have depended on key agricultural fertilizers from PRC. And during the Ukraine war, there was both Russia and China began to curb their exports of those key agricultural inputs to the U.S. and other countries.

The way you really work with that cultural market or any other market, it still takes some time for us to find alternative suppliers, and we did that. We engaged with Canada and other key partners. They are now somehow filling up the gap left by those two nations.

So there's this story that both nations depend on each other for different types of inputs. Over.

COMMISSIONER KUIKEN: Thank you, Gabe.

MR. COLLINS: On the energy side, there's a very tight nexus in the wind and solar space when it comes to dependency on PRC centric supply chains. I think when we get into the fossil space, it really depends what you're looking at. If you're looking at actually converting coal into usable energy and you're somewhere in the world you want to build a coal power plant, basically the best technology on the face of the planet at this point comes out of China because they have honed the experience building, at this point, roughly, 1.3 terawatt sized generating base. I mean, it's phenomenal. It's over six times the size of what our coal fired power base is in the U.S. or what exists in India for that matter.

When it comes to oil and gas, we're a massive center of global excellence because not only do we have the resource base, and we're not unique in that the Saudis have resources, others in the Gulf, the Russians but when you think about the marriage between the resource base and the technology that enables you to get at it under various conditions, the United States really stands head and shoulders above the others there.

And I think, when I think about energy and how it factors into the U.S. China competition, it's less about whatever direct bilateral linkages might exist and it's more about the kind of system and the way we want to do things globally and sort of how our system looks to countries that may be on the fence, you know, if you're thinking Indonesia, places like that, versus the way the Chinese system looks. And to kind of bring that full circle, that's why when you think about the U.S. and the implications of having what is fundamentally a restrictive energy strategy, which we have had for the last few years, versus one that really embraces an energy abundance approach and says we're going to be productive in all fronts, we're going to do oil, we're going to do gas, we're going to do renewables to the extent that we can, and we're also going to do advanced nuclear, it's something that makes us so much more compelling globally as a partner.

COMMISSIONER KUIKEN: Thank you. It looks like I'm over time. Over to you, Chair Sims.

COMMISSIONER GOODWIN: Thank you.

COMMISSIONER KUIKEN: Oh, no, Chair Goodwin. I'm sorry. Chair Goodwin. I apologize.

COMMISSIONER GOODWIN: Commissioner Helberg.

COMMISSIONER HELBERG: Thank you. Dr. Liu, if China has pursued a policy on the defensive side of becoming self-sufficient to protect itself from being cut off from strategic foreign inputs, have they also sought to make other countries more reliant on key Chinese inputs on the offensive side?

DR. LIU: Thank you very much, Mr. Helberg, for your question. Yes. And, in fact, a couple of years ago, a Chinese government document stated that China intends to make Chinese industries and Chinese companies indispensable across global supply chains. And, in fact, to a very large extent, China has already succeeded in doing that because, by a lot of measures, China is the only country in the world that has the complete supply chain across almost every industry.

But I think the critical part of that is that not just China's control or dominance. When geopolitical tension is low, we do not really care about that too much. However, I think, right now, with the influence or the coming back of geopolitical tensions, perhaps what we used to consider as good, meaning economy of scale, is no longer the best way for us to build resilience because resiliency means we have to have backups.

So, from that point of view, I do think you are right that China has pursued efforts along the entire supply chains. Right now, in a way, the electric vehicle or batteries is one good example. But part of the reason is not necessarily because China wanted to have this domestic over capacity, but, because of weak domestic consumption, it becomes overly reliant global market. So, from that point of view, China's dependence on global market is, in fact, China's vulnerability.

But thank you very much for your question.

COMMISSIONER HELBERG: Is it the consensus of this panel that China is effectively preparing for war at this point? I know that a number of you have talked about different signs that would support that thesis, but, on a first principles level, does everyone on this panel agree that China is preparing for war?

DR. LIU: I guess I'll start by saying that I do think China is preparing for the worst-case scenario, but the mixed bag of Chinese efforts, in my assessment, is that China is trying to reduce and focusing on reducing its vulnerabilities, rather than actively pursuing a war.

COMMISSIONER HELBERG: What is that worst case scenario if it's not a war? Are any of you referring to the war?

DR. LIU: The worst-case scenario could be a miniaturized conflict over Taiwan. It could be in the South China Sea. It could also be some other espionage, industrial espionage, activities that lead to the West sanctions against China.

MR. COLLINS: Yes. I mean, I think, in terms of the worst-case scenario, I'll give you a more blunt answer, is that is war. But I think, in terms of what we're seeing, and the other panelists may differ here, to use a football analogy, the Chinese are eating well, they're lifting weights, they're running, they're testing to see how their pads and helmet and everything feel. But are we at the point yet of a live full contact scrimmage? I don't think so, but they're definitely putting all the preparatory steps in place where, if you need to step out on the field and it's full tackle football, everything would be ready to go, I think, is at least, if you're thinking about what their core objective is, is to have that capacity in place and usable.

DR. FERREIRA: I second the comments from my two colleagues. When it comes to food security, China has been doing this for thousands of years. They've been building stockpiles. Different emperors had that policy in place to prevent famines and other calamities. So no change there.



But what's happening is, I think, China has a legitimate interest of becoming food secure, like we are, right, where we are, you know, a very well served country when it comes to natural endowments and food availability. So I think that is a legitimate aspiration by the PRC.

So you've got to be careful to confuse preparation

COMMISSIONER HELBERG: It's not just food. It's energy, it's currency. It's basically every area, the technology supply chain. I mean, it goes well beyond just food, does it not?

DR. FERREIRA: Well, yes. It's part of a broader resiliency effort, and I think food is one piece of it. But, again, from my angle, from my foxhole, it's hard to distinguish is this a preparation for conflict or is this a legitimate effort to become more resilience to food shocks and to climate change. So we have to be a little bit careful. Again, on the food security space, we've got to be a little bit careful to distinguish those two lanes.

COMMISSIONER HELBERG: All right. And just because we're a little bit over time, I had one last question. So on this topic of China pursuing resilience, is it fair to say that China is effectively pursuing a policy of decoupling from the United States and are they farther along that path of decoupling than we are from them?

MR. COLLINS: So to your first question, I'll give my probably my shortest response of the day is yes. In terms of assessing the degree of decoupling, I think you really have to break that down by sector and space, and there's not a one size fits all answer to that part of the question.

DR. FERREIRA: And from my end, I think, curiously enough, I think the two nations are decoupling at the sense in one pace. They both are trying to find alternative markets in terms of suppliers, but I think we're going to reach a threshold in where that decoupling is going to stop because there's no other ways around and we still are connected by trade. And just remember the PRC are very opportunistic food buyers, and they're always going to go sometimes, prices will trump even national security. They're known for that. So I think that decoupling is going to hit a wall when it comes to food security.

DR. LIU: I think the narrative of self-reliance has sort of changed a little bit. Again, President Xi Jinping is not the first one to talk about self-sufficiency or self-reliance. The idea existed. And on the technical aspect, I would say President Hu Jintao really was the guy to emphasize China needs to climb up the value chain so that China can own its own IPs. So it was in that context that China was pursuing self-sufficiency or domestic innovation capacity. But, again, if we push China too hard, China may over react, and it would inevitably lead to not just government initiated decoupling but companies in their global distribution of the supply chains. Companies will start to do that, and we already see this happening.

So there are two levels of things going on. One is there's a government initiative, and, on the other hand, there are companies following, which can be described perhaps as data. But thank you very much for your question.

COMMISSIONER HELBERG: Thank you for the time.

COMMISSIONER GOODWIN: Thank you. Commissioner Glas.

COMMISSIONER GLAS: Many thanks to all of you for your testimony. Dr. Liu, I wanted to start with you. You touched on this in some of your previous comments about securing our financial systems. You noted in your testimony that the House passed the Financial Innovation and Technology for the 21st Century Act that had some reforms but didn't go far enough, and you noted that there are not clear rules in that legislation on monitoring or restricting the illegal use of digital assets and cryptocurrencies for sanction evasion.

Having not followed the details of when that bill was being debated or discussed, is there anyone who would be opposed to that? Was that just an oversight in the legislation? Because that seems to me like a glaring hole in our ensuring financial security.

DR. LIU: Thank you very much, Commissioner Glas, for your careful read of my written testimony and for your attention. I wouldn't say that is because of our legislators' oversight. Perhaps the bill was in the broader context of regulating digital asset, and we tended to focus more domestically. Therefore, perhaps, that lead to a lack of emphasis on the aspect of the international transaction implications.

Thank you, Commissioner Glas, for your attention and your recognition of the importance of this issue, and I do hope that, with your leadership, members of the Congress could recognize the importance of regulating digital assets, in particular stablecoins, for anti-sanction purposes. Thank you.

COMMISSIONER GLAS: Also, just give me a sense of the framework.

DR. LIU: The framework in terms of? Hello?

COMMISSIONER GOODWIN: Did we lose Commissioner Glas? There she is.

COMMISSIONER GLAS: Sorry about that. Sorry. I don't know what I did or didn't do. So you talked about the financial resiliency, and I get a sense of urgency related to this because that is just critical to our nation's infrastructure. Do you believe that lawmakers are doing enough here? What would you do first, and how broadly would you, you know, define, like, where would you start?

DR. LIU: Thank you, Commissioner Glas. I think you touched upon perhaps the most important issue for legislators, which is prioritization. And as a nation, we have a lot of issues, but I would begin with regulating the digital asset perspective. And the reason, the very reason is because of the fact that China and its partners are building an alternative system that is unparalleled, that is unprecedented. And it's not just the digital. It runs parallel with the dollar-based system.

So, from that point of view, I would hope that Congress would pass legislation or at least consider strengthening, on the one hand, continuing to empower our private sector for their financial innovation; but then, on the other hand, really we need to strengthen our monitoring of the transactions and the interchangeability of all the varieties of a critical asset. There is not just national security but also financial security, and financial security is very much important for the U.S. dollar going forward.

And then, secondly, I would also want to offer China enough incentive in addition to sticks. Again, I do think sticks are important and indispensable, but, right now, what we see and the motivation for Chinese policymakers to actively expand this alternative system is because they are very much concerned about their vulnerabilities. So we need to do all that we can to embed China in the existing system, rather than offering them a lot of incentive to divert away, because I'm afraid that, if we push them too far, they might divert a lot of transaction flows away from the dollar based system and we are going to lose our long term leverage.

Thank you very much, Commissioner Glas. I think the issue of prioritization is very important.

COMMISSIONER GLAS: Thank you.

COMMISSIONER GOODWIN: Thank you, Commissioner Glas. Commissioner Friedberg.

COMMISSIONER FRIEDBERG: Thank you very much, and thanks for all of our witnesses. This has really been an excellent panel. Mr. Collins, maybe I could start with you. I'm



taken with your football analogy. I wonder do you have a sense of how close CCP officials and planners believe they are to being ready for game day, at least in the energy sector?

MR. COLLINS: That's a phenomenal question. I'll never apologize for being a Texan, but it does creep into some of the analogies and things that we use.

I think it's the kind of thing where the honest answer is you probably never really feel fully ready. But if you're benchmarking to where they were four or five years ago, you know, maybe just immediately pre-pandemic, there's been a huge amount of progress made because, if you harken back to the summer of 2021, there were significant electricity shortages within China. That's one of the reasons we've actually seen coal production shoot up.

And so if you look at what's been done on the domestic electricity front and you look at the continuing pace of oil storage build out, the buildup of natural gas storage, and you sort of ask where does this put you, A, in terms of climate and natural disaster resilience and then, B, where does it put you in terms of resilience in national security contingencies, the progress is great. Is it something where they feel like they're ready for a live scrimmage or full contact football game? Maybe not quite there yet, but they're much closer than they were even three years ago.

COMMISSIONER FRIEDBERG: Thank you. You include some very interesting calculations, which I think are based on an article that you wrote in 2018 about the extent to which China might be able to replace or provide its oil needs even in the event of a maritime blockade. And if I read it correctly, you conclude that China, in fact, is already in pretty good shape in this regard and could have oil sufficient to operate for two to four years.

Is that your judgment? Have they solved the oil vulnerability problem?

MR. COLLINS: I would not at all frame it as solving. The reason for that is the single step in that chain of calculations that you're referring to that had the biggest impact was rationing, and that comes at the cost of domestic economic performance.

And so if you're thinking about a situation where, basically, what's on the other side is a binary question of national or regime survival or not, then you could argue that they're very close to a solution. But if you're thinking about this in terms of more intermediate contingencies that could affect energy flows and how they respond to those, they probably don't feel as ready.

COMMISSIONER FRIEDBERG: Okay. Thank you. Dr. Liu, let's see if I could summarize what I understood you to say. China may have been interested and may still be interested eventually in having renminbi used as a reserve currency. They talked about it back around the time of the global financial crisis. They seem to have given up on that idea, at least for the time being, for reasons you suggest, and they focused on trying to find ways in which their currency can be used to settle international trade. First.

Secondly, the extent to which they're able to do that seems to be quite limited, and Commissioner Miller asked you if you had an estimate of how much of global trade could be eventually conducted in renminbi. It seems like they're limited, at least for now, to kind of a block of countries which are under sanction by the United States and its allies. And so that's a pretty small portion of China's overall trade that might be insulated from the ability of the United States to impose sanctions. Is that correct?

DR. LIU: Thank you very much, Commissioner Friedberg, for your question. I do think that your overall assessment is correct, but I would put a small footnote in terms of China's ability to mitigate the sanctions in the sense that, just from a trade perspective, right now, and this is oftentimes supported by China government officials, which is China is the largest trading partner for over 100 countries in the world. And if you just think about that, combine that with

the ability for the Chinese Central Bank to offer currency swaps to facilitate the trade transaction and layer on top of that with a parallel system that is denominated in renminbi rather than the U.S. dollar. And on top of these three layers, you also have the transaction data center located in China.

So, from that point of view, I do think China has the basic infrastructure for China to conduct sanction time. Trade is there, is ready to go. It's just a matter of time for them to seal it up.

And has this system been tested ready to go? Yes. You know, two Chinese state-owned oil and gas champions in the past year have completed the transaction of oil and gas import using renminbi settlement, as well as digital renminbi. So, from that point of view, I do see the infrastructure is there to go. It's just a matter of time for them to have enough incentive to scale it up.

But thank you very much for your attention.

COMMISSIONER FRIEDBERG: Okay. Thank you.

DR. FERREIRA: May I just add a 20 second

COMMISSIONER GOODWIN: Very quickly, if you can.

DR. FERREIRA: When it comes to food security, I believe this is an area where the PRC knows they're not fully ready to go. And both government and academic communities are brutally honest about it. This is one area they realize their shortcomings.

So I think the question that remains open is whether modern China and the middle class will be willing to endure hyperinflation in the food sector or, worst case scenario, food rationing. This has been quite a time since the great famine, so this is a whole generation that it's dying slowly that experienced those hardships, and we don't know if this narration will be, how they will react to such scenario. Thank you.

COMMISSIONER GOODWIN: Thank you. Last but not least, Chair Cleveland.

CHAIRMAN CLEVELAND: So I want to pull a little bit on this and maybe challenge what Commissioner Friedberg was saying. Mr. Ferreira, you mentioned that you thought that one way that China might consider this potential food scarcity issues, water scarcity and pollution and a number of the other issues that are affecting access to food, would be to work with Brazil and Argentina to pressure them to cooperate with us.

At this very moment, China is renegotiating the giant debt that they hold of Argentina. So I'm curious how, Dr. Liu and Mr. Ferreira, how these two issues are fused because it seems to me we are paying attention to some big global trends but, on a transactional basis, China may be asserting a leverage in our backyard in Argentina, and that that is not only substantial, the country is teetering as a result, there are also national security implications in terms of facilities that are in Argentina.

So if the two of you could kind of pull together for us how Argentina might be a case study of moving beyond what Dr. Friedberg described as countries that are aligned in sanctions. Because Argentina is not under any sanction. It just has a lot of debt and poor economic management policies.

DR. FERREIRA: Sure. I can start with that. Great question, Chair Cleveland. It's something I have been trying to, you know, bring up to policymakers' attention that this is not, when it comes to agriculture trade, this is not a bilateral issue. It does involve other key players. And in order for us to be effective, at least on our side or at least to have a neutral posture where they follow rule of law and international diplomacy. It's not a coincidence that as soon as President Lula won the election, the PRC sent immediately a high-level delegation to Brazil. It's

not a coincidence that the PRC just lifted restrictions of GOOD MORNING corn imports for Argentina. Those are all very much part of a concerted effort to expand those relationships with those countries. I mean, we're now jumping to the classified space, but, at this time, PRC controls substantial sections of the agriculture supply chain in Brazil. They have been making very large investments across farm all the way to the ports. It's all part of it.

And, again, there is so much we can do. I mean, these are market driven, as well, so there's so much we can influence. But definitely we need to be aware and need to really strengthen our relationships with our two southern neighbors. Thank you.

CHAIRMAN CLEVELAND: Dr. Liu.

DR. LIU: Commissioner Cleveland, thank you very much for your question. I appreciate that you raised the issue of Chinese involvement in sovereign debt and, in particular, the case of Argentina. And you are right. Argentina is a unique case in that, literally, last November Argentina resorted to its currency swap with the Chinese government, and it repaid part of its debt to the IMF using renminbi instead of the U.S. dollar, and that is not the first time. So you are right that this is an important case showing that China is, in a way, very active in U.S. backyard.

I wanted to take a step back also by saying that this is also an opportunity for the United States and its allies to socialize China and manage China's behavior in international debt negotiation. For a long period of time, China has been offered the opportunity to join the Paris Club, but the Chinese government has frequently rejected the invitation for two reasons. The first reason is that China is considered as a developing country in chief, so, from that point of view, the Paris Club is viewed as a rich country club. So if China joined, China is going to have an identity crisis. And then the second reason that China does not want to join is also because there is this international the diversification of the international debt or international creditors and, in particular, the private sector participation in sovereign loans. So, from that point of view, I do see that this is an opportunity for the United States to offer incentive for China to stay in the international debt negotiation, and I do think that we have made progress and, in particular, with Secretary Yellen's visit to China and trying to work with the Chinese government in international debt negotiation.

But, overall, I do think that we perhaps overestimated China's ability, in particular its domestic ability, to reach agreement. The thing, I think, perhaps, for us, viewing from America, we tend to think that China can present itself as unit reactor. But when it comes down to international debts and negotiations, because the sphere of participants is so vast, inside of China there is, so far, no single player or single ministry or bank can say, well, this is what we are going to do.

And then, finally, no Chinese bureaucrats are going to say, you know, I am willing to offer myself as the sacrificial goat, the sacrificial lamb, to say, you know, I signed the deal to wipe off the debt for a particular country. That would be career suicide.

But, again, this is an opportunity for us to socialize China and offer China incentive to be embedded in the U.S. system. Thank you very much for your question.

CHAIRMAN CLEVELAND: I have another question if we have, but, if we don't, I'm good. You're muted.

COMMISSIONER GOODWIN: We're over time already, but go ahead. We're only breaking for lunch, so we can go a little bit over.

CHAIRMAN CLEVELAND: No, I'll submit it for the record. It's for Dr. Liu. I wanted to talk to you about the ports that you mentioned in your testimony, how many ports are

controlled and what possibility or how they might be used in the event of war. So I'll submit the question for the record and hope for an answer. Thank you.

COMMISSIONER GOODWIN: Great. And I know Commissioner Wessel indicated he might have a second question, too, so perhaps he could submit a question.

COMMISSIONER WESSEL: Those are on ports, as well, so I'll talk to staff and Robin to coordinate.

CHAIRMAN CLEVELAND: We can coordinate, yes.

COMMISSIONER GOODWIN: All right. Well, thank you very much for your time today. We are on a one-hour break, and we'll reconvene for our third panel at 1:50.

(Whereupon, the above entitled matter went off the record at 12:54 p.m. and then went back on the record at 1:51 p.m.)

### **PANEL III INTRODUCTION BY COMMISSIONER CLIFF SIMS**

COMMISSIONER SIMS: Welcome back, everyone. Our third panel today will examine China's ability to mobilize military personnel, civilian personnel, and resources for conflict. We'll start with Mr. Devin Thorne, Principle Threat Intelligence Analyst for China Geopolitics at Recorded Future.

Mr. Thorne will examine China's national defense mobilization system, recent reforms to the system, and the types of civilian assets available to be leveraged by Chinese authorities in a conflict.

Lastly, we'll hear from Dr. Timothy Heath, Senior International and Defense Researcher at the RAND Corporation. Dr. Heath will examine specific aspects of military mobilization such as specific assets China would need to mobilize in its system to prepare for a conflict and how those efforts could be observed to give U.S. policy makers advanced warning of any impending military action.

Thank you all very much for your testimony. I ask that all our witnesses please keep your remarks to seven minutes to preserve time for questions and answers. So with that, Mr. Thorne, we will begin with you.

**OPENING STATEMENT OF DEVIN THORNE,  
PRINCIPAL THREAT INTELLIGENCE ANALYST, RECORDED FUTURE**

MR. THORNE: Thank you. Vice Chair Price, Commissioner Sims, other Commissioners and staff of the Commission, thank you for the invitation to participate in this hearing.

I was asked a series of questions about China's National Defense Mobilization system and the role of civilian resources in a conflict. To answer these, my testimony has sought to provide a survey of the entire system, why it exists, how it functions, challenges it faces, and efforts by the People's Republic of China, PRC authorities to overcome those challenges. The central finding of the survey is that today authorities likely assess progress in addressing long standing deficiencies in the system and likely have increasing confidence in their ability to use the system to mobilize comprehensive national power against a threat.

With my time for these remarks, I'll offer answers to five key questions posed by the Commission. One, why does the system exist?

Fundamentally, the National Defense Mobilization system exists because, in a time of crisis, whether due to war or non-war emergency, authorities must be able to rally national manpower and economic, technological, and other resources if military stockpiles or national strategic reserves are insufficient.

PRC authorities further take pride in their ability to mobilize mass patriotism and work ethic in pursuit of their objectives. The People's Liberation Army, or PLA, also believes that military-civil fusion can maximize combat readiness and efficiency, especially with regard to military logistics. For these reasons, authorities prepare to draw on civilian resources during a conflict.

Two, what challenges does the system face?

The National Defense Mobilization system provides the mechanism by which the PLA, with government approval, can requisition almost any civilian resource, likely including all transportation infrastructure.

The system has several major tasks, coordinating national development plans and policies with the likely requirements of future crises, maintaining accurate records of all relevant national resources, enabling the conversion of those resources for wartime or crisis management purposes, and building armed forces reserves including militias.

However, for a long time, the system has faced significant challenges. These include unsatisfactory implementation of necessary work by the civilian government, largely due to their focus on economic development. It includes an over reliance on the military, the convoluted and stifling bureaucracy, unreliable data on relevant national resources, and impaired development of militia forces.

Three, what has been done to solve for some of these existing challenges? Especially since 2017, PRC authorities have made efforts to address each of these areas. The National Defense Transportation Law, for example, has reportedly eased the military's ability to add national defense requirements to transportation infrastructure and requires civilian industry participation in national defense related training activities.

Organizational and legal reforms have likely increased the responsibility of civilian government authorities to prepare for national defense mobilization.

New audit and survey procedures have reportedly improved the accuracy and precision of annual surveys used to track national defense relevant resources nationwide.



And finally, new militia training practices seek to ensure that these forces will be able to support the PLA in all domains, which is the purpose of so-called new type militias created from skills found in industries including communications, cyber security, and robotics.

Four, what is the role of private sector resources in a conflict?

Private enterprises in industry, such as equipment manufacturing, information technology, unmanned systems, logistics and medicine, are likely to be called to support a war effort according to their specific strengths, especially in relation to logistics, maintenance, and technology development.

Through new type militias and other mechanisms, private enterprises also offer equipment and skilled personnel to PRC armed forces, including for operations such as reconnaissance, intelligence, and surveillance, and cyber operations in cyber space. Outside of overseas logistics, most tasks that the private sector and militias will undertake are likely to be carried out from within the PRC. After a conflict, owners of requisitioned civilian resources, including the operators of transportation infrastructure, are eligible for compensation

Five, how is the transportation sector being prepared for mobilization?

Under military guidance, lines of effort among PRC authorities have included adding military use infrastructure to ports, railways, and airports, developing new rail transportation methods, such as for over large equipment, and identifying pre-enlisting and pre-modifying civilian vessels like heavy truck cranes, and semi-submersible ships so that such resources can be immediately available in the event of a crisis.

Notably, mobilization in the transportation sector for a major conflict, such as over Taiwan, is likely to produce detectable changes in patterns of behavior within the PRC.

Lastly, I'll offer two recommendations. The Commission has raised excellent questions in relation to this under study topic. Congress should consider directing or funding further public research on the PRC National Defense Mobilization system, as greater attention to the subject would be beneficial to furthering the U.S. government and public understanding of military civil fusion, the potential sign posts of a looming conflict, and the forces the PRC will be able to bring to bear in a conflict.

Additionally, Congress should consider passing, with amendments as necessary, the Open Translation Center Act of 2024 to help maintain and expand access to key materials from the PRC government and broader PRC information space.

Thank you for your time, and I look forward to any questions you may have.

COMMISSIONER SIMS: Thank you. Dr. Heath?

**PREPARED STATEMENT OF DEVIN THORNE,  
PRINCIPAL THREAT INTELLIGENCE ANALYST, RECORDED FUTURE**

# China's National Defense Mobilization System

**Devin Thorne**

Principal Threat Intelligence Analyst for China Geopolitics  
Recorded Future

**Testimony before the U.S.-China Economic and Security Review Commission**

Hearing on China's Preparations for Competition and Conflict

June 13, 2024

## Introduction

National defense mobilization rallies national labor, economic resources, and other elements of comprehensive national power in response to war and non-war emergencies. The People's Republic of China's (PRC) national defense mobilization system coordinates economic development with anticipated wartime and emergency requirements and enables authorities to requisition publicly-owned and privately-owned resources during a crisis. It is the mechanism through which authorities can draw on the PRC's vast economic base when national strategic and military reserves are insufficient and implement "people's war". It is also an enabler of efficiency and readiness for People's Liberation Army (PLA) logistics. PRC authorities likely have moderate and increasing confidence in the national defense mobilization system's ability to perform its core duties during a conflict, despite recognizing long-standing and continuing deficiencies in the system. Since 2015, authorities have made organizational, procedural, and legal reforms that they likely assess are having positive results. As early as 2016, Chinese Communist Party (CCP) General Secretary Xi Jinping expressed confidence in the system.

**Section I** introduces the purpose and effectiveness of the PRC's national defense mobilization system, including its challenges and the views of national leadership. **Section II** details the national defense mobilization bureaucracy and explains the effects of recent organizational reforms. **Section III** discusses how the national defense mobilization system collects and tracks data on national resources, challenges facing this work, and recent procedural reforms. **Section IV** describes the PRC's legal authority and process for requisitioning civilian resources in a crisis. **Section V** explores the likely roles of the private sector and "new-type" militias during a conflict. **Section VI** surveys select aspects of preparations for national defense mobilization in the transportation sector and the effects of the 2017 National Defense Transportation Law. **Section VII** provides recommendations for Congress.

## Key Findings and Judgements:

- The PRC national defense mobilization system is a complex bureaucracy of military and civilian government coordinating bodies under CCP leadership. The primary coordinating organizations in this system are national defense mobilization commissions at each PRC administrative level. The system coordinates development plans with national defense requirements; builds armed forces reserves, including militias; maintains records of all relevant national resources; and enables the conversion of those resources for use during wartime and emergencies.
- The PRC national defense mobilization system has long been impaired by its complex and confusing bureaucracy; poor staffing and implementation of duties, especially on the civilian side; and overreliance on the military. Other issue-specific problems include unreliable collection of data on available national resources and poor-quality militia training.
- To address these challenges, authorities have issued new laws and regulations to strengthen civilian (i.e., government and industry) responsibilities and obligations related to national defense, and pursued organizational and procedural reforms to rectify specific impairments.
  - In 2017, authorities implemented the National Defense Transportation Law, which has likely succeeded in improving the military's ability to implement national defense requirements related to the design of transportation networks.
  - In 2018 and 2021, authorities introduced new auditing and survey procedures to improve the reliability of data on national resources that can be mobilized during a crisis, which reportedly achieved moderate success.
  - In 2022, authorities began organizational reforms to relocate administrative responsibilities from the military to the civilian government, specifically placing these responsibilities directly under civilian authorities in charge of economic planning.
  - In 2024, authorities implemented new efforts to improve militia training that seek to break down geographic barriers, encourage resource sharing between localities, and ensure that militias receive training on advanced topics (e.g., drone operation).
- With some exceptions, the PLA can requisition and modify any publicly- or privately-owned resource with the government's approval. The requisition process involves several steps: 1) the military drafts and submits requests, 2) the government coordinates among specialized offices and issues requisition orders to property owners, and 3) authorities provide compensation in cases where resources are damaged, modified beyond return to their original state, or the owners suffer other direct economic harm. Compensation extends to the owners and operators of transportation infrastructure.
- Private enterprises are increasingly important to national defense mobilization. Efforts are underway to pre-prepare enterprises for mobilization requirements in the fields of equipment manufacturing, information technology, logistics, medicine, and others. During a conflict, private enterprises are likely

to be called on to support the war effort according to their specific strengths, potentially to include contributing technical personnel for operations in cyberspace.

- “New-type” militia units are intended to be capable of supporting the PLA in all domains. They are created from high-skill professionals — including those from the private sector — in the information technology, communications, cybersecurity, robotics, unmanned systems, artificial intelligence, and other fields. However, militia development and training have been deficient for a long time, partly due to inherent contradictions between military and business requirements.
- Examples of national defense-related modifications to transportation networks and transportation planning decisions since the 2017 National Defense Mobilization Law include the creation of new dual-use terminals at ports, addition of military-use infrastructure (e.g., stations and platforms) along railways and (likely) at airports, and retention of out-of-use railways due to their military value. Other lines of effort include pre-enlisting and pre-modifying civilian vehicles like heavy truck cranes and aligning special-use train cars with military requirements. However, more research is needed to wholistically understand how the law has been implemented.
- Wartime mobilization in the transportation sector is likely to generate detectable changes in patterns of activity within the PRC. Changes may include disruptions to normal civilian passenger and cargo air traffic, abnormal movements of dual-use civilian ships, placement of concealment devices (e.g., tarps) at likely ports and airports of embarkation, and social media activity documenting military transportation activities in major cities. The challenge is that, at best, such signals are likely to be visible only months ahead of a conflict. Signals in other areas may provide warning on a longer timeline.

**Appendix G** summarizes key findings according to the Commission’s specific questions.

Additionally, in case it is of interest to the Commission, **Appendix H** offers an assessment on recent civil air defense activities (including construction of air raid shelters) in Fujian province.

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## List of Abbreviations Used

<b>CCP</b>	Chinese Communist Party
<b>CMC</b>	Central Military Commission
<b>CMC LSD</b>	CMC Logistics Support Department
<b>CMC NDMD</b>	CMC National Defense Mobilization Department
<b>DRC</b>	Development and Reform Commission
<b>JLSC</b>	Joint Logistics Support Center
<b>JLSF</b>	Joint Logistics Support Force
<b>MCF</b>	Military-Civil Fusion
<b>NDM</b>	National Defense Mobilization
<b>NDMC</b>	National Defense Mobilization Commission
<b>NDMO</b>	National Defense Mobilization Office
<b>NDTL</b>	National Defense Transportation Law
<b>PAFD</b>	People's Armed Forces Department
<b>PAP</b>	People's Armed Police
<b>PLA</b>	People's Liberation Army
<b>PMD</b>	Provincial Military District
<b>PRC</b>	People's Republic of China

## Section I: PRC National Defense Mobilization — Purpose and Effectiveness

### *Section I.I: Purpose of the National Defense Mobilization System*

*Summary: The national defense mobilization system ensures PRC authorities' ability to leverage comprehensive national power against any threat, including wars, natural disasters, and other crises; the system is also critical to supporting the military's joint logistics.*

National defense mobilization (国防动员; NDM) refers to the conversion of political, economic, technological, cultural, social, and other resources from a peacetime status to a war footing in support of national defense.<sup>1 2 3</sup> The PRC NDM system seeks to coordinate national development plans and policies with the likely requirements of future crises; build armed forces reserves, including militias; maintain accurate records of the status and availability of all relevant national resources; and enable the conversion of those resources in times of need as quickly and effectively as possible.<sup>4</sup> NDM is an outcome and component of the PRC's military-civil fusion (军民融合; MCF) strategy.<sup>5 6</sup>

The NDM system responds to war and other threats to PRC sovereignty, unity, territorial integrity, security, and development interests.<sup>7</sup> The NDM system also responds to non-war emergencies, such as natural disasters and epidemics,<sup>8</sup> and is increasingly intertwined with the PRC's national emergency response management (应急管理) system.<sup>9 10 11</sup> NDM entails a wide range of activities along at least eight lines of effort: political mobilization, armed forces mobilization, national economic mobilization, equipment mobilization, civil air defense mobilization, transportation readiness mobilization, science and technology mobilization, and information mobilization. Details on what these different forms of mobilization entail are provided in **Appendix A**.

The NDM system provides an important mechanism for applying comprehensive national power (综合国力) to, and carrying out “people’s war” (人民战争) in support of, CCP and PLA tasks and objectives during a crisis.<sup>12</sup> <sup>13</sup> PRC authorities take pride in the ability to mobilize mass patriotism and work ethic in support of the country’s national defense.<sup>14</sup> This ability served them well in revolutionary campaigns,<sup>15</sup> during the COVID-19 pandemic,<sup>16 17</sup> and during evacuations after Russia invaded Ukraine in 2022.<sup>18</sup>

Fundamentally, the NDM system exists so that authorities are able to draw on the PRC's vast economic base to manage a conflict or emergency when necessary resources and capabilities are not available in military stockpiles or national strategic reserves. The PLA has also sought to establish a joint logistics support system that pre-prepares and integrates public and private civilian resources and capabilities wherever possible, assessing that doing so can “maximize combat capabilities, ensure peacetime efficiencies, and guarantee a constant state of combat readiness” as well as achieve “greater efficiency, flexibility, and timeliness.”<sup>19 20</sup> The NDM system is a “critical enabler” of PLA logistics.<sup>21</sup>

*Summary: PRC authorities likely have a moderate level of confidence in the national defense mobilization system despite long-standing organizational, procedural, and legal problems; they likely assess that reforms since approximately 2015 have achieved progress in rectifying some of these challenges.*

Since assuming the positions of CCP general secretary and Central Military Commission (中央军事委员会; CMC) chairman in 2012, Xi Jinping has heavily focused on modernizing and improving the PRC's national defense and the ability of PRC armed forces to fight and win wars.<sup>22</sup> NDM is an important component of this work. However, the PRC's NDM system has faced significant challenges for decades, its development swinging between progress under stress during times of crisis and neglect during times of peace.<sup>23</sup> References to NMD in authoritative Chinese sources since 2013 indicate party-state and military leadership awareness of organizational, procedural, and legal problems, as well as the need to modernize NDM to support modern forms of conflict.<sup>a</sup>

Specific issues with the NDM system identified in Chinese military media, academic sources, and other research include:

- Confusion and ambiguity regarding roles, responsibilities, and tasking<sup>24</sup>
- Unclear chain of command<sup>25</sup>
- Insufficient staffing of NDM implementation organizations<sup>26</sup>
- Poor adherence to legal obligations among officials<sup>27 28</sup>
- Neglect of NDM work by civilian authorities due to their focus on economic development<sup>29 30</sup>
- Military leadership over civilian organizations<sup>31 32</sup>
- Limited authority among institutions responsible for coordinating NDM work<sup>33</sup>
- Overreliance on the military for administrative and implementation work<sup>34 35</sup>

To begin addressing these challenges, Xi Jinping centralized oversight of mobilization planning, control of the military side of the NDM system, and reserve force construction by creating the CMC National Defense Mobilization Department (国防动员部; NDMD) in 2016.<sup>36</sup> Authorities had previously implemented at least three transportation-related NDM regulations in 2015, which were followed by the National Defense Transportation Law in January 2017.<sup>37 38 39</sup> In October 2017, during the 19th CCP National Congress, Xi Jinping directly asserted the need to improve the NMD system.<sup>40</sup> Since then, other NDM-related laws have been updated, adjusted, or are currently on the national legislative agenda for modification;<sup>41 42 43 44 45 46</sup> new processes for tracking national resources have been implemented;<sup>47</sup> and the organization of the NDM system itself has been reformed.<sup>48</sup>

Xi Jinping's likely goals for the NDM system include ensuring that 1) the CCP leads NDM work absolutely, 2) NDM serves the PRC's strategic ambitions, 3) economic plans account for NDM requirements, 4) NDM preparations are woven into peacetime activities, 5) militia forces and modes of people's war are strengthened

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<sup>a</sup> See The Diversified Employment of China's Armed Force (government white paper, 2013), *Science of Military Strategy* (PLA textbook, 2013), China's Military Strategy (government white paper, 2015), 13th Five-Year Plan (government policy, 2016), China's National Defense in the New Era (2019), *Science of Military Strategy* (PLA textbook, 2020), 14th Five-Year Plan (government policy, 2021), and *Comprehensive State Security Concept Study Outline* (CCP cadre education material, 2022).

and innovated, and 6) there is a passion for national defense and commitment to struggle throughout the military and society.<sup>49</sup> PRC armed forces and the NDM system have been urged to “correct peacetime ills” — the “accumulated inertia” of a long peace that impairs combat readiness.<sup>50 51</sup>

Xi Jinping and other party-state and military leaders likely assess they have made some progress in tackling the challenges associated with NDM. The “Resolution of the CCP Central Committee on the Major Achievements and Historical Experience of the Party over the Past Century” issued in November 2021 states that “national defense mobilization has become more effective, unity between the military and government and the military and people has become more firm.”<sup>52</sup> A CMC NDMD party committee conference on May 10, 2024, further noted that the “cross-military and government,” “integrated military-civilian,” “cross-process,” “integrated peace and war,” “cross-domain,” “integrated supply and demand,” “cross-functional,” and “fusion” characteristics of the PRC’s NDM system are “becoming more prominent.”<sup>53 54</sup>

At the same time, PRC leadership continues to recognize room for improvement. The same May 2024 CMC NDMD party committee conference emphasized the need to maintain high readiness and make continued efforts to investigate, identify, and correct problems affecting the NDM system. A January 2024 Tianjin Garrison party committee meeting on NDM and reserve force construction emphasized the continuing need to strengthen party leadership, awareness of political responsibility, military-government coordination, military-government communication, and the efficacy of reforms.<sup>55</sup> In October 2023, the political commissar of the Sichuan Military District similarly noted the need to “fully release the effectiveness of national defense mobilization system reforms” and “further sort out the relationship between peacetime leadership and organization of national defense mobilization and wartime organization and command.”<sup>56</sup> Other areas of focus include improving implementation and adherence to relevant national laws.<sup>57</sup>

Despite the many notable challenges to the PRC’s NDM system, Xi Jinping expressed confidence in it as early as 2016. During remarks to the CMC Joint Operations Command Center (联合作战指挥中心), he stated, “we have a complete national defense mobilization system, [we] have this magic weapon of people’s war, [we] can rapidly mobilize.”<sup>58</sup>

## **Section II: The PRC National Defense Mobilization System — Organization and Reform**

### *Section II.I: Organization of the National Defense Mobilization System*

*Summary: The national defense mobilization system consists of a complex bureaucracy intended to integrate military and civilian government decision-making under CCP leadership; however, the civilian side has often not actively participated, leading to an inefficient overreliance on the military.*

The state and military jointly manage PRC NDM. At the national level, the leading body is the National Defense Mobilization Commission (国家国防动员委员会; NDMC) under the leadership of the State Council (国务院) and CMC.<sup>59</sup> The national NDMC is a “deliberative and coordinating” organization responsible for organizing nationwide NDM work and coordinating relevant relationships between national defense, the military, the economy, the government, labor, and material resources, including by drafting laws, regulations, and plans.<sup>60</sup> Sub-national NDMCs exist at each administrative level down to the county.<sup>61</sup> They work with the

military commands of the CMC NDMD-led provincial military district (省军区; PMD) system.<sup>62 63 64</sup> The CCP leads both the state and military, including on NDM work.<sup>65</sup>

The national-level NDMC is directed by the state premier, with deputy directors drawn from the State Council and CMC.<sup>66 67 68</sup> It involves the participation of various CCP, government, and military organizations.<sup>69</sup> At the sub-national levels (province and below), the NDMCs are likewise jointly led by civilian government and military personnel.<sup>70 71 72 73 74</sup> The PMD system — comprising military districts at the provincial level, sub-districts at the prefectural level, and People's Armed Forces Departments (人民武装部; PAFD) at and below the county level — is under the dual leadership of the military and government institutions at the same and higher administrative levels.<sup>75 76</sup>

NDM working offices that prepare for and coordinate implementation of each NDM line of effort described in **Appendix A** exist at the national and local levels. At the national and sub-national levels, NDM working offices are hosted and staffed by various government and military organizations.<sup>77 78 79</sup> For example, the national NDMC has six working offices, four of which are under the CMC NDMD, one of which is under the CMC Logistics Support Department (后勤保障部; LSD), and one of which is under the national-level Development and Reform Commission (发展与改革委员会; DRC).<sup>80</sup> Other national ministries likely host other NDM working offices.<sup>81</sup> The national NDMC General Office (综合办公室) is responsible for “national defense mobilization planning, policy formulation, regulatory research, organization and coordination, and secretarial services”;<sup>82</sup> it is directed by the head of the CMC NDMD and managed and assisted by the CMC NDMD General Office.<sup>83</sup> Thus, the CMC NDMD “director has the most active role in defense mobilization planning and coordination but likely relies on the more senior NDMC leaders for whole-of-government support.”<sup>84</sup>

Although the NDM system is intended to ensure effective military-civilian coordination at all levels under the unified leadership of the CCP, it is undermined by a number of problems. Two significant organizational issues have been 1) lack of civilian participation and overreliance on the military for the implementation of NDM work;<sup>85</sup> and 2) a situation in which sub-national NDM working offices within local government departments are subordinate to national-level working offices under the CMC, creating an arrangement in violation of the PRC Constitution that is known as “the military above, the people below” (上军下民).<sup>b 86 87</sup>

## *Section II.II: Reform of the National Defense Mobilization System*

*Summary: Legal and organizational reforms since 2020 seek to strengthen civilian government participation in national defense mobilization work, including through the creation of new offices under economic authorities to lead coordination; as of early 2024, these reforms likely have not yet achieved their full intended effect.*

PRC authorities have implemented at least two reforms to address overreliance on the military in matters of NDM administration and implementation. First, revisions to the PRC's National Defense Law in 2020 significantly emphasized the State Council's responsibility to develop, organize, and implement NDM work,

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<sup>b</sup> As discussed in **Section II.II**, legal and organizational reforms have sought to shift greater administrative and implementation responsibility to the state while likely strengthening the military's guiding role. This has produced changes in sub-national divisions of labor, but whether it has changed the foregoing description of the distribution of NDM working offices at the national level is not clear.

particularly in relation to economic, civil air defense, and transportation mobilization (among other areas, but likely not including armed forces mobilization).<sup>88 89 90</sup> Second, since late 2022, sub-national organizational reforms to the NDM system have relocated responsibilities for NDM general coordination and NDM construction management (国防动员综合协调、建设管理) that were formerly held by the PMD system to the civilian government.<sup>91</sup> To do so, new NDM offices (国防动员办公室; NDMO) have been established down to the county level.<sup>92 93 94 95 96 97 98 99</sup> NDMOs are subordinate to the DRCs at each level,<sup>100</sup> and NDMO directors are often DRC directors or deputy directors.<sup>c 101 102 103 104 105 106 107</sup> Further, NDMOs form the joint offices of local NDMCs with the mobilization bureau or office (动员局[处]) of the military district or sub-district at their same level (with the military affairs section [军事科] of the county-level PAFD); these joint offices are now the “daily work institutions” (日常办事机构) of all NDMCs below the national level.<sup>108 109 110 111 112 113 114 115 116</sup>  
<sup>117 118</sup> **Appendix B** provides an organizational chart of the NDM system following these reforms.

NDMOs are responsible for implementing the NDM and civil air defense policies of the CCP central authorities and government authorities at and above their level; coordinating NDM work implementation; organizing NDM resource surveys (see **Section III**); and other NDM tasks.<sup>119 120 121</sup> NDMC Joint Offices are responsible for defining the NDM-related responsibilities of NDMC members, among other duties.<sup>122</sup>

The new sub-national organizational arrangement is likely intended to improve the NDM system and related work in three ways. First, by placing NDMOs under DRCs, the reforms institutionalize the mandate that civilian authorities who are focused on economic planning must consider NDM requirements. Second, the reforms likely give NDM general administrative staff greater authority; the previous bureaucracy encountered difficulties because general coordination offices were often under military organizations and attempting to coordinate with higher-ranking NDM working offices in civilian agencies.<sup>123</sup> Third, by removing the administrative burden, the reforms likely enable the PMD system to better focus on guiding NDM preparations to be carried out by civilians, contingency planning, and militia and reserve development.<sup>124 125</sup>

Time will tell if these reforms achieve their goals. As of March 2024, however, it appears authorities are likely still facing obstacles and attempting to fully “release” the “efficacy” of organizational reforms.<sup>126</sup> It is unclear whether there have been organizational reforms at the national level to address the problem of “the military above, the people below” — such as by redistributing NDMC working offices from the CMC NDMD and LSD to government departments under the State Council.

## **Section III: Tracking National Defense Potential — Surveys and New Methods**

### *Section III.I: National Defense Potential Surveys*

*Summary: National defense potential surveys are an annual, monthly, and ad hoc process through which authorities collect and verify information on relevant resources throughout the PRC economy that could be mobilized during a crisis; despite their importance, the surveys have often been unreliable.*

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<sup>c</sup> NDMOs were established on the basis of existing Civil Air Defense Offices (人民防空办公室; CADO) so that NDMOs and CADOs are now often integrated as one organization with two nameplates (possibly on a temporary basis).



A key task of the NDM system is to collect, maintain, and verify records about the resources that authorities can draw on in a crisis. During peacetime, the national resources available for mobilization constitute the PRC's "national defense potential" (国防潜力).<sup>127</sup> The process of surveying national defense potential involves the military defining their requirements and government agencies implementing national defense potential surveys as coordinated by NDMCs (since the end of 2022, NDMOs have likely taken a leading role in coordination).<sup>128</sup><sup>129</sup> <sup>130</sup> People's government statistical offices and NDM working offices, such as information mobilization offices, at and above the county level support this work, with surveys conducted on annual, monthly, and ad hoc schedules.<sup>131</sup> <sup>132</sup> <sup>133</sup> <sup>134</sup> <sup>135</sup> <sup>136</sup> <sup>137</sup>

Data is drawn from local government departments, enterprises, working units (事业单位), and social organizations and organized into "national defense mobilization potential evaluation reports" (国防动员潜力评估报告) that are provided to military authorities so that commanders know what is available, how much is available, and the quality of available resources.<sup>138</sup> <sup>139</sup> <sup>140</sup> **Appendix C** shows the general steps of the annual national defense potential survey.

Like other aspects of the NDM system, national defense potential survey work has been impaired by many problems for a long time. Problems identified in PRC military media as recently as 2022 include neglect of survey work due to shared but ill-defined responsibilities among government and military organizations, overreliance on the military and passivity among government, unwillingness (in violation of the law) on the part of some organizations to fully disclose relevant information to protect their self-interest, low skill workforces being tasked with data collection and verification, and the treatment of national defense potential data surveys as a formality.<sup>141</sup> Traditionally, the survey process has also been a very manual exercise — involving the grassroots level filling out forms<sup>142</sup> — and, as of 2019, the adoption of information technology solutions to improve this situation was still "insufficient."<sup>143</sup> Further, it has been difficult to align descriptors of specific resources between military users and data collectors.<sup>144</sup> <sup>145</sup>

The overall effect of these challenges is erroneous, inaccurate, undetailed, and unclear accounting of available resources.<sup>146</sup> As a result, it has been common that when military forces request an "apple," the NDM system provides a "pear."<sup>147</sup>

### *Section III.II: New National Defense Potential Survey Methods*

*Summary: To address shortcomings in national defense potential surveys, PRC authorities have urged the adoption of information technologies, including integration with smart city networks; implemented new audit procedures; and updated catalogs (indexing systems) of the resources to be tracked.*

Various efforts have sought to address issues with NDM survey work in recent years. There has likely been progress in implementing "big data"-driven and networked solutions to improve data collection, resource tracking, and resource tasking. Many information management systems for each NDM line of effort (see **Appendix A**) have reportedly been created at every administrative level in recent years, with at least some vertical integration between administrative levels.<sup>148</sup> <sup>149</sup> <sup>150</sup> <sup>151</sup> Military training events highlight the ability of commanders to reference national defense potential databases in the field; a January 2023 Ningxia Military District event, for example, involved the use of an "Operations Brain" (作战大脑) that reportedly had limited

access to a “national defense mobilization comprehensive information system” (国防动员综合信息系统), “veterans information management system” (退役军人信息管理系统), and other systems.<sup>152</sup> Information collection efforts are being aided, in part, by the development of smart cities, with the goal being to establish centralized networks with confidential, secure, accurate, and timely information on the status of relevant resources.<sup>153 154 155</sup>

As of early 2022, however, the overall effort to modernize national defense potential data management with information technology was likely impeded by poor integration, with different information systems using different standards and interfaces.<sup>156</sup> Implementation of technology solutions at the county level was likely also incomplete as of mid-2023.<sup>157</sup>

To address issues related to data quality, reliability, and specificity, the CMC NDMD implemented new annual national defense potential data auditing practices in 2018.<sup>158 159</sup> In 2021, the CMC NDMD also introduced new guidance for conducting surveys.<sup>160</sup> One piece of this guidance was an updated indexing system that classifies a range of more than 4,000 types of resources about which national defense potential surveys should collect information.<sup>161</sup> The indexing system offers a view of the civilian resources that the party-state and military may seek to leverage or requisition in a conflict or emergency. The indexing system includes resources such as foodstuffs, medical equipment, construction materials, engineering equipment, transportation support specialists, legal services, broadcast infrastructure, cyberspace and artificial intelligence technologies, and overseas ports.<sup>162</sup> **Appendix D** provides a full list of the national defense potential resource categories identified in the 2021 indexing system.

Notably, the annual audit conducted after the implementation of the new survey guidance reportedly assessed progress in raising the quality of reported national defense potential data, noting the data’s evolution from “rough, few, and biased” to “precise, complete, and high[-quality].”<sup>163</sup> Nevertheless, since 2021, there have been calls to continue improving the indexing system, such as in relation to resources in emerging domains.<sup>164</sup>

## **Section IV: The Requisition of Civilian Resources — Powers and Processes**

### *Section IV.I: Party-State and Military Powers to Requisition Resources*

*Summary: With some exceptions, the PLA can requisition and modify any publicly- and privately-owned civilian resources with the government’s approval; the owners of civilian resources, including infrastructure like ports, are eligible for compensation if they suffer direct economic harm.*

The PRC government — and through the government, the PLA — can requisition and modify almost any publicly-owned or privately-owned civilian resource for their purposes. The PRC Constitution, 2010 National Defense Mobilization Law, and many other laws and regulations provide this power in the context of “public interest” and “national defense requirements.”<sup>165 166 167 168 169 170</sup> The 2015 National Security Law also contains the obligation that citizens and organizations assist the military if required.<sup>171</sup> There has been some debate, but PRC academics have argued from a maximalist viewpoint that the state can requisition movable, immovable, and intangible property; personal labor; and goods and materials that have not yet been produced.<sup>172</sup> Foreign-

owned property in the PRC can also likely be requisitioned, given that the 2000 Foreign Enterprise Law (外资企业法) allows the state to expropriate foreign-invested enterprises “under special circumstances.”<sup>173</sup>

The owners of requisitioned resources are eligible for compensation in cases where national defense construction or military activities cause direct economic harm to citizens and organizations and when the requisitioned resource cannot be returned to its original state, either because it was modified or destroyed.<sup>174 175</sup> Legal right to compensation covers transportation infrastructure; according to 2019 regulations governing civilian transportation national defense mobilization (民用运力国防动员条例; hereafter “civilian transportation regulations”), persons and organizations that own or manage civilian transportation tools, including ports, airports, and train stations, shall be compensated if these suffer depreciation or damage.<sup>176</sup> The state will also likely cover the salaries of operating and support personnel.<sup>177</sup> At least in the context of expropriation under special circumstances, foreign enterprises may also be entitled to compensation.<sup>178</sup>

As with other aspects of the NDM system, there are various points of contention regarding the requisition of civilian resources. A 2021 article by a professor and graduate student at the Army Command College, for example, argues that the specifics of the process are not defined by law and that there is a need to improve incentives for supporting, and punishments for obstructing, requisitions.<sup>179</sup> The latter suggests compliance with the law remains a challenge. There have also been issues related to ambiguity and diverging interests in how compensation is implemented.<sup>180 181</sup> Others have argued that the military should have the authority (which is currently held by the government) to approve decisions about the requisition of civilian resources.<sup>182</sup>

#### *Section IV.II: The Resource Requisition Process*

*Summary: To requisition civilian resources, PRC armed forces submit requests to government authorities, which coordinate with each other and the military and then issue directives to property owners; to maintain readiness, authorities pre-prepare mobilization hubs and reserves.*

According to the 2010 National Defense Mobilization Law, requisitions of civilian resources can be initiated *after* the government orders a national defense mobilization and *if* available reserve materials cannot promptly satisfy mobilization requirements.<sup>183</sup> PRC armed forces, including the PLA, People’s Armed Police (人民武装警察部队; PAP), and militia organizations, cannot unilaterally organize requisitions. Instead, they must submit requisition requests to be implemented by the government.<sup>184</sup>

As outlined in the aforementioned article by authors affiliated with the Army Command College, the general process (in practice, if not law) involves armed forces filling out requisition requests and passing them up their respective chains of command, such as to the theater commands, the headquarters of the PLA services and PAP, or the PMDs in the case of militias. Unified requisition plans are formulated at these levels and then passed to the military-civilian coordination mechanisms of the NDM system. Local governments fulfill the requests. Under special circumstances, military forces at lower levels also have the authority to directly request resources from the local government.<sup>185</sup>

More specifically, in a wartime context, it is theater command mobilization bureaus (战区动员局) that collect requisition requests from subordinate units, review and draft mobilization plans, and align needs with national

defense potential.<sup>186</sup> The theater command mobilization bureaus work through theater command joint operations command centers (联合作战指挥中心) to submit resource requests to the PMDs for approval by provincial NDMCs.<sup>187</sup> There are other military organizations inside and outside of the theater command involved in organizing requisitions within specific sectors, such as when organizing transportation resources.<sup>188</sup> For large-scale operations that span across theaters or industries, requests for resources are first submitted to the CMC NDMD and the national-level NDMC so that mobilization requirements can be centrally coordinated.<sup>189</sup> Once NDMCs receive requisition requests, they coordinate implementation through NDM working offices and other government offices to arrange the acquisition of civilian resources.<sup>190 191 192</sup>

Additionally, to accommodate potential future mobilization requirements, authorities pre-arrange NDM hubs and material reserves. For example, economic mobilization centers (经济动员中心) established within large state-owned enterprises and industrial parks “manufacture products that meet national defense material requirements... [and] maintain latent production capacity and the excess components, semi-finished products, and standard parts needed to surge... production... to support contingency requirements.”<sup>193 194</sup>

In cases where civilian resources must be modified to support military uses, an even greater range of actors is involved. **Appendix E** provides a case study of the process for requisitioning and modifying a civilian ship for military service.

## **Section V: The Private Sector in Conflict — Private Enterprise and Militias**

### *Section V.I: The Role of Private Enterprise*

*Summary: PRC private enterprises are an important part of national defense mobilization, especially in relation to the production of advanced technology and related skilled labor; when mobilized, they are likely to provide enterprise resources to support logistics, maintenance, technology development, and other activities.*

While state-owned enterprises are likely the primary conduit for mobilizing resources from the PRC’s economic, industrial, and transportation base,<sup>195 196</sup> private enterprises are also important. This is particularly true given their significant contributions to the PRC’s innovation of advanced technologies and authorities’ focus on technology as an enabler of victory.<sup>197 198 199</sup> Local authorities in Beijing have reportedly had success establishing national economic and equipment mobilization centers (国民经济和装备动员中心) and “key mobilization units” (重点动员单位) within private enterprises in the fields of equipment manufacturing; information communications; medicine; nuclear, biological and chemical surveillance; and fire and disaster relief.<sup>200</sup> In Shanghai, authorities have created a “National Defense Mobilization Alliance” (国防动员联盟) to enroll more technology enterprises in MCF efforts.<sup>201</sup> In Tianjin, the NDMO has focused on increasing the range of products from private enterprises that are listed in military procurement catalogs, particularly in the “unmanned intelligence” (likely meaning drones), biomedicine, logistics, and warehousing fields.<sup>202</sup> Through these partnerships and other activities, the party-state and military are likely building relationships, aligning military requirements with private sector potential, and preparing material reserves to facilitate rapid conversion to a wartime or emergency footing.

During a conflict, private enterprises are likely to be called on to provide their specific strengths in whatever ways might support the war effort. This could include shifting production to focus on military-relevant equipment and medicine; developing new solutions to specific technological challenges related to, for example, intelligence, surveillance, and reconnaissance as well as communications transmission;<sup>203</sup> and providing skilled personnel and equipment to facilitate logistics support and maintenance activities.

Examples of these kinds of private sector contributions have been seen in times of crisis, during military training, and NDM preparation efforts. During the COVID-19 pandemic, “high-tech companies in Shanghai” were mobilized to provide robotics systems “used for autonomous distribution, self-disinfection, and unmanned guidance for diagnosis.”<sup>204</sup> Many enterprises, including privately-owned firms, also mobilized to produce and distribute masks.<sup>205 206</sup> Private logistics companies have signed contracts with PLA logistics departments, reportedly significantly decreasing material delivery times in some situations; they have specifically trained to provide delivery of medical and equipment maintenance parts to military forces via aerial drones.<sup>207 208</sup> Software development companies have developed programs to support national defense potential data tracking and civilian transportation dispatch for military uses.<sup>209</sup> In 2018, the Shanghai Garrison used the aforementioned “alliance” to organize a maritime drone exercise.<sup>210</sup> Leaked documents in February 2024 showed one network security firm selling “WIFI Close-In Attack Systems” and “realistic training” platforms to PLA units.<sup>211</sup>

It is also possible for the PLA to mobilize technical talent in private enterprises to support network (cyber) operations. Multiple versions of the PLA textbook *Science of Military Strategy* identify civilian forces as spontaneous or organized contributors to network attack, defense, and reconnaissance.<sup>212</sup> However, it is not clear from open sources how civilians — who may be treated as contractors — would be incorporated into the armed forces command structure.<sup>213</sup> One known way in which private enterprises contribute cyber expertise to the armed forces and otherwise support the PRC’s national defense is by establishing or contributing personnel to militia organizations.

## *Section V.II: The Role of “New-Type” Militias*

*Summary: “New-type” militias are armed forces units established among civilian professionals, including those from the private sector, in advanced technology industries; authorities are attempting to correct long-standing problems with militia development so that PRC militias can support the PLA in all domains.*

Militias (民兵) are the third component of the PRC’s armed forces, along with the PLA and PAP.<sup>214</sup> Militias are established under the PMD system, with the CMC NDMD Militia Reserve Bureau (民兵预备役局) managing related policies, standards, procedures, and requirements.<sup>215</sup> Militias are subject to the dual leadership of military and civilian government authorities, most directly through PAFDs,<sup>d</sup> and are increasingly integrated into civilian emergency response mechanisms.<sup>216 217 218</sup> They undertake war readiness duties (战备勤务), operations

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<sup>d</sup> There are two categories of PAFD, those at the county-level and those at the grassroots-level. The county-level PAFDs “are manned by active duty PLA personnel” and grassroots PAFDs “are manned by civilian cadres whose salaries are paid by local governments and sometimes work on a part-time basis. These grassroots PAFDs are the closest interface through which militia interact with the PLA command on a regular basis, as their direct managers for recruitment, planning, organization, training, and policy execution.” See Conor M. Kennedy and Andrew S. Erickson, “China Maritime Report No. 1: China’s Third Sea Force, The People’s Armed Forces Maritime Militia: Tethered to the PLA,” China Maritime Studies Institute, March 2017, p. 4, <https://digital-commons.usnwc.edu/cgi/viewcontent.cgi?article=1000&context=cmsi-maritime-reports>.



to “support the front” (支援前线) and resist invasion (抵抗侵略), defensive operations (防卫作战), military operations other than war (非战争军事行动), and activities to maintain social order (维护社会治安) and respond to non-war emergencies.<sup>219 220 221</sup> Militia personnel retain their civilian jobs during peacetime.<sup>222</sup>

Since approximately the late 1990s, and accelerating under Xi Jinping’s leadership and the elevation of MCF as a national strategy, military authorities have sought to leverage “specialized and professional skills from the PRC’s modern economy and specialized enterprises” for militia construction.<sup>223 224 225 226</sup> The focus of this effort is to ensure that the PRC’s militias can effectively support joint operations under conditions of “‘informatized warfare... on land, at sea, in the air, in space, and within the electromagnetic spectrum as well as [computer] networks’.”<sup>227 228</sup>

The outcome of this drive is the creation of “new-type” (新型) or “new-quality” (新质) militia forces that are established within or enlist skilled personnel from civilian state-owned and privately-owned enterprises (and other organizations like universities) in the information technology, communications, cybersecurity, software, electronics, robotics, aerial and undersea unmanned systems, “big data,” artificial intelligence, and other sectors.<sup>229 230 231</sup> Militia forces established at or from these types of organizations include those listed below.<sup>232 233 234 235 236</sup> Note that militia construction practices are highly localized, and the specific units (分队) available in a given city or county can vary greatly.

- Network (cyber) units for defensive and offensive operations
- Network (cyber) units for public opinion guidance
- Intelligence and information support units
- Aerial drone reconnaissance and logistics units
- Drone countermeasures units
- Meteorological and hydrological information support units
- Surveying and mapping units
- Emergency communications support units
- Maritime search and rescue units
- Undersea target detection and rescue units
- Multifunctional robotics units

**Appendix F** provides further details on the range of “new-type” or “new-quality” militia forces that authorities are interested in establishing, based on the aforementioned 2021 national defense potential indexing system.

There are likely several million enlisted militiamen; however, a specific number is not known. In 2010, there were eight million militiamen, and reforms since 2016 have sought to reduce that number.<sup>237 238 239</sup> The number of militiamen classified as “new-type” or “new-quality” is likewise not known. In 2016, PRC media reported that 114 private enterprises had established PAFDs and more than 1,000 private enterprises have organized militia units;<sup>240</sup> however, the report was unclear whether these numbers reflect nationwide activity or only activity in Ningbo, Zhejiang province.

Despite ambitious goals for “new-type” militia forces and the support they can offer the PLA, PRC militia organizations broadly have been plagued by significant challenges for a long time. Problems, many of which stem from tensions inherent in the MCF concept, include poor quality training that is routine, non-standard, and



basic; insufficient equipment; and reluctance and non-compliance among enterprises to commit personnel and equipment to militia responsibilities.<sup>241 242 243 244 245</sup> One manner of reluctance that has been observed since 2021 is technology enterprises creating militia units from non-technical sales staff and members of enterprise party organizations, instead of from specialized personnel.<sup>246</sup> A key concern among enterprises and others is that militia training responsibilities are disruptive to productivity.<sup>247</sup>

There are various local efforts to address these challenges and some indications of improvement.<sup>248</sup> For instance, some local authorities have reportedly improved the participation of technology enterprises in militia enrollment efforts through consultative mechanisms and by adjusting training to be minimally disruptive.<sup>249</sup> A district in Shenzhen, Guangdong, is reportedly “offering guaranteed housing and economic assistance” to non-public enterprises that establish militias.<sup>250</sup> Increasing and improving political education among militiamen in private enterprises is also seen as an important line of effort to ensure that they heed the CCP’s command, faithfully carry out their missions, and assist in improving combat effectiveness and productivity.<sup>251 252</sup>

Improving the content of militia training is likely to benefit from a more centralized approach, as the military leadership has more direct control through the CMC NDMD.<sup>253 254 255</sup> Since the start of 2024, authorities have developed a new training pattern focused on improving the quality of militia instructors;<sup>256</sup> the CMC NDMD and PMDs provide training on special and important subjects while the military sub-districts focus on standard subjects. The new pattern implements group training for instructors, seeking to break down geographical boundaries and share resources in a likely attempt to overcome unsatisfactory and uneven militia training. Lessons are also designed with input from military personnel, military academics, veterans, and civilian industry personnel.<sup>257</sup>

In a wartime context, militia forces, including those from private enterprises, are most likely to be called to contribute to logistics, area defense, intelligence, other support operations, and offensive operations (such as in cyberspace) that can be carried out within PRC territory (or within the PRC’s claimed maritime spaces in the case of maritime militias<sup>258 259</sup>). The 2020 edition of *Science of Military Strategy* describes militia forces as responsible for “transport support, material and oil support, medical rescue, equipment repair, communication support, intelligence reconnaissance, [and] camouflage protection” during air, border and coastal defense, maritime, and information operations.<sup>260</sup> A 2010 PLA textbooks suggest militias may contribute to the war effort by resisting attacks against in-depth targets, supporting enemy delay and harassment operations, and working to maintain social order.<sup>261</sup> However, other PLA textbooks also suggest a role closer to the front line during offensive activities like port landing operations.<sup>262</sup> Other research has also suggested that maritime militias could, prior to or at the start of a conflict, support intelligence collection, battlefield reconnaissance, minelaying, and covert deployment of special operations forces.<sup>263</sup>

Militias are more regularly training with PLA theater command and service forces in recent years,<sup>264</sup> providing another means of assessing their likely roles during a conflict. Militia activities in such training include providing drone countermeasures support to troops conducting cross-regional maneuvers; supporting transportation brigade troops (运输旅兵) through militia support points (民兵保障网点) across a 500-mile stretch of the Tibetan plateau; setting up radar corner reflectors; firing Dongfeng-11 short-range ballistic missiles; providing communications, encampment, fuel, and meteorological information support; and clearing and repairing bridges.<sup>265 266 267 268</sup>

In general, the mobilization and mission orders of militia forces run through the PMD system and are issued by PAFDs at the county level.<sup>269 270</sup> However, operational command of militias can likely be shifted on a temporary basis to other authorities; operational command of maritime militia units, for example, can be variably assigned to the PLA Navy or China Coast Guard, though the civilian and military authorities of the PMD likely retain at least a supervisory (and possibly direct) role.<sup>271</sup> During a significant crisis — war or other emergency — theater commands can also likely assume command over militia forces “operating within their areas of geographic responsibility.”<sup>272 273 274</sup>

## **Section VI: Transportation Mobilization — Preparations and Signposts**

### *Section VI.I: Preparing Transportation Infrastructure*

*Summary: PRC law requires that transportation infrastructure (e.g., roads, railways, and ports) must implement national defense requirements, but adherence has long been affected by complex bureaucracy; the 2017 National Defense Transportation Law has likely improved, but not solved, this impediment.*

Some of the earliest efforts undertaken by Xi Jinping’s government to strengthen PRC NDM work occurred in the transportation field. Efforts included 2015 regulations for implementing national defense requirements during the construction of new civilian ships and guidance on retrofitting existing ships for military requirements issued by the national-level Transportation Readiness Office (交通备战办公室).<sup>275 276</sup> In 2016, authorities passed the National Defense Transportation Law (NDTL), which was implemented in January 2017.<sup>277</sup> The NDTL strengthened the legal basis for ensuring the military has access to, and can make use of, the PRC’s transportation infrastructure. This access is likely unlimited, except by physical and technical considerations. For example, while the PLA does use the PRC’s high-speed rail network, military analysts have identified challenges that may limit its usefulness in certain mobilization scenarios.<sup>e 278 279 280</sup>

The NDTL aims to ensure that the planning, construction, and use of railroads, roads, waterways, airways, pipelines, and postal services account for national defense transportation requirements, including by providing priority access to PRC armed forces during times of need. Among other provisions, the NDTL also establishes (or strengthens) requirements and mechanisms for stimulating the purchase (by the industrial base) of certain categories of civilian vehicles (民用运载工具) relevant to national defense transportation so they are available if needed and establishing strategic projection support forces (战略投送支援力量) at transportation enterprises to facilitate long-distance and large-scale national defense transportation operations.<sup>281</sup>

With regard to implementing national defense requirements in the design and construction of transportation infrastructure, the NDTL builds on requirements found in the 2010 National Defense Mobilization Law.<sup>282</sup> Per that law, the state and military develop a catalog of projects that are required to implement national defense requirements. The 2016 version of the catalog includes railways; roadways; airports; ports; refined oil pipelines; fixed, mobile, satellite, and broadcast communications systems; data centers and the data exchange platforms of

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<sup>e</sup> As of 2019, the designs of train cars, stations, bridges, and power supply mechanisms likely inhibited the high-speed rail system’s use for transporting heavy troops and oversized equipment through some parts of the network. PLA engineers are likely working to overcome these challenges.

government departments; geopolitical, meteorological, and hydrological information systems; radio frequencies; and civil air defense infrastructure.<sup>283 284</sup>

Examples of national defense requirements being implemented in transportation infrastructure construction and planning since the NDTL include Qingdao Port building a military-civilian dual-use terminal for naval vessels and large civilian roll-on/roll-off ships, which includes 100,000 square meters of assembly area (集结地域) as well as water and power supply facilities;<sup>285</sup> a state-owned railway operator in Shanghai adding military-use platforms to a logistics park;<sup>286</sup> a state-owned railway operator agreeing not to demolish an out-of-service track connecting Anhui and Guangxi provinces due to its military value;<sup>287</sup> the same state-owned railway operator adding new military-use stations, ration supply stations, and other military-use improvements to its lines;<sup>288</sup> and all airports establishing preferential treatment procedures for military personnel.<sup>289</sup>

Railway departments in Shandong have also worked to align (对接) their “special train cars” with military needs to support the transportation of equipment that is too large for regular train cars.<sup>290</sup> These Shandong departments have also reportedly worked with the military to achieve technological breakthroughs supporting more effective national defense transportation.<sup>291</sup> Transportation readiness offices at all levels across Guangdong are organizing (纳编), “pre-reserving and pre-requisitioning” (预储预征), and modifying equipment such as general-use aircraft, semi-submersible ships, cold-chain transportation equipment, rapid bridge-launch vehicles, heavy truck cranes, large flatbed trucks, roll-on/roll-off ships, and other equipment.<sup>292</sup> Other research has documented efforts to develop strategic projection support forces among airlines and shipping enterprises since 2012.<sup>293 294 295 296</sup>

A more wholistic assessment of how the NDTL has been implemented in the context of preparing transportation networks for NDM requires more research. Reflections of this effort are only inconsistently present in national and sub-national transportation-focused five-year plans, for example.<sup>297 298 299 300 301</sup> When included, references are typically not specific. Guangdong’s “14th Five-Year Development Plan for a Comprehensive Transportation System” is relatively descriptive and only says, “actively promote the military-civilian integrated development of transportation infrastructure” and “strengthen regional military-civilian airspace coordination and air traffic control cooperation.”<sup>302</sup> Additionally, according to a 2017 article, CMC LSD Transportation Bureau (运输投送局) efforts to establish a strategic projection capability that draws heavily on civilian resources included 43 projects to support deep military-civil integration of military requirements at international cargo airports.<sup>303</sup> However, the details of these projects are unknown as of this writing.

Nonetheless, the NDTL has likely eased some of the difficulties that military authorities previously faced in adding national defense requirements to transportation infrastructure construction plans. Analysts from the PLA Transportation Academy have asserted that the NDTL supported major steps toward “achieving an effective ‘top-down construction plan’ rather than the ‘bottom-up reporting and top-down approval’ that characterized an earlier era.”<sup>304</sup> In 2018, a commander of the Wuxi Joint Logistics Support Center (无锡联勤保障中心; Wuxi JLSC), which is subordinate to the PLA Joint Logistics Support Force (联勤保障部队; JLSF), indicated to reporters that after the NDTL, national defense requirements are directly put into construction plans without layers of bureaucratic approval.<sup>305 306</sup> According to Wuxi JLSC military representative office personnel, the NDTL has also improved airline compliance with military training requirements.<sup>307</sup>

Problems and limitations also likely remain. As recently as March 2024, participants in a forum on NDM hosted by the National Defense University Joint Operations College reportedly expressed dissatisfaction with the ambiguous responsibilities of different parties in implementing national defense requirements when building roads, bridges, ports, and other infrastructure.<sup>308</sup> This likely echoes concerns from as early as 2019 about deficiencies in the NDTL regarding its implementation.<sup>309</sup> Other concerns in the transportation sector include cost and bureaucracy impeding efforts to retrofit existing civilian ships;<sup>310</sup> limited loading and unloading facilities suited for military needs at civilian airports, which prevents the military's use of many airports (it is possible this is one aspect that the CMC LSD Transportation Bureau's efforts have focused on);<sup>311</sup> and training for railway national defense transportation teams being underfunded, of poor quality, and beset by other issues.<sup>312</sup>

## *Section VI.II: Signposts of Transportation Mobilization*

*Summary: In a major conflict, such as against Taiwan, mobilization to a wartime footing would likely create observable distortions or anomalies in the PRC transportation sector despite possible PLA efforts to conceal such irregularities; however, other signposts of a conflict may be clearer or more visible on a longer timeline.*

If the PRC were to initiate a large-scale joint operation, such as an invasion of Taiwan, the PLA "would require about 3,000 train trips, 1 million vehicle trips, 2,100 aircraft sorties, 15 oil pipeline battalions... and more than 8,000 ship voyages," according to one set of estimates from the PLA Logistics Academic Research Center.<sup>313</sup> According to a separate single estimate, by 2025 the PLA hopes to be able to complete outbound loading of materiel within 24 hours and loading of outbound brigades and regiments within four hours.<sup>314</sup> This tempo likely does not account for earlier stages of preparation, however, such as forward deploying weapons to key locations, which would likely occur months ahead of a conflict.<sup>315</sup>

Mobilization on this scale is likely to generate detectable changes in transportation patterns and other activities within the PRC. The challenge is that most of the clearest signals of imminent threat in this sector will likely occur in relatively close temporal proximity (likely months) to the onset of aggression. Although the authoritative PLA textbook *Science of Campaigns* (2006) advises that some campaigns — such as airborne campaigns — should carry out preparations and force concentration in secret, aided by activities to deceive the enemy, it also acknowledges that the scale of activities required to prepare for a joint landing campaign make concealing the initiator's intention "extremely difficult."<sup>316</sup>

Observable changes in the transportation sector might include large disruptions in civilian passenger and cargo flights as the military amasses required materiel and abnormal patterns of behavior by civilian vessels, especially roll-on/roll-off ships but also deck cargo ships and others.<sup>317 318</sup> Some concealment activities may also produce indicators observable through satellite imagery, such as the installation of tarps at ports used to load military equipment on civilian ships.<sup>319</sup> It may be possible to monitor the relatively limited number of military and civilian airports likely to be used as points of embarkation for a campaign against Taiwan (approximately 33 airports, depending on the criteria applied) for similar atypical activity.<sup>320</sup> Additionally, it is possible — maybe even likely — that Chinese social media users will document military transport activities and

other indicators of mobilization in their localities (although authorities would likely take measures to prevent this).<sup>f</sup>

Signals outside of the transportation sector may be clearer or available on a longer timeline. Some analysts assess the CCP is likely to order a general mobilization “at least three or four months” before an invasion of Taiwan and halt demobilizations of enlisted PLA personnel six to 12 months before an invasion.<sup>321</sup>

## Section VII: Recommendations

1. The foregoing survey of the PRC’s NDM system in relation to the Commission’s questions highlights several topics that could benefit from further research. PRC authorities hold significant expectations for the ability of the NDM system — and militias — to efficiently and rapidly convert PRC comprehensive national power from a peacetime to a wartime footing. However, the system and authorities’ efforts to improve it are understudied in public sources. Greater attention to the subject would be beneficial to furthering the U.S. government and public’s understanding of MCF, potential signposts of a looming conflict, and forces that the PRC will be able to bring to bear in a conflict. As such, Congress should consider directing or funding public-facing research that examines the following topics:
  - The effects of the 2017 National Defense Transportation Law on local government transportation infrastructure planning, as well as potential modifications to existing transportation networks
  - PLA expectations and goals for the operational tempo of mobilization for large-scale joint operations
  - PRC progress in addressing challenges related to militia development and training
2. Congress should consider passing (with amendments if needed) the Open Translation Center Act of 2024 (H.R.7942/S.4118) to help maintain and expand foreign access to key materials from the PRC government and broader PRC information space. In 2021, the Commission received a similar recommendation that Congress should “pass legislation to create and fund an open-source center or repository of material on issues relating to the entire breadth of China’s domestic, foreign, and security policies.”<sup>322</sup> Since that time, access to publicly available sources of insight on developments within the PRC, including developments addressed in this testimony, has notably deteriorated. Public access to original PRC materials and quality translations is vital to the U.S. government and public’s ability to accurately assess intentions, capabilities, and other developments in the PRC.

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<sup>f</sup> For example, around the time then-Speaker of the United States House of Representatives Nancy Pelosi visited Taiwan in August 2022 — China responded with significant military exercises — alleged videos of military platforms moving into and around Fujian province found their way to international social media platforms.

## Appendix A: PRC National Defense Mobilization Lines of Effort

Line of Effort	Related Tasks Include:
Political Mobilization (政治动员) — the chief task	Creating a political environment conducive to engaging in a conflict or responding to an emergency; igniting patriotic fervor and inspiring the military; attracting foreign support for the PRC's goals
Armed Forces Mobilization (武装力量动员) — the core task	Shifting PLA and other armed forces from a peacetime to a wartime footing and organizational structure; expanding active-duty PLA units and transitioning reserve forces to active duty; mobilizing troops, equipment, and materiel
National Economic Mobilization (国民经济动员) — the foundational task	Transitioning economic resources from peacetime to wartime production; unifying leadership to coordinate industry, agriculture, natural resources, transportation, finance, and other sectors to promote national defense
Equipment Mobilization (装备动员) — the key task	Drawing on equipment and resource stockpiles; requisitioning government and commercial civilian equipment, facilities, and other assets; redirecting production and research capabilities for wartime requirements
Civil Air Defense Mobilization (人民防空动员) — the shield task	Constructing air-raid shelters and other protective facilities; establishing warning and command systems; stockpiling repair equipment; educating the public regarding evacuation routes and other measures; creating air defense units for rescue and repair operations
Transportation Readiness Mobilization (交通战备动员) — the support task	Activating railways, highways, waterways, and airways for wartime requirements; organizing units to repair and defend transportation assets and lines; cutting off access to specific regions if needed; requisitioning and modifying civilian transportation tools (e.g., trucks or ships)
Science and Technology Mobilization (科技动员) — the critical task	Organizing government and commercial civilian research institutions for military-related research; incorporating scholars, engineers, and technical personnel into military technical operations; achieving technological advantages to support the war effort (or other crisis

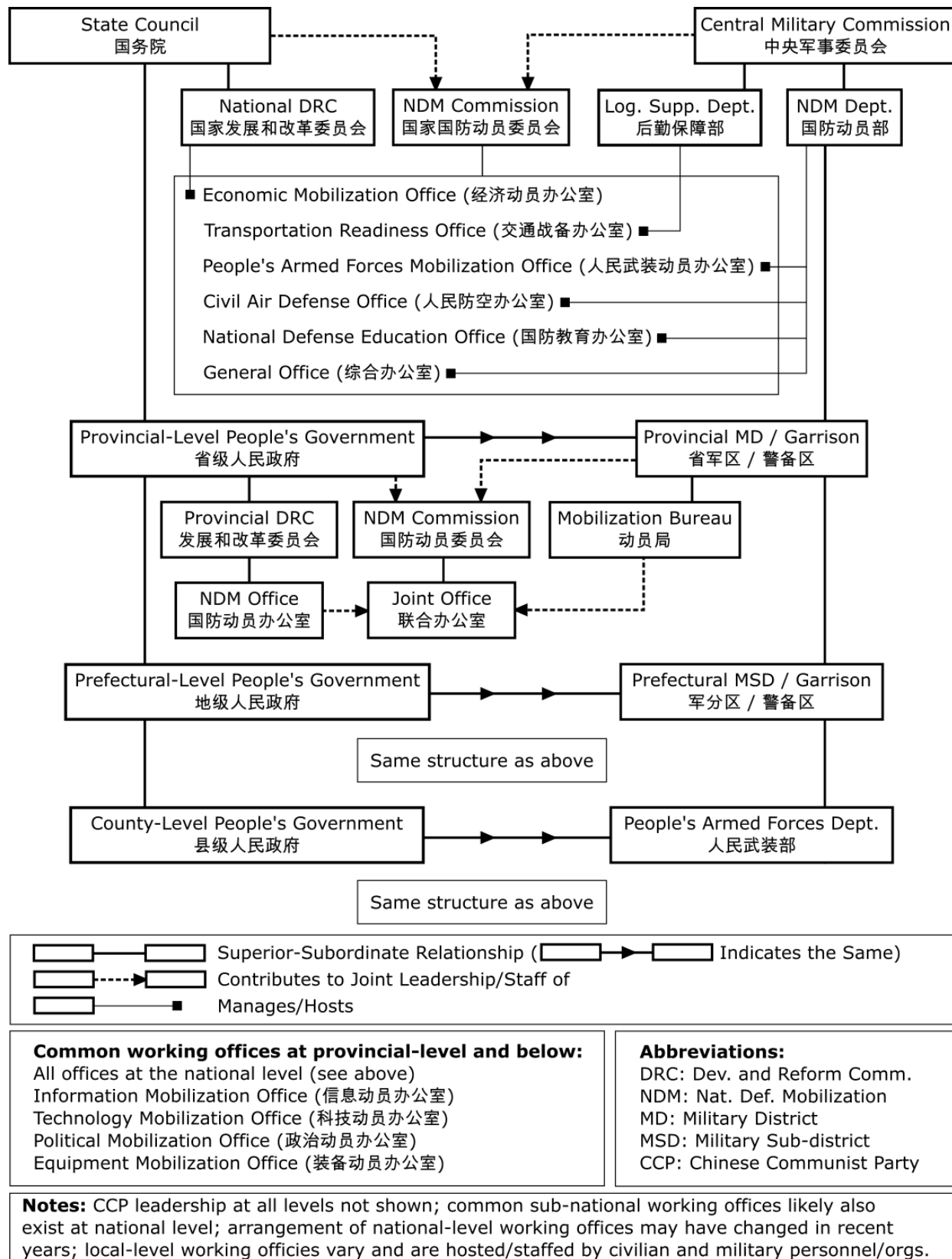


	response)
Information Mobilization (信息动员) — the support task	Ensuring the information collection, storage, transmission, and management needs of the military (incl. along the electromagnetic spectrum); employing civilian resources and personnel in network (cyber) offense and defense; expanding production of information equipment; creating units for securing and repairing communication networks

**Sources:** Dean Cheng, "Converting the Potential to the Actual: Chinese Mobilization Policies and Planning," in Andrew Scobell et al. (eds.), *The People's Liberation Army and Contingency Planning in China* (National Defense University Press, 2015), p. 109-113, <https://ndupress.ndu.edu/portals/68/Documents/Books/PLA-contingency/PLA-Contingency-Planning-China.pdf>; 理论研讨 | 弯弓搭箭射天狼——浅谈国防动员的八张“弓” ["Theory Discussion | Draw the Bow and Shoot the Wolf: A Brief Discussion of the Eight "Bows" of National Defense Mobilization"], 衡阳市国防动员办公室 衡阳市人民防空办公室 [Hengyang Municipal National Defense Mobilization Office Hengyang Municipal Civil Air Defense Office], January 30, 2022, <https://web.archive.org/web/20240512204843/https://www.hengyang.gov.cn/ccad/rfdt/mts/20230130/i2919801.html>.

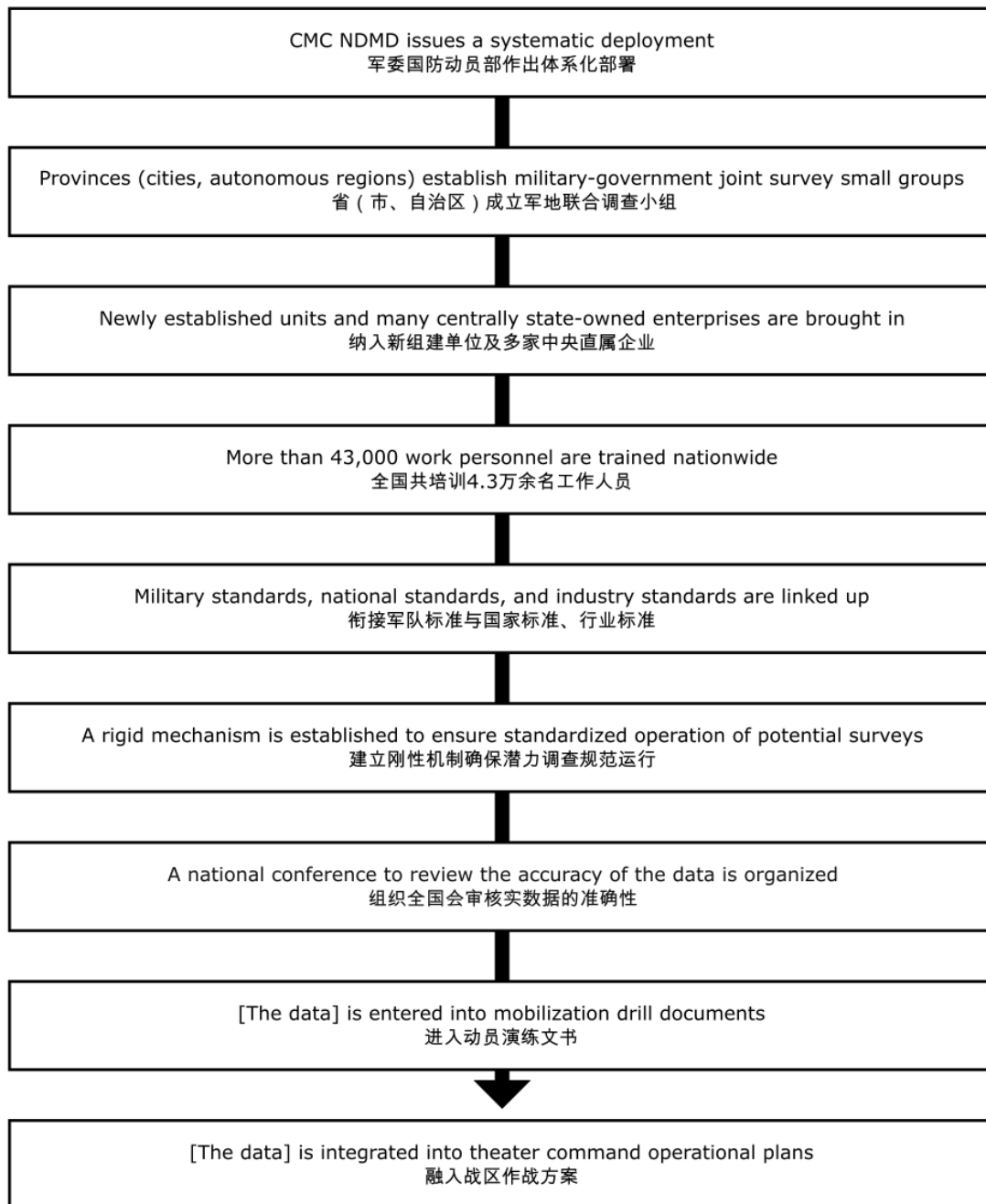
Additionally, although it is not a type of mobilization, national defense education is an important peacetime process supported by the NDM system to promote patriotism; strengthen society's concern for, support for, and willing participation in national defense construction; and ensure that all people know their obligations as defined in PRC law.<sup>323</sup>

## Appendix B: Organizational Chart of the PRC National Defense Mobilization System



**Sources:** Author's research; Richter and Rosen, "China's National Defense Mobilization System," p. 40.

## Appendix C: General Steps in the Annual National Defense Potential Survey



**Source:** Adapted from 丁文渊 [Ding Wenyuan] and 贾勇 [Jia Yong], 提升“第一用户”体验, 国防动员部这些措施有心了 ["To Improve the 'First User' Experience, the National Defense Mobilization Department has Taken These Measures"], 中华人民共和国国防部 [People's Republic of China Ministry of National Defense], November 14, 2019, <https://web.archive.org/web/20240511020553/http://www.mod.gov.cn/gfbw/gfdy/4854988.html>.

## Appendix D: National Defense Potential Resources by Class and Subclass

<b>Overall/General Class</b> <b>综合类</b>	<b>Reserve Force Class</b> <b>后备力量类</b>	<b>National Economy Class</b> <b>国民经济类</b>
<p><b>4 Subclasses:</b></p> <ul style="list-style-type: none"> <li>● National Defense Mobilization Committee Administrative Institutions</li> <li>● Grassroots People's Armed Forces Departments</li> <li>● Population, Economic, and Agricultural Resources</li> <li>● Extractive Resources</li> </ul>	<p><b>4 Subclasses:</b></p> <ul style="list-style-type: none"> <li>● Retired Military Personnel</li> <li>● Active Reserve Force Personnel (现役部队预编预备役人员)</li> <li>● Registered Reserve Force Personnel (编入预备役部队预备役人员)</li> <li>● Militia Forces</li> </ul>	<p><b>12 Subclasses:</b></p> <ul style="list-style-type: none"> <li>● Major and Supplemental Foodstuffs</li> <li>● Fuel Logistics Resources</li> <li>● Medicine and Healthcare Resources</li> <li>● Nuclear and Chemical Disaster Emergency Response Resources</li> <li>● Delivery Instruments Repair and Manufacture Resources</li> <li>● Engineering and Construction Resources</li> <li>● Equipment and Material</li> <li>● Meteorological and Hydrological Charting Resources</li> <li>● Civilian-Use Explosive Resources</li> <li>● Emergency Supply Reserves</li> <li>● Safe Production and Emergency Rescue Resources</li> <li>● National and Local Economic Mobilization Centers</li> </ul>
<p><b>Civil Air Defense Class</b>  <b>人民防空类</b></p> <p><b>6 Subclasses:</b></p> <ul style="list-style-type: none"> <li>● Civil Air Defense Key Shelter Cities</li> <li>● Civil Air Defense Command Posts</li> <li>● Civil Air Defense Engineering Projects</li> <li>● Civil Air Defense Evacuation Zones (Bases)</li> <li>● Civil Air Defense Alarm Installations</li> <li>● Civil Air Defense Specialist</li> </ul>	<p><b>Transportation Class</b>  <b>交通运输类</b></p> <p><b>5 Subclasses:</b></p> <ul style="list-style-type: none"> <li>● Transportation Infrastructure</li> <li>● Transport Delivery and Hauling Capacity</li> <li>● War Preparation Material Transportation Resources</li> <li>● Transportation Specialist Teams</li> <li>● Maritime Search and Rescue Forces</li> </ul>	<p><b>Political Mobilization Class</b>  <b>政治动员类</b></p> <p><b>7 Subclasses:</b></p> <ul style="list-style-type: none"> <li>● State Security Research Institutions</li> <li>● Internet Supervision and Public Sentiment Guidance Institutions</li> <li>● Internet and Information Services Enterprises</li> <li>● Radio and Television Institutions</li> <li>● Legal Services Institutions</li> <li>● Psychological Consulting Institutions</li> </ul>

Teams		<ul style="list-style-type: none"> <li>● Human Resources (e.g., Language Translation/Interpretation Personnel)</li> </ul>
<b>Weapons/Equipment Class</b> <b>武器装备类</b>  <b>4 Subclasses:</b> <ul style="list-style-type: none"> <li>● Weapons and Equipment Research and Development Institutions</li> <li>● Weapons and Equipment Production Enterprises</li> <li>● Weapons and Equipment Maintenance Enterprises</li> <li>● Weapons and Equipment Specialist Support Teams</li> </ul>	<b>Emerging Domains Class</b> <b>新兴领域类</b>  <b>7 Subclasses:</b> <ul style="list-style-type: none"> <li>● Maritime Resources</li> <li>● Space Resources</li> <li>● Network Space Resources (i.e., Cyberspace and Communications)</li> <li>● Biological Resources</li> <li>● New Energy Resources</li> <li>● Artificial Intelligence Resources</li> <li>● Scientific Research, Universities and Academies, and Scientific Research Results</li> </ul>	<b>Overseas Resources Class</b> <b>海外资源类</b>  <b>3 Subclasses:</b> <ul style="list-style-type: none"> <li>● Overseas Embassies and Consulates</li> <li>● Overseas Enterprises</li> <li>● Overseas Chinese Organizations</li> </ul>

**Source:** Thorne, *"Inside China's National Defense Mobilization,"* p. 7.

## Appendix E: Process for Civilian Ship Mobilization and Retrofit

This case study is based on Chinese academic sources from 2004 and 2015, with specific points supplemented by more recent sources. Although dated, the process outlined here is likely still relevant to understanding how the PLA would mobilize a civilian ship unequipped for national defense requirements and the types of organizations involved.

The process for mobilizing and modifying civilian ships involves three supporting activities:<sup>324</sup>

1. Maintaining up-to-date information on available ships, their type, size, personnel quality, and physical location
2. Managing a given ship's status through "daily contact," port records, and personnel files; this relies on county-level maritime affairs departments and PAFDs
3. Coordinating military-local government efforts, including pre-preparing resource resupply points at major ports, signing reserve agreements (such as for fuel and water), and establishing other reserves and support teams<sup>325</sup>

Once the requirement to requisition and modify a civilian ship is identified, the theater command (or other military authority) transmits a requisition request to the relevant PMD.<sup>326</sup> The request is routed to the local NDMC, which, likely with input from the offices for economic mobilization, transportation readiness, and armed forces mobilization, formulates a plan for requisition and modification. The NDMC then distributes orders to relevant enterprises, working units, and managing departments in the name of the local government.<sup>327</sup>  
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According to a 2004 source, the relevant economic mobilization offices and military authorities, together with personnel from transportation readiness, shipyard, ship inspection, ship unit, and other units establish a "civilian ship installation (modification) command organization" (民船加(改)装指挥机构) to coordinate, organize, and implement the ship modification work.<sup>329</sup> The 2019 civilian transportation regulations affirm the roles of the transportation readiness office, economic mobilization office, and other organizations in transportation modification.<sup>330</sup> Military representative offices are likely involved in this process as well.<sup>g 331 332</sup>

A 2015 source indicates the involvement of two other specific entities in the ship modification process: "civilian ship installation (modification) mobilization centers" (民船加(改)装动员中心) and "civilian ship installation (modification) units" (民船加(改)装分队),<sup>333</sup> with the latter likely being composed of engineers from shipyards or ship design companies with the help of NDM working offices or the PMD system.<sup>334</sup> Demonstrating consistency between 2015 and earlier processes, "civilian ship mobilization modification bases" (民船动员改装基地) began to be created within shipping enterprises at least as early as 2006, in accordance with the 2003 version of the aforementioned civilian transportation regulations.<sup>335</sup>

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<sup>g</sup> Military representative offices are established by CMC departments and PLA services in cities, enterprises, and factories. These offices advocate for the military's interests in relation to matters such as weapons production and implementation of national defense requirements. For ship modification and other work related to transportation mobilization, it is likely that the relevant military representative offices will be those associated with the JLSF or their JLSCs. For examples, see Du, Gao, and Hao, "National Defense Transportation Law;" Peng and Zhou, "Retain Unused Railway Links for Military Transport."



Required modifications may include, depending on the circumstances and specific ship, the addition of military communications, medical, firefighting, and rescue equipment and facilities; changes to accommodate living areas for military personnel; and improvements to the ship's "structure and performance such as reinforcing decks or preparing helicopter landing sites."<sup>336</sup>

After the modified ship is no longer needed, the civilian ship installation (modification) command organization formulates and implements a plan to return the ship to its original state (e.g., removing sensitive equipment and repairing damage). The government pays for this repair work, as well as the work of modifying the ship.<sup>337</sup>

## Appendix F: “New-Type” Militia Units

The following tables are based on a draft version of the CMC NDMD’s 2021 national defense potential statistical survey indexing system. That system identifies 20 types of militia organizations, such as those for emergency response, stability maintenance, civil air defense, and transportation protection. For the seven militia organization types described below, “new-type” or “new-quality” units account for more than 50% of all units conceived of within each type of militia organization. Note that the indexing system is likely aspirational and generalized. It likely reveals the PLA’s thinking with regard to the types of missions that PRC militias should be able to support during future wars or other crises, not the exact composition of militia organizations in any specific locality. There are other types of “new-type” or “new-quality” units not accounted for in the tables below.

Maritime Militia (海上民兵)	
% New-Quality (类型 = 新质)	New-Quality Units (分队) Responsibilities Include:
65% (26 out of 40 unit categories)	<ul style="list-style-type: none"> <li>● Maritime Special Reconnaissance (海上特种侦察)</li> <li>● Maritime Remote Sensor and Monitoring (海上遥感监测)</li> <li>● Maritime Undersea Target Detection (水下目标探测)</li> <li>● Maritime Environment Monitoring (海洋环境监测)</li> <li>● Maritime Meteorology and Hydrology (海上气象水文)</li> <li>● Maritime Information Assistance and Support (海上信息支援保障)</li> <li>● Maritime Transport Type 3 (海上运输(三)) (Maritime Transport Type 1 and 2 are not labeled new-quality)</li> <li>● Maritime Search and Rescue Type 2 (海上搜救(二))</li> <li>● Maritime Search and Rescue Type 1 (海上搜救(一))</li> <li>● Maritime Air Search and Rescue (海上空中搜救)</li> <li>● Maritime Special Rescue (海上特种救援)</li> <li>● Maritime Salvage (海上蛙人打捞)</li> <li>● Maritime Ship Repair (海上船舶维修)</li> <li>● Ship Equipment Repair (船舶装备维修)</li> <li>● Maritime Engineering Rapid Repair and Construction Support (海上工程抢修抢建保障)</li> <li>● Far Seas Defense (远海防卫)</li> <li>● Deep Ocean Assistance and Support (深海支援保障)</li> <li>● Maritime Overall Support (海上综合保障)</li> <li>● Maritime Channel Opening (海上航道开辟)</li> </ul>

Intelligence and Information (情报信息)	
% New-Quality (类型 = 新质)	New-Quality Units (分队) Responsibilities Include:
90% (9 out of 10 unit categories)	<ul style="list-style-type: none"> <li>● Escort and Translation/Interpretation (向导翻译)</li> <li>● Special Languages (特种语言)</li> <li>● Big Data (大数据)</li> <li>● Data and Information (数据信息)</li> <li>● Information Support (Service) (信息保障(服务))</li> <li>● Smart Voice (智能语音)</li> <li>● Information Countermeasures (信息对抗)</li> </ul>

Special Assistance and Support (特种支援保障)	
% New-Quality (类型 = 新质)	New-Quality Units (分队) Responsibilities Include:
92% (23 out of 25 unit categories)	<ul style="list-style-type: none"> <li>● Special Sabotage Assistance and Support (特种破袭支援保障)</li> <li>● Amphibious Operations Assistance and Support (两栖作战支援保障)</li> <li>● Long-Range Attack Assistance and Support (远程打击支援保障)</li> <li>● Airborne Operations Assistance and Support (空降作战支援保障)</li> <li>● Intelligentized Operations Assistance and Support (智能化作战支援保障)</li> <li>● Biological Assistance and Support (生物支援保障)</li> <li>● Polar Assistance and Support (极地支援保障)</li> <li>● Space Assistance and Support (太空支援保障)</li> <li>● Cognitive Assistance and Support (认知支援保障)</li> <li>● Unmanned Operations Assistance and Support (无人作战支援保障)</li> <li>● Aviation Assistance and Support (航空支援保障)</li> </ul>

Equipment Support (装备保障)	
% New-Quality (类型 = 新质)	New-Quality Units (分队) Responsibilities Include:
93% (25 out of 27 unit categories)	<ul style="list-style-type: none"> <li>● Mid-Air Fuel Support (空中油料保障)</li> <li>● Engineering and Machinery Maintenance (工程机械维修)</li> <li>● Special Vehicle Maintenance (特种车辆维修)</li> <li>● (High) Artillery Equipment Maintenance (火(高)炮装备维修)</li> <li>● Wheeled Armored (Vehicle) Equipment Maintenance (轮式装甲装备维修)</li> <li>● Tracked Armored (Vehicle) Equipment Maintenance (履带式装甲装备维修)</li> <li>● Radar Equipment Maintenance (雷达装备维修)</li> <li>● Photoelectric Interference Equipment Maintenance (光电干扰装备维修)</li> </ul>

	<ul style="list-style-type: none"> <li>● Chemical Defense Equipment Maintenance ((防化装备维修)</li> <li>● Missile Maintenance (导弹维修)</li> <li>● At-Sea Mobile Ship Repair (舰船海上机动修理)</li> <li>● Ship Maintenance (船舶维修)</li> <li>● Special Equipment Maintenance (特种装备维修)</li> <li>● Special Equipment and Technology Support (特种装备技术保障)</li> <li>● Special Electronic Installations Maintenance (特种电力设备维修)</li> <li>● Airplane Equipment Maintenance (飞机装备维修)</li> <li>● Military Motorboat Maintenance (军用汽艇维修)</li> <li>● Roll-On/Roll-Off Ship Modification (滚装船改装)</li> <li>● Tank Artillery Noise Reduction (坦克火炮降噪)</li> <li>● Electronic Warfare Equipment Maintenance (电子战装备维修)</li> <li>● Other High/New (Advanced) Equipment Maintenance (其他高新装备维修)</li> <li>● Military Aerospace Equipment Maintenance (军事航天装备维修)</li> <li>● Optical Instrument Equipment Repair (光学仪器装备修理)</li> </ul>
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Network (Cyber) (网络)	
% New-Quality (类型 = 新质)	New-Quality Units (分队) Responsibilities Include:
100% (22 out of 22 unit categories)	<ul style="list-style-type: none"> <li>● Network Attack (网络攻击)</li> <li>● Network Security and Defense (网络安全防护)</li> <li>● Public Opinion Propaganda (舆论宣传)</li> <li>● Network Public Sentiment Monitoring and Guidance (网络舆情监控引导)</li> <li>● Psychological Treatment (心理治疗)</li> <li>● Network Maintenance (网络维管)</li> <li>● Network Information Reconnaissance (网络信息侦察)</li> <li>● Network Status Awareness (网络态势感知)</li> <li>● Network Attack and Defense 网络攻防)</li> <li>● Psychological Attack and Defense (心理攻防)</li> <li>● Legal Struggle (法理斗争)</li> </ul>

Reconnaissance and Intelligence Support (侦察情报保障)	
% New-Quality (类型 = 新质)	New-Quality Units (分队) Responsibilities Include:
100% (26 out of 26 unit categories)	<ul style="list-style-type: none"> <li>● Unmanned Aerial Vehicle Reconnaissance (无人机侦察)</li> <li>● Rotorcraft Reconnaissance (旋翼机侦察)</li> <li>● Helicopter Aerial Reconnaissance (直升机空中侦察)</li> <li>● Radio Detection (无线电侦测)</li> <li>● Electromagnetic Spectrum Detection (电磁频谱侦测)</li> </ul>

	<ul style="list-style-type: none"> <li>● Electronic Countermeasures Reconnaissance (电子对抗侦察)</li> <li>● Charting and Navigation (测绘导航)</li> <li>● Meteorological and Hydrological (Information) Support (气象水文保障)</li> <li>● Target Posture Guidance (目标态势引导)</li> <li>● Escort and Translation/Interpretation (向导翻译)</li> <li>● Satellite Telemetry (卫星遥测)</li> <li>● Multi-Spectral Night Vision Equipment Support (多光谱夜视装备保障)</li> <li>● Special Intelligence and Reconnaissance (特种情报侦察)</li> <li>● Strategic Early Warning Assistance and Support (战略预警支援保障)</li> <li>● Military Aviation Assistance and Support (军事航天支援保障)</li> <li>● Fixed-Wing Aircraft Reconnaissance (固定翼飞机侦察)</li> <li>● Information Collection (信息侦搜)</li> </ul>
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**Source:** Thorne, *"Inside China's National Defense Mobilization,"* p. 17-21.

## Appendix G: Summary of Key Findings Aligned with the Commission's Questions

*Please provide an overview of China's national defense mobilization system.*

- The PRC national defense mobilization system consists of national defense mobilization commissions (NDMC) at the national, provincial, prefectural, and county levels that are jointly led by civilian government and military authorities under the leadership of the CCP. At the national-level, for example, the NDMC is directed by the state premier and deputy directors are drawn from the Central Military Commission. NDMCs are supported by national defense mobilization working offices that perform work related to specific elements of national defense mobilization (e.g., an office for transportation mobilization will provide guidance, develop capacity, and align military requirements with available resources in that area of specialization). These offices are variably hosted and staffed by different civilian and military organizations and are not uniform across China. Since reforms in late 2022, new “national defense mobilization offices” have been created from the provincial to the county level to remove general administrative responsibilities from the military and place these responsibilities under development and reform commissions at the same level.

*How has the Chinese leadership's view of the national defense mobilization system evolved over time? What problems have they previously identified with the system, what progress do they feel they have made in improving the system, and what obstacles do they believe still remain?*

- Authoritative PRC government and military sources published since 2013 demonstrate recognition of significant organizational, procedural, and legal problems impeding the ideal functioning of the national defense mobilization system. Problems include 1) a confusing bureaucracy; 2) insufficient staffing and limited implementation, including inadequate adherence to legal obligations among officials and private citizens; 3) administrative overreliance on the military; 4) unreliable data on national resources; and 5) impediments to an effective militia force. Still, as early as 2016, Xi Jinping expressed confidence in the system. Authorities recognize continuing challenges in each of these areas, but likely assess that various reform efforts since approximately 2015 have strengthened the system. Authorities likely have moderate and increasing confidence in the system's ability to perform during a conflict.

*How do civilian resources “fit in” to China's national defense mobilization system? Why do Chinese leaders not plan to solely rely on military organizations and resources in a conflict?*

- The PRC's vast economic and industrial base offers significant civilian resources that authorities consider elements of PRC comprehensive national power. Through the national defense mobilization system, authorities plan for — and requisition civilian resources during — contingencies that military stockpiles and national strategic reserves are unable to manage (e.g., major conflicts or nation-wide emergencies). Additionally, the PLA assesses that integrating civilian capabilities into military logistics can “maximize combat capabilities, ensure peacetime efficiencies, and guarantee a constant state of combat readiness” as well as achieve “greater efficiency, flexibility, and timeliness.”



*What types of civilian personnel and resources does China plan to leverage in a crisis or a conflict? How does it keep track of where these resources are and what organizations or intermediaries will be used to mobilize them?*

- There are more than 4,000 different civilian resources that military authorities identify as relevant to national defense requirements. These include resources such as foodstuffs, medical equipment, construction materials, engineering equipment, transportation support specialists, legal services, broadcast infrastructure, cyberspace and artificial intelligence technologies, and overseas ports. To track these civilian resources, the national defense mobilization system conducts both regular and ad hoc surveys that draw data from local government departments, enterprises, working units, and social organizations. Mobilization of resources during a conflict involves the military requesting resources from the government and the government coordinating across many specialized offices to identify available resources and issue requisition orders to property owners. Where possible, authorities engage with enterprises, industrial parks, and other entities to prepare them for potential mobilization tasks ahead of a crisis.

*Please discuss the role of “new-type militia forces” in China’s national defense mobilization. What tasks are they intended to carry out? What kind of professionals do they recruit? What industries do these militias exist in, and how many are there? How do these new-type militias interface with China’s military-civil fusion (MCF) framework?*

- “New-type” or “new-quality” militia forces are intended to be capable of supporting the PLA in all domains, meeting the requirements of high-speed and high-tech modern warfare. They are created from high-skill professionals — including those from the private sector — in the information technology, communications, cybersecurity, software, electronics, robotics, aerial and undersea unmanned systems, “big data,” artificial intelligence, and other industries. During a conflict, they are most likely to be called to contribute to logistics, area defense, intelligence, and other support operations and offensive operations (such as in cyberspace) that can be carried out within PRC territory. Like the entire national defense mobilization endeavor, militias are an outcome of the MCF strategy that seeks to locate and make use of military-relevant resources and skills within the PRC’s civilian economic and social base. The total number of “new-type” militia forces nationwide is unknown.

*Please address the extent to which the Chinese government can leverage its civilian transportation infrastructure—including high-speed rail lines, highways, and ports—for military purposes? What is the 2017 National Defense Transportation Law, and how have various levels of government within China worked to incorporate defense transport needs into their plans and activities after its passage?*

- PRC government and military authorities likely have unlimited access and authority to use civilian transportation infrastructure for their purposes in a crisis or conflict. The only limits are likely physical and technical, such as the high-speed rail system’s likely inadequacy (which the PLA is likely working to remedy) for transporting heavy military cargo and weapons systems in some scenarios. The 2017 National Defense Transportation Law sought to strengthen the legal basis for authorities’ (especially the military’s) use of civilian infrastructure, including by further mandating that national defense requirements be considered during infrastructure construction. A wholistic assessment of how

authorities have incorporated defense transportation requirements into their plans requires more research, but lines of effort include preparing international cargo airports to support military needs, pre-enlisting and pre-modifying civilian vehicles like heavy truck cranes, and aligning train car design with military requirements. The law likely improved the ease with which the military can require civilian entities to accommodate military needs (e.g., design considerations and training), though implementation is not perfect.

*What sorts of modifications would need to be made to civilian transportation networks to become suitable for military use, and to what extent would these modifications be observable to the U.S. government? Would civilian operators be compensated for the requisitioning and potential destruction of this infrastructure in wartime?*

- Examples of modifications to PRC transportation networks since the 2017 National Defense Transportation Law include the creation of new dual-use terminals at ports, retention of out-of-use railways due to their military value, and addition of military-use infrastructure (e.g., stations and platforms) along railways and (likely) at airports. To a certain extent, these kinds of modifications may be visible to the U.S. government either through open-source reporting or satellite imagery. However, discerning military use from civilian use may be difficult, as many projects are inherently intended to be dual-use in accordance with the MCF strategy. Further research is required to understand the broader range of possible modifications to PRC transportation networks. Legal right to compensation covers transportation infrastructure, including damage to ports, airports, and train stations and (likely) the salaries of personnel required to operate such infrastructure.

*How might transportation activity change in the lead up to a potential conflict scenario?*

- Transportation mobilization for a large-scale joint operation, such as an invasion of Taiwan, would likely involve 3,000 train trips, 1 million vehicle trips, 2,100 aircraft sorties, and more than 8,000 ship voyages. Activity at this scale would likely generate detectable changes in transportation patterns and other activities within the PRC. The challenge is that most of the clearest signals of imminent threat in this sector will likely occur in relatively close temporal proximity to the onset of aggression (likely a matter of months). Signals outside of the transportation sector may be clearer or available on a longer timeline.

*What role could China's private sector play in a potential conflict scenario? How might the Chinese government incorporate these firms and their activities into their military operations?*

- PRC private enterprises are an important part of national defense mobilization, especially in relation to the production of advanced technology and related skilled labor. Private enterprises are likely to be mobilized to shift production or provide their staff to support logistics, maintenance, technology deployment, and other activities. Enterprises in fields such as equipment manufacturing; information communications; medicine; nuclear, biological and chemical surveillance; fire and disaster relief; “unmanned intelligence” (likely meaning drones); biomedicine; logistics; and warehousing are targets for the preparation of mobilization requirements in major cities. It is also possible for private sector

technical talent to be mobilized to support network (cyber) operations, though the command and control of civilians for this activity is unclear.

*What are the implications of China's construction of civil air defense projects (such as air raid shelters) in recent years?*

- PRC authorities are focused on maintaining, improving, and building new civil air defense infrastructure, including in Fujian province across the strait from Taiwan. This aligns with the national leadership's very likely assessment that the possibility of an armed conflict in coming years is increasing. However, many construction projects primarily related to economic or social development (e.g., schools or industry parks) are likely to include a civil air defense component (principally a basement that can be used for shelter) due to PRC law. This reduces the usefulness of civil air defense project construction as a signpost of an imminent threat. Civil air defense projects in Fujian province likely represent ongoing, long-term efforts to strengthen civil air defense infrastructure incrementally and improve NDM readiness broadly, rather than representing an urgent effort to brace for conflict in the short-term. In particular, authorities continue to focus on the dual defensive and commercial purposes of civil air defense projects (such as defensive facilities that are also developed for tourism), which is likely not indicative of construction motivated by an immediate threat.

*The Commission is mandated to make policy recommendations to Congress based on its hearings and other research. What are your recommendations for Congressional action related to the topic of your testimony?*

- Congress should consider directing or funding public research into understudied areas of the PRC national defense mobilization system revealed by the Commission's questions. See **Section VII** for a list of such topics. Greater attention to the subject would be beneficial to furthering the U.S. government and public's understanding of MCF, potential signposts of a looming conflict, and the forces the PRC will be able to bring to bear in a conflict. Congress should also consider passing (with amendments if needed) the Open Translation Center Act of 2024 (H.R.7942/S.4118) to help maintain and expand foreign access to key materials from the PRC government and broader PRC information space.

## Appendix H: Civil Air Defense Projects in Fujian Province

The term “civil air defense project” (人防工程) refers to any underground protective structure used to ensure the wartime shelter of personnel and materials, civil air defense command, or medical rescue resources.<sup>338</sup> Specific types of civil air defense projects include air raid shelters, tunnel engineering, command communications infrastructure, and underground hospitals. Since at least late 2020, Fujian provincial authorities and the authorities in cities such as Fuzhou, Xiamen, and Quanzhou have inspected, maintained, upgraded, and approved the building of new, civil air defense facilities; improved regulations and processes related to their construction, management, and supervision; and made efforts to improve civil air defense workforces and public education, including through the introduction of modern technologies.

Civil air defense projects in Fujian province likely represent ongoing, long-term efforts to strengthen civil air defense infrastructure incrementally and improve NDM readiness broadly, rather than representing an urgent effort to brace for conflict in the short-term. In cases of new construction, many projects are likely the by-product of national laws governing major construction in cities. The PRC’s Civil Air Defense Law and other regulations require that many civilian-use construction projects in urban areas include underground facilities (i.e., basements) that can be used as air raid shelters.<sup>339 340</sup> Thus, many construction projects primarily related to economic or social development are likely to include a civil air defense component, which reduces the usefulness of civil air defense project construction as a signpost of an imminent threat. Further, as seen in the list below, part of recent civil air defense work in Fujian province has included continuing focus on converting existing infrastructure to serve dual defensive and commercial purposes, an element of MCF.

Still, PRC authorities are focused on improving civil air defense readiness.<sup>341</sup> This aligns with the national leadership’s very likely assessment that the possibility of an armed conflict in coming years is increasing. The following list of civil air defense projects in Fujian province is not exhaustive.

- March 2024 — The Xiamen National Defense Mobilization Office inspected more than 30 “early-stage civil air defense projects” (i.e., those originally built in the 1960s and 70s<sup>342</sup>) for their safety, potential for development, and other factors, with the goal likely being to ensure both continued use for civil air defense and commercial endeavors.<sup>343</sup>
- March 2024 — The Fuzhou National Defense Mobilization Office inspected civil air defense infrastructure in Yantai Mountain and discussed plans for converting it for commercial purposes (this would not preclude it continuing to function as a civil air defense facility).<sup>344</sup>
- June 2023 — Fuzhou completed phase one of a project to install “folding camouflage doors” (折叠伪装门) on line four of the city’s metro system, which is reportedly an important element of the city’s civil air defense infrastructure.<sup>345</sup>
- March 2023 — Fujian province published a description of “smart civil air defense,” suggesting this is a priority; “smart civil air defense” refers to incorporating civil air defense into smart city planning, leveraging data, cloud computing, and other technology for civil air defense purposes, and promoting

peacetime uses of civil air defense infrastructure to support development (such as by using shelters as parking garages).<sup>346</sup>

- January 2023 — Fujian provincial authorities issued a press release highlighting Xiamen’s success in civil air defense management reform to decrease administrative burdens (such as project approval times) and impact on people’s lives.<sup>347</sup>
- March 2023 — A Quanzhou district issued a list of eighteen construction projects with a likely civil air defense component that authorities approved in 2022; the projects include middle schools, health service areas, residential communities, industry parks, and other facilities. Each project was approved under regulations for the “construction of civil air defense underground rooms in new urban civilian-use buildings” (城市新建民用建筑修建防空地下室) or regulations related to “relocating” air defense facilities, both of which likely relate to provisions of the Civil Air Defense Law and other PRC regulations.<sup>348</sup>
- December 2022 — Fujian provincial authorities included a Fuzhou-based school construction project on a list of “prefabricated construction model project cases”; the school includes a civil air defense component, likely in accordance with the Civil Air Defense Law.<sup>349</sup>
- December 2022 — A Xiamen-based news outlet highlighted the city’s efforts to improve civil air defense, including through a new "Civil Air Defense Navigation" platform to aid citizens’ discovery of evacuation routes, upgrades to emergency broadcast systems and command infrastructure, renovations to “early-stage civil air defense projects,” and educational programs.<sup>350</sup>
- October 2022 — Quanzhou issued a call for civil air defense volunteers as part of efforts to address weaknesses related to civil air defense project ownership, maintenance management, and professional and technical strength.<sup>351</sup>
- December 2021 — Fujian provincial authorities conducted “double random” inspections of ten operational or under-construction civil air defense sites according to policies implemented in November of the same year, finding faults in all but two sites; the faults ranged from mandatory personnel not being on-site, to administrative failures like missing paperwork, to failure to adhere to civil air defense construction standards.<sup>352</sup>
- September 2020 — Fujian provincial authorities visited Xiamen, Quanzhou, and Zhangzhou to investigate project statuses and management practices, emphasizing the need for strict management and quality supervision but also the importance of not allowing approval processes to cause delays.<sup>353</sup>

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**OPENING STATEMENT OF TIMOTHY HEATH,  
SENIOR INTERNATIONAL/DEFENSE RESEARCHER, RAND**

DR. HEATH: Good afternoon, Chair Harris, Simms, and Goodwin, Commissioners and staff, thank you for inviting me to speak with you today. In my testimony, I will address the topic of whether China is preparing for a conflict with the United States.

I will begin by distinguishing between the concepts of military preparedness and national war preparation. I will briefly examine evidence for both. I will discuss what sorts of indicators might reveal Chinese intentions to start war, and I will conclude with some recommendations.

Although experts routinely claim that China is preparing for war, the evidence for such claims merits closer scrutiny. In evaluating the question, it is important to distinguish between the concepts of military preparedness and national war preparation.

By military preparedness, I mean the breadth of activity undertaken by state to ensure its military can carry out any and all missions assigned to it. This includes investments in and development of new weapons and equipment, recruitment and training of personnel, planning in preparation for contingencies, and defense mobilization reorganization activity.

Military preparedness is a normal activity undertaken regardless of whether a country's leadership believes a war is impending or not. Absent other indicators, military preparedness alone is not a reliable indicator that a country is posturing for conflict.

National war preparation consists of changes to policy and procedures in nonmilitary domains to facilitate the execution of combat operations. National war preparation is inherently more political and potentially contentious in a way that military preparedness is not, because it involves the transfer of resources normally assigned for civilian purposes to the military.

Most states carry out military preparedness activity, but only countries that anticipate war are likely to endure the stress of national war preparation. In contrast to military preparedness, national war preparation provides a more reliable set of indicators that a country is contemplating war.

Although there is ample evidence that China is carrying out military preparedness related activity, there is little evidence that China is carrying out national war preparation related activity.

My written testimony provides more details, but here I will briefly highlight a few key points. Politically, Xi Jinping has made no statement suggesting the entire nation must prepare for war or otherwise suggesting war is likely or at all desirable.

In terms of industry and the economy, China's defense spending remains relatively modest at under two percent of GDP, although the actual amount is probably slightly under reported.

China has carried out reforms to improve defense mobilization procedures and clarify roles and responsibilities, as we just heard, however the system continues to face serious shortfalls. And the medical system has so far failed to establish capabilities for handling the sort of mass casualties that one would expect from war.

What would it take to move China to a war footing? In my view, the biggest obstacle lies in politics. In particular, Chinese leaders lack any constituency for war, and the state bureaucracy is not postured for war.

Without a constituency for war, and with a bureaucracy that has prioritized economic development related policies, Chinese leaders face powerful disincentives and major hurdles to

escalating any crisis to conflict. The most important indicators that a war could be coming would consist of changes in the political posture to ready the country for conflict.

What would this look like in practice? Here I can sketch out a few steps. The first and most important step would be for the national leader to re-prioritize the nation's goals. Instead of national development, the leader would articulate goals of defeating U.S. power and perhaps conquering Taiwan.

He would call for mass sacrifice and highlight the values of individual sacrifice for the good of the nation. Such a vision would represent a dramatic change from current policies and would probably elicit some resistance among elites and the public.

Accordingly, the leadership would need to carry out extensive purges and an intense indoctrination to build up a base of public support and train the bureaucracy to prioritize war preparation.

Once the Chinese leader has successfully set the political conditions, however, national war preparations could proceed very quickly. The bureaucracy would understand its job and could carry out national war preparations or even mobilization in all domains.

Under a more belligerent political posture, the risk of conflict could escalate rapidly. Chinese leaders could plan a deliberate attack, but even if they did not plan a deliberate attack, their expectations of its likelihood, and the extensive war preparations undertaken, would raise the risk that any crisis could rapidly escalate into a war. Under such conditions, it would be extremely difficult to determine when and where the Chinese might start an attack.

In conclusion, China has undertaken military preparedness for many years. The reasons for the military buildup varied, but there is currently no evidence that China is currently on a war footing or contemplating moving to one eminently.

The political disincentives to initiating war remain compelling. This does not rule out the possibility of sudden China-related shocks, crises, coercion, feuding, all of which are possible and may well increase as U.S. tensions persist. However, so long as Chinese leaders believe the path of peaceful development to be viable, the risk of escalation to war, in my view, remains low.

And I conclude with some recommendations. First, to improve our understanding of Chinese intentions regarding the potential use of force, and more accurately identify indications and warnings of a potential conflict, the United States should monitor Chinese senior leader speeches and official documents that assess the prospects for the country's national development.

Evidence of growing pessimism and debate about the viability of the current strategy would be a very important indicator of a potential change in the nation's political strategy.

Second, the United States should focus more analysis on Chinese national war preparations. While analysts have long tracked developments in the country's military preparedness and mobilization system, there has been less attention paid to the nonmilitary domains related to national war preparation.

Third, the United States should monitor the mood of the public in China and among elites as represented in publicly available media, a surge in fictitious depictions of war with the United States in a Chinese movie, television shows, books, et cetera, could reflect government efforts could cultivate public support for a more belligerent policy and potentially deepening public support for such a war.

Thank you for giving me the time to speak with you. And I look forward to your questions.

**PREPARED STATEMENT OF TIMOTHY HEATH,  
SENIOR INTERNATIONAL/DEFENSE RESEARCHER, RAND**



TIMOTHY R. HEATH

# Is China Prepared for War?

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Indications and Warning of a Potential Chinese Conflict  
with the United States

CT-A3381-1

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*Is China Prepared for War? Indications and Warning of a Potential Conflict  
with the United States*

Testimony of Timothy R. Heath<sup>1</sup>  
RAND<sup>2</sup>

Before the U.S.-China Economic and Security Review Commission

June 13, 2024

**A**mid worsening U.S.-China tensions and an unrelenting Chinese military buildup, fears have grown that Beijing may be preparing for war. In this testimony, I will address the topic of whether China is prepared for a conflict with the United States. I will begin by distinguishing between the concepts of *military preparedness* and *national war preparation*. There is ample evidence that China's military is enhancing its preparedness, but little evidence that the national leadership intends to fight a war anytime soon. A principal obstacle to China initiating war lies in politics—in particular, the lack of a constituency for war and the unprepared condition of the bureaucracy. The most important indicators of a potential conflict would consist of efforts to overcome these obstacles. Although difficult to achieve, once a Chinese leader has set the political conditions for conflict, the risk of war could rise dramatically. The timing of a preplanned attack or even the escalation of a crisis to a major war under such conditions would likely be very difficult to predict.

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<sup>1</sup> The opinions and conclusions expressed in this testimony are the author's alone and should not be interpreted as representing those of RAND or any of the sponsors of its research.

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## Military Preparedness Versus National War Preparation

Experts have for decades predicted an imminent U.S.-China war. In 2005, international relations theorist John Mearsheimer predicted a rising China would fight the United States.<sup>3</sup> Throughout the 2010s, many books and articles foretold a U.S.-China conflict.<sup>4</sup> The predictions failed to materialize, but this has not dampened a thriving industry of similar prognostications; recent reports claim, for example, that China has moved to “wartime footing.”<sup>5</sup> And the claim that U.S.-China war is right around the corner has become routine.<sup>6</sup> Some observers have even specified the year in which they believe war might occur, such as 2025 or 2027.<sup>7</sup>

Why have such predictions gained such traction? Analysts often cite evidence of Chinese war preparations, but these claims merit closer scrutiny. In evaluating the evidence, it is essential to distinguish between military preparedness and national war preparation. By *military preparedness*, I mean the breadth of activity undertaken by a state to ensure its military can carry out any and all missions assigned to it. This includes investments in and development of new weapons and equipment, recruitment and training of personnel, and planning and preparation for contingencies. Military preparedness is a normal activity undertaken regardless of whether a country’s leadership believes a war is likely or not. For example, the U.S. military has prepared to fight a major war against potential adversaries for decades, even though it last fought a great power in World War II. Similarly, the People’s Liberation Army (PLA) has focused its military preparations on a war with Taiwan since at least the early 1990s, even though the two sides last fought each other in the 1950s.<sup>8</sup> Absent other key indicators, military preparedness alone is not a reliable indicator or warning of imminent military action.

More reliable indicators that a country is anticipating conflict can be observed when the entire society prepares for war. There are two ways in which societies may prepare for war. The more demanding form, *national defense mobilization*, consists of state-directed activity to transition part or all of the country from a peacetime to war footing through such measures as conscription and the large-scale transfer of resources from civilian to military use. It can greatly expand the war-making capacity of a state, but it is also enormously costly and disruptive and, therefore, rarely undertaken outside a conflict. The less demanding form, which I call *national war preparation*, consists of changes to policy and procedures in nonmilitary domains to facilitate the execution of combat operations. It is less costly and disruptive than mobilization but

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<sup>3</sup> John Mearsheimer, “The Rise of China Will Not be Peaceful at All,” *The Australian*, November 18, 2005.

<sup>4</sup> One such example is Michael Pillsbury, “China and the United States Are Preparing for War,” *Foreign Policy*, November 13, 2014.

<sup>5</sup> Seth G. Jones, “Beijing Is on a Wartime Footing,” *Wall Street Journal*, January 1, 2024.

<sup>6</sup> Gordon Chang, “China Is Preparing for War, America Is Not,” Institute of World Politics, November 29, 2022; John Pomfret and Matt Pottinger, “Xi Jinping Says He is Preparing China for War,” *Foreign Affairs*, March 29, 2023.

<sup>7</sup> “U.S. Four-Star General Warns of War with China in 2025,” Reuters, January 28, 2023; Joe Saballa, “China ‘on Track’ for Potential Taiwan Invasion by 2027: US Admiral,” *Defense Post*, March 22, 2024.

<sup>8</sup> U.S. Department of Defense, *Military and Security Developments Involving the People’s Republic of China: Annual Report to Congress*, 2023.

also results in a smaller expansion of war-making capacity. Chinese sources make such a distinction between two types of conflict preparation. According to the PLA dictionary, “war mobilization” [争动员战] occurs when a country, in anticipation of conflict, directs part or all of society to move from a peacetime to wartime footing. By contrast, “war preparation” [战争准备] occurs when a country enacts policies in the political, economic, industrial, and other domains to facilitate combat operations. Measures for war preparation can be undertaken in peacetime, as well as both prior to and during conflict.<sup>9</sup> For example, Russia, which has fought numerous conflicts since it invaded Georgia in 2008, carried out war preparations in peacetime beginning around 2010, and it intensified preparations prior to and during its seizure of Crimea in 2014 and invasion of Ukraine in 2022. Key measures included Putin’s consolidation of power, a relentless propaganda campaign directed against Ukraine and NATO, tightened media censorship, stockpiling, economic security measures, and military deployments.<sup>10</sup> However, Russia first attempted a defense mobilization in 2022 when its initial assault stalled, a process that proved so contentious that Moscow suspended it.<sup>11</sup> Although national war preparation is less disruptive and costly than mobilization, it still is premised on an expectation of conflict. Thus, it is inherently more political and potentially controversial in a way that military preparedness is not. Most states carry out military preparedness, but only countries that anticipate war are likely to endure the stress of attempting national war preparation. In contrast to military preparedness, national war preparation is a more reliable indicator and warning that a country may be planning to get involved in a conflict.

A great deal of the evidence cited for the claim that China is preparing for war is more accurately characterized as evidence of military preparedness. For example, reports have cited China’s large defense budgets or annual increases in military spending. Analysts have also drawn attention to China’s vast network of missiles and weapons to deter foreign interventions.<sup>12</sup> Reports have also cited China’s vast inventories of short-range ballistic missiles and many medium- and intermediate-range ballistic missiles.<sup>13</sup> China’s military preparedness may be worrying, but it does not in itself signal any expectation of imminent conflict.

Speeches by Xi Jinping that exhort the military to ensure combat readiness, while alarming when read out of context, must be understood as another part of military preparedness.<sup>14</sup> This is true even though Xi has himself, confusingly, sometimes used the term “war preparation work”

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<sup>9</sup> *Military Dictionary* [军语], PLA Press, 2011.

<sup>10</sup> Kalev Stoicescu, Mykola Nazarov, Keir Giles, and Matthew D. Johnson, *How Russia Went to War: The Kremlin’s Preparations for Its Aggression Against Ukraine*, International Centre for Defence and Security, April 2023.

<sup>11</sup> Katharina Krebs, Chris Liakos, and Lianne Kolirin, “Russia Suspends ‘Partial Mobilization’ of Citizens for Ukraine War,” CNN, November 1, 2022.

<sup>12</sup> Katsuji Nakazawa, “Analysis: Xi Puts Economy on War Footing with Taiwan in Mind,” *Nikkei Asia*, November 10, 2022.

<sup>13</sup> Grant Newsham, “China’s Military Buildup Enough to Win a War with US,” *Asia Times*, November 30, 2023.

<sup>14</sup> Verna Yu, “Xi Jinping Tells China’s Army to Focus on Preparation for War,” *The Guardian*, November 9, 2022.

[备战打仗工作].<sup>15</sup> In every case, Xi or other top military leaders have used such language when addressing military units or in standard speeches, such as Party Congress reports, that contain sections on the military. The officials have defined such phrases in terms of military training, planning, and organizational change—in other words, standard military preparedness activity.<sup>16</sup>

In sum, although Chinese military modernization developments may well pose a threat to the U.S. military, they do not signal that China is carrying out (or has already initiated) national war preparations. This point was underscored when senior U.S. officials clarified that intelligence reports regarding PLA modernization goals for 2027 did not imply any intent to actually start a war.<sup>17</sup>

## Little Evidence of National War Preparation

To determine whether China actually expects war, it is far more important to observe what the leadership is saying and doing in the nonmilitary policy domains. There is no evidence that China is carrying out any type of mobilization for war and little evidence of national war preparation. Although a comprehensive review of the state of preparations in all nonmilitary policy domains lies beyond the scope of this testimony, I will highlight a few key areas: politics, economy, defense industry, defense mobilization, and medical care.

Politically, Xi Jinping has made no statement suggesting the entire nation must prepare for war or otherwise suggesting war is likely or at all desirable. On the contrary, Xi has consistently affirmed that Beijing adheres to the pursuit of the “China Dream” of national revitalization through a peaceful development strategy.<sup>18</sup> To be clear, Xi has made numerous criticisms of the United States and has stated on several occasions that Taiwan unification must occur and that use of force cannot be ruled out. Yet his statements about Taiwan largely resemble those of his predecessors.<sup>19</sup> For example, when Xi makes pledges to ensure Taiwan’s unification, he has done so in sections of long speeches that outline national priorities and imperatives, such as the 19th or 20th Party Congress reports. In such reports, mention of Taiwan usually appears near the end of the report, in a section typically reserved for the issue. The overwhelming focus of those speeches is on socioeconomic issues, such as jobs, corruption, and inequality.<sup>20</sup>

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<sup>15</sup> “Xi Stresses Breaking New Ground for War Preparedness in PLA Eastern Theater Command Inspection,” Xinhua, July 6, 2023.

<sup>16</sup> “Deepen the Work of Preparing for War in the New Era and Fight the Tough Battle to Achieve the Centenary Goal of the Founding of the Army” [“深入推进新时代备战打仗工作 打好实现建军一百年奋斗目标攻坚战”], *People’s Daily* [人民日报], February 9, 2024.

<sup>17</sup> Joe Saballa, “China to Develop Ability to Seize Taiwan by 2027: US Intel,” *Defense Post*, September 21, 2022.

<sup>18</sup> Wang Yi, “All People of Chinese Descent Should Jointly Oppose ‘Taiwan Independence’ and Support Peaceful Reunification,” Ministry of Foreign Affairs of the People’s Republic of China website, March 7, 2024; “Full Text of Xi Jinping’s Report at 19th CPC National Congress,” Xinhua, November 3, 2017.

<sup>19</sup> Timothy R. Heath, “Is China Planning to Attack Taiwan? A Careful Consideration of Available Evidence Says No,” *War on the Rocks*, December 14, 2022.

<sup>20</sup> Timothy R. Heath, “Xi’s Cautious Inching Towards the China Dream,” *Lawfare*, August 7, 2023.

What about China's economy and defense industry? Countries that are serious about waging war tend to significantly increase their defense spending to maximize the odds of victory. In World War II, mobilized Allied and Axis powers increased defense spending to between 50 and 70 percent of gross domestic product (GDP). In more recent wars, states have ramped up spending, though to a lesser degree. U.S. defense spending surged to around 6 percent of GDP in the wars in Iraq and Afghanistan, for example.<sup>21</sup> Russia has ratcheted defense spending to between 6 and 9 percent of GDP in its war in Ukraine.<sup>22</sup> By contrast, China's defense spending remains relatively modest at under 2 percent of GDP, although the actual amount spent is probably slightly underreported.<sup>23</sup> Although China has pursued a "military-civil fusion" strategy, its purpose seems as much to be about supporting the country's economic development strategy as it is about improving military capability.<sup>24</sup> Some have cited evidence of stockpiling to suggest war preparations. But this may be explained more simply by Chinese concerns over a more unstable and unpredictable global economy, given the disruptions from the Russia-Ukraine war and other crises. It is a concern shared by many countries. For example, China may have amassed about 300-400 million barrels of oil, while the U.S. Strategic Petroleum Reserve has accumulated 364 million barrels.<sup>25</sup>

China has carried out reforms to streamline defense mobilization procedures and clarify roles and responsibilities. However, the system continues to face shortfalls.<sup>26</sup> As an example, the People's Armed Forces Department (PAFD) has experienced a resurgence in activity. The PAFD is responsible for overseeing the recruitment, organizing, and management of militia forces and also plays a key role in the mobilization of militia. However, improvements to the PAFD do little to address the more fundamental problems with China's defense mobilization system, such as a lack of standardized data management, understaffed and misaligned bureaucracies, inconsistent authorities, and unresolved compensation policies.<sup>27</sup>

China's medical infrastructure has made little progress in national war preparations as well. Chinese hospitals appear, at most, to be prepared for earthquakes but otherwise have little

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<sup>21</sup> Lee Hudson Teslik, "Iraq, Afghanistan, and the U.S. Economy," Council on Foreign Relations, March 11, 2008.

<sup>22</sup> Howard J. Shatz and Clint Reach, *The Cost of the Ukraine War for Russia*, RAND Corporation, RR-A2421-1, 2023, [www.rand.org/t/RR-A2421-1](http://www.rand.org/t/RR-A2421-1).

<sup>23</sup> Megan McKernan, Stephanie Young, Timothy R. Heath, Dara Massicot, Mark Stalczynski, Ivana Ke, Raphael S. Cohen, John P. Godges, Heidi Peters, and Lauren Skrabala, *Planning, Programming, Budgeting, and Execution in Comparative Organizations: Vol. 1, Case Studies of China and Russia*, RAND Corporation, RR-A2195-1, 2024, [www.rand.org/t/RR-A2195-1](http://www.rand.org/t/RR-A2195-1); Nan Tian and Fei Su, *A New Estimate of China's Military Expenditure*, Stockholm International Peace Research Institute, 2021.

<sup>24</sup> Elsa B. Kania and Lorand Laskai, "Myths and Realities of China's Military-Civil Fusion Strategy," Center for a New American Security, January 28, 2021.

<sup>25</sup> Chen Aizhu and Florence Tan, "Exclusive: China's CNOOC Stockpiles Russian Oil at New Reserve Base," Reuters, April 15, 2024.

<sup>26</sup> Yu-Ping Chang, "National Defense Mobilization: Towards a Clear Division of Labor Between the PLA and Civilian Bureaucracies," *China Brief*, Vol. 24, No. 6, March 15, 2024.

<sup>27</sup> Liu Ruiqiang [刘瑞强], "Achievements, Problems and Prospects of National Defense Mobilization Law Since Its Implementation" ["国防动员法"实施以来的成就、问题与展望], *Journal of Beijing Institute of Technology* [北京理工大学报告], Vol. 24, No. 1, 2022.

capacity to cope with mass casualties.<sup>28</sup> A survey of academic reports in 2018 observed that China lags its counterparts in the study of emergency medical systems for mass casualty incidents.<sup>29</sup> Chinese military medical journals have also judged the existing system of medical evacuation and treatment of war-related injuries deeply inadequate.<sup>30</sup> China's medical system has seen some improvements during Xi's tenure, but it continues to suffer serious deficiencies, including ineffective regulation and inconsistent training and education of providers.<sup>31</sup> China's mishandling of the exit from the COVID-19 pandemic underscored weaknesses in the system.<sup>32</sup>

China may have made little effort to put the country on a war footing, but Beijing has clearly sought to bolster the country's security. This activity has contributed to the perception that China is stepping up war preparations. However, Chinese leaders have fairly consistently highlighted domestic dangers as the principal reason for such preparations. When Xi described the threats to national security at the 20th Party Congress, he began by listing issues of "social governance," likely referring to popular discontent over corruption, inequality, and local malfeasance. He then mentioned "ethnic separatists, religious extremists, and violent terrorists," as well as organized crime and natural disasters, before moving on to discuss other perils, including pressure from the United States.<sup>33</sup> The strong emphasis on domestic dangers should not be surprising. International polls similarly show that domestic issues, such as crime, unemployment, and corruption, are top concerns in many developing countries, including China.<sup>34</sup> The security preparations observed in industry, defense mobilization, the PAFD, the medical system, and elsewhere are consistent with a country worried first and foremost about a deteriorating domestic situation and are less consistent with those undertaken by a leadership contemplating major war.

## Politics: The Key to National War Preparation

What would it take to move China politically to a war footing? A big obstacle to China's initiation of a war against Taiwan lies in politics. In particular, Chinese leaders lack a public

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<sup>28</sup> Jin-Hong Chen, Jun Yang, Yu Yang, and Jing-Chen Zheng, "Mass Casualty Incident Primary Triage Methods in China," *Chinese Medical Journal*, Vol. 128, No. 19, October 5, 2019.

<sup>29</sup> Wenya Yu, Yiping Lu, Chaoqun Hu, Xu Liu, Haiping Chen, Chen Xue, and Lulu Zhang, "Research of an Emergency Medical System for Mass Casualty Incidents in Shanghai, China: A System Dynamics Model," *Patient Prefer Adherence*, Vol. 12, 2018.

<sup>30</sup> Yang Pei, Yue Song, and Min Yu, "A New Approach to Organization and Implementation of Military Medical Treatment in Response to Military Reform and Modern Warfare in the Chinese Army," *Military Medicine*, Vol. 182, No. 11–12, November 2017.

<sup>31</sup> Jennifer Bouey, "China's Health System Reform and Global Health Strategy in the Context of COVID-19: Addendum," testimony before the U.S.-China Economic and Security Review Commission, RAND Corporation, CT-A321-2, 2020, [www.rand.org/t/CTA321-2](http://www.rand.org/t/CTA321-2).

<sup>32</sup> Jennifer Bouey, "Lost Opportunities to Contain COVID-19 in China," *RAND Blog*, January 6, 2023, <https://www.rand.org/pubs/commentary/2023/01/lost-opportunities-to-contain-covid-19-in-china.html>.

<sup>33</sup> Ministry of Foreign Affairs of the People's Republic of China, "Full Text of the Report to the 20th National Congress of the Communist Party of China," October 25, 2022.

<sup>34</sup> Pew Research Center, "Crime and Corruption Top Problems in Emerging and Developing Countries," November 6, 2014.



constituency for war and the state bureaucracy is not ready for war. The most important indicators of a potential war involving China will likely stem from activity related to overcoming these obstacles. However, Chinese leaders would face serious risks if they attempt to do so.

The lack of public demand for major war is important, given the expected hardships that war with the United States could entail, including mass casualties and a severe economic disruption, to say nothing of potential nuclear annihilation.<sup>35</sup> Scholarly surveys have found that the Chinese public has expressed little support for armed conflict to compel Taiwan's unification and still less if such a war might involve the United States.<sup>36</sup> Nor is there any evidence of a faction of Chinese elites who eagerly seek war with the United States.

The bureaucracy is responsible for carrying out the myriad tasks related to national war preparation, but it is not currently postured to do so. Party cadres have been thoroughly socialized to prioritize peaceful development policies. Their promotion criteria, rules, regulations, indoctrination material, and political work all prioritize such measures as GDP growth, governance, and management of social stability, not war preparation. Their work remains guided by the ideology largely set by Deng Xiaoping and refined by subsequent generations of leaders. This ideology upholds a "peaceful development" strategy that is fundamentally anchored on the assessment that China faces a relatively benign security environment. China has not fundamentally changed its assessment, set in 1985, that the country faces a low risk of general war, although it has made many modifications to the identification of specific threats.<sup>37</sup> The 2019 defense white paper, for example, states that "forces for peace predominate over elements of war" and describes the Asia-Pacific region as "generally stable."<sup>38</sup>

Without a constituency for war and with a bureaucracy focused on development-oriented policies, Chinese leaders face powerful disincentives and major hurdles to escalating any crisis to conflict.<sup>39</sup> Although Xi has concentrated power, China retains a more institutionalized form of authoritarian rule than other autocracies. These features make it harder for Chinese leaders to start a conflict than might be the case in a personalistic regime such as Putin's Russia.<sup>40</sup> The difference in political systems helps explain, in part, the contrasting records of belligerence. Russia under Putin has fought wars almost continually since 2008, while China has not fought a war since 1979.

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<sup>35</sup> David C. Gompert, Astrid Stuth Cevallos, and Cristina L. Garafola, *War with China: Thinking Through the Unthinkable*, RAND Corporation, RR-1140-A, 2016, [www.rand.org/t/RR1140](http://www.rand.org/t/RR1140).

<sup>36</sup> Adam Y. Liu and Xiaojun Li, "Assessing Public Support for (Non)Peaceful Unification with Taiwan: Evidence from a Nationwide Survey in China," *Journal of Contemporary China*, Vol. 33, No. 145, 2024.

<sup>37</sup> Edmund J. Burke, Kristen Gunness, Cortez A. Cooper III, and Mark Cozad, *People's Liberation Army Operational Concepts*, RAND Corporation, RR-A394-1, 2020, [www.rand.org/t/RR-A394-1](http://www.rand.org/t/RR-A394-1).

<sup>38</sup> State Council Information Office of the People's Republic of China, *China's National Defense in the New Era*, July 24, 2019.

<sup>39</sup> Timothy R. Heath, "Could Beijing Risk a Diversionary War Against Taiwan?" *Lawfare*, January 13, 2023.

<sup>40</sup> Jessica L. Weeks, "Strongmen and Straw Men: Authoritarian Regimes and the Initiation of Conflict," *American Political Science Review*, Vol. 106, No. 2, May 2012.



Although commentators routinely warn that China and the United States could blunder their way into war, the danger is easily overstated.<sup>41</sup> Historically speaking, getting great powers to fight each other when they are disinclined to do so has proven extremely difficult.<sup>42</sup> In the Cold War, the United States and the Soviet Union faced numerous crises and even proxy wars but never directly fought each other. Similarly, China and the United States have experienced their own crises, including the U.S. bombing of the Chinese embassy in Yugoslavia in 1999 and the downing of a U.S. military aircraft by the Chinese military in 2001. Yet none of these incidents have led to war. Tensions have intensified in the last few years between Washington and Beijing, but both sides continue to state their disinclination to fight a war with each other.<sup>43</sup>

Increasing China's willingness to risk war requires at least several steps. A first step would be the articulation by a top leader that China no longer faced a benign security environment and that the risk of war had grown to dangerous levels. To cope with the new situation, the leadership would revamp the country's priorities and goals. Instead of economic development, national preparations for war and the realization of more basic security goals, such as the securing of lost territory or the defeat of U.S.-backed threats to CCP rule, would become top priorities.<sup>44</sup> Alarmed elites and members of the public might question the leadership's shift toward a more belligerent politics. Extensive purges and repression would be required to suppress any such challenges. Consolidating his grip on power around a belligerent policy agenda would enable the Chinese leader to carry out national war preparations. Relevant measures could include extensive propaganda that depicted the United States and/or Taiwan as a threat to China's safety and that glorified the notion of individual sacrifice in service to China. A flurry of meetings and indoctrination efforts would orient the bureaucracy to prioritize national war preparation over peacetime development goals. Diplomatic preparations are also important. Starting around 1976, Chinese leaders and media declared Vietnam in hostile terms, issued bitter denunciations, and diplomatically maneuvered to isolate Vietnam before launching an attack in 1979.<sup>45</sup> China would likely undertake similar efforts to mobilize international pressure against the United States and/or Taiwan. For war with the United States, politically mobilizing the populace would likely be necessary to extract war taxes, conscript labor, mobilize militia, or otherwise reallocate resources from civilian to military needs.

Making such changes would be politically difficult and risky. Xi may personally be more powerful than rival elites, but the Chinese state's grip on society is far weaker than was the case

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<sup>41</sup> Graham Allison, "How America and China Could Stumble to War," Belfer Center for Science and International Affairs, April 12, 2017.

<sup>42</sup> Michael P. Colaresi, Karen Rasler, and William R. Thompson, *Strategic Rivalries in World Politics: Position, Space and Conflict Escalation*, Cambridge University Press, 2008.

<sup>43</sup> "Biden: China's Xi Knows We Are Not Seeking Conflict," Reuters, October 26, 2022; Cao Desheng, "Xi: Conflicts, Confrontations Serve Nobody's Interests," *China Daily*, March 18, 2022.

<sup>44</sup> Timothy R. Heath, Kristen Gunness, and Tristan Finazzo, *The Return of Great Power War: Scenarios of Systemic Conflict Between the United States and China*, RAND Corporation, RR-A830-1, 2022, [www.rand.org/t/RR-A830-1](http://www.rand.org/t/RR-A830-1).

<sup>45</sup> Timothy R. Heath, Christian Curriden, Bryan Frederick, Nathan Chandler, and Jennifer Kavanagh, *China's Military Interventions: Patterns, Drivers, and Signposts*, RAND Corporation, RR-A444-4, 2021, [www.rand.org/t/RR-A444-4](http://www.rand.org/t/RR-A444-4).

in Mao Zedong's day. Mao could command the populace to carry out astonishing acts of national sacrifice in such bloody campaigns as the Great Leap Forward or Cultural Revolution. By contrast, the Chinese state under Xi grapples with persistent discontent over a slowing economy, unemployment, corruption, and inadequate social welfare services. The internal security budget has remained slightly larger than the military budget since 2011, and Chinese Communist Party (CCP) academics concede that popular identification with the CCP has dwindled.<sup>46</sup> Academic surveys suggest that popular support for the CCP is around 50–70 percent and is likely declining further.<sup>47</sup> Elite compliance with Xi's directives can also be overstated. His incessant tirades and criticism of "formalism" and "bureaucratism" hint at the intractable problems of elite noncompliance with many of Beijing's directives. Many elites continue to resist instructions that threaten their privileges and wealth, resulting in persistent political fragmentation and inconsistent policy implementation.<sup>48</sup>

The political peril of attempting a radical redirection of the country's political agenda from a decades-old focus on national development to war can perhaps be grasped by reviewing the last such change of this magnitude. In the 1970s, the leadership attempted to abandon a messianic communist ideology in favor of a pragmatic politics featuring market-friendly changes. That change proved enormously contentious and occurred only after considerable political strife and violence. Even after Deng enshrined the turn toward "reform and opening" in 1978, he struggled with hardliner opponents throughout the 1980s and only prevailed after ousting his rivals in 1992.<sup>49</sup>

## Conclusion

Once China's leader had successfully overhauled the country's politics and entrenched a new agenda that regarded war as likely or necessary, national war preparations could proceed quickly. The bureaucracy could carry out national war preparations or even mobilization in the economic, industrial, medical, and other domains. With ample indoctrination and relentless propaganda, a base of public support for war could emerge. Under a more belligerent political posture, the risk of conflict would increase dramatically. Chinese leaders could plan a deliberate attack. Even if they did not plan a war, their expectations of its likelihood and extensive national war preparations would raise the risk of rapid escalation in any crisis. Under such conditions, it would be difficult to determine when and where China might choose to initiate conflict.

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<sup>46</sup> Timothy R. Heath, Weilong Kong, and Alexis Dale-Huang, *U.S.-China Rivalry in a Neomedieval World: Security in an Age of Weakening States*, RAND Corporation, RR-A1887-1, 2023, [www.rand.org/t/RR-A1887-1](http://www.rand.org/t/RR-A1887-1).

<sup>47</sup> Erin Baggott Carter, Brett L. Carter, and Stephen Schick, "Do Chinese Citizens Conceal Opposition to the CCP in Surveys? Evidence from Two Experiments," *China Quarterly*, January 10, 2024; Ilaria Mazzocco and Scott Kennedy, "Public Opinion in China: A Liberal Silent Majority?" Center for Strategic and International Studies, February 9, 2022.

<sup>48</sup> Timothy R. Heath, *The Autocrat's Predicament: The Political Peril of Economic Upgrade in Single-Party Authoritarian Regimes*, Lexington Books, 2023.

<sup>49</sup> Heath, 2023.

In conclusion, China has undertaken military preparedness for many years. The reasons for the military buildup vary, but there is no evidence that China is currently on a war footing or contemplating moving to one imminently.<sup>50</sup> The political disincentives to initiate a war remain compelling. This does not rule out the possibility of sudden China-related shocks, crises, coercion, and intense feuding—all of which are possible and may well increase should U.S.-China tensions worsen. However, so long as China's leaders believe a path of peaceful development to be viable, the risk of escalation to war in any situation should remain low.

## Policy Recommendations

To improve our understanding of China's intentions regarding the potential use of force and more accurately identify indications and warning of a potential Chinese intent to risk war with the United States, I close my testimony with some policy recommendations:

- The United States should monitor Chinese senior leader speeches and official documents that assess the prospects for the country's peaceful development. Evidence of broad pessimism regarding the country's peaceful development strategy would pose a dangerous warning of a potential shift in the political agenda.
- The United States should focus more analysis on Chinese national war preparations. While analysts have long tracked developments in the country's military preparedness and mobilization system, less has focused on war preparations in all policy domains.
- The United States should monitor the mood of the public in China and among elites as represented in publicly available media. A surge in fictional depictions of war with the United States in Chinese movies, television shows, and books could reflect both government efforts to cultivate popular support for a more belligerent policy and deepening public support for such a policy.

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<sup>50</sup> Timothy R. Heath, "Why is China Strengthening its Military? It's Not All About War," *Defense News*, March 24, 2023, <https://www.rand.org/pubs/commentary/2023/03/why-is-china-strengthening-its-military-its-not-all.html>.

### PANEL III QUESTION AND ANSWER

COMMISSIONER SIMS: Thank you both for your prepared testimony. I'll kick us off in our Q&A session.

Dr. Heath, I'd like to start with you. It sounds like from your prepared testimony that you would say that China's political preparedness for conflict is lagging behind its military preparedness for conflict. Is that an accurate description of the way you view this?

DR. HEATH: Yes. And I would say that's probably true of many countries. There are many countries that direct ongoing military modernization and preparedness for conflict, even if they do not assess that the conflict is imminent.

COMMISSIONER SIMS: One of the things that you said we've heard several times in other testimonies today references the rhetoric that Chinese leadership uses to talk about being prepared for extreme scenarios or being prepared to struggle. Xi Jinping uses the language of struggle a lot.

And it sounded like you don't see them doing that at this point or don't hear them doing that at this point. But how do you square that with, I guess, other testimonies that we've heard today.

It sounded like people believe they are beginning to that, although the caveat being it's hard to tell whether the language of struggle in particular is more about the economic challenges that they're facing internally or the military side of things. So I guess are you just seeing a delineation between what that language is being used for?

DR. HEATH: Excellent question, and several points I'd make in response. First, there are different types of comments for different kinds of venues. So there are, for example, many speeches where Xi Jinping exhorts the military in particular to be ready for conflict and uses a lot of language about being combat ready, et cetera. That is appropriate and pretty much the norm for when the leader is addressing the military.

In other speeches he, especially when he's talking to the entire Congress or Central Committee, he does talk about a deteriorating security situation and, in several speeches, has enumerated the actual threats.

In almost all cases, the priorities, or the ones he lists first, and appeared to be the most threatening to CCP rule, are domestic, corruption, economic stagnation, crime, et cetera, et cetera.

This is not to discount the problems that China has with the United States. He does acknowledge that. But there's no evidence that I can find where he calls out for the whole nation to be prepared for war in a way that his predecessor has.

Last point I'll make is leaders that are seriously contemplating war do not shy away from naming the villain. They will try to paint their anticipated enemy in the starkest and often the most demonic terms as possible in order to make clear to the people who is to blame when the real hardships come and who the people need to prepare to sacrifice in order to defeat. Thank you.

COMMISSIONER SIMS: Got it. Dr. Thorne, I have a question for you. One of the things that sticks out when we're thinking about Chinese military preparedness is it's got to be in the back of their minds that their military is pretty much untested in modern history at this point.

And so as they are looking around the world and trying to draw lessons from other conflicts, since they haven't been in a lot of their own, what lessons do you think they're

learning from a preparedness standpoint from what's happening in Ukraine right now that perhaps could be applied to potential conflict across the Taiwan Strait?

MR. THORNE: Sure. I think, you know, one of the biggest such concerns that leads to a potential lesson learned is about the risk of a protracted conflict. You know, Taiwan situation is obviously unique from Ukraine, but if there's a situation where it draws on for months and months, will the domestic populous continue to support the hardship that is going to come with any particular war.

And I think they're also learning lessons about just sort of the roles that new technologies can play and how, in certain situations, sort of the global community can come together to support sort of a besieged jurisdiction or country.

So for instance, in Ukraine we've seen, in the cyber security space, many different companies coming to Ukraine's aid, supporting them against different types of cyber intrusions posed by Russia.

I think when the CCP looks at Taiwan and they think about, not that they are necessarily ready right now, to Dr. Heath's point, to contemplate an actual invasion of Taiwan on any kind of immediate time line, but when they look at the potential for that, I think they're going to be looking at possibility of a protracted war. To what extent is the National Defense Mobilization system and the participants in it going to be able to stand up to hardship.

And as you said, Commissioner Sims, you know, they haven't been tested in this wartime scenario. And they're also looking at perhaps what can we do to ensure that private companies around the globe are not going to support Taiwan the same way that they've supported Ukraine, to China's detriment.

COMMISSIONER SIMS: To put a fine point on that, and then I'll wrap up, from a preparedness standpoint, one of the takeaways then would be they would likely be preparing for, in the event of there being across Strait conflict, to come in with overwhelming force and try to make it not a protracted conflict but be able to use decisive force at the outset, correct?

MR. THORNE: I think there's others who have done extensive research on the specific sort of battle plans that the PLA contemplates. It would not be surprising, based on sources I've read, for that to be the intention, to come in sort of as quickly as possible, and as destructively as possible to achieve maximum effect and bring the conflict to a close, yes, as quickly as possible.

COMMISSIONER SIMS: Thank you both.

Going down the list, we'll start with Chairman Cleveland.

CHAIRMAN CLEVELAND: Thank you. I just have a quick question for you. You say in your written testimony that there are two ways societies can prepare for war. The more demanding National Defense Mobilization, consists of a state directed activity to transition part or all of the country from peacetime to war footing through such measures as conscription and large-scale transfer of resources from civilian to military use.

I'd like to focus on the second part of that sentence. If a decision was made to move from war preparation to war footing, to mobilize, how long do you anticipate it would take Xi and the CCP to complete the large-scale transfer of resources from civilian to military use?

DR. HEATH: Good question. I think that would, of course, depend on the exact course of action under consideration. In the event of a large-scale invasion of Taiwan, for example, I think my fellow panelist is actually in a probably better position to answer the calculations put forth by the Chinese.

But I would expect many months to assemble at least the fuel, the ammunition, the food, the supplies, the transportation networks, and ships in particular. And coordinating all that is a massive job. So I would expect that to take, I would think weeks and potentially months at least.

However, I think actually the most difficult part would be the political mobilization, getting the people onboard with this idea that the whole country should head into war. That could be quite violent and bloody in my opinion.

Because I expect a lot of people would question that and challenge that. And the government would have to suppress, of course, anybody who's, well, not of course, but I expect they would fully suppress and purge people who resisted that.

CHAIRMAN CLEVELAND: Well, you anticipated my next question. So I'd like to turn do you want to comment on the

MR. THORNE: Sure.

CHAIRMAN CLEVELAND: the timetable, just the timetable?

MR. THORNE: Sure. Yes, I would agree that it, at a minimum, would be months in most sectors, like the transportation sector, grain sector, to have food stuffs available, medical equipment, et cetera.

The political mobilization, I would agree, is also that's a challenge. And it's why the CCP continues to focus on sort of rule by law and adherence to Party values so that, if that situation develops, hopefully they can say we're ready. Now it's time for you to be ready too. But I do agree that it would be a challenge. And the timeline on that is likely in months, at least.

CHAIRMAN CLEVELAND: I think probably the timeline varies depending on whether or not you anticipate some kind of full assault that involves mechanized divisions and missiles, or you anticipate a smaller assault.

But could we speak to the issue of political constituency? Because it feels like this monolith. And I suspect, both within society and then within the Chinese leadership, there are constituencies within this constituency.

So could you speak a little bit about what those constituencies look like and who is most likely to least likely, perhaps on a continuum, to be supportive and get in line, or localize opposition?

DR. HEATH: Sure. I'll start with a caveat that data on public opinion in China is very difficult to get since it is an authoritarian state that controls all information.

However, what few surveys we have gathered from Western scholars shows an extremely small level of support for armed conflict against Taiwan which is their number one threat, at least as defined by CCP, and virtually no support for the idea of war with the United States.

This should not be too surprising given the fact that the U.S. military is regarded as the best, most powerful in the world. And the U.S. is armed to the teeth with nuclear missiles. It doesn't take a lot of imagination to consider that a war with the U.S. could end in total catastrophe for China.

Among elites, it is very hard to find. I have not found any faction or grouping that is pushing hard for China to start a war with the U.S. for any reason at all. On the contrary, there are huge numbers of cadres throughout the party state bureaucracy that benefit from status quo policies, and I suspect would favor their continuation.

These are people who profit, through corruption or just simple oversight of business connections to ensure trade and investment, and that have a vested interest in the continuation of those policies.



A lot of people, Chinese people, like people in America, and every other country, including Russia, you know, don't like war and want to just have a peaceful life and live comfortably. So they have a natural disinclination to support a leader who urges them to get involved in a war.

And I'll just mention it by way of comparison. The Russian leader, Putin, has struggled to involve the Russian people in his war and continues to rely on basically convicts and mercenaries to do most all of his fighting.

Because he knows if he tries, and he has not tried seriously to mobilize all the Russian people for the war, he knows that the support for that is really low. And this is a leader who has been at war decades, unlike the Chinese.

CHAIRMAN CLEVELAND: Thank you. I know my time has run out so, Mr. Thorne, perhaps we can come back to you later. Thank you.

COMMISSIONER SIMS: Great, next we have Commissioner Friedberg.

COMMISSIONER FRIEDBERG: Thank you very much. Dr. Heath, good to see you again. I think you make an important distinction between military preparedness which, as you say, is something that most major powers are engaged in in this idea of nation war preparedness. But I wonder if perhaps your conclusions aren't a little too reassuring.

Let me ask it in two ways. One, you argue that leadership, in order to actually be prepared to go to war would have to mobilize public support and bureaucratic support to an extent that it hasn't done already. So the first question is, well, how important are those really in a system in which power is as heavily concentrated as it clearly is in the Chinese system?

And then secondly, when you go through the list of things you mentioned that leaders would have to do in order to mobilize the necessary support, it seems to me that many of these things have already happened or are happening, to a degree.

National leader re prioritizes goals, well, downgrading of economic development in the recent year seems to answer to that description, calls for mass sacrifice, the use of references to eating bitterness.

Purges, well, there's sort of been an ongoing purge of sorts as long as Xi Jinping is around. Popular culture, my understanding is that the most popular movies in China in recent years have portrayed China's struggle against the United States in the Korean War.

So I wonder if this preparedness is not simply binary but a matter of degree and where, in fact, what we've been seeing are progressive steps closer to being at that point than perhaps we were five years ago or ten years ago.

I wonder if you'd respond to that?

DR. HEATH: Thank you, Dr. Friedberg, and good to see you as well.

So in terms I'll start with the second question first. I do agree that there are degrees. It is not purely binary. And although I disagree on how much of what is going on in China really correlates with a strong form of that, I do not deny there are steps moving in that direction.

There has been a minority of media that depicts the conflict with the U.S., mainly that one film about the Korean War and Wolf Warrior, a series of movies that depicts a clearly American evil mercenary fighting the Chinese, which was popular in China.

But this quite different, orders of magnitude different than what we saw in the Korean War where you had, you know, large numbers of films cranked out that demonized the U.S. with the propaganda against America. Without question, there's tensions between U.S. and China, but America, American culture, the American people, are not hated in China, in my understanding, like they were perhaps in the Cold War.

So there are some movies in the media. Xi speeches, again, orders of magnitude different from the Cold War where Mao lambasted the U.S. in the most harsh terms. Think of North Korea's rhetoric, that's what it looked like in China in the '50s and '60s. And that was a government that was clearly viewing the U.S. as an enemy and was getting the people ready for war against the U.S.

That is not the case today. Xi Jinping criticizes the U.S., but he does not call for mass sacrifice and people to die for their country the way that Mao did. On the contrary, we saw in COVID the government went to great lengths to try to minimize loss of life, because they feared that there would be repercussions on the CCP's legitimacy.

So I think it's important to state that, although there are steps moving in that direction we are, I think, headed, unfortunately in the direction where tensions are growing, and the Chinese are finding some incentive to consider reprioritization of their goals.

And again, I do not think that they have abandoned national development as a priority. That is the top priority, and Xi Jinping has not stopped that. We should not overstate that how much has moved that way.

All that is to say it is important, in my view, for us to balance our policy towards China to both protect our own interests and not unnecessarily drive them in a direction of hostility that can make these trends even more alarming.

And then in terms of your first question you mentioned, I'm sorry, I wrote a word down, but I can't read it. Can you just give me a quick word about the first question?

Sorry, you're muted.

COMMISSIONER FRIEDBERG: I was asking to what extent in the Chinese system it really is the case that the attitudes of people low down in the bureaucracy or people on the street really are going to have an impact on the leadership when it comes to decisions about war and peace.

DR. HEATH: Well, the precedent for China is that it matters a great deal. And we've seen, throughout their past seven decades of CCP rule, any time a leader has tried to change the policy direction in a significant way, there has been a great struggle in the Party for control of all levers. And they only successfully transition to a new policy agenda after that transition has been carried out.

The last time this happened was in the '70s and '80s when Deng Xiaoping and his marked friendly reformers wanted to get away from Maoism, Mao's agenda. And it took them well over a decade to complete that transition. Chen Yun resisted right up to '92 before he was finally driven out.

And in my view, the consensus in the leadership, one reason why Xi Jinping's rule has been stable is that the elites agree with him that, although national security is growing in importance, economic development is still a top priority. And there is no support at all for elevating war as a priority above those things.

So Xi Jinping understands where the middle is and where the consensus is. And he has stayed in that, although he has moved slightly towards security.

COMMISSIONER FRIEDBERG: Okay, thank you very much.

MR. THORNE: Dr. Friedberg, if I might offer a thought on your second question, you know, I don't disagree with Dr. Heath that China has not made a decision to move to a war footing.

I think perhaps where I try to square that circle a little bit between some of the rhetoric we see and, you know, this assessment that a war is not eminent, at least not one that China has

made a decision to launch, is that I believe the leadership very likely assesses that the risk of a high-end war is growing. Whether that is over Taiwan, South China Sea, or unilateral attack on China by the United States.

I think that they assess this risk is increasing. And you see that in statements by PLA leadership, in PLA textbooks, adoption of new doctrines and forced development guidelines, training activities.

And then, you know, most tellingly perhaps is, in 2020, China's leadership did believe that the U.S. was considering a unilateral attack on China as part of a, quote, unquote, "October surprise."

And I think the logic and perhaps the fear that drives that kind of assessment doesn't just dissipate, even though, you know, from their perspective they are not ready to launch a war themselves.

COMMISSIONER SIMS: Thank you both. Commissioner Glas?

COMMISSIONER GLAS: Many thanks to you all. And Mr. Thorne, I'm going to start with you. What role could China's private sector play in a potential conflict scenario?

What are you seeing in terms of trends, of the intensification, of coordination between the CCP and the private sector? And how might the government another way to ask that is how might the government incorporate these firms and their activities into their military operations?

I'll just start with you and anyone else who has comments on that.

MR. THORNE: Sure. So for the private sector, I think the most likely roles that they are going to have to play is in surging production and contributing personnel to logistics, maintenance, and technology development activities, right.

That's going to include things like helping produce weapon systems, helping produce drones, helping support, you know, transportation units that need bridges redesigned or repaired, and roads repaired. So they'll contribute engineers for that kind of activity or ship modifications and such.

And then there's the technology development angle which I think is a little bit difficult to predict exactly what the PLA might think some new technology is going to be needed in a given conflict. But there's going to be a role for private sector to play there.

In terms of sort of intensifying preparations for that, I think it would be difficult for me to make an assessment based on what I've seen, sort of a judgement on whether it's becoming more intense.

But I would say that in recent years there has been activity within the National Defense Mobilization system to try and increase certain contacts with the private sector in industries like equipment manufacturing, information technology, logistics and warehousing, and a number of other fields, unmanned intelligence, which I take to mean drones mostly.

As far as how they can be incorporated into these kind of activities, the National Defense Mobilization system itself, I think, is going to take the lead on production activities as directed by military needs for more logistical or maintenance type support operations. A lot of that is going to run through different National Defense Mobilization working offices like offices dedicated to transportation mobilization.

And then for use of private sector resources, capabilities, skilled professional personnel in other types of operations, such as intelligence collection, reconnaissance, or even offensive or defensive cyber operations, there's a couple of ways that that can happen.

The main one that I think is most well documented is through militias. But there are also potential other avenues, direct contracts with certain companies, or maybe ad hoc command and control structures. You know, some of that gets a little bit unclear. I hope that answers your question.

COMMISSIONER GLAS: Any other comments from the other panelists?

All right, thank you.

COMMISSIONER SIMS: All right, we'll go to our hearing Co chair, Commissioner Goodwin.

COMMISSIONER GOODWIN: Thank you, Commissioner Sims.

Dr. Heath, I want to follow up on your exchange with Commissioner Friedberg. And as he acknowledged, I also appreciate the distinction that you draw between military preparedness, and war preparations, and war mobilization. But I wonder, as he posed the question to you, whether the approach could be more progressive and incremental.

As you described it in your testimony, the shift would be a radical redirection of the country's political agenda from those decades long focus on economic development, and performance, and growth to a war footing.

I actually alluded to your testimony this morning during one of our earlier panels and offered up your description of a bureaucracy, which has not been condition, prepare, or incentivize, to focus on these sorts of security initiatives instead have been incentivized, and prepared, and conditioned to focus on just that, economic development, growth, and the like. In response, I don't want to put words into those witnesses' mouths, but my takeaway was they seem to say that security is becoming the priority. And striking this dynamic balance between security and growth, security is now becoming the priority.

So if that's the case, are you seeing this incremental shift towards security trumping economic development and growth? And as such would it no longer have to necessitate a radical redirection?

DR. HEATH: Thank you, Commissioner Goodwin. It's a very good question. And I agree that security is definitely moving up in priority, although the overwhelming focus is still on national development. And I do not see evidence that, despite the increased importance placed on security, that the bureaucracy is in a posture of prioritizing actual war preparation.

And let me just add that all this discussion makes me think that, in some ways, the purpose of this panel, or at least as I understood it, focusing on high-end war, it's not a straw man, but it is such a high threshold that, you know, if we're looking for indicators of that, I don't think it's there.

But I worry about a different kind of conflict, not high-end conflict of, you know, tanks, and airplanes, and missiles, but a more soft conflict, cyber, political, economic. And there I think, you know, the indicators for something happening there are much more alarming.

And part of that has to do with the fact that both the U.S. and China are much more vulnerable in the economic, political, and ideological, and cyber domains. And part of it is that there is quite an intense acrimony and, you know, not quite hostility but certainly trending in that direction, that's quite alarming.

So if we set aside the question of preparations for high-end war, which again I reiterate, I do not see the Chinese preparing for high-end war, and we just look at this other issue of vulnerability to political interference, economic warfare, cyber intrusion, all that kind of activity, then the picture is very different.

And there the government bureaucracy is being told they need to defend against that, they need to learn how to deal with that, and build capabilities for that. And there is evidence that they are doing more and more against us in those domains.

So I agree with you, and I think this is part of the issue that we've been wrestling with in the last few questions, is we know the Chinese are doing a lot of things against us. And they are. And yet you hear me saying they're not getting ready for war.

But the answer to that, in my opinion, is to distinguish between high-end combat, which I again reiterate I see very little evidence that they're preparing for that, and then lower intensity type, softer forms of the conflict which I would agree is well underway and intensifying.

COMMISSIONER HELBERG: Thank you.

COMMISSIONER SIMS: Commissioner Helberg?

COMMISSIONER HELBERG: Thank you. Mr. Thorne, based on our research how would the PLA utilize and mobilize Chinese businesses in a time of war, specifically in the critical technology sectors?

MR. THORNE: So I think the most evidence exists in critical technology sectors. I guess, when I hear that phrase I think, and then compare it to what I've seen as far as what the PLA is thinking about, really the technology that comes to mind is cyber space, cyber security.

PLA writings essentially reference the ability of the PLA to mobilize civilian technical talent in that space to join military operations. Those military operations are undefined. I tend to think what is most likely, if that type of mobilization is going to happen, it's going to focus on sort of defense of China's critical information networks domestically to, you know, defend the homeland during a wartime scenario.

There are, of course, as I'm sure everyone here on the Commission knows, cyber security companies in China that also do contract with the government for more offensive capabilities, both tool development and actual intrusions of foreign networks.

The links to PLA there, they exist, they're not quite as well documented, at least in the last few years, as they are to other aspects of the Chinese security apparatus. But I think that's what comes to mind for me, is cyber security professionals being enrolled in PLA operations.

As I was saying earlier though, the most likely, or the most well documented method for that to actually come about is pre-enrollment in militias, these organizations standing down militias or contributing forces to militias.

Because in a wartime scenario, everyone's going to be shocked. You know, I don't know the real feasibility of just going to some security company and saying, hey, you're now going to support this military operation without any prior training. At least in the militia space, they will have had a little bit of training, even though that training has some questionable quality to it.

Other ways that the militia, including professionals from the private sector, could participate in PLA operations, like I said, war, mainly focuses on reconnaissance, search and rescue, undersea and aerial intelligence collection through autonomous systems, and that kind of thing.

COMMISSIONER HELBERG: Mr. Heath, do you have anything to add?

Mr. Thorne, a previous witness stated that China has a policy deliberately encouraging U.S. reliance on Chinese supply chains and critical inputs. Do you believe that a critical component of China's military mobilization will be cutting our own military and technology sectors off of those critical inputs ranging from rare earth and raw materials to semiconductors?

MR. THORNE: I would say that this question really gets into the territory of what are China's plans for certain contingencies. And unfortunately, that's not an area where my research



has really gone yet. So I would be hesitant to comment that, yes or no, that would be part of the plan.

Certainly, you know, monitoring of those resources, and China's access and continued access to those resources, is part of, you know, military planning and the National Defense Mobilization system. But as far as how it works in reverse, such as, you know, cutting off the U.S. access to those materials, that's something that I haven't really delved into.

COMMISSIONER HELBERG: Mr. Heath, would you like to comment? Is it your shared assessment that the PLA is also taking similar steps in order to stockpile critical inputs key technologies?

DR. HEATH: In my view, the Chinese are very concerned about their vulnerability to disruptions to their supply chains, just as we are. And they are taking measures to stockpile critical components like advanced ships in some cases.

And, you know, both countries are carrying out their own forms of de risking. The Chinese actually have been doing it longer than we have. So yes, I agree that that there is some of that going on.

MR. THORNE: I would agree in general that that is likely, though again the very specifics of it, how much has been stockpiled, particular mechanisms for that, is not something I've personally researched.

COMMISSIONER HELBERG: Thank you for the time.

COMMISSIONER SIMS: Commissioner Kuiken?

COMMISSIONER KUIKEN: Thank you, great testimony Devin and Tim, I appreciate it. I've been a little surprised by the sort of tone you've taken about where we are with respect to China, and its sort of buildup towards, you know, conflict or some sort of action with respect to Taiwan.

Let me ask you two questions just to lead into this, and then just quick answers if you can. First question is the crackdown on big tech seems to have come to an end. Should we assume that the end, or sort of a pause in that crackdown, means that the big Chinese tech companies are not sort of have acquiesced essentially to the government and that they will be compliant with any requests to either conduct cyber operations, or provide information, or do the other things that they're capable of?

Tim doing it first and then Devin.

DR. HEATH: The crackdown on big tech seems to have been driven in part by simply CCP desire for political control and fear of autonomous centers of power, which is a long standing CCP fear. Now that they have made their point known, and the big tech seems to understand that, yes, I do think the big tech companies will be more compliant with CCP directives.

But on the other hand, the Chinese government is aware that there is a golden goose problem. So if they make their competitive companies too obviously tools of the Chinese government, they risk undercutting the competitiveness of those companies when foreign countries become alarmed and start curtailing access to their markets due to security fears.

But on the other hand, if the Chinese government lets these companies act too autonomously, then they might act in a way contrary to the CCP rule. So I suspect what has likely happened, again this is not my area of particular expertise, but the CCP has made its point known. They are monitoring.



And, you know, while generally tolerating these companies carrying out their commercial activities, they have made clear that they reserve the right, in an emergency, to override the decision making of these companies to carry out national security related policies.

COMMISSIONER KUIKEN: Devin, unless you're going to disagree, let me just keep going. Is that all right?

MR. THORNE: Yes, sir, that's fine.

COMMISSIONER KUIKEN: All right. Indications and warnings, MILDEC, we've sort of talked military deception operations, we've talked about this this morning, and you guys have touched on it as well.

What if we're just seeing sort of a slower build than we're used to? And so the things, Tim, that would normally set you off or, Devin, would set you off, as sort of, you know, as spikes in what you'd normally see is rather part of a more elaborate slow build strategy that is designed to make sure analysts like the two of you are, you know, more sanguine in your analysis.

Have you considered that as part of your judgements here? Or do you sort of think, you know, no matter what, in the buildup to a conflict there has to be spikes in various indications and warnings?

Well, I've run out of time, so that will be my last question. So, Tim, Devin, take as much time as you want, and we'll turn it over to the following commissioner.

DR. HEATH: Roger. Yes, I have looked at MILDEC for many years. And operationally it's getting harder and harder to tell, I think, frankly, because they do all these exercises in training. But to me, the big issue is still the political posture.

It is very hard to find a precedent for any country in the world contemplating a war with a country as powerful the U.S. to leave their people completely unprepared for exposing them to major conflict and even potential nuclear annihilation, and not even make sure that their fellow elites are onboard with this idea.

We have zero indication, not even rumors coming out of Beijing that there's a secret cabal plotting to attack the U.S., which to me either that means Xi Jinping has made this the best kept secret in the world, and only he has it in his head. In which case how does he compel the whole state to carry out a shocking change of policy?

On that point I'll just emphasize, you know, my own research suggests there's a great deal of resistance in the party state to Beijing's orders as they are right now. It is an illusion that there's some kind of robotic machinery that automatically complies with whatever Beijing comes out with.

There's historically, you know, and there is right now a great deal of resistance and evasion going on throughout the party state to orders that they don't like. So there has to be a great deal of arm twisting and coercion, and purging, and often violence to compel cadres up and down the chain to do what Beijing wants.

And right now we just don't have, not even a rumor that Xi Jinping is planning some kind of attack. So to me, I'm very skeptical of the MILDEC idea. I think it is much harder to carry out than people assume. And there's no precedent that I'm aware of, you know, with a situation that could involve the U.S. Not Hitler, not Japan, there was plenty of political warning well before those attacks.

COMMISSIONER KUIKEN: Devin, what do you think?

MR. THORNE: I think that this a question that certainly I've asked. It comes down to me a matter of sort of strategic time lines and sort of tactical level signals.

I think we do see, you know, if you're laser focused on is there going to be an invasion of Taiwan, you can definitely find the evidence. In fact, there'll be evidence that these are the preparations. But from an analytical perspective, there are also other explanations for a lot of this activity.

And in my assessment, as I was stating earlier, I think the leadership is concerned about the possibility of a high-end conflict without having actually made the decision that we are going to launch a conflict.

So some of the activity, you know, in terms of perhaps some of the stockpiling activity that was discussed earlier, is indicative of that need to be ready in case something happens, or in case a decision is made but is not necessarily, deliberately geared towards we're moving to a specific date on which we will take an aggressive action.

COMMISSIONER KUIKEN: Thanks, Tim.

COMMISSIONER SIMS: Vice Chair Price?

VICE CHAIR PRICE: Thank you. And thank you for your participation today. It's been very, very interesting.

Much of what I planned to ask has been covered. So let me just go back and fill in some pieces in between.

Mr. Thorne, when you did your survey, your in-depth survey, what actions make you the most concerned or the most optimistic as you go down your list of areas that you looked into?

MR. THORNE: So I guess the survey is mostly focused on China's leadership assessment of whether the National Defense Mobilization system will function as it's intended to function. The research was less focused on the question of whether we've hit certain check boxes.

So I think that would be sort of difficult for me to answer. That's ongoing research that I've kind of proffered with over time. But it's not I don't have an immediate assessment on that question in front of me, if that makes sense.

VICE CHAIR PRICE: So in answer to one of my colleague's questions a few minutes ago, you did say that you thought the leadership might be assessing that risk is growing. Do you see them conveying that to the public at all?

MR. THORNE: I do think that they have conveyed that concern to at least the National Defense Mobilization apparatus. I don't think it's necessarily, you know, to the issue of the examples of movies, and sort of popular culture, and broad messaging to the general public, maybe it hasn't reached that level.

But you can see, in my opinion, the messaging that we need to be prepared for worse case scenarios, that has trickled down into the National Defense Mobilization leadership and their sort of internal discussions on, you know, you need to take this work seriously. Because for a long time, it has not been taken seriously.

You need to overcome, quote, unquote, "peace time ills," which is generally a phrase that means sort of the accumulated inertia of just a long peace and the belief that war could never happen. You see those messages, I believe, coming down from certain PLA commanders and into the National Defense Mobilization system.

So I think that urgency has been trickled down, that we do need to increase our preparedness overall in case something happens. Those messages, I believe, have come down.

VICE CHAIR PRICE: Thank you. And, Mr. Heath, I really appreciate the nuance in your presentation and the difference you defined in response to, I think, Commissioner Goodwin's questions about the high-end type of conflict versus economic, and cyber, and other areas. Could you talk a little bit about where, in those areas, you're most concerned?

DR. HEATH: Absolutely. In fact, that is where I'm most concerned. I think the U.S. and Chinese are already well underway in a sort of low intensity, it's not quite a war or conflict but confrontation. It is getting easier and easier for both countries to interfere in each other's politics as populations become disaffected and disillusioned with their own governments.

We see that happening here where the Russians have paved the way and the Chinese are clearly imitating their methods of provoking American discontent. We are doing the same to China, arguably, with our way we do with Taiwan.

In my opinion, it's just another version of this kind of interference to provoke and undermine the legitimacy of the government on the other side. The Chinese, again, they're doing the same type of things to us.

Economically, we already talked about de risking, and the trends are not reversing anytime soon. You know, there's now AI booming on the horizon. How that can be deployed against other countries is studied in both capitals, no doubt. And I expect the Chinese will start trying to deploy these technologies again to promote political discontent in America.

We have cyber operations have been going on for a while. This kind of confrontation into cyber space, the Chinese, we've had issues with them for years and years. It's not getting better in my view.

So, you know, all this is meant to underscore that, in my view, the situation we're in is that both U.S. and Chinese, frankly, are too weak to risk a large-scale war. It's too destabilizing for both countries.

But they can sustain indirect forms of conflict for a very long time, because you don't need don't need the public. You don't need the public to carry out cyber operations, information operations. What we need to do is find ways to mitigate your vulnerabilities to provoke provocations from the other side.

And to me, that's where a lot of the activity is going on right now, is we are coping with a much more vulnerable domestic situation and greater reach by all governments into the heart of each other's populations.

And, you know, to me this is a problem that I'm not sure we have put enough effort studying, given all the attention paid on planned conflict which, in my view, is much less likely than this form of societal conflict and political conflict that is intensifying.

VICE CHAIR PRICE: Really helpful, thank you so much.

COMMISSIONER SIMS: Commissioner Schriver?

COMMISSIONER SCHRIVER: Yes, I just want to thank the witnesses, appreciate the statements and the very thoughtful Q&A. I think everything I would have raised has been addressed. So thank you again.

COMMISSIONER SIMS: Great. Well, we will close with the godfather of the U.S.-China Commission, Commissioner Wessel.

COMMISSIONER WESSEL: Grasshopper, ha, ha, ha. You may be one of the few people who knows the reference.

I appreciate our witnesses. Although I have to say I find myself in, I'd say, somewhat alarmed disagreement, although I understand the comments about soft versus hard conflict. But,

you know, to me a soft conflict these days can have almost as devastating an impact as a hard conflict.

A cyber intrusion that takes down the electricity grid or disables the cooling capabilities at a nuclear facility, or disables water treatment, is every bit as disabling potentially, you know, as a bomb. So bits and bytes now can equal bombs.

And, you know, one of our witnesses talked about fairly stable defense budgets in China. And I think there are many assessments that disagree with that. We all know the accounting and the opacity in China limits the ability for Western observers to understand this.

So I want to ask a question about technology mobilization, again going to the bits and bytes issue, and Commissioner Helberg raised, in part, this.

We now see the, what is it, square yard high fences, we see the Biden administration's approach, as it relates to AI quantum and semiconductors, as seeking to limit military capabilities, if you will, where they have stability in China to buildup military capabilities. Similarly we have, I think, a strategic dependence on China that, you know, we are seeking to address with CHIPS funding, et cetera.

Help me through, if you can, if you've done any work on this, on what assessments the Chinese have made of U.S. vulnerabilities in these areas and whether our actions, again AI and the other technologies, whether we have a mobilization deficit here, if you will, that would enable us to be a properly resourced competitor to China.

Mr. Heath, do you want to start?

DR. HEATH: Yes, sir. Thank you for the question. Some of the dependencies the Chinese have identified are rare earths. And we've now recognized that and have, my understanding the government is taking actions to mitigate that.

There are components that feed into our defense systems which are Byzantine to try to unpack. And I don't pretend to know the depths of our dependence on Chinese components and sub components, but I do understand it's an incredibly difficult thing to unravel and identify where there are Chinese inputs into, you know, weapon systems that include thousands of parts.

But to the extent we haven't identified those, those could be dependencies that leave us vulnerable. I'll stop there and turn it over to Devin to see if he has additional comments.

MR. THORNE: Yes. I think I would have to reiterate that in my research I haven't particularly focused on Chinese assessments of U.S. mobilization capacity or particular vulnerabilities.

One area I think where, and this is outside of the technology scope, so I'll keep it very short, is that one area that they think they probably would be stronger is in the ability of the public to get onboard with a war scenario and survive through it, right, this idea, and legacy, and history of struggle.

Now to Dr. Heath's point, they haven't really necessarily taken a lot of steps to actually make sure that that's possible. But I think Chinese leadership, when they look at themselves, they think we have this history of struggling through, eating bitterness, et cetera. The U.S. likely does not.

That's sort of the extent of comparison that I could offer there, unfortunately.

COMMISSIONER WESSEL: In terms of, thank you, in terms of Chinese mobilization, and again we've had some discussion here of technology as, you know, a vector, cyber intrusions, et cetera. And I think Director Wray and many others have identified, you know, the constant nature, I think, of electronic recon and the vulnerabilities.

We as a Commission have recommended in the past, you know, trying to enhance visibility into our own search capacity. And I think, over the last couple of years on a bipartisan basis, in the technology area, there's been an understanding.

Are you aware of Chinese assessments of their own capabilities and vulnerabilities? And as we advance again with CHIPS and the export controls, is there reporting on how China is responding to that and whether they view that as an offensive act?

DR. HEATH: Well, I'll offer some thoughts first.

COMMISSIONER WESSEL: Sure.

DR. HEATH: Since the 2010s the Chinese leadership has articulated this imperative of improving their self-reliance and reducing their dependence on U.S. technology. And the Chinese government has invested billions upon billions of dollars to develop their own indigenous technology capabilities.

They have had very uneven success, frankly. And I think they recognize that they are at a disadvantage given the U.S. strengths, many strengths we have. But they do seem determined to try to build up their own indigenous capabilities and technologies that reduce their reliance on the U.S.

COMMISSIONER WESSEL: Great.

MR. THORNE: Yes, I would agree with that, absolutely. And I think some of the most recent developments there in the last year or so have been sort of more explicit policies that stable enterprises, party organizations, major corporations that are supporting the government need to begin replacing certain foreign technology systems, operating software, database management software, sort of these core functions.

To your point that, in theory, any foreign power could infiltrate and have eyes on throughout that system theoretically, so I think they've accelerated some of their concerns there in efforts to alleviate it through an initiative called zaichuangxin, which is just like IT innovation, essentially.

But yes, it's a long road. You know, some of their operating systems are not perhaps up to the standards that the business world in China is going to be used to at this point.

COMMISSIONER WESSEL: Great, thank you.

COMMISSIONER SIMS: Thank you to the witnesses for your testimony today. I'll turn it over to my Co chair, Commissioner Goodwin, to close us up.

COMMISSIONER GOODWIN: Perfect. Well, again appreciation to the witnesses and all our witnesses for their excellent testimonies today.

A quick reminder, you can find those testimonies, as well as a recording of the hearing, on our website, uscc.gov. And with that, we are adjourned.

(Whereupon, the above entitled matter went off the record at 3:01 p.m.)

## **STATEMENT FOR THE RECORD**

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### **STATEMENT OF GREGORY WISCHER, FOUNDER AND PRINCIPAL, DEI GRATIA MINERALS**



Statement for the Record before the US-China Economic and Security Review  
Commission

Hearing on “China’s Stockpiling and Mobilization Measures for Competition and  
Conflict”

June 13, 2024

Gregory D. Wischer<sup>\*</sup>

*Founder and Principal, Dei Gratia Minerals<sup>+</sup>*

**Overview**

The Chinese central government stockpiling minerals is one potential indicator that it may be preparing to invade Taiwan. The National Food and Strategic Reserves Administration oversees China’s stockpile, which reportedly contains large volumes of minerals like aluminum, cobalt, and copper. Three specific indicators that China may be stockpiling for strategic reasons, like an invasion of Taiwan, are (1) stockpiling when domestic mineral producers do not face profitability issues, (2) high apparent mineral consumption relative to real mineral consumption, and (3) spiking mineral imports. Indicators 2 and 3 also assess Germany’s mineral stockpiling activities before it invaded Poland in September 1939.

**How China’s Mineral Stockpiling Could Indicate It Is Preparing to Invade Taiwan**

Mineral stockpiling is one indicator that a hostile state may be preparing to launch a military attack.<sup>1</sup> A mineral stockpile can indicate a capability to attack because minerals are necessary to manufacture military platforms and munitions before and during a conflict. Mineral stockpiling, therefore, can indicate an intent to attack because a mineral stockpile is a capability that states may seek before launching an attack.

For example, Germany stockpiled significant copper volumes in 1938 and 1939,<sup>2</sup> and when it invaded Poland in September 1939, Germany had enough copper stocks to cover almost

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<sup>\*</sup> I would like to thank Morgan Bazilian, Jack Little, and David Wischer for their insightful feedback.

<sup>+</sup> Wischer is also a non-resident fellow at the Payne Institute for Public Policy at the Colorado School of Mines and a non-resident fellow at the Northern Australia Strategic Policy Centre at the Australian Strategic Policy Institute.

<sup>1</sup> Cynthia Grabo defines an indicator as “a known or theoretical step which the enemy should or may take in preparation for hostilities.” See Cynthia M. Grabo, *A Handbook of Warning Intelligence* 1 (Washington, DC: Defense Intelligence Agency, July 1972), 2–3,

<https://www.cia.gov/readingroom/docs/CIA-RDP80B00829A000800040001-6.pdf>.

<sup>2</sup> T.H. Miller, H.M. Meyer, and Allan F. Matthew, “Copper,” in *Minerals Yearbook Review of 1940*, ed. H.D. Keiser (Washington, DC: US Government Printing Office, 1941), 88, <https://search.library.wisc.edu/digital/ANL3GAHUQMHTGL8Q/pages/AOSZXJZPAW2JOV9D>.

nine months of estimated wartime consumption.<sup>3</sup> Similarly, Japan began stockpiling minerals like tin after 1936,<sup>4</sup> and when it launched attacks across the Pacific in December 1941, Japan had accumulated significant mineral stockpiles, including enough bauxite stocks to cover nine months of Japanese demand at 1941 consumption levels.<sup>5</sup>

During the Cold War too, mineral stockpiling by the Soviet Union and Warsaw Pact states was an indicator of possible preparation for a military attack. In 1979, the RAND Corporation said that the Soviet Union's preparation for war could include mineral stockpiling by both the military and industry, as well as spiking mineral imports.<sup>6</sup> Likewise, a US National Intelligence Estimate in 1984 said that Warsaw Pact states' preparations for war could include mineral stockpiling, noting that "stockpiling in unusual quantities" could be a "particularly salient" indicator.<sup>7</sup> Thus, China's central government stockpiling minerals could be one indicator that China is preparing to invade Taiwan.

### China's Mineral Stockpile

China's central government maintains a mineral stockpile.<sup>8</sup> The National Food and Strategic Reserves Administration, more commonly known as the State Reserves Bureau, oversees China's mineral stockpile and sits under China's powerful National Development and Reform Commission.<sup>9</sup> China does not disclose the list and quantity of minerals

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<sup>3</sup> Jonas Scherner, "Preparing for the Next Blockade: Non-ferrous Metals and the Strategic Economic Policy of the Third Reich," *The English Historical Review* 137, no. 585 (April 2022): 496, <https://academic.oup.com/ehr/article/137/585/475/6576229>.

<sup>4</sup> Louis Morton, *Strategy and Command: The First Two Years* (Washington, DC: Center of Military History, US Army, 1962), 55–56, [https://history.army.mil/html/books/005/5-1/CMH\\_Pub\\_5-1.pdf](https://history.army.mil/html/books/005/5-1/CMH_Pub_5-1.pdf); and E.W. Pehrson and J.B. Umhau, "Tin," in *Minerals Yearbook 1941*, ed. F.M. Shore (Washington, DC: US Government Printing Office, 1943), 728, <https://search.library.wisc.edu/digital/AVZLKWT7LNXCK39B/pages/AGACFAKE6N4G7Q9C>.

<sup>5</sup> Jerome B. Cohen, "The Japanese War Economy: 1940–1945," *Far Eastern Survey* 15, no. 24 (1946): 362, <https://doi.org/10.2307/3021956>.

<sup>6</sup> Edmund Brunner, Jr., "Perception and Strategic Warning," RAND Corporation, prepared for the US Air Force, November 1979, 6–7, <https://apps.dtic.mil/sti/tr/pdf/ADA080448.pdf>.

<sup>7</sup> Director of Central Intelligence, "Warning of War in Europe," National Intelligence Estimate, April 1, 1984, 47, 66, <https://nsarchive.gwu.edu/sites/default/files/documents/5028377/Document-21-Warning-of-War-In-Europe-National.pdf>.

<sup>8</sup> Notably, China has the world's largest producer and consumer mineral stockpiles. See David R. Wilburn, Donald I. Bleiwas, and Nick A. Karl, "Global Stocks of Selected Mineral-Based Commodities," US Geological Survey, 2016, 7, <https://pubs.usgs.gov/sir/2016/5152/sir20165152.pdf>.

<sup>9</sup> Mark Burton et al., "US Bid to Loosen China's Grip on Key Metals for EVs Is Stalling," *Bloomberg*, February 19, 2024, <https://www.bloomberg.com/news/features/2024-02-20/us-china-washington-ramps-up-hunt-for-ev-metals-to-secure-its-own-supplies>; and Min Zhang and Tom Daly, "Explainer: What We Know about China's Metals Reserves Release," *Reuters*, June 17, 2021, <https://www.reuters.com/world/china/what-we-know-about-chinas-metals-reserves-release-2021-06-17/>. The National Development and Reform Commission is arguably the most powerful economic agency in China's government, exercising control and planning over China's economy including its five-year plans. See "Main Functions of the NDRC," National Development and Reform Commission (NDRC), People's Republic of China, accessed May 13, 2024, <https://en.ndrc.gov.cn/aboutndrc/mainfunctions/>; and "China

stockpiled, but its stockpile reportedly includes aluminum, antimony, cadmium, cobalt, copper, gallium, germanium, indium, molybdenum, rare earth elements, tantalum, tin, tungsten, zinc, and zirconium.<sup>10</sup> The stockpile may contain up to 2 million metric tons of copper, 900,000 metric tons of aluminum, 400,000 metric tons of zinc, and 7,000 metric tons of cobalt.<sup>11</sup> See Figure 1 for estimated stockpiled volumes of selected minerals.

Mineral	Metric tons	Year
Aluminum (ingots)	800,000–900,000	2021
Cobalt (metal)	7,000	2021
Copper (refined)	1,500,000–2,000,000	2021
Indium	100	2016
Molybdenum (oxide)	22,300	2016
Nickel (refined)	20,000–50,000	2016
Rare earth elements	40,000	2015
Tungsten (concentrate)	30,000	2016
Zinc (refined)	250,000–400,000	2021

**Figure 1: China’s estimated stockpile volumes for selected minerals.**

Source for 2015 and 2016 numbers: David R. Wilburn, Donald I. Bleiwas, and Nick A. Karl, “Global Stocks of Selected Mineral-Based Commodities,” table 6, <https://doi.org/10.3133/sir20165152>. Source for 2021 numbers: Tom Daly and Shivani Singh, “Explainer: What China Keeps in Its Secretive Commodity Reserves,” *Reuters*, August 4, 2021, <https://www.reuters.com/world/china/what-china-keeps-its-secretive-commodity-reserves-2021-08-05/>.

Regarding the purchasing process for the mineral stockpile, the NFRSA usually issues a tender to purchase Chinese-branded metal from state-owned enterprises.<sup>12</sup> The NFRSA coordinates such actions with the state-owned enterprises and hosts meetings with the industry participants.<sup>13</sup> The Chinese government then purchases minerals from the

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Puts Most Powerful Agency in Charge of Climate Policies,” *Bloomberg*, July 6, 2021, <https://www.bloomberg.com/news/articles/2021-07-06/china-puts-most-powerful-agency-in-charge-of-climate-policies>.

<sup>10</sup> David R. Wilburn, Donald I. Bleiwas, and Nick A. Karl, “Global Stocks of Selected Mineral-Based Commodities,” US Geological Survey, 2016, 6–7, <https://pubs.usgs.gov/sir/2016/5152/sir20165152.pdf>.

<sup>11</sup> Shivani Singh, “Explainer: What China Keeps in Its Secretive Commodity Reserves,” *Reuters*, August 4, 2021, <https://www.reuters.com/world/china/what-china-keeps-its-secretive-commodity-reserves-2021-08-05/>.

<sup>12</sup> Julian Luk, Justin Yang, and Alexander Cook, “Potential China SRB Tender Helps Stabilize Falling Rotterdam Cobalt Prices,” *Fastmarkets*, August 9, 2022, <https://www.fastmarkets.com/insights/potential-china-srb-tender-helps-stabilize-falling-rotterdam-cobalt-prices/>.

<sup>13</sup> James T. Aredy, “China Moves to Strengthen Grip Over Supply of Rare-Earth Metals,” *Wall Street Journal*, February 7, 2011, <https://www.wsj.com/articles/SB10001424052748704124504576117511251161274>; Nabeel A. Mancheri et al., “Effect of Chinese Policies on Rare Earth Supply Chain Resilience,” *Resources, Conservation and Recycling* 142 (2019): 108–109, <https://doi.org/10.1016/j.resconrec.2018.11.017>; Risk & Policy Analysts, “Stockpiling of Non-energy Raw Materials,” prepared for the European Commission, March 2012, 11, <https://www.mmta.co.uk/wp-content/uploads/2017/02/stockpiling-report-EU-DG-Enterprise-and-Industry-Mar-2012.pdf>; and Julian Luk, Justin Yang, and Alexander Cook, “Potential China SRB Tender

producers and transfers them to government storage facilities or facilities owned by state-owned enterprises like Baotou Steel, which reportedly stockpiles rare earth elements.<sup>14</sup> Local and provincial Chinese governments also stockpile minerals, but they stockpile for economic—not strategic—reasons like supporting domestic mineral producers.<sup>15</sup> When they stockpile, they purchase the minerals and have mineral producers store the minerals at their facilities, rather than transferring the minerals to government storage facilities.<sup>16</sup>

Notably, the Chinese central government’s mineral stockpile is a capability that could support a Chinese military invasion of Taiwan and a subsequent war, including against the United States and its allies. According to US government officials, Chinese President Xi Jinping has directed the Chinese military leadership to be prepared to invade Taiwan by 2027.<sup>17</sup> Ostensibly, China should have a mineral stockpile by 2027 to support such an invasion; however, China’s actual military preparedness timeline could be different, and China could have a different deadline to meet a mineral stockpile target. Still, a mineral stockpile is likely a capability that China would seek to attain before invading Taiwan.

Therefore, mineral stockpiling could indicate that China is seeking to attain a mineral stockpile that could support its invasion of Taiwan.<sup>18</sup> Importantly, China’s mineral stockpiling serves both an economic *and* strategic purpose: it influences prices to ensure Chinese mineral producers and consumers remain operational, and it accumulates minerals

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Helps Stabilize Falling Rotterdam Cobalt Prices,” Fastmarkets, August 9, 2022, <https://www.fastmarkets.com/insights/potential-china-srb-tender-helps-stabilize-falling-rotterdam-cobalt-prices/>.

<sup>14</sup> Pui-Kwan Tse, “The Mineral Industry of China,” US Geological Survey, February 2015, 8.8, <https://d9-wret.s3.us-west-2.amazonaws.com/assets/palladium/production/mineral-pubs/country/2008/myb3-2008-ch.pdf>; James T. Areddy, “China Moves to Strengthen Grip Over Supply of Rare-Earth Metals,” *Wall Street Journal*, February 7, 2011, <https://www.wsj.com/articles/SB10001424052748704124504576117511251161274>; and Nabeel A. Mancheri et al., “Effect of Chinese Policies on Rare Earth Supply Chain Resilience,” *Resources, Conservation and Recycling* 142 (2019): 108, <https://doi.org/10.1016/j.resconrec.2018.11.017>.

<sup>15</sup> Andy Home, “Column: A Brief History of China’s Metals Stockpiling Programmes,” *Reuters*, May 1, 2020, <https://www.reuters.com/article/idUSKBN22D56W/>.

<sup>16</sup> Pui-Kwan Tse, “The Mineral Industry of China,” US Geological Survey, February 2015, 8.8, <https://d9-wret.s3.us-west-2.amazonaws.com/assets/palladium/production/mineral-pubs/country/2008/myb3-2008-ch.pdf>.

<sup>17</sup> Hope Yen, “CIA Chief: China Has Some Doubt on Ability to Invade Taiwan,” *AP*, February 26, 2024, <https://apnews.com/article/russia-ukraine-taiwan-politics-united-states-government-eaf869eb617c6c356b2708607ed15759>; and Roxana Tiron, “China on Track to Be Ready to Invade Taiwan by 2027, US Says,” *Bloomberg*, March 20, 2024, <https://www.bloomberg.com/news/articles/2024-03-20/china-on-track-to-be-ready-for-taiwan-invasion-by-2027-us-says>.

<sup>18</sup> Gerard DiPippo, “Economic Indicators of Chinese Military Action against Taiwan,” Center for Strategic and International Studies, August 16, 2022, <https://www.csis.org/analysis/economic-indicators-chinese-military-action-against-taiwan>.

to supply China's military and economy in national emergencies, like war.<sup>19</sup> Consequently, when observing China's mineral stockpiling, one must discern whether China is stockpiling for economic or strategic reasons, which are discussed below.

According to the White House, China stockpiles for economic reasons, "actively combatting price volatility or supporting particular industry segments."<sup>20</sup> Amid low mineral prices, the Chinese government purchases minerals to increase mineral prices and increase margins for upstream mineral producers,<sup>21</sup> and amid high mineral prices, the Chinese government sells minerals to decrease mineral prices and increase margins for downstream mineral consumers.<sup>22</sup> For example, the Chinese government bought zinc at low prices in 2009 and 2012, and it sold zinc at high prices in 2021.<sup>23</sup> These purchases and sales are public as the government seeks to send price signals to the market, and they usually target minerals in which China has sizable production, like aluminum and zinc.<sup>24</sup>

China also stockpiles for strategic reasons—that is, preparation for national emergencies like war.<sup>25</sup> According to a study requested by the European Parliament, "Analysts believe...that China's stockpile is growing to secure reserves in the event of a conflict."<sup>26</sup> Typically, China's strategic purchases are not announced publicly, and they target minerals—namely copper—in which China has far less production relative to domestic demand, and precious and minor metals—like cobalt—with specialized applications.<sup>27</sup>

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<sup>19</sup> Gregory D. Wischer, "China Shows How Western Governments Should Stockpile Minerals," *The Strategist*, Australian Strategic Policy Institute, March 6, 2024, <https://www.aspistrategist.org.au/china-shows-how-western-governments-should-stockpile-minerals/>.

<sup>20</sup> White House, "Building Resilient Supply Chains, Revitalizing American Manufacturing, and Fostering Broad-Based Growth: 100-Day Reviews under Executive Order 14017," June 2021, 188, <https://www.whitehouse.gov/wp-content/uploads/2021/06/100-day-supply-chain-review-report.pdf>.

<sup>21</sup> "State Reserve Agency Stockpile to Buoy Aluminum Sector," *Xinhua*, December 27, 2008, [https://www.chinadaily.com.cn/bizchina/2008-12/27/content\\_7346725.htm](https://www.chinadaily.com.cn/bizchina/2008-12/27/content_7346725.htm).

<sup>22</sup> Mai Nguyen and Min Zhang, "China to Release Copper, Aluminium and Zinc Reserves to Stabilise Prices," *Reuters*, June 16, 2021, <https://www.reuters.com/world/china/china-release-copper-aluminium-zinc-reserves-stabilise-commodity-prices-2021-06-16/>.

<sup>23</sup> Andy Home, "Home: China's Sale of State Zinc Reserves Is a Well-Timed Trade," *Reuters*, June 24, 2021, <https://www.mining.com/web/chinas-sale-of-state-zinc-reserves-is-a-well-timed-trade/>.

<sup>24</sup> Andy Home, "Column: A Brief History of China's Metals Stockpiling Programmes," *Reuters*, May 1, 2020, <https://www.reuters.com/article/idUSKBN22D56W/>.

<sup>25</sup> "SRB Revealed: Shedding Light on China's State Reserve Bureau in the Copper Market," *Fastmarkets*, July 31, 2015, <https://www.fastmarkets.com/insights/srb-revealed-shedding-light-on-chinas-state-reserve-bureau-in-the-copper-market/>.

<sup>26</sup> Elmer Rietveld et al., "Strengthening the Security of Supply of Products Containing Critical Raw Materials for the Green Transition and Decarbonization," European Parliament, December 2022, 71, <https://www.europarl.europa.eu/cmsdata/267347/QA-04-22-302-EN-C.pdf>.

<sup>27</sup> Andy Home, "Column: A Brief History of China's Metals Stockpiling Programmes," *Reuters*, May 1, 2020, <https://www.reuters.com/article/idUSKBN22D56W/>; and Pratima Desai, "Exclusive: China State Stockpiler Aims to Buy Up to 15,000 T of Cobalt, Sources Say," *Reuters*, May 24, 2024, <https://www.reuters.com/markets/commodities/china-state-stockpiler-aims-buy-up-15000-t-cobalt->



To help discern whether China is stockpiling for strategic reasons—including a possible invasion of Taiwan—three key indicators exist: (1) stockpiling when domestic mineral producers do not face profitability issues, (2) high apparent mineral consumption<sup>28</sup> relative to real mineral consumption,<sup>29</sup> and (3) spiking mineral imports. These indicators would signal deviation from China’s normal stockpiling activities during its current military expansion, which is arguably the largest peacetime military expansion in recent history.<sup>30</sup> Therefore, these indicators could reveal that China is stockpiling minerals for reasons beyond military expansion, such as preparation for conflict.

Indicators 2 and 3 also assess Germany’s stockpiling activities before it and the Soviet Union invaded Poland in September 1939. Notably, Germany before World War II has similarities with China today: “Germany is an outstanding example of a major industrial nation in which processing of mineral raw materials is a far more important element in the national economic structure than production of the materials themselves,” according to the US Geological Survey in 1938.<sup>31</sup> Today, China mines appreciable volumes of some minerals, but it processes far larger volumes, being a global leader in processing production for many minerals.<sup>32</sup> Thus, Germany’s stockpiling activities before invading Poland in 1939 may parallel China’s stockpiling activities before potentially invading Taiwan.

**Indicator 1: Stockpiling when domestic mineral producers do not face profitability issues.** Generally, China stockpiles minerals to increase domestic mineral prices and support domestic mineral producers, which will sometimes request that the government

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[sources-say-2024-05-23/](https://www.reuters.com/markets/commodities/china-state-stockpiler-aims-buy-up-15000-t-cobalt-sources-say-2024-05-23/). China is reportedly seeking to buy 15,000 metric tons of cobalt in 2024—a record amount of cobalt for a single purchase. See Pratima Desai, “Exclusive: China State Stockpiler Aims to Buy Up to 15,000 T of Cobalt, Sources Say,” *Reuters*, May 24, 2024, <https://www.reuters.com/markets/commodities/china-state-stockpiler-aims-buy-up-15000-t-cobalt-sources-say-2024-05-23/>.

<sup>28</sup> Apparent consumption is domestic mineral production plus mineral imports minus mineral exports.

<sup>29</sup> Real consumption is actual domestic mineral usage.

<sup>30</sup> Kitty Donaldson, “UK Urges China to Explain ‘Biggest’ Peacetime Military Build-Up,” *Bloomberg*, April 24, 2023, <https://www.bloomberg.com/news/articles/2023-04-24/uk-urges-china-to-explain-biggest-peacetime-military-build-up>.

<sup>31</sup> J.S. McGrath, “World Production of Minerals and Economic Aspects of International Mineral Policies,” in *Minerals Yearbook* 1938, ed. H. Herbert Hughes (Washington, DC: US Government Printing Office, 1938), 48,

<https://search.library.wisc.edu/digital/AZTQ7FWNGGO4TW86/pages/AQ33QVDT6XXY4A8J>.

<sup>32</sup> International Energy Agency, “The Role of Critical Minerals in Clean Energy Transitions,” May 2021, 13, <https://iea.blob.core.windows.net/assets/ffd2a83b-8c30-4e9d-980a-52b6d9a86fdc/TheRoleofCriticalMineralsinCleanEnergyTransitions.pdf>; Rodrigo Castillo and Caitlin Purdy, “China’s Role in Supplying Critical Minerals for the Global Energy Transition: What Could the Future Hold?” Brookings Institution, July 2022, 2, [https://www.brookings.edu/wp-content/uploads/2022/08/LTRC\\_ChinaSupplyChain.pdf](https://www.brookings.edu/wp-content/uploads/2022/08/LTRC_ChinaSupplyChain.pdf); and Mark Burton, “Why the Fight for ‘Critical Minerals’ Is Heating Up,” *Bloomberg*, November 20, 2023, <https://www.bloomberg.com/news/articles/2023-11-20/critical-minerals-china-s-dominance-as-supplier-is-a-problem-for-the-west>.



stockpile minerals to support domestic prices.<sup>33</sup> Consequently, China stockpiles when mineral prices are low and domestic mineral producers face profitability issues, increasing mineral producers' profit margins.<sup>34</sup> If China stockpiles minerals when mineral prices are not low or when domestic mineral producers do not face profitability issues, China could be stockpiling for strategic reasons, like preparation for a conflict.

To further discern China's intent for stockpiling, China stockpiling minerals with disproportionate military end-uses could indicate stockpiling for a conflict. For instance, a large portion of beryllium's demand is from defense applications; therefore, greater stockpiling of beryllium could indicate preparation for war.<sup>35</sup> The grade and form of the mineral being stockpiled could also indicate whether China is stockpiling for military purposes. For example, unalloyed beryllium metal and beryllium composite products predominantly have military end-uses.<sup>36</sup> Increased stockpiling rates of these minerals could indicate that China is preparing for war.

**Indicator 2: High apparent mineral consumption relative to real mineral consumption.**

Apparent consumption is domestic mineral production plus mineral imports minus mineral exports, while real consumption is actual domestic mineral usage. High apparent mineral consumption relative to real mineral consumption would suggest that China has far greater mineral production and imports than consumption and exports. This excess supply may be stockpiled by China's central government. For instance, if China has high copper production and high copper imports but low copper consumption and low copper exports, the excess copper may be stockpiled for strategic reasons.

For example, before Germany invaded Poland in 1939, Germany's apparent copper consumption in 1937 and 1938 far exceeded possible real consumption.<sup>37</sup> This circumstance indicated that Germany had far greater supply than demand, hinting that

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<sup>33</sup> "Update 1-China Issues Tender to Stockpile Aluminium – Sources," *Reuters*, November 12, 2012, <https://www.reuters.com/article/idUSL3E8MC3MQ/>.

<sup>34</sup> Andy Home, "Column: A Brief History of China's Metals Stockpiling Programmes," *Reuters*, May 1, 2020, <https://www.reuters.com/article/idUSKBN22D56W/>; and Pui-Kwan Tse, "The Mineral Industry of China," US Geological Survey, February 2015, 8.2, <https://d9-wret.s3.us-west-2.amazonaws.com/assets/palladium/production/mineral-pubs/country/2012/myb3-2012-ch.pdf>.

<sup>35</sup> US Geological Survey, *Mineral Commodities Summary 2024* (Reston, VA: US Geological Survey, 2024), 17, <https://pubs.usgs.gov/periodicals/mcs2024/mcs2024.pdf>. Germanium is another element that could be monitored given its defense applications. See US Geological Survey, *Mineral Commodities Summary 2024* (Reston, VA: US Geological Survey, 2024), 17, <https://pubs.usgs.gov/periodicals/mcs2024/mcs2024.pdf>.

<sup>36</sup> Brian W. Jaskula, "Beryllium," US Geological Survey, January 2024, 44, <https://pubs.usgs.gov/periodicals/mcs2024/mcs2024-beryllium.pdf>.

<sup>37</sup> J.W. Furness and H.M. Meyer, "Copper," in *Minerals Yearbook 1939*, ed. H. Herbert Hughes (Washington, DC: US Government Printing Office, 1939), 116, <https://search.library.wisc.edu/digital/AQGHPBQDKJTJZH9E/pages/AEJ7EHD3HQL3IT84>.

sizable copper volumes were stockpiled.<sup>38</sup> In 1940, the US Geological Survey confirmed that Germany's copper stockpiling was in preparation for conflict: "During the past few years [Germany's] apparent consumption is believed to have been considerably above real consumption, and large stocks of copper probably were accumulated in preparation for war."<sup>39</sup> Thus, if China's apparent mineral consumption far surpasses its real mineral consumption, China could be stockpiling minerals in preparation for conflict.<sup>40</sup>

**Indicator 3: Spiking mineral imports.** Under normal circumstances, mineral imports should be relatively stable, with increases and decreases correlated with domestic consumption. Spiking mineral imports suggest significantly increased mineral demand, but absent a corresponding increase in domestic consumption, these mineral imports could be stockpiled by the government for national emergencies like a conflict—or a pandemic. During the COVID-19 pandemic in 2020, China imported copper despite elevated copper prices, implying copper stockpiling.<sup>41</sup> Citi analyst Max Layton said China sought increased mineral stocks to withstand supply disruptions from the pandemic.<sup>42</sup> China, therefore, sometimes stockpiles for strategic reasons beyond conflict preparation.

Still, spiking mineral imports are a potential indicator of war preparation. In 1939, Germany had "sharp increases" in tin imports that suggested stockpiling.<sup>43</sup> Germany also imported such significant volumes of copper before 1939 that the US Geological Survey said, "[I]t seems almost certain that a stock pile [*sic*] of significant proportions has been accumulated."<sup>44</sup> During the Cold War too, an indicator of the Soviet Union possibly preparing for war was significantly increasing mineral imports.<sup>45</sup> Consequently, if China's mineral imports spike, China could be stockpiling minerals in preparation for war.

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<sup>38</sup> J.W. Furness and H.M. Meyer, "Copper," in *Minerals Yearbook 1939*, ed. H. Herbert Hughes (Washington, DC: US Government Printing Office, 1939), 116,

<https://search.library.wisc.edu/digital/AQGHPBQDKJTJZH9E/pages/AEJ7EHD3HQL3IT84>.

<sup>39</sup> H.M. Meyer, "Copper," in *Minerals Yearbook 1940*, ed. H. Herbert Hughes (Washington, DC: US Government Printing Office, 1940), 102,

<https://search.library.wisc.edu/digital/ADCTPMSF6KGZOY85/pages/A2TWBIOW3S3Y5D8J>.

<sup>40</sup> China could also be consuming heightened volumes of minerals for new or secret military programs.

<sup>41</sup> Pratima Desai, "China's Blueprint to Stockpile Copper Expected in Five-Year Plan," *Reuters*, October 21, 2020, <https://www.reuters.com/article/idUSKBN2761B4/>.

<sup>42</sup> Pratima Desai, "China's Blueprint to Stockpile Copper Expected in Five-Year Plan," *Reuters*, October 21, 2020, <https://www.reuters.com/article/idUSKBN2761B4/>.

<sup>43</sup> E.W. Pehrson and John B. Umhau, "Tin," in *Minerals Yearbook 1939*, ed. H. Herbert Hughes (Washington, DC: US Government Printing Office, 1939), 686, <https://search.library.wisc.edu/digital/AQGHPBQDKJTJZH9E/pages/AEPKD4VCAEKKCV9C>.

<sup>44</sup> J.W. Furness and H.M. Meyer, "Copper," in *Minerals Yearbook 1939*, ed. H. Herbert Hughes (Washington, DC: US Government Printing Office, 1939), 119, <https://search.library.wisc.edu/digital/AQGHPBQDKJTJZH9E/pages/AUVQKSH5FCUDXI8J>.

<sup>45</sup> Edmund Brunner, Jr., "Perception and Strategic Warning," RAND Corporation, prepared for the US Air Force, November 1979, 6, <https://apps.dtic.mil/sti/tr/pdf/ADA080448.pdf>.

## Denial and Deception

Detecting these indicators could, however, face denial and deception. For instance, Germany started hiding its metal consumption beginning in 1935.<sup>46</sup> Regarding China's mineral stockpile, public information is lacking. While China's information control on stockpiling minerals not deemed "strategic" like zinc is less strict, it conceals its stockpiling activities for strategic minerals like copper.<sup>47</sup> To conceal stockpile purchases in preparation for conflict, China could also undertake stockpile purchases for strategic reasons under economic auspices. A portion of these purchases could actually be for conflict preparation, hiding the strategic intent behind the purchases. Additionally, a lack of detectable stockpiling activity could indicate that China has met its stockpile targets.<sup>48</sup>

China could also deceive observers about its stockpiling activities. For example, the Chinese government could direct "private" Chinese mineral companies like Tsingshan to undertake mineral stockpiling. Local and provincial governments could participate in the stockpiling effort too, and they usually stockpile for economic reasons and could thus obfuscate mineral stockpiling for strategic reasons.<sup>49</sup> They could better conceal such stockpiling as they purchase the minerals and have the mineral producers store the minerals at their facilities, rather than transferring them to government storage facilities.<sup>50</sup>

## Other Mineral-Related Indicators

Detecting other mineral-related indicators could help counter denial and deception efforts and ultimately help inform whether China is stockpiling for strategic reasons, like preparing to invade Taiwan. For instance, if China establishes a board of control for minerals, China could be preparing for conflict. Such an action is an extreme measure to govern the consumption of minerals in a state expecting significant mineral demand and

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<sup>46</sup> Jonas Scherner, "Preparing for the Next Blockade: Non-ferrous Metals and the Strategic Economic Policy of the Third Reich," *The English Historical Review* 137, no. 585 (April 2022): 486, <https://academic.oup.com/ehr/article/137/585/475/6576229>.

<sup>47</sup> Andy Home, "Learning to Live with (Talk of) Chinese State Metal Sales: Andy Home," *Reuters*, June 16, 2021, <https://www.reuters.com/business/energy/learning-live-with-talk-chinese-state-metal-sales-andy-home-2021-06-16/>; Andy Home, "Column: A Brief History of China's Metals Stockpiling Programmes," *Reuters*, May 1, 2020, <https://www.reuters.com/article/idUSKBN22D56W/>; and "SRB Revealed: Shedding Light on China's State Reserve Bureau in the Copper Market," *Fastmarkets*, July 31, 2015, <https://www.fastmarkets.com/insights/srb-revealed-shedding-light-on-chinas-state-reserve-bureau-in-the-copper-market/>.

<sup>48</sup> Andy Home, "Column: A Brief History of China's Metals Stockpiling Programmes," *Reuters*, May 1, 2020, <https://www.reuters.com/article/idUSKBN22D56W/>.

<sup>49</sup> Andy Home, "Column: A Brief History of China's Metals Stockpiling Programmes," *Reuters*, May 1, 2020, <https://www.reuters.com/article/idUSKBN22D56W/>.

<sup>50</sup> Pui-Kwan Tse, "The Mineral Industry of China," US Geological Survey, February 2015, 8.8, <https://d9-wret.s3.us-west-2.amazonaws.com/assets/palladium/production/mineral-pubs/country/2008/myb3-2008-ch.pdf>.

constrained mineral supply. For example, before World War II, Germany established boards of control to regulate mineral use as part of its “Four-Year Plan,” which was announced in 1936 and sought national economic self-sufficiency.<sup>51</sup>

Another mineral-related indicator that China could be preparing for conflict is the Chinese government heavily subsidizing unprofitable domestic mineral producers. This action indicates that the government expects curtailed mineral imports, possibly due to conflict. Before World War II, Germany undertook efforts to increase domestic mineral extraction despite the unprofitability of many domestic deposits.<sup>52</sup> In November 2023, China’s Minister of Natural Resources Wang Guanghua noted that China will increase its domestic mineral exploration, urging that “[t]he supply of minerals must be secured for both defense and livelihood purposes to ensure the domestic circulation is smooth under extreme situations.”<sup>53</sup> He noted, “This is a very urgent mission.”<sup>54</sup> Along with monitoring China’s mineral stockpiling, these other mineral-related indicators should also be monitored to better inform whether China is preparing to invade Taiwan.

### **China’s Mineral Stockpiling Should Be Monitored**

China’s stockpiling activities could indicate that China is preparing for an invasion of Taiwan. Three indicators that China may be stockpiling for strategic reasons, like a military invasion, are (1) stockpiling when domestic mineral producers do not face profitability issues, (2) high apparent mineral consumption relative to real mineral consumption, and (3) spiking mineral imports. Other mineral-related indicators—like boards of control for minerals and large subsidies to unprofitable mineral producers—could further indicate that China is possibly preparing to invade Taiwan. However, these indicators must be further contextualized with other state actions, specifically China’s military activities, to better discern whether China is indeed intending to invade Taiwan.

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<sup>51</sup> J.S. McGrath, “World Production of Minerals and Economic Aspects of International Mineral Policies,” in *Minerals Yearbook 1937*, ed. H. Herbert Hughes (Washington, DC: US Government Printing Office, 1937), 104–105,

<https://search.library.wisc.edu/digital/AFNJS6RDFYJRTT8F/pages/A2X5ZFHOMGQRIS86>.

<sup>52</sup> J.S. McGrath, “World Production of Minerals and Economic Aspects of International Mineral Policies,” in *Minerals Yearbook 1937*, ed. H. Herbert Hughes (Washington, DC: US Government Printing Office, 1937), 105,

<https://search.library.wisc.edu/digital/AFNJS6RDFYJRTT8F/pages/A2X5ZFHOMGQRIS86>.

<sup>53</sup> Kinling Lo, “China’s Strategic Mineral Supply Push ‘a Very Urgent Mission,’ Says Resources Minister, amid Self-Reliance Push,” *South China Morning Post*, November 10, 2023, <https://www.scmp.com/economy/china-economy/article/3240941/chinas-strategic-mineral-supply-push-very-urgent-mission-says-resources-minister-amid-self-reliance>.

<sup>54</sup> Kinling Lo, “China’s Strategic Mineral Supply Push ‘a Very Urgent Mission,’ Says Resources Minister, amid Self-Reliance Push,” *South China Morning Post*, November 10, 2023, <https://www.scmp.com/economy/china-economy/article/3240941/chinas-strategic-mineral-supply-push-very-urgent-mission-says-resources-minister-amid-self-reliance>.