2021 Report on the Development of the Chinese Communist Party's Politics and Military

Editors-in-Chief
Kuan-Chen Lee
Ming-Te Hung

Preface

The inauguration of U.S. President Joe Biden in 2021 has been considered the beginning of a shift in the international strategic environment. It was anticipated that the strategic confrontation between the U.S. and China that began with former U.S. President Donald Trump would de-escalate as Biden advocated a strategic competitive relationship with the Chinese Communist Party. However, over the past year, initial predictions of de-escalation of U.S.-China relations have been undermined by the Chinese Communist Party's continued military aggression, ethnic and religious oppression in Xinjiang, as well as its national security legislation constricting human rights in Hong Kong, which have alarmed countries in the Indo-Pacific region. As a result, Biden was forced to continue Trump's Indo-Pacific strategy to curb the Chinese Communist Party's attempts. In particular, the immediate fall of Afghanistan to Taliban control after the withdrawal of U.S. troops from the country has raised international concerns regarding whether the U.S. will uphold its strategic assurances and commitments to its allies.

Over the past year, the U.S. conducted intensive joint military exercises and training in the Indo-Pacific region with regional and allied countries. In addition to the existing Quad security structure, the U.S. established a trilateral alliance (AUKUS) with the United Kingdom and Australia to upgrade the strength of its Indo-Pacific maritime alliance. In addition, Japan, Canada, the Netherlands, Germany, France, and other countries have been regularly invited to hold joint naval exercises in the Indo-Pacific region, demonstrating the determination of the U.S. and its allied countries to deter the Chinese Communist Party with superior military power. As a consequence of this dynamic, other regions such as Northeast

Asia, Southeast Asia, South Asia, the Middle East, and Europe have been affected in terms of security.

Published this year, the 2021 Report on the Security Landscape of the Indo-Pacific Region distinguishes between the strategic context and the actions of major powers that affect the Indo-Pacific region, the responses and actions of major Indo-Pacific nations, and the security implications for the Indo-Pacific region. The 15-chapter assessment report is herewith presented to provide a reference for relevant policymaking stakeholders.

As the Chinese Communist Party entered its 100th year of establishment, the political and military dynamics of the CCP in 2021 reflected a Xi Jinping in haste to establish his position in history and perpetuate his power. The "2021 Report on the Development of the Chinese Communist Party's Politics and Military" analyzes and assesses the internal and external challenges confronting the CCP from the primary perspectives of political, military, economic and social. In terms of the internal environment, the CCP released its 14th Five-Year Plan and 2035 Visionary Goals and promoted its dual-cycle policy, which not only emphasizes strategic technologies and enterprises with R&D potential but also aims to foster semiconductor industries to achieve technological autonomy. Furthermore, under the goal of maintaining stability and sustainable governance, the CCP, mindful of the coming 20th Party Congress, will intensify, not relax, its control over social, public opinion, media, and military forces.

In terms of external relations, the CCP is alienated from the international community because of its series of actions suppressing human rights and democracy and its use of a wolf warrior diplomacy to deflect international criticism. As the U.S.-China dynamic intensifies, the U.S.-Taiwan military cooperation relationship has dramatically escalated, bringing an increasing number of countries to support Taiwan and its participation in international bodies. There are divergent views on whether the CCP is overconfident and expanding externally as a result of its rising national power, or whether it is in a state of international isolation and unrest, seeking internal stability and preventing external forces from taking advantage of the situation and adopting strong control measures. This year's

2021 Report on the Development of the Chinese Communist Party's Politics and Military provides a critical perspective on the CCP, with the hope of gaining a deeper understanding of the nature of the CCP regime.

In the wake of media reports of the launch of hypersonic missiles into space orbit in the South China Sea, the U.S.-China nuclear arms race has evolved into a competition for missiles capable of traveling faster than five times the speed of sound. While the Chinese Communist Party is actively strengthening its military intelligence, the development of new-generation military technology capabilities is not only of concern to advanced Western countries, it is also expected to impact the military balance in the Indo-Pacific region. The "2021 Report on the Defense Technology Trend Assessment—Assessment of the New Generation of Chinese Communist Party's Military Technology," pulls together forward-looking insights regarding the Communist Party's conventional military forces, strategic forces, strategic support equipment, general-purpose technology, and policy support, and analyzes the Communist Party's current and potential future defense technology capabilities and policies.

The Institute for National Defense and Security Research's research efforts range from the study of national security, the Chinese Communist Party's political and military forces, and operational concepts at the national level to the study of national defense strategies and resources, cyber security, and decision-making at the strategic level, bolstered by cross-evidence of strategic theory and practice. In addition, many scholars and experts from different fields have been invited to give lectures, teach classes, and integrate research across fields to strengthen the depth and breadth of the Institute's research results and to build research capacity.

The 2021 assessment reports are a manifestation of the annual research results of INDSR's four research institutes. In view of many topics and volumes, there are inevitably errors and omissions, and we hope that all parties will be kind enough to offer their comments.

Chairman
Shoou-Yeh Huoh
December 6, 2021

Author Team

Editors-in-Chief

Kuan-Chen Lee
(Assistant Research Fellow, Division of Chinese Politics, Military and Warfighting Concepts)
Ming-Te Hung
(Assistant Research Fellow, Division of Chinese Politics, Military and Warfighting Concepts)

Authors

Tsun-Yen Wang
(Assistant Research Fellow, Institute for National Defense and Security Research)
Shiow-Wen Wang
(Assistant Research Fellow, Division of Chinese Politics, Military and Warfighting Concepts)
Kuan-Chen Lee
(Assistant Research Fellow, Division of Chinese Politics, Military and Warfighting Concepts)
Che-Jen Wang
(Assistant Research Fellow, Division of Cyber Security and Decision-Making

Simulation)
Tzu-Chieh Hung
(Assistant Research Fellow, Division of Chinese Politics, Military and Warfighting Concepts)
Shu-Yuan Liang
(Postdoctoral Fellow, Institute of the Politics, Military Forces and Concept of Operations)
Caroline Chen
(Policy Analyst, Division of Chinese Politics, Military and Warfighting Concepts)
Chung-Ting Huang
(Assistant Research Fellow, Division of Chinese Politics, Military and Warfighting Concepts)
Si-Fu Ou
(Research Fellow, Division of Chinese Politics, Military and Warfighting Concepts)
Shan-Son Kung
(Assistant Research Fellow, Division of Chinese Politics, Military and Warfighting Concepts)

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Introduction

Kuan-Chen Lee, Ming-Te Hung*

The 19th National Congress of the Chinese Communist Party has put the goal of realizing the "Two Centenaries" in the Constitution of the Chinese Communist Party. It aimed to build a moderately prosperous society in all respects on the 100th Anniversary of the Chinese Communist Party (2021) and to build China into a great modern socialist country in all respects on the 100th anniversary of the founding of the People's Republic of China (2049). Undoubtedly, Xi Jinping announced the achievement of the first goal for the 100th Anniversary of the Chinese Communist Party on the ceremony.[1] However, in the background of celebrating its 100th anniversary, the CCP strengthened the anti-corruption and rectification campaign and mind control in the aspect of politics to remove the obstacles on Xi's way of re-election on 20th National Congress of the CCP. At the same time, the CCP concluded the major achievements and historical experience in its 100-year-struggle and confirmed that Xi is the core leader with his thought acting as the foundation of official and governmental guidance through the announcement of the "Resolution of the Central Committee of the Communist Party of China On the Major Achievements and Historical Experience of the Party

* Kuan-Chen Lee, Assistant Research Fellow, Division of Chinese Politics, Military and Warfighting Concepts, Institute for National Defense and Security Research; Ming-Te Hung, Assistant Research Fellow, Division of Chinese Politics, Military and Warfighting Concepts, Institute for National Defense and Security Research.

1 "The Magnificent Declaration of Xi Jinping: Building a Moderately Prosperous Society in All Respects," China News Service, July 1, 2021, https://www.chinanews.com/gn/shipin/cns-d/2021/07-01/news893376.shtml.

Over the Past Century (The Third Resolution on History).” It was to unify the corresponding measures of all members of the party when facing risks in the future. In terms of the CCP’s Taiwan policy, it is going to strengthen its three-pronged strategy composed of “anti-independence, promotion of fusion and promotion of unification” to make progress in the peaceful reunification of Taiwan with China. In the military aspect, China keeps spending money on its armed forces and weapons. This is to accelerate the modernization of its national defense and armed forces. The CCP rectifies the capital market and promotes the idea of common prosperity in the economic aspect, and this is to prevent the expansion of capital from challenging its ruling base. In the social aspect, the Internet platforms and the cultural entertainment industry are strictly regulated in order to curb the subversion of culture by crooked and chaotic trends. Upon this situation, “The 2021 Report on the Development of the Chinese Communist Party’s Politics and Military” took the 100th anniversary of the CCP as the main shaft and covered the political, military, economic and social aspects with reasoning and analysis in the way of discussing specific issues. This report can be divided into totally 10 chapters, including the Section of Politics, the Section of Military Affairs, and the Section of Economy and Society.

In Chapter 1 of the section of politics, the political implications and policy priorities of the “14th Five-Year Plan and the Long-Range Objectives Through the Year 2035” and the profound influence of them on the development of China under the rule of CCP were described from the perspective of the changes in the external situation for CCP and its historical progress. The principles and discourse on the 2021 Taiwan policy of CCP were reviewed in Chapter 2, and the adjustments and changes in the Taiwan policy of CCP were analyzed in this light. In Chapter 3, the division of labor and strategies between the Taiwan Affairs Office of the State Council and the Ministry of Foreign Affairs in Taiwan-related issues were compared using the statements made by the two divisions as the examples. China’s promotion of the Belt and Road Initiative (BRI) in the Indo-Pacific region in the past year was reviewed in Chapter 4. The risks and controversies of the BRI, and the countermeasures of the international community at this stage were all

summarized.

The Fifth Plenary Session of the 19th CPC Central Committee proposed the idea of "Ensuring the achievement of the military's centenary goal by 2027," planning to complete the military transformation by the 100th anniversary of the establishment of People's Liberation Army. CCP is going to promote intelligentization on the basis of mechanization and informatization to build a military force that matches its national strength in the world. In response to this situation, the changes in the patterns of Chinese warplane incursions were first compiled based on open source intelligence in Chapter 5, Section of Military Affairs in this annual report. the meaning of the frequent access to Taiwan's southwestern ADIZ by Chinese warplanes was further analyzed, and the possible ways for Taiwan to respond were proposed according to it. The focus of Chapter 6 was on the South China Sea. From the three perspectives: war potential extension and battlefield awareness, the approaches of offense and defense in islands and reefs, and the suppression of foreign forces, the military preparedness of the PLA in the South China Sea were analyzed. In Chapter 7, we took the four official Weibo accounts operated by the PLA as the research subjects to clarify the public opinion dissemination model and development trend of the PLA on social media and to attempt to gain a more thorough understanding of its weaponized propaganda model.

After the inauguration of Joe Biden as the president of the U.S.A., the US-China tensions have not abated, and there has been no relaxation in the control of technology. For its part, the CCP wants to develop technological independence through its domestic market and state capital support in order to get rid of the U.S. containment. Therefore, in Chapter 8 of the Section of Economy and Society, a systematic review of the PRC's economic situation and semiconductor industrial policy for 2021 was conducted, providing readers with a snapshot of China's economic outlook and the challenges of semiconductor development. Chapter 9 was focused on the development of PRC's aerospace science and technology and its related industrial chain. By clearly depicting the path of PRC's aerospace science and technology development and its related industrial structure, the authors

endeavored to investigate the development mechanism and military application potentials of PRC's aerospace science and technology in depth. Finally, the focus of Chapter 10 was on the social aspect of China, analyzing the various measures taken to strengthen social control during the 100th anniversary of the CCP. The reason why CCP has strengthened its political, economic and social stability maintenance in China is, in the short term, related to the re-election of Xi Jinping at the 20th National Congress. In the long term, it is the risk management to ensure the basic achievement of socialist modernization by 2035.

In conclusion, although the CCP announced on its 100th anniversary that it has built a moderately prosperous society in all respects and set specific targets for 2027, 2035 and 2049, this is by no means a smooth road to prosperity. On the contrary, the CCP is facing the road of changes full of hidden dangers and challenges on its 100th anniversary. This annual report is composed of issue-oriented studies focusing on the political, military, and socio-economic aspects of the PRC, with the hope of providing readers with a more in-depth understanding of the recent political, military, economic, and social developments in the PRC.

PART ONE

Politics

Chapter 1

The 14th Five-Year Plan and Changes in the CCP's Economic Strategy

Shu-Yuan Liang*

I. Forewords

During the Two Sessions of the National People's Congress (NPC) this year (2021), besides reviewing the budgets, bills and work reports of the State Council, the Supreme People's Court, the Prosecutor General's Office and other government departments, the CCP also passed the "The 14th Five-Year Plan for National Economic and Social Development of the People's Republic of China [hereinafter referred to as "the 14th Five-Year Plan and 2035 Visionary Goals (the 14th Five-Year Plan)"].[1]

According to the decision-making process of the CCP, the approved 14th Five-Year Plan and the 2035 Visionary Goals are to be implemented at the Fifth Plenary Session of the 19th Central Committee and the Central Economic Working Conference in 2020. The Chinese Economic Reform has narrowed the scope of the CCP's mandatory plans,[2] but why does the public continue to pay attention to the

* Postdoctoral Fellow, Institute of the Politics, Military Forces and Concept of Operations, Institute for National Defense and Security Research.

1 The full text of the 14th Five-Year Plan was announced on March 13, 2021. Please refer to "The 14th Five-Year Plan for National Economic and Social Development of the People's Republic of China," *People's Daily Online*, March 13, 2021, http://lianghui.people.com.cn/2021npc/n1/2021/0313/c435267-32050512.html.

2 The market economy is gradually formed through the process of limiting the economic activities that can be influenced by the mandatory plans, while the non-public economy outside the mandatory plans is growing rapidly. Barry Naughton, *Growing Out of the Plan: Chinese Economic Reform*, *1978-1993* (New York: Cambridge University Press, 1995).

CCP's five-year economic development plan?

Although the mandatory plans were gradually phased out from the policy arena following the CCP's announcement of the establishment of the socialist market economy in 1992, the CCP also established a new planning system that could maintain the authority of the central government while preserving the flexibility of economic activities.[3] While the state has abandoned setting economic targets for specific sectors and enterprises, it has switched to a guiding industrial policy with an emphasis on macroeconomic regulation and established a set of "network planning." The national economic and social development plan adopted every five years provides macro policy objectives, which are followed by regional and project planning at the State Council level, as well as specific implementation of the plans by related ministries and provinces.[4] In addition, the Central Committee of the CCP adopted a cadre accountability system in order to make localities cooperate with the central government's policies. The system evaluates cadres through policy indicators, which strengthens the compulsory power of the planned policy contents on the cadre.[5]

This report is based on the analysis of the 14th Five-Year Plan and the 2035 Visionary Goals, which is not only limited to political documents and discussions at the Two Sessions, but also incorporates the decisions of the CCP in the Fifth Plenary Session of the 19th Central Committee and the Central Economic Working Conference. The following discussion examines (1) the meaning and (2) policy focus of the 14th Five-Year Plan and the 2035 Visionary Goals, and their implications for (3) the development of China's state capitalism.

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[3] Sebastian Heilmann and Oliver Melton, "Planning: The Core Mechanisms of China's Policy Process," *Age of Openness (Guangzhou)*, Vol. 6, 2013, p. 9.

[4] Sebastian Heilmann & Oliver Melton, the same article cited, pp. 11-15.

[5] Please refer to Sebastian Heilmann and Oliver Melton, the same article cited, pp. 22-23. Liu Yalin, *Bottom-Up Reform: Divergent Paths for Local Economic Development in China* (Taipei: Chuliu Book, 2017), pp. 91-93.

II. Significance of the 14th Five-Year Plan and 2035 Visionary Goals

Since China's economic reform, the CCP approved two long-term goals: the 9th Five-Year Plan for National Economic and Social Development (the 9th Five-Year Plan) and Guidelines of the 2010 Visionary Goals, and the 14th Five-Year Plan and 2035 Visionary Goals. Why did the CCP announce its second lot of visionary goals 25 years after the introduction of the 14th Five-Year Plan? In this report, we argue that the visionary goals signal a completion of the previous stage of the CCP's targets and introduce a new vision aimed at a smooth transition to the next stage of development. The 9th Five-Year Plan and Visionary Goals 2010, led by Jiang Zemin, marked the completion in 1995 of the second stage of the CCP's Three-Step Development Strategy – a quadruple increase in GDP by the end of the twentieth century compared to the baseline of the 1980s. Xi Jinping's 14th Five-Year Plan and 2035 Visionary is a response to the fact that the CCP did not complete its original plan to quadruple China's GDP in 2010, as originally envisioned by Jiang Zemin. This also explains why the CCP did not launch its next long-range objectives in 2010 during Hu Jintao's tenure. In light of general conditions, by the time of the 16th CCP National Congress in 2002, China was unlikely to achieve its goal of quadrupling its GDP by 2010. Hence Hu Jintao, in his political report to the 16th National Congress, defined building a moderately prosperous society in all respects as "striving to quadruple the nation's GDP by 2020 comparing to the economic output in 2000.

However, both the 9th Five-Year Plan and 2010 Visionary Goals and the 14th Five-Year Plan and 2035 Visionary Goals reflect two forces that influence the CCP's economic policy: the party's domestic development goals and the impact of external conditions on state development. This chapter explains the two forces that influence the implementation of the 14th Five-Year Plan and the 2035 Visionary Goals, and clarifies the future direction of national development led by the CCP.

1. Moving Towards the Direction of Building a Modern Socialist Country

After the Cultural Revolution, the Third Plenary Session of the 11th Central Committee (1978) confirmed that the future focus of governance would be on the modernization of socialism. At that time, for Deng Xiaoping, rather than joining the countries of "western modernization," completion of the modernization of China meant that a moderately prosperous society has been built in the country.[6] At the 13th National Congress (October 1987), Zhao Ziyang, then Secretary of the CCP, proposed the report on "moving forward along the road of socialism with Chinese characteristics," which laid out the so called "Three-Steps Development Strategy." The three steps were step one, ensure that the people have enough food and clothing; step two, increase per-capita GNP to the level of medium-developed countries; and step three, make the people fairly well-off, basically achieve modernization, build a moderately prosperous society in China, and finally transform the country into a modern country.[7] In outlining the Three-Steps Strategy, the first and second steps were the main objectives while the third step was only briefly described. Not much was said about how to achieve modernization in China.[8] In 1995, after the CCP completed the second step, or quadrupling GNP from against the 1980s level ahead of the envisioned timeline, the CCP faced the questions of what the third step is and how should the country move from the second to the third step. Jiang Zemin and Xi Jinping later proposed more detailed plans for advancing the strategy.

In 1997, Jiang Zemin pointed out at the 15th National Congress that it was a critical period for the CCP to lead China to take the third step on the basis of the completion of the second step. The process of taking the second step to the third step was divided into three stages – also known as the "New Three-Steps

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6 Deng Xiaoping, *The Selected Works of Deng Xiaoping Vol. 2* (Beijing: People's Press, Edition 2, 2006), pp. 237-238.

7 Zhao Ziyang, "Moving Forward on the Road of Socialism with Chinese Characteristics – The Report at the 13th National Congress of the CCP (October 25, 1987)," *People's Daily Online*, http://cpc.people.com.cn/BIG5/64162/64168/64566/65447/4526368.html.

8 Fan Xianlei, "From a Moderately Prosperous Society to a Moderately Prosperous Society in All Respects," *CCP News Net*, May 4, 2014, http://dangshi.people.com.cn/n/2014/0504/c384616-24971790.html.

Development Strategy" – and Jiang mentioned the "realization of the first century goals" for the first time. The CCP envisioned that: (1) by 2010, the GNP should double that of year 2000; (2) by the hundredth anniversary of the CCP in 2021, the party would have made the national economy more developed and various systems more improved; and (3) by the hundredth anniversary of the founding of the PRC in 2049, China would have basically achieved modernization and become a strong, democratic and civilized socialist country.[9] In the 19th National Congress, Xi Jinping proposed a "two-stage" arrangement for the third step of the "new three steps," which is basically the achievement of modernization by 2049. In the first stage (2020-2035), on the basis of a moderately prosperous society in all respects, the CCP will struggle for 15 years to achieve the modernization of socialism. In the second stage (2035 to the middle of the twenty-first century), on the basis of basic modernization, the CCP will struggle for another 15 years to build China into a strong, democratic, civilized, harmonious, and modern socialist country.[10]

The current governance blueprint of the Central Committee is a change from Deng Xiaoping's expectation that China's modernization would turn the country into a "moderately prosperous society." The modernization that Xi Jinping seeks to build on the foundation established in the Jiang and Hu generations refers to a "strong, democratic, civilized, harmonious and modern socialist country" that is comparable to the West. At the Politburo Standing Committee meeting on December 3, 2020, Xi Jinping announced the completion of the final stage of "building a moderately prosperous society in all respects," demonstrated by the success in alleviating poverty in rural areas.[11] The CCP believes that it has fulfilled its promise to the people, and the next step for the party is to move forward to

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[9] Jiang Zemin, *The Selected Works of Jiang Zemin Vol. 2* (Beijing: People's Press, 2006), p 4.

[10] Xi Jinping, "Building A Moderately Prosperous Society In All Respects And Seizing The Great Victory Of Socialism With Chinese Characteristics In The New Era," *Central Government of the PRC*, October 27, 2017, http://www.gov.cn/zhuanti/2017-10/27/content_5234876.htm.

[11] "The Politburo Standing Committee of the Central Committee of the Communist Party of China Held a Meeting to Listen to the Summary and Evaluation Report of the Alleviating Poverty Attack, and Xi Jinping, General Secretary of the CPC Central Committee, Presided Over the Meeting," *Xinhua Net*, December 3, 2020, http://www.xinhuanet.com/politics/leaders/2020-12/03/c_1126818856.htm.

achieve the modernization of socialism on the basis of a moderately prosperous society in all respects. As a political party that values ideology, the CCP boasts a close relationship between theoretical conceptions and party policies. In 2018, after Xi Jinping abolished limits on the presidency by removing institutional restrictions on re-election, "success in alleviating poverty" and "establishment of a moderately prosperous society in all respects" have become the source of legitimacy for Xi to be re-elected within the party. The CCP is expected to use the 14th Five-Year Plan and the 2035 Visionary Goals to set the general policy direction of a modern socialist country, which will be the first step in the modernization of socialism and shaping the path of national development for the future.

Based on Xi Jinping's remarks at the Two Sessions this year, one can observe the party's thinking on how to realize a modern socialist country. This author argues that for the CCP, the most important policy axis is to promote the party and move towards "high quality development," around which the relevant policies will gradually be developed. The following paragraphs illustrate this with examples of Xi's remarks during the Two Sessions.[12] First, one should note that Xi Jinping participated in cluster-groups of the medical and health sector and the education sector in the Political Consultative Conference, as well as the Representatives of Inner Mongolia, Qinghai and the PLA at the National People's Congress (NPC). From Xi's remarks to the cluster-groups, it is clear that the CCP's movement towards "high quality development" will be the first step for building a modern socialist country, and the top priority of the 14th Five-Year Plan. "High quality development" is a requirement for all regions in China and not limited to those with better economic development. In addition, progress is not limited to economic development but also all aspects of social development.[13] China's economic

[12] "Participating cluster-groups" means the participation in the various cluster-groups by the CCP leadership during the Two Sessions. The composition of these "cluster-groups" includes different categories of people's groups, provincial representatives, and political parties, and the PLA also forms a "cluster-group" of its own.

[13] "Xi Jinping's Review when Participating in the Cluster-group of Qinghai Representatives," *Xinhua Net*, March 7, 2021, http://www.xinhuanet.com/politics/2021-03/07/c_1127181075.htm.

indicators are bound to show slow decline as the economy grows and in the long run, the CCP must adjust its economic development goals. The term "high quality development" refers to the fact that short-term economic statistics are no longer the only priorities to be pursued. Although economic development is still the main focus, the emphasis is instead on composite indicators. For example, each region should develop different industries according to local conditions and ecological environment, and establish a modernized economic system with local characteristics. The goals are to narrow the gap between urban and rural areas in terms of education, medical care and other basic needs, to nurture innovative talents in the field of technology, to strengthen the public nature of medical resources, and to emphasize morality and civilization.

2. The Unfavorable External Situation May Impact China's Economic Development Model

When Deng Xiaoping established the CCP's political focus on economic development, China faced the question of how to develop its economy as an under developed country. The CCP's answer was to increase China's openness to the world; its economic policy had been hinged on how to use foreign technology, capital, and talent to boost economic and technological development. The relationship between the world and China not only affects the speed but also the model and path of economic development. The 9th Five-Year Plan and 2010 Visionary Goals and the 14th Five-Year Plan and 2035 Visionary Goals are political documents that present judgment of the external situation by senior officials and discuss the impact of the situation on the economic development path planned by the CCP.

Compared to the relaxed international political environment for China in 1996, when the 9th Five-Year Plan and 2010 Visionary Goals were formulated, in the Fifth Plenary Session of the 19th Central Committee, Beijing announced its political documents and made clear that the external situation faced by the PRC is complex and entered a "period of turbulent change and accelerated evolution" due to the

spread of the COVID-19 epidemic.[14] The relaxed international atmosphere was due to: (1) the U.S. foreign policy decision to temporarily put aside its ideological differences with China during the Cold War in consideration of tensions with the Soviet Union, and (2) the U.S. continuation of "strategic engagement" with China despite the Tiananmen Square incident. China has taken advantage of the situation to actively integrate into the international community, benefit from the multilateral free trade system under the liberal international order, and attract global investment through its gradually developing and expanding market potential. Furthermore, market scale and administrative regulation complemented each other to bring in foreign capital, high-level talent and technological progress for China, and advance Deng Xiaoping's path for economic openness.

Nonetheless, the external situation confronting the CCP has entered a "period of accelerated evolution and turbulent change" and China now faces changes in the international environment. From a macro perspective, the liberal international order under U.S. leadership has undergone changes since the end of the Cold War. The ability of the U.S. to lead the liberal international order is deeply challenged while global capitalism and democratic values are facing the challenges of economic disparity and failure in democratic governance, which in turn leads to the crisis of political legitimacy. For China, there are two implications. First, in the context of U.S.-China competition, the CCP believes that the U.S. is pressuring China and the friction has extended from trade and technology to ideology. In particular, the Biden administration has not given up on military deployment in East Asia and has done more than the Trump administration to rally allies. The U.S. has not given up on exploring the origins of the COVID-19 epidemic while the vaccine diplomacy race rages under the table. Second, the CCP also faces uncertainties

[14] The term "period of accelerated evolution" was proposed by Wang Xiaohui (the deputy head in charge of daily affairs, the Publicity Department of CCP) in the news conference of the Fifth Plenary Session of the 19th CPC Central Committee. The term "period of turbulent change" refers to the words of Xi Jinping at a symposium of experts in the economic and social fields in August 2020. "The News Conference of the Fifth Plenary Session of the 19th CPC Central Committee," *People's Daily Online*, October 30, 2020, http://cpc.people.com.cn/BIG5/67481/434038/434053/index.html; Xi Jinping, "Correctly Understand And Grasp The Major Issues Of Economic And Social Development In The Medium And Long Term," *Qiushi Journal Online*, January 15, 2021, http://www.qstheory.cn/ dukan/qs/2021-01/15/c_1126984966.htm.

from third-party countries that inhabit the vast "gray zone" between the U.S. and China, adopting a cooperative stance on some issues while resisting Beijing's position on some issues.[15] According to Shi Yinhong, for the CCP, the unfavorable external situation comes not only from the pressure of the U.S. but also from the alienation and resistance of countries that are neither allied with China nor with the U.S. For countries in the gray zone, their greatest common ground is their search for autonomy in foreign policy – how to establish independent national interests and not be swayed by confrontation between the U.S. and China. If confrontation remains unchanged, for China, the uncertain position of these non-aligned countries may become a thorny problem in foreign relations over time.

This author argues that Beijing must guard against international dispute over ideology and values. Once the U.S. teams up with democratic countries in the gray zone on the basis of ideology, human rights, freedom of speech and fair market competition, China may be under tremendous pressure. The harsh external situation may also challenge China's existing development model. Since economic reform in 1978, China has become an integral part of the global supply chain based on its advanced manufacturing processes, abundant labor force and well-developed infrastructure. While China has integrated with the global economy and became the factory of the world, it has also increased its dependence on the world; the demand for energy, markets, and technology has increased the risk to China's economic security. Once the liberal international order is shaken and anti-globalization emerges – the rise of anti-China sentiment and the formation of an "anti-communist alliance" – the first thing that may be challenged may be the CCP's intent to integrate with the global supply chain through the relaxed international environment.[16] Xi Jinping, on his part, has announced that the party will adopt the

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[15] For the viewpoint in the second level, please refer to Shi Yinhong, "The World Landscape: Divergent Short- and Mid-term States and Long-term Trends," *Russian Studies*, Vol. 5, October 2021, pp. 3-18.

[16] Liu He, A "Dual Circulation" Development Pattern In Which Domestic Economic Cycle Plays A Leading Role While International Economic Cycle Remains Its Extension And Supplement, Learning and Implementing the Spirit of the Fifth Plenary Session of the 19th CPC Central Committee," *People's Daily Online*, November 25, 2020, http://paper.people.com.cn/ rmrb/html/2020-11/25/nw.D110000renmrb_20201125_1-06.htm.

strategy for a protracted economic war to deal with the situation.[17]

3. Policy Emphasis of the 14th Five-Year Plan and 2035 Visionary Goals

In the early 1990s, the Bill Clinton administration planned to adopt a China policy that entwined human rights and most favored nation status. However, under the pressure from interest groups at home, Washington abandoned the policy and returned to "strategic engagement," which in turn enabled Beijing to survive the fallout from the Tiananmen protests. Beijing capitalized on the opportunity offered by a relaxed international environment and actively pronounced its position on joining the WTO, which became one of the most important objectives of China at that time. Towards the West, the CCP believed that it must make its determination and readiness to integrate into the global economic order known in order to take hold of potential opportunities. Against this background, Jiang Zemin introduced the 9th Five-Year Plan and 2010 Visionary Goals (1996), and the development model that exploits China's vast market and abundant labor force to attract global investment and become the world's factory. As a result, economic development soared and per capita income continued to rise while China became a manufacturing powerhouse. In terms of policy deployment, China made plans to absorb technologies transferred from advanced countries while remaining open to foreign countries, in order to maintain the flow of advanced technology, talent and foreign capital into the country. In a study on China's business regulations, scholars found that Beijing adopted different approaches for managing domestic and foreign investment, creating a more favorable regulatory environment for foreign investment.[18]

The 14th Five-Year Plan and 2035 Visionary Goals, nonetheless, are different from the previous national economic and social development plans released by

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[17] "The Political Bureau of the CCP Held a Meeting and Decided to Convene the Fifth Plenary Session of the 19th CPC Central Committee to Analyze and Study the Current Economic Situation and Economic Work, with Xi Jinping, General Secretary of the CPC Central Committee, Presiding over the Meeting," *Xinhua Net*, July 30, 2020, http://www.xinhuanet. com/politics/leaders/2020-07/30/c_1126306023.htm.

[18] Yasheng Huang, "One Country, Two System: Foreign-Invested Enterprises and Domestic Firms in China," *China Economic Review*, Vol. 14, No. 4, September 2003, pp, 404-416; Wang Wenjie, "The Unbalanced Development of the Chinese Legal System," *Soochow Law Review*, Vol. 18-1, August 2006, pp. 1-30.

the CCP every five years. The current Five-Year Plan is at a critical stage, as the external environment is under "changes unseen in one hundred years" while China is preparing to shift towards building a modern socialist country.[19] This author believes that the CCP planned the 14th Five-Year Plan and 2035 Visionary Goals based on a pessimistic outlook on the external environment. CCP policy reflects preparation for a protracted war with external forces – planning efforts to fight against the strong while bidding time for changes in the power ratio between the opponent and itself.[20] Correspondingly, in the 14th Five-Year Plan and 2035 Visionary Goals, the policy direction of the CCP is to develop and strengthen the party's strength internally. As such, Xi Jinping asked party members to maintain strategic stability, accumulate strength and manage their own affairs, suggesting that the party should not be affected by changes in the environment and should prioritize development of the domestic economy and resolution of domestic problems.[21] In light of Xi's words, the CCP focused on enhancing China's economic autonomy – expanding "self-reliance and self-strengthening" on the path of economic development as much as possible – and sought to mitigate external interference on domestic development in China while searching for a development path unconstrained by others. The priorities of the 14th Five-Year Plan and 2035 Visionary Goals hence revolve around (1) strengthening economic autonomy and (2) managing internal and external risks. The following discussion summarizes the

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[19] He Yiting, *China's Development Environment Is Facing Profound And Complex Changes*, Party School of the CCP Central Committee (Chinese Academy of Governance), December 8, 2020, https://www.ccps.gov.cn/xytt/202012/t20201208_145518.shtml.

[20] Mao Zedong referred to "protracted war" as a strategy to overcome the strong with the weak, focusing on how to comprehensively assess the strengths and weaknesses of our enemies and seek to change the ratio of our strengths to theirs. Mao believes that the enemy's strengths can be weakened and weaknesses can be enlarged by our efforts. On the other hand, our strengths can be strengthened by our efforts, and our weaknesses can be overcome by our efforts. As long as the confrontation between the two sides is repeatedly prolonged, and in the process, our strengths are continuously expanded and the enemy's advantages are weakened, waiting for the moment when the enemy's weaknesses are expanded and the strengths become weaknesses, then we will make a fatal attack to finally overcome the enemy and win.

[21] Xi Jinping," Explanation of Proposal of the Central Committee of the CPC on Formulating the 14th Five-Year Plan for National Economic and Social Development and the 2035 Visionary Goals," *Xinhua Net*, November 3, 2020, http://www.xinhuanet.com/ politics/2020-11/03/c_1126693341.htm; Yu Zeyuan, "Why was Strategic Determination Emphasized in the Fifth Plenary Session?," *Lianhe Zaobao*, October 30, 2020, https://www.zaobao.com.sg/realtime/china/story20201030-1097053.

priorities of the Five-Year Plan and Visionary Goals.

(1) Strengthening Economic Autonomy

① *Self-reliance and self-strengthening in the field of technological innovation*

Under the leadership of Deng Xiaoping, the CCP introduced the "four modernizations" (industry, agriculture, national defense and science and technology) and made sure that economic development in China would not follow the old path of building backyard furnaces, while technological innovations remained central to all five-year development plans. The CCP's emphasis on innovation in science and technology was unique. As economic development moved forward, Beijing's objective gradually moved from the integration of advanced foreign technologies and with local scientific research to independent research and development and innovation.

In the 13th Five-Year Plan for National Economic and Social Development (2016-2020) (hereinafter referred to as "the 13th Five-Year Plan"), the CCP mentioned the "strengthening of basic research for innovative development" while achieving "introduction, digestion, absorption and innovation." In 2020, Xi Jinping made it clear at the seventh meeting of the Central Financial and Economic Affairs Commission that self-reliance is the focus of China's economic policy in the future will focus on self-reliance – a move that may betray Xi's concern that importing foreign technology may generate economic instability and the CCP would not be able to respond should other countries seek to suppress China with restrictions on key technologies. Hence for the first time in history, the introduction of technology was not mentioned in the 14th Five-Year Plan and 2035 Visionary Goals for the first time, while self-reliance and the local development of technologies became the future emphasis of science and technology innovation in China. At a press conference after the Two Sessions in 2021, Li Keqiang noted that "the efforts in basic research in China are still inadequate, and the ratio of R&D spending to GDP remains low, especially for basic research, which accounts for only 6% of total R&D spending." In developed countries, the spending on basic research can

account for as high as 15% to 25% of total R&D spending." In the foreseeable future, China can be expected to expand its spending on basic research in order to increase autonomy in technological innovation.

② *Strong domestic demand and the search for economic autonomy*

A critical part of China's economic development remains the coordination of domestic and international markets. By the 13th Five-Year period, China continues to prioritize opening up to the world on all fronts, attracting foreign capital and encouraging domestic enterprises to "go global" and expand their markets. However, at the Two Sessions of the Central Committee and the Standing Committee of the Central Political Bureau in May 2020, the Standing Committee proposed the idea of "dual circulation," which suggests a model of the domestic economic cycle taking lead while the international economic cycle plays a supporting role. The Fifth Plenary Session of the 19th Central Committee and Central Economic Working Conference held in December 2020 further confirmed dual circulation as the economic strategy for the 14th Five-Year Plan.

Dual circulation focuses on: A. giving priority to the domestic market in terms of investment, production and consumption; B. combining supply-side reforms to lead and create new demand with high quality supply, rather than just investing and producing regardless of demand (consumer market); C. expanding the domestic market; and D. building atop the domestic market and attract foreign investment. China's proposal for a "new development pattern" has two implications. First, China is expected to adjust its priorities for the domestic and international market. Preference is given to growth of the domestic market, which would attract international investment in turn and encourage multinational enterprises to allocate their factors of production to the country. Due to China's long-standing trade surplus with the U.S. and weakened consumer demand in the West under the impact of COVID-19, the export industry was hard hit and vulnerable, which led Beijing to adopt a developmental approach based on the domestic market and reallocation of resources. Second, a domestic market fueled by strong demand will help to absorb China's production capacity, creating a beneficial cycle of

consumption-led investment. All the initiatives echo Xi Jinping's emphasis on self-reliance and "managing our own affairs," which may increase global dependence on China and China's ability to deter others in turn.[22]

③ *Emphasis on safety and stability of the supply chain and autonomy of process technology in the real economy*

The U.S.-China struggle over global dominance in advanced technologies, a hidden strand in the trade dispute, was brought to the fore by former U.S. President Donald Trump's executive order on "foreign adversaries." As a long term security challenge, China led the U.S. to move towards the containment of "technology in China" in the high-tech industry. Washington's move made Beijing realize that in the future, China might confront disruption to the production chain and the risk of U.S. sanctions on key technologies. Hence in the 14th Five-Year Plan period, China's policy on building a manufacturing powerhouse centers on two aspects, namely security and stability of the supply chain, and control of process technology and equipment.

First, it is an indisputable fact that both Chinese and foreign investors are taking hedging measures to shift the supply chain of information products amidst the unstable relationship between the U.S. and China. Maintaining the security and stability of the supply chain is not only a current challenge for China, it also serves as the foundation for the smooth flow of the internal circulation of the supply chain by protecting the chain from being shifted abroad by foreign-invested companies. According to the 14th Five-Year Plan and 2035 Visionary Goals, China is expected to address the issue of security and stability in the supply chain on two levels. 1. Redeployment of the supply chain. Companies that have left their supply chain in China are preparing to engage and incorporate new subcontractors. When Xi Jinping visited Anhui in August 2020 and convened the forum on "strategy for integrated development of the Yangtze River Delta," authorities from some

[22] For details of Xi Jinping's speech at the seventh meeting of the Central Finance Commission on April 10 this year, see: Xi Jinping, "Major Issues Concerning China's Strategies for Mid-to-Long-Term Economic and Social Development," *Qstheory.cn*, October 31, 2020, http://www. qstheory.cn/dukan/qs/2020-10/31/c_1126680390.htm.

provinces and cities pointed out the "windfall for local micro, small and medium-sized enterprises (MSMEs)—small businesses that previously did not have the opportunity to work with large international companies are now receiving olive branches."[23] 2. Facilitating regional balance and strengthening the infrastructure of the western and northeastern regions to take over the transfer of industries. In light of the precarious external environment and the likelihood of a potential split between the Chinese and Western market over high-tech products in the future, Beijing introduced the policy of "prioritizing internal circulation" and generated an opportunity to address the issue of regional imbalance in China. In the early years of reform, when industries were concentrated in East China, development through raw material processing while markets and resources remain outside the country produced the lowest shipping cost for both imported materials and finished goods for export. Noting the mentioned model, Beijing took the lead in investing in the East China region – which boasted a strong industrial base – and relaxed restrictions on the movement of people between urban and rural areas. Enterprises followed the lead of Beijing and reallocated their production factors to East China, resulting in the concentration of industries in the region. As such, the market rationale of companies seeking to reduce the cost of production limited the success of the Great Western Development Strategy.

Nonetheless, promotion of regional balance in China is not only about balancing the urban-rural divide, but also about leveraging investment and consumption in China's domestic market in the face of external pressures. In addition, if the market for high-tech products is split between Chinese and Western standards, it would no longer be unprofitable for companies to move the supply chain to the west, provide supplies locally and "shorten the supply chain." In October 2020, the Politburo reviewed the "Plan Outline for the Construction of the Chengdu-Chongqing Twin City Region." The project is expected to hasten the formation of the "Chengdu-Chongqing Economic Circle" and suggests that official resources may tilt towards

[23] "Play a Good First Move, Open up a New Situation for Development – Notes on General Secretary Xi Jinping's Visit to Anhui," *People's Daily Online*, August 24, 2020, http://politics.people.com.cn/BIG5/n1/2020/0824/c1001-31833325.html.

Chengdu and Chongqing in the future. Located in Southwest China, the Chengdu-Chongqing economic circle may be the next bright spot for China's economic growth.

Since the 11th Five-Year Plan (2006-2010), China's primary development strategy regarding industrial modernization has shifted from "introducing foreign advanced technology and the integration and combination of independent development" to "putting forth efforts to innovate independently and pushing forward the industrialization of independent innovative achievements." In other words, China had established the goal of modernizing its industries by mastering process technology. However, for China, technological innovation was not just about upgrading industries and increasing the output and quality of products to tap into more domestic and international markets. One can observe from the economy policy deployment made at the Fifth Plenary Session of the 19th Central Committee and the Central Economic Working Conference in 2020 that China is not only maximizing technological autonomy and control at various points in the industrial chain, it is also seeking to enhance its ability to control other national stakeholders through key technologies. The 14th Five-Year Plan and 2035 Visionary Goals focuses on enhancing the basic capabilities of industries – emphasizing the rate of self-production of basic components, technologies and materials rather than pursuing innovative technologies that can lead to breakthroughs in the industry – in an effort to address the U.S. strategy of targeting individual industries and cutting off China's back-end production. China continues to "refine and develop more unique technologies" in areas where its industries boast advantages, so as to increase the dependence of other countries on Chinese manufacturing.

(2) Managing Internal and External Risks

① *Narrowing the gap between people's livelihoods and well-being and move towards common prosperity*

According to the logic of Chinese political terminology, where the contradictions lie is where they remain to be resolved. For China at this stage, the goal of "Let some people get rich first" has been achieved, but there is a "contradiction

between the people's growing need for a better life and unbalanced and inadequate development." China is well aware that the widening gap between the rich and the poor following the economic reform is not only contrary to the ideology of socialist statehood, but also tends to create social instability, which in turn threatens the legitimacy of communist rule. According to Han Wenxiu, deputy director of the Office of the Central Financial and Economic Affairs Commission, China's pursuit of high-quality development means moving from "availability" to "level." Part of high-quality economic development involves solving the problem of uneven and inadequate development and promoting "common prosperity" for all Chinese people.

The CCP first brought up "demand-side management" at the meeting of the Politburo on December 11 last year, as the 14th Five-Year Plan period sees strengthening the domestic market as an economic strategy, and domestic demand has become the major driving force for China's economy in the years to come. Domestic demand comprises consumer demand, investment demand and government investment in the local market. Therefore, when it comes to policy deployment, during the 14th Five-Year Plan period, China seeks to remove the "blockage" of uneven income distribution and contain monopolistic private enterprises (e.g. Alibaba Group), in addition to maintaining an easing monetary policy, so that more room for market investment can be created. The demand side of China's economy, particularly the consumer market, is at its most critical stage. Although both investment and consumption were hit hard by the COVID-19 outbreak in 2020, consumption is still recovering at a slower pace than investment according to Chinese official figures (Figure 1-1 below). The consumption power of the society is extremely sensitive to the market price of end-use goods and is susceptible to disparities in disposable income, or to an inadequate social safety net, which is a disincentive to high fixed expenditure on health care, education and housing, making it difficult for China to develop a consumer market that matches the consumer population. As such, the "14th Five-Year Plan and 2035 Visionary Goals" discuss at length how to establish a social safety net by allocating resources to the villages, health, medical care, urban renewal and elderly care, in

an attempt to lower fixed expenditure and indirectly raise the disposable income of the entire society, so as to promote common prosperity, which is the basis for boosting the consumer market. Although the voluntary donations referred to in the third deposition have been the subject of much debate, the overall focus of China's policy on promoting "common prosperity" is now on the second deposition – fiscal reform and the construction of a social welfare safety net. We believe that the core of "second deposition" is to unleash and leverage rural consumption power, which will help to sustain the production of low-end consumer goods in China and respond to the direction of building a strong domestic demand market and addressing overcapacity.

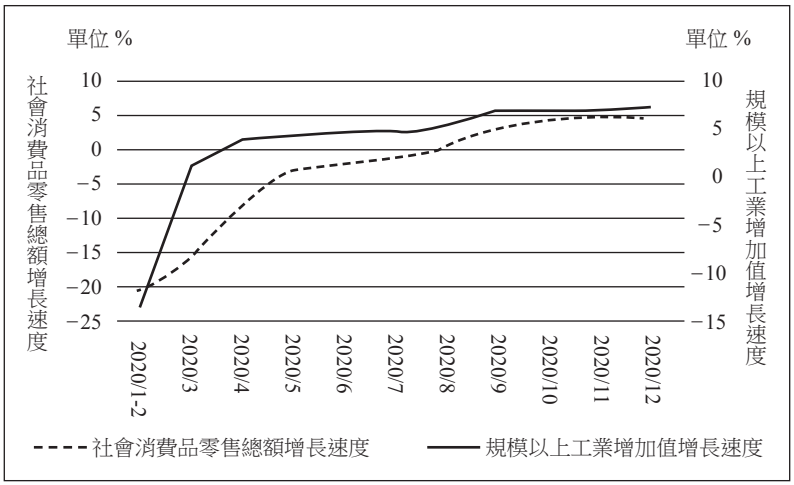

Figure 1-1 Year-on-year Comparison of the Growth Rate of Value Added of Enterprise above Designated Size and the Trend of Total Retail Sales of Consumer Goods in China (Jan-Dec 2020)

Notes:

1. Enterprise above designated size: The scope of statistics covers industrial entities with annual main business revenue of RMB20 million or above.

2. Growth rate of value added of enterprise above designated size: This indicator reflects the change in the volume of industrial production over a given period and provides an indication of how the industrial sector is performing. Figure 1-1 shows the growth rate of value added of enterprises above designated size, which are real growth rates net of price factors.

3. Total retail sales of consumer goods: The amount of useful goods sold by enterprises to individuals and social groups for non-production and non-business purposes, and the amount of revenue generated

from the provision of food and beverage services. The survey covers wholesale enterprises with annual revenue of RMB20 million or more, retail enterprises with annual revenue of RMB5 million or more, and accommodation and food and beverage enterprises with annual revenue of RMB2 million or more. Source: Compiled and drawn by the author from the National Bureau of Statistics of China at http://www.stats.gov.cn/.

② *Promoting economic growth while managing national security issues*

The Third Plenary Session of the 18th CPC Central Committee held in November 2013 resolved to set up the Central National Security Commission (CNSC), a platform for coordinating the actions of various departments, in a bid to enhance the long-term planning and crisis response of China's national security policy and to break through the established departmental interests. This is a testament to the Chinese central government's perception of the changing internal and external situation and the growing threat of non-traditional security, coupled with the intersection of internal and external concerns such as the confluence of Uyghur issues and external terrorism. Accordingly, when the National Security Commission of the Chinese Communist Party (CCP) convened its first meeting in 2014, it brought up for the first time the general concept of national security and the path to national security with Chinese characteristics.[24] Against this backdrop, the 13th Five-Year Plan , which was adopted in 2016, for the first time devoted a separate chapter to national security (Chapter 73 Establishing a National Security System) by bringing together security issues that had been scattered throughout the chapters. The "14th Five-Year Plan and 2035 Visionary Goals" also includes a separate chapter on national security – "Chapter 15 Coordinating Development and Security to Construct a More Peaceful and Secure China."[25]

Compared to the 13th Five-Year Plan, which focused on counter-terrorism, ethnic separatism and religious extremism, the 14th Five-Year Plan and the 2035

[24] "Xi Jinping: Adhering to the General Concept of National Security and Following the Road of National Security with Chinese Characteristics," *Xinhua Net*, April 15, 2014, http://news.xinhuanet.com/politics/2014-04/15/c_1110253910.htm.

[25] "Part 15 of the 14th Five-Year Plan and 2035 Visionary Goals" contains chapters on "Strengthening the National Security System and Capacity Building," "Enhancing National Economic Security," "Comprehensively Improving Public Security" and "Safeguarding Social Stability and Security".

Visionary Goals, on the other hand, suggests that China must guard against the risks involved in the pursuit of building a modern socialist country. In the midst of a series of competitions between the U.S. and China, ranging from trade and technology to ideology, coupled with the rampant COVID-19 infections, the already unpredictable external environment has become even more precarious. It is clear in this context that China is aware of three pressing national security issues: A. China's economic vulnerability under trade globalization and the international division of labor, such as its ability to source key raw materials and its inability to cope with a protracted war strategy; B. guarding against the risk of external forces (the U.S.) targeting the Communist Party of China to instigate an ideological or value war in an attempt to intensify the antagonistic relationship between the Chinese people and the Communist regime; and C. the aforementioned external risks becoming a fuse for social discontent.

China's national security issues in the next five years are as follows: A. In the area of economic security, food, energy and financial risk control are highlighted as the main areas of concern, which shows that these three types of economic risks are the focus of China's attention; B. Public security: new vaccine safety and biosecurity risk management are added to the existing food and drug safety, safe production and improved disaster response systems; and C. The emphasis is no longer only on the control of social security, but also on the development of a comprehensive mechanism for the management of social conflicts, and the integration of judicial mediation and the petitioning system.

③ *Emphasizing the absolute leadership of the Communist Party of China as a guarantee for achieving the development goals of the 14th Five-Year Plan*

The 13th Five-Year Plan for the first time had incorporated "strengthening safeguards for plan implementation" into the five-year plan for national economic and social development, demonstrating the significance that the fifth-generation leadership led by Xi Jinping attaches to the role of party organizations in the five-year plan for national economic and social development. China's high-ranking officials believed that the goals of the 13th Five-Year Plan could only be achieved if

the Party's core leadership abilities were maximized, the Party's ability to govern was reinforced by strict self-discipline, the motivation of its cadres was enhanced, and the functions of the Party at grass-roots level were upgraded. However, at a press conference after the Fifth Plenary Session of the 19th CPC Central Committee, Jiang Jinqian, Director of the Central Policy Research Office, pointed out that the 14th Five-Year Plan period and beyond would see China being exposed to a series of risks and challenges, and the Party's central leadership role was no longer sufficient to cope with them, and that further centralized leadership was imperative for the country's future development.[26] This suggests that the next stage in China's preparations to tighten the Party's grip on economic affairs will result in a change in the country's state-market relationship.

IV. Conclusion: The 14th Five-Year Plan Projects the Development of State Capitalism

China's economic reforms have not yet run their course, and the way in which the state intervenes in economic affairs, and with it the "state-market relationship" is still in flux. In the wake of the Cultural Revolution, as reformers gradually consolidated their economic reforms, China not only recognized private property rights, but also the dominance of market mechanisms in the allocation of most resources, making the Chinese political and economic system a capitalist rather than a socialist mode of operation as defined by academics.[27] The notion of state capitalism is now widely used in academic circles to gain an insight into China's political and economic system and the "state-market" relationship, and as a framework for understanding China's economic development model. State capitalism means that "the state becomes an actor in the market economy and

[26] "China Holds Press Conference on the Spirit of the Fifth Plenary Session of the 19th CPC Central Committee," *People's Daily Online*, October 30, 2020, http://cpc.people.com.cn/BIG5/67481/434038/434053/index.html.

[27] Barry Naughton, *The Chinese Economy: Transition and Growth* (Cambridge, MA: The MIT Press, 2007), p. 5; Chih-hsien Liu, "Chinese State Capitalism: A New Research Agenda For Political Economy," *Taiwan Political Science Review*, Vol. 19, No. 2, December 2015, pp. 54-57; Chi-wu Chen, *There Is No Such Thing as a Chinese Model* (Taipei: Gusa, 2010).

operates commercially according to the laws of the market economy in order to achieve political ends." China's economic development model has been categorized as state capitalism because of the following three characteristics: 1. the state retains the institutional arrangement to intervene in economic affairs through the market mechanism; 2. the state participates in the market economy with the political motive of consolidating the communist regime; 3. the state grants special preference to state-owned enterprises, which gives them a competitive advantage over the private sector, but does not negate the existence of the private sector.[28]

In previous years, China's five-year plans for national economic and social development have often failed to specify how the state would intervene in economic affairs. The 14th Five-Year Plan period marked the first five years of building a modern socialist country in the face of a severe external situation. For China, proposing a new development pattern and "managing our own affairs" will serve as the economic strategy for the 14th Five-Year Plan period to deal with the volatile external situation. It is particularly important for the authorities to implement the new development pattern while following the market mechanism. What are the possible directions of change in the way China's official involvement in economic affairs is taking? A further analysis of this would help to map out our policy on the economic and trade dealings with China, based on how China intervenes in the development of enterprises in different sectors.

This paper suggests that the following two policies may have a bearing on the future development of state capitalism in China. First of all, the 14th Five-Year Plan and 2035 Visionary Goals identify the significance of a "new nation-wide system" to spearhead the development of strategic technologies – the state is guided by strategic needs and focuses on the role of enterprises in innovation and R&D, directing social capital to enterprises that possess strategic technologies or hold R&D potential, which can later be deployed by the state. Secondly, in the construction of a high-level socialist market economy in China under the 14th Five-Year Plan and 2035 Visionary Goals, how China is going to build a

[28] Chih-hsien Liu, op. cit. pp. 55-56.

sound state-owned economy system in the future hinges on transforming the relationship between the state and state-owned enterprises (SOEs) and shifting the management of SOEs from "managing enterprises" to "managing capital." The Chinese government intends to capitalize on the "reasonable flow" of state-owned capital to drive SOEs towards high quality development and address the problems of inefficiency and overcapacity in SOEs on the one hand, and to scale up state-owned capital investment in advanced manufacturing industries, backing R&D in core technologies and guiding industrial development on the other. This policy focuses on the following: 1. accentuating the investor relationship between the state and SOEs and downplaying the bureaucratization of the upper and lower levels of the hierarchy. The state has changed the way it administratively manages SOEs to emphasize the responsibilities of the funders (the principal funders of central enterprises are the State-owned Assets Supervision and Administration Commission of the State Council), and the state, as the funders, must exercise shareholders' rights and interests based on the law and the market mechanism; and 2. placing extra emphasis on the investment efficiency of state-owned capital, stressing the importance of investment returns and the growth of state-owned capital. This policy focuses on the expansion of the volume of state-owned capital, so state-owned capital should be able to move in and out.

In light of the above two policy deployments, we can infer that the future mode of intervention of the Chinese government in economic affairs will probably be through the exercise of shareholders' legitimate rights as a channel to intervene in corporate governance or influence industrial development[29] Some academics are now suggesting that China is heading towards an "investor state," in which the state uses the power of state-owned capital to acquire a stake in the private

[29] Musacchio and Lazzarini advocate the classification of state capitalism into four categories based on state intervention mechanisms: the leviathan as an entrepreneur, the leviathan holding a majority stake in the enterprise, the leviathan holding a minority stake in the enterprise, and the private sector as the dominant sector, to which China falls under the second category. However, according to Chih-hsien Liu, China, as a practitioner of state capitalism, is characterized by a combination of three types of intervention mechanisms: the state as an entrepreneur, the state holding the majority and minority ownership. Aldo Musacchio and Sergio G. Lazzarini, *Reinventing State Capitalism: Leviathan in Business, Brazil and Beyond* (Cambridge, MA: Harvard University Press, 2014), p. 8; Chih-hsien Liu, op. cit. pp. 50, 57-59.

sector with investment potential, not only to reap economic profits and enhance the investment efficiency of state-owned capital, but also to influence or back private enterprises as a shareholder, as another means of carrying out the state's industrial policy.[30] What's more, companies operating with state-owned capital can be seen as the cornerstone to create a cross-shareholding conglomerate, which can be utilized to grow state-owned capital and build stronger Chinese-funded enterprises. More importantly, if state-owned capital can move in and out, China may transition to a state capitalist mode of operation that no longer favors exclusively SOEs and treats the private sector differently.

[30] Chen, Hao and Meg Rithmire, "The Rise of the Investor State: State Capital in the Chinese Economy," *Studies in Comparative International Development*, No. 55, July, 2020, pp. 257-277.

Chapter 2

Adjustments and Changes of Taiwan Policy of CCP in 2021

Tzu-Chieh Hung*

I. Introduction

Reviewing the Taiwan policy of CCP in 2021, we could see that although the basic approach and rhetoric of Xi Jinping's "Xi's Five Points" remains largely consistent from the past; however, many of its actions toward Taiwan have become more and more hostile. While Xi Jinping's approach to Taiwan is seriously disconnected to current global reality, CCP still focuses mainly on the concept of anti-secession and pro-unification for their Taiwan policy. They have been promoting relevant preferential policies on the one hand, while threatening Taiwan through political intimidation or military coercion on the other hand. CCP's actions, in general, are not enhancing the peaceful and stable development of cross-strait relations but have instead become a troublemaker in cross-strait and international relations. In this chapter, we will analyze and discuss the key contents, adjustments, and changes of the CCP's Taiwan policies and their united front work toward Taiwan from December 2020 to October 2021.

II. The Chinese Communist Party's Discourse and Guidelines of Policies on Taiwan

In 2021, the CCP's guidelines of policy and statements toward Taiwan have re-

* Assistant Research Fellow, Division of Chinese Politics, Military and Warfighting Concepts, Institute for National Defense and Security Research.

main much the same as their directions in the past, as we could see from the statements made by Wang Yang on January 17-18, 2021 during the Working Conference on Taiwan, the 2021 Governmental Work Report and the Taiwan-related remarks made by Li Ke-Qiang and Wang Yang during the Two Sessions. These statements toward Taiwan-related issues highlighted the following issues: the obedience to the One-China Principle and the 1992 Consensus, CCP's action on suppressing the forces of Taiwan independence, the "interference" toward China from external forces, and CCP authority's promotion on the peaceful development of cross-strait relations.[1] In Xi Jinping's speech at the 100th anniversary of the Chinese Communist Party on July 1, 2021 and the 110th Anniversary of Xinhai Revolution on October 9, his attitudes on Taiwan-related issues are more or less the same as in the past, and the context is constructed on two levels: peaceful reunification and the use of force to achieve unification. Several Taiwan-related statements, for example, emphasized the ideas such as "solving the Taiwan Question and realizing the complete reunification of the motherland is the historical mission of the Chinese Communist Party", "uphold the one-China principle and the 1992 Consensus, and work for the peaceful development of cross-Strait relations", "secession aimed at 'Taiwan independence' is the greatest obstacle to national reunification and a grave danger to national rejuvenation", "the Taiwan question is purely an internal matter for China, one which brooks no external interference" and "those who forget their heritage, betray their motherland, and seek to split the country will come to no good end", etc. [2] In short, the statements of CCP on Taiwan-related issues this year remain focused on the points they have repeated in the past. While they elaborate on peaceful reunification across the Taiwan Strait and identify with the 1992 Consensus, they have also given much more warnings on the issue of Taiwan indepen-

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1 "2021 Conference on Taiwan United Front Work Held in Beijing," *People's Daily Online*, January 19, 2021, http://politics.people.com.cn/BIG5/n1/2021/0119/c1024-32003668.html.

2 "(Authorized) Xi Jinping: Talk on The 110th Anniversary of Xinhai Revolution," *People's Daily Online*, October 9, 2021, http://cpc.people.com.cn/BIG5/n1/2021/1009/c64094-32248619.html; "Xi Jinping: 100th Anniversary of the Chinese Communist Party," *Xinhua Net*, July 15, 2021, http://www. xinhuanet.com/politics/leaders/2021-07/15/c_1127658385.htm; "(Authorized) Xi Jinping: Talk on The 110th Anniversary of Xinhai Revolution," *People's Daily Online*, October 9, 2021, http://cpc.people.com.cn/BIG5/n1/2021/1009/c64094 32248619.html.

dence and threatens on possible consequences. Xi also showed his determination that the "Taiwan Question" will eventually be solved and that the status quo shall not remain forever.

While emphasizing the importance of One-China Principle, the 1992 Consensus, and the influence of Taiwan independence and interference from external forces, the Taiwan policy Xi Jinping announced this year focuses much on the policy of integrated development. Aside from highlighting the active participation of Taiwanese businessmen and Taiwan-funded enterprises in the 14th Five-Year Plan and Fujian province as an experimental area to promote cross-strait integrated development,[3] Xi Jinping, during his visit to Fujian on March 25, 2021, suggested that "we should highlight the strategy of 'promoting integration through communication, benefit, and affection', exploring a new path of the cross-strait integrated development".[4] Through the strategy of "promoting integration through communication, benefit, and affection", CCP has made bilateral exchanges more convenient between China and Taiwan by giving Taiwanese people equal treatments as people in China, attracting Taiwanese people and enterprises for work and investments. They are trying to increase mutual trust and recognition on the basis of the existing cross-strait non-governmental communication. On September 26, Wang Yang attended the commemorative meeting to mark the 40th anniversary of the founding of the All-China Federation of Taiwan Compatriots (ACFTC), in which he stressed the point of "continuously promoting the peaceful and integrated development of cross-strait relations".[5] CCP's policy of integrated development with Taiwan reflects much of Xi's Five Points of "deepening cross-strait integration and development, solidifying the foundation of peaceful reunification" and "realizing the spir-

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[3] "2021 Conference on Taiwan United Front Work Held in Beijing," *People's Daily Online*, January 19, 2021, http://qh.people.com.cn/n2/2021/0119/c182753-34535523.html.

[4] "TAO: We Will Actively Promote Integration through Communication, Benefit, and Affection," *Xinhua Net*, March 31, 2021, http://www.xinhuanet.com/tw/2021-03/31/c_1127278434.htm; "Xi Jinping's Visit to Fujian Mentions 'Communication, Benefit and Affection' to Promote Integration with Taiwan," *Central News Agency*, March 25, 2021, https://www.cna.com.tw/news/acn/202103250347.aspx.

[5] "Wang Yang Attending the Commemorative Meeting to Mark the 40th Anniversary of the Founding of the All-China Federation of Taiwan Compatriots (ACFTC)," *People's Daily Online*, September 27, 2021, http://cpc.people.com.cn/BIG5/n1/2021/0927/c64094-32237934.html.

itual connection of compatriots, increasing recognition of peaceful reunification". In such policies, the government also cooperates with the 14th Five-Year Plan to attract Taiwanese businessmen and Taiwan-funded enterprises.

Aside from the actions mentioned above, CCP also amended the "Regulation on the United front of the Communist Party of China" on January 5, 2021. In the section on Taiwan-related issues, the articles have been expanded to enhance extensive solidarity with Taiwan compatriots at home and abroad, "developing and strengthening Taiwan's patriotic unification force" and "continuously pushing forward the peaceful reunification process of the motherland." The wording "consolidate and deepen the political, economic, cultural, social foundation for the peaceful development of cross-strait relations" has been deleted,[6] yet the core of the united front work basically remains the same as that of the government's previous united front work against Taiwan. In the future, however, the united front will focus more on cultivating the united front of overseas Taiwanese and the development of pro-Beijing camp in Taiwan after the pandemic.

III. CCP's Front Work on Taiwan

1. Continuous Promotion on The Policy of Integrated Development

An important indicator of the CCP's front work on Taiwan in 2021 appears to be the promotion of cross-strait integrated development which could be subdivided into three parts: "promoting integration through communication", "promoting integration through benefits" and "promoting integration through affections". In terms of "promoting integration through communication," the CCP hopes to expand the passages and capacities of cross-strait economic and trading events, with actions such as building interconnection of infrastructure, energy resources, meanwhile set-

[6] "Regulation on the United Front Work of the Communist Party of China," *People's Daily Online*, January 6, 2021, http://politics.people.com.cn/BIG5/n1/2021/0106/c1001-31990197.html; "Regulation on the United Front Work of the Communist Party of China," *People's Daily Online*, September 23, 2015, http://cpc.people.com.cn/n/2015/0923/c64107-27622040.html.

ting up regulations for various industries. They have also continued to promote the access to water, gas, electricity, and bridges in the coastal areas of Kinmen, Matsu, and Fujian.[7] In terms of polices that have been put into practice, since the issue of the "New Four Links" in Kinmen and Matsu requires the agreement of the Taiwanese side and cannot be decided by the CCP alone, the CCP authority is thus building the infrastructure of Fujian as an alternative for the "New Four Links" project. Fujian announced the Implementation Plan for the Construction of the Pilot Zone for a Powerful Transportation Country in Fujian Province in August 2021, stating that it would help improve the development of the infrastructure through the "three vertical channels, six horizontal links and two connecting dots" for the structure of transportation along with the "211" transportation circle, completing the infrastructure by "promoting the integrated development of cross-strait traffic".[8]

In fact, although such policy is promoted under the so-called "policy of integrated development", such infrastructure plans in Fujian are actually more of a symbolic meaning than actual practice when it comes to the united front work of Taiwan. For the Fujian Province itself, such plan appears to be more like an instrument to compete for fundings from the Beijing central government.

The idea of "promoting integration with benefits" is a continuation of the "preferential policy" provided by the CCP to Taiwan which has been conducted for a long time. The core value of the "preferential policy" is not exactly to win Taiwan over but to give equal treatment to Taiwan people, boosting the economy of mainland China through economic attraction and to achieve the purpose of cross-strait integration. From the so-called "31 measures", "26 measures", "11 measures" in the past to the "22 measures on agriculture and forestry" announced by CCP this year, much focus has been given to attracting Taiwanese businessmen and Tai-

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[7] "Taiwan Affairs Office Press Conference Highlights (2021-03-31)," *Taiwan Affairs Office*, March 31, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/xwfbh/202103/t20210331_12342228. htm.

[8] The "211" transportation circle means 2-hour access between each city, 1-hour commute between Fuzhou and Xiamen-Zhangzhou-Quan metropolitan areas, and 1-hour basic coverage of transportation between cities and counties and towns. For the references please see "Implementation Plan for the Construction of the Pilot Zone for a Powerful Transportation Country in Fujian Province," *Fujian Daily*, August 3, 2021, http://www.fujian.gov.cn/xwdt/fjyw/202108/ t20210803_5659170.htm.

wan-funded enterprises to enter the Mainland for employment and investment. Finally, in terms of "promoting integration through affection", CCP hopes to bring the people of Taiwan and the Mainland Area closer together through cultural exchanges to achieve the goal of unification with Taiwan.

As for other related policies, the CCP authority has approved to construct seven Cross Strait Exchange bases in 2021, such as the Fujian Longyan Changting Tingzhou, Capital of Hakka, approved in January, the Anxi Quanzhou Quanzhou Water Rock, and The Cultural Corridor of Grand Canal, Huai'an, Jiangsu, Wen Chang Ancient Temple, Zitong County, Mianyang, Sichuan, the Xiandu Neighborhood of Jinyun County, Lishui, Zhejiang, and the Leizu Park, Yanting County, Mianyang Sichuan, approved in July and the September 18th Historical Museum, Shenyang Liaoning, which was approved in September, bringing the total number of Cross Strait Exchange bases up to 82.[9] The purpose of these Cross Strait Exchange bases is to attract people from Taiwan to visit based on the purpose of cross-strait integration.[10] Due to the continued impact of the COVID-19 pandemic, the actual cross-strait exchanges this year were therefore focused mostly on the online events, such as "virtual tours", "cloud exhibitions", accompanied by other face-to-face gatherings for Taiwanese people living in China. We can see from the number of visits to the "cloud exhibitions" in the relevant exchange bases, however, that the results are obviously not quite effective, which means the actual impact of the Cross Strait Exchange base may not perform as well as the CCP authority has expected. Aside

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[9] The categories of Cross Strait Exchange base are mainly divided into five categories: traditional Chinese culture, religious venues, venues of Taiwan's modern history, venues of the history of ROC (Sino-Japanese War) and new construction in recent years. For references please see "Taiwan Affairs Office Introduces Cross Strait Exchange Base to Launch Exchange Activities and the Establishment of 4 New Bases," *Taiwan Affairs Office*, January 13, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202101/t20210113_12316801.htm; "Current Status on the Focus of Traditional Culture and Historical Relics of the ROC," WeMedia01(HK) Limited, January 18, 2021, https://www.hk01.com/中國觀察/575703/重傳統文化與民國史遺跡-盤點兩岸交流基地 (cross-strait exchange bases) 現狀 ; "New Cross Strait Exchange base in Lishui, Zhejiang and Mianyang, Sichuan," *Xinhua Net*, July 12, 2021, http://www.xinhuanet.com/2021-07/12/c_1127646947.htm; "Taiwan Affairs Office Introducing the Establishment of Cross Strait Exchange Base at the 'September 18th' Historical Museum," *Taiwan Affairs Office*, September 15, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202109/t20210915_12378624.htm.

[10] Wang, Chia-Chou. "Comments on the new Cross-strait Exchange Bases in Mainland China," *Prospect & Exploration*, Vol. 16, No. 8, 2018, p. 10.

from the events mentioned above, CCP is still actively engaged in relevant exchange activities with young students in Taiwan in terms of online activities such as "Cloud Exchange". For example, in early January, the "2020 Sunshine Cross-Strait Youth Art Exhibition" exchange program was held by 20 elementary schools in Fujian and 18 elementary schools in Taipei and Taoyuan, such as Dongyuan Elementary School and Xinjie Elementary School in Taoyuan City.[11] However, it is difficult to evaluate the effectiveness of such online communication activities, and it is also doubtful whether these activities can be transformed into recognition of China and the CCP. Yet we can say with certainty that the CCP's online efforts toward Taiwan will continue.

2. Promoting Cross-strait Integrated Development through Fujian as an Experimental Area

In CCP's united front plan this year, their government has mentioned Fujian as an experimental area to promote the policy of integrated development with Taiwan. Since Fujian is the closest province to Taiwan and has been an important united front base for CCP, they have taken cities like Xiamen as the special economic zone after the 1980s, hoping to attract Taiwanese businessmen for investments.[12] The Cross Straits (Fuzhou) Agricultural Cooperation Pilot Zone and The Cross Straits (Zhangzhou) Agricultural Cooperation Pilot Zone were established one after another after 1996.[13] The two pilot zones along with the recent planning of The Economic Zone on the West Side of the Straits has made Fujian an important role in the united front work toward Taiwan. Therefore, although CCP has proposed to

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[11] "Lishui, Zhejiang and Mianyang, Sichuan Set up New Cross-strait Exchange Bases," *Xinhua Net*, July 12, 2021, http://www.xinhuanet.com/2021-07/12/c_1127646947.htm.

[12] Huang Chao-Neng, "A Study of Fujian's Role in Constructing Cross-Strait Relation," *Prospects & Exploration*, Vol. 7, No. 10, 2009, p. 50.

[13] After the "Cross-Straits (Zhangzhou) Agricultural Cooperation Pilot Zone," the CCP has established cross-straits agricultural cooperation pilot zones consecutively in Fuzhou, Hainan Island, Pingdu Shandong, Heilong Jiang and Yangling in Shaanxi. During 1996 and 2001, more than 5,000 Taiwanese agricultural companies moved to the mainland, with investing amounts up to US$4 billion. For the reference please see "Analysis of the Impact of the 'Cross-Strait Agricultural Cooperation Pilot Zone' in Mainland China on Taiwan's Agricultural Development" by Liu, Hou-Lien, *Land Issues Research Quarterly*, Vol. 5, No. 3, 2006, pp. 39-44.

make Fujian an experimental area for cross-strait integrated development this year, such practice is just a repetition of policies in the past, instead of raising the status and importance of Fujian in terms of united front work to Taiwan. In early January, Fujian announced the "225 lists of equal treatment for Taiwanese and Taiwan-funded enterprises in Fujian". The list of 225 articles is divided into four parts: economic field, cultural and educational field, social field, and facilitation measures. The main focus of the articles is to give equal treatment to Taiwanese in the local area or in the free-trade zone.[14]

At the end of April, the "Taiwan Compatriot Entry Quarantine 'Convenient Channel' Pilot Program" was announced. The program allowed Taiwanese to enter Fujian through the mini three links channel without quarantine as long as they have lived in Kinmen or Matsu for 28 consecutive days.[15] In the future, other regions in mainland China will also promote relevant preferential treatment for Taiwanese people under the rules of the so-called "preferential policy" in different regions.

3. The Restriction against Imports of Specific Fruits from Taiwan and the 22 Measures on Agriculture and Forestry

Since the beginning of 2021, CCP has announced a political restriction against the import of certain agricultural products from Taiwan. For example, on January 27, 2021, the Taiwan Affairs Office announced the restriction against meat products which are produced or transshipped from Taiwan due to the fact of Taiwan lifting the ban of importing U.S. pork to the island.[16] On February 26, 2021, the General Administration of Customs of the People's Republic of China (GAC) an-

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[14] For the reference please see "225 Lists of Equal treatment for Taiwanese and Taiwanese Companies in Fujian," *Taiwan Office of the Fujian Municipal Government*, January 2, 2021, http://www.fjtb.gov.cn/news/202101/t20210102_12314945.htm; "225 Lists of Equal Treatment for Taiwanese and Taiwanese Companies in Fujian," People's Daily Online, January 2, 2021, http://fj.people.com.cn/BIG5/n2/2021/0102/ c181466-34507667.html.

[15] The "convenient access", however, was later suspended due to the outbreak of pandemic in Taiwan during May. For the reference please see "Fujian Suspends the Convenient Channel for Taiwanese, Taiwan Affairs Office: A Dynamic Management of the Pandemic," *Central News Agency*, May 12, 2021, https://www.cna.com. tw/news/acn/202105120117.aspx.

[16] "Taiwan Affairs Office: China Strictly Prohibits the Import of Meat Products Produced or Transshipped in Taiwan," *Xinhua Net*, January 27, 2021, http://www.xinhuanet.com/2021-01/27/c_1127032549.htm.

nounced on its website about restricting the import of pineapples from Taiwan. Ma Xiaoguang, the spokesperson for the Taiwan Affairs Office, said the import of pineapples from Taiwan has been restricted since March 1 because the customs has repeatedly "inspected pests that should be quarantined". Although Taiwan did not export any fresh pork or processed meat to China, which thus would not raise much negative opinions, the case for Taiwan's fresh pineapple exports is different. The exports of pineapples to China takes up 91% of the total amount in 2020, with an export value of US$49,878,000, which then causes great disturbance. These restrictions conducted by CCP authority is considered as a political decision and an action of vengeance in cross-strait relations according to many Taiwanese media.[17] Within a few days, however, CCP immediately proposed "Measures to support the development of compatriots and enterprises from Taiwan in agriculture and forestry on the mainland" ("22 measures") on March 17 to promote the preferential policy and the policy of integrating development toward Taiwan.

Taking CCP's policy of united front work into consideration, we could see that they are in fact creating panic among Taiwanese farmers, especially for those who have long relied on the mainland market for their products, then attract them to invest in the mainland by providing solutions for the difficulties CCP itself has created. On September 18, the Customs of PRC further announced that the wax apples (95.6% of export ratio to mainland China, with the value of US$18,050,000; 3.5% to Hong Kong, with the value of US$666,000) and sugar apples (94.8% of export ratio to mainland China, with the value of US$42,453,000; 4% to Hong Kong, with the value of US$1.779,000) had been detected to contain the pest Planococcus citri. These fruits thus have been restricted from China since September 20.[18] Items such

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[17] "China Unilaterally Suspended the Import of Taiwan Pineapples, the County and City of Origin Dissatisfied," *Central News Agency*, February 26, 2021, https://www.cna.com.tw/news/aipl/202102260211.aspx; Lu, Bo-Hua. "Headlines Reveal Taiwan Officials' Incoherent Language and the Ban on Pineapples in China is More Shocking than Military Drills with Missiles," *China Times*, March 2, 2021, https://www.chinatimes.com/ realtimenews/20210302000585-260407?chdtv; "China Banned the Import of Taiwan Pineapples, Scholars: A Usual Cultivating, Trapping and Killing Technique," *Liberty Times*, January 26, 2021, https://news.ltn.com.tw/news/life/breakingnews/3450803.

[18] The relevant data were compiled from the Trade Statistics Database of the Council of Agriculture, Executive Yuan, https://agrstat.coa.gov.tw/sdweb/public/trade/TradeReport.aspx.

as pineapples, wax apples and sugar apples from Taiwan are all products listed in the "prohibited types of agricultural products for investment or technical cooperation in Mainland China" (hereinafter referred to as "prohibited items") in the regulations of Taiwan. These actions would then not only "punish" the ruling party's cross-strait policy to arouse farmers' discontent, they could also create a certain extent of pressure to the Taiwanese government to make adjustments to the list of "prohibited projects".

Aside from pineapples, wax apples and sugar apples, other long-term agricultural products which rely much upon the Chinese market include pomelo (export ratio of 69.9% in China, with the value of US$4,892,000 in 2020; export ratio of 20% in Hong Kong, with the value of US$1,398,000), mango (export ratio of 30.1% in China, with the value of US$7,846,000; export ratio of 28.5% in Hong Kong, with the value of US$7,440,000), and grouper (export ratio of 75.7% in China, with the value of US$30,858,000; export ratio of 24.1% in Hong Kong, with the value of US$9,800,000). These items along with other products may be banned to import based on political decisions of the CCP in the future. If so, the "22 measures" may further influence the Taiwanese government's attitude towards the amendment of the list of "prohibited items", reaching the goal of Mainland China to raise the reliance of Taiwan companies on the Chinese market. However, the concept of the "22 measures on agriculture and forestry" is not much different from that of the previous policies of cross-strait agricultural zones[19], not to mention that the world is going through uncertainties since we are currently affected by the aftermath of the COVID-19 pandemic. Under so much uncertainty, it is expected that CCP may not be able to attract much Taiwanese to invest or work in China through the "22 measures on agriculture and forestry" in the short term.

4. The Chinese Communist Party Continues to Disturb the Security of Taiwan

In 2021, the CCP continues to manipulate and suppress Taiwan on issues such

[19] Wu, Chia-Hsun. "Discussion on Mainland China's '22 Measures on Agriculture and Forestry' for Taiwan," *Cross-Strait Economic and Trade Monthly*, Vol. 353, 2021, pp. 4-7.

as vaccines and the pandemic situation in Taiwan. Taiwan has continued to receive international support, such as on Taiwan's participation in the World Health Assembly (WHA) and vaccine donation by the United States and Japan. Facing such phenomenon, CCP strongly criticizes Taiwan for "gaining independence through vaccines" and continues to suppress Taiwan's participation in the WHA; they also successfully pressured Guyana, a South American country to compensate for the cancellation of its agreement to establish the office a day by providing 20,000 doses of vaccine a day after Taiwan's announcement of establishing the office in Guyana, on February 4, 2021.[20] Other political offenses and defenses also centered on issues related to the pandemic, such as providing vaccinations to Taiwanese living in China, hindering Taiwan authority from obtaining vaccines abroad, and suggesting donations of Chinese vaccines when the pandemic in Taiwan outbreaks in May.[21]

The CCP authority offered assistance to Taiwan through official statements while continuing to manipulate public opinion on the Internet to create internal confusion, generating public distrust toward Taiwanese government's handling of the situation, hence increasing internal conflicts on political situations in Taiwan. In addition, the Taiwan Affairs Office has further accused the statements of related speeches made by government officials as actions of "Taiwan independence" with both great frequency and strong wording. For example, Taiwan Affairs Office had made strong accusation of President Tsai's "Four Commitments" in the speech of

[20] "20,000 Vaccine Doses Taking Over the Taiwan Office? Former diplomat: It Would be Guyana's Misfortune to Trust China," *Liberty Times*, February 5, 2021, https://news.ltn.com.tw/news/politics/breakingnews/3433451; "Update: Foreign Minister of Guyana Announces Accepting 20,000 Doses of COVID-19 Vaccines from China As Soon As They Terminate the Relationship with Taiwan Office," *Public News Network*, February 5, 2021, https://news.pts.org.tw/article/512093.

[21] "Highlights of Taiwan Affairs Office Press Conference (2021-06-16)," *Taiwan Affairs Office*, June 16, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/xwfbh/202106/t20210616_12359721.htm; Lu Chia-Hung, "COVID-19 Pandemic in Taiwan: Mainland China Says They are Willing to Provide Vaccines to Fight the Pandemic in while Mainland Affairs Council (MAC) of Taiwan Responded by Calling it 'United Front Work'," *Liberty Times*, May 27, 2021, https://www.bbc.com/zhongwen/trad/chinese-news-57264880; Lin Yu-Li, "German Lawmaker Confirms China Hinders Taiwan From Buying BNT Vaccines, Putting Health of Taiwanese People at Risk," *Central News Agency*, July 15, 2021, https://www.cna.com.tw/news/firstnews/202107150301.aspx.

National Day on October 10.[22] Ma Xiaoguang, spokesperson for the Taiwan Affairs Office, also criticized President Tsai's insistence of Republic of China and the People's Republic of China being not subjugated to each other, considering it as "an evident propaganda of the 'two-state' theory."[23] From December 1, 2020, to October 29, 2021, Taiwan Affairs Office had published a total of 258 press releases on their official website. Apart from the 76 (29.5%) press releases on policy introduction and defense, condolences and the current political situation, the remaining 182 (70.5%) were negative criticisms and warnings against Taiwan. Among these negative statements, 105 (40.7%) were specifically targeted at the DPP, while 33 (12.8%) and 6 (2.3%) are warnings and urges toward the U.S. and Japan respectively.[24] The Taiwan Affairs Office's press releases have become the main channel for threats and warnings on Taiwan-related issues.

IV. Incursions by Chinese aircrafts that Enhance the Military Indications

The frequent incursions of PLA into Taiwan's Air Defense Identification Zone (ADIZ) have become a regular occurrence. Among these incursions, the aircrafts had flown in pair into Taiwan's southwestern ADIZ (see Table 2-1) for many times, which raised people's awareness. In the past two years, CCP often takes specific political events as excuses to send military aircraft into the surrounding waters of Taiwan to rationalize their entrance into Taiwan's Air Defense Identification Zone

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[22] The four commitments include commitments that "were to liberal democracy and constitutional government; that the Republic of China (ROC) is not subject to the jurisdiction of the People's Republic of China (PRC); to protect the nation's sovereignty; and that the future of the ROC must be decided in accordance with the will of Taiwanese," For the reference please see Yeh, Su-Ping, "Speech of President Tsai on National Day Includes Four Commitments that Sovereignties on Both Sides of the Taiwan Strait are Non-subordinated and Inviolable with Each Other," *Central News Agency*, October 10, 2021, https://www.cna.com.tw/news/firstnews/202110100210.aspx.

[23] "Taiwan Affairs Office: The So-called 'ROC Being not Subject to Each Other' is an Evident Propaganda of the 'Two-state Theory.'," *Taiwan Affairs Office*, October 13, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202110/t20211013_12384230.htm.

[24] The statistics are collected by the author from the press releases on the official website of the Taiwan Affairs Office.

(ADIZ). They have also taken military drills as excuses to carry out military threats against Taiwan. In 2021, CCP continues to send warnings to Taiwan through specific political events, such as the 28 times of flights into ADIZ of Taiwan on June 15, which are believed to be related to the statement in which peace and stability in the Taiwan Strait were first mentioned in the G7 Leaders Communiqué Summit.[25] Although the political meaning of the incursions by the PLA from October 1 to 4 (with 149 flights in total) is more highlighted than its practical military purpose, other incursions of PLA aircrafts this year could still be regarded as a means of expanding regional influence and training of enhancing capability training, rather than as a military threat to Taiwan. Such manipulation of "actual combat training" disguised as military intimidation has become more evident than in previous actions of PLA.

The PLA's incursions by Chinese aircrafts in 2021, aside from their regular attempts to expand their sphere of influence, does not convey the political intention as strong as it was in 2020 when they entered Taiwan's Air Defense Identification Zone (ADIZ) several times. Rather, some of the incursions were associated with U.S. and ROC military activities and exercises in the surrounding areas, to which CCP responded through incursions to restrain the power of "Taiwan independence" and "external forces". Wu Qian, spokesperson for the PLA, for instance, stated on Jan. 23 and 24 in response to the incursions that "the military activities carried out by the Chinese PLA in the Taiwan Strait are necessary actions in response to the current security situation across the Taiwan Strait and to defend national sovereignty and territorial integrity. It is also a solemn response to the interference of external forces and the provocations by 'Taiwan independence' forces. …those who play with fire will set themselves on fire, and 'Taiwan independence' means

[25] Lu, Jia-Rong, "28 Chinese Aircrafts Enter Taiwan ADIZ After G7 Communiqué First Mentions the Cross-strait Issues, Beijing: A Suppressing Action of Taiwan Independence," *Udn.com Co.*, *Ltd.* June 16, 2021, https://udn.com/news/story/7331/5536270; Chung Yu-Chen, "A Highest Number of 28 Chinese Aircrafts Enter Taiwan ADIZ After G7 Communiqué First Mentions the Cross-strait Issues, Scholar: Appeasement to Hawks," *Central News Agency*, June 15, 2021, https://www.cna.com.tw/news/firstnews/202106150307.aspx.

nothing but war."[26]

As for the 25 flights into Taiwan's southwestern ADIZ on April 12, Ma Xiaoguang, spokesperson for the Taiwan Affairs Office, indicated that the PLA's actions are signals to hinder Taiwan independence.[27] Ren Guo-Qiang, spokesperson of PLA also stated about the June 24 entry into Taiwan's ADIZ that "Taiwan is an inseparable part of China. ... The PLA's deployment of multiple types of aircraft to organize training activities in the Taiwan Strait is a necessary action in response to the current cross-strait security and the need to safeguard national sovereignty. The PLA will resolutely fulfill its sacred duty of guarding national sovereignty and territorial integrity, securing the safety of the nation."[28] In fact, these three incursions into Taiwan's southwestern ADIZ are considered by many experts as provocative actions against the U.S. naval ships' entering the South China Sea, or as exercises simulating possible conflicts with the U.S. military.[29]

The PLA has been testing and interfering Taiwan authorities through different types of aircrafts and different types of incursions. There were even rumors in April and May that drones or armed helicopters were sent to "sea-skimming flying" to test the range of surveillance of Taiwan's radar.[30] Furthermore, 11 PLA flights has flown 11 times into Taiwan's Southwest Air Defense Identification Zone (ADIZ) on

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[26] "Transcript of the Press Conference for the Ministry of National Defense in January 2021," *Ministry of National Defense of People's Republic of China*, January 28, 2021, http://www.mod.gov.cn/big5/jzhzt/2021-01/28/content_4878227.htm.

[27] "Highlights of Taiwan Affairs Office Press Conference (2021-04-14)," *Taiwan Affairs Office*, April 14, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/xwfbh/202104/t20210414_12345433.htm.

[28] "Transcript of the Press Conference for the Ministry of National Defense in June 2021," *Ministry of National Defense of People's Republic of China*, June 24, 2021, http://www.mod.gov.cn/info/2021-06/24/content_4888067.htm.

[29] Lin Yen-Chen, "Incursions by 28 Chinese Aircrafts are Followed by '3 Warships' Behind! Experts analyze the real purpose." *ETtoday News*, June 15, 2021, https://www.ettoday.net/news/20210617/2008483.htm; Yu, Kai-Shiang, "The Number of Incursions by Chinese Jets Reaching Its Highest, Scholars: A Simulation of Attack on U.S. Fleet," *Central News Agency*, April 12, 2021, https://www.cna.com.tw/news/firstnews/202104120316.aspx; Yang, Ming-Chu, "Japanese Media: Incursions by Chinese Jets are Intended to Intimidate the U.S. Fleet off Taiwan," *Central News Agency*, January 30, 2021, https://www.cna.com.tw/news/firstnews/202101300004.aspx.

[30] Tsai, Tsung-Hsien, "The Altitude of the Chinese Aircraft during the Incursions Hit the Lowest Level of '30 Meters' and May Target the Southwest Airspace to Find Dead Ends of Radar," *Liberty Times*, April 26, 2021, https://news.ltn.com.tw/news/politics/breakingnews/3511664.

August 17. Shi Yi, spokesperson for the PLA Eastern Theater Command, said the exercise was designed to test the capability of military integration of the army and to further give warnings to the U.S.-Taiwan collusion and give provocation on possible forces of Taiwan independence.[31] Yet there are also information revealing that the Yun-8s (Y-8) had flown into Taiwan's declared "R-12 target area", attempting to interfere with Taiwan's National Army training exercises. In addition, PLA is also routinely entering Taiwan's southwestern ADIZ, making progress in testing, combat-oriented military training, and surveillance of military activities in this region. The PLA has extended its sphere of influence into Taiwan's southwestern ADIZ in just one year.

On September 23, 24 aircrafts of PLA entered Taiwan's southwestern ADIZ. From October 1 to 4, there had been a high intensiveness of 149 PLA aircraft incursions happening in surrounding areas of Taiwan. CCP is raising tensions to gain possible concessions from the U.S. side.[32] Yet despite their intensions, their actions could also be considered as military training and combat preparation, for instance, scholars believe that the incursion on September 23 may be related to the Jiadong military drill, which means CCP is not only targeting airports, but also national highways and provincial highways of Taiwan.[33] The 149 aircraft over four days in October were considered to be an exercise of day and night combat capabilities. They are also considered as practices of integrated joint operations between different forces such as bomber (B: bomber) and airborne early warning and control (AEW&C). The aircrafts are formed to be capable of attacking Taiwan as well as

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[31] Miao, Tsung-Han and Peng-Da Shen, "PLA Eastern Theater Command (ETC) Performing Exercises of Navy and Air Force, Ministry of National Defense, PRC: the Situation is Well Handled," *Central News Agency*, August 17, 2021, https://www.cna.com.tw/news/firstnews/202108170121.aspx; Wang, Jiong-Hua, "Serious Provocations by Chinese Jets! The First Time of the Yun-8 Aircraft Crossing Our Announced Target Area, with 11 Aircrafts in Total Interfering with Military Drills of Our Army," *Apple Daily*, August 17, 2021, https://tw.appledaily.com/politics/20210817/O35E3BJGOVE6FPFRURJBQQ3HJA/.

[32] For Relative Content Please see Hung, Tzu-Chieh, "CCP's Strategy for Handling Recent Cross-strait Relations," *Defense Security Bi-weekly*, Vol. 40, October 2020, pp. 11-15.

[33] Yu, Kai-Hsiang, "19 Incursions by Chinese Jets, Scholar: Incursions of Southeast Airspace are Aiming to Block U.S. Military Activities in the Bashi Channel," *Central News Agency*, September 23, 2021, https://www.cna.com.tw/news/firstnews/202109230265.aspx.

fight against the United States through different types of formations.[34]

After CCP explicitly put forward the goal of "ensuring the achievement of the military's centenary goal by 2027" in the Fifth Plenary Session of the 19th CPC Central Committee in 2020, PLA mentioned that they will "accelerate the integrated development of a mechanized, informationized and intelligent military", "accelerate the modernization of our military in terms of theory, organizational structure, service personnel, and weaponry", and that "it is required to put quality and efficiency first" while promoting "the simultaneous growth of defense and economy."[35] Therefore, whether in combat-oriented military training, developing technology, or practicing new tactics, the goal of PLA is to strengthen its army and bridge the gap with the U.S. military. CCP's frequent intimidation of Taiwan through exercise in the past two years has resulted in decreases in the effectiveness of these intimidations. Moreover, PLA has intensified its training and military activities around the Taiwan Strait in recent years, making the military threat against Taiwan more like a preparation for the expansion of military power and for possible military conflicts in the future.[36]

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[34] Yu, Kai-Hsiang, "Incursions of Chinese Jets Reaches Its Peak in Two Consecutive Days, Scholars: A Demonstration of Capability to Suppress Taiwan-U.S. Relations," *Central News Agency*, October 3, 2021, https://www.cna.com.tw/news/firstnews/202110030079.aspx.

[35] "Ministry of Defense: Striving to Advance the Cause of A Strong Military to Ensure the Achievement of the Military's Centenary Goal," *Ministry of National Defense of the People's Republic of China*, November 26, 2020, http://www.mod.gov.cn/big5/info/2020-11/26/content_4874680.htm.

[36] For a detailed analysis of incursions by Chinese jets, please refer to Chapter 5 of this report, "Evolution of China's Military Departure Patterns," of *2021 Annual Assessment of Trends of Defense Technology*, edited by Li, Guan-Cheng and Ming-Te Hung (Taipei: Institute for National Defense and Security Research, 2021).

Table 2-1 Incursions of PLA Aircrafts (Double Digits) Entering Taiwan's Southwestern ADIZ, 2021

Date	Numbers	Types of Aircrafts
January 23	13 aircrafts	ASW: anti-submarine warfare, One Y-8 ASW, Eight H-6K, Four J-16
January 24	15 aircrafts	Two Y-8 ASW, Two SU-30, Four J-16, J-10, Six J-10, One Y-8 RECCE
March 26	20 aircrafts	Two Y-8 ASW, OneKJ-500 AEW&C, Four H-6K, Ten J-16, J-10, Two J-10, One Y-8 RECCE
March 29	10 aircrafts	One KJ-500 AEW&C, One Y-8 ASW, Four J-16, Four J-10
April 5	10 aircrafts	One Y-8 ASW, One KJ-500 AEW&C, Four J-16, Four J-10
April 7	15 aircrafts	Eight J-10, Four J-16, One Y-8 ASW, Two KJ-500 AEW&C
April 12	25 aircrafts	Two Y-8 ASW, One KJ-500 AEW&C, Four J-10, Fourteen J-16, Four H-6K
June 15	28 aircrafts	One Y-8 ASW, FourH-6, One Y-8 EW, Two KJ-500 AEW&C, Fourteen J-16, Six J-11
August 17	11 aircrafts	One Y-8 ASW, OneY-8 EW, One KJ-500 AEW&C, Six J-16, Two H-6K
September 5	19 aircrafts	One Y-8 ASW, Four H-6, Ten J-16, Four SU-30
September 17	10 aircrafts	One Y-8 ASW, OneY-8 RECCE, Two J-11, Six J-16
September 23	24 aircrafts	Two times a day. First time: Twelve J-16, Two Y-8 ASW, Two H-6, One Y-8 EW, Two J-11. Second time: Two J-16, One KJ-500 AEW&C, Two J-11
October 1	38 sorties	Two times in one day. First time: ten J-16, two H-6, one KJ-500. Second time: eighteen J-16, four SU-30, two H-6, one Y-8 ASW
October 2	39 sorties	Two times in one day. First time: twelve J-16, six SU-30, one KJ-500. Second time: fourteen J-16, four SU-30, two Y-8 ASW
October 3	16 sorties	Eight J-16, four SU-30, two Y-8 ASW, two KJ-500 AEW&C
October 4	56 sorties	Two times in one day. First time: four J-16. Second time: thirty four J-16, two SU-30, two Y-8 ASW, two KJ-500 AEW&C, twelve H-6

Note: Only data for 10 or more flights at a time are listed as of October 29, 2021.
Source: Collected by the author from the Ministry of National Defense (MND) website.

V. Conclusion

One important feature of the CCP's Taiwan policy in recent years since President Tsai Ing-wen took office is that the CCP's united front work toward Taiwan have become more unilateral, such as its "preferential policy" and accusatory warnings, without regarding the bilateral relations and interactions. Considering the CCP's diplomatic speeches in recent years in the wolf warrior diplomatic style, the proportion of the CCP's foreign-related speeches and their statements of internal propaganda has increased significantly compared to the past. In other words, the CCP authority are trying to support their internal propaganda by making tough statements to the external world.[37] China has adopted similar approach to Taiwan. Whether it is the unilateral policies on Taiwan that ignore the actual situation on both sides of the Taiwan Strait, or the frequency of strong statements toward Taiwan by the Taiwan Affairs Office and the Ministry of Foreign Affairs, the CCP's work on Taiwan issues has become more dominated by internal propaganda and manipulation of nationalism than in the past.[38]

To sum up, although the main theme of the CCP's Taiwan policy and united front work remains unchanged in 2021, they have continued to promote the policy of integrated development and enhance cross-strait online exchanges. Meanwhile, the CCP authority continues their manipulation through information warfare, disinformation and cognitive warfare on issues such as vaccines, internal government affairs and the pandemic issues, aiming to create distrust in the government's actions and increasing internal political conflicts. As for the political perspective, the CCP hindered Taiwan from obtaining vaccines, restricted the import of pineapples,

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[37] Such an approach now seems to be the subject of discussion in different units within the CCP, such as the Ministry of National Defense showing dissatisfaction with the style of the discourse of the Ministry of Foreign Affairs. For more details please see Chan, Minnie, "Wolf vs Panda: is China at a Crossroads Over How to Spread its Global Message?," *South China Morning Post*, August 8, 2021, https://www.scmp.com/news/china/diplomacy/ article/3144269/wolf-vs-panda-china-crossroads-over-how-spread-its-global.

[38] For more details on the discussions between the Taiwan Affairs Office and the Ministry of Foreign Affairs, see Chapter 3 of this report, "The Division of Labor and Strategy of CCP Authority Toward Taiwan: Taking the Taiwan Affairs Office (TAO) and the Ministry of Foreign Affairs (MFA) as Examples," written by Kung Shan-Son, of *2021 Annual Assessment of Trends of Defense Technology*, edited by Li, Guan-Cheng and Ming-Te Hung (Taipei: Institute for National Defense and Security Research, 2021).

wax apples and sugar apples, while engaging in diplomatic suppression to disrupt the administration of the ROC government, at the same time increasing the intensity of its defamation and criticism. On the military front, while the PLA's military threat against Taiwan continues, it is more important for the PLA to expand its sphere of influence and strengthen its own combat capabilities through its military activities around the Taiwan Strait. There is an increase of military threats in the name of "actual combat training". This makes the results of the CCP's policy and actions toward Taiwan this year even more aggressive and hostile, erasing the possibility that the integrated development of CCP is trying to achieve.

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Chapter 3

The Division of Labor and Strategy of CCP Authority toward Taiwan: Taking the Taiwan Affairs Office (TAO) and the Ministry of Foreign Affairs (MFA) as Examples

Shan-Son Kung*

I. Introduction

Since the end of Chinese Civil War, the authorities on two sides of the Taiwan Strait have been separated. For the further reunification of the motherland, the CCP government of mainland China finds it necessary to build the Central Leading Group for Taiwan Affairs directly under the CCP Central Committee. In 1954, Mao Zedong suggested to establish the Central Leading Group for Taiwan Affairs, which was further executed by Zhou Enlai. The group has gone through major historical events such as the cultural revolution and the Chinese economic reform. Its name was once changed to "The Central Group for Taiwan Affairs" under the ruling of Deng Xiaoping. After Jiang Zemin became the general secretary of the CCP Central Committee in 1993, the word "leading" was restored in the title. The group is led by Jiang Zemin and includes heads of five departments as regular members: the Taiwan Affairs Office, Ministry of Foreign Affairs, People's Liberation Army, United Front Work Department and Ministry of State Security.[1] This basic formation of members has remained the same until now and is even

* Assistant Research Fellow, Division of Chinese Politics, Military and Warfighting Concepts, Institute for National Defense and Security Research.

1 Kou, Chien-Wen, *The Organizational System and Personnel of Mainland China's United Front Work with Taiwan*, Commissioned Research of Mainland Affairs Council, March 2019, pp. 39-48, https://ws.mac.gov.tw/001/Upload/295/relfile/7845/73953/dad82e36-96d1-43bc-a57e- 47e3b777064b.pdf.

expanded to include Ministry of State Security, Ministry of Commerce, and the Publicity Department into the group, with additions and deletions depending on the work requirements of the leaders in different times.

In this chapter, we choose the Ministry of Foreign Affairs and the Taiwan Affairs Office as research targets, both relating to The Central Leading Group for Taiwan Affairs (CLG). The two units share the common feature of presenting press releases on Taiwan-related issues. The Taiwan Affairs Office (TAO) refers to the co-location of the Office of The Central Leading Group for Taiwan Affairs, the Office of Taiwan Affairs of the Central Taiwan Affairs Office, and the Office of Taiwan Affairs of the State Council, which is a typical "one set of staff with two titles of units" administration structure. The unit will thus be abbreviated as TAO in the following paragraphs. In terms of their duties, the official website of the MFA of China states its main responsibilities in Article 9, "To release information about important diplomatic activities, elaborate on foreign policies, conduct information-related work about important diplomatic activities, organize public diplomacy activities, and take charge of the affairs related to foreign journalists in China and resident foreign news agencies", and in Article 13 "To handle, in accordance with law, diplomatic and consular affairs in Hong Kong and Macao Special Administrative Regions, and handle foreign affairs related to Taiwan."[2] These two statements are the most relevant ones to the diplomatic discourse on Taiwan issues. The TAO, on the other hand, is responsible for handling "global and regional security, political, economic, human rights, social, refugee and other diplomatic affairs in the United Nations and other multilateral fora."[3] The difference of duties is that the MFA has less responsibility for Taiwan and is involved only in foreign affairs, while the major Taiwan-related events fall under the responsibility of the TAO.

The following framework of the chapter will introduce the discourses of the MFA and the TAO of China on specific events in Taiwan during 2021 with

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[2] "Main Functions of Ministry of Foreign Affairs of the People's Republic of China," *Ministry of Foreign Affairs*, https://www.fmprc.gov.cn/web/wjb_673085/zyzz_673087/.

[3] "Main Functions," *Taiwan Affairs Office*, http://www.gwytb.gov.cn/jgsz/.

summaries and comparisons. The purpose of this study is to understand the division of labor between the two units on Taiwan-related issues and whether there is significant difference of attitudes adopted on different issues or if they adopt a converging attack type of strategy. In this chapter, the scope of study would follow the format of this annual report, focusing on the important events that occurred during 2021, and further summarizes the patterns for future reference.

II. China's Discourse on Taiwan Issues for Major Events in 2021

Spokespersons from the MFA and the TAO of China would make statements at press conferences to state their positions for specific events, representing the official attitude of CCP on Taiwan-related issues. Their statements help U.S. understand the similarities and differences in the attitudes of the two departments toward the same or related events. Although the MFA runs a twitter account to publish its opinions, the TAO, on the other hand, only runs a Weibo account instead of twitter, and the contents are mostly just videos of press conferences, making it unavailable to make a clear contrast between the two. In the upcoming sections, we will continue to use the official press conference or press release as the target for discussion. The following analysis is organized by different major events.

1. The U.S.-Taiwan Official Contact

After the Trump administration lifted restrictions on U.S.-Taiwan relations in January 2021, Zhao Lijian, the spokesperson of MFA reiterated their position on the meeting of Assistant Secretary of State Clarke Cooper with Hsiao Bi-khim, the representative of the ROC (Taiwan) to the United States, "The one-China principle is the political foundation and fundamental precondition for the establishment of diplomatic relations between China and the United States. … It is the solemn pledge of the U.S. side not to have official interactions with the Taiwan region. It should honor its commitment and not misinterpret or deviate

from it under any pretext."[4] On March 29, Zhao Lijian, the spokesperson of the MFA, criticized the event of U.S. Ambassador of Palau visiting Taiwan with the President of Palau, "China firmly opposes any form of official interactions between the U.S. and Taiwan. This position is consistent and clear. We urge the U.S. side to fully recognize that the Taiwan question is highly sensitive, and that it should abide by the one-China principle and the three China-U.S. joint communiqués. It must stop any official interaction with Taiwan, refrain from sending any wrong signals to Taiwan independent forces, stop any attempt to cross the bottom line, and properly handle Taiwan-related issues with prudence, lest it should damage China-U.S. relations as well as peace and stability across the Taiwan Strait."[5] President Joe Biden sent a delegation to Taiwan for the first time since he takes office, which consists of former Senator Chris Dodd and former Deputy Secretaries of State Richard Armitage and James Steinberg. This, of course, drew oppositions from the MFA of China as well, whose Vice Minister, Le Yucheng, stated, "China firmly opposes any form of official engagement between the United States and Taiwan. Whether low-level or high-level, official engagement is what we firmly oppose. The United States should not play the 'Taiwan card'. It is dangerous. The one-China principle is China's red line. No one should try to cross it."[6] In September, the U.S. administration announce the possibility to change the name Taipei Economic and Cultural Representative Office in the United States (TECRO) to the Taiwan Representative Office (TRO). In response to the possible renaming of the Taipei Economic and Cultural Representative Office in the United States (TECRO) to the Taiwan Representative Office, the spokesperson of MFA Zhao Lijian said, "The U.S. should abide by the one-China principle and the three China-U.S. joint communiqués, honor its commitments with concrete actions, stop all forms of official exchanges or elevating substantive relations with Taiwan, including not

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[4] "Foreign Ministry Spokesperson Zhao Lijian's Regular Press Conference on January 12, 2021," *Ministry of Foreign Affairs*, January 29, 2021, https://www.fmprc.gov.cn/web/fyrbt_673021/jzhsl_673025/t1845835.shtml.

[5] "Foreign Ministry Spokesperson Zhao Lijian's Regular Press Conference on March 29, 2021," *Ministry of Foreign Affairs*, March 29, 2021, https://www.fmprc.gov.cn/web/fyrbt_673021/jzhsl_673025/t1865084.shtml.

[6] "Le Yucheng, Vice Minister of Ministry of Foreign Affairs: China Firmly Opposes Any Form of Official Engagement between the United States and Taiwan," *Ministry of Foreign Affairs*, April 18, 2021, https://www.mfa.gov.cn/web/wjbxw_673019/t1869644.shtml.

renaming the Taipei Economic and Cultural Representative Office in the U.S. the 'Taiwan Representative Office', and stop sending wrong signals to 'Taiwan independence' separatist forces. The U.S. side should handle the Taiwan question in a prudent manner, lest it should seriously undermine China-U.S. relations and peace and stability across the Taiwan Strait."[7] We can thus conclude that on the issue of U.S.-Taiwan relations, the MFA of China mostly protested and appealed to the One-China Principle and the Three Joint Communiqués in their statements. They especially discourage the trend of U.S. administration propelling Taiwan away from China.

The TAO and the MFA of China share the same position on the issues of U.S.-Taiwan contact. For example, their spokesperson Zhu Fenglian made a warning on January 7, 2021, targeting a political-military dialogue between Taiwan and the United States, "The DPP authorities should immediately terminate any kind of official contacts and military ties with the U.S. They should not go further down to the wrong path of 'Relying on the United States for Independence'. They should not push the people of Taiwan into disaster, or else they will be severely punished."[8] Then on January 21, Zhu Fenglian made another statement to Hsiao Bi-khim, the representative of ROC (Taiwan) in the United States, who attended the Inauguration of President Biden. Zhu stated that CCP "is firmly opposed to any form of official relations between the United States and Taiwan. The U.S. should abide by the one-China principle as well as the three China-U.S. joint communiqués while treating the Taiwan Question in an appropriate manner." Zhu also appealed to the Taiwan authority that "the DPP authorities can never cover up its nature of 'Taiwan independence' with any tricks or excuses. The DPP authorities will have their own consequences if they go further on the path of Taiwan independence."[9]

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[7] "Foreign Ministry Spokesperson Zhao Lijian's Regular Press Conference on September 13, 2021," *Ministry of Foreign Affairs*, September 13, 2021, https://www.fmprc.gov.cn/web/fyrbt_673021/jzhsl_673025/t1906645.shtml.

[8] "Taiwan Affairs Offices: DPP Authorities Should Not go Further down to the Wrong Path of 'Relying on the United States for Independence'," *Taiwan Affairs Office*, January 7, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202101/t20210107_12315774.htm.

[9] "Response from Zhu Feng-Lian, Spokesperson for the Taiwan Affairs Office," *Taiwan Affairs Office*, January 21, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202101/t20210121_12326462.htm.

On March 26, Zhu Fenglian criticized the American Institute in Taiwan (AIT) and the Taiwan Economic and Cultural Representative Office (TECRO) for signing the *Memorandum of Understanding on Establishing the Coast Guard Working Group, CGWG*, "We are firmly opposed to any form of official relations between the United States and China in Taiwan, or the signing of any agreement with sovereign implications. ... the DPP authorities will only drive Taiwan into disaster if they continue to rely on the United States for Independence and betraying national interests." [10] On April 13, Ma Xiaoguang, the spokesperson for the TAO, criticized on U.S.' lifting restrictions for contacts with Taiwan in the *New Guidelines for U.S. Government Interactions with Taiwan Counterpart*, "We are firmly opposed to the development of any form of official relations between the United States and Taiwan. ... The U.S. should abide by the one-China principle and the three China-U.S. joint communiqués. It is a solemn commitment made by the U.S. government to the Chinese authority. We urge the U.S. government to abide by its commitments with practical actions, instead of sending wrong signals to forces of Taiwan independence, and to safeguard peace and stability in the Taiwan Strait." He added a rigid sentence in the last part, saying that "If the DPP authorities rely on the United States for Independence, they shall be doomed to fail."[11] As for the discussion on changing the name of TECRO to "Taiwan Representative Office," Zhu Fenglian, the spokesperson of TAO, said on September 13, "We are firmly opposed to the development of any form of official relations or the establishment of official institutions between Taiwan and countries with diplomatic relations with China. ... The DPP authorities are doomed to fail, no matter how they play their tricks to promote Taiwan independence."[12] To sum up the statements of the TAO,

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[10] "Taiwan Affairs Office: We are Firmly Opposed to Any Agreement Signed with Sovereign Implications between the United States and China in Taiwan," *Taiwan Affairs Office*, March 26, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202103/t20210326_12341108.htm.

[11] "Taiwan Affairs Office: We are Firmly Opposed to Any Form of Official Relations between the United States and China in Taiwan," *Taiwan Affairs Office*, April 13, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202104/t20210413_12345104.htm.

[12] "Taiwan Affairs Office: We are Firmly Opposed to the Establishment of Official Institutions between Taiwan and Countries with Diplomatic Relations with China," *Taiwan Affairs Office*, September 13, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202109/t20210913_12378056. htm.

we could see that they are not only corresponding to the attitude of warning against U.S. with the MFA, but also criticizes the DPP government's strategic choice of relying on the U.S. to resist the pressure of Chinese unification.

2. U.S. Military Aircraft at Taiwan

In June 2021, the U.S. Congressmen arrived at Taiwan in U.S. Army Aircrafts, symbolizing a breakthrough of the cooperation of our country with U.S. military since the Biden administration took office. CCP, for sure, is not glad to see such development, which is why they strongly criticized the event yet was unable to break out of the pattern of their past criticism. On June 7, for instance, Wang Wenbin, the spokesperson for the MFA of China, showed his status on the event of U.S. Senate visiting Taiwan on a C-17 to meet President Tsai Ing-wen. As usual, they requested U.S. "to immediately discontinue all forms of official interactions with Taiwan and handle issues relating to Taiwan in a prudent manner. It should avoid sending any wrong signal to 'Taiwan independence' separatists and causing further damage to China-U.S. relations and peace and stability across the Taiwan Strait."[13] Ma Xiaoguang, the spokesperson for the TAO, also requested that "U.S. should abide by the one-China principle and the three China-U.S. joint communiqués. They should also handle the Taiwan Question prudently and appropriately, while any forms of the official contacts and military ties between U.S. and Taiwan should be terminated." Comparing to TAO, the MFA, however, went further and directly accused the Taiwan government of sentences like "the situation of pandemic on the island continues to get worse. The DPP authorities are ignoring the well-being of Taiwan compatriots by deliberately provoking cross-strait relations. DPP authorities' once again showed their disregard for the lives of the people, their ignorance for the health and well-being of the Taiwanese people. Such political manipulation in pursuit of 'independence' is an ugly expression".[14]

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[13] "Foreign Ministry Spokesperson Wang Wenbin 's Regular Press Conference on June 7, 2021," *Ministry of Foreign Affairs*, June 7, 2021, https://www.fmprc.gov.cn/web/fyrbt_673021/jzhsl_673025/t1881907.shtml.

[14] "Taiwan Affairs Office Responding to Three U.S. Congressmen Visiting Taiwan," *Taiwan Affairs Office*, June 7, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202106/t20210607_12357590.htm.

From the statements of the MFA and the TAO on the U.S. military plane carrying the U.S. Congressman to Taiwan, we could see that while both units urged the United States to abide by the One-China Principle and the three communiqués, the latter focused more on criticizing the Taiwanese government and ruling party. It is customary for TAO to make inappropriate connections between U.S.-Taiwan affairs and Taiwan independence. For example, Zhu Fenglian, the spokesperson for TAO, indicated on July 15 when another U.S. military transport plane landed in Taiwan, "We are firmly opposed to any form of military ties between Taiwan and the United States to enhance the sovereign security. We encourage that the U.S. should abide by the one-China principle and the three China-U.S. joint communiqués. The DPP authorities should stop their provocation of seeking independence in any forms of connections with external forces. If they continue to refuse reunification, they may lead the people of Taiwan to disaster, and their plan is bound to fail",[15] which shows the evident verbal attack of TAO against the DPP government.

3. The Opening of the Taiwanese Representative Office in Lithuania

As for the event of our government establishing a representative office in Lithuania, Zhao Lijian, the spokesperson of MFA responded on July 20, 2021, "China firmly opposes any official exchanges and the mutual establishment of so-called 'representative offices' between Taiwan and countries with diplomatic relations with China. We urge the Lithuanian side to adhere to the one-China principle and honor its commitment made upon the establishment of diplomatic ties. Also a word of advice to the Taiwan authorities: 'Taiwan independence' leads to a dead end and any attempt to create 'two Chinas' or 'one China, one Taiwan' will not succeed."[16] Later on August 10, the CCP recalled its ambassadors due to their assumptions that Lithuania had stepped over their boundaries on Taiwan

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[15] "U.S. Military Transport Plane Landed in Taiwan, TAO: We are Firmly Opposed to Any Form of Military Ties between Taiwan and the United States," *Taiwan Affairs Office*, July 15, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202107/t20210715_12366076.htm.

[16] "Foreign Ministry Spokesperson Zhao Lijian's Regular Press Conference on July 20, 2021," *Ministry of Foreign Affairs*, July 10, 2021, https://www.fmprc.gov.cn/web/fyrbt_673021/jzhsl_673025/t1893709.shtml.

issues. On the same day, the spokesperson of TAO, Zhu Fenglian, also stated their position, "We oppose the development of official relations between our diplomatic partners and Taiwan. We urge Lithuania to abide by the One-China Principle instead of sending wrong signals to the forces of Taiwan independence. The setting of the representative office is nothing but a farce set by the DPP authorities and the Taiwan independence forces with the aim of seeking 'independence'."[17] Not only do the two Taiwan-related organizations share the same stance when speaking public statements, but they both attack the Taiwan government with harsh critiques.

With Lithuania's change of diplomatic attitude as a starting point, the European External Action Service Ministry further stated that the establishment of "representative offices" between EU member states and Taiwan does not violate the One-China Policy. In response to this, the spokesperson of the MFA of China, Hua Chunying, requested EU on August 13, "Any country, when following the one-China policy, must strictly abide by the one-China principle, including severing all official ties with the Taiwan authorities. …China urges the EU to uphold a correct position on Taiwan-related issues and refrain from sending wrong signals on issues concerning China's core interests and creating new troubles for China-EU relations."[18] CCP is obviously worrying that the change of attitude on the One-China Policy in international communities might spread from Lithuania to the whole EU, urging them to react immediately. From the statements of these two Taiwan-related departments, we could see how CCP is trying to prevent the change of diplomatic attitude toward Taiwan from other countries, which could make the situation more and more unfavorable to China and even gradually shaking the EU's long-standing One-China Principle.

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[17] "Taiwan Affairs Office: We Oppose the Development of Official Relations between Our Diplomatic Partners and Taiwan," *Taiwan Affairs Office*, July 20, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202107/t20210720_12367042.htm.

[18] "Foreign Ministry Spokesperson Hua Chunying's Remarks on the U.S. and EU's Wanton Comments on China's Recall of Its Ambassador to Lithuania," *Ministry of Foreign Affairs*, August 13, 2021, https://www.fmprc.gov.cn/web/fyrbt_673021/dhdw_673027/t1899285.shtml.

4. Vaccines Given to Taiwan by Various Countries

Although there have been many countries who donated vaccines to Taiwan since the outbreak of COVID-19 in May, China's political statements does not target to those countries, but focused primarily on the donations of the United States and Japan instead. Wang Wenbin, the spokesperson for the MFA of China, for instance, responded to Japan's announcement in May 2021 of donating vaccines to Taiwan, "We are firmly against those who exploit the pandemic to put on political shows or even meddle in China's internal affairs. …the Japanese government's announcement of considering providing vaccines to China's Taiwan region has drawn doubts from media and the public including in Taiwan." Taking advantage of this incident, he also made an accusation that "the DPP authorities, proceeding from selfish political calculations, turned a blind eye to the goodwill of the mainland, and even resorted to malicious smears and various other means to thwart the shipment of vaccines from the mainland to the island. This is running roughshod over the life and health of our compatriots in Taiwan."[19] The TAO has repeatedly criticized the DPP government's restrictions of vaccine donations from China to Taiwan.[20] They refuted the saying of China interfering with Japanese donations but has not made any direct accusations against Japan. On the other hand, when the 2.5 million doses of COVID-19 vaccines donated by the U.S. arrived in Taiwan on June 20; Zhao Lijian, the spokesperson of MFA only made a soft statement toward this event, "The mainland and Taiwan are one family. Our hearts are with our Taiwan compatriots who are faced with the grave situation. We have always made clear the readiness to do our utmost to help our compatriots in Taiwan overcome the difficulties at an early date." They also urged the U.S. side "not to use vaccine aid for political maneuver or interference in China's internal affairs" and accused the DPP authorities of "trying every means to obstruct the shipping of vaccines from the mainland to Taiwan, and even falsely claimed

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[19] "Foreign Ministry Spokesperson Wang Wenbin's Regular Press Conference on May 31, 2021," *Ministry of Foreign Affairs*, May 31, 2021, https://www.fmprc.gov.cn/web/fyrbt_673021/jzhsl_673025/t1880107.shtml.

[20] "Taiwan Affairs Office: Lies Cannot Help DDP Escape the Guilt of Ignoring People's Lives and Health," *Taiwan Affairs Office*, June 7, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202106/t20210607_12357599.htm.

that the mainland was obstructing its vaccine procurement. For their own selfish political gains, the DPP authorities constantly seek political manipulation over anti-epidemic cooperation, showing disregard of the lives and health of Taiwan compatriots and violating the basic humanitarian spirit."[21]

The statements and attitudes of the TAO toward vaccine issues are different from the focus of the MFA of China when seeing foreign countries helping Taiwan with vaccines. TAO has been denouncing the Taiwan government since early 2021, mainly by denying China's obstruction of Taiwan's vaccine procurement and criticizing Taiwan's restrictions on Chinese vaccine imports to Taiwan. On the former issue, Ma Xiaoguang, the spokesperson of TAO, implied on Feb. 18, "The so-called 'mainland factor hindering the procurement of BNT Pfizer vaccine to Taiwan' is a complete fabricated and false statement, which, once again, revealed the immoral and incontrollable political nature of DPP politicians."[22] On May 27, Zhu Fenglian, the spokesperson of TAO, re-emphasized that "The claim of Mainland China hindering the procurement of BNT vaccines to Taiwan is merely a rumor. These lies told by the leaders of the DPP authorities once again expose their consistent ways of political manipulation, such as blaming the mainland and shifting the focus to cover up the problem."[23] On June 2, Ma Xiaoguang also claimed that "the DPP authorities set up their own obstacles and did not procure the BNT vaccine through normal agency channels. Shanghai Fosun Pharmaceutical Co., Ltd. is the only agent for the German BNT vaccine in Hong Kong, Macau and Taiwan. It is basic business logic that the purchase of the BNT vaccine should only be conducted through Shanghai Fosun Pharmaceutical Co. The DPP authorities know it too well, yet they still insisted on doing it in an opposite way

[21] "Foreign Ministry Spokesperson Zhao Lijian's Regular Press Conference on June 21, 2021," *Ministry of Foreign Affairs*, June 21, 2021, https://www.fmprc.gov.cn/web/fyrbt_673021/jzhsl_673025/t1885422.shtml.

[22] "Taiwan Affairs Office: The Claim of Mainland China Hindering the Sale of BNT Vaccines to Taiwan is Merely a Rumor," *Taiwan Affairs Office*, February 18, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202102/t20210218_12332879.htm.

[23] "Taiwan Affairs Office: The Claim of Mainland China Hindering the Sale of BNT Vaccines to Taiwan is Merely a Rumor," *Taiwan Affairs Office*, May 27, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202105/t20210527_12355405.htm.

instead of purchasing in the appropriate approach."[24] From the comment, we could see that the TAO has been trying to pass the buck for hindering Taiwan's vaccine procurement.

The restrictions on the import of CCP vaccines into Taiwan was also the focus of the TAO's discourses. They supported this argument with the publicity of some Taiwanese examples who were willing to get CCP vaccines, such as CCP's vaccine donations to Kinmen and Matsu, which had been rejected by Taiwan's Mainland Affairs Council. Thus, on May 28, Zhu Fenglian, the spokesperson for the TAO, stated, "The Mainland Affairs Council's statement is just an excuse to hinder Taiwan compatriots from using mainland vaccines that could help stop the spread of pandemic as soon as possible."[25] Zhu Fenglian followed up with another criticism on May 31, "Some political parties, groups, individuals and counties on the island have repeatedly appealed to the DPP authorities to lift the political restrictions so that mainland vaccines could be imported to Taiwan as soon as possible. … On the contrary, the DPP authorities have allowed their devilish political intentions to take over under such critical moment of pandemic prevention. The company has been ignoring the voices of the people of Taiwan, the lives and the health of the people. Their manipulation of constant political tricks shows their attempt to divert attention and blur the focus by blaming on the mainland for their own faults."[26] On June 1, Ma Xiaoguang took over the discussion, "The DPP authorities should seriously listen to the calls for safe vaccines from people of the island, takithe safety of the lives and interests of Taiwan compatriots in the first place. They should change their approach of political manipulation on the vaccine issue as soon as possible by lifting the bans

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[24] "Taiwan Authorities Falsely Claim that the Mainland Interfered with the Vaccine Procurement Process, TAO: a Trick out of Nowhere to Avoid Responsibilities," *Taiwan Affairs Office*, June 2, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202106/t20210602_12356578.htm.

[25] "Mainland Affairs Council Making up Excuses to Hinder Mainland Vaccines from Taiwan, TAO: A Cold-blooded Action," *Taiwan Affairs Office*, May 28, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202105/t20210528_12355644.htm.

[26] "TAO Appealing to DPP Authorities: It is Better to Cast away the Political Demons and Stop Harming the Well-being of People on the Island," *Taiwan Affairs Office*, May 31, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202105/t20210531_12356084.htm.

so that the Chinese vaccines can be imported to Taiwan as soon as possible".[27] On June 15, Ma Xiaoguang further criticized, "The DPP authorities are still refusing to introduce vaccines from the Mainland to Taiwan. When it comes to importing vaccines into Taiwan in the name of non-governmental organizations, they have set up spontaneous barriers such as complicated procedures and demanding requirements".[28] Judging from the statements of TAO, we could see that their approach is to keep blaming the Taiwanese government for the failure of the vaccine procurement in general and the importing of Chinese vaccines to Taiwan. They were trying to put more political pressure on Taiwan in order to create an image of ineffective pandemic prevention by ignoring the objective scientific evidence to twist the true reason of restrictions.

5. Japan Raising Awareness on Cross-Strait Security

In 2021, Japan has repeatedly expressed its concern about cross-strait security and has kept close cooperation with the U.S. On April 20, 2021, therefore, Ma Xiaoguang, spokesperson for the TAO, responded to the joint statement issued by the U.S. and Japan concerning the cross-strait situation, "We urge the United States and Japan to abide by the One-China Principle, to properly address the Taiwan Question, and to stop interfering in China's domestic affairs. The DPP authorities, who rely much on the foreign powers to elevate themselves, are becoming the pawn of anti-China forces in the game, which will only put Taiwan in a more dangerous situation."[29] Japanese Deputy Prime Minister and Minister of Finance Tarō Asō, made another clear statement afterwards, suggesting that "Japan would have to defend Taiwan with the United States." Zhu Feng Lian, spokesperson

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[27] "TAO: DPP Authorities should Lift the Bans so that the Chinese Vaccines can be Imported to Taiwan as soon as Possible." *Taiwan Affairs Office*, June 1, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202106/t20210601_12356328.htm.

[28] "TAO Appealing to DPP Authorities: It is better to Lift the Bans so that the Chinese Vaccines can be Imported to Taiwan as soon as Possible for the Sake of Well-being for the People on the Island," *Taiwan Affairs Office*, June 16, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202106/t20210616_12359728. htm.

[29] "Taiwan Affairs Office: We Urge the United States and Japan to Abide by the One-China Principle and to Stop Interfering in China's Domestic Affairs," *Taiwan Affairs Office*, April 20, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202104/t20210420_12346817.htm.

of TAO, commented on this on July 6, "Some Japanese politicians have made a series of misleading remarks on Taiwan-related issues. These words are the clear violation of Japan's political commitments to China on the Taiwan Question. They disobeyed the spirit of the four political documents of China and Japan, the international law and the standards of international relations. We are firmly opposed to this kind of situations."[30] On July 20, the administrative vice minister Mori Takeo, the MFA of Japan had a talk with the visiting U.S. Deputy Secretary of State Wendy Sherman, in which they reiterated the importance of cross-strait peace and stability, while expressing serious concern about Uygur and Hong Kong issues. In response to this, Zhao Lijian, spokesperson of MFA, expressed strong dissatisfaction and resolute opposition, stressing that "issues relating to Taiwan, Hong Kong and Xinjiang are China's internal affairs that allow no foreign interference. No one should underestimate the resolve, the will and the ability of the Chinese people to defend their national sovereignty and territorial integrity."[31] These joint statements presented by the U.S. and Japan on cross-strait security have put pressure on both MFA of China and the TAO to give their response. The two units could merely reiterate the One-China Principle to the public and restate that the Taiwan Question are part of the internal affairs of the CCP.

Aside from the U.S.-Japanese alliance, the Japanese government itself has also increased the weight of its speeches or policies on the cross-strait situations. For example, Japan has released the 2021 edition of the Defense White Paper on July 13, and for the first time, the importance of stability in Taiwan's periphery was mentioned in the White Paper. Zhao Lijian, spokesperson of MFA made his accusations, "The Japanese side have been making issues out of China, grossly interfering in China's internal affairs, making groundless accusation of China's normal national defense and military activities…China deplores and rejects this…Taiwan is part of China and the Taiwan question is purely China's internal

[30] "Taiwan Affairs Office: We Urge Japan to Stop all Wrong Deeds on Taiwan-related Issues," *Taiwan Affairs Office*, July 6, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202107/t20210706_12364135.htm.

[31] "Foreign Ministry Spokesperson Zhao Lijian's Regular Press Conference on July 22, 2021," *Ministry of Foreign Affairs*, July 22, 2021, https://www.fmprc.gov.cn/web/fyrbt_673021/jzhsl_673025/t1894384.shtml.

affairs. China never allows interference in the Taiwan question in any form by any country."[32] Japan's Deputy Minister of Defense Nakayama Yasuhide said on September 8, "The stability of Taiwan is important to Japanese security and linked to the peace and stability of the international community." According to his speech, the MFA of China made serious representations to the Japanese authority. The spokesperson Zhao Lijian expressed his strong dissatisfaction and firm opposition on this issue and denounced that "Japan should stop interfering in China's domestic affairs, avoid undermining China's sovereignty in any form and refrain from sending wrong signals to 'Taiwan independence' forces in any form."[33] Regarding Japan's own position, it seems that the MFA has always been the one to stand out and comment on events, while TAO does not intervene much on Japanese issues.

The progress of Taiwan-Japan relations in 2021 has also evoked the anxiousness of MFA and TAO of China. Facing several statements of Japanese government officials repeatedly and openly calling Taiwan as a country, Ma Xiaoguang, spokesperson of TAO, stated on June 11, "We urge the Japanese authority to correct its mistake immediately and take practical action to abide by the One-China Principle as well as the spirit of the four political documents of China and Japan. They should be cautious on the Taiwan Question and stop sending any wrong signals to the Taiwan independence forces." He also warned that "the DPP authorities and the 'Taiwan independence' separatist forces are trying to collude with foreign powers to create violating actions against the One-China Principle, which would not change the fact that Taiwan is part of China."[34] On June 16, Ma Xiaoguang also commented on the Japanese Senate's endorsement of Taiwan's participation in the World Health Assembly (WHA), "The DPP authorities are held accountable for the failure of Taiwan attending WHA, since they deny the

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[32] "Foreign Ministry Spokesperson Zhao Lijian's Regular Press Conference on July 13, 2021," *Ministry of Foreign Affairs*, July 13, 2021, https://www.fmprc.gov.cn/web/fyrbt_673021/jzhsl_673025/t1891716.shtml.

[33] "Foreign Ministry Spokesperson Zhao Lijian's Regular Press Conference on September 9, 2021," *Ministry of Foreign Affairs*, September 9, 2021, https://www.fmprc.gov.cn/web/fyrbt_673021/jzhsl_673025/t1905828.shtml.

[34] "Taiwan Affairs Office: We Urge Japan to Immediately Correct Its Mistake and be Cautious in Its Words on the Taiwan Question," *Taiwan Affairs Office*, June 11, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202106/t20210611_12358830.htm.

1992 Consensus and refuse to accept the One-China Principle. What the Japanese authority should do is to treat and reflect on the dishonorable history of aggression in a correct way, and to abide by the One-China Principle as well as the spirit of the four political documents of China and Japan. They should stop pointing fingers and give judgements on the Taiwan Question."[35] On August 27, 2021, the Liberal Democratic Party (LDP) of Japan and the DPP authority of Taiwan held an online "2+2 Dialogue" conference. In response to this, Zhao Lijian, spokesperson for the MFA, commented the same day, "Taiwan is an inalienable part of China's territory. China firmly opposes all forms of official interactions between Taiwan and countries having diplomatic ties with China. The Chinese side has lodged solemn representation to the Japanese side. The Taiwan question concerns the political foundation of China-Japan relations… We seriously ask Japan to stop interfering in China's domestic affairs, and refrain from sending wrong signals to 'Taiwan independence' forces."[36] As summarized above, the CCP's discourses and statements toward Japan are slightly different from their demands to the United States, standing at the moral high ground while using the historical feud between China and Japan as the material. They further highlighted the spirit of the four political documents between China and Japan, which includes not to interfere in the domestic affairs of the CCP, while the TAO will often give additional accusations on the Taiwan government.

III. The Division of Labor and Strategy toward Taiwan between the MFA and TAO

1. The MFA of China and TAO Sharing the Same Position, yet Each has Its Own Focus

From the summary of speeches of both the MFA and the TAO, we could figure

[35] "Taiwan Affairs Office: Japan should Stop Giving Judgements on the Taiwan Question," *Taiwan Affairs Office*, June 16, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202106/t20210616_12359723.htm.

[36] "Foreign Ministry Spokesperson Zhao Lijian's Regular Press Conference on August 27, 2021," *Ministry of Foreign Affairs*, August 27, 2021, https://www.fmprc.gov.cn/web/fyrbt_673021/jzhsl_673025/t1902491.shtml.

out that when major events involving countries of international communities happened, MFA's criticism does not target directly to Taiwan but rather the third country who has involved in the event. Their intention is to accuse those countries' Taiwan-friendly policies and to put political pressure on them. The structure of discourse often began by condemning the third country for violating the One-China Principle or other political documents relating to CCP. The ending of the statement would often be concluded with appeals to stop sending the wrong signal about the issue of Taiwan independence. On the other hand, the Taiwan government has remained as the main target of TAO's speeches for major events. Although their discourses often resonate with the statements of MFA, the main content of their words would still focus on criticizing the DPP government of its actions or administration. They depreciated the progress Taiwan has made in major events and often end with a harsh warning about Taiwan independence at the end of their discussions.

To sum up, the MFA and the TAO together share an overlapping division of labor, while the former focusing on foreign affairs and the latter on statements toward Taiwan. The former prevents the world from interacting with the Taiwanese government, while the latter prevents the Taiwanese government from interacting with the world. There are also some details worth noting on the wording of the statements. The warning of TAO has been explicitly limited to the DPP government, actions of "Taiwanese independence" labeled by CCP, or even mere interactions with other countries. Such a division of opinion is effective to the implementation of its united front work against Taiwan, which means it does not overly expand the group of targets to those who can be won over through their assessment. Therefore, if we compare the objectives of the two separate units, there is clear evidence that TAO has been given a more diversified role in Taiwan-related issues than the MFA, which is still practicing the "wolf warrior diplomacy".

In Figure 3-1, the timeline is organized by the five major events mentioned above. We could see from the chart that before the rise of pandemic in Taiwan and the subsequent worries about the lack of vaccines in May 2021, the MFA and TAO each had different duties of publicity. The former targeted their focus on a third-

party country relating to the Taiwan diplomacy and the latter is directed at the Taiwan government. We cannot exclude possibilities of two units having a common target in individual cases. For example, when controversy appears over whether the procurement of BNT vaccine was hindered by CCP, the MFA also participated in the accusations to Taiwan's DPP government. In the case of establishing representative offices between Taiwan and Lithuania, the MFA of China also accused the DPP government of seeking "independence". The MFA and TAO of China, despite their legal separation of duties, both participated in discursive accusation directly to the DPP government in Taiwan. While the distinction of responsibilities between the two units remains, MFA has clearly begun to increase the frequency of giving aggressive statements and to change their role towards Taiwan. It will be an interesting issue to see whether the interests of the TAO's departmental role will be weakened in the future.

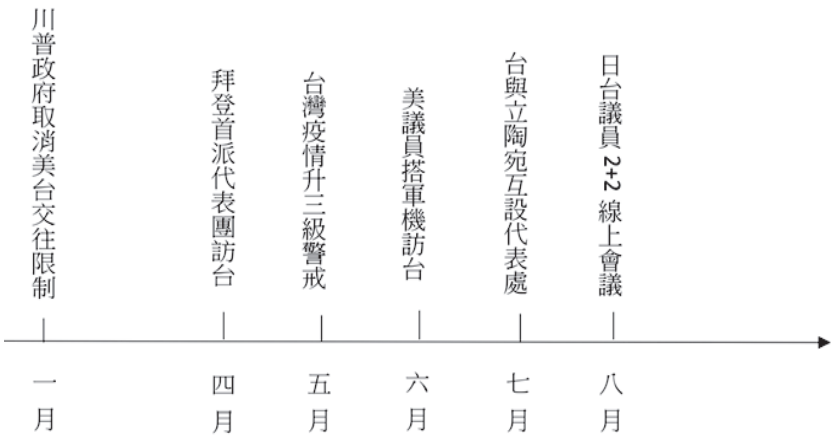

Figure 3-1 Timeline of Important Taiwan-related Events in 2021

Source: graph drawn by author.

2. TAO Serves as a Conciliatory Force of United Front Work to Taiwan

From the previous paragraphs, we could find evident proof that TAO has been taking the main responsibility of united front work with Taiwan, with the strategy of "promoting integration through communication, benefit, and affection" highlighted in 2021. In this research, we demonstrate a compilation of several important examples of publicity on Taiwan issues in 2021. Firstly, CCP has responded to the COVID-19 pandemic situation by welcoming Taiwan compatriots to China for vaccination. Ma Xiaoguang, spokesperson of TAO, deliberately released the following message on April 14 regarding Taiwan compatriots in mainland China who have access for vaccination, "According to the jus soli principle and policy of equal treatment, the same policies and regulations are applied as those for mainland residents in the region where they are located. That is, on the premise of informed consent and willingness, one can register for vaccination at their place of residence if they possess the Residence Permit for Taiwan or Certificate of Medical Insurance in Mainland China." In June, Ma gave another announcement, "Taiwan compatriots coming to China on flights of Civil Air Transport may receive vaccinations in China under relevant regulations if they meet the requirements for vaccination, with voluntary and informed consent, and are willing to follow the relevant policies for vaccinations before boarding and after arrival."[37] According to the statistics of TAO, more than 156,000 Taiwanese compatriots have been vaccinated in mainland China until August 31, receiving more than 290,000 doses of vaccines produced by China in total. In some places, the administration has begun to give vaccinations to Taiwanese students between the ages of 12 and 17 in mainland China as a part of such opening measures.[38] The

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[37] "Taiwan Affairs Office: Same Policies and Regulations are Applied for Taiwan Compatriots as Those for Mainland Residents in the Region where They are Located," *Taiwan Affairs Office*, April 14, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202104/t20210414_12345447.htm; "Taiwan Affairs Office: Taiwan Compatriots Coming to China on Flights of Civil Air Transport may Receive Vaccinations in China under Relevant Regulations," *Taiwan Affairs Office*, June 11, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202106/t20210611_12358743.htm.

[38] "Taiwan Affairs Office: More than 156,000 Taiwanese Compatriots Have been Vaccinated in Mainland China," *Taiwan Affairs Office*, September 15, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202109/t20210915_12378623.htm.

TAO's propaganda on the CCP vaccine focused on accusing the DPP government of lack of preparation on purchasing vaccines, in order to highlight the willingness and convenience of Taiwanese compatriots to get the vaccine in China. However, the appeal of CCP vaccine to the Taiwanese public is actually very little, making it difficult to achieve the effect of their propaganda.

Second, another important point of publicity is the launch of preferential policies for Taiwan in 2021 corresponding to the 14th Five-Year Plan. On March 17, for example, the "22 measures on agriculture and forestry" was announced. The measures urge Taiwan compatriots and Taiwan-invested enterprises to participate in the development of the agricultural and forestry involving the use of agricultural and forest land, financing facilities and capital support, investment and operation, research and innovation, development of domestic markets, integration of three stages in agricultural industries, participation in intelligent agriculture, organic fertilizers, etc.[39] The purpose of the 22 measures on agriculture and forestry is to attract Taiwanese people to live and work cross-Strait, while contributing to the much-needed revitalization of their rural villages. On the same day when TAO announced the 22 measures on agriculture and forestry, they have also announced that the establishment of 15 cross-strait agricultural experiment zones and 28 Taiwan farmers' entrepreneurship parks had been approved.[40] In terms of quantity and job opportunities created in mainland China, the cross-strait agricultural experiment zone has already reached a certain scale. However, if these experiment zones cannot create the transfer of key agricultural technologies from Taiwan, the damage to Taiwan agricultural industries might still be limited.

Third, the TAO is committed to publicizing the effectiveness of the Cross Strait Exchange base. On February 24, TAO first publicized the effectiveness of Pingtan comprehensive experimental zone in Fujian, boasting its equal treatment for Taiwan compatriots and Taiwan-funded enterprises to create a cross-strait

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[39] "Taiwan Affairs Office Introduces the '22 Measures on Agriculture and Forestry and Its Features'," *Taiwan Affairs Office*, March 17, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202103/t20210317_12339184.htm.

[40] "The 14th Five-Year Plan Brining New Opportunities for Participating Taiwan Compatriots and Taiwanese Companies," *Taiwan Affairs Office*, March 17, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202103/t20210317_12339178.htm.

"New Four-Link Transportation" for further integration.[41] In reality, however, the conditions for Taiwanese businessmen to settle in are quite limited, with plenty of companies receiving official subsidies from CCP that are very likely to be shell cooperation.

Then on July 12, TAO announced the establishment of two new Cross Strait Exchange bases in Xiandu Neighborhood of Jinyun County, Lishui, Zhejiang and Leizu Park, Yanting County, Mianyang Sichuan.[42] These constructions show China's intention to rely on the culture of the Yellow Emperor and the culture of Leizu, trying to build a common traditional cultural identity between the two sides of the Taiwan Strait in order to accomplish the united front work. They expected that such an approach may attract temples or religious organizations from Taiwan that share the same beliefs.

IV. Conclusion

From the overview of the speeches and actions of the MFA and TAO, we could see a clear division of labor between the two units, with MFA focusing on propaganda toward international community and TAO focusing on propaganda toward Taiwanese government and people. The MFA of China adopts a stiff stance in the spirit of "wolf warrior diplomacy" as their major tactics. They still, however, occasionally cross the line of division of labor, directly attacking Taiwan government on Taiwan-related issues. TAO, on the other hand, has applied both strong and soft attitudes of discourses considering their targets to be the Taiwanese government or non-governmental organizations. In terms of effectiveness however, the CCP authority should not be too optimistic. Though the "wolf warrior diplomacy" has been conducted for several years, the support and sympathy for

[41] "Taiwan Affairs Office: Fujian Pingtan Comprehensive Experimental Zone Aims to Explore New Paths of Cross-strait Integrated Development, Building a Primary Home for Settling down on the Mainland for Taiwan Compatriots and Taiwanese Companies," *Taiwan Affairs Office*, February 24, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202102/ t20210224_12334021.htm.

[42] "New Cross-strait Exchange Bases Setting up in Lishui, Zhejiang and Mianyang," *Taiwan Affairs Office*, July 12, 2021, http://www.gwytb.gov.cn/xwdt/xwfb/wyly/202107/t20210712_12365224.htm.

Taiwan from countries all over the world, on the other hand, is growing day by day. Countries gradually switch a more positive and friendly attitude towards Taiwan since 2021, who are not backed off by the strong speeches and warnings from China. This indicates that the international trend has changed and are turning to the direction that the CCP authority would not be glad to see. After Xi Jinping's speech at the 40th Anniversary of Message to Compatriots in Taiwan, TAO created a much clearer divergence of soft statements or hard critiques toward the Taiwanese government or the society. Yet despite the efforts of CCP in general, there have been several issues showing that the distance between Taiwan and CCP authorities, from the governmental level to the non-governmental level, have drifted apart. We could see this phenomenon from the public opinion during the pandemic, the growing awareness of Taiwan's sovereignty, or even the "blind patriots" from China reporting artists as supporting "Taiwan independence" from time to time. Such phenomenon turns out to be the exact opposite way of the integrated development based on national sentiment that the CCP has been trying to achieve. Furthermore, although the CCP authority has been manipulating with the concept of nationalism in a top-down approach mainly for the purpose of consolidating its sovereignty, the current development of public opinion on the Internet has created an opposite effect. The public opinion online has contributed much to "wolf warrior diplomacy" and other discourses that generate negative sentiments internationally. It is harmful not only to the CCP's international image, but also to the development of cross-strait relations, which, in other words, is offset against the conciliatory policy toward Taiwan.

Finally, responding to the strategy of CCP's departments toward Taiwan, the Taiwan government and the society should both react directly to the focus discourse of the MFA and the TAO. The government may consider strengthening the consensus of values while enhancing the basis of concrete cooperation from the perspectives of democratic values, mutual assistance in science and technology, and experience in pandemic prevention, under the growing atmosphere of international friendship with Taiwan. Such practices may transcend the long-term cooperation that could not be achieved in the past due to the opposition of the

CCP. Although it is expectable that any countries who developed any international cooperation with Taiwan will cause discomfort for the CCP authority, we could still accomplish breakthroughs in a non-targeted way that stands with universal values. The power of judgements and attacks from the Taiwan-related departments of CCP will thus remain merely at a shallow level of repetitive statements, making their unilateral, rigid narratives difficult to make an influence at a global scale. The people in Taiwan should adopt a scientific attitude in evaluating the efficacy of the CCP vaccine or the procurement of international vaccines. If we could develop a collective consensus with such attitude, our citizens could thus make objective judgments without being affected by political propaganda or false information from Taiwan-related departments of China. Moreover, when facing the attraction of the so-called preferential policy, the public has been able to make rational judgements on the China's intentions of unification and to face these intentions with an instrumental attitude. However, the hatred sentiment fostered by the cross-strait extremists in the online community could make it difficult to create a mutual understanding and transmission of goodwill. The extremists' bottom-up public opinion respectively will force the governments from both sides of the Strait to take tough measures, which may fall into a vicious cycle. Therefore, it is up to the insightful citizens and government counterparts on both sides of the Taiwan Strait to stop the vicious cycle and reflect on the trend of public opinion. We should also take the approach of demassification when treating the CCP authorities and the public opinions of people from China.

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Chapter 4

Risks and Controversies Surrounding China's Belt and Road (BRI)

Tsun-Yen Wang [*]

China is willing to work with all parties to build a closer "Belt and Road Initiative" partnership, adhere to the path of solidarity and cooperation, interconnection and common development, and jointly promote the construction of a human community of shared future.

(Xi Jinping, Asia and Pacific High-level Conference on Belt and Road Initiative)[1]

The epidemic has profoundly changed the world, but the demands for the Belt and Road Initiative by all parties remain unchanged, and China's determination to promote international cooperation under the Belt and Road Initiative remains unchanged.

(Wang Yi speaking at a press conference of the National People's Congress (NPC))[2]

[*] Assistant Research Fellow, Division of National Security Research, Institute for National Defense and Security Research.

[1] "Xi Jinping Delivers a Written Speech at the Asia and Pacific High-level Conference on Belt and Road Initiative," *Xinhua Net*, June 23, 2021, http://www.xinhuanet.com/politics/leaders/2021-06/23/c_1127592047.htm.

[2] "State Councilor and Foreign Minister Wang Yi Answers Questions from Chinese and Foreign Journalists on China's Foreign Policy and Foreign Relations," *Ministry of Foreign Affairs of the People's Republic of China*, March 7, 2021, https://www.fmprc.gov.cn/web/wjbzhd/t1859110.shtml.

I. Preface

It has been more than eight years since Xi Jinping announced the "Silk Road Economic Belt" in September 2013 in the Central Asian country of Kazakhstan and the 21st-century Maritime Silk Road in his speech in the Southeast Asian country of Indonesia in October 2013, the so-called "Belt and Road Initiative (hereinafter called BRI)" of large-scale political and economic planning projects. In October 2017, the CPC even included the Belt and Road Initiative in the Constitution of the Chinese Communist Party and the Constitution of the People's Republic of China, elevating it to a higher level and turning the vision advocated by Xi Jinping into a goal that will be difficult for China to revoke in the future.

However, since the global outbreak of COVID-19 in 2020, it is inevitable that the promotion of the Belt and Road Initiative has also been affected, with restrictions on the transportation of engineering staff, disruption of the supply of raw materials from the China, and the imperative concentration of resources on epidemic prevention within the BRI recipient countries. Wang Xiaolong, Director of the Department of International Economic Affairs at China's Ministry of Foreign Affairs of the People's Republic of China, admitted last June that about 20 percent of Belt and Road Initiative projects have been severely affected by the epidemic, while 30 to 40 percent have been affected to some extent.[3]

However, the Chinese government has continued to promote the project. In June 2021, at the "Asia and Pacific High-level Conference on Belt and Road Initiative", Xi Jinping announced that over the past eight years China had signed BRI cooperation agreements with 140 countries around the world, and insisted that the BRI would provide more "market opportunities, investment opportunities, and growth opportunities" for countries along the route.[4] According to Chu Shijia, Director of the Comprehensive Department, Ministry of Commerce, at the end

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[3] Bao Rong, "The COVID-19 outbreak Hits Belt and Road Initiative (BRI) Hard, but Xi Jinping will Still Insist on Implementing it," *Voice of America*, December 25, 2020, https://www.voachinese.com/a/one-belt-one-road-20201224/5712402.html.

[4] "Xi Jinping Delivers a Written Speech at the Asia and Pacific High-level Conference on Belt and Road Initiative," *Xinhua Net*, June 23, 2021, http://www.xinhuanet.com/politics/leaders/2021-06/23/c_1127592047.htm.

of January 2021, the CPC has signed 205 BRI cooperation documents had been sighed with 171 countries and international organizations.[5]

However, in addition to the economic and development benefits claimed by the CPC government, the process of promoting the BRI has continued to create debt traps, loss of national sovereignty, environmental damage, and social disorder in the countries concerned, and has been widely criticized by the international community as irresponsible, suspecting China's real intention behind the BRI is no win-win situation for China and BRI recipient countries as claimed.

Since the United States and other major European countries such as the United Kingdom, Germany and France have shifted their foreign policy focus to the Indo-Pacific region and formulated related strategies, and even launched policies with implications of countering the BRI, this article aims to provide a brief overview and analysis of China's promotion of BRI in the Indo-Pacific in the past year.

II. The Belt and Road Initiative (BRI) Promotion under the Epidemic

According to financial information provider "Refinitiv", as of last year, there were more than 2,600 BRI projects worldwide with a total value of about US$3.7 trillion. In 2020, Chinese enterprises signed US$255.54 billion in new contracts for international contractions association, of which 61 countries along the Belt and Road accounted for US$141.46 billion, accounting for 55.4%.[6] In terms of trading, the State Council of China announced that China's total imports and exports to countries along the Belt and Road will reach RMB 9.37 trillion in 2020, accounting for a 1% increase.[7]

According to the Ministry of Commerce of the CPC, from January to July 2021,

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[5] "China Has Signed 205 BRI Cooperation Documents," *Belt and Road Portal*, January 30, 2021, https://www.yidaiyilu.gov.cn/xwzx/gnxw/163241.htm.

[6] "China to Sign NT$7 Trillion Contracts in 2020," *Central News Agency*, September 9, 2021, https://www.cna.com.tw/news/acn/202109090393.aspx.

[7] "China's Exports and Imports to Countries Along the BRI in 2020: RMB 9.37 Trillion," *Ministry of Commerce of the People's Republic of China*, February 18, 2021, https://tinyurl.com/kukvpanw.

non-financial outbound direct investment by Chinese enterprises in 56 countries along the BRI was US$11.29 billion, an increase of 9.9% year-on-year, mainly in Vietnam, Laos, Thailand, Singapore, Indonesia, Malaysia, Bangladesh, Saudi Arabia and Kazakhstan. The contract value of off-shore outsourcing to countries along the BRI was US$109.6 billion, and the execution value was US$72.2 billion, representing a year-on-year increase of 46.1% and 29.7% respectively.[8]

Focusing on the Indo-Pacific region, a China-funded gigantic national stadium in Cambodia as a major BRI project in Southeast Asia, which seats 60,000 spectators and costs US$150 million, was completed on September 12, 2021, and will be used for the 2023 Southeast Asian Games hosted by Cambodia.[9] The 146-meter long Pasig River Bridge in the Philippines was completed in late July 2021 under China's assistance, with President Rodrigo Duterte joining the opening ceremony.[10] In Laos, on August 19, 2021, the downstream hydropower station in Houay Lamphan River, Laos, built by the Communist Party of China Gezhouba Froup Corporation, was handed over[11] In Thailand, the first phase of the China-Thailand railway project was signed in March 2021 and is scheduled to be completed and opened to traffic between late 2026 and early 2027. In Myanmar, the CPC is assisting Myanmar in the construction of the National Center of Disease Control (CDC) and Medical Training Center, including the construction of buildings and laboratory equipment, as well as the provision of related medical and technical staff, and the construction has begun on January 10, 2021.[12]

In South Asia, the Padma Bridge over the Padma River in Bangladesh is also a BRI project, which opened on August 27, 2021. The 6.15-kilometer-long bridge is

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[8] "Ministry of Commerce: China's Investment in Countries Along the BRI Continues to Grow," *People's Daily Online*, September 1, 2021, http://finance.people.com.cn/BIG5/n1/2021/0901/c1004-32214279.html.

[9] "China Gives Cambodia $150 million Stadium as Part of The Belt and Road Initiative," *Radio Taiwan International*, September 13, 2021, https://www.rti.org.tw/news/view/id/2111198.

[10] Guan Xiangdong, "Chinese Government-assisted E-P Bridge Project over Philippines's Pasig River Completed and Opened to Traffic," *China Internet Information Center*, July 30, 2021, http://news.china.com.cn/2021-07/30/content_77661334.htm.

[11] Zhou Jiale, "Handover of the downstream hydropower station in Houay Lamphan River, Laos," *mpower.in-en.com*, August 25, 2021, https://mpower.in-en.com/html/power-2395207.shtml.

[12] "Zhang Dongqiang and Che Hongliang, China's Assistance to the Construction of the National CDC in Myanmar," *Xinhua Net*, January 10, 2021, https://tinyurl.com/5tardt3a.

a dual-use road and rail bridge.[13] In the Pacific Ocean region, Papua New Guinea joined the BRI project in 2018. The Papua New Guinea government and China signed a plan last November to build a comprehensive multifunctional fishery industrial park on Daru Island in western Papua New Guinea at a cost of US$200 million.[14]

III. Risks and Controversies Arising from the Belt and Road Initiative (BRI)

Except for a few advanced countries (e.g., Italy), most of the countries along the BRI are developing countries that are in urgent need of infrastructure development for socio-economic development. Further, the developing countries are pursuing "developmentalism", where economic and people's livelihood development is a priority issue of governance and an important source of governmental legitimacy. Therefore, when their own financial resources are insufficient, but the country urgently needs to strengthen its infrastructure, and the CPC is willing to provide financial support such as investment or financing, they tend to accept or even welcome it. However, while infrastructure is being developed, there are also international concerns about the compounded problems of debt trap, environmental damage and loss of national sovereignty caused by the projects to the countries along the route.

1. Debt Trap and Sovereignty Loss

To date, many policy institutes have warned that the BRI has triggered or deepened the debt of countries along the route. In this regard, a 2018 study by the U.S. Center for Global Development pointed out that the BRI has led to debt crises in 23 countries. According to the World Bank's 2019 statistics, the ratio of foreign

[13] "Padma Bridge in Bangladesh Built by Chinese Enterprises was Opened," *Chinanews.com*, August 27, 2021, https://finance.sina.com.cn/tech/2021-08-27/doc-ikqciyzm4014350.shtml.

[14] Jamie Seidel, "China's Bold New Fishing Plan on Australia's Doorstep Increases Tensions," *News.com.au*, December 13, 2020, https://reurl.cc/vg0Aal.

debt to gross national income (GNI) of a country is as high as 94.1% in Laos and 60% in Cambodia, both of which are over 50%; Indonesia and Thailand have 37% and 34.4% respectively, and the Philippines has the lowest ratio of 20%.[15]

Table 4-1 Ratio of External Debt to Gross National Income (GNI) in Southeast Asia

Country	Cambodia	Indonesia	Laos	Myanmar	Philippines	Thailand	Vietnam
Percentage	60%	37%	94.1%	15.2%	20.2%	34.4%	47.6%
Year	2019	2019	2019	2019	2019	2019	2019

Source: Statistics compiled by the author from the World Bank.

According to a study published in September 2021 by the AidData Research Office of the Reves Center for International Studies, College of William & Mary, half of the loans for projects between the CPC and 165 countries over the past 20 years have become implicit liabilities for the borrowing countries, trapping them in the CPC's debt trap.[16] Mohamed Nasheed, the speaker of parliament for the Indian Ocean island nation of Maldives, even confessed on his Twitter that the debt owed by Maldives to the CPC could not be repaid "Even if we sell our grandmother's jewelry, we won't be able to afford these repayments".[17]

It is worth noting that some countries along the BRI have so far been forced to transfer their strategically important domestic assets to the CPC in the form of leases, which is tantamount to exchanging national sovereignty for debt, due to their inability to repay their debts to the CPC. The most frequently discussed case in recent years is that of the 99-year-long right of management of the Hambantota Port in Sri Lanka by a CPC enterprise. Even Malaysian Prime Minister Mahathir Mohamad, during a visit to the Philippines in March 2019, reminded Philippine President Rodrigo Duterte to be careful not to fall into the CPC's debt trap and be

[15] External debt stocks (% of GNI), World Bank, https://tinyurl.com/4a4zn976.

[16] Ammar Malik, et al. *Banking on the Belt and Road: Insights from a new global dataset of 13,427 Chinese development projects*, AidData, September 29, 2021, https://reurl.cc/957a3a.

[17] "The Pro-Beijing Former President Borrowed a Huge Amount of Loans; Speaker of Parliament for Maldive: 'Even if We Sell Our Grandmother's Jewelry, We Won't be able to Afford These Repayments'," *Liberty Times*, November 19, 2021, https://news.ltn.com.tw/news/world/breakingnews/3355971.

forced to surrender the right of management of infrastructure to the CPC.[18]

2. Destruction of the Ecosystem and Environment

In addition to the debt and loss of national sovereignty problems at the national level, the BRI also brings ecological and environmental damage at the social level. As related projects are launched worldwide, related international exchanges of people and goods are also becoming increasing frequent. This process is accompanied by the invasion and spread of exotic species in countries along the route, ultimately affecting global biodiversity. According to an article in the 2019 international science journal "Current Biology", there are 14 hotspots of invasive exotic species across the globe and on all continents, many of which are along the "BRI" route.[19] A World Wildlife Fund survey found that the BRI overlaps with 265 habitats of endangered species and 1,739 important bird areas.[20] The aforementioned AidData survey also pointed out that 35% of the "BRI" projects have environmental damage and public protest problems.

In Indonesia, the Jakarta-Bandung HSR, a landmark "BRI" project linking Jakarta and Bandung, has cut off the flow of water to many villages in West Java, forcing residents to buy water for lack of natural water.[21] Laos and China Datang Corporation are building the US$2 billion Sanakham Dam on the upper Mekong River, which is expected to be in operation by 2028 and is the sixth dam to be built by Laos on the upper Mekong River. Not only does the dam create a huge debt for Laos to China, but the Bangkok authorities are concerned about the environmental impact of the dam on the border, even threatening not to buy electricity generated by Laos in the future, as it is geographically located about 15 kilometers from

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[18] Raul Dancel, "Beware of China 'Debt Trap', Malaysia's Mahathir Tells the Philippines," *Straits Times*, March 7, 2019, https://reurl.cc/1o3qKX.

[19] Xuan Liu,Tim M. Blackburn, Tianjian Song, Xianping Li, Cong Huang, Yiming Li "Risks of Biological Invasion on the Belt and Road," *Current Biology*, January 24, 2019, https://reurl.cc/bnDAWy.

[20] "WWF and Greening the Belt and Road Initiative," *World Wildlife Fund*, November 2, 2017, https://tinyurl.com/d6hre4wc.

[21] "BRI Indonesia Indicator / Jakarta-Bandung High-Speed Railway Tunnel Cuts off Mountain Springs, Forcing West Java People to Buy Water for 2 Years," *Central News Agency*, April 15, 2021, https://www.cna.com.tw/news/firstnews/202104150042.aspx.

Vientiane, the capital of Laos, but only 2 kilometers from the border with Laos in northeastern Thailand.[22] As a country located along the downstream of the Mekong River, Vietnam is concerned that the continued construction of dams in Laos will exacerbate the drought and soil salinization in Vietnam's lower Mekong River region, which will affect its agricultural operations.

In addition, many indigenous people and minority groups living in the area were forced to migrate for the construction of the dam, or the project impacted the local environment and affected the canals that had been used for fishing and farming, but in the end, they were not adequately compensated by the builders and the government.[23] It can be said that the "BRI" not only affects the environment and ecology, destroying the living space of animals, but also forcing humans to migrate.

3. Impact on Social Culture and Order

A 2021 study by the Center for Advanced Defense Studies also noted that the China's construction of special economic zones in five Southeast Asian countries — Cambodia, Laos, Myanmar, Thailand, and Vietnam — under the BRI umbrella was originally intended to attract foreign investment and increase domestic employment, but turned out to be a breeding ground for corruption and crime. For example, the Dongmei Group, chaired by Wan Kuok-koi, a Chinese gangster from Macau who was blacklisted by the United States Department of the Treasury (December 2020) for his multiple criminal activities, is planning to invest in the development of the Saixigang industrial zone on the Thai-Myanmar border, which will be turned into a resort area.

The report also noted that the United States Department of the Treasury

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[22] Hydropower development is central to the Laos government's plan to export about 20,000 megawatts of electricity to neighboring countries by 2030. "Laos and China Spent $56 Billion to Build Dams on the Mekong River, Raising Thailand's Hackles," *Liberty Times*, January 30, 2021, https://ec.ltn.com.tw/article/breakingnews/3427489.

[23] "Human Rights Watch: Chinese-financed Hydroelectric Dam in Northeastern Cambodia Undermined the Lives and Livelihoods of Thousands of Indigenous and Ethnic Minority People," *Voice of America*, August 1, 2021, https://tinyurl.com/f4t6pz5r.

has accused Zhao Wei, the Chinese chairman of the Golden Triangle Special Economic Zone in Laos, of using the zone for illegal activities such as trafficking in prostitutes, wildlife and drugs, and that the United Nations Office on Drugs and Crime (UNODC) has accused Zhao of treating the zone as his "private turf."[24] In fact, Sihanoukville, Cambodia, has become a casino town under the development by Chinese developers, with over 80 casinos in the city, most of which are run by Chinese, and thus attracting Chinese tourists.

4. Promoting Ideology

In addition to the negative impact of the "BRI" on the societies and cultures of the countries along the route, the Communist government has also been questioned for its attempts to promote ideology in Southeast Asian countries through the "BRI". According to an Epoch Times coverage on November 15 last year, the CPC has established the "Lancang-Mekong Alliance for Vocational Education" at Yunnan Nationalities University as part of the "Lancang-Mekong River" cooperation, and has set up an educational alliance with the Mekong countries, including Vietnam, Laos, Cambodia, Thailand and Myanmar, for universities and colleges.

However, the Chinese side included "encouraging vocational and higher education to participate in the construction of the Belt and Road Initiative" as one of the goals of the alliance, and emphasized the need to "provide students with a better understanding of the Belt and Road Initiative". In addition, the report also revealed that the CPC trained translators of these five countries to instill awareness of the policies and situations related to the BRI.[25]

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[24] "China's Criminal Syndicate make Illegal Profits with The Belt and Road Initiative," *Central News Agency*, June 24, 2021, https:// tinyurl.com/2p4adec3; Husain Haider, "Police Launch Crackdown on China Project With Casino Raid Resulting in 15 Arrested and Two Extortion Victims Freed," *Khmer Times*, September 11, 2021, https://tinyurl.com/5w6t869a.

[25] Gu Qinger, "[Insider] CPC's Promotion of Ideology to Southeast Asian Countries," *The Epoch Times*, November 15, 2020, https://www.epochtimes.com/gb/20/11/12/n12542962.htm.

5. Concealed Military Attempts

Despite the Chinese government's claim that the Belt and Road Initiative (BRI) aims to help countries along the route develop their infrastructure, the international community is questioning the true strategic objectives of the BRI plan and suspecting that military intentions lie behind it. In the "Military and Security Developments Involving the People's Republic of China 2019", the United States Department of Defense cites the African nation of Djibouti as an example of how the CPC is using the global push for the Belt and Road Initiative (BRI) to expand its military influence internationally by setting up overseas military bases under the pretext of protecting related projects.[26] In this regard, the first "China Military Power: Modernizing A Force to Fight and Win", published by the Defense Intelligence Agency of United States in April 2019, also warns that while the Belt and Road Initiative (BRI) is marketed as a means to promote trade and development, the People's Liberation Army (PLA) is benefiting from the use of foreign transportation systems as transportation is at the heart of the BRI.[27]

According to the report by the Center for Advanced Defense Studies, Cambodia allowed the CPC Navy to station at the Naval Base in Sihanoukville while demolishing the buildings funded by the United States.[28] In addition, the aforementioned cooperation between Papua New Guinea and the CPC to build a fishery park on Daru Island, which is geographically close to Australia, has led the Australian government to suspect that behind the cooperation are China's ambitions to covet Australia's sphere of influence – the Pacific Ocean island.

6. Concerns about "Hidden Military in Civilians"

So far, the BRI has met with strong opposition in some countries, including those that have undertaken anti-terrorism measures. Take Pakistan as an example. Pakistan is a beneficiary country of the China-Pakistan Economic Corridor project,

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[26] *Military and Security Developments Involving the People's Republic of China 2019*, U.S. Department of Defense, May 2, 2019, https://reurl.cc/Q6Y2Rp.

[27] *China Military Power: Modernizing A Force to Fight and Win*, Defense Intelligence Agency, U.S. Department of Defense, April, 2019, https://tinyurl.com/4x7c2cwa, p. 104.

[28] "China's Criminal Head Seeks Profit by Unlawful Use of Belt and Road Initiative," *Central News Agency*, June 24, 2021, https://tinyurl.com/2p4adec3.

and the Gwadar Port in the Province of Balochistan is an important part of the CPC's "String of Pearls" strategy in South Asia, for which it has acquired a 43-year lease. However, in recent years, there have been frequent attacks on Chinese by local separatism groups, including a suicide bomb attack on a vehicle carrying Chinese passengers in the Dalbandin area of the Province of Balochistan in August 2018, in which 3 Chinese were injured; and an attack by the extremist group "Balochistan Liberation Army" on a Chinese-owned hotel in the Gwadar Port in May 2019. On August 20, 2021, a vehicle carrying Chinese construction workers was attacked by suicide bombers in the City of Gwadar, resulting in 2 deaths and 3 injuries. Earlier, on April 21, an explosion at a hotel in the Province of Balochistan killed 4 and injured 10 people in what is believed to be an attack on a CPC group. On July 14, a bus exploded on its way to the Dasu Dam in the Province of Khyber Pakhtunkhwa, killing 13 people, including 9 Chinese engineers, and injuring 28 other Chinese, as part of the Belt and Road Initiative (BRI) project.[29]

In the face of ongoing attacks related to the Belt and Road Initiative (BRI), and the lack of effective protection by security personnel hired by local countries or companies, the CPC has taken the approach of placing civilian security at this stage. In this regard, PLA National Defence University professor Major General Zhu Chenghu has argued that the CPC should support the establishment of civilian security companies to protect the interests of the BRI,[30] and the "Asia Times" has revealed that many BRI projects rely on civilian security companies, many of which are staffed by PLA veterans.[31] In addition, the Center for Advanced Defense

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[29] "Suicide Bomb Attack Against Chinese Workers in Pakistan Injures 6," *Radio France Internationale*, August 11, 2018, https://tinyurl.com/yxsef8rr; "Shooting at Pakistani Hotel 'Targeting Chinese'," *BBC Chinese*, May 11, 2019, https://tinyurl.com/2hj7mm8y; Li Bao, "Bomb Attack at a Pakistan Hotel Suspected of Targeting Chinese Delegation," *Voice of America*, April 22, 2021, https://tinyurl.com/9mj7kffn; "Chinese Engineers Killed in Pakistan Bus Blast," *BBC*, July 14, 2021, https://tinyurl.com/9xazznvf; "9 Chinese Engineers Killed, Bus Bombing in Pakistan Classified as Terrorist Attack," *World Journal*, July 17, 2021, https://tinyurl.com/7kbumbdc; "Bomb Attack on Pakistani Vehicle Full of Chinese, Foreign Media: This is Related to the Protest Against the BRI," *Liberty Times*, August 21, 2021, https://tinyurl.com/3ynfntup.

[30] "Civil Power' Becomes a New Backbone of Overseas Interest Protection – 56th Meeting of the Charhar Round Table and Seminar on 'BRI' and Overseas Interest Protection," *The Charhar Institute*, September 12, 2017, https://tinyurl.com/uvmdfb2z.

[31] Gordon Watts, "China's 'Private Army' prowls the 'New Silk Road'," *Asia Times*, August 20, 2018, https://tinyurl.com/44a6mr23.

Studies report also pointed out that the security company owned by Wan Kuok-koi, a Macau gangster, is chaired by retired PLA veterans and covers up the arms business of countries along the BRI project route.[32]

7. Potential Functions of United Front and Infiltration against Taiwan

For Taiwan, it is important to note the united front function of the Belt and Road Initiative. The CPC government has so far expressed its support for Taiwanese businessmen to join the Belt and Road Initiative, saying that it wants to further expand the scope for Taiwan-funded enterprises to participate in the Belt and Road Initiative and the country's regional development strategy, saying that it provides more opportunities for Taiwanese businessmen to develop in China.[33] As the Beijing Government continues to call on Taiwanese businessmen to join the BRI project, the aforementioned PLA veterans who joined the security company are more likely to have access to the Taiwanese businessmen involved in the project than the PLA soldiers in uniform. Accordingly, the BRI may be a good opportunity for the CPC to draw in Taiwanese businessmen for united front in the name of "protection" if they are in a volatile country.

In addition, on July 22, 2021, the Project 2049 Institute, a U.S. policy institute, released a report authored by its senior director, Ian Easton, warning that China Ocean Shipping (Group) Company, the main contractor of the BRI project, may have extended its influence into Taiwan's Port of Kaohsiung and taken control of the 6th Container Terminal, as well as Wharves No. 65-66,Port of Kaohsiung.[34] In other words, in addition to the opportunity for the BRI to become a united front for

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[32] "China's Criminal Head Seeks Profit by Unlawful Use of Belt and Road Initiative," *Central News Agency*, June 24, 2021, https://www.cna.com.tw/news/aopl/202106240378.aspx.

[33] "Seizing the 14th Five-Year Plan, Taiwanese Businessmen Have Great Opportunities," *Chinese Central Government's Official Web Portal*, April 5, 2021, http://www.gov.cn/xinwen/2021-04/05/content_5597797.htm.

[34] Ian Easton, "Hostile Harbors: Taiwan's Ports and PLA Invasion Plans," *Project 2019 Institute*, July 22, 2021, https://tinyurl.com/2yjd5tt2. According to the report, China Ocean Shipping (Group) Company and other Chinese companies established the Hong Kong Zheng Long Investment Company, which owns 30% of the shares of "Kao Ming Container Terminal" established by Yang Ming Marine Transport Corp., and "Kao Ming Container Terminal" has obtained the concession of the 6th Container Terminal in Kaohsiung. "'LTN Economics', RBI Invades Kaohsiung Port, U.S. Policy Institute Warns," *Liberty Times*, August 30, 2021, https://ec.ltn.com.tw/article/breakingnews/3652765.

Taiwanese businessmen, Taiwan should also pay attention to the silent penetration of the BRI to the people of Taiwan when facing the issue.

IV. The International Community's Rejection of Resistance to the BRI

Recently, the attitude of the international community towards the BRI has been shifting slowly. The Italian government, which was the first in the G7 to sign the Belt and Road Initiative MoU with the CPC, not only rejected two investments from the CPC in 2021, but also supported the North Atlantic Treaty Organization Communique, criticizing "China's clear ambitions and arbitrary behavior is making a systemic challenge to the rules-based international order and NATO security-related areas".[35]

In the Indo-Pacific region, the attitude of some Southeast Asian countries has likewise turned lukewarm. In this regard, Husain Haqqani, a researcher at the Hudson Institute, a U.S. policy institute, points out that the Philippines has accepted the Belt and Road Initiative (BRI) project but has actually gained nothing.[36] Since China's BRI has already created many problems in the countries along the route and even brought challenges to their sustainable development, it is no wonder that the international community has become wary of the BRI actively promoted by the CPC, with rumors that some countries along the route have turned suspicious or rejected the BRI and some have even launched policies to counteract it.

1. Rejection

According to AidData research, Malaysia has cancelled US$11.58 billion in

[35] "Once Signed BRI Agreement, Italy Now Cools Relation with China," *Central News Agency*, October 1, 2021, https://www.cna.com.tw/news/firstnews/202110010359.aspx.

[36] Ji Xi, "Betting on Beijing was 'a Mistake', Philippines Wants to Join U.S.-Philippines Alliance," *Voice of America*, July 24, 2021, https://www.voachinese.com/a/US-China-Philippines-strategy-20210724/5977721.html.

various projects between 2013 and 2021.[37] In the southern hemisphere, Australia was originally one of the key countries along the BRI, but on December 3, 2020 the Australian Parliament legislated to give the federal government the power to veto any agreements signed by Australian states, local councils and academic institutions with foreign governments.[38] Accordingly, the Australian Minister of Foreign Affairs, Marise Payne, announced on April 21, 2021, that the Federal Government would rescind the State Government of Victoria's decision to join the CPC's BRI Project.[39]

In the Pacific Ocean region, the island nation of Samoa has joined the BRI of the CPC, making the CPC the largest creditor nation in Samoa and accounting for about 40% of the country's foreign debt (about US$160 million). But Fiame Mataafa, the new prime minister elected in April 2021, decided that his country was already in debt and that port development under the Belt and Road Initiative (BRI) was not a priority for Samoa, and announced in July that he was canceling the US$100 million development project at Vaiusu Bay, which was funded by the CPC.[40]

In South Asia, Nikkei Asia revealed on June 28, 2021 that the Office of Prime Minister of Bangladesh has proposed to reduce the budget of two "BRI" projects in the country. The report points out that one of the main reasons behind the proposal is that the CPC floated the cost by three times, while China previously warned Bangladesh not to join the Quadrilateral Security Dialogue (QUAD), which has

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[37] David Stanway, "China's Belt and Road Plans Losing Momentum as Opposition, Debt Mount-study," *Reuters*, September 29, 2021, https://tinyurl.com/u7zhsn6s.

[38] "Australia's Strike Back: Parliamentary Quasi Central Rejects Agreement with Beijing, China's Ambition to Bring BRI to Australia Failed," *CredereMedia*, December 3, 2020, https://www.cmmedia.com.tw/home/articles/24678.

[39] "Cancellation of the Belt and Road Initiative (BRI) Agreement between Victoria and China; Australia: Inconsistent with Foreign Policy," *Central News Agency*, April 21, 2021, https://tinyurl.com/za237wn4; "Australia Cancels the 'BRI'; German Media: a Big Embarrassment for Xi Jinping," *Liberty Times*, April 25, 2021, https://tinyurl.com/yy3cvdn3.

[40] "Belt and Road Initiative Rejected! Samoa Cancels CPC's Port Development Plan," *Liberty Times*, July 30, 2021, https://tinyurl.com/8juc9493.

long strained the relationship between China and Bangladesh.[41]

2. Counterbalance

One of the main reasons why the CPC's Belt and Road Initiative (BRI) project has continued to be promoted despite the risks associated with it is that no countermeasures have been proposed by other major countries and no alternatives are available to the countries along the route. The United States, Europe, and even Japan have finally come up with similar plans to counteract them.

(1) *United States, Europe*

Following the establishment of the Blue Dot Network by the Trump administration with Japan and Australia in 2019, on June 12, 2021, the Biden administration announced that it would launch a global infrastructure program "Build Back Better World" with the G7, which envisages large-scale investment in infrastructure in developing countries and sets out principles such as emphasizing universal values and sound governance in recipient countries, focusing on environmental protection, and attracting private capital through development financing.[42] In this regard, Director for China of the National Security Council, United States, Rush Doshi advocates a multilateral and institutionalized approach to thwarting the CPC's political distortions in the Belt and Road Initiative (BRI) planning.[43]

In addition, on July 12, 2021, the European Union adopted the "A Globally Connected Europe" international infrastructure plan, which excludes the CPC from

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[41] "BRI is Falling Apart! Bangladesh Cuts $10 Billion Railroad Construction Budget, Chinese Enterprises Gone Mad and Pull out of Investment," *Liberty Times*, June 28, 2021, https://tinyurl.com/63eembrs; Zhang Yahan, "Opposing China's BRI Project, Samoa's First Female Prime Minister to Take Office," *Radio Taiwan International*, July 24, 2021, https://tinyurl.com/7tjpje6t.

[42] "U.S. Announces Blue Dot Network Plan to Counter China's Belt and Road Initiative (BRI)," *Central News Agency*, November 6, 2020, https://reurl.cc/l5gAeE; Fang Bing, "Counteracting the Belt and Road Initiative? Expert Reminds Biden to 'Build Back Better World,' Don't Race China in Spending Money," *Voice of America*, June 18, 2021, https://reurl.cc/35793R; "FACT SHEET: President Biden and G7 Leaders Launch Build Back Better World (B3W) Partnership," *The White House*, June 12, 2021, https://reurl.cc/bnDAEd.

[43] Fang Bing, "Director for China of the White House's New Book Shows a Tougher U.S. Strategy Toward China," *Voice of America*, July 15, 2021, https://tinyurl.com/pyd4p7zs.

the list of partners and advocates a joint effort with the United States, and said it would be further discussed by spring 2022.[44] Furthermore, Ursula von der Leyen, President of the European Commission, announced on September 15, 2021, that he will promote a "Global Gateway" program to invest in quality infrastructure, link global goods and services, and ban the import of forced labor products into Europe, with an emphasis on "creating links and not dependencies".[45] Although Ursula von der Leyen claimed that the program's primary implementation area is Africa, it is believed that the program will also focus on the Indo-Pacific region as major European countries are paying close attention to it. In addition, although not discussed in this article, financial institutions in Germany, France and Italy are rumored to be working in 2021 to help Montenegro repay its debt to the CPC under the Belt and Road Initiative (BRI), suggesting that some major European countries are beginning to offer assistance to countries along the route so that they do not have to give in to the CPC due to the difficulties brought about by the BRI.[46]

(2) *Japan*

In the face of the CPC's push for the politically and economically risky Belt and Road Initiative (BRI), Japan in Northeast Asia has been relatively forward-looking, launching the "Partnership for Quality Infrastructure" program in 2015 as a counterbalance and promoting it to this day.[47] The "Free and Open Indo-Pacific" concept also emphasizes infrastructure support, and one of the "three pillars" of the concept is the "pursuit of economic prosperity," and one of the "three links" it emphasizes is the "physical link," which emphasizes quality infrastructure.

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[44] "A Globally Connected Europe: Council approves conclusions," *Council of the EU Press Release*, July 12, 2021, https://reurl.cc/Gb4Oe3; "EU's International Infrastructure Program to Join Hands with U.S. to Counter China's Belt and Road Initiative (BRI)," *Central News Agency*, August 4, 2021, https://tinyurl.com/4z2m3vvz; "Anti-BRI! European Union Launches Global Interconnection Plan with 8 Pages of Draft Strategy 'Full of China'," *Liberty Times*, July 16, 2021, https://tinyurl.com/56zwty4x.

[45] Stuart Lau and Hanne Cokelaere, "EU Launches 'Global Gateway' to Counter China's Belt and Road," *Politico*, September 15, 2021, https://reurl.cc/pxrA6r.

[46] "Europe Helps Montenegro Cut China's Debt as Negotiations Enter Final Stage," *Voice of America*, June 19, 2021, https://reurl.cc/WXR7G5.

[47] "「質の高いインフラパートナーシップ」の公表," *Ministry of Foreign Affairs of Japan*, May 21, 2015, https://tinyurl.com/u6txdtyt.

Japan has adopted a "whole-of-government" model in which different government ministries are responsible for supporting projects in their respective fields. For example, the Ministry of Foreign Affairs of Japan is responsible for projects such as the "ASEAN-Japan Economic Resilience Action Plan" and the "Financing of Network Communications Environment Improvement Projects in the Asia-Pacific Region;" the Ministry of Land, Infrastructure, Transport and Tourism is responsible for the "ASEAN-Japan Transport Partnership" project; and the Ministry of Economy, Trade and Industry and the Ministry of Finance are jointly promoting the "ASEAN Regional Energy Infrastructure Financial Assistance" project.[48]

(3) *South Asia: India-Sri Lanka*

The expansion of the CPC's "BRI" in South Asia, including Pakistan, Bangladesh, Sri Lanka, and Maldives, is well known to the international community, and India, a regional powerhouse in South Asia, appears to be taking countermeasures against this development. The Adani Group has reportedly reached an agreement with Sri Lanka on September 30, 2021 to build another terminal adjacent to the Chinese-run Colombo International Container Terminals (CICT). Since the former is operated by the Chinese, the Indian project is seen as a counterbalance to China's expanding presence in Sri Lanka.[49]

V. Conclusion

The CPC claims that the infrastructure construction facilitated by the "BRI" will create links between different regions and countries, promote trade, and enhance the economic livelihoods of developing countries. In fact, for the CPC, the "BRI" is a perfect opportunity to shift production capacity overseas and enhance the

[48] "第 23 回日 ASEAN 首脳会議," *Ministry of Foreign Affairs of Japan*, November 12, 2020, https://tinyurl.com/npf6e3sa.

[49] "To Counteract China, Indian Companies Enter Into Terminal Contract with Sri Lanka," *Radio Taiwan International*, October 1, 2021, https://tinyurl.com/padkfv7w.

internationalization of Chinese companies at a time when there is a surplus of domestic production capacity.

But in recent years, the international community has been realizing that the enormous debts induced by the "Belt and Road Initiative" have become a convenient and powerful diplomatic tool—"debt diplomacy"—for the CPC. As Scott Greytak, Director of Advocacy for the U.S. office of Transparency International, commented, "The Belt and Road Initiative is one of the main ways in which the CPC is strategically using corruption to expand its power and economic and political influence in key regions of the world".[50] In this regard, the Joint Statement of the G20 Development Ministers Meeting in 2021 emphasizes the importance of transparency and accountability in the preparation of development funds. In addition, the international community is also concerned about the potential expansionist ambitions of the CPC behind the BRI, and the environmental and ecological havoc it will cause. Even if the BRI is an economic opportunity for Southeast Asia, the negative social and cultural impact on the countries along the route is more difficult to estimate.

Major countries such as the U.S. and Japan have proposed their own infrastructure-related policies in response to the various impacts of the "BRI" project. In the future, when the quality of the "BRI" project may be surpassed by the U.S. or European countries, it cannot be ruled out that the CPC will use political means to tighten the economic ties in order to continue to promote it. The competition between the CPC and the U.S. and European countries around infrastructure projects may turn fierce in the future, and it is worth keeping an eye on the relevant policies and reactions of the countries along the route.

For Taiwan, the exchange and trade between global regions not only brings about the problem of invasive species, but also increases the risk of disease transmission. As Beijing continues to promote the benefits for Taiwanese businessmen in the "BRI", Taiwanese businessmen may gradually participate in the future. Since the countries along the BRI overlap with some of the countries

[50] Yang Ming, "Lifting the Veil of Opacity to Reduce Misjudgment of Strategic Competition with China," *Voice of America*, July 2, 2021, https://reurl.cc/jg3o3L.

targeted by Taiwan's "New Southbound Policy", Taiwan may be exposed to the same ecological and health risks as those participating in the BRI, even though Taiwan is not one of the BRI countries. With the cross-strait political relationship in the doldrums, we should still be concerned about Taiwanese businessmen's participation in the "BRI".

PART TWO

Military

Chapter 5

The Evolution of the Patterns of the CPC's Maritime Patrol Aircrafts

Si-Fu Ou*

I. Preface

In the early years, the CPC's military was not strong enough and their aircraft seldom went to sea, and Taiwan even had the Air Defense Identification Zone (ADIZ) delineated to the Chinese interior. In 1999, President Lí Teng-hui proposed the "two-state" theory, in which Chinese aircrafts began to fly along the Taiwan Strait west of the median line and crossed the median line. With the expansion of CPC military power, the PLA has been conducting more and more long-distance training flights, including crossing the median line, flying over the East China Sea, flying over the Sea of Japan, flying through the Miyako Strait and out of the Western Pacific Ocean, circling Taiwan's main island, flying out of the Bashi Channel, flying over the South China Sea, and intruding into Taiwan's southwest Air Defense Identification Zone (ADIZ). The PLA emphasized that the soldiers are trained where the war is fought.

The CPC believes that the Air Force of the CPLA is flying around the motherland, even claiming that the mountain behind the cloud of the H-6K is

* Research Fellow, Division of Chinese Politics, Military and Warfighting Concepts, Institute for National Defense and Security Research.

Yushan, which is clearly a political intimidation or military coercion tactic by Beijing. There are different views within Taiwan as to whether the Ministry of National Defense will announce the incursions by Chinese aircrafts. Some people think that there is no need to let CPC lead U.S. by the nose and announce the Chinese aircrafts' activities each time, which is exactly what Beijing's political intimidation or military coercion is doing to the Taiwanese people, causing panic and anxiety in Taiwan society. Others believe that Taiwan is already a mature democratic society and that the people have the right to know and the wisdom to judge for themselves. Not releasing the information is tantamount to giving Beijing the power of speech, leaving it to explain the nature of the Chinese aircrafts' operations at will. In the past, the Ministry of National Defense selectively announced the movements of Chinese aircrafts in Taiwan, and the types and numbers of aircrafts were vaguely omitted, so that outsiders could not get a full picture. After September 17, 2020, the Ministry of National Defense began to release daily updates on the incursions by Chinese aircrafts in Taiwan, so that the outside world could have more concrete data for statistical and research purposes.

The Ministry of National Defense has begun releasing data on incursions by Chinese aircrafts in Taiwan, but the Taiwan's southwestern ADIZ fan page also publishes data, with discrepancies between the two, leading outsiders to question whether there are reservations. The Ministry of National Defense of Taiwan itself compiles statistics on incursions by Chinese aircrafts in Taiwan's Air Defense Identification Zone (ADIZ), and some of them include the activities of Chinese aircrafts west of the median line, which is different from the statistics only collected east of the median line. In this article, we use the official data as the basis for the study of the evolution of patterns of the CPC's maritime patrol aircrafts, and do not cover the activities of the CPC's to the west of the median line, in an attempt to find out the types and trends of these activities and how to respond to them.

II. Air Defense Identification Zone (ADIZ) and the Strait Median Line

Air Defense Identification Zone (ADIZ) refers to a certain airspace unilaterally designated by a country for air defense needs, so that the military can quickly locate, monitor, and control aircraft entering that airspace. The legal basis for the establishment of the Air Defense Identification Zone (ADIZ) is uncertain and controversial. The international community does not have an international convention on the ADIZ, and whether or not to establish the ADIZ and how to designate it is a matter within the discretion of each country. A country locates, monitors, and controls aircraft after they enter its Air Defense Identification Zone (ADIZ). The country may take certain measures, such as flying a fighter aircraft to monitor the aircraft, but does not have the right to land or shoot down the aircraft until it enters the country's airspace, otherwise it would be a serious violation of International Law. The Air Defense Identification Zone (ADIZ) was first established by the United States in the late 1950s when the U.S., together with Canada, created a air defense identification zone consisting of five areas, believing that strategic bombers from the Soviet Union posed a threat to the North American continent. Taiwan, South Korea, and Japan have established Air Defense Identification Zones (ADIZ) one after another. On November 23, 2013, the CPC announced the establishment of an Air Defense Identification Zone (ADIZ) in the East China Sea, covering most of the East China Sea, requiring aircraft navigating in the zone to notify the CPC of their flight plans. The CPC claims that it will take defensive emergency measures against aircraft that do not cooperate with identification or refuse to obey instructions.[1]

Taiwan's ADIZ is like a rectangular shape with one corner missing in the southeast. The latitudes and longitudes of its five points from the upper right corner are 29°N 123°E, 23°N 123°E, 21°N 121.3°E, 21°N 117.3°E, and 29°N 117.3°E, respectively (Figure 5-1). The northern two points of Taiwan's ADIZ are 29°N,

[1] "Information: Air Defense Identification Zone (ADIZ)," *BBC Chinese*, November 27, 2013, https://www.bbc.com/zhongwen/trad/world/2013/11/131127_information_adiz.

123°E and 29°N, 117.3°E. The two points of the southern part of the East China Sea ADIZ are 26.44°N 120.58°E and 24.45°N 123°E, which are overlapping. After World War II, the U.S. Army defined the Air Defense Identification Zone (ADIZ) between Taiwan and Japan at the 123°E longitude. This line divides the airspace of Yonaguni Island into two halves, with the eastern part falling within the ADIZ of Japan and the western part falling within the ADIZ of Taiwan. On June 25, 2010, the Ministry of Defense of Japan announced that the ADIZ of Yonaguni Island would be extended 12 miles out from the baseline, and 2 more miles would be a buffer zone.[2] Taiwan does not accept this decision of Japan, but also tacitly acknowledges the fact, which makes the ADIZ of Taiwan and Japan overlap a little.

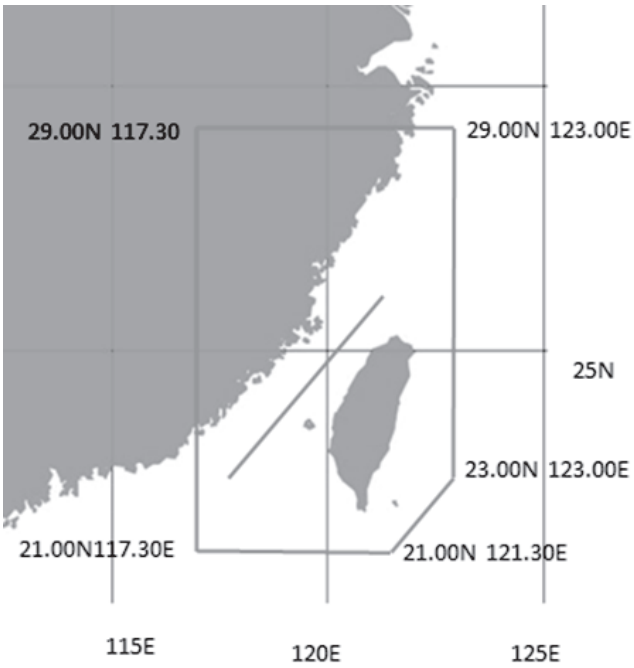

Figure 5-1 Longitude and Latitude of Taiwan ADIZ

Source: Modified by the author from publicly available information on the Internet.

[2] Hsiu-Chuan Shih, "Japan Extends ADIZ Into Taiwan Space," *Taipei Times*, June 26, 2010, http://www.taipeitimes.com/News/front/archives/2010/06/26/2003476438.

The formation of the median line in the Taiwan Strait dates back to the 1950s, when Taiwan and the United States signed the Mutual Defense Treaty between the U.S. and the ROC in Washington, D.C., on December 3, 1954. In 1955, the U.S. Thirteen Air Force officially participated in the defense of Taiwan and established an air defense line over the strait. The U.S. Army also named the defense line the Davis Line after Brigadier General Benjamin O. Davis Jr., the first Commander of the Air Force in Taiwan. The U.S. has drawn this air defense line to warn the CPC and to restrict Taiwan's military aircraft from taking the initiative. After several air battles between Taiwan and the CPC in the Taiwan Strait in 1958, the two sides seem to have reached a tacit agreement on the median line, and the conflict has since diminished. On May 26, 2004, then Minister of National Defense Lee Jye announced for the first time the geographical coordinates of the Strait's median line, which ranges from 26.30°N, 121.23°E (Point A), to 24.50°N, 119.59°E (Point B), and south to 23.17°N, 117.51°E (Point C), during a Q&A session with the Legislative Yuan.[3] Due to the existence of the median line of the Taiwan Strait, in essence, Taiwan's rectangular air defense identification zone is divided by the median line of the Taiwan Strait and is limited to the airspace east of the median line of the Taiwan Strait.

CPC Ministry of Foreign Affairs spokesman Wang Wenbin said on September 21, 2020 that "The Taiwan region is an inalienable part of China's territory. The so-called 'median line' is non-existent".[4] On the next day, Minister of Foreign Affairs of Taiwan, Wu Zhaoxie, condemned the CPC for destroying the status quo in the Taiwan Strait with its approach to the median line. On October 8, 2020, a U.S. Army MC-130J entered the Taiwan Strait in the morning and flew along the median line from north to south, leaving exactly one median line on the track

[3] "CPC Aircrafts Frequently Crossing the Median Line, a Virtual Line Proposed by the U.S. Army in the 1950s," *Apple Daily*, September 22, 2020, https://tw.appledaily.com/politics/20200922/2SQRFZPZUNHSBH6GJVRDRFPNUM.

[4] "There is no so-called 'median line' in the Taiwan Strait," *Wenweipo*, September 22, 2020, https://www.wenweipo.com/a/202009/22/AP5f691498e4b0f54bfefa7396.html.

chart.[5] On June 2, 2021, a U.S. Navy P-8A took off from Kadena airfield and flew south along the median line of the Taiwan Strait, quite literally declaring the existence of the median line of the Taiwan Strait once again.[6] Incursions by Chinese aircrafts into Taiwan's southwest ADIZ all come from the airspace south of the strait's median line.

III. The Detection of Chinese Aircrafts Training Model by the U.S. and Japan

In the early years, the CPC's military was not strong enough and their aircraft seldom went to sea. In 1999, President Lí Teng-hui proposed the "two-state" theory, in which Chinese aircrafts began to fly along the Taiwan Strait west of the median line and crossed the median line. However, the CPC forces were more restrained under former President Chen Shui-bian and President Ma Ying-jeou until President Tsai Ing-wen took office in 2016, when they returned to their old ways. On March 31, 2019, two CPC J-11 aircrafts flew over the median line of the Taiwan Strait for more than 10 minutes.[7] On February 10, 2020 and August 10, 2020, there are records of provocations by Chinese aircrafts crossing the median line of the Taiwan Strait. On September 18, 2020, up to 12 Chinese aircrafts crossed the median line of the Taiwan Strait.[8]

According to information from Taiwan's Ministry of National Defense, the U.S.-China Economic and Security Review Commission divides PLA air activity around the Taiwan Strait into training routes across the median line, west of the

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5 "The Department of National Defense Confirms U.S. Special Forces Transport Aircraft Flew Through the Median Line of the Taiwan Strait," *Liberty Times*, October 8, 2020, https://news.ltn.com.tw/news/politics/breakingnews/3315428.

6 "Tension in Taiwan Strait ｜ 7 U.S. Military Aircrafts Showed up at the Same Time! P-8A Aircrafts Flew South Along the Median Line of the Taiwan Strait, CPC's Provocative Broadcast Backfired," *Apple Daily*, June 2, 2021, https://tw.appledaily.com/politics/20210602/M76JOAOMRBDA5BQNBWZI4LLCDY.

7 "Exclusive! 2 Chinese J-11s Crossed the Median Line of the Taiwan Strait Today and were Intercepted by Our Forces," *Liberty Times*, March 31, 2019, https://news.ltn.com.tw/news/politics/breakingnews/2744960.

8 "United States Under Secretary of State Visits! 18 Incursions by Chinese Aircrafts are Tracked and Controlled by Our Air Force Anti-aircraft Missiles," *Central News Agency*, September 19, 2020, https://www.cna.com.tw/news/firstnews/202009185008.aspx.

median line, the Miyako Strait, around Taiwan, and the Bashi Channel. From 2015 to October 14, 2020, the total number of aircraft activities around the Taiwan Strait were 9, 6, 24, 14, 7 and 38 times respectively.[9] During this period, the Ministry of National Defense of Taiwan did not release complete information, so it is clear that the U.S.-China Economic and Security Review Commission statistics are incomplete and do not provide a complete picture.

According to information released by the Review Commission Joint Staff Office of Japan's Ministry of Defense, PLA Y-8 EW began flying in the East China Sea in 2010 and H-6 B and EW flew over the Miyako Strait and the Western Pacific Ocean in 2013 as the CPC expanded its military power. The training flight paths of Chinese aircrafts around the East China Sea and Taiwan Strait includes flying over the East China Sea, Sea of Japan, Miyako Strait, Western Pacific Ocean, and around Taiwan (Table 5-1). Due to the short range of the fighter aircraft, they usually flew as far as Miyako Strait or Bashi Channel before turning back when escorting the bombers or special operations aircrafts.

Table 5-1 Statistics of the Review Commission Joint Staff Office of the Ministry of Defense of Japan on the Overflight of Chinese Aircrafts over the Taiwan Strait in the Past Years
(As of October 2021)

Year	East China Sea			Sea of Japan			Miyako Strait and Western Pacific Ocean			Around Taiwan			Total
	FA	B	SOA	FA	B	SOA	FA	B	SOA	FA	B	SOA	
2010			1										1
2011			7										7
2012													0
2013			4					8	7				19
2014			3					10	12				25

[9] U.S.-China Economic and Security Review Commission, "Taiwan," in *2020 Annual Report to Congress*, December, 2020, https://www.uscc.gov/sites/default/files/2020-12/Chapter_4--Taiwan.pdf.

Year	East China Sea			Sea of Japan			Miyako Strait and Western Pacific Ocean			Around Taiwan			Total
	FA	B	SOA	FA	B	SOA	FA	B	SOA	FA	B	SOA	
2015					4			10	9				23
2016					2	4	2	4	5	4	4	4	29
2017				2	8	5				2	2	6	25
2018						9	2	4	5	6	14	6	46
2019					2	5	2	6	6		4	1	26
2020					4	3		2	2		4		15
2021									8			4	12
Subtotal			15	2	20	26	6	44	54	12	28	21	228
Total	15			48			104			61			228

Description: FA = Fighter Aircraft; B = Bomber; SOA = Special Operations Aircrafts, including ASW (anti-submarine warfare), EW (electronic warfare), and AEW&C (airborne early warning and control).
Source: Review Commission Joint Staff Office, *Ministry of Defense of Japan*, "Reported Information", https://www.mod.go.jp/js/Press/press2021.htm.

As shown in Table 5-1, from 2010 to October 2021, there were a total of 228 activities of the Chinese aircrafts in the sea around Japan. Among them, 29 times in 2016, 46 times in 2018 as the most, and 26 times in 2019, followed by a significant decline. In terms of flight paths, the most number of long-range training flights conducted by Chinese aircrafts were 104 through Miyako Strait to the Western Pacific Ocean, and the official CPC media claimed to have broken the first island chain, targeting Japan and the U.S. military in Japan; the peak was 15, 22, and 19 times from 2013 to 2015. Then, there were 61 times around Taiwan, with 12, 10 and 26 times from 2016 to 2018 being the most. The total number of flights to the Sea of Japan is 48, and the imaginary enemy is also Japan, with 15, 9 and 7 times from 2017 to 2019 as the peak. There were only 15 flights over the East China Sea, mainly between 2010 and 2011, when the flights first began, with 1 and

7 times respectively. The PLA aircrafts surrounding Taiwan are of most concern to the people of Taiwan. The route of the PLA aircrafts around Taiwan is mainly through the Miyako Strait, southward along the eastern waters of Taiwan, into the Bashi Channel, and back to the station. Alternatively, they can travel north through the Bashi Channel along the eastern waters of Taiwan and enter the Miyako Strait to return to their station. Or they may travel around Taiwan from north to south and south to north at the same time in both directions. On March 29 and October 31, 2021, there was a north-south pincer movement, i.e., one side of the aircraft went south through the Miyako Strait to the middle waters of eastern Taiwan and then turned back the same way, and the other side went north through the Bashi Channel to the middle waters of eastern Taiwan and then turned back the same way, an L-shaped and an inverted L-shaped trajectory forming a north-south pincer movement, which is another variant of the pattern around Taiwan (Figure 5-2). The hypothetical target would be the Hualien and Taitung military bases in Taiwan.

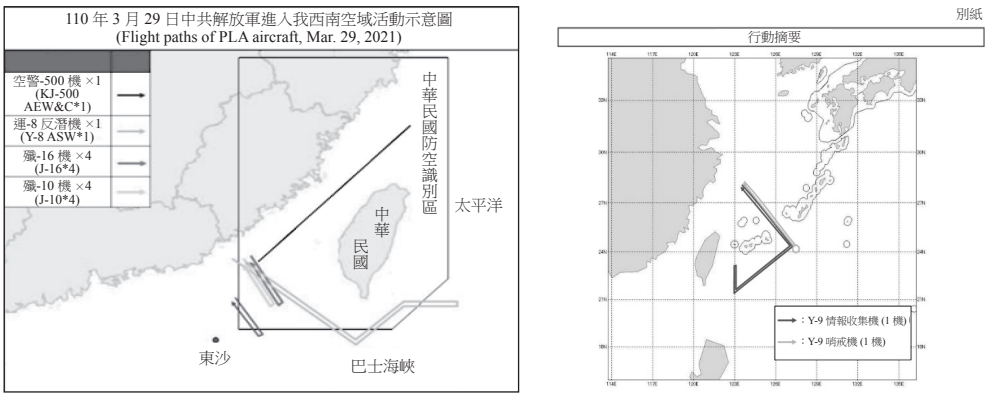

Figure 5-2 Variants of Chinese Aircrafts Surrounding Taiwan

Description: On March 29, 2021, the Chinese aircrafts intruded into Taiwan's southwestern ADIZ to form an L-shaped trajectory, while on the right figure, the Chinese aircrafts formed an inverted L-shaped trajectory in Miyako Strait and northeastern airspace on the same day, showing a north-south pincer movement.

Source: Review Commission Joint Staff Office, Ministry of Defense of Taiwan and of Japan.

If we look at the timeline, the earliest overflights in the East China Sea were from 2010 to 2011. The next most frequent overflights were over the Miyako Strait and the Western Pacific Ocean from 2013 to 2015. The most frequent overflights surrounding Taiwan were from 2016 to 2018, and the most frequent overflights over the Sea of Japan were from 2017 to 2019.[10]

After a long silence, the Review Commission Joint Staff Office of Japan's Ministry of Defense stated on August 26, 2021 that CPC drones had been spotted in the airspace around Japan for several days. On August 24, the Japan Self-Defense Force (JSDF) spotted a CPC drone, presumed to be a TB-001 reconnaissance strike drone, over the East China Sea, the first time the JSDF has ever spotted a drone. On August 25, a Chinese BZK-005 drone, a Y-9 patrol aircraft and a Y-9 intelligence gathering aircraft flew through the Miyako Strait to the Western Pacific Ocean and turned back the way they came. On August 26, a TB-001 drone, a Y-9 patrol aircraft and a Y-9 intelligence gathering aircraft flew through the Miyako Strait to the Western Pacific Ocean.[11]

In terms of mission types, there are H-6 for bombers, J-30 for fighter aircrafts, Tu-154 intelligence gathering aircraft, Y-9 intelligence gathering aircraft, Y-9 patrol aircraft, Y-9 AEW aircraft, Y-8 AEW aircraft, Y-8 EW aircraft, Y-8 intelligence gathering aircraft, BZK-005 and TB-001 drones, and even Y-12 maritime surveillance aircraft for special operations aircrafts.

IV. Taiwan's Detection of Chinese Aircrafts Training Model

In the past, the Ministry of National Defense of Taiwan has been selective in releasing facts about Chinese aircrafts' activities on the grounds of protecting classified sources, not letting CPC lead U.S. by the nose, and avoiding public panic. However, Beijing is using incursions by Chinese aircrafts to launch a united

[10] "Reported Information", *Review Commission Joint Staff Office*, *Ministry of Defense of Japan*, https://www.mod.go.jp/js/Press/press2021.htm.

[11] Same as the previous note.

front offensive, such as the H-6K flying in the clouds on December 16, 2016, with two neighboring peaks visible in the distance. The route around the island is like the outstretched arms of the motherland, with Taiwan in the arms of the motherland.[12] On April 26, 2018, the PLA Air Force flew around the Taiwan of the motherland, measuring the great rivers and mountains of the motherland with the flight path of aircrafts.[13] In the face of this united front offensive, the Ministry of National Defense of Taiwan can sometimes be put in a passive position, so there are voices that want to follow the example of the Ministry of Defense of Japan in announcing the activities of aircraft from countries in its vicinity. Since September 17, 2020, the Ministry of National Defense of Taiwan has been releasing information on the activities of Chinese aircrafts around Taiwan, mainly crossing the median line and incursions into Taiwan's southwestern ADIZ, while Chinese aircrafts surrounding Taiwan are rare.

The Ministry of National Defense of Taiwan has adopted a schematic diagram for the 2017 National Defense Report on the activities of Chinese aircrafts surrounding the Taiwan Strait, with the date and type of aircraft marked on the side. The brown color represents the training in the Sea of Japan, the yellow color represents the training in the Western Pacific Ocean, the pink color represents the training surrounding Taiwan, and the red color represents the training in the Bashi Channel.[14] The training in the Bashi Channel is mainly aimed at the U.S. military base in Guam as the target, the 2019 National Defense Report is divided into the training around Miyako Island and Taiwan, the training in the Western Pacific Ocean, the training in the South China Sea, the training around the Bashi Channel and the training in the Sea of Japan.[15] Comparing the two editions of the National Defense Report, the 2019 edition has one more flight training in the South China Sea, with the dates and aircraft types of the training removed, and the training

[12] "[Feature Article] PLA aircrafts and Taiwan 'in the same frame'," *Wenweipo*, April 29, 2021, https://www.wenweipo.com/a/202104/29/AP6089c756e4b0476859b902a9.html.

[13] "Once Again! PLA Aircrafts are 'Circling the Island' Again Today and being Provocative," *Liberty Times*, April 26, 2018, https://news.ltn.com.tw/news/Taipei/breakingnews/2407483.

[14] Ministry of National Defense, R.O.C., *2017 National Defense Report*, p. 38.

[15] Ministry of National Defense, R.O.C., *2019 National Defense Report*, p. 36.

surrounding in the 2017 edition has been replaced by the training around the Miyako Island and Taiwan (Figure 5-3). From September 2020 to October 2021, there were 815 incursions into the southwest ADIZ, with 194 incursions in October 2021 and 115 incursions in September being the most. The median line was crossed only 23 times, mainly by fighter aircrafts. During the incursions into the southwest ADIZ, there were 208 times by ASW aircrafts, 160 times by EW aircrafts, 343 times by fighter aircrafts, 47 times by bombers, and 34 times by AEW&C aircrafts, which shows that the lack of aerial refueling aircrafts is the weakness of the Chinese aircrafts' combat-oriented mission configuration (Table 5-2).

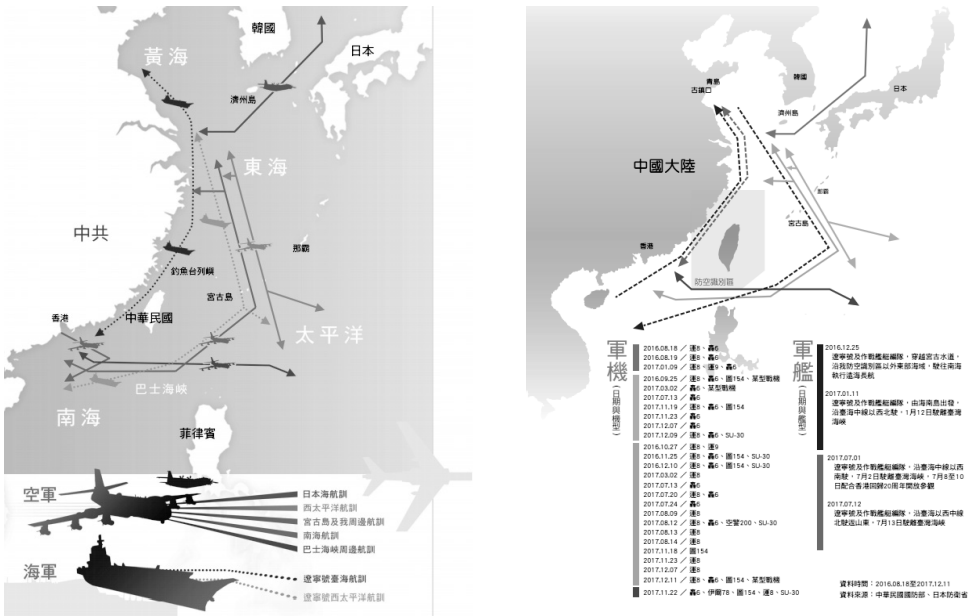

Figure 5-3 The Flight Paths of Chinese Aircrafts' Training Around the Taiwan Strait

Source: Ministry of National Defense of Taiwan, "2019 National Defense Report," p. 36; 2017 "National Defense Report," p. 38.

The Chinese aircrafts routinely harass Taiwan, usually with the Y-8 series of military aircraft as the primary aircrafts, using single or dual aircrafts, but sometimes there is a sudden outburst of large formations of fighter aircrafts,

bombers, AEW&C aircrafts, ASW aircrafts, and electronic reconnaissance aircrafts to simulate an attack on Taiwan, or targeting the United States or its allied carrier strike group in a simulated exercise. For example, on April 12, 2021, the CPC deployed 25 aircrafts for incursions into Taiwan's southwest ADIZ, including 2 Y-8 ASWs, 1 KJ-500 AEW&C, 4 J-10s, 14 J-16s, and 4 H-6Ks.[16] On June 15, 2021, China deployed 28 aircrafts for incursions around Taiwan, including 1 Y-8 ASW, 4 H-6s, 1 Y-8 EW, 2 KJ-500 AEW&Cs, 14 J-16s, and 6 J-11s.[17] On October 4, 2021, China deployed 56 aircrafts for incursions around Taiwan, including 38 J-16s, 2 Su-30s, 2 Y-8 ASWs, 2 KJ-500 AEW&Cs, and 12 H-6s into Taiwan's southwestern ADIZ.[18] This is the highest number of incursions by Chinese aircrafts into Taiwan's surrounding airspace in a single day.

Table 5-2 Statistics on the Activities of Chinese Aircrafts Surrounding the Taiwan Strait by the Ministry of National Defense of Taiwan (As of October 2021)

Year/Month	Median Line					Southwestern ADIZ					Total
	FA	B	ASW	EW	AEW&C	FA	B	ASW	EW	AEW&C	
September 2020	22					10	4	12			48
October								17	12	3	32
November						6		17	18		41
December				1				15	16		32
January 2021								18	25	3	46

[16] 'Taiwan Strait Military Situation' The Chinese Aircrafts Have Made 309 Incursions around Taiwan from January to May, with J-16s and Y-8 ASWs for 74 Times Each.," *Liberty Times*, June 5, 2021, https://news.ltn.com.tw/news/politics/breakingnews/3558877.

[17] 'Taiwan Strait Military Situation' Record breaking! 28 Chinese Aircrafts Harass Taiwan's Airspace in One Day," *Liberty Times*, June 15, 2021, https://news.ltn.com.tw/news/politics/breakingnews/3570849.

[18] "The Ministry of National Defense Released Its Second Update on the Total Number of Incursions by Chinese Aircrafts (56) Reaching a New High," *Central News Agency*, October 4, 2021, https://www.cna.com.tw/news/firstnews/202110040366.aspx.

Year/Month	Median Line					Southwestern ADIZ					Total
	FA	B	ASW	EW	AEW&C	FA	B	ASW	EW	AEW&C	
February								16	17		33
March						27	4	15	6	2	54
April						54	4	16	16	9	99
May						2	2	14	10	1	29
June						26	4	8	3	3	44
July								11	6		17
August						10	3	10	7	1	31
September						64	10	23	15	3	115
October						144	16	16	9	9	194
Subtotal	22			1		343	47	208	160	34	815
Total	23					792					815

Description: FA = Fighter Aircraft; B = Bomber; ASW = Anti-Submarine Warfare; EW = Electronic Warfare; AEW&C = Airborne Early Warning and Control.
Source: Ministry of National Defense, R.O.C., *Military News Update*.

When incursions by Chinese aircrafts break out, they are usually highly political, targeting not only Taiwan but also the United States. As Washington positions the U.S. and China in a competitive relationship, the relationship between Taiwan and the U.S. has been escalating in recent years, and, to paraphrase Beijing, incursions by Chinese aircrafts are preventing further collusion between Taiwan and the U.S.[19] On October 4, 56 Chinese aircrafts had a major incursion around Taiwan in protest of U.S., Japanese and UK aircraft carrier drills in the surrounding waters. On June 15, 28 Chinese aircrafts made an incursion into Taiwan's southwestern

[19] "PLA Launches Military Training in Multiple Seas; Experts: Prevent Further Collusion between U.S. and Taiwan," *Xinhua Net*, July 20, 2021, http://www.xinhuanet.com/mil/2021-07/20/c_1211248201.htm.

ADIZ, expressing dissatisfaction with the entry of the USS Ronald Reagan CVN-76 carrier strike group into the South China Sea the day before.[20] On April 12, 25 Chinese aircrafts gathered in protest of the USS Theodore Roosevelt CVN-71 aircraft carrier's activities northwest of Huangyan Island on April 11.[21] On March 26, 20 Chinese aircrafts were deployed in response to the signing of AIT-TECRO MOU on Coast Guard Cooperation the day before.[22] Even earlier, on September 18, 2020, 18 Chinese aircrafts intruded into Taiwan's southwestern, western, northern, and northwestern airspace, 12 of which crossed the median line of the Taiwan Strait, just as U.S. Under Secretary of State Keith Krach was visiting Taiwan.[23]

The Ministry of National Defense has started to release information on the activities of Chinese aircrafts in the Taiwan Strait. The incursions by Chinese aircrafts include H-6K and JH-7 bombers, and Su-30, J-16, J-11, J-10 and J-7 fighter aircrafts. The old J-7 appeared in the Taiwan Strait, and the Hong Kong media reported that it had been changed to a drone, which would be used as bait to attract enemy air defense weapons, but the military on both sides of the Taiwan Strait remained silent.[24] Special operations aircrafts include KJ-500, Y-9 EW, Y-8 RECCE, Y-8 ASW, Y-8 ELINT, and Y-8 EW. The helicopters include the Z-8, Z-9 ASW, WZ-10, and Mi-17. In addition to the above aircraft types, on August 12, 2017, the KJ-200 was seen flying around Taiwan from south to north for co-

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[20] "The Ronald Reagan Carrier Strike Group Enters South China Sea with Seventh Fleet Announcement: U.S. Navy's Indo-Pacific Routine," *Liberty Times*, June 15, 2021, https://news.ltn.com.tw/news/world/breakingnews/3569975.

[21] "The Latest Position of the U.S. Aircraft Carrier in the South China Sea is Revealed! Activities in the Northwest of Huangyan Island," *Xinhua Net*, April 12, 2021, http://www.xinhuanet.com/mil/2021-04/12/c_1211107492.htm.

[22] "Biden Signs first U.S.-Taiwan Cooperation MOU After Taking Office to Strengthen Maritime Patrol Cooperation," *Liberty Times*, March 26, 2021, https://news.ltn.com.tw/news/politics/breakingnews/3479452.

[23] " United States Under Secretary of State Visits! 18 Incursions by Chinese Aircrafts are Tracked and Controlled by Our Air Force Anti-aircraft Missiles," *Central News Agency*, September 18, 2020, https://www.cna.com.tw/news/firstnews/202009185008.aspx.

[24] Minnie Chan, "Why Has China's PLA Started Sending Grandpa Fighter Aircrafts to Test Taiwan's Air Defense?," *South China Morning Post*, July 11, 2021, https://www.scmp.com/news/china/military/article/3140627/why-has-chinas-pla-started-sending-grandpa-fighter-aircrafts-test.

training.[25] On November 22, 2017, Chinese aircrafts were seen flying via the Bashi Channel to the Western Pacific Ocean with Tu-154 and Il-78.[26] On May 11, 2018, Su-35 and KJ-2000 were seen flying around Taiwan for co-training.[27]

V. Implications of Chinese Aircrafts Incursions into Taiwan's Southwestern ADIZ and Response from the United States

Taiwan's southwestern waters, south of the median line of the Taiwan Strait, are vast and far from Taiwan and the CPC, and used to be a non-sensitive area. As the CPC has increased its military forces, it has begun to interfere with Taiwan's southwestern ADIZ more frequently, and such overflights, which do not cross a actual median line but does cross an invisible line, have become a major battleground for incursions by Chinese aircrafts.

The first island chain has put the CPC in an unfavorable geostrategic position by semi-enclosing its coastal waters. In order to move from the shallow coastal waters to the deep distant seas, the PLA Navy must pass through the first island chain with multiple chokepoints and straits, and will face the extremely high risk of chokepoint island chain defense.[28] The Southwest Sea is located at the southern end of the Taiwan Strait, connecting the East China Sea to the north, the South China Sea to the south, and the Western Pacific Ocean to the east via the Bashi Channel. The CPC will need to control this area if it is to move far out to sea to compete with the United States. The main implications of the CPC's incursions into Taiwan's southwestern ADIZ are:

1. Emphasizing the weakness of Taiwan's defense. Chinese aircrafts can fly over

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[25] "China is Causing Trouble Again! Many Military Planes Approach Taiwan Waters," *Liberty Times*, August 12, 2017, http://news.ltn.com.tw/news/politics/breakingnews/2160894.

[26] Update: More than 10 PLA Aircrafts Flew Out to Sea Today, Intruding into Our ADIZ," *Apple Daily*, November 22, 2017, https://tw.news.appledaily.com/politics/realtime/20171122/1245757.

[27] "Chinese Aircrafts Fly around Taiwan Again, Military Releases Surveillance Video to Strike Back," *Liberty Times*, May 11, 2018, http://news.ltn.com.tw/news/politics/breakingnews/2423039.

[28] Ken Moriyasu, "US Eyes Using Japan's Submarines to 'Choke' Chinese Navy," *Nikkei Asia*, May 5, 2021, https://asia.nikkei.com/Politics/International-relations/Indo-Pacific/US-eyes-using-japan-s-submarines-to-choke-chinese-navy.

the first island chain from the East China Sea, but the U.S. and Japan are closely monitoring, and may even support the Taiwan Strait, the overall air and sea combat power of the CPC is not outstanding. The defense of the Taiwan Strait is heavily deployed in northern Taiwan, with the southwest being the weakest, and the U.S. and Japanese support lines will be lengthened. If the CPC places the same force in the southwest, it may have the ability to reverse the disadvantage in the East China Sea; 2. Attrition warfare. When Chinese aircrafts infiltrate the Taiwan's southwestern ADIZ, they usually use the Y-8 series of slow-speed aircrafts as the main aircraft, either using single or dual aircraft, forcing the Republic of China Air Force (ROCAF) fighters to take off in an emergency. The long term high tension force dispatch tests not only the front line officers and soldiers, but also the logistical material transportation capability.[29] Such an approach, in addition to depleting ROCAF's air power, slow-speed aircraft is also less provocative and will not raise tensions; 3. The PLA's attack on Taiwan is likely to be multi-directional. In the past, the PLA emphasized the decapitation strike operation, meaning the first battle is the final battle. It is generally believed that the most likely direction of PLA's attack on Taiwan is mainly in the north, supplemented by the central part, and the east is only a distraction. Now, Chinese aircrafts are frequently flying over Taiwan's southwestern ADIZ, demonstrating their power to attack Taiwan from another direction. This multi-directional approach to encircle Taiwan will make Taiwan spread its forces and create a breach; 4. Threatening Pratas Island and Taiping Island. Not only do Chinese aircrafts intrude into Taiwan's southwestern ADIZ, but their drones have also been conducting reconnaissance over Pratas Island.[30] The presence of Chinese aircrafts in Taiwan's southwestern ADIZ demonstrates the ability to intimidate Taiwan's Taiping Island and Pratas Island. Once the CPC wants to punish Taiwan to a limited extent, it would be easy to capture the off-shore islands of Taiwan in the South China Sea.

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[29] "Forces Reserve Reform/The CPC frequently Attacked Taiwan with Political Intimidation or Military Coercion, Causing Attrition Warfare Themselves," *Central News Agency*, October 11, 2020, https://www.cna.com.tw/news/firstnews/202010110133.aspx.

[30] "To counter the threat of CPC, the construction of the runway in Pratas Island will be completed in February 2022," *Central News Agency*, April 12, 2021, https://www.cna.com.tw/news/aipl/202104120132.aspx.

5. Operate anti-submarine battlefield. Once the PLA launches a nuclear attack, a ballistic missile submarine stationed in the South China Sea would have to exit the Bashi Channel in order to launch a JL-2 ballistic missile. It is believed that the U.S. military and attack submarines will be waiting in ambush to kill the PLA ballistic missile submarines in the Bashi Channel near the Western Pacific Ocean. The southwestern waters are the gateway to the ocean for PLA submarines, with ballistic missile submarines stationed in the South China Sea; U.S. anti-submarine warfare (ASW) and oceanographic research vessels have been conducting reconnaissance activities in these waters for years. The CPC has to do a better job of managing the battlefield and put up multiple barriers to the U.S. anti-submarine warfare; 6. Protection of bastion in the South China Sea. The CPC is building base clusters in the Nansha Islands, the Paracel Islands, and Hainan Island with the aim of turning the South China Sea into a bastion of ballistic missile submarines.[31] There is a second missile submarine base in Sanya Yalong Bay, with the deployment of 6 094A/094 ballistic missile submarines and 4 093/093A missile submarines. In Sanya Naval Base, the Chinese aircraft carrier Shandong is stationed there. 8 Type 071 landing platform docks are currently in service, 5 of which are deployed in the PLA Southern Theater Command Navy.[32] The aircraft carrier provides air cover, the attack submarine ensures underwater safety, the amphibious ships support the island and reefs bases, and the islands and reefs bases provide intelligence, surveillance and reconnaissance (ISR), making the ballistic missile submarine safe and secure. The huge naval air station in Hainan has become the Guam and Murmansk of the CPC. The southwestern waters, which are the periphery and gateway to the South China Sea, are even more in China's hands.

In response to the incursion of Chinese aircrafts into the southwestern ADIZ, Taiwan immediately responded by dispatching air patrol forces, issuing radio warnings, and deploying air defense missile systems. To avoid falling into the trap of attrition warfare, Taiwan has deployed C-130 transport aircraft and P-3C ASW

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[31] "Strategic Weapons: Chinese SLBM Triumph," *Strategy Page*, June 16, 2021, https://www.strategypage.com/htmw/hticbm/articles/20210616.aspx.

[32] "Amphibious Warfare Ship,"《世界の艦船》, February 25, Reiwa 3 (February 25, 2021), p. 44.

to counter slow-speed aircrafts from CPC, adjusted personnel deployment and training plan, and used early warning radar and joint air defense of the three armies to deal with the situation. In other words, according to the assessment of the threat, various means are used to match the high-low mix of high-speed aircraft, slow-speed aircraft, air defense missile, and electric warfare forces to effectively use the combat power to avoid excessive damage to the army's logistics.[33]

The future strengthening of Taiwan's southwest defense should include: 1. Be vigilant to the regular incursions of Chinese aircrafts. The CPC considers incursions into Taiwan's surrounding airspace to be regular combat training, but the Taiwanese public takes it as a normal practice and loses its vigilance. In the event of a surprise attack by Chinese aircrafts, Taiwan will be caught off guard. The people of Taiwan should be more vigilant so that the CPC will not be able to achieve its goal; 2. Strengthen intelligence, surveillance and reconnaissance in Taiwan's southwestern ADIZ. Chinese aircrafts are intensively intruding into Taiwan's southwestern ADIZ. Due to the inadequacy of the existing intelligence, surveillance and reconnaissance (ISR) detection capability and airspace coverage in the area, a new early warning radar system needs to be deployed in the southern mountainous region to effectively supplement the air defense force in Taiwan's southwestern ADIZ;[34] 3. To enhance air defense capabilities. The Air Force's current system covers all types of air defense radar, patriot missiles, anti-tactical ballistic missile (ATBM), and the HAWK missile, but does not include naval ships, high-mountain radar, and shipborne air defense missiles such as Standard 1/2 and Chaparral. The air and naval forces have their own air defense systems, which can lead to omissions and blind spots. "Huanzhan" project is to upgrade the hardware and software to integrate the radar information of the air and naval forces in real

[33] "More than 400 Chinese Aircrafts Have Come around This Year, and We are Doing More to Prevent the 'Attrition Warfare'," *Liberty Times*, August 30, 2021, https://news.ltn.com.tw/news/politics/paper/1469763.

[34] China-Taiwan Naval Situation: Strengthen Taiwan's Southwestern ADIZ Air Defense Force! Military Proposes to Procure 'New Early Warning Radar System'," *Liberty Times*, April 20, 2021, https://news.ltn.com.tw/news/politics/breakingnews/3505288.

time, so that the overall combat capability can be fully utilized;[35] 4. To discuss the feasibility of procuring electronic warfare. Incursions by Chinese aircrafts into Taiwan's southwestern ADIZ are most frequent with ASWs and EWs. Taiwan is equipped with 12 P-3C ASWs and only 1 EW. The feasibility of procuring EA-18Gs or small commercial aircrafts to convert to EWs should be discussed to make up for the shortcomings of EWs. In addition to the EA-18Gs, the U.S. Army's conversion of small airliners into intelligence, surveillance and reconnaissance (ISR) carriers may be more appropriate for Taiwan, such as the ARES (Airborne Reconnaissance and Electronic Warfare System) with the Bombardier Global 6000/6500 aircraft, and the ARTEMIS (Aerial Reconnaissance and Targeting Exploitation Multi-Mission Intelligence System) with the Bombardier Challenger 650;[36] 5. To strengthen anti-submarine intelligence cooperation with allies. Beijing has built the South China Sea as a bastion to protect the ballistic missile submarine, which it regards as the CPC's internal sea. If successful, it would cut off the U.S. military's access to the Pacific Ocean and the Indian Ocean. The U.S. military will not let this happen and will certainly conduct more close reconnaissance, bomber task force missions and other activities. The U.S. and China are wrestling more and more intensely in the South China Sea, and Taiwan should strengthen cooperation with allies in the Taiwan Strait in the areas of anti-submarine, electronic warfare, and even intelligence, surveillance and reconnaissance (ISR).

In response to the intrusions of Chinese aircrafts into the Taiwan Strait, the U.S. has assisted Taiwan's self-defense, primarily through Salami Slicing, by enhancing aerial surveillance and bomber dynamic force employment in China's near waters.[37] As the U.S.-China rivalry becomes clearer, the U.S. is helping Taiwan to strengthen its defense capabilities more frequently. The Biden administration

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[35] :Taiwan's Military Situation: Combination of Air and Sea Missiles and Radar to Strengthen Air Defense! Military's 'Huanzhan Project' to be Completed by 2024," *Liberty Times*, May 1, 2021, https://news.ltn.com.tw/news/politics/breakingnews/3517481.

[36] Jen Judson, "US Army's Recon, Electronic Warfare-capable Aircraft Flies for the First Time," *Defense News*, August 28, 2021, https://www.defensenews.com/industry/2021/08/27/us-armys-recon-electronic-warfare-capable-aircraft-flies-for-the-first-time.

[37] Hal Brands, "U.S. Copies China's 'Salami Slicing' to Defend Taiwan," *Bloomberg*, August 12, 2021, https://www.bloomberg.com/opinion/articles/2021-08-12/u-s-copies-china-s-salami-slicing-to-defend-taiwan.

approved its first arms sale to Taiwan since taking office on August 5, 2021, consisting of the M109A6 Paladin self-propelled howitzers and nearly 1,700 kits to convert projectiles into more precise GPS-guided munitions, valued at US$750 million. The Biden administration's sale of the M109A6 self-propelled howitzers and the Trump administration's 11 arms sales to Taiwan during his four-year tenure amounted to US$18.335 billion, making the 12 arms sales US$19.085 billion (Table 5-3). The most important of these arms sales was the sale of 66 F-16V Block 70 fighters in 2019, which changed the PLA's air superiority over Taiwan. The sale of the AGM-84H/K SLAM-ER and the new F-16 MS110 in 2020 allowed the F-16V to be able to attack mainland China from east of the median line of the Taiwan Strait, forcing the PLA to spend more on air defense power.[38]

Table 5-3 U.S. Arms Sales to Taiwan by the Biden Administration and the Trump Administration

Time	Content	Amount (US$ 100 million)	Remark
August 5, 2021	40 new M109A6 self-propelled howitzers with nearly 1,700 kits to convert projectiles into more precise GPS-guided munitions.	7.5	First arms sale during Biden Administration
December 7, 2020	Field Information Communications System (FICS), consisting of 154 Communications Nodes (CN); 24 Communication Relays; 8 Network Management Systems (NMS) and relevant equipment.	2.8	Arms sales during Trump Administration
November 3, 2020	4 Weapons-Ready MQ-9B Remotely Piloted Aircrafts.	6	
October 26, 2020	Harpoon Coastal Defense System (HCDS).	23.7	

[38] "Biden and Trump's Arms Sales to Taiwan: Over NT$530 Billion Dollars in the Past 4 Years, 66 F-16Vs to Help Taiwan Defend Its Airspace," *Apple Daily*, August 6, 2021, https://tw.appledaily.com/politics/20210806/DSCKSX7CPRE33G7GQGONZJPF2I.

Time	Content	Amount (US$ 100 million)	Remark
October 21, 2020	11 high mobility artillery rocket system (HIMARS); 135 AGM-84H standoff land attack missile expanded response (SLAM-ER) missiles; 6 MS-110 multispectral airborne reconnaissance pods.	18.113	
July 10, 2020	Repair and Recertification of MIM-104F (PAC-3) surface-to-air missile, supporting an operational life of thirty years.	6.2	
May 20, 2020	18 Mk-48 Mod6 AT heavyweight submarine-launched wire-guided torpedoes (HWT), etc.	1.8	
August 19, 2019	66 F-16V block 70 multi-role fighters.	80	
July 8, 2019	108 M1A2T main battle tanks; FIM-92F man-portable missiles, etc.	22.24	
April 15, 2019	Continuation of the pilot training program of 21st Fighter Squadron in Luke AFB, Arizona.	5	
September 24, 2018	Spare parts for F-16, C-130H, F-5E/F, Indigenous Defense Fighter (IDF), and other aircraft.	3.3	
June 29, 2017	HARMs; JSOW air-to-ground missiles; MK48 torpedoes; SM-2 missiles; upgrade the AN/SLQ-32(V)3 Electronic Warfare Systems in support of 4 ex- Kidd-class (now Keelung-class) destroyers.	14.2	

Source: "Biden and Trump's Arms Sales to Taiwan: Over NT$530 Billion Dollars in the Past 4 Years,66 F-16Vs to Help Taiwan Defend Its Airspace," *Apple Daily*, August 6, 2021, https://tw.appledaily.com/politics/20210806/DSCKSX7CPRE33G7GQGONZJPF2I; U.S. Sells Taiwan Field Information Communications System (FICS); the 11th Arms Sale to Taiwan during Trump Administration," *Central News Agency*, December 8, 2020, https://www.cna.com.tw/news/firstnews/202012085001.aspx.

In terms of symbolic support, U.S. aircraft arrived in Taiwan directly as opposed

to PLA aircrafts surrounding Taiwan or disturbing Taiwan. On June 6, 2021, U.S. Senators Tammy Duckworth, Dan Sullivan, and Chris Coons arrived at Taipei Songshan Airport aboard a C-17 to meet with President Tsai Ing-wen. Due to the lack of diplomatic relations between the U.S. and Taiwan, it is extremely rare for an Air Force marked military aircraft to land in Taiwan.[39] On July 15, 2021, a U.S. C-146A transportation aircraft landed from Okinawa to Taipei Songshan Airport in the morning. Neither the Ministry of Foreign Affairs (MFA) nor the American Institute in Taiwan (AIT) commented. The C-146A is a military version of the German Dornier 328, which can be used not only as an executive aircraft, but also as a special forces aircraft in combat.[40] On July 19, 2021, a U.S. C-130 transportation aircraft landed at Taoyuan Airport and flew off after completing its operations. The C-130 is a contracted aircraft between the U.S. Army and a non-governmental company, and is positioned as a commercial cargo aircraft.[41]

On August 9, 2020, Secretary of United States Department of Health and Human Services Alex Azar flew to Taipei's Songshan Airport aboard a U.S. Air Force C-40B executive aircraft with a U.S. flag painted on the tail, representing an official visit by the U.S. in its official capacity and a symbol of enhanced relations between Taiwan and the United States.[42] Under Secretary of the State Council Keith Krach arrives at Taipei Songshan Airport on September 17, 2020, aboard a modified Gulfstream 5 version of the C-37A.[43] The U.S. C-37A aircraft that arrived at Taipei Songshan Airport in the evening of November 22, 2020, was the same model as the one that U.S. Under Secretary of the State Council Clarke took when he came to Taiwan, and it was rumored that the visitor might be Michael William Studeman, the Director of Intelligence of the United States Indo-Pacific

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[39] "C-17 First Landing! Taiwan Scholar: Demonstrates U.S. Army's Emergency Transport Capability," *Central News Agency*, June 6, 2021, https://www.cna.com.tw/news/aipl/202106060095.aspx.

[40] "U.S. Army C-146A Executive Aircraft Lands at Songshan Base, Air Force: No Contact," *Liberty Times*, July 15, 2021, https://news.ltn.com.tw/news/politics/breakingnews/3604120.

[41] "Suspected U.S. Transportation Aircraft Landing in Taoyuan International Airport and Leaving After a Short Stay," *Central News Agency*, July 19, 2021, https://www.cna.com.tw/news/aipl/202107190144.aspx.

[42] "U.S. Air Force 'Air Office'! Alex Azar Arrives in Taiwan; the C-40B Aircraft Has Special Significance," *Liberty Times*, August 9, 2020, https://news.ltn.com.tw/news/politics/breakingnews/3254864.

[43] "The State Council's Highest-ranking Official to Visit Taiwan in 1979: Under Secretary Krach Arrives in Taiwan," *Central News Agency*, September 17, 2020, https://www.cna.com.tw/news/firstnews/202009175011.aspx.

Command.[44] The pattern of U.S. aircrafts arriving in Taiwan in the past two years shows that a military aircraft or a executive aircraft with a clear flag will come first, carrying senators or ministerial officials, followed by two unflagged, semi-official, semi-civilian aircraft. This is a big step forward and two small steps back, highlighting support for Taiwan and not ruling out the possibility of crisis intervention. On the other hand, the possibility of intervention is blurred, so that Beijing will not have the opportunity to provoke.

In addition to more frequent reconnaissance, the U.S. military aircrafts are flying closer and closer to the coast of China. From September 4 to 6, 2021, the U.S. Army RC-135S electronic reconnaissance aircraft took off from Kadena Air Base in Okinawa for three consecutive days, crossing the East China Sea ADIZ and flying directly into the Yellow Sea south of Qingdao to conduct close reconnaissance of the CPC; the first two days were about 30 miles from the baseline of territorial waters, and on September 6, the closest flight was about 26 miles from the baseline of territorial waters.[45] On March 22, a U.S. Army RC-135U reconnaissance aircraft entered the South China Sea via the Bashi Channel and conducted reconnaissance of the coastal areas of South China, once approaching 25.33 miles from the baseline of territorial waters and getting close to the edge of the contiguous zone (24 miles). The U.S. aircrafts have been approaching for reconnaissance, which can be said to be a departure from the norm. Usually, the U.S. military reconnaissance to China is kept about 50 miles to 70 miles off the coastline.[46] U.S. aircraft extreme close reconnaissance generally have three kinds of circumstances: First, some image reconnaissance operations must be as close as possible to the opponent's territorial airspace or territorial waters, so as to obtain a clearer image; second is to test, forcing the opponent's radar, air defense facilities

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[44] "Seven U.S. Planes Spotted in Taiwan's Southern Waters before a Mysterious C-37A Arrived at Taiwan," *Liberty Times*, November 23, 2020, https://news.ltn.com.tw/news/politics/breakingnews/3359533.

[45] "U.S. Army RC-135S with 3 Days of Reconnaissance in the Yellow Sea, Callsign Suspected of Mocking the PLA to Make Chinese Think Tanks Rage," *Liberty Times*, September 7, 2021, https://news.ltn.com.tw/news/world/breakingnews/3663317.

[46] " 25.33 Nautical Miles from China's Coast, U.S. Military Aircraft Set a New Record for Close Reconnaissance of China," *HK01*, March 22, 2021, https://www.hk01.com/即時中國/602448/距中國沿海 25-33 海里 - 美軍機刷新對華抵近偵察紀錄 .

on, in order to obtain relevant electronic intelligence; third is simply to provoke.[47]

The U.S. military attempts to understand and grasp the various military dynamics of the CPC in and around the South China Sea through ongoing daily air reconnaissance operations against China. According to incomplete statistics, from January to July 2021, 345 U.S. aircrafts have flown to the South China Sea to conduct close reconnaissance.[48] In 2020, nearly 1,000 U.S. aircrafts have taken off from Osan Air Base of Korea, Kadena Airfield of Okinawa, Andersen Air Force Base in Guam, Clark Air Base in the Philippines and Brunei, mainly U-2S high altitude reconnaissance aircraft, RC-135 series of reconnaissance aircraft, E-3B AEW&C aircraft , E-8C air-to-ground surveillance aircraft, P-8A and P-3C anti-submarine patrol aircraft, EP-3E electronic reconnaissance aircraft, CL-650 reconnaissance aircraft, CL-604 maritime surveillance aircraft and RQ-4B Global Hawk, MQ-4C Triton high altitude unmanned reconnaissance aircraft and other types.[49] U.S. aircrafts also flew to the East China Sea and the Yellow Sea for close reconnaissance, but the statistics are incomplete.

As for Bomber Dynamic Force Employment, the U.S. Air Force B-52H and B-1B bombers (B: bomber) were deployed on a limited number of occasions in 2021. On February 11, 2021, a B-52 led a formation of U.S. and Japanese fighters during the Cape North 21 exercise in Guam. On January 25, 2 B-52s from Barksdale, Louisiana were deployed to Guam. On their way to Guam, one landed directly on Guam, while the other flew through the Philippine Sea, Sulawesi Sea, and Sulu Sea into the South China Sea, flying over the South China Sea before returning to Guam from the Bashi Channel. On January 11, a B-1B from Dyess, Texas, flew a Task Force mission to the indo-pacific region.[50]

In 2020, U.S. Air Force bombers conducted high intensity military operations

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[47] "20 Years After the Hainan Island Incident, U.S. Military Set a New Record on Air Reconnaissance Distance to China," *ETtoday Military*, April 2, 2021, https://www.ettoday.net/news/20210402/1951916.htm.

[48] "SCS Probing Initiative," *SCS Probing Initiative Official Think Tank Weibo*, https://www.weibo.com/u/7065543812?is_all=1#_loginLayer_1629794756985.

[49] "SCS Probing Initiative," *Incomplete Report on U.S. Military Activities in the South China Sea in 2020*, March 12, 2021, http://www.scspi.org/sites/default/files/reports/2020nian_mei_jun_nan_hai_jun_shi_huo_dong_bu_wan_quan_bao_gao_.pdf.

[50] Aircraft Spots, "Monitoring Military Air Movements," https://twitter.com/aircraftspots.

in the South China Sea in an attempt to demonstrate the unpredictability of bomber tactical operations. According to incomplete statistics, the U.S. Air Force bombers flew 17 times in the South China Sea throughout the year, mostly in dual formations, with 1 B-52H and 21 B-1Bs deployed. Of these, 4 took off from home bases and the rest from Guam. It is defined as a north-south attack, one from the Bashi Channel and one from the Philippines Sulu Sea into the South China Sea; emphasizing unpredictability and systematic joint operations closely supported by refueling and reconnaissance aircraft.[51]

VI. Conclusion

The Air Defense Identification Zone (ADIZ) and the median line of the Taiwan Strait are products of the Cold War era and have maintained peace in the Taiwan Strait for decades. The U.S. has been sending military aircrafts along the median line of the Taiwan Strait to show Beijing that it disagrees with the claim that it does not exist. With the rise of the CPC, Chinese aircrafts are flying farther and farther, from crossing the median line of the Taiwan Strait, through the Tsushima Strait and out of the Sea of Japan, through the Miyako Strait and out of the Western Pacific Ocean, around Taiwan, and over the Bashi Channel, intruding on Taiwan's southwest ADIZ and patrolling the South China Sea. These training flight paths are not only a threat to Taiwan, but also to the United States and Japan. The Chinese aircrafts are routinely intruding on the Taiwan Strait periphery, emphasizing that the soldiers are trained where the war is fought. In addition to demonstrating its all-around attack capability, its flight training pattern has shifted from crossing the median line and surrounding Taiwan to disrupting Taiwan's southwest airspace. From 2016 to October 2021, the aircrafts have made 61 flights around Taiwan, and from September 2020 to October 2021, the aircrafts have crossed the median

[51] "SCS Probing Initiative," *Incomplete Report on U.S. Military Activities in the South China Sea in 2020*, March 12, 2021, http://www.scspi.org/sites/default/files/reports/2020nian_mei_jun_nan_hai_jun_shi_huo_dong_bu_wan_quan_bao_gao_.pdf.

line of the Taiwan Strait 23 times and entered the southwest airspace 792 times. The Y-8 series of military aircrafts were used as the backbone of the incursions by Chinese aircrafts into the southwestern airspace, with single or dual aircraft formations, and sometimes dozens of aircraft were deployed on a large scale, highlighting their political and military significance.

The main significance of the frequent access of Chinese aircrafts to the southwest airspace is to highlight the weakness of Taiwan's defense, which has always focused on the north. The PLA's slow-speed aircrafts have forced Taiwan's air force to take to the air in a hurry, depleting our air power and logistical supply capabilities. The PLA has demonstrated its ability to launch attacks in multiple directions and areas, leaving Taiwan passive and hard to guard against. Chinese aircrafts can easily threaten the outer Pratas Islands and Spratly Islands, exposing Taiwan's inability to rescue them. The southwestern waters are where the PLA's ballistic missile submarine must pass through, and the CPC is working hard to manage the battlefield. The CPC has established a bastion in the South China Sea to protect the ballistic missile submarine, and the PLA must control the southwestern waters connected to the bastion. Taiwan should strengthen its southwest defense by: Deploying new types of early warning radar to enhance the intelligence, surveillance and reconnaissance of the southwest airspace. Integrating naval and air force radars and missiles, upgrading hardware and software performance, and improving air defense capabilities. Discussing the possibility of procuring electronic warfare (EW: electronic warfare) aircrafts, especially small passenger aircraft converted to intelligence, surveillance and reconnaissance carriers. Strengthening anti-submarine, electronic warfare, and intelligence, surveillance and reconnaissance cooperation and exchanges with allies to deter and counter incursions and threats from Chinese aircrafts.

In response to the incursions of Chinese aircrafts into southwestern airspace, the United States has taken countermeasures, including Salami Slicing, to help Taiwan improve its self-defense capabilities. In recent years, the U.S. has made 12 arms sales to Taiwan, increasing the range and power of its weapons. Taiwan's five-year military build-up has focused on long-range precision strike weapons

and strengthening its multi-domain deterrence capabilities. The U.S. has sent various types of aircrafts into the southwestern airspace, the South China Sea, the East China Sea and the Yellow Sea to conduct close reconnaissance missions. The close reconnaissance is getting closer and closer to the coastline of the CPC, and the frequency is quite frequent. The U.S. also sent bombers to the Indo-Pacific on task force missions, demonstrating strategic clarity and tactical unpredictability. The bombers take off from Taiwan or Guam and encircle the South China Sea from the Bashi Channel or the Philippines Sulu Sea from both north and south. At a time when Chinese aircrafts are conducting normalized and actual combat drills to attack Taiwan and relations between the Taiwan Strait are tense, deterring CPC provocations requires the cooperation of Taiwan, the United States, Japan and other neighboring democratic countries to counter Beijing's foreign military expansion. Taiwan's proper preparation for defense in the Taiwan Strait is the greatest contribution to the democratic countries in the Indo-Pacific region.

Chapter 6

Military Preparedness of the PLA in the South China Sea

Chung-Ting Huang*

I. Introduction

"China's Military Strategy," a 2015 Chinese defense white paper, states that "Preparation for military struggle (PMS) is a basic military practice and an important guarantee for safeguarding peace, containing crises and winning wars. To expand and intensify PMS, China's armed forces must meet the requirement of being capable of fighting and winning, focus on solving major problems and difficulties, and do solid work and make relentless efforts in practical preparations, in order to enhance their overall capabilities for deterrence and warfighting." The white paper stresses that in light of the evolution of warfare and the national security situation, the People's Liberation Army (PLA) should not only base its military preparedness on winning informationized local wars, but also highlighting maritime military struggle and maritime PMS.[1]

In 1968, Richard Nixon declared the Vietnamization of the Vietnam War, which indirectly opened the door to military preparedness for the PLA in the South China Sea. Since defeating the South Vietnamese Navy in 1974 and acquiring all of the

* Assistant Research Fellow, Division of Chinese Politics, Military and Warfighting Concepts, Institute for National Defense and Security Research.

1 "China's Military Strategy," *Central Government of the PRC*, May 26, 2015, http://big5.www.gov.cn/gate/big5/www.gov.cn/zhengce/2015-05/26/content_2868988.htm.

Paracel Islands, the PLA had been pushing forward its "From Green Water to Blue Water" plan through the Navy's submarine 252 and the South Pacific Special Surface Fleet, which had stepped out of the first island chain while strengthening its military preparedness in the South China Sea by implementing the "Green Water Defense" strategy formulated by Commander of the PLA Navy Liu Huaqing. In 1988, China capitalized on Vietnam's preoccupation with withdrawing its troops from Cambodia to capture the Johnson South Reef in the Spratly Islands. In the early 1990s, it took advantage of the retreat of U.S. forces from the Subic Bay Base to Guam to seize Mischief Reef.

The securing of strategic positions in the Paracel Islands and Spratly Islands in the South China Sea is fundamental to the PLA's military preparedness in the region. With the subsequent establishment of the Sansha Garrison, the creation of the regular combat readiness patrol system in the South China Sea, the expansion of the PLA's naval fleet, and the reclamation of islands in the waters, the PLA has been able to prepare for military struggles in the region in a diversified manner. As the South China Sea has become a major arena for the U.S. -China competition in the Indo-Pacific, the PLA's preparations for military struggle in the South China Sea are a matter of concern to the countries with a stake in the region. On the basis of this knowledge, this paper intends to delve into the military preparedness of the PLA in the South China Sea from three perspectives: the extension of military strength and battlefield awareness, the offense and defense on islands and reefs, and the suppression of foreign forces in the waters.

Owing to length constraints, this paper will leave out the topic of military preparedness in the airspace of the South China Sea. The military drills carried out by the PLA and other countries in the South China Sea are in the nature of military diplomacy, regional cooperation, humanitarian relief and disaster assistance, and are therefore not covered in this article.

II. The Extension of Military Strength and Battlefield Awareness in the South China Sea

1. South Sea Fleet Drills in the South China Sea

On May 22, 1983, the Chinese navy made its first patrol to the James Shoal. At the same time that the PLA was confirming its defensive coverage of the South China Sea, Beijing was reinforcing its nominal and substantive control over the islands and reefs by naming them.[2] Albeit nominally the same as the East China Sea and the North Sea that fell within China's green waters, the PLA's drills in the South China Sea had been far sea training in nature since the beginning, given the vast expanse of the area. In the autumn of 2008, a task force of the South Sea Fleet (SSF) sailed around the South China Sea. According to the Chinese side, the voyage was only marked with the course and turning point, but not the specific time of the operation, and the 10-day voyage was a confrontation throughout the course, the waters and the time.[3] The realities of the South China Sea issue from a far sea perspective was also reflected on the difficulties of logistical support on the battlefield in the waters, particularly in light of China's call in the 18th National Congress Report to "resolutely safeguard the country's maritime rights and interests and build a strong maritime nation." From late 2012 to early 2013, the South Sea Fleet was tasked to conduct an exercise on the provisioning of supplies by emergency relief vessels, in order to boost the planning, organization and implementation capabilities of the Base of the South Sea Fleet's far-sea logistic support, and to solve the issues of shore-based emergency loading, long-range storage of supplies and integrated ocean-going replenishment, thereby setting up the South Sea Fleet's integrated ocean-going support system. In the meantime, the PLA was testing its escort mission via the Gulf of Aden in the South China Sea.[4]

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[2] Chung-Ting Huang, "A Comparative Analysis of the Naming of Features by China in the South China Sea in 1983 and 2020," *Proceedings of the 2020 Lecture on Ocean and National Defense* (Taoyuan: National Defense University, 2020), p. 107.

[3] "China's Navy Normalizes Distant Voyages, from Sailing Training to Fierce Confrontation Exercises (2)," *Chinanews.com*, May 11, 2009, http://www.chinanews.com/gn/news/2009/05-11/1685171.shtml.

[4] "South Sea Fleet Establishes Integrated Ocean-going Protection System," *Chinese Communist Party News Network*, January 22, 2013, http://cpc.people.com.cn/n/2013/0122/c64387-20286574.html.

From 2013 onwards, the PLA's attempts to establish a formal warfare order had gained momentum. At this point, air reconnaissance and air defense capabilities were still weak on islands and reefs in the South China Sea, so the South China Sea surface fleet paid particular attention to anti-aircraft and anti-submarine training. On March 19, four ships including the amphibious landing platform dock Jinggang Mountains, missile destroyer Lanzhou, missile frigates Yulin, and Hengshui formed the South Sea Fleet for a combat-readiness patrol and far-sea training program with four helicopters, one hovercraft and one marine company on board. The task force was divided into three force groups and went to the South China Sea and the Western Pacific Ocean to undertake training in such programs as setting up command posts, maritime maneuvers, maritime rights maintenance, distant sea escort, rapid response in support of operations and political work. On March 20, a ship-submarine countermeasures exercise, including anti-aircraft and anti-submarine, was carried out in the waters east of Hainan Island.[5] On April 16, China released a white paper entitled "China's Defense White Paper: The Diversified Employment of China's Armed Forces," which advocated strengthening the infrastructure of combat readiness, conducting targeted combat readiness drills, organizing combat readiness duty and border, sea and air defense patrols, and being ready for combat and non-war military operations. On the other hand, the navy organized and performed regular war preparedness patrols in accordance with the principles of efficient use of troops, diversified patrols and whole-area surveillance, and maintained a military presence in the relevant waters. All fleets ensured that the requisite number of ships were on patrol in their respective jurisdictions throughout the year, stepped up air force reconnaissance patrols, and formed a mobile force to patrol and guard the relevant waters as required.[6]

Driven by the above objectives of regular combat readiness patrols, the PLA

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[5] "Navy Fleet Launches Beach Landing Training in South China Sea," *Central Government of the PRC*, March 21, 2013, http://www.gov.cn/jrzg/2013-03/21/content_2359439.htm; "Military: Normalization of Far Sea Training to Enhance the Combat Capability of China's Navy," *Central Government of the PRC*, March 21, 2013, http://www.gov.cn/jrzg/2013-03/20/content_2358632.htm; "South Sea Fleet Organizes Joint Mobile Patrol Training," *Huanqiu.com*, March 19, 2013, https://mil.huanqiu.com/article/9CaKrnJzJ4Z.

[6] "White Paper Features First Separate Section on 'Maintaining a State of Combat Readiness'," *Chinanews.com*, April 16, 2013, http://www.chinanews.com/mil/2013/04-16/4734091.shtml.

began to intensify its patrolling activities on the southern rim of the South China Sea. In March 2013, an amphibious fleet of four Chinese warships held a declaration of sovereignty in James Shoal, much to Malaysia's consternation and rare protest against China.[7]

On January 20, 2014, the far sea training unit for naval war preparedness patrols composed of the South Sea Fleet's amphibious landing platform dock Changbai Mountain, missile destroyers Haikou and Wuhan departed from the port of Sanya with three helicopters, a hovercraft and a marine company on board. The task force then held a joint submarine and ship breakthrough exercise in the South China Sea with a submarine unit. On January 26, the task force again cruised to James Shoal and staged an affirmation of sovereignty.[8] This, in turn, has prompted Malaysia to quietly ramp up its cooperation with the Philippines and Vietnam in an attempt to get the Chinese government to accept a binding code of conduct in the South China Sea.[9]

With the South China Sea issue taking on an international dimension as a result of the arbitration case, the PLA's exercises and training activities in the region had become increasingly propagandistic. On the 25 of April 2016, a detachment submarine 372 of the South Sea Fleet embarked on a collaborative drill with surface ships and airmen in a certain sea area. With a scenario set up based on the combat-oriented requirements, the exercise was conducted with a data link communication compliance guide, joint strike, crew escape and rescue, submarine vertical supply and submarine rescue towing.[10] On July 7, 2016, China's state media reported that a hovercraft and a land navigation brigade of the PLA Southern Theater Command's 42nd Army Group had launched a WZ-10 attack

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7 "Navy to Set up Fourth Base in Bintulu-RMN Chief," *The Borneo Post*, March 8, 2018, http://www.theborneopost.com/2018/03/08/navy-to-set-up-fourth-base-in-bintulu-rmn-chief/.

8 "Navy's South Sea Fleet's Far-sea Training Taskforce Arrives at James Shoal for Cruise," *People's Daily Online*, January 26, 2014, http://politics.people.com.cn/n/2014/0126/c70731-24234692.html.

9 "Focus: Malaysia Stands with Philippines and Vietnam as China's South China Sea Claims Frowned upon," *Reuters*, February 28, 2014, https://www.reuters.com/article/malaysia-china-maritime-idCNCNEA1R07920140228.

10 "South Sea Fleet Submarine 372 and Surface Ship, Air Force Exercise (Photo)[2]," *People's Daily Online*, April 28, 2016, http://military.people.com.cn/n1/2016/0428/c1011-28312622-2.html.

helicopter to the South China Sea to conduct maritime flight training, highlighting the PLA's offense and defense capabilities on islands and reefs in the region. On July 8, four days prior to the announcement of the South China Sea arbitration judgment, in order to convey China's refusal to "swallow the bitter consequences of its sovereignty being undermined" and its confidence in its ability to defend its territorial sovereignty and maritime rights in the South China Sea through military means, the PLA, with the South Sea Fleet as its main unit, and the North Sea Fleet and East Sea Fleet, comprising more than 100 vessels, dozens of warplanes and coastal defense units, was divided into red and blue sides to stage a confrontation drill with ammunition in the waters around the Hainan Island and Paracel Islands. The exercise was carried out against a backdrop of winning a local war at sea under information-based conditions, and the themes set were closely aligned with real combat, focusing on air-to-air strike and other maritime information-based operations under the direction of members of the Central Military Commission of China (CMC), Commander of the PLA Navy Wu Shengli, Deputy Chief of the Joint Staff Department of the CMC Wang Guanzhong, political commissar of the PLA Navy Miao Hua, commander of the PLA Southern Theater Command Wang Jiaocheng.[11]

To further establish a formal order of warfare in the South China Sea, the PLA had made it a regular routine to carry out exercises with troops, ammunition and combat there. On the 27 of May 2017, Type 052C Haikou frigate, Type 052D Changsha and Hefei frigates and Type 054A Sanya frigate of the South Sea Fleet of the Chinese Navy launched a live-fire exercise in an area of the waters, including the firing of a Yu-7 torpedo from a destroyer and a single barrel 130 gun from a Type 052D destroyer. From March 20 to 22, 2018, a landing dock detachment of the South Sea Fleet hosted the first full training and solo maritime operation examination in the new year. Three landing dock boats rushed to the pre-determined sea area and organized a series of combat-oriented drills.

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[11] "Navy's Three Major Fleets Drill in South China Sea, Experts: Showcases China's Military Construction Achievements," *People's Daily Online*, July 11, 2016, http://military.people.com.cn/n1/2016/0711/c1011 28543175.html.

In 2018, in line with Xi Jinping's two-pronged strategy of peace and warfare in the South China Sea, the PLA on April 12 held a naval parade in the waters under the inspection of Xi Jinping, Chairman of the Central Military Commission., two days after Xi delivered his keynote speech "Openness for Greater Prosperity, Innovation for a Better Future" at the Hainan Boao Forum for Asia. It is worth noting that the ships on parade were organized into seven battle groups, including strategic strike, underwater attack, open-sea operations, naval strike, amphibious landing, offshore waters defense, and integrated protection, while the aircraft on parade were composed of 10 air echelons, including carrier-based aircraft, anti-submarine patrol operations, early warning command, open-sea operations, air-to-ship strike, long-range cover support, and air-to-air strike,[12] indicating that the South China Sea combat-oriented exercise was another large-scale joint operation comprising shore-based, underwater, surface and air forces.

To curb the political effect of the PLA's actions, the U.S. military sent the USS Theodore Roosevelt CVN-71 to the vicinity of the sea area where the PLA was carrying out military drills, and invited Philippine generals, officials and media to board the aircraft carrier to watch the F/A-18 Hornet jet landing and take-off operations.

To counter the challenge posed to the South Sea Fleet by the U.S. Freedom of Navigation Operation and its vessels and submarines, the PLA has thus expedited the commissioning of a Type 002 aircraft carrier Shandong. On December 17, 2019, China's first domestically built aircraft carrier was delivered to the navy, and Chairman of the Central Military Commission Xi Jinping awarded a banner and naming certificate to the naval receiving unit. On the other hand, it was actively developing an underwater attack system and an air combat system in the South China Sea, thereby strengthening the synergy between the two systems. In September 2018, the South Sea Fleet (SSF) organized an integrated submarine and aircraft countermeasures exercise in an area of the South China Sea, which lasted for several days and nights and was executed in a complex underwater acoustic

[12] "Xi Jinping Attends Naval Parade in South China Sea," *Central Government of the PRC*, April 12, 2018, http://www.gov.cn/xinwen/2018-04/12/content_5282030.htm.

environment. The Red and Blue sides engaged in the exercise involving multiple types of submarines, a number of escort ships and several anti-submarine aircraft. The submarines during the course demonstrated submarine-aircraft confrontation, submarine confrontation and live firing of mines against underwater targets, and fired several types of anti-ship and anti-submarine weapons.[13] In February 2019, the PLA Southern Theater Command (STC) for the first time joined hands with various military forces to organize the "Zhanlan-2019A" joint distant sea training mission, but intentionally refrained from releasing the relevant content. In July 2020, the PLA STC Naval Air Force conducted a high-intensity day and night exercise in the South China Sea with new fighter aircraft such as the H-6G and H-6J, including day and night take-offs and landings, long-range attacks, and target attacks on the sea. In August of the same year, the PLA's Hong Kong Garrison dispatched the Type 056 corvette Huizhou to undertake training programs in the South China Sea, including live-fire interfering bombs, main gun fire against the sea, sub-gun fire to destroy floating mines, counter-terrorism and anti-piracy, live-fire torpedoes, carrier-based aircraft landing and life-saving, as well as the earlier unannounced "sinking enemy submarine" exercise. On December 28, 2020, the Shandong and the Type 075 amphibious landing helicopter dock were seen together in the port of Sanya.[14]

On Jan 2, 2021, PLA submarines held a training exercise 65 km south of the port of Sanya. On January 4, Chairman of the Central Military Commission Xi Jinping issued a mobilization order for the PLA to commence training, calling for the army to be ready to fight and be able to fight whenever needed. All major military branches of the PLA responded to the call and did accordingly. The South Sea Fleet (SSF) on January 6 announced its combat-oriented training content, saying that it would employ the Type 054A frigate Yuncheng, the Type 056A corvette Yongzhou, the J-11B/BH fighter, the JH-7A bomber and the new Type 093A submarine.

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[13] "Liaoning Aircraft Carrier Task Force Finishes Training Program, Combat Capability in Place," *CCTV.com*, December 22, 2018, https://reurl.cc/829O1d.

[14] 2:43 PM · December 28, 2020, GEOINT@lobsterlarryliu, https://twitter.com/lobsterlarryliu/status/1343447357677924352.

The SSF also released the first footage of the Z-20F anti-submarine helicopters, which would be deployed on the Type 075 amphibious landing helicopter dock, the first of which was undergoing final testing at the SSF's Sanya base. Although the "Shandong" was inducted into the South Sea Fleet, it did not initially conduct operational exercises with other surface ships, but only carried out tests in the waters around Hainan Island.

In the first half of 2021, the South Sea Fleet's training objectives centered on two areas. On the one hand, it was a landing and combat oriented live-fire drill to mount a military threat against Taiwan. At the end of January 2021, for instance, the PLA Southern Theater Command deployed a number of landing docks, including the Navy ships Wuzhishan, Changbai Mountain and Kunlun Mountain, to conduct combat-oriented military training sessions in an area of the South China Sea. After firing live ammunition from the naval artillery and anti-aircraft artillery, a number of air-cushioned landing craft were detached from the mother ship and proceeded to the mission area for a beach landing exercise. On the other hand, it was a surface ship combat oriented live-fire exercise against the U.S. ships on a freedom of navigation operation. At the end of February 2021, the PLA Southern Theater Command's naval far-sea joint taskforce consisted of the missile destroyer Yinchuan, the frigate Hengyang, the amphibious landing platform dock Wuzhishan and the replenishment tanker Chagan Lake to form a strike team to conduct a live-fire drill against the sea. By simulating multiple waves of intense enemy missile attacks, the warship's close-range weapon system was effectively tested against missiles. In mid-March, for example, the PLA began firing training within a 5-kilometre radius off Weizhou Island, west of the Leizhou Peninsula, to deny U.S. forces access to the Chinese-controlled side of the Gulf of Tonkin. In late March, the PLA Southern Theater Command's Type 056A corvettes, such as Enshi and Hanzhong, formed a task force to carry out combat-oriented military training in various sea zones. The exercise included the deployment of air force to attack enemy frigates, release interference bombs and other disruption measures to protect against interference, as well as organizing various weapons systems to fight against aerial targets, assembling offense and defense, ship and aircraft search and rescue,

main gun fire, secondary gun fire to destroy floating mines and light weapons fire.

From mid to late April 2021, the South Sea Fleet (SSF) carried out landing and surface warfare exercises without interruption. For example, the PLA Southern Theater Command naval destroyer detachment dispatched the missile destroyer Wuhan and the missile frigate Hengyang to hold a live-fire drill in the South China Sea; a landing dock brigade of the SSF organized the Mount Song and Hengshan vessels for several days of combat-oriented military training in the South China Sea; a naval frigate detachment of the PLA Southern Theater Command formed a task force to embark on combat-oriented military training alongside the replenishment tanker Weishan Lake in the South China Sea.

On the 23 of April, the three major PLA warfare ships Changzheng 18, Dalian and Hainan were inducted into the South Sea Fleet under the witness of Xi Jinping, and the integration of the major warships has become an integral part of its recent combat training. On April 28, the aircraft carrier Shandong and the amphibious assault ship Hainan finally left the Sanya Naval Base and entered the South China Sea for sea trials.[15] By the end of May, the Shandong and Hainan warships were regularly conducting training exercises in the waters around Sanya to strengthen the South Sea Fleet's operational system. The first Type 075 amphibious landing helicopter dock called Hainan was the most active. In the same month, the PLA Southern Theater Command (STC) also staged landing drills, with the landing dock Qilian Mountains and its sister ship Wuzhishan being deployed to carry out vertical landing training alongside carrier-based aircraft. It was not until mid-June that the South Sea Fleet's first Type 055 destroyer, the Dalian, left the port and was operating in the northeastern waters of Sanya.

In mid-July, the Shandong and Hainan were operating in the south-eastern and western waters of Sanya respectively. Another point of interest was the naval training. Meanwhile, a PLA STC naval missile brigade held an all-day and all-night training test, which included maritime reconnaissance and evidence collection, vessel damage control training, camouflage and concealment using various tactics,

[15] 8:49 PM · April 28, 2021, GEOINT@lobsterlarryliu, https://twitter.com/lobsterlarryliu/status/1387388505869807624.

and firepower strikes. In addition, the PLA STC launched a joint air and sea drill in the South China Sea, with its sister units, including ships and submarines, invited to participate in the event. It seems that the South Sea Fleet (SSF) has also started to strengthen its asymmetrical warfare capability in order to be flexible against the large surface fleets of foreign countries entering the South China Sea when the main warships were inducted into the SSF.

2. Far Sea Training for Combat Readiness Patrols across Regions to the South China Sea

The South China Sea is not only a natural area for the South Sea Fleet's drills, but also an ideal venue for other fleets for cross-regional exercises due to the vast waters off the island chain, the complex hydro-meteorological and electromagnetic environment, and the historical practice of the 18th brigade of the East Sea Fleet frigates supporting the "Battle of the Paracel Islands" in 1974.[16] In 2007, for instance, two battleships of a destroyer detachment of the East Sea Fleet confronted an unidentified electromagnetic signal in the South China Sea on their way to the Indian Ocean for military drills.[17] From late January to early February 2013, the PLA, in response to the Philippines' referral of the South China Sea territorial dispute to the United Nations Permanent Court of Arbitration, dispatched the missile destroyer forces from the East Sea Fleet and the North Sea Fleet to the islands and reefs in the South China Sea to stage high-level armed patrols. The task forces adopted a high and low defense system with one destroyer and two escorts to facilitate air defense, as well as carried out training programs such as offense and defense, anti-submarine, repelling ships infringing on Chinese territorial waters, anti-piracy and complex channel navigation through islands and reefs. The task force's far sea training for combat readiness patrols was done without a

[16] "Expert: China's 054A Ships Sufficient to Deal with Neighboring Enemy Diesel-electric Submarines," *Sina Military*, February 5, 2013, http://mil.news.sina.com.cn/2013-02-05/0940714930.html; "In 1974, People's Navy Ship Fleet Passed Through Taiwan Strait for First Time," *Chinese Communist Party News Network*, May 6, 2014, http://dangshi.people.com.cn/ n/2014/0506/c85037-24981328.html.

[17] "China's Navy Normalizes Distant Voyages from Sailing Training to Fierce Confrontation Drills (2)," *Chinanews.com*, May 11, 2009, http://www.chinanews.com/gn/news/2009/05-11/1685171.shtml.

replenishment tanker in the waters off Woody Island in the Paracel archipelago, and relied on a replenishment tanker from a sister fleet for on-call supply at sea. It is worth noting that the PLA underlined the real-time positioning function of the BeiDou Navigation Satellite System for precise mapping of ships, which offered vital parameters for this mission. Also, the Bashi Channel is an international shipping lane, and under the United Nations Convention on the Law of the Sea, all ships and aircraft have the freedom to navigate and overfly.[18]

Driven by the goal of regular combat readiness patrols, the PLA had become more active in seeking the presence of Chinese warships in the South China Sea. On the 26 of November 2013, Liaoning set sail from its homeport the in Qingdao Cruise Terminal, accompanied by missile destroyers Shenyang, Shijiazhuang and missile frigates Yantai and Weifang left for the South China Sea to initiate scientific trials and military training activities. This is the first time that the armed forces had organized cross-sea area long-duration sailing training and fleet sailing training with the Liaoning as the core, and the first time that it had performed a comprehensive trial of operational systems since the Liaoning was commissioned. The PLA Navy units deployed several types of aircraft, surface ships and submarines to support the test and to facilitate combat-oriented military training.[19] In January 2014, the South Sea Fleet's far sea training unit for armed patrols was divided into two groups and went to the South China Sea, the Western Pacific Ocean and the East Indian Ocean to conduct training in such programs as command post establishment, operations assistance, tactical operations and political work.

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[18] "Our Naval Fleet Force Enters South China Sea through Bashi Channel as Scheduled," *Central Government of the PRC*, February 1, 2013, http://www.gov.cn/govweb/jrzg/2013-02/01/content_2324972.htm; "Chinese Naval Force Finishes Armed Patrols in South China Sea," *South China Sea Institute*, *Xiamen University*, February 8, 2013, https://scsi.xmu.edu. cn/info/1210/4558.htm; "Chinese Naval Fleet Force Training Round-the-clock in South China Sea," *Sina Military*, February 4, 2013, http://mil.news.sina.com.cn/2013-02-04/0744714776.html; "Expert: China's 054A Ships Sufficient to Deal with Neighboring Enemy Diesel-electric Submarines," *Sina Military*, February 5, 2013, http://mil.news.sina.com. cn/2013-02-05/0940714930.html; "Philippines Responds to Chinese Fleet Drills in South China Sea: No Infringement of Philippine Sovereignty," *Sina News Center*, February 4, 2013, http://news.sina.com.cn/w/2013-02-04/060926196403.shtml.

[19] "Liaoning Returns from Scientific Trial Mission in South China Sea," *Central Government of the PRC*, January 1, 2014, http://www.gov.cn/jrzg/2014-01/01/content_2558512.htm.

In early January 2017, the Liaoning aircraft carrier unit took up a cross-sea area training and trial mission by organizing night landings and take-offs of J-15 fighters, carrier-based aircraft training trials and multiple training programs in the South China Sea, while pushing ahead with tactical drills such as anti-submarine and missile submarine support in the vast expanse of the waters.[20]

In early February 2017, the "Zhanlan-2017" expeditionary training unit, comprising the North Sea Fleet vessels Qingdao, Yantai and Yancheng, travelled to the South China Sea, where it first conducted longitudinal replenishment in the Paracel islands before cruising to the Spratly waters to carry out armed patrol duties. At the same time, the fleet unit also carried out operational exercises such as maritime law enforcement, counter-terrorism and anti-piracy, and anti-submarine activities.[21]

In early 2018, the Liaoning sailed again to the South China Sea on a cross-region long-distance voyage, but the nature of her mission has shifted from the scientific trials of 2013 to the operational level. In the meantime, the Liaoning carrier group launched a live-fire exercise in the distant sea by sailing, training and confronting all the way. The unit underwent several training sessions in the South China Sea in the areas of reconnaissance and early warning systems building, electronic countermeasures, air operations, sea operations, land strikes and anti-submarine operations, centering on the construction and use of combat systems, breaking through submarine ambush zones, sea-to-sea and air-to-air operations, and command post training to enhance the unit's operational capability. On March 25, 2018, the Liaoning carrier group departed from the port of Sanya, Hainan, and joined the Type 052D destroyer, Type 054A frigate, Type 056 corvette, Type 071 amphibious transport dock, Type 093 nuclear-powered attack submarine, and the Type 901 ocean-going replenishment tanker Hulun Lake designed for navigational service, among 40 warships, for military drills at the training ground south of

[20] "Expert: J-15 Conducts Night Takeoffs and Landings in South China Sea to Boost Combat Capability," *People's Daily Online*, January 10, 2017, http://military.people.com.cn/n1/2017/0110/c1011-29010137.html.

[21] "Navy Fleet Force on Armed Patrol in Spratly," *China Youth Online*, April 21, 2017, http://m.cyol.com/content/2017-04/21/content_15974512.htm.

Hainan Island.

On April 3, 2021, the Liaoning fleet sailed south from the Miyako Strait to the Western Pacific Ocean and then entered the South China Sea from the Bashi Channel for drills. The convoy first stayed from April 11 to 14 in waters east of Hainan Island, then from 16 to 17 moved around the Paracel Islands, and from 21 to 22 arrived in Spratly waters before transiting the Spratly islands and reefs and the South China Sea west of the Philippines. On the 25, the ships left the Bashi Channel and returned to the East China Sea via the Miyako Strait the next day. The Liaoning's cross-regional drills this time were the most extensive of its kind in the South China Sea. In addition, the Liaoning joined forces with the North Sea Fleet's Type 052D destroyer Chengdu and Type 055 destroyer Nanchang for exercises in the South China Sea. The Liaoning was mostly active around Hainan Island until mid-April, then sailed northwest of the Subi Reef on the 22, even running into a U.S. fleet 193km northwest of the Subi Reef.[22] According to the satellite photos, the U.S. missile destroyer followed the fleet of the Liaoning around in the South China Sea and even cut into the left side of its formation. The U.S. Navy also released a photo of a U.S. captain looking at the Liaoning with his legs crossed,[23] with the intention of containing the domineering presence of the Liaoning's fleet.

3. Raising the Awareness of the South China Sea Battlefield

This involves the mastery of geographical and hydrological information on the battlefield in the South China Sea and the monitoring of potential enemies in the waters and surrounding areas. Through various drills and exercises as described in the preceding sections, the PLA would be able to heighten its perception of the battlefield in the South China Sea. In addition to naval vessels, marine police vessels and the militia under the jurisdiction of the Central Military Commission can also provide real-time information on the waters. Moreover, the PLA often

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[22] 9:05 AM · April 22, 2021, GEOINT@lobsterlarryliu, https://twitter.com/lobsterlarryliu/status/1385037025095471105.

[23] "Headline: Liaoning's South China Sea Drill Revealed, U.S. Ship Cutting into Formation Sparks Netizens' Anger," *Chinatimes.com*, April 28, 2021, https://www.chinatimes.com/realtimenews/20210428000680-260407?chdtv.

accesses sensitive waters or tests the performance limits of its vessels on the pretext of emergency relief operations. Equipment installed by China on the occupied islands and reefs, including radar arrays and satellite communication base stations, all contribute to the PLA's ability to enhance its situational awareness in the South China Sea.[24]

III. Military Preparedness for Approaches of Offense and Defense to Islands and Reefs

Since China's militarization of the occupied islands and reefs in the South China Sea in 2012, the offense and defense capabilities associated with these islands and reefs had quickly risen above the simple notion of "naval mines for offense and defense against the coral reef islands.[25] On top of deploying the YJ-12 anti-ship missile and the HQ-9B mid-to-long-range surface-to-air missile system on the relevant islands and reefs, the PLA Navy was also involved in offense and defense missions on the islands and reefs in the South China Sea.

In January 2013, the South Sea Fleet organized a task force of 560 ships to go on a training patrol in the sea area west of Scarborough Shoal. The training content highlighted duty officer training, offense and defense operations at sea, data link communication, and training to support and cover local law enforcement forces. During the training, back-to-back group training was emphasized and 36 hours of successive search and dive training was organized in accordance with the training and security conditions at sea. In mid-March 2013, Jingpo Lake, a combat support ship detachment of the South Sea Fleet, dispatched a new type of replenishment vessel to supply oil and water to the Subi Reef in the Spratly Islands. The vessel featured easy navigation in narrow waterways, high loading speed and the ability

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[24] "Viewpoint: China's Submarines and Struggles under South China Sea," *BBC Chinese*, July 11, 2016, https://www.bbc.com/zhongwen/trad/china/2016/07/160711_viewpoint_south_china_sea_submarines.

[25] "Chinese Naval Nines as the 'Lethal Weapon' of Chinese Navy," *U.S. Naval War College - Chinese Mine Warfare*, No. 3, June 2009, p. 40, http://www.andrewerickson.com/wp-content/uploads/2013/07/Chinese-Mine-Warfare_China-Maritime-Study-3_2009-August_CHINESE_Traditional.pdf.

to cope with Class 4 sea conditions. On the 21 of March, the South Sea Fleet's expeditionary group launched a beach landing exercise targeting D Island in the South China Sea, which involved more than 100 officers and men from the Marine Corps and Air Force of the Jinggang Mountains warfare ship, using an assault boat, an domestically-built amphibious air-cushioned landing craft (the first of its kind) and helicopters to stage a vertical assault to the islands and reefs, thus speeding up the formation of a four-in-one landing force comprising landing dock, hovercraft, main battle vehicle and Marine Corps to meet the need to operate on islands and reefs in unfamiliar waters and complex sea conditions.[26]

From the 21 to the 22 of January 2014, the South Sea Fleet's unit for armed patrols and far sea training embarked on a cruise in the Paracel waters covering the islands and reefs of Yongxing Island, Lincoln Island, Duncan Island, Triton Island and Money Island. During the cruise, the far sea training team also led the Paracel garrison to conduct offense and defense drills on the islands and reefs. During the exercise carried out "back to back," the fleet employed rubber boats, assault boats, carrier-based aircraft and new hovercraft to carry the landing force and implement multi-modal and multi-method landing, thus accumulating experience for the shift in the new combat force generation mode in the distant sea. From the 23 to the 25, a South Sea Fleet far sea training unit was on an armed cruise to the reefs of the Spratly Islands and the surrounding waters. During the reef patrol by the Changbai Mountain fleet, the Haikou fleet conducted a planned submarine countermeasures exercise under air threat conditions and led offense and defense drills on the Spratly islands and reefs.[27]

According to radio calls from Chinese naval aircraft received by a U.S. Boeing

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[26] "South Sea Fleet's Mobile Task Force and Submarines Against Hovercraft Racing at 45 Knots (photo)," *Sina Military*, March 21, 2013, http://mil.news.sina.com.cn/2013-03-21/0750719217.html; "South Sea Fleet's New Replenishment Vessel for Islands and Reefs Unveiled at Subi Reef in Spratly Islands (Photo)," *Sina Military*, March 13, 2013, http://mil.news.sina.com.cn/2013- 03-13/1150718369.html; "Marines in Assault Boat Raid the Beach and Push Their Way to the Island's Stronghold," *Sina Pictures*, March 22, 2013, http://slide.news.sina.com.cn/c/slide_1_2841_31135.html#p=1.

[27] "PLA Landing Dock Drills to Capture Islands in Paracel with Female Soldiers in Action," *NetEase Military Affairs*, January 23, 2014, https://war.163.com/photoview/4T8E0001/42283.html?from=tj_xgtj#p=9J8SBH7T4T8E0001; "South Sea Fleet Far Sea Training Unit Ends Cruise Around Spratly Islands," *Central Government of the PRC*, January 23, 2014, http://www.gov.cn/jrzg/2014-01/26/content_2575596.htm.

P-8 Poseidon maritime patrol aircraft in the South China Sea in 2015, China had set up air defense boundaries such as "Chinese turf sky" and "military security area" in the airspace near the occupied islands and reefs, indicating that the islands and reefs were being militarized.[28]

From the 12 to the 13 of February 2017, the South Sea Fleet (SSF) far sea training team, together with aviation and shore-based air defense forces, launched a joint air defense combat-oriented exercise, which included shore-based air defense on islands and reefs. According to the rehearsal, the PLA has built a three-layer air defense network for the defense of islands and reefs: on the outer perimeter are two fighter planes of a division of the naval aviation force on patrol and prepared for battle; in the middle layer are the Type 052C/D destroyers with long-range air defense capability – the "Changsha" and "Haikou" ships; and at close range are ground-based air defense fires. The shore-based air defense forces involved in the drill might include the HQ-9 air defense battalion on Yongxing Island in Paracel, as well as the 76mm rapid fire artillery and 30mm close-in artillery defensive fire on the newly constructed islands and reefs in Spratly, indicating that the Spratly defense system had acquired its initial operational capability. The airfields on Yongxing Island in Paracel and the newly built islands on reefs in Spratly might also serve this purpose. The air force for the exercise was probably the land-based aviation unit of the South Sea Fleet based on Hainan Island, the J-11BSH.[29]

According to a video posted on China Central Television's (CCTV) Defense and Military Affairs Channel on Weibo on June 19, 2021, pilots from a brigade of the PLA Southern Theater Command air force issued a two-stage warning when intercepting a foreign military aircraft. The first accusation was that the foreign aircraft had "entered the airspace where Chinese military aircraft are operating, endangering flight safety" and the second that the aircraft "kept approaching our internal control line despite the first warning." According to the terminology used

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[28] "Chinese Navy Issues Angry Warning to U.S. Plane in South China Sea-Audio Recording," YouTube, May 22, 2015, https://www.youtube.com/watch?v=OaKbZW0pqkM.

[29] "South Sea Fleet Organizes Joint Air Defense Drill in Response to U.S. Aircraft Carrier Fleet Cruise," *Tencent News*, February 15, 2017, https://news.qq.com/a/20170215/036005.htm.

by the Chinese air force for air interception, the phrase "airspace where Chinese military aircraft are operating" should refer to its "Air Defense Identification Zone" (ADIZ), while the term "internal control line" should represent the tentative 12-mile limit of China's occupied Spratly islands and reefs before Beijing announced the baseline of the territorial waters of the Spratly Islands and the scope of the territorial waters and airspace. Once a foreign military aircraft enters the "internal control line," it can be considered as an infringement of the Chinese airspace.[30] Coincidentally, PLA Southern Theater Command (STC) press spokesman Comodoro Mayo on September 8, 2021 responded to a 12-nautical mile entry by the U.S. destroyer into Mischief Reef by saying that "it illegally trespassed into the waters adjacent to Mischief Reef in China's Spratly Islands without the approval of the Chinese government." In the anterior part of the sentence, the word "approval" is clearly a reference to China's discretionary power of "non-innocent passage" in its territorial waters, but in the posterior part, the PLA did not describe the waters accessed by the U.S. ship as territorial waters, but as "adjacent ones." These examples illustrate that China still sought to deny freedom of navigation to foreign forces with self-declared airspace or territorial waters boundaries, using a vocabulary of sovereignty claims that had no basis in international law, before it had declared the baseline of the Spratly territorial waters.[31]

In addition, the PLA's operation and management of Mischief Reef or its activities in the waters of Union Banks are of continuing concern. Mischief Reef has a two-armed embrace of the bay, and after the completion of land reclamation on the reef, it can allow the PLA ships to berth there on a long-term basis. In January 2016, The Philippine Star reported that China had built a port of call for submarines at Mischief Reef, which was frequented by PLA ships in late 2020. According to a Planet Labs satellite photo dated December 12, 2020, several Chinese naval vessels were spotted sailing into Mischief Reef and on the 24, a

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[30] Chung-Ting Huang, "All Criteria Null and Void: The PLA's Battlefield Operations in the Airspace of the South China Sea," *National Defense Security Commentary*, July 1, 2021, https://www.shorturl.at/dmyD3.

[31] Chung-Ting Huang, "Area Denial vs. Freedom and Openness: A Look at the China-US Indo-Pacific Debate," *National Defense Security Commentary*, September 29, 2021, https://www.shorturl.at/dyzDY.

suspected PLA fleet was photographed near Mischief Reef. On the 26, a vessel suspected to be heading from the vicinity of Mischief Reef to Union Banks was captured on camera. On the 29, there was again a gathering of warships near Mischief Reef. On January 8, 2021, an assembly of ships was seen around Subi Reef. Meanwhile, satellite photos showed Chinese maritime militia, marine police and engineering vessels stationed near Whitsun Reef, Grierson Reef and Hughes Reef, which are part of Union Banks. On April 8, 2021, while on board a civilian vessel heading to Second Thomas Shoal in Philippine exclusive economic zone, where the Philippine Marine Corps was posted, the Philippine ABS-CBN news team was chased by the vessels of the China Coast Guard and two PLA Type 022 missile boats. The vessel in question was only 90 nautical miles from Palawan. It was alleged that after a chase of more than 20 minutes, the Type 022 missile boat diverted toward Mischief Reef. The Philippine military said it had photographed the missile boat spotted near Mischief Reef on April 3, carrying two short-range missiles with guns on board.

As regards Fiery Cross Reef, it should be a stronghold of the PLA's naval air force in the Spratly Islands. On January 5, 2021, a satellite photo showed a large military aircraft landing on Fiery Cross Reef. Satellite photos of Fiery Cross Reef dated June 5th and 9th both showed the Y-8 Maritime Patrol Aircraft.[32] MAXAR satellite photos revealed that the Type 815 spy ship, probably belonging to the South Sea Fleet, appeared on June 9 in the waters northeast of Fiery Cross Reef and southwest of Union Banks, with a large number of Chinese militia fishing boats in the distance to the left of the ship.[33] On March 4, 2021, the PLA was suspected to have conducted joint air and sea training exercises near Mischief Reef.

The waters surrounding Scarborough Shoal in the Macclesfield Bank are currently the focus of a naval tussle between China, the U.S. and the Philippines. On December 21, 2020, for example, the Type 054A frigate was suspected to

[32] 4:47 PM · Jun 5, 2021, Duan Dang@duandang, https://mobile.twitter.com/duandang/status/1401098427920904195?lang=ar.

[33] "Chinese Military Surveillance Ship, Aircraft Spotted at Contested South China Sea Reef," *USNI News*, June 9, 2021, https://news.usni.org/2021/06/10/chinese-military-surveillance-ship-aircraft- spotted-at-contested-south-china-sea-reef.

have appeared in the Mindoro Strait at the exit of the Verde Island Passage, about 240 km southeast of Scarborough Shoal. The ship was also photographed trailing behind the USS John S. McCain (DDG-56), about 270 km southeast of Scarborough Shoal. According to a report by the Asia Maritime Transparency Initiative (AMTI), a combined total of 13 Philippine law enforcement vessels and warships between March 1 and May 25, 2021 carried out at least 57 patrols in the waters of Scarborough Shoal and the Spratly Islands.

Moreover, the AG600, the world's largest amphibious aircraft developed by China, has completed several flight tests. In the future, it may support the PLA's South China Sea garrison in replenishment and enhance the force of guarding the islands and reefs in the South China Sea.

IV. Containment of Foreign Forces: Interdiction, Cruising and Display of Military Power

To assert China's claims in the South China Sea and to deny or deter others from exercising freedom of navigation or related sovereign rights in the region, the PLA may take specific actions such as interdiction, cruises and displays of military strength.

1. Interdiction

The PLA's primary means of containing foreign forces in the South China Sea is through interdiction, such as interfering with surveillance, tailing, and declaring prohibition of navigation.

In terms of interfering with monitoring, for instance, the PLA in 2009 attempted to cut the towed sonar exploration cable of the USNS Impeccable ship near Hainan Island with the aid of maritime militia; in the same year, it rammed the towed sonar detector of a U.S. vessel through a submarine, targeting the USS John S. McCain destroyer operating off Subic Bay. Also, the USS Curtis Wilbur (DDG-54) on May 22, 2021 cut in from the eastern side of North Reef, the northeastern base of Paracel, and then circled out from the northwest of the Crescent Group.

Meanwhile, the PLA dispatched a Type 054 frigate to interfere with the activities of the U.S. ship, which was only 0.9 nm away from the Type 054A frigate at 14.7 nm off the western baseline of Paracel.

Regarding tailing and surveillance, in February 2018, the SSF's far sea training unit conducted a visit and search and arrest exercise in which the ship Hengyang was tasked to board and inspect a merchant vessel of an unknown registry carrying prohibited cargo. Also, in June 2018, HMS Sutherland, a British Royal Navy frigate, was followed and monitored by 16 Chinese warships while on a cruise in the South China Sea.[34] In July 2018, Chinese state media reported that the South Sea Fleet's Type 052C destroyer Haikou had been ordered to tail a large fleet of ships of a certain country and carry out identification and warning of evictions in accordance with the law. On July 1, 2020, the USS Gabrielle Giffords (LCS-10), a U.S. ship sailing in the South China Sea, was suspected to have been followed by a Type 054A frigate. On July 4, the USS Nimitz and USS Ronald Reagan fleets launched a drill in the South China Sea. Besides sending warships for close surveillance, China also dispatched "fishing boats" to operate in the vicinity of the U.S. fleets.[35] For example, on October 9, 2020, the destroyer USS John S. McCain (DDG-56) was shadowed by the Type 054A frigate 59 nm southeast of Yongxing Island.[36] Another example was the entry of the USS John S. McCain (DDG-56), a destroyer, into the waters of the Paracel Islands in the South China Sea on February 5, 2021, which was tailed by a PLA warship. On June 15, 2021, the Type 054A frigate was north of the North Danger Reefs watching the USS Theodore Roosevelt CVN-71 exiting the Verde Island Passage at a distance of about 320 nm, but the Shandong was returning to Sanya.[37] On July 12, 2021, the USS Kidd DDG-100 destroyer appeared to be under surveillance by a Type 052D destroyer. Also, the

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[34] "British Warships Followed by Our 16-ship Fleet in South China Sea, Performance Lags Behind 054A," *Sina Military*, July 3, 2018, http://mil.news.sina.com.cn/jssd/2018-07-03/doc-ihevauxi8041233.shtml.

[35] "U.S. and Japanese Warships Rehearse Together in South China Sea Amid PLA's Paracel Exercises," *HK01*, July 9, 2020, https://www.shorturl.at/fALR7.

[36] 11:14 AM · October 10, 2020, GEOINT@lobsterlarryliu, https://twitter.com/lobsterlarryliu/status/1314766159435100161.

[37] 4:56 PM · June 15, 2021, GEOINT@lobsterlarryliu, https://twitter.com/lobsterlarryliu/status/1404724379842355201.

sister ship USS Benfold (DDG-65) was accused of trespassing in the territorial waters of the Paracel Islands on the day of the rendezvous with the USS Kidd. On July 13, 2021, the USS Benfold (DDG-65) was followed by the PLA frigates with only 7.8 nm between them.[38]

In terms of declaring a ban on navigation, for example, against the backdrop of U.S. vessels active in the South China Sea last summer and military aircraft repeatedly approaching the mainland's coast for reconnaissance, the PLA Unit 95180 on July 23, 2020 issued a sea closure notice, stating that the unit would stage live-fire target shooting in the waters west of the Leizhou Peninsula from July 25 to August 2, when all marine navigation and fishing operations in the relevant waters would be prohibited and vessels should be berthed in port and forbidden to set sail. The PLA's declaration of a ban on navigation under the pretext of military drills may appear to be provocative, but its original intention in announcing the prohibition was to discourage the U.S. military from taking a step further into the "minefield." Specific cases in point are the three military drills organized by the PLA Southern Theater Command in July 2020, including one in the Paracel waters between July 1 and 5, one in Hainan between July 15 and 16, and one in the Gulf of Tonkin between July 25 and August 2. The gradual retreat of these military exercises towards the mainland has sent a message to the U.S. that it is unwilling to confront the U.S. military. Additionally, for three months in March, April and May 2021, the Chinese authorities issued successive prohibition notices against sailing through the western entrance to the Qiongzhou Strait, in an attempt to deny access to the Strait by the French naval vessels carrying out the "Mission Jeanne d'Arc 2021." In late April of the same year, China promulgated a draft amendment to the Maritime Traffic Safety Law of the PRC, asserting its discretionary right of "non-innocent passage." This paper suggests that China's proclamation of a ban on navigation has the same purpose as declaring the right of non-innocent passage, which aims to preclude foreign warships from routinely encircling China's coastal waters, islands and reefs, and then using the right of transit passage or freedom of

[38] 9:16 PM · July 13, 2021, GEOINT@lobsterlarryliu, https://twitter.com/lobsterlarryliu/status/1414936764943273989/photo/3.

navigation to cross the straits of any of China's claimed territorial waters.[39] Another example was the PLA's large-scale military training in the South China Sea from August 6 to 10, 2021, after announcing a military drills area of up to 100,000 square kilometers linked by eight coordinates. This was partly in response to the Large-Scale Global Exercise 21 (LSGE21) that the U.S. and its allies launched between the 3rd and 16th of the same month.[40]

2. Underwater Cruise

The PLA is able to carry out combat readiness patrols in the South China Sea not only by means of distant sea training, but also with individual submarine cruises. Underwater cruises by submarines may not reveal their exact location, but their concealment carries an intimidating effect that is beyond the reach of surface fleets. The PLA submarines patrolling the South China Sea, even at depths of 200 meters, are sufficient to eliminate the threat of satellite detection, and the natural noise in some waters can mask the noise of the submarines. In addition, since there are many obstacles such as sunken ships and abandoned derricks in the South China Sea, it seems that the PLA's submarines should have established cruising routes, and these routes will not only allow the PLA to cross the first island chain from the perimeter of the South China Sea, but also facilitate the PLA's deployment of naval mines at the channels to block the shipping lanes,[41] as well as cruising to the deep waters above 4,000 meters at the edge of the waters, so as to spy on the activities of foreign vessels and prepare for tactical ambushes in times of war.

The PLA is also preparing for the military struggle in the South China Sea by going on cruises in the extended waters and expanding the depth of defense. For example, the Indian Navy has accused the PLA's missile submarine of carrying out

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[39] Chung-Ting Huang, "China's Newly Amended 'Maritime Traffic Safety Law' Implies Message of Maritime Rights Maintenance and Great Power Play," *Up Media*, May 25, 2021, https://reurl.cc/j8x7vD; Chung-Ting Huang, "South China Sea 'Navigation Ban' not just Provocation," *Up Media*, September 4, 2021, https://www.upmedia.mg/news_info.php?SerialNo=123372.

[40] "China Announces '100,000 sq km' of Military Drills in South China Sea," *Radio Free Asia*, August 5, 2021, https://www.rfa.org/cantonese/news/drill-08052021065432.html.

[41] "South Sea Fleet Submarine Detachment Practices Blocking Shipping Lanes with Distant Sea Mines," *Sina Military*, January 21, 2013, http://mil.news.sina.com.cn/2013-01-21/1718713361.html.

secret cruises in the Indian Ocean for years. In 2013, the South Sea Fleet's Type 093 missile submarine headed into the Indian Ocean via the Ombai Strait on the eastern flank of the Lesser Sunda Islands in Indonesia, followed by several months of underwater navigation near Pakistan, the Gulf of Aden and the Indian Ocean.[42] Another example is that in January 2017, the North Sea Fleet's Type 039 Regular Power Submarine and the ocean-going salvage lifeboat "Changxing Island" called at the port of Kota Kinabalu, the capital of Sabah in Malaysia. The submarine was on its way back from the Gulf of Aden and Somali Sea, when it docked at Kota Kinabalu for rest and replenishment. The call was the first time a PLA submarine had visited Malaysia. The port of Kota Kinabalu, facing the South China Sea, is an important military port for Malaysia and is another submarine replenishment port confirmed by the PLA after Sri Lanka in 2014.[43]

3. Display of Military Power

The PLA is also building up its deterrent power in the South China Sea by relying on relevant sea-based, shore-based or submarine-launched missiles. In July 2016, Chinese state media deliberately hyped the presence of Type 093B nuclear-powered attack submarines at Yulin Harbor, stressing that the submarine constituted one of the cornerstones of China's resistance to U.S. hegemony, and suggesting that it carried an improved version of the JL-2A intercontinental ballistic missile or the JL-3 submarine-launched ballistic missile, which could both threaten U.S. military strongholds west of the east coast of the Pacific Ocean. Also, in March 2020, it was noted that the PLA had set up a HQ-9 surface-to-air missile base in Ningming County, Guangxi, on the China-Vietnam border,[44] to deter U.S. military aircraft attempting to gain access to the mouth of the Northern Gulf to spy on the military. Another case in point is the high-profile entry and exit of a

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[42] "In-depth: India Concerned about China's Nuclear Submarines Entering Indian Ocean, Leasing Russian Nuclear Submarines," *Sina Military*, November 3, 2015, http://mil.news.sina.com.cn/2015-11-03/1656842957.html.

[43] "Defense Ministry Confirms First Submarine Visit to Malaysia as South China Sea Situation Eases," *Sohu News*, January 8, 2017, http://news.sohu.com/20170108/n478090863.shtml.

[44] "Vietnam Holds off for Opportunity as PLA Deploys Missiles along Border," *HK01*, March 10, 2021, https://www.shorturl.at/wDMS5.

PLA Type 093 attack submarine into and from the underground base of the Yulin Naval Base in Hainan in mid-August 2020, amidst successive military drills by the U.S., Japan, Australia, India and Southeast Asian countries. On the 26 of the same month, the PLA executed a ballistic missile test launch in the waters between Hainan Province and the Paracel Islands. It is alleged that China launched a DF-26B missile with a range of about 4,000 kilometers from the inland province of Qinghai, targeting an old merchant ship sailing unmanned, and a few minutes later launched a DF-21D missile with a range of over 1,500 kilometers from Zhejiang province in eastern China. It was reported that the two missiles almost simultaneously sank the target ship, which was adequate to threaten the U.S. ships operating in the South China Sea.

Three test firings around the Qiongzhou Strait between the 26 and 31 of July 2021 preceded a military drill off the Pearl River Estuary from the 27 to the 29. Chinese state media reported that a satellite image of the South China Sea taken on July 28 revealed that the British Queen Elizabeth-class aircraft carrier had made its way into the waters and was within striking range of the J-15 (with a combat radius of about 1,500 km) when it was just 580 nm (1,000 km) from the Shandong. Given that China was very concerned about British ships traveling within 12 nm of the islands and reefs in the South China Sea,[45] especially in the territorial waters of the Paracel Islands, the firepower display since the end of July should also have implied a high degree of area denial.

On August 6, the PLA embarked on a five-day military drill in the South China Sea, covering an area of 100,000 square kilometers southeast of Hainan Island, including the Paracel Islands. In addition to the Shandong, the participating ships included a Type 075 landing helicopter dock, three Type 055 destroyers and nearly 30 ships of various types, a scale and firepower rarely seen before. Analysts

[45] "British Navy's 'Queen Elizabeth' Enters South China Sea waters, U.S. Media Urges Her to Enter 12 Nautical Miles of Chinese Islands and Reefs as Provocation," *huanqiu.com*, July 27, 2021, https://news.sina.com.cn/c/2021-07-27/doc-ikqciyzk7815840.shtml; "Military Buzz: British Carrier Fleet Enters South China Sea, J-15 Wants to Contribute," *The Epoch Times*, August 5, 2021, https://www.epochtimes.com/b5/21/8/3/n13136607.htm.

noted that of the three Type 055 destroyers deployed in the exercise, apart from the Dalian, which was already part of the South Sea Fleet, the other two were the Anshan and Yenan, which had not yet been publicly revealed and were likely to be assigned to the South Sea Fleet.[46]

V. Conclusion

The South China Sea lies in a vast area, far from the mainland of China, and is therefore difficult for the PLA to conduct offensive and defensive operations as well as maintenance tasks. This has led the PLA to give priority to the development of an "ocean-going integrated security system" at the beginning of its preparations for military struggle in the waters. Under Xi Jinping's rule, reinforcement of operational infrastructure has taken center stage in the military preparedness in the South China Sea. Against this backdrop, the PLA has been setting up a base by reclaiming land on reefs, while at the same time making "connections" through operational patrols, thereby building up its military presence in the region.

Looking at the PLA's combat-oriented programs of near-shore exercises and distant sea training sessions, both in terms of its armament (e.g. with the hovercraft, the Type 075 landing helicopter dock, and the Z-20) and its collaborative training units (e.g. the joint drills by underwater and overwater vessels and other naval and air forces), or its familiarity with the waters of distant islands and reefs and mastery of complex sea conditions for military preparedness, it is clear that China is placing greater emphasis on strengthening the two major operational systems of landing on islands and reefs and joint multi-services operations. Moreover, the PLA's recent efforts to bolster the synergy between its new warships, such as the Shandong, Dalian and Hainan, and its existing forces have revealed China's subjective need to step up its deterrence and intimidation of foreign forces, while exposing the objective predicament of the South Sea

[46] "Military Drills in South China Sea by Shandong Carrier Pose Challenge to Resistance to U.S. and Allies," *Radio France Internationale*, August 10, 2021, https://www.shorturl.at/yQRUX.

Fleet's insufficient capacity to back up the region's battlefield on its own and the requirement for the Liaoning fleet to travel across for assistance, given the huge threat posed by the U.S. twin ships.[47]

Examining the relevant satellite photos, it can be assumed that the PLA has not only upgraded the military facilities of the occupied islands and reefs in the Spratly Islands, but also pushed the islands and reefs to further function as a regional military stronghold. Since the end of 2020, Mischief Reef has been frequented by ships that seem to be operating in the waters of Whitsun Reef in the Union Banks to the west, at the exit of the Verde Island Passage on Luzon Island, and in the Balabac Strait channel at the southern tip of Palawan Island. In other words, the Mischief Reef garrison should have the West Philippine Sea as its defense area of responsibility when Fiery Cross Reef is suspected of presiding over the southwest corner of the Spratly Islands. As the PLA's surveillance cruises in the Spratlys are on the rise, it is possible that China will further announce the base points and baselines of the territorial waters in the Spratly Islands and even declare the designation of the ADIZ in the region.

The confrontation between the U.S. and Chinese naval forces in the South China Sea has escalated over the past two years, but it is sufficient to notice the PLA's tendency to avoid aggravating the standoff with the U.S. military or even clashing with it. The PLA often sends ships or maritime militia to tail and monitor individual foreign vessels or units operating in the South China Sea, occasionally approaching to issue a warning or obstruct foreign military activities. The PLA's declaration of a ban on sailing in the name of military drills is not sufficiently effective in preventing the U.S. military from remaining active in the South China Sea, while underwater cruises and demonstrations of military strength have limited effect in curbing foreign military activities in the region. However, the PLA's greater mastery of the limited underwater waterways in the South China Sea gives it a degree of "home turf advantage." In addition, "telling the story of the PLA's

[47] Chung-Ting Huang, "South China Sea 'Navigation Ban' not just Provocation," *UP Media*, September 4, 2021, https://www.upmedia.mg/news_info.php?SerialNo=123372.

deterrence in the South China Sea" has apparently served to be a primary avenue for the PLA to demonstrate its military strength in the area.

Chapter 7

How the People's Liberation Army Uses Social Media for Propaganda

Kuan-Chen Lee*

I. Introduction

Mind control and public opinion guidance are the Chinese Communist Party's (CCP) tactics to hold on to power. Since the advent of the Internet and digital media, the CCP has stepped up its efforts to turn cyberspace into a battleground for public opinion by applying new technologies and approaches to seize the initiative from the battlefield of public opinion. For the People's Liberation Army (PLA), how to capitalize on the Internet to dominate public opinion, to have a say over public affairs, and even to wage information warfare and cyber warfare against its enemy is one of the key means to win what it calls "information-based local wars." In recent years, the PLA has registered a plethora of official accounts on Weibo and WeChat, utilizing these new channels to enhance the reach and penetration of its propaganda. Compared to traditional military news dissemination, the new form of Chinese military media has become a warfare force with "a neo-type military soft power that is politically motivated, opinion-led propaganda and psychological influence."[1] With the borderless nature of information dissemination,

* Assistant Research Fellow, Division of Chinese Politics, Military and Warfighting Concepts, Institute for National Defense and Security Research.

1 Hui-ming Tung, PRC's Military Media Propaganda and Dissemination Strategy, *Fu Hsing Kang Academic Journal*, Vol. 113, December 2018, p. 4.

even when we are on the island of Taiwan, we often receive news of the Chinese fleet circling Taiwan carrying out long-distance training over the sea, the Chinese military aircraft flying around the island, the Dongfeng missiles launch test by the PLA Rocket Force, or the organization of military drills surrrounding the Taiwan Strait.[2] The PLA's social media campaign is designed to maximize the spread of its warfare training, combining physical, physiological and psychological elements in "fusion warfare" to reinforce the deterrent effect.[3]

Since the PLA made the "three warfares" (psychological warfare, public opinion warfare and legal warfare) a priority in 2003, it has recently made efforts to develop software, hardware and tactics that affect the cognitive abilities of its opponents, indicating that the PLA sees information as the most crucial element for success in future wars.[4] Given the CCP's emphasis on the role of information in warfare, more and more research has begun to look at the PLA's social media operations, propaganda strategies and disinformation campaigns. To date, however, few studies have systematically analyzed the PLA's social media postings, leaving U.S. unclear as to what propaganda the PLA engages in through social media. Is there a temporal and spatial pattern to the frequency of different

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[2] There are numerous cases of the PLA releasing drills against Taiwan through its official Weibo account, such as "MND Keeps Tabs on and Responds to the PLA Eastern Theater Command's Air and Sea Exercises," *Central News Agency*, August 17, 2021, https://reurl.cc/a9Q4nZ; "PLA 80th Group Army Official's Microblogging Site Post 'Preparing for war' as Drills of Various Military Types Taking Place in June," *ETtoday*, June 10, 2021, https://reurl.cc/Q90ZW5; "PLA Eastern Theater Command Assault Drill, Rocket Force Midnight Multi-round Fire Strike," *ETtoday*, September 14, 2020, https://reurl.cc/Ldlj6K; "Another Provocation! PLA Releases 'If War Broke out Today' Video, Threatening to Defend 'Every Inch of the Motherland," *Apple Daily*, September 22, 2020, https://reurl.cc/Q3Enep; "Breaking News: PLA Nighttime Drill Video 'Dongfeng Missiles,' Netizens Threaten: Liberate Taiwan at Dawn!" *Formosa TV News*, September 22, 2020, https://reurl.cc/zzDglN; "Aimed at Taiwan? PLA Eastern Theater Command Releases Video of "Dozens of Dongfeng Missiles Fired in Rapid Succession," *Apple Daily*, September 25, 2020, https://reurl.cc/Q3EnEZ.

[3] For more information on the physical, physiological and psychological elements in fusion warfare, see Jianwei Wang, *All Victory: The Way to Win in the Information Network Era* (Wuhan: Changjiang Wenyi Press, 2017), p. 108.

[4] For research on the three warfares, see Pan, C.C., "The Development of the PLA's Political Endeavors in the New Century," *Prospect & Exploration*, Vol. 3, No. 9, September 2005, pp. 69-82; For the PLA's development of a concept of warfare in the cognitive domain, see Huafeng Zeng and Haiming Shi, *Mental Dominance: The Laws of War in the Global Media Age and National Security Strategy* (Beijing: People's Liberation Army Press, 2014), pp. 180-196; Nathan Beauchamp-Mustafaga, "Cognitive Domain Operations: The PLA's New Holistic Concept for Influence Operations," *China Brief*, Vol. 19, No. 16, September 2019, https:// reurl.cc/yEx4ny.

types of propaganda? Is the content on different official accounts like a set meal served from a central kitchen, or is it a customized one to suit the audience's taste? Clarifying the logic of the PLA's social media propaganda will not only help us to understand its weaponized propaganda model, but also boost our immunity to information manipulation.

In view of this, this paper collected data from four official Weibo accounts of the PLA, including PLA Eastern Theater Command (ETC), PLA Southern Theater Command (STC), PLA Central Theater Command (CTC), and PLA Western Theater Command (WTC) from August 1, 2020 to August 25, 2021, for 5,033 Weibo posts altogether.[5] Through text mining and the structural topic model (STM), the postings were examined,[6] in order to ascertain the pattern and development of the spread of public opinion on social media by the PLA and to probe its implications. In the subsequent sections, Part II deals with the PLA's communication strategy on social media and presents the types and themes of its propaganda with empirical data; Part III provides insights into the logic behind the PLA's propaganda by looking into the chronological changes in the frequency of postings on different topics; then, the differences in the content of posts on the official Weibo accounts from different theater commands are compared to highlight their customized spreading patterns. Finally, the conclusion of this chapter is drawn based on the arguments put forward in each section.

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[5] The PLA ETC official Weibo account was created on August 1, 2020 and has been followed by more than 550,000 fans since then at https://reurl.cc/pyvnvb; the PLA STC official Weibo account was registered on August 1, 2020 and has been followed by more than 470,000 fans since then at https://reurl.cc/ogO48D; the PLA CTC official Weibo account posted its first message on February 1, 2020 and has over 1.01 million followers since then at https://reurl.cc/yEx4Ra; Xi-lu-qiang-jun-hao (西陸強軍號) is the official Weibo account of the PLA WTC, which was officially established on August 1, 2020 and has over 250,000 followers at https://reurl.cc/ R0aEE9.

[6] The structural topic model, a follow-on to the Latent Dirichlet Allocation (LDA) model, is used in the field of unsupervised machine learning and natural language processing, primarily to uncover statistical models of latent topics in a range of documents. For related methods and applications, see Margaret E. Roberts et al., "stm: R Package for Structural Topic Models," *Journal of Statistical Software*, Vol. 91, No. 2, October 2019, pp. 1-40; Margaret E. Roberts et al., "Structural Topic Models for Open-Ended Survey Questions," *American Journal of Political Science*, Vol. 58, No. 4, October 2014, pp. 1064-1082.

II. PLA Propaganda Strategy and Topic Distribution on Weibo

With the rapid growth of social networking sites, both the Chinese government and the PLA have recently registered a proliferation of Weibo and WeChat official accounts. Generally speaking, authenticated official accounts not only contain abundant information pertaining to government policies, but are also highly authoritative and can target specific groups to deliver real-time information, thus becoming a new tool for CCP propaganda. According to long-term research on the Chinese government's propaganda campaigns, its propaganda departments at all levels are gradually phasing out the traditional rigid doctrinal propaganda in an effort to attain its performance targets. The new mode of propaganda often involves the participation of netizens by sharing practical information, rewarding retweets, collaborating with patriotic celebrities or "following in the footsteps of President Xi" at his visits.[7] In addition, official government accounts have even introduced a commercial model, resorting to clickbait to draw views and gradually heighten public awareness of, familiarity with and reliance on official accounts, supplemented by algorithms that feed similar messages, and ultimately achieving the effect of political propaganda.[8] This means that the Chinese government's control of information has gone beyond censorship and propaganda and has evolved from an emphasis on "winning hearts and minds" to "shaping hearts and minds."

In terms of the PLA's propaganda efforts, the basic mission of PLA propaganda is nominally to "tell the story of the army and spread the voice of the army," i.e. to keep tabs on military affairs and defense voices in the emerging media space on

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7 For the CCP's innovative approaches to propaganda, see Maria Repnikova and Kecheng Fang, "Authoritarian Participatory Persuasion 2.0: Netizens as Thought Work Collaborators in China," *Journal of Contemporary China*, Vol. 27, No. 113, April 2018, pp. 763-779.

8 For the introduction of a business model for propaganda mounted by the Chinese government, see Yingdan Lu and Jennifer Pan, "Capturing Clicks: How the Chinese Government Uses Clickbait to Compete for Visibility," *Political Communication*, Vol. 38, No. 1-2, January 2021, pp. 23-54.

the Internet.[9] In fact, according to Harold et al, the PLA's propaganda exercises on social media serves two interrelated purposes: "overt messaging" and "covert manipulation." Regarding overt messaging, the PLA deploys three tactics to reach its target audience: rapid response, agenda setting and adaptive narratives. As for covert manipulation, the PLA focuses on denigrating the leadership of its opponents, undermining enemy morale and swaying their public opinion. To be specific, related measures include the use of online media to create rumors, disseminate false information, or manipulate information by posing as or working with local collaborators in enemy countries.[10] Although overt messaging and covert manipulation may seem to be targeted at quite different audiences, the distinction between target groups in a digital age has become blurred and internal propaganda can be spilled over through the media. Studies have shown that the CCP's military media brands on Weibo and WeChat are expanding the dissemination of messages to specific target groups, while also reinforcing the audience's reliance on and identification with military media feeds. Further, they have also mounted various campaigns on social media to increase the inclusion and participation of netizens, thereby raising the online visibility and competitiveness of the military media outlets.[11] An overview of the above literature reveals a degree of similarity in the propaganda ploys and modus operandi across social media sites between both the Chinese government and the PLA, but it is noteworthy that their tactics are becoming increasingly sophisticated and diverse.

This research then employed the structural topic model (STM) to analyze the posts on the official Weibo accounts of the four PLA theater commands from August 1, 2020, to August 25, 2021, to gain insight into the types of posts made by the PLA on social media, and whether there are variations in the weight of propaganda themes among them. To determine the number of topics, this study

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[9] Yuanchao Zhang, "Exploring the Development Path of Military WeChat Official Accounts – A Case Study of the Official WeChat Accounts of Military Correspondents," *Military Correspondent*, Vol. 10, October, 2017, pp. 53-54; Xinping Jiao and Feng Ao, "A Study of Military Weibo Discourse Based on a Corpus – A Case Study of @ Military Correspondents," *Foreign Languages Research*, Vol. 167, January, 2018, pp. 8-12.

[10] Scott W. Harold et al., *Chinese Disinformation Efforts on Socia Media* (Santa Monica, Calif.: RAND Corporation, 2021), pp. 16-25.

[11] Hui-ming Tung, *PRC's Military Media Propaganda and Dissemination Strategy*, p. 15.

first set up models with 5 to 40 topics and compared these models by examining model statistics such as held-out likelihood, residual and semantic coherence.[12] The statistics indicated that the most intuitive model was that with the 14 themes, making it a focus for subsequent analysis. We marked each theme by perusing documents related to the topic, looking at the words that appeared most frequently in the theme, and examining the terms that came up often in the topic. The 14 topics are: learning to strengthen the military, model recognition, celebrations, Taiwan strait situation, officer promotion, paying tribute to military personnel, constant readiness for war, remembering veterans, military diplomacy, combat exercises, disaster relief by troops, food and welfare, training in the field and miscellaneous news. With the four themes as examples, the posting templates of the PLA on Weibo are given in Table 7-1 below:

Table 7-1 Examples of Documents Highly Relevant to Topics 1, 4, 10 and 13

Topic 1: Learning to Strengthen the Military	**Topic 4: Taiwan Strait Situation**
# A New Journey after a Century of Struggle #[Online + Offline, eLearning party history] In the past few days, a certain department of the Rocket Force has been promoting the learning and education of party history through various forms and channels, so that the officers and soldiers can absorb the red gene and hold on to their revolutionary beliefs in the process of sharing the learning.	[#PLA Eastern Theater Command spokesman speaks on U.S. ships sailing through Taiwan Strait #] PLA Eastern Theater Command (ETC) spokesman Senior Colonel Zhang Chunhui spoke on the USS Barry sailing through the Taiwan Strait: The USS Barry destroyer on Oct 14 passed through the Taiwan Strait while the PLA ETC organized naval and air forces to follow and monitor the U.S. ship throughout the trip. Recently, the United States has frequently sent wrong signals to the "Taiwan independence" forces on Taiwan-related issues, seriously damaging .....

[12] For the benchmark and methodology for determining the number of themes, see Margaret E. Roberts et al., "stm: R Package for Structural Topic Models," pp. 9-12.

Topic 1: Learning to Strengthen the Military	Topic 4: Taiwan Strait Situation
[This game brings the audience to tears"] Recently, a brigade of the 77th Group Army held a speech contest entitled "Red Stories to accompany me in my struggle to strengthen the army" on the theme of "learning history to be sensible, learning history to be trustworthy, learning history to be virtuous and learning history to be practical" to guide officers and soldiers to learn red stories and inherit red genes in a strong atmosphere of party history learning and education.	[#Defense Ministry responds to U.S. sale of drones to Taiwan#] In response to the U.S. approval of the sale of four MQ-9 drones to Taiwan, Defense Ministry spokesman Wu Qian responded today: The U.S. sale of arms to Taiwan is a gross violation of the One-China Principle and the provisions of the Three Joint Communiqués, seriously jeopardizing China's sovereignty, security and territorial integrity; gravely challenging China's core interests and undermining the relationship between China and the U.S. and the peace and stability in the Taiwan Strait. The Chinese side expresses its firm opposition and strong condemnation of this move.....
Topic 10: Combat exercises	**Topic 13: Miscellaneous News**
[Anti-aircraft missiles, fire!] Recently, a brigade of the 77th Group Army has been fighting in one place after another for hundreds of kilometers, conducting a total-factor, high-intensity live-fire exercise in the northwest desert, setting up multiple groups of targets for surprise attacks, strong electromagnetic interference throughout, comprehensively testing the ability of air defense firepower to react quickly, coordinate efficiently and destroy accurately. In the drill, this brigade conducted a deep integration of elements such as reconnaissance and early warning, information perception and firepower striking, and continued to undertake multi-channel intelligence reconnaissance and multi-means firepower interception	[#What would you most like to say to yourself if you were 20 years old again?] Do you remember what it was like to be 20 years old? Were you young and enthusiastic or confused and uncertain? There may be bumps in the road, but there is also infinite hope. If you had the chance to be 20 years old again, what would you say to yourself? Take a look at the video, click↓↓↓, to hear the Dongfeng dispatcher tell his story of being 20 years old.

Topic 10: Combat exercises	Topic 13: Miscellaneous News
[Glimpse of training ground – # Armed helicopters shooting live rounds across day and night#] Recently, an air assault brigade of the 75th Group Army carried out cross-day and night live-fire training with armed helicopters in a sea area in eastern Guangdong. The live-fire training highlighted the characteristics of multi-direction, multi-munition, and multi-subjects, implemented three-dimensional, full-depth, and mechanized operations, strengthened the joint training of detachments, collaborated on combat capabilities, and improved combat-oriented military training.	[The belle of the military camp! Comic wallpaper of female soldiers is available!] There is such a group of people who do not love makeup, but love the military life; they are brave and resolute, dedicating their most beautiful youth to the troops dressed in camouflage. A wave of heroic female soldiers comic wallpaper is now available, first come, first served↓↓.

Source: Compiled by the author.

Figure 7-1 shows the distribution of the 14 topics, with the y-axis being the topics of PLA Weibo posts, the x-axis being the percentage of topics, and the text behind the bar concerning the high-frequency words appearing in the topic. Among the Weibo posts by the four PLA theater commands, the highest proportion of posts falls under the category of "miscellaneous news," followed by "combat exercises," "food and welfare," "officer promotion," "paying tribute to military personnel," "constant readiness for war," "learning to strengthen the military," "model recognition," "disaster relief by troops," "celebrations," "remembering veterans," "training in the field," "military diplomacy," and "Taiwan Strait Situation." In the logic of Chinese propaganda, seemingly meaningless miscellaneous postings actually have far-reaching political connotations. For example, King et al. analyzed the posting patterns of the CCP's online comment writers (50 Cent Party, wumao 五毛) and found that their primary role is not to defend the Chinese government, but to churn out non-political posts across social media in a bid to distract netizens from government or political events; in Internet terms, the CCP avoids online opinion from going to extremes by "straying from the topic in forum

replies." (wailou, 歪樓)[13] In the cases covered in this paper, the miscellaneous PLA Weibo posts include greetings for festivals, combat art and literature, or the glamor of female soldiers, as well as lucky draws, in line with recent literature that suggests the CCP spreads "positive energy" to penetrate popular culture and the private sphere, and to engage netizens in propaganda tactics.[14] All in all, the miscellaneous articles on the PLA's Weibo account are not meaningless; on the contrary, through such posts, the audience is often unwittingly led into the propaganda channels of the military media, which is why they account for the highest proportion of all the posts.

The second highest percentage of posts among all topics is related to combat exercises. As the barrel of a gun for the Chinese regime, the PLA is in dire need of what it can do to consolidate the CCP regime and defend national security. As such, one of the principal purposes of posting articles on combat-oriented military training on social media is to convey to the Party and the people the PLA's determination to prepare for war, and to create the impression that the PLA is capable of managing crises, deterring war, and even winning wars. Moreover, the CCP often resorts to military threat to respond to changes in the external environment, and this logic holds true for the propaganda efforts of its military media. Studies have shown that the PLA tends to flex its muscles more frequently in the media when there is a rise in conflict or a change in the situation between China and its neighbors.[15] The aim and intended effect of the PLA's propaganda is that, irrespective of the authenticity of its muscle-flexing content, the PLA's Weibo posts help to strengthen the regime and rally public support internally, while externally they serve as a deterrent in military drills.

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[13] See Gary King et al. "How the Chinese Government Fabricates Social Media Posts for Strategic Distraction, Not Engaged Argument," *American Political Science Review*, Vol. 111, No. 3, July 2017, pp. 484-501.

[14] See Zifeng Chen and Clyde Yicheng Wang, "The Discipline of Happiness: The Foucauldian Use of the 'Positive Energy' Discourse in China's Ideological Works," *Journal of Current Chinese Affairs*, Vol. 48, No. 2, February 2020, pp. 201-225 and Maria Repnikova and Kecheng Fang, "Authoritarian Participatory Persuasion 2.0: Netizens as Thought Work Collaborators in China," pp. 772-775.

[15] For details, see Kuan-chen Lee, "The Logic of PLA's Muscle-Flexing on Social Media: Observations on the Official Sina Weibo Account of the PLA Eastern Theater Command," *Defense Security Biweekly*, No. 13, October 8, 2020, pp. 13-19, https://reurl.cc/6ap1Y6.

Figure 7-1 The Rate of Appearance of Topics Posted by the PLA on Weibo

Note: The simplified Chinese characters in the figure are high-frequency words that appear in the various topics and are taken from the original data files.
Source: Drawn by the author.

Next, the third most prevalent theme is food and welfare, followed by officer promotions and tributes to soldiers. As Weibo's audience is mainly young Chinese netizens, the focus of publicity is not only on the impression of a strong military, but also on attracting the target group to join the military by highlighting the benefits, treatment and glory of military personnel, which is why the proportion of posts on such topics is high.

Lastly, Taiwan-related posts are identified by statistical models as a separate theme in the posts on the four official Weibo accounts of the PLA. Notwithstanding its low percentage, the Taiwan strait situation theme is more relevant than other propaganda messages on military strength, recruitment, civil-military relations or political education. This paper argues that the PLA's intention to highlight Taiwan is twofold. Firstly, the PLA is seeking to use Weibo to frame to the general public that the Taiwan Strait issue is attributable to the provocations of Taiwan independence elements and foreign forces, and to declare its resolve to defend the

country's territorial sovereignty. In addition, the PLA attempts to take advantage of the borderless nature of information dissemination to spread these hard-line ideas against Taiwan, in order to shape public opinion and disrupt the morale of Taiwan's military and civilians.

III. Changes in the Topics of the PLA's Weibo Campaign over Time

Those well-versed in media manipulation agree in principle that the timing of a message can have greater visibility and impact than the content of the message itself; in other words, sending the right information at the right time can help increase the breadth and depth of the message. As a result, message distributors have a strong incentive to choose the right time to publish messages that are relevant to them, and this provides the researcher with an opportunity to observe the inter-temporal variation among different types of messages, and thus to grasp the regularity of various modes of publicity. In view of this, this section gives insights into the logic behind the propaganda by looking at the chronological changes in the proportion of postings on different topics on the PLA's Weibo account.

In past studies of the Chinese media outlets, Roberts et al.'s model captured the timing of important events and the differences in the description of the same events between newspapers. During the 2000 and 2004 presidential elections in Taiwan, for instance, there was a marked upsurge in coverage of Taiwan. Moreover, while the Xinhua News Agency reported on Taiwan more frequently with terms such as "One-China," "province" or "unification," the Associated Press used the terms "democracy," "election" or "vote" more often to depict the presidential election on the island.[16] Further, when examining the PLA Eastern Theater Command's Weibo

[16] See Margaret E. Roberts et al., "The Structural Topic Model and Applied Social Science," *Advances in Neural Information Processing Systems Workshop on Topic Models: Computation, Application, and Evaluation*, 2013, pp. 3-4, https://reurl.cc/WXa3lZ.

posts, Lee found that the timing of the posting of military drills articles coincided with changes in the external situation. For example, the proportion of military drills posts on Weibo increased significantly after the China–India skirmishes and the U.S. Secretary of State's visit to Taiwan.[17] Unfortunately, the time frame covered by that study is relatively short, and the topics addressed are relatively homogeneous. In the following, this paper looks at the tendencies of the four PLA theater commands' Weibo posts in 14 themes throughout a year.

Figure 7-2 depicts the trend of the expected percentage of the 14 topics posted by the PLA on Weibo between August 1, 2020 and August 25, 2021, with the x-axis denoting the time and the y-axis denoting the expected percentage, while the solid black line represents the estimated percentage of occurrence of each topic and the dashed line is the 95% confidence interval. The first thing to notice is that among the 14 types of posts, there are seven themes that fluctuate markedly up and down: Learning to strengthen the military, combat exercises, disaster relief by troops, miscellaneous news, celebrations, tributes to soldiers and Taiwan strait situation. The other half of the themes, such as model recognition, food and welfare, officer promotion, constant readiness for war, training in the field, remembering veterans and military diplomacy, vary less dramatically across time, implying that posting articles on these topics is a routine task.

In terms of post themes over time, the first thing to notice is that the highest proportion of posts in the category of miscellaneous news started to drop considerably in late June this year (2021) and reached its lowest point in mid-July, before returning to its normal percentage. Posts in the miscellaneous news category declined at this time for two reasons: firstly, in anticipation of the 100th anniversary of the CCP's founding, the PLA' Weibo accounts began to post numerous articles pertaining to the party's centenary, so the rate of celebrations (Topic 3) picked up gradually from June onwards and reached a peak in early July; secondly, the decrease in the number of miscellaneous news articles was also associated with the sudden heavy rainfall and flooding in Henan Province in

[17] For details, see Kuan-chen Lee, "The Logic of PLA's Muscle-Flexing on Social Media: Observations on the Official Sina Weibo Account of the PLA Eastern Theater Command," pp. 17-18.

mid-July. Experts who have long observed the CCP pointed out that the official media attributed the blame for the floods in Henan to the "once-in-a-thousand-year" extreme weather, and that the focus of the reports revolved around the results of the authorities' rescue efforts or news of donations from private enterprises, deliberately covering up the specific disaster situation.[18] In the case of the PLA's Weibo account, posts regarding the army's disaster relief efforts (Topic 11) also saw a sharp rise in July. The PLA seized this opportunity to take to social media to publicize the troops' risky rescue work, showcasing their mobilizing capabilities on the one hand and polishing up their positive image of loving and protecting the people on the other.

Secondly, posts on the PLA's Weibo account that show a marked ups and downs in number are in the categories of learning to strengthen the military (Topic 1) and paying tribute to military personnel (Topic 6). Posts concerning learning to strengthen the military began to rise in late March this year when Xi Jinping visited Fujian, during which he inspected the 2nd Mobile Corps under the Chinese People's Armed Police Force (PAP) in Fuzhou and stressed the importance of Party history learning and education, and guiding officers and soldiers to remember their original aspiration. On April 1, the Qiushi (lit. "Seeking Truth") magazine published an important article on Xi Jinping's "Speech at the Party History Learning and Education Mobilization Conference," and thus posts on the PLA's Weibo accounts about learning to strengthen the army reached their first peak at this point in time. The proportion of posts on learning to strengthen the forces declined slightly afterwards, but climbed to a second peak at the end of June when the 31st collective study session of the Politburo of the CCP kicked off, at which Xi Jinping laid emphasis on "making good use of red resources and renewing the red bloodline."

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[18] For details, see, "Zhengzhou Floods: Official Media Propagates 'God Blesses Zhengzhou' by Only Reporting Rescue but not Disaster, Officials and People React Very Differently," *Radio Free Asia*, July 21, 2021, https://reurl.cc/pxDMX4; Qinglian He, "He Qinglian: A Look at the Chinese Government's Disaster Response Model in the Light of the Zhengzhou Floods," *UP Media*, July 28, 2021, https://reurl. cc/em5O7M.

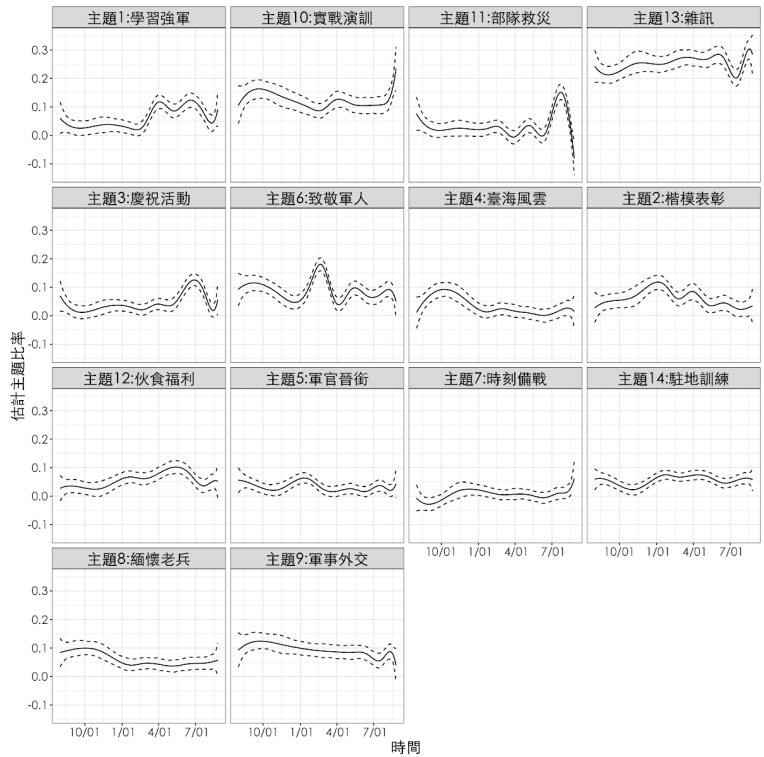

Figure 7-2 The Trend of the Topics Posted by the PLA on Weibo Over Time

Source: Drawn by the author.

Also, the theme of paying tribute to military personnel on the PLA's Weibo postings exhibited inter-temporal fluctuations, the most obvious being the peak in early March, when the PLA promoted learning from Lei Feng and encouraged netizens to pay tribute to military personnel in commemoration of Lei Feng Day.[19]

Finally, the PLA's Weibo accounts also trend to adjust the proportion of posts on combat exercises (Topic 10) and Taiwan Strait situation (Topic 4) on different occasions, and this paper finds some degree of covariation between the two topics in terms of fluctuations, with the magnitude of change being higher for combat

[19] For details, see Wenliang Zhang, "Lei Feng, the Great Ordinary Soldier," *Central Institute of Party History and Literature of China*, March 2, 2021, https://reurl.cc/Rbdyyr.

exercises than for the Taiwan Strait situation. With regard to covariation, the first wave of both themes peaked around the end of September last year (2020), when the U.S. broke the tacit agreement since the severance of diplomatic ties with the Republic of China (ROC) and sent Undersecretary of State for Economic Growth, Energy and the Environment Keith Krach to Taiwan on September 17, prompting Beijing to announce the organization of combat-oriented military drills near the Taiwan Strait. On September 18 and 19, the Chinese government dispatched 18 and 19 military aircraft into the Taiwan Strait in multiple layers, aircraft types and batches, with 12 of them crossing over the median line.[20] The PLA's Weibo accounts were apparently capitalizing on this timing to disseminate more news about the Taiwan Strait situation and combat-based drills, and to deter Taiwan by "exposing" military exercises on a large scale. Since then, the proportion of posts on the topics of combat exercises and the Taiwan Strait situation had gradually returned to normal, although a second wave of combat exercises posts hit a peak level at the end of March this year on the PLA's Weibo pages, which coincided with the signing of a memorandum of understanding to establish a Coast Guard Working Group (CGWG) by Taiwan and the U.S. On March 26, the PLA carried out 20 sorties to intrude into Taiwan's Air Defense Identification Zone (ADIZ), including H-6K bombers and anti-submarine warfare (ASW) aircraft crossing the Bashi Channel into Taiwan's southeastern waters.[21] The PLA's social media campaign on Weibo for strategic intimidation proved to be quite obvious. The last wave of the PLA's Weibo posts about combat drills fell at the end of July this year, and it is worth noting that the percentage of such posts was growing even more than the previous two waves. It is possible that part of the increase in posts on the topic of combat-oriented drills was associated with the fact that the PLA mostly holds military exercises in the summer, but if we follow this logic we should

[20] For details, see Che-cheng Hung and Chin-hung Lai, "U.S. Undersecretary Visits Taiwan, Chinese Military Aircraft Harassing Taiwan Again with 12 Crossing Median Line," *udn.com*, September 19, 2020, https://reurl.cc/em5zZx. On top of the Taiwan-U.S. engagement, the China–India skirmishes was also responsible for the increase in the proportion of combat exercises posts on the PLA's Weibo pages in September 2020.

[21] For details, see Wei-chen Hsu et al, "Taiwan and U.S. Sign MOU on Coastal Patrols, Chinese Military Aircraft Harassing Taiwan," *udn.com*, March 27, 2021, https://reurl.cc/Rbder9.

have also noticed an uptick in the number of military drills postings last summer, although the empirical data has refuted this hypothesis. Consequently, based on the effort of the posting and the increase in the percentage, this paper deduces that the sharp hike in the proportion of combat exercise posts on the PLA's Weibo accounts this year aimed primarily at responding to the U.S. Japan Orient Shield training exercise, the U.S.-Australia Talisman Sabre 2021 joint military exercise, and the U.S. Large Scale Global Exercise 2021, which carried strong implications for the counteraction of China.

In summary, the PLA's propaganda efforts were not regular and routine. Through repeated operations, they have learnt that a rigid approach to publicity campaigns is not only unconvincing, but also fails to deliver strategic intimidation. As a result, the PLA's Weibo accounts put a premium on the timing of information dissemination, stressing the importance of releasing messages at the right time to guide public opinion internally and to shape the PLA's image as a powerful army that loves its people, while maximizing the deterrent effect externally.

IV. A Comparison of the Differences in the Propaganda Content on the PLA Weibo Pages

China's military reforms in 2015 reorganized the original seven military regions into five major theater commands: Eastern, Southern, Western, Northern and Central. Such restructuring, in addition to forming a joint theater command mechanism, also sets out clear objectives for each theater command. The PLA Eastern Theater Command is responsible for the Taiwan Strait, the PLA Southern Theater Command for the South China Sea and Southeast Asia, the PLA Western Theater Command for Central and South Asia, the PLA Northern Theater Command for Northeast Asia, and the PLA Central Theater Command for guarding the political and economic hub of Zhongnanhai. Should the PLA wish to reinforce its strategic deterrent effect, its military propaganda efforts should be adjusted according to its geographical area of responsibility in order to bring out its targeted

nature; in other words, we should be able to observe the varying degrees of focus in the dissemination of news on each PLA theater command's Weibo accounts.[22]

Figure 7-3 presents a difference in the estimated proportion of topics posted on the Weibo accounts of the PLA's theater commands, with the control group being the PLA's PLA Western Theater Command account (xi-lu-qiang-jun-hao, 西陸強軍號), the y-axis being the 14 topics among the PLA's Weibo posts, the x-axis being the difference in the proportion of topics in the posts, and the circle marking the mean of the difference. The 95% confidence interval is indicated by the extended line at each end, with red representing a statistically significant non-zero difference in the percentage of posting topics and black representing a non-significant difference. In the case of PLA Eastern Theater Command (ETC) field training, for example, the percentage of posts on field training was slightly higher in the ETC than in the WTC, but the difference was not statistically significant.

Firstly, in terms of similarities, the PLA ETC, STC and CTC Weibo accounts posted fewer miscellaneous articles than that of the PLA WTC (xi-lu-qiang-jun-hao). Conversely, the PLA WTC's Weibo account was the most frequently posting miscellaneous items compared to other accounts. In addition, Figure 7-3 indicates that the proportion of posts on military diplomacy topics by each theater command is all considerably lower than that by the WTC. A further look at the posts made under the military diplomacy theme reveals that many of the postings are about China-India military chiefs' talks or a consensus reached between the two countries. Since India is one of the targets at the Western Theater Command, the PLA WTC's Weibo account has devoted a high proportion of its posts to highlighting China's strong military and diplomatic stance in the recent Sino-Indian border conflict, in a bid to attract and convince its target group.

In addition to the two themes noted above, Figure 7-3 shows that there are clear

[22] The content released on different theater command's Weibo account may vary depending on the style of the department head or social media editor. For example, the Hunan Armed Police WeChat official account sticks to the approachable route, with an emphasis on thoughtful, warm and quality communication, see "Making trouble! Hunan Armed Police social media editors' collectively breaking news ..." *Hunan Armed Police WeChat official account*, July, 7, 2018, https://reurl.cc/953eoV.

differences and specificity in the posting themes across the theater commands. A significantly higher proportion of the PLA Eastern Theater Command's (ETC) Weibo posts are about the Taiwan Strait situation, in line with the PLA ETC's deployment against Taiwan. As a result, the PLA ETC's Weibo posts often contain news of U.S. ships crossing the Taiwan Strait and the Taiwan Affairs Office and the Ministry of National Defense of the PRC taking a strong stance against Taiwan. Despite the relatively fewer posts on the PLA ETC's combat drills, a high percentage of them are devoted to constant readiness for war, putting across the message of the PLA ETC's readiness and determination to fight and win, while intimidating Taiwan via its combat readiness images and texts. It is also observed in Figure 7-3 that a higher number of PLA ETC posts involve disaster relief by troops, which is judged to be linked to the annual flood season of the Yangtze River, whereby the PLA ETC garners public support by posting such posts. On the other hand, posts on the PLA Southern Theater Command's (STC) Weibo page center on topics such as combat drills and constant readiness for war. In the past year, the U.S. has been frequently conducting Freedom of Navigation Operations in the South China Sea, and U.S. aircraft carrier battle groups have also been carrying out military drills in the South China Sea in defense of a "Free and Open Indo-Pacific Strategy." In response to the U.S. action and to demonstrate the PLA's combat capability to the target group, the PLA Southern Theater Command (STC) Weibo postings focused on exercises and preparedness for war. Lastly, the PLA Central Theater Command's (CTC) Weibo posts deal with topics such as learning to strengthen the military, officer promotion, food and welfare, and disaster relief by troops. As the central guard, it is not surprising that the PLA Central Theater Command's (CTC) Weibo page places emphasis on learning and education on Xi Jinping Thought, or frequently releases news about the promotion of military officers, while its high proportion of disaster relief postings are assumed to be associated with the floods in Henan province, in which it deliberately revealed news of the PLA's heroic relief efforts and the official doublespeak to obscure the disaster and evade accountability for the floods.

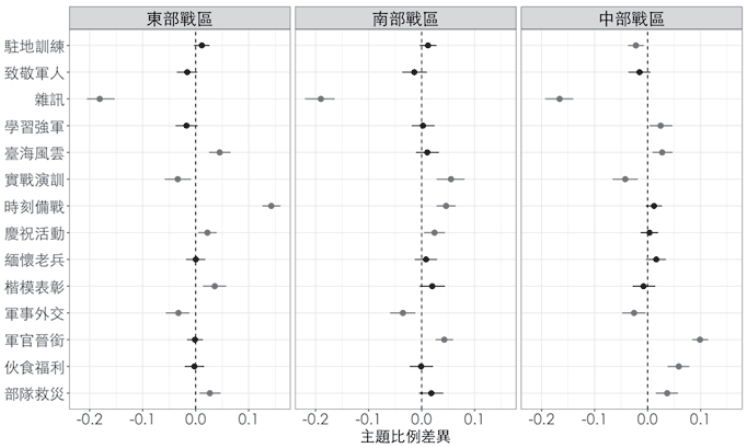

Figure 7-3 Differences in the Proportion of Topics Among the Posts on the PLA Theater Commands' Weibo Accounts

Note: The reference category for comparison is the PLA WTC's Weibo account, where red indicates a significant difference in the percentage of topics, while black does not.
Source: Drawn by the author.

V. Conclusion

The communiqué of the Fifth Plenary Session of the 19th CPC Central Committee proposed "ensuring the achievement of the 2027 centennial military building goal." Experts point out that the goal is to build a modern PLA with "mechanization, informatization and intelligence," and to achieve intelligence on the basis of mechanization and informatization, so as to shorten the gap in the military strength between China and the U.S.[23] To win "information-based local wars," the PLA has not only stepped up the hard power of its high-tech armaments and weapons, but has also steadily upgraded the soft power of its military communications in an attempt to bring together physical, physiological and psychological offensives to maximize the effect of strategic deterrence.

[23] Ming-shih Shen, "Commentary on Ensuring the Achievement of the Military's Centenary Goal by 2027," *Mainland and Cross-Strait Briefing*, December, 2020, p. 24, https://reurl.cc/aNrKWG.

Despite a number of studies that have focused on the PLA's propaganda tactics in the past, systematic analyses of its propaganda content are not commonly found. In light of this, this paper probes the logic of the PLA's social media propaganda by examining the content of posts from the four PLA theater commands' Weibo accounts. The research findings suggest that the PLA's publicity campaigns on Weibo are highly strategic, excelling in using seemingly random posts to draw audiences into the PLA's propaganda channels and implant the military's ideas and positions. In addition, the PLA's Weibo propaganda tends to place relevant messages at the right time to optimize the effectiveness of the messages disseminated. Finally, this paper also found that the proportion of different types of articles on Weibo is tailored by the PLA theater commands to the areas they are responsible for, in order to bring out their specificity. Overall, the PLA's propaganda on social media is strategic, timely and targeted, moving towards informatization and enhanced strategic deterrence. The PLA's propaganda through social media is also amassing a wealth of information, and in the future there is a high probability that it will be weaponized with artificial intelligence (AI) to undermine enemy morale in wartime, which warrants our utmost vigilance.

PART THREE

Economy and Society

Chapter 8

China's Economic Situation and Semiconductor Industrial Policy in 2021

Che-Jen Wang*

I. Introduction

In late September 2021, Evergrande Group's shares plunged on the Hong Kong Stock Exchange, triggered by the suspension of part of Evergrande Wealth's debt payments, causing Asian stock markets and even the U.S. stock market to tumble in tandem. Given the fact that China has little intention to bail out Evergrande,[1] and that Evergrande's US$300 billion debt involves 128 financial institutions in China, the market has become concerned about a systemic financial crisis, which could lead to massive civil rights movements. With a series of tightening controls imposed on large corporations, such as those on e-commerce platforms, the cram school industry, the video game industry and artists in the showbiz, it is difficult to be optimistic about China's economic prospects in 2021. In addition, the U.S.-China tensions have not eased, as the Biden administration has not relaxed its technological confrontation with Beijing compared to the Trump administration, but has instead convinced its allies to join the ranks of keeping a lid on China's

* Assistant Research Fellow, Division of Cyber Security and Decision-Making Simulation, Institute for National Defense and Security Research.

1 Keith Zhai, "China Makes Preparations for Evergrande's Demise," *Wall Street Journal*, September 23, 2021, https://www.wsj.com/articles/china-makes-preparations-for-evergrandes- demise-11632391852.

technological ambitions. At the same time, this kind of clash between rival groups is also taking place in the current conflict in the South China Sea. Judging from the introduction of the 14th Five-Year Plan and the Dual Circulation strategy, the Chinese government's intention is to replace the foreign market with the domestic one, and to develop technological autonomy by leveraging the huge local market and the state's capital support, both of which are aimed at getting rid of the restrictions from the U.S. in pursuit of long-term domestic economic stability. China is a major manufacturer of electronic products, which are applied across a wide range of sectors, from the toy industry to the aerospace industry, making the electronics sector a growing part of its GDP and a key driver of economic growth. In the past, however, most of the critical components relied on imports. In particular, the U.S. sanctions in the recent years have made it difficult for China to acquire leading-edge chips with high computing capacity for the AI industry and 5G, which are being promoted vigorously, thus hindering the development of industries and necessitating domestic production instead of imports. If China's economy is to embrace high quality development in the future, the autonomy of the electronics industry — especially the integrated circuit (IC) sector — is not only a prerequisite for the independence of strategic industries, but also an integral part of economic prosperity.

This paper begins with an analysis of China's economic performance, followed by an examination of the country's IC industry strategies that will shape China's future economic upgrading, and concludes with a summary of the prospects for China's development of a third-generation semiconductor industry by overtaking on a bend.

II. Current Economic Situation in China

1. Poor Economic Outlook for the Second Half of the Year

According to the economic data for the first half of the year released by the National Bureau of Statistics of China (NBS) in July 2021, China's GDP grew in the second quarter of the year by 7.9 percent from the same period last year,

which was down from the 18.3 percent growth rate in the first quarter of the year. The main reason for this is that growth in the first quarter of last year was -6.8% and in the second quarter it was +3.2%, so the performance in the second quarter of this year was not as good as in the first quarter as the base period had risen significantly.

China's GDP growth rate for the first half of the year reached 12.7 percent, a substantial rise against last year. However, the two-year average growth rate was only 5.3 percent, slightly falling short of the 6 percent mark before the outbreak of the pandemic, while the economic growth showed signs of weakness from the second half of the year. Industrial production rose by 5.3% year-on-year in August, according to the newly released figures, but albeit with an increase, exhibited a gradual downward trend since the beginning of the year. While electricity and fuel consumption were both marginally higher than last year, steel, cement and vehicle sales were all lower than the same period last year. It is worth noting that electricity generation increased by just 0.2 percent year-on-year in August, a sharp drop from the more than 7 percent rise seen in previous months, and that the slowdown in generation might be responsible for the blackout at the end of September.

On top of the current slump, the outlook for the overall manufacturing industry is not promising. The Purchasing Managers' Index (PMI) for the manufacturing sector was 49.6 published by the China NBS in September 2021, falling below the 50 mark, which separates growth from contraction, for the first time, and the figures had declined for six consecutive months, with all sub-indices below 50. The China NBS attributed this to high temperatures, heavy rainfall and the pandemic, although similar indices issued by the China Caixin website in August presented a similar picture. It was clear that the manufacturing sector as a whole was under considerable pressure, and the PMI for the service sector fell below the 50 mark in August for the first time since May.[2] These indices suggest that Chinese

[2] The Non-Manufacturing Business Activity Index (NMBAI) released by the Chinese NBS plunged to 47.5 in August 2021 before rebounding to 53.2 in September.; the Services PMI was 53.4 published on Caixin.com, recovering from 46.7 in August For details, see "China's Purchasing Managers' Index in September 2021," *National Bureau of Statistics*, September 30, 2021, http://www.stats.gov.cn/tjsj/ zxfb/202109/t20210930_1822646.html; "China's Services PMI rises to 53.4 in September on Caixin.com, Back in Expansionary Territory," *Caixin.com*, October 8, 2021, https://pmi.caixin.com/2021-10-08/101783800.html.

producers and operators are wavering in their outlook on the future of the economy and that their confidence may not be as strong as official expectations for future consumption. It is estimated that real year-on-year GDP growth in China is likely to slow to 5 percent to 6 percent in the second half of the year, probably back to pre-pandemic levels.

2. Pressure from Rising Wholesale Prices

The Consumer Price Index (CPI) rose by a mere 0.8 percent in August 2021 compared to the same month last year, as there was no upward pressure on consumer prices in the wake of the pandemic, with transport and education rising more markedly by 5.9 percent and 3 percent respectively; nevertheless, the Industrial Price Index registered a considerable increase. The Purchasing Price Index for Industrial Producers increased by 13.6 percent over the same period last year, with important raw materials for production, such as fuels, power, ferrous metals, non-ferrous metals and chemicals all rising by more than 20 percent. This wave of global raw material price hikes has squeezed the profits of small and medium-sized enterprises, and as a result, China is set to introduce new tax breaks and fee reductions this year, following last year's 2.5 trillion yuan tax cut, which is expected to reach 700 billion yuan.[3]

Meanwhile, consumer spending continued to be sluggish. Although the total retail sales of consumer goods recorded a year-on-year increase of 18.3 percent between January and August, the monthly growth rate of the total sales declined steadily from 15.8 percent in April to 2.3 percent in August. Apart from the short-term impact of the floods and the pandemic, private consumption has not rebounded after the outbreak was brought under control, and export growth is likely to remain weak in the second half of the year and the economy is under increased downward pressure. The pessimistic sentiment towards the economy was also reflected in loan demand, with new medium and long-term loans to enterprises/ business amounting to 521.5 billion yuan in August, down by over

[3] "Ministry of Finance: New Tax Cuts and Fee Reductions Expected to Exceed 700bn Yuan for the Year," *China Business Network*, July 30, 2021, https://www.yicai.com/news/101126304.html.

200 billion yuan year-on-year, while short-term loans fell by 114.9 billion yuan, indicating a lack of demand for entity financing. As a result, some reports suggested that China's GDP would struggle even more in the second half of the year than it did in the first, and that policies to support economic growth would be needed.[4] In summary, in the face of sluggish demand, economic growth in 2021 is driven primarily by government investment and imports and exports.

3. Relaxed Monetary and Infrastructural Facilities Boost the Economy

On the monetary front, a 0.5 percent reduction in the reserve requirement ratio (RRR) for financial institutions was announced on July 15. The across-the-board reduction, which was estimated to release around 1 trillion yuan in long-term funds, also contributed to an 8.2 percent increase in broad money (M2),[5] in August, which was not reflected in the availability of private funds. As the gap between M2 and narrow money (M1) growth had widened since May, from 2.2 percent to 4 percent in August, this means that private funds had shifted to less liquid savings or time deposits, indicating that people preferred to put their funds in less liquid time deposit accounts to earn interest, rather than in demand deposits, which can be withdrawn at any time for investment purposes, which reflected the market's pessimistic outlook on future economic trends. This downbeat assessment was also translated into an increment in private financing, which rose by 2.96 trillion yuan in August, down 629.5 billion yuan from a year earlier.[6]

New infrastructure construction, led by the government, is a key driver of economic growth. The combined government and private investment in new infrastructure construction projects between 2021 and 2025 will amount to 10.6 trillion yuan, with a further investment of around 2 trillion yuan per year.[7] For

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[4] "Macro Policy Tone May be Stable with Some Relaxation in the Second Half of 2021," *China Business Network*, August 4, 2021, https://www.yicai.com/news/101130259.html.

[5] According to the People's Bank of China, M0 refers to cash in circulation, narrow money (M1) refers to M0 plus entities' demand deposits (of which corporate demand deposits account for about 80 percent), and broad money (M2) means M1 plus corporate time deposits, residential savings deposits, and other deposits.

[6] "RMB Loans up 1.22 tn Yuan in August," *People's Daily Online*, September 11, 2021, http://finance.people.com.cn/BIG5/n1/2021/0911/c1004-32224176.html.

[7] "China Significantly Expands New Infrastructure Construction Investment," *cn.nikkei.com*, January 25, 2021, https://zh.cn.nikkei.com/china/ceconomy/43560-2021-01-25-05-00-00.html.

example, 718,000 5G base stations were open at the end of 2020 and 993,000 at the end of August 2021.[8] In ultra-high voltage, the State Grid Corporation of China invested 460.5 billion yuan in 2020, rising to 473 billion yuan this year.[9] Moreover, to achieve the goal of carbon neutrality, investment in new energy sources such as wind power and solar energy will be stepped up on an ongoing basis.

4. Outside-in Development Strategies

Due to the high degree of uncertainty in the external economy, China's development strategy has shifted to internal circulation. The U.S. government's trade war and technological confrontation with China has made it difficult for many Chinese companies to gain access to advanced and critical technologies. In the wake of the pandemic, the supply chain is not only decoupled and disrupted, but the global outbreak control is out of sync and the economic recovery is uneven. Additionally, the possible shift in monetary policy towards tightening in the U.S. Federal Reserve System (Fed) has added to the external uncertainty and has created potential concerns for import and export growth. In May 2020, Xi Jinping unveiled a new "dual circulation" development pattern in which domestic economic cycle plays a leading role while international economic cycle remains its extension and supplement. This new dual circulation strategy, which centers on the expansion of domestic demand, is designed to address the situation where the global supply chain is partially broken under the onslaught of the pandemic, with raw materials unable to come in from abroad, overseas staff unable to enter, and goods unable to be exported, bringing work and production to a standstill.[10] From China's perspective, the trade protectionism, U.S. interest-based unilateralism and even bullying practices pushed by then U.S. president Donald Trump since

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[8] "Latest Information: China Has Built the World's Largest 5G Network," *Chinese government portal*, January 31, 2021, http:// www.gov.cn/xinwen/2021-01/31/content_5583838.htm; "China Leads the World in 5G Adoption: 993,000 5G Base Stations Opened and Built," *China Service Trade Guide website*, September 10, 2021, http://tradeinservices.mofcom.gov.cn/article/szmy/hydt/202109/119606.html.

[9] "State Grid Releases 2020 Social Responsibility Report: 473bn Yuan in Grid Investment in 2021," *POWER.IN-EN.com*, April 15, 2021, https://power.in-en.com/html/power-2386504.shtml.

[10] "Take the First Step, See the Refreshing New Look," *People's Daily Online*, August 3, 2021, http://politics.people.com.cn/BIG5/n1/2021/0803/c1001-32178833.html.

he took office had created the phenomenon of "reverse globalization," causing the global industrial chain, supply chain and value chain to begin to shake, and putting China's economy in unprecedented difficulties and challenges. China, as a beneficiary of globalization, must take action against this move.

In terms of internal circulation, the main objective is to bring about autonomous control of markets and technologies. To protect its market from adverse factors (trade protectionism and the COVID-19 pandemic), China has sought to orient its future economic growth towards a large domestic consumer market; and to avert the technological constraints that could undermine its economic development, the country has embarked on the localization of key technologies and products, particularly in the chip industry, which has been "seized by the throat." The external circulation under this double circulation strategy is primarily geared towards supporting the internal circulation. By promoting export sales to retain the scale of production made in China, and by drawing in foreign investment and technology to boost the quality and technological content of domestic manufacturing, the goal of replacing the external circulation with the internal circulation will ultimately be achieved.

III. China's Semiconductor Industry's Independent Development Predicament

1. Current Semiconductor Development Situation in China

Since the development of the semiconductor industry in China in the 1950s, state support has played a vital role. The 6th Five-Year Plan (1980-1985) and the 7th Five-Year Plan (1986-1990) each set out dozens of projects for the semiconductor industry, particularly in the areas of semiconductor design, testing, semiconductor manufacturing, semiconductor end-product applications, semiconductor manufacturing equipment, and basic theoretical research for national scientific and technological breakthroughs. In addition to the above, the 8th Five-Year Plan (1990-1995) also touched on the establishment of foundries (called "standard processing

lines" in China) and the development of GaAs and other power semiconductors.[11] "The 9th Five-Year Plan (1996-2000) set the goal of building 8-inch wafer fabs and developing 0.3 to 0.5 micrometer ICs as special projects, with a particular focus on developing new IC electronic components, computers and communications equipment, thereby upgrading the information systems and manufacturing equipment needed for economic and social progress. China's policies on boosting the IC industry are primarily based on tax incentives and special projects pushed by the state budget. In terms of IC manufacturing volume, 310 million units were fabricated in 1995 and 2.5 billion units were estimated in output by the year 2000, but the actual volume attained was much higher than that.[12]

The release of the "Notice by the State Council of Issuing the Several Policies for Incentivizing the Development of the Software Industry and the Integrated Circuit Industry" in 2000 and the subsequent upturn in the semiconductor industry in 2003 led to substantial growth in China's IC market and industry scale. As of the end of 2003, there were over 30 IC wafer production lines. The proportion of sub-6-inch fabs still stood at 78 percent, 8-inch fabs were not yet mainstream, and process standards had not yet reached internationally accepted levels, with processes above 0.35 micrometers representing over 80 percent of the total.[13] The 11th Five-Year Plan (2006-2010) aimed at promoting IC R&D centers and developing IC infrastructure software. In terms of wafer fabrication process, 90nm was achieved and progress was made towards 60nm to 45nm processes.

The 2011 "Notice of the State Council on Issuing Several Policies on Further

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[11] Zhongyu Yu, "The Current Status and Development Trend of the Integrated Circuit Industry in China," *Semiconductor Intelligence*, Vol. 1, 1988, pp. 7-10; Junlu Jiang, Yangyuan Wang and Yongwen Wang, "Review and Prospects of China's Integrated Circuit Science and Technology Development," *Journal of Shanghai Jiaotong University*, Vol. 26, No. 1, 1992, pp. 1-14.

[12] "The 9th Five-Year Plan for National Economic and Social Development of the People's Republic of China and the 2010 Vision Outline," *National People's Congress (NPC) website*, March 17, 1996, https://reurl.cc/EZgDM1. According to the statistical communique of 2000, the number of ICs manufactured was 5.88 billion units, for details, see "Statistical Communique on National Economic and Social Development of the People's Republic of China 2000," *Chinese government portal*, February 28, 2001, http://www.gov.cn/gongbao/content/2001/content_60684.htm.

[13] Tung-ho Shieh, "Cross-Strait IC Manufacturing Industry Development and Competition," *CTimes*, March 5, 2004, https://www.ctimes.com.tw/DispArt/tw/040305133 4I0.shtml.

Encouraging the Development of the Software and Integrated Circuit Industries,"[14] the February 2012 "Plan for Development of the Electronic Information Manufacturing Industry During the 12th Five-Year Plan,"[15] and "Plan for Development of the Integrated Circuit Industry During the 12th Five-Year Plan"[16] enabled the development environment of China's IC industry to continue to be optimized. To further expedite the growth of the IC industry, the State Council in June 2014 unveiled the "Outline of the Program for National Integrated Circuit Industry Development," which identifies five basic principles for the development of the IC industry: "Demand-led, innovation-driven, software and hardware combined, key breakthroughs, and open development."

"Made in China 2025, launched in 2015, focuses on the IC industry and its associated specialized equipment. In terms of design, priority is given to IC intellectual property (IP) and electronic design automation (EDA) to enhance the standard of IC design; regarding IC manufacturing, breakthroughs are made in core general-purpose chips that are critical to national information and network security and the development of the electronic machine industry; with respect to packaging, emphasis is placed on high-density packaging and 3D packaging; in respect of specialized equipment, independent development capabilities are developed to upgrade the packaging industry and testing, and form a key manufacturing equipment supply capability. At this point in time, the most advanced photolithography systems are not yet within the purview of the dedicated equipment policy. During the 13th Five-Year Plan period (2016-2020), China's semiconductor manufacturing industry has made some concrete achievements,

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[14] "Notice of the State Council on Issuing Several Policies on Further Encouraging the Development of the Software and Integrated Circuit Industries," *Chinese government portal*, February 9, 2011, http://www.gov.cn/zwgk/2011-02/09/content_1800432.htm.

[15] "The Issuance of 'The Plan for Development of the Electronic Information Manufacturing Industry During the 12th Five-Year Plan'," *Chinese government portal*, February 24, 2012, http://www.gov.cn/gzdt/2012-02/24/content_2075829.htm.

[16] "The Issuance of 'The Plan for Development of the Integrated Circuit Industry During the 12th Five-Year Plan'," *Chinese government portal*, February 24, 2012, http://www.gov.cn/gzdt/2012-02/24/content_2075782.htm.

such as the commissioning of a 12-inch "specialty process" production line,[17] the mass production of 14nm process by Semiconductor Manufacturing International Corporation (SMIC),[18] and the development of 128-layer 3D NAND flash memory by Yangtze Memory Technologies Corp (YMTC), which is basically on a par with the international mainstream.[19] China has been making great strides in its wafer fabrication capabilities, as evidenced by Advanced Micro-Fabrication Equipment Inc.'s (AMEC) 5nm etch system that has been validated by Taiwan Semiconductor Manufacturing Co (TSMC),[20] and the photolithography systems that have yet to be proven.

With regard to market sales, semiconductor sales in China were booming, with sales of 884.8 billion yuan in 2020, up more than six times when compared to 2010.[21] The quality of IC manufacturing had also improved, with the average price per unit increasing from 2.2 yuan per unit in 2010 to 4.08 yuan per unit in 2019.[22] However, the quality of ICs for export has not seen any marked improvement, with the average price per unit increasing from US$0.42 in 2009 to US$0.45 in 2020,[23] with no significant rise. It is speculated that the increase in the unit price of chips but not in the export price may be due to the fact that the quality of chips manufactured in China (including foreign-owned fabs) has improved, but mainly for local assembly needs, while foreign electronic assembly plants have

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[17] The so-called "special process" ICs in China refer to IC products that do not rely on advanced manufacturing processes and high-end equipment. These products do not require the same state-of-the-art, low-nanometer processes as processors or memory, but rather special features that are tailored to the different physical requirements of the working environment. Products in this category include power components, analogue chips, RF devices, MEMS and sensors.

[18] "Gap Between SMIC and TSMC, 14nm in Mass Production, Admits 'Still a Long Way to Go' from World-class Enterprise," *Apple Daily*, November 12, 2020, https://reurl.cc/NZbDmx.

[19] Lefeng Shao, "YMTC's 128-layer 3D NAND Launched as Best in Industry," *EE Times*, April 14, 2020, https://reurl.cc/356mEO; Qingxiu Han, "YMTC's 128-layer NAND Yield not Yet in Place, China's Local Supply Chain in the Works," *DIGITIMES*, August 24, 2021, https://reurl.cc/aNZzmQ.

[20] "Shenzhen AMEC Semiconductor's 5nm Plasma Etch System Has been Validated by TSMC," *Electronic Engineering World*, December 18, 2018, http://news.eeworld.com.cn/szds/2018/ic-news121814304.html.

[21] Sales volume in 2010 was 142.4 billion yuan, see "2010 Domestic IC Industry Operation," *China Semiconductor Industry Association*, January 25, 2011, http://www.csia.net.cn/Article/ShowInfo.asp?InfoID=17076.

[22] "Yu Xiekang: China's IC Industry Enters New Stage, Gap with Foreign Countries Still Obvious," *digfamily.com*, NO.1, October 15, 2020, https://reurl.cc/2o639m.

[23] The author's calculations are based on data from the China Semiconductor Industry Association website, http://www.csia.net.cn.

little demand for China's mid- to low-end chips, which also reflects the lack of competitiveness of China's domestically-made chips in the international arena and the fact that their export prices cannot compete with similar products from other countries.

In terms of the structure of the IC industry, the IC design industry is currently dominant, with an output value of 176.64 billion yuan in the first half of 2021, accounting for 43 percent of the whole sector and making it internationally competitive; followed by the IC wafer manufacturing industry, with a value of 117.18 billion yuan, constituting 29 percent; and finally, the IC assembly, packaging and testing industry, with a value of 116.47 billion yuan, comprising 28 percent (see Table 8-1 below). In the past, assembling, packaging and testing accounted for a larger share than wafer fabrication, but was gradually overtaken by wafer fabrication in the last two years when new fab capacity began to come on stream.

Regarding production lines, China has seen a rapid expansion in chip manufacturing over the past few years, with some 200 production lines (see Table 8-2 below), of which memory chips make up the largest share, followed by logic chips. More 12-inch wafer production lines are currently being built or signed than are in operation, and at the present rate of construction, China's wafer fabrication capacity should double in the coming years.

Table 8-1 Structure of the IC Industry in China

Year	H1 2020	H1 2020 growth (%)	2020	2020 growth (%)	H1 2021	H1 2021 growth (%)
Industry sales (in 100 mn yuan)	3,539.0	16.1	8,848.0	17	4,102.9	15.9
IC design industry (in 100 mn yuan)	1,490.6	23.6	3,778.4	23.3	1,766.4	18.5
IC wafer industry (in 100 mn yuan)	996.0	17.8	2,560.1	19.1	1,171.8	21.3

Year	H1 2020	H1 2020 growth (%)	2020	2020 growth (%)	H1 2021	H1 2021 growth (%)
IC assembling, packaging and testing industry (in 100 mn yuan)	1,082.4	5.9	2,509.5	6.8	1,164.7	7.6
Qty of IC imports (in 100 mn units)	2,422.7	25.5	5,435.0	22.1	3,123.3	29
Amount of IC imports (in US$100 mn)	1,546.1	12.2	3500.4	14.6	1,978.8	28.3
Qty of IC exports (in 100 mn units)	1,125.6	13.8	2,598.0	18.8	1,513.9	39.2
Amount of IC exports (in US$100 mn)	505.1	10.5	1,166.0	14.8	663.6	32.0

Source: Compiled by the author based on data from the China Semiconductor Industry Association, at http://www.csia.net.cn.

Table 8-2 China's Fab Production Line Statistics

	2018		2019		2021Q2				
	In operation		In operation		In operation		Being built or signed		
	Prod line	Monthly capacity	Prod line	Monthly capacity	Prod line	Monthly capacity	Prod line	Monthly capacity	Investment
12"	10	60		90	27	118	29	132	6,000
8"	20	90		100	28	120	10	27	NA
6" and under						400			
6"	50+	200		230					
5"		90		80					
4"		200		260					
3"		50		40					
Total	100+				200				

Notes:
1. This table is an incomplete statistical source of information collected by the author from various reports.
2. The unit of production line is a piece, the unit of monthly production capacity is 10,000 pieces, and the unit of investment is RMB100 million.
Source: "Yu Xiekang: China's IC industry enters new stage, gap with foreign countries still obvious," *digfamily.com*, NO.1, October 15, 2020, https://reurl.cc/2o639m; ChipInsights, "China Wafer Fabrication Lines in Q2 2021," *Snowball*, September 16, 2021, https://reurl.cc/ MkyEVK; Yuanchuang Zhao, "Year-End Industry Roundup: China's 63 fabs Update in 2019," *EE Times*, January 3, 2020, https://reurl.cc/px5E2x.

On the whole, the problem facing China's chip manufacturing industry is that the domestic market has a large demand (consuming 24 percent of the world's electronic goods and manufacturing 35 percent of the world's electronic goods), but the technology level is not high. Despite numerous independent innovations in the country, they are not sophisticated, with some core technologies and advanced equipment relying heavily on foreign supplies, and the innovation system of the manufacturing industry dominated by enterprises, is imperfect. These products are not high-grade and short of world-famous brands.

2. Policy Instruments under the "14th Five-Year Plan"

If the order in the contents of the 14th Five-Year Plan represents policy importance, the strategic development of science and technology is the focus of the plan, as the significance of science and technology and how to develop the technology industry cover the entire second part of the plan and the first two chapters of the third part.

The 14th Five-Year Plan, which was introduced to pursue technological autonomy and control against the backdrop of the U.S.-China trade war and technology war, has not only invested heavily in the wafer manufacturing industry (see Table 8-3 below), but also in third-generation semiconductors (see the next section for analysis), chip design tools and chip manufacturing equipment, which have come to the fore in the 14th Five-Year Plan.

China's subsidies to the semiconductor industry are broadly based on three approaches: (1) direct equity injection from state funds; (2) tax and fee reductions; and (3) preferential loans (bank credit and equity financing).

China set up the "National Integrated Circuit Industry Investment Fund (the "Big Fund") Phase I in 2014 and Phase II in 2019, with a size of approximately 100 billion yuan and 200 billion yuan respectively. Both have slightly different investment directions, but they both target industries that are backed by policies at the time. The Phase I covers the entire IC industry chain, but more than half of the funds are allocated to leading semiconductor manufacturing companies, such as SMIC (approx. 21.5 billion yuan), YMTC (19 billion yuan), HLMC (11.6 billion yuan) and Tsinghua Unigroup (10 billion yuan).[24] The holding was gradually scaled down in 2019 and the Phase I is expected to be concluded in 2024. The Phase II puts emphasis on China's weaker semiconductor equipment and materials sectors, such as Advanced Micro-Fabrication Equipment Inc.

The State Council's subsidies on taxation mainly originated from the "Several Policies on Encouraging the Development of the Software and Integrated Circuit Industries" in 2000, followed by the "Notice of Several Policies on Further Encouraging the Development of the Software and Integrated Circuit Industries"[25] in the "12th Five-Year Plan" in 2011, which adopted lower income tax rates, exemptions within a given period of time (e.g. exemption of enterprise income tax on first 2 years, and half diminution from the third to the fifth year.), income tax exemptions or investment tax rebates, accelerated depreciation, etc. Along with expanding the scope of income tax incentives, some adjustments had been made under the new incentive scheme in 2011, such as the abolition of reinvestment tax rebates.[26]

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[24] Ling Fang, "Significant Progress in Domestically Produced Semiconductors! Wuhan National Memory Base Project Phase II Commences Construction," *All Weather TMT*, June 21, 2020, https://awtmt.com/articles/3596487.

[25] After the State Council issued a policy notice in 2000, the Ministry of Finance also published notices in 2000 and 2002 respectively, namely the "Notice of the Relevant Tax Policies for Encouraging the Development of Software and Integrated Circuit Industry" and the "Notice of the Relevant Tax Policies for Further Encouraging the Development of Software and Integrated Circuit Industry." Following the issuance of the policy in 2011, the relevant ministries released notices in 2012 and 2015 respectively, namely the "Notice of Taxation on Enterprise Income Tax Policies for Further Encouraging the Development of Software and Integrated Circuit Industries" and the "Notice of Taxation on Enterprise Income Tax Policies for Further Encouraging the Development of Integrated Circuit Industries."

[26] For more information on tax relief measures for the IC industry, see Li Sun and Qiang Chi, "Review and Analysis of Corporate Income Tax Policies for the Software and IC Industry," *International Taxation*, Vol. 6, 2016, pp. 63-67.

Table 8-3 IC Industry Scale Planning during the 14th Five-Year Period in China's Provinces/Autonomous Regions/Direct-controlled Municipalities
Unit: RMB 100 mn

Location / Year	2021	2022	2023	2025	Subtotal
Anhui	1,000				1,000
Beijing				3,000	3,000
Guangdong				4,000	4,000
Hubei		1,000			1,000
Shandong		1,000			1,000
Shaanxi				2,000	2,000
Shanghai	2,440				2,440
Sichuan		1,500		2,000	3,500
Zhejiang				2,500	2,500
Chongqing		350			350
Gansu				200	200
Hebei				200	200
Hunan				300	300
Jiangxi				500	500
Liaoning				800	800
Tianjin			400		400
Total	3,440	3,850	400	15,500	23,190

Source: ChipInsights, "The 14th Five-Year Plan for IC Industry Development Planning and Industry Scale Targets by Region," WeChat official account, September 10, 2021, https://reurl.cc/Ok5DKg.

In terms of loan financing, the 2011 "Several Policies on Further Encouraging the Development of the Software and Integrated Circuit Industries" had guided local governments to establish loan risk compensation mechanisms and intellectual property pledge loans and guarantee services. The "Outline of the Program for National Integrated Circuit Industry Development" released in 2014 stated that it "supports the Export–Import Bank of China in stepping up its services to IC enterprises within its scope of business, encourages and guides the China Development Bank and commercial banks to increase their credit support to the IC industry on an ongoing basis, and innovates credit products and services tailored to the needs and characteristics of the IC industry." Under this policy, the China Development Bank issued loans of 107.8 billion yuan and 123.8 billion yuan in 2017 and 2018 respectively.[27]

With such policies in place, China has subsidized the semiconductor industry to the tune of US$50 billion over the past two decades.[28] While this has been beneficial to the development of China's semiconductor industry, it has not solved the problem of over-reliance on foreign chips and has resulted in over-subsidization, leading to the phenomenon of "botched" semiconductor fab construction projects such as Wuhan Hongxin and Guangdong Haixin. More than a dozen "failed" semiconductor plants are currently out of operation,[29] most of which have no plans for actual construction, let alone production. The main reason for the shutdown and construction suspension is mostly due to funding issues (disruption of capital, lack of availability of funds).

In 2020, the 14th Five-Year Plan saw a shift to a different approach to granting subsidies. The "Notice on the Issuance of Several Policies to Promote the High

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[27] "China Development Bank: Giving Full Play to Countercyclicality and Strengthening Services to the Real Economy," *China Development Bank*, January 2, 2019, http://www.cdb.com.cn/xwzx/khdt/201901/t20190122_5815.html.

[28] "Poor Results of Big Spending? FT: China's 1.4 Trillion Yuan Subsidy to Chip Industry in 20 Years is 100 Times that of Taiwan," *Liberty Times*, October 26, 2020, https://ec.ltn.com.tw/article/breakingnews/3332698.

[29] Atkinson, "A Look at China's Top 10 Tech Busts, with HSMC Still Topping the List," *Financial News*, January 18, 2021, https://reurl.cc/730Zx5; "After HSMC, QXIC also Collapses with 180 Taiwanese Engineers Left with no Jobs," *Liberty Times*, May 23, 2021, https://reurl.cc/Gbjz3G; Ning Xu, "HSMC's 100bn Yuan Fraud Project Ends, a Repeat of the 'Backyard Furnaces' Project," *Voice of America*, March 6, 2021, https://reurl.cc/ WXxe9y.

Quality Development of Integrated Circuit and Software Industries in the New Period"[30] promulgated on August 4, 2020 not only introduced more preferential income tax and value-added tax subsidies for more advanced processes node projects, but also took a progressive approach to reducing the eligible recipients and preferential measures according to the technological threshold of the process. In addition, it also stresses investment risks to avoid overlapping investments and vying for talents.

3. Semiconductor Development Predicament and the Way Out

Since the Trump administration-imposed sanctions on ZTE Corp in 2017 for violating the embargo on Iran, and with the arrest of Huawei Technologies Co's founder's daughter Meng Wanzhou in Canada in 2018, the U.S. Department of Commerce in May 2019 placed Huawei and 70 of its affiliates on an "Entity List," making it impossible for the Chinese company to purchase electronic parts from the U.S. without U.S. permission. A year later (2020), the U.S. escalated sanctions against Huawei, requiring that any semiconductor chip using U.S. technology or design must first secure a U.S. export license before it can be sold to the company, even if it is manufactured outside the U.S. In December 2020, the U.S. Department of Defense (DoD) officially blacklisted Semiconductor Manufacturing International Corp (SMIC), leading the U.S. Department of Commerce to add SMIC to its Entities List. Since then, the U.S. has completely blocked China's ambition to forge ahead in advanced manufacturing processes (less than 5 nanometers).

In terms of advanced manufacturing processes, the U.S. ban has prevented SMIC from acquiring a long-standing order for extreme ultraviolet lithography (EUV) machines from ASML Holding NV, a Dutch photolithography systems house, which has kept SMIC's manufacturing process at 14nm. However, this restriction has only compelled China to change its development strategy and

[30] "Notice of the State Council on the Issuance of Several Policies to Promote the High Quality Development of Integrated Circuit and Software Industries in the New Period," *Chinese government portal*, August 4, 2020, https://reurl.cc/Mk6DKn.

move forward in a roundabout way. First of all, SMIC is experimenting with a new process technology to attain "7nm-like" performance. For example, SMIC has developed the "N+1" process, which is claimed to offer a 20 percent boost in performance over the existing 14nm, a 57 percent reduction in power consumption, a 63 percent shrinkage in logic area, and a 55 percent decrease in system area per chip, with chip stability and power consumption close to that of the 7nm process, albeit not quite as good as the true 7nm process.[31] This is an attempt by China to break through the limitations of the chip process without relying on EUV technology.

Second, the capacity of the mature process technology node is being expanded. According to Semiconductor Equipment and Materials International (SEMI), eight new fabs are slated to be built in China between 2021 and 2022.[32] Also, the "White Paper on China Wafer Fabrication Lines" published by ChipInsights indicates that as of the end of Q2 2021, there are 29 12-inch fabs under construction or under contract, with an investment amount of up to 600 billion yuan and a planned monthly capacity of 1.32 million pieces; and 10 8-inch fabs with a projected monthly capacity of 270,000 pieces.[33] In particular, SMIC plans to commit US$8.87 billion to build a 28nm 12-inch foundry production line in Shanghai with a capacity of 100,000 pieces per month.[34] The expansion of the mature process capacity is not only in response to the strong demand for the process for automotive chips, but also to meet China's demand for chips other than high-end ones for mobile phones. The abandonment of 7nm or 5nm chip fabrication only affects the high-end handset business. The technology of 14nm node is more than sufficient for chips that do not require advanced processes, such as automotive chips and power management chips, which using micrometer or sub-

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[31] Jih-hsing Yang, "SMIC's N+1 Process Breakthrough Sends Shares Soaring," *Commercial Times*, October 13, 2020, https://ctee.com.tw/news/china/350574.html.

[32] "SEMI: New Fab Construction Expected to Drive Significant Increase in Equipment Spending," *SEMI*, June 23, 2021, https://www.semi.org/zh/new-fab.

[33] ChipInsights, "China Wafer Fabrication Lines in 2Q 2021," *EETimes*, September 16, 2021, https://www.eet-china.com/mp/a77879.html.

[34] Chen-i Lin, "SMIC Spends NT$248bn on 12-inch Fab," *Economic Daily News*, September 4, 2021, https://money.udn.com/money/story/5604/5721141.

micrometer technology node. Moreover, it is beneficial to maintain the expansion of mature production capacity in order to draw in foreign high-tech talents on a continuous basis, and to sustain exchanges with foreign equipment suppliers to avoid decoupling of the supply chain. This shows that China is now setting its sights on non-advanced chips that are not restricted by the U.S., so that it can retain its basic operations, preserve the stability of its supply chain, maintain technology exchanges with foreign countries, and waiting for the lifting of the U.S. ban.

IV. China's Third Generation Semiconductor Development

In recent years, the trend of 5G and electric vehicles has made high-frequency, high-power, high-temperature-resistance, high-breakdown-voltage and high-current-density semiconductor components a necessity, leading to a steep increase in demand for power components. Compared to traditional semiconductor, such as silicon (Si) and germanium (Ge) in the first generation, and gallium arsenide (GaAs), indium phosphide (InP) and gallium arsenide (AlGaAs) in the second generation, third generation semiconductors have superior physical properties such as high temperature and voltage resistance, fast switching and high efficiency (low loss) (see Table 8-4 for details). The third generation of semiconductors can be classified into silicon carbide (SiC) and gallium nitride (GaN) materials. GaN has a high breakdown field, high saturation electron velocity and excellent thermal conductivity due to its large band gap, giving it a higher power RF capability[35] and making it an essential material for 5G base stations, where power applications are better at low and medium voltages. On the other hand, silicon carbide (SiC) performs better at high voltages (>600 volts) and is suited for high power applications such as electric vehicles, charging stations, UPS and power supplies. Due to the high efficiency and low dissipation characteristics of third generation semiconductors, the size of the components is significantly reduced, and

[35] "A Primer on GaN and 3 Reasons It Outperforms Other Semiconductors in RF Applications," *Qorvo*, April 20, 2017, https://reurl.cc/734lxk.

the low dissipation characteristics generate less heat energy, eliminating the need for larger heat dissipation designs than traditional silicon-based power components such as Si-MOSFETs or insulated gate bipolar transistors (IGBTs), so that they can be applied across four China's new infrastructure construction projects: 5G infrastructure, new energy vehicle charging piles, ultra-high voltage and rail transportation. Further, their light weight is of great benefit in aerospace operations and is therefore highly valued in military applications, making third generation semiconductors a product of economic and military strategic importance to China.

Table 8-4 Differences in Physical Properties between Silicon-based and Third-generation Semiconductors

Materials Property	Si	SiC-4H	GaH
Band Gap (eV)	1.1	3.2	3.4
Critical Field 106 V/cm	.3	3	3.5
Electron Mobility (cm2/V-sec)	1450	900	2000
Electron Saturation Velocity (106 cm/sec)	10	22	25
Thermal Conductivity (Watts/cm2 K)	1.5	5	1.3

Source: Microsemi, P. P. G. "Gallium nitride (GaN) Versus Silicon Carbide (SiC) In the High Frequency (RF) and Power Switching Applications," Digi-key (2014), https://reurl. cc/956ylv, p. 2.

As noted above, the market for third generation semiconductors holds great potential for growth. Regarding power devices, the global market for SiC elements was around US$700 million in 2020 and is projected to grow to US$4.7 billion by 2026, representing an annual compound growth rate of 40 percent (as shown in Figure 8-1).[36] In addition, the GaN market is exhibiting similarly high growth rates, surging to more than US$100 million in 2020 from merely over US$10 million in 2019, and will reach US$1.2 billion by 2027, a compound growth rate of 35.4 percent.[37]

[36] "The Global Silicon Carbide Power Semiconductor Market was Valued at USD 628.72 Million in 2020, and it is Expected to Reach USD 4708.71 Million by 2026, Registering a CAGR of 42.41% During the Period 2021-2026," *Global News*, July 20, 2021, https://reurl.cc/Q6R0W0.

[37] "The Global GaN Semiconductor Device Market Size is Estimated to be USD 19.4 Billion in 2021 and is Projected to Reach USD 24.9 Billion by 2026, at a CAGR of 5.2%," *Global News*, June 18, 2021, https://reurl.cc/jgWxlL.

1. Policy Instruments for China's Third Generation Semiconductors

China's "Made in China 2025," initiated in 2015, states that "a breakthrough in the manufacturing and application of key components and materials such as high-power power electronic devices and high-temperature superconducting materials achieved will bring about industrialization capabilities."[38] Since then, the policy of backing third generation semiconductors has begun to take shape. Other than some policies and subsidies for overall semiconductor development, such as the "Special Integrated Circuit Projects Strongly Backed by the Ministry of Science and Technology" and the 13th Five-Year Plan for the Development of National Strategic Emerging Industries" in 2015, the State Council's policies specifically targeting third-generation semiconductors are the "Belt and Road Initiative Plan for Cooperation in Scientific and Technological Innovation" in 2016. The third generation of semiconductors is explicitly addressed as one of the new materials in the new material development section of the Plan's focus areas.[39]

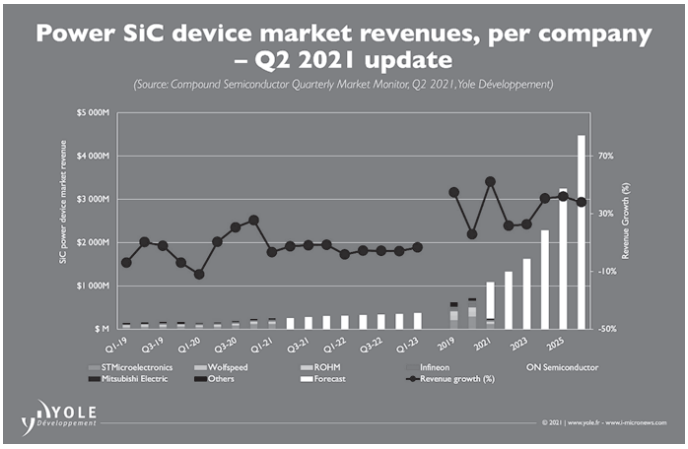

Figure 8-1 Revenue and Estimates of SiC Manufacturers in Recent Years

Source: Quoted from "Silicon Carbide Device Market to Exceed $4bn by 2026," *Semiconductor Today*, July 23, 2021, http://www.semiconductor-today.com/news_items/2021/jul/yole-230721. shtml.

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[38] "GaN Power Device Market Outlook-2027," *Allied Market Research*, May 2020, https://reurl.cc/956yev.

[39] "Notice on the Issuance of the 'BRI Plan for Cooperation in Scientific and Technological Innovation'," *State Council Press Office*, September 14, 2016, https://reurl.cc/52ve1y.

Additionally, the policies sponsored by the ministries and commissions are presented in Table 8-5 below.

Table 8-5 Subsidy Policies for Developing Third Generation Semiconductor Industry

promulgated year-month	Department in Charge	Name of Policies	Objectives
2016-12	National Energy Administration	13th Five-Year Plan for Energy Technology Innovation	Research on the stable preparation technology of 8-inch silicon carbide (SiC) substrates and realize the mass production of 6-inch SiC crystal substrates; develop GaN single crystal growth technology with breakdown voltage greater than 5kV, realize mass production of 6-inch GaN single crystal substrates, and research key technologies for low-cost domestic production of high-power LED encapsulants. It is expected to be completed by 2023.
2016-12	Ministry of Industry and Information Technology, National Development and Reform Commission	Guide to the Development of the Information Industry[40]	1. Develop production lines for specialized processes such as analogue and digital-analogue hybrids, MEMS, power electronics, high-voltage circuits, RF circuits and for compound ICs. 2. Step up efforts in areas of "more than Moore", promote the construction of special process production lines and the development of third-generation compound semiconductor products, and expedite innovation in new materials, structures and processes.

[40] "Notice of the Ministry of Industry and Information Technology and the National Development and Reform Commission on the Issuance of the Guide to the Development of the Information Industry," *Ministry of Industry and Information Technology*, February 9, 2017, https://ppt.cc/fG4fvx.

promulgated year-month	Department in Charge	Name of Policies	Objectives
2017-4	Ministry of Science and Technology	13th Five-Year Plan for Science and Technology Innovation in the Materials Sector under 13th Five-Year Plan [41]	To strengthen China's material system and vigorously develop high-performance carbon fibers and composite materials, high temperature alloys, new materials for military industry, third-generation semiconductor materials, new display technologies, special alloys and new rare earth materials, etc., so as to meet the material needs of China's major projects and national defense construction. One of the key developments: third generation semiconductor and LED materials.
2019-11	Ministry of Industry and Information Technology	Directory for Guiding the Exemplary Application of the First Batch of Key New Materials (2019)[42]	1. Gallium Nitride (GaN) single crystal substrates: 2-inch and above. 2. GaN epitaxial wafers for power components: 4-inch and above. 3. Silicon Carbide (SiC) epitaxial wafers: 4" and above. 4. SiC and N-type SiC single crystal substrates: 4" and above. 5. Aluminium-based SiC complexes. 6. SiC ceramic membrane filtering material. 7. β-SiC micropowder. 8. Key strategic material: high temperature continuous resistant SiC fiber.

Source: Compiled by the author from publicly available information.

[41] Notice of the Ministry of Science and Technology on the Issuance of the "13th Five-Year Plan for Science and Technology Innovation in the Materials Sector," *Chinese Academy of Sciences*, September 12, 2017, http://www.bdp.cas.cn/ztzl/sswgh/201709/t20170912_4614051.html.

[42] Notice of the Ministry of Industry and Information Technology on the Issuance of the 'Directory for Guiding the Exemplary Application of the First Batch of Key New Materials (2019 Edition)'," *Chinese Government Portal*, December. 3, 2019, https://reurl.cc/RbqAyz.

2. China's Third Generation Semiconductor Situation and Plight

With subsidies granted by the Chinese government, third generation semiconductors are springing up everywhere. According to a China Resources investment report, there were 2, 12 and 18 cases for newly-built SiC plants between 2018 and 2020, with investment amounts of 5 billion, 19.9 billion and 46.5 billion yuan respectively.[43] Under the "Third Generation Semiconductor Industry Technology Innovation Strategic Alliance," there were 14 SiC construction projects (including new construction and expansion) worth 22.08 billion yuan in 2019 and 17 projects worth 55 billion yuan in 2020; there were 3 GaN projects worth 4.5 billion yuan in 2019 and 7 projects worth 14.4 billion yuan in 2020 (as displayed in Figure 8-2).

In terms of output value, the total output value of power and RF third-generation semiconductors surpassed 10 billion yuan in 2020, up about 70 percent from 2018, with the scale of power components reaching 4.47 billion yuan. As a result of the increased investment, the value of output will also go up in the future. For instance, Hunan Sanan's third-generation semiconductor plant, which commenced production in June 2021, is the first in China and the third in the world in the vertically integrated silicon carbide (SiC) chain, with a capacity of up to 30,000 6-inch SiC wafers per month and its projected production value of 12 billion yuan.[44] In the same month, Innoscience (Suzhou) Semiconductor Co also started mass production at its 8-inch GaN on Si plant.[45] With a maximum annual production capacity of 780,000 wafers, this facility is expected to have an annual production value of 15 billion yuan. The market for SiC and GaN power components in China is forecast to be several times larger than the current size by 2023.

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[43] Chen-i Lin, "3rd Generation Semiconductor Era Begins: a Look at the Strategic Benefits of Semiconductors," *Sina.com*, August 11, 2021, https://finance.sina.com.cn/tech/2021-08-11/doc-ikqciyzm0748150.shtml.

[44] Chia-i Chang, "'Chinese Industry,' San'an Optoelectronics, Hunan Semiconductor Base Phase I Project Commences Production," *chinatimes.com*, August 11, 2021, https://wantrich.chinatimes.com/news/20210624S379223.

[45] Gallium Nitride (GaN) is used in low and medium frequency elements.

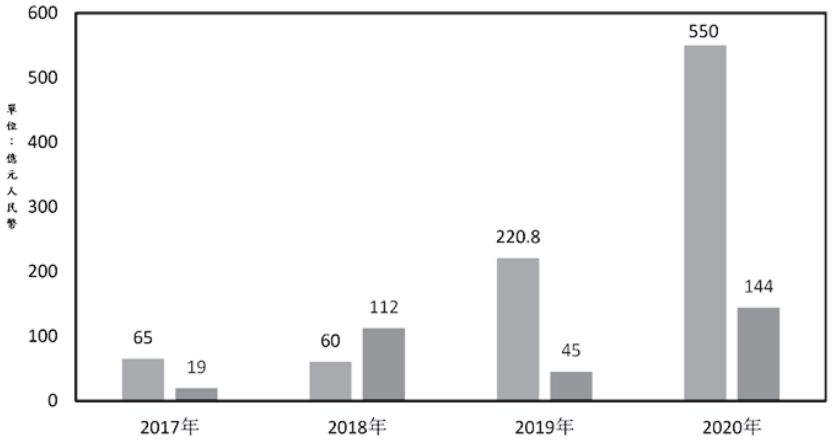

Figure 8-2 China's Third Generation Semiconductor Investment and Expansion from 2017 to 2020

Source: Third Generation Semiconductor Industry Technology Innovation Strategic Alliance, "Third Generation Semiconductor Industry Development Report 2020," *Third Generation Semiconductor Industry Technology Innovation Strategic Alliance*, April 2020, http://www.casa-china.cn/ uploads/ soft/210927/6_1522096971.pdf, p. 47.

Despite a surge in Chinese investment in third-generation semiconductors in the past few years, European and U.S. manufacturers have the first-mover advantage over China in terms of technology and products, e.g. 80 percent of SiCs come from the U.S. Since the design of third-generation semiconductors is not as difficult as that of logic ICs,[46] the majority of third-generation semiconductors are still produced in the form of integrated device manufacturers (IDMs) and original equipment manufacturers (OEMs) are not common. As such, China must surmount difficulties in process equipment and chip production (substrate → epitaxy → design → fabrication → packaging) if it is to overtake in technology. In epitaxial technology, for example, SiC requires stable control of material matching at high temperatures (2,600 degrees Celsius) to produce usable single-crystal SiC. Furthermore, due to the slow growth rate of third-generation semiconductor crystals, the high cost resulting from low process yields, the long-term downward

[46] The majority of third generation semiconductors are manufactured in micrometer or sub-micrometer processes.

trend in the IC prices,[47] and the leading market players strategically waging price wars to drive potential Chinese competitors out of the market, all these factors will impede the development of China's third-generation semiconductor industry.

V. Conclusion

Amidst the lingering COVID-19 outbreak and U.S.-China tensions, China's economic performance are barely satisfactory, thanks to a low base period last year. Xi Jinping intends to take advantage of the internal circulation economy to counteract the effects of the global economy hovering at a low level and to build domestic technological autonomy to prevent the U.S. government from restraining China's economic and high-tech progress by clutching at the throat of technology. Judging from the economic growth figures, the Chinese government's efforts are not in vain, but the results may not have emanated from the policies it has pushed, highlighting its policy mistakes or shortcomings. For example, the internal circulation policy, which relies on consumption to drive domestic economic growth, has seen a decline in the already sluggish domestic demand in August, due to the required rectification and reform of Ant Group and Tencent and other platforms since last year, as well as the Evergrande incident in September this year and power rationing, among other restrictive policies. As a result, the hope that domestic consumption would lead to economic growth did not materialize. Instead, the external circulation of exports continued to do well, as foreign buyers were unable to find alternative sources of goods.

When it comes to technological autonomy, China is still following the past path of developing consumer products, starting with the low-end market, then gradually upgrading products through research and development, and finally penetrating the high-end market. Nevertheless, the manufacture of chips involves large-scale capital, process experience and the coordination of upstream and downstream

[47] The price of third-generation semiconductors has risen rather than fallen in the past two years amid the COVID-19 pandemic and U.S.-China tensions, which is an exceptional case.

patents from various countries. Although China's policies have mostly backed up its semiconductor industry and hit some of its policy targets, excessive subsidies have led to a fierce race for government resources rather than focus on their own businesses, resulting in a plethora of failures, and despite some adjustments to the 14th Five-Year Plan's IC funding program, its effectiveness has yet to be tested over time. Moreover, China's technological progress has also been disrupted by the lack of access to advanced foreign equipment and materials following the U.S. technology embargo. Despite the fact that its development of traditional silicon-based chips has been hampered, China is now focusing its hope on third-generation semiconductors and is looking to overtake its rivals, but the technical difficulties and pricing practices of foreign manufacturers may not be overcome overnight. However, while China can count on its large domestic market, abundant and inexpensive technological talent, and substantial government subsidies to develop, it remains to be seen whether China's third-generation semiconductor industry can grow as rapidly as its silicon-based products in the past, given the constraints imposed by the U.S.

Chapter 9

The Development of Aerospace Science and Technology and Industry in China

Shiow-Wen Wang*

I. Introduction

China's aerospace science and technology[1] made significant progress in 2021. First, China's space station construction kicked off this year. On April 29, the launch vehicle "Long March 5B" sent China's Tiangong space station core module, Tianhe, into Earth's orbit. On June 17, the Shenzhou 12 spacecraft delivered three astronauts to the core module of Tianhe, where they stayed for three months and carried out robotic arm operations, extravehicular work, space experiments and various critical technology verification before returning to Earth on September 17. Secondly, the Chinese Mars probe Tianwen-1 on May 15 successfully landed on the southern Utopia Planitia of Mars after entering orbit around Mars in February. The Zhurong Mars rover, carried by Tianwen-1, has spent more than 140 days on the planet by mid-October, with the goal of exploring the terrain and climatic features of the planet and looking for signs of the presence of water or ice.

These are major breakthroughs in Chinese aerospace science and technology in the very short term, following the successful launch of the Long March 5B launch vehicle, the return of lunar soil samples by Chang'e 5 and the activation of the

* Assistant Research Fellow, Division of Chinese Politics, Military and Warfighting Concepts, Institute for National Defense and Security Research.

1 The term "hang-tian" (航天 , aerospace) used in China refers to the interplanetary flight of man-made satellites and spacecraft around the Earth or within the solar system, and is somewhat different from the terms "hang-tai" (航太 , space flight) and "tai-kong" (太空 , space) used in Taiwan. In order to retain the original meaning, the term "hang-tian" (航天) is used hereinafter.

BeiDou-3 global satellite navigation system in 2020. In particular, the Tiangong space station is scheduled for completion in 2022 and is likely to replace the International Space Station (ISS), which will be decommissioned in 2024, as the only space station in low-Earth orbit. Moreover, China has become the second country after the United States to successfully land on Mars in its first exploration of the planet. In 2018, China ranked first in the world in terms of the number of spacecraft launches, and from 2020 onwards, it has scheduled even more launches in preparation for the gradual realization of the Chinese "space dream."

China's primary objective in developing aerospace science and technology is to dominate space. Large-scale projects such as missile/rocket launches, satellite networks, planetary exploration and manned spaceflight were initially developed for military purposes, and only later for economic and social development purposes. Aerospace science and technology is itself a dual-use technology, and China's military-civilian integration policy gives top priority to military applications. However, the economic benefits of aerospace science and technology are far greater than the Chinese military could ever have imagined, even when combined with emerging technologies such as 5G, artificial intelligence (AI) and big data to drive a range of innovative activities from basic research to human resources cultivation. Particularly, Satellite Internet was included in April 2020 as one of China's "new infrastructure construction" projects, which means that satellite networks would constitute one of China's national infrastructure priorities during the 14th Five-Year Period, and its military and commercial applications are worthy of continued attention.

The Chinese government is making every effort to build a strong aerospace nation, with the aim of achieving the goal of establishing a modern and strong socialist country by 2049, the 100th anniversary of the founding of the People's Republic of China. How is China developing its aerospace science and technology? Through what mechanism? What capabilities and foundations are in place for military and commercial applications? What are the future trends? This chapter will attempt to address these issues.

II. The Development of Aerospace Science and Technology in China

The "space dream" is at the heart of Xi Jinping's "China Dream." The importance of aerospace construction in China's development can be seen from the 13th Five-Year Plan's "building of an major space player" to the 14th Five-Year Plan's "building of an major space power."[2] The specific contents of the "building of an major space power" include: human spaceflight, lunar exploration, Mars exploration, asteroid exploration, BeiDou navigation, high-resolution earth observation system(i.e. the "Gaofen satellite project"), heavy-lift launch vehicles, spacecraft in-orbit services, and a space-ground integrated communication network system. The ultimate goal is to make China a space power through aerospace science and technology.

As a matter of fact, China's initial development of aerospace science and technology was for national defense purposes. Immediately after Qian Xuesen's 1956 "Position Paper on the Establishment of China's National Defense and Aviation Industry," China set up the Aviation Industry Commission, the Missile Management Bureau of the Ministry of National Defense, and the first missile research institute, the Fifth Research Institute of the Ministry of National Defense,[3] to actively develop rocket/missile and satellite technologies. In 1966, China completed the combination of a nuclear warhead and a missile. In 1970, China launched its first artificial satellite, Dongfanghong 1, fulfilling the goal of developing "two bombs and one satellite" (missile, nuclear bomb and artificial satellite). The U.S. Congress has also pointed out that China may develop a number of counterspace systems that will pose a growing threat to U.S. national security.[4]

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[2] At first, China drew the vision and roadmap to major space power by 2030 in " China's Space Activities in 2016".

[3] It was founded in Beijing and its first director was Qian Xuesen.

[4] See *China's Space and Counterspace Capabilities and Activities*, The U.S.-China Economic and Security Review Commission, May 11, 2020, https://www.uscc.gov/sites/default/files/2020-05/ China_Space_and_Counterspace_Activities.pdf.

1. Roadmap of China Aerospace Science and Technology Development

The Three-Step Development Strategy is a strategy for the development of important technologies and industries in China. In addition to setting short-, medium- and long-term development targets, it is also effective in terms of investment and allocation of resources. For example, the Three-Step Development Strategy for the manned spaceflight project was formulated in 1992. The first step was to launch a manned spacecraft to accomplish experimental human spaceflight and space applications; the second step was to complete astronaut extravehicular activities, spacecraft rendezvous and docking, and launch a space laboratory to achieve short-term manned space applications; and the third step was to build a space station to realize long-term space applications with a larger number of crew members stationed. Other major aerospace science and technology projects such as planetary exploration, BeiDou navigation and carrier rockets also have their own "Three-Step Development Strategy" (Table 9-1).

2. The Main Content of China's Aerospace Science and Technology

Since the development of the "Two Bombs and One Satellite" in the 1950s, China's aerospace science and technology has seen a steady advancement in rocket and satellite applications. The highlights of this development can be briefly described as follows:

(1) Planetary exploration: The main missions are lunar exploration ("Lunar Exploration Program"), Mars exploration and other planetary explorations. China had successfully landed on the back of the Moon in 2019 and returned to Earth in 2020 with nearly two kilograms of lunar soil samples collected by robotic arms. Following the experience of the Lunar Exploration Program, China is currently conducting Mars exploration and planning future projects such as Mars sampling, Jupiter exploration and solar exploration. However, the technical key to planetary exploration lies not only in the successful launch of the launch vehicle, but also in the acquisition of energy for the long-range flight of the probe, the ability to communicate and remotely control from space, and the ability of the spacecraft to autonomously identify and respond

to environmental conditions (e.g. slowing down during landing, releasing Mars rovers or drones).

Table 9-1 The Three-Step Development Strategy for China's Major Aerospace Projects

	Name	Step 1	Step 2	Step 3
1	Human Spaceflight	1992-2003: Launched a manned spacecraft, built an experimental crewed spacecraft project and started experiments in space applications. • In 2003, China became the third country in the world, after the U.S. and the former Soviet Union, to conduct manned spaceflight on its own.	2005-2017: Achieved astronaut extravehicular activities, spacecraft rendezvous and docking, launched space laboratories, and solved the problem of short-term manned space applications of a certain scale.	From 2020 onwards: Building a space station to address the issue of larger scale, long-term manned space applications.
2	Lunar Exploration	"Orbiting": 2007- 2012 • Launched a lunar probe to orbit the Moon at an altitude of 2,000 km above the lunar surface. • Conducted integrated surveys of the lunar terrain, some elements and material composition, lunar soil properties, etc. • Set up a preliminary system for lunar exploration projects.	"Landings": 2013-2018 • Launched soft landers and rovers, landed on the lunar surface and released lunar rovers. • Performed surveys of terrain, geomorphology, geological structure and material composition of the landing zone. • Carried out lunar-based astronomical observations.	"Return": 2019 - 2020 • Launched an automated lunar sampling return vehicle. • Collected lunar soil and rock samples by robotic arm. • Brought lunar soil samples back to Earth.
3	Mars Exploration	Robotic exploration of Mars • Mars Sample Return, Mars base site survey, in-situ resource utilization system construction, etc.	Primary exploration • Manned orbit around Mars, orbital surveys, manned Mars landing surveys, Mars base construction, etc.	Flight-based exploration • Large-scale Earth-Mars transport fleet, establishment of an Earth-Mars economic circle, large-scale development and applications, etc.

	Name	Step 1	Step 2	Step 3
4	BeiDou Navigation Satellite System	A pilot system was developed since 1994, and the BeiDou-1 system (1st gen BeiDou system) for navigation within China was set up in 2000 until Dec 2012.	Since Nov 2012, the "BeiDou 2 System" (2nd gen BeiDou system) was rolled out to provide regional positioning services to customers in the Asia Pacific region.	The global positioning service of the "BeiDou-3 System" (3 gen BeiDou system) was rolled out in 2018 and was fully operational by the end of July 2020.
5	Heavy-lift Launch Vehicle	Developing the Long March series of launch vehicles, which can be launched into low, medium and high Earth orbits and carry various types of satellites with different loads, etc.	Completion of autonomous manned launch capability.	Completion of high density launch capability.

Source: Compiled by the author from various publicly available information.

(2) Manned spaceflight: The main tasks are crewed spaceflight, spacecraft docking and space station construction. As stated earlier, the construction of China's Tiangong space station is slated for completion in 2022 and it could be the only space station in near-Earth orbit in the foreseeable future. During its construction, China will launch several cargo and manned spacecraft to deliver other modules, supplies and astronauts to the station.[5] Meanwhile, China is also planning human missions to the moon and even a manned landing on Mars, but has yet to surmount numerous technical hurdles. The space suits worn by astronauts for extravehicular activities, the manufacture and operation of extravehicular robotic arms, and the remote communication with the Earth control center all require a high level of technology in the fields of materials, robotics, communications and AI. A robotic arm on a space station,

[5] "China Space Station: Tiangong Core Module 'Tianhe' Launched, First Step Towards Permanent Chinese Space Station," *BBC News Chinese*, April 29, 2021, https://www.bbc.com/zhongwen/trad/science-56926554.

for instance, must be equipped with visual recognition and autonomous AI capabilities in order to observe, monitor, capture and push space targets.

(3) Heavy-lift launch vehicle: This refers mainly to the capability to launch satellites or manned spacecraft in low, medium and high Earth orbits, and the key technology is the engines. China's Long March-11 rocket took off in 2019 from an offshore platform in the Yellow Sea, marking the first sea launch of a launch vehicle, and the country will follow up with commercial rocket launches at sea. On the other hand, rocket technology has also contributed to China's development of supersonic weapons for direct attacks on terrestrial targets from orbit through the atmosphere, such as the completion of the world's first supersonic gliding missile—the Dongfeng-17 ballistic missile[6] — in 2018 and the testing of a hypersonic missile fitted with a nuclear warhead in August 2021.[7] China is currently developing a new generation of super heavy-lift launch vehicle with a payload of 70,000 kg, capable of carrying a men to the moon.[8]

(4) Satellite Internet: It refers to the use of a certain number of communication satellites to form a worldwide, real-time, low-cost satellite broadband communication system. The BeiDou satellite system, which was fully operational at the end of July 2020, can already perform positioning, navigation, remote sensing (i.e. "telemetry") and communication functions. The ultimate goal of the Satellite Internet is to create a space-ground integrated system, enabling accurate and clear communications in mobile vehicles on land, at sea and in the air, or in remote areas where 5G base stations cannot be easily built. In April 2021, the Chinese Academy of Sciences unveiled a database of global satellite images targeting more than one million objects

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[6] "China Successfully Tests DF17 Missile, 2500 km Radius to be Off-limits to U.S. Military," *Sina Military*, January 1, 2018, http://mil.news.sina.com.cn/jssd/2018-01-01/doc-ifyqefvw8169842.shtml.

[7] "China Tested Hypersonic Missiles in Aug, Experts: a Step Towards Global Nuclear Attack from Space," *udn.com*, October 17, 2021, https://udn.com/news/story/6809/5823405.

[8] "China Continues to Push Forward the Development of Two 'Heavyweight' Rockets in 14th Five-Year Plan," *People's Daily Online*, March 3, 2021, http://finance.people.com.cn/BIG5/n1/2021/0303/c1004-32040948.html.

that could enhance AI's ability to identify objects from space, and in August, China's Xinhua News Agency released a video of its satellite surveillance of more than 200 U.S. bio-lab sites around the world, providing a glimpse into the latest advances in Chinese satellite technology.[9] In addition, China is currently developing a light detection and ranging (LiDAR) satellite that will enable it to detect foreign submarines under the sea directly from space.[10]

(5) Reusable Earth to orbit transportation system: In September 2020, China announced the successful launch of its reusable spacecraft when it launched the Long March 2F launch vehicle to send an experimental reusable spacecraft to Earth orbit, returning to its intended landing site two days later.[11]

3. China's Counterspace Capabilities

What concerns the U.S. most, however, is China's integration of various aerospace science and technology to develop counterspace capabilities (or "counterspace weapons"). As the U.S. military relies heavily on satellites for communications, global positioning and surveillance functions to maintain global operations, satellites have become a source of vulnerability for U.S. military deployments.[12] According to relevant studies, "counterspace weapons" can be broadly categorized as follows:[13]

(1) Physical kinetic attack: A direct attack on a satellite or ground station or detonation in the vicinity. The main types are anti-satellite missiles launched directly from the ground, co-orbital anti-satellite weapons (e.g. killer satellites)

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[9] "Overseas Netizens Gasp as Space Angle Locates U.S. Biochemical Lab," *Xinhua News Agency*, August 11, 2021, http://www.xinhuanet.com/world/2021-08/11/c_1211327482.htm.

[10] "Turning the Ocean Transparent! China Develops Laser Satellites that Could Become Submarine Killers," *China Times*, October 1, 2018, https://www.chinatimes.com/realtimenews/20181001001180-260417?chdtv.

[11] Chloe (Tomorrow's Science Editorial Group), "Higher Technology than SpaceX Uses? China Launches First 'Reusable Rocket'," *The News Lens*, September 10, 2020, https://www.thenewslens.com/article/140297.

[12] Hiroyuki Akita, "China's Space Ambitions Target Satellites, a U.S. Vulnerability," *Nikkei Asia*, May 26, 2021, https://reurl.cc/mvYxLY.

[13] See Harrison, Todd et al., "Space Threat Assessment 2021," *CSIS*, April 2021, https://www.csis. org/analysis/space-threat-assessment-2021; Weeden, B. and Samson, V, "Global Counterspace Capabilities," *Secure World Foundation*, May 17, 2021, https://reurl.cc/kLonLK.

and direct attacks on ground stations.

(2) Non-physical kinetic attacks: These are attacks that do not require direct physical contact to achieve their effectiveness. Examples include blinding satellite sensors with lasers or overheating of electronic components, high powered microwave (HPM weapons), detonation of nuclear devices in space to create a highly radioactive environment, and electromagnetic pulses. Laser and HPM weapons can be launched from the ground, ships, airborne platforms or other satellites to mount multi-angle attacks and are not easily detected, while nuclear detonations from space can cause long-term radioactive contamination of the Earth's orbit and damage to satellite components.

(3) Electronic attacks: Electromagnetic spectrum that interferes with satellite data transmission. For example, the creation of electronic noise in the form of radio waves in the same frequency to interfere with satellite communications, or the inclusion of false signals in the transmission of a signal to deceive the receiver. Such attacks can be launched from satellites or ground-based mobile vehicles.

(4) Cyberattack: An attack on satellite data and data streams by users that can create "grey zone conflicts" without directly harming people, such as monitoring the flow of satellite data, intercepting data or inserting fake messages into it, or even controlling the satellite through the satellite control system.

As regards China's counterspace capabilities, some U.S. studies suggest that China already has significant capabilities in the areas of direct liftoff attack on low-Earth-orbit (LEO) satellites, electronic warfare and space situational awareness, as well as partial capabilities in co-orbital attacks (including low- and medium-orbit and geosynchronous orbits), direct liftoff attacks on medium- and geosynchronous-orbit satellites, and directed energy weapons.[14]

Specifically, the U.S. believes that China has the capability to deploy an anti-

[14] Weeden, B. & Samson, V, "Global Counterspace Capabilities," *Secure World Foundation*, May 17, 2021, https://swfound.org/counterspace/.

satellite ground-based laser weapon system that can blind U.S. satellites with direct laser fire from ground stations. The U.S. also predicts that China will be able to deploy a ground-based directed energy weapons system in five years to directly disrupt U.S. satellite operations. Moreover, China may also develop a mobile-staged laser weapon to destroy a large number of U.S. low-Earth-orbit (LEO) satellites, or use the robotic arm of a killer satellite to capture or push a U.S. satellite out of orbit.[15]

Actually, since the first collision of artificial satellites in near-Earth orbit in 2009, both space debris and scrapped spacecraft can become ultra-low-cost space weapons. Not only can space junk such as satellite debris damage the robotic arms of the International Space Station (ISS), but even Russian experimental capsules can knock the ISS out of its rotation.[16] Further, China is currently developing space capabilities such as in-orbit satellite repair, space debris removal, and special spacecraft technologies that can be readily converted into military weapons under the civil-military integration policy. Some U.S. officials even hold the view that if there is a war between the U.S. and China in the Taiwan Strait, it will most likely start with a satellite attack.[17] Space warfare will undoubtedly be another major battlefield of technological warfare between the U.S. and China.

4. The Major R&D Institutions of China's Aerospace Science and Technology

China Aerospace Science and Technology Corp (CASTC) and China Aerospace Science and Industry Corp (CASIC), two major central state-owned military enterprises, are the cornerstones of China's R&D in aerospace science and

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[15] "China and Russia Accused by U.S. of Developing Ground and Orbital Anti-satellite Weapons," *BBC News Chinese*, December 20, 2020, https://www.bbc.com/zhongwen/trad/world-55385518; "Expert: China's space program poses direct military threat," *The Epoch Times*, August 11, 2021, https://www.epochtimes.com/b5/21/8/10/n13153236.htm; Si-fu Ou, "China's Robotic Arm Practices Satellite 17," *National Defense Security Commentary*, June 17, 2021; ODNI, *Annual Threat Assessment*, April 9, 2021, pp. 7-8; Joe Gould, "China Aims to Weaponize Space, Says Intel Community Report," *Defense News*, April 14, 2021, https://reurl.cc/AR3Myj.

[16] "International Space Station Briefly Loses Control After New Russian Module Misfires," *CNN*, July 29, 2021, https://edition.cnn.com/2021/07/29/tech/nasa-iss-russian-space-module-misfire-scn/index. html.

[17] Hiroyuki Akita, "China's Space Ambitions Target Satellites, a U.S. Vulnerability," *Nikkei Asia*, May 26, 2021, https://reurl.cc/mvYxLY.

technology.[18]

CASTC is tasked with the R&D, design, production, testing and launch of missile weapon systems, aerospace technology applications, aerospace products and aerospace services, and is the sole manufacturer of China's intercontinental strategic nuclear missiles. Its performance is the highest among China's central state-owned enterprises (SOE) and it has been ranked among the world's top 500 enterprises since 2015. The division of work in CASTC is shown in Table 9-2.

As regards CASIC, apart from the production of missiles, it is also responsible for the launch of various space vehicles, satellite networks and the development of reusable spacecraft. The division of work in CASIC is listed by Table 9-3.

Table 9-2 CASTC Division of Work

		Primary Secondary Units	Principal Business
Large research and production consortia/ institutes	1	China Academy of Launch Vehicle Technology (CALT) (CASTC 1st Research Institute)	R&D of launch vehicle technology, satellite application technology, and computer hardware and software technology.
	2	Academy of Aerospace Solid Propulsion Technology (AASPT) (CASTC 4th Research Institute)	R&D of aerospace power technology, development of aerospace products and civil products, related professional training and technical services.
	3	China Academy of Space Technology (CAST) (CASTC 5th Research Institute)	Development of outer space technology, satellites, spacecraft and other space vehicles.
	4	Academy of Aerospace Liquid Propulsion Technology (AALPT) (CASTC 6th Research Institute)	R&D of space rocket propulsion technology and aerospace inertial device technology.
	5	Sichuan Academy of Aerospace Technology (SAAT) (CASTC 7th Research Institute)	Research, development and production of a wide range of aerospace products and development of the Guardian series of multiple launch rocket weapon systems.

[18] In addition, the Chinese Academy of Sciences' National Space Science Center and Space Environment Prediction Center are also involved in China's space science and satellite projects.

		Primary Secondary Units	Principal Business
	6	Shanghai Academy of Spaceflight Technology (SAST) (CASTC 8th Research Institute)	R&D of satellite application equipment and communication equipment.
	7	China Academy of Aerospace Electronics Technology (CAAET) (CASTC 9th Research Institute)	R&D of products such as for inertial navigation, measurement and control communications, and specialized electronics.
	8	China Academy of Aerospace Aerodynamics (CAAA) (CASTC 11th Research Institute)	Research into integrated aircraft aerodynamics, aerodynamic technology applications and testing, related equipment manufacturing, and the overall design and manufacture of specialized aircraft.
Directly affiliated units	1	China Aerospace Academy of Systems Science and Engineering (CASTC 12th Research Institute)	One of the founding units of China's manned aerospace project, with the aim of continuing Qian Xuesen's theory.
	2	China Academy of Aerospace Standardization and Product Assurance	Formerly the China Aerospace Standardization Research Institute (708 Institute), it provides aerospace product standardization and product assurance.
Specialized enterprises	1	China Satellite Communications Co	Responsible for satellite operation services, it is the only satellite communications enterprise in China that owns communication satellite resources and is a listed company.
	2	China Lucky Group Corp	China's largest manufacturer of video message recording and photographic materials.
	3	China Great Wall Industry Corp	The only commercial organization authorized by the Chinese government to launch and provide satellites for commercial use and to engage in international space technology cooperation.
	4	China Siwei Surveying & Mapping Technology Co	A benchmark industry in China's geographic information sector, it is mainly engaged in electronic maps, satellite navigation and positioning, remote sensing, aerial photography and surveying, and vehicle monitoring and dispatching.

		Primary Secondary Units	Principal Business
	5	Aerospace Science & Technology Finance Co	Responsible for the centralized management and use of CASTC funds, providing financial management and support to CASTC's member organizations.
	6	China Aerospace Investment Holdings Ltd	An investment management, capital operation and strategic cooperation platform authorized by CASTC.
	7	China Aerospace International Holdings Limited	China Aerospace International Holdings Limited is a listed company in Hong Kong. Its main businesses are manufacturing of injection molding, LCD monitors, audio-visual products, circuit boards printing, telecommunication products, smart charging and security systems; property investment and trading of electronic products.
	8	Beijing Shenzhou Aerospace Software Technology Co., Ltd.	Combining cloud computing, big data, "Internet +" and other emerging technologies, providing four major services such as industrial software, big data, e-gov, intelligent management system, to military and government customers.
	9	Shenzhen Academy of Aerospace Technology	Focus on the research development and industrialization of technologies in four areas: power electronics and power transmission, mobile computing and communication technologies, composite materials, and microelectronics. Specifically in four fields, including new enegry, new materials, IoT, energy conservation and environmental protection.
	10	Aerospace International Long-march Trade Co., Ltd.	Import and export of defense equipment, technology and services; anti-terrorism, riot control equipment and technology export; international exchange and cooperation in related technologies; aerospace technology industry and related investment, the company is also engaged in overseas project contracting.

		Primary Secondary Units	Principal Business
	11	Macro Co., Ltd. Net Communication	One of China's ISP and LEO operator, in charge on China's first LEO system "Hong yan constellation".

Source: Official website of China Aerospace Science and Technology Corp (CASTC) at http://www.spacechina.com/n25/n142/n152/n12989/index.html; official websites of its subsidiary companies and other publicly available information, etc.

Table 9-3 CASIC Division of Work

	Name of Company	Primary Service
1	China Aerospace Systems Engineering Corp	Founded in 1993 under the direction of Qian Xuesen, it is affiliated with the Academy of Information Research of CASIC (CASIC 1st Academy) and is principally engaged in the research of civil-military information technology, product development and system integration, specializing in large-scale aerospace system engineering and advanced aerospace technology. It is currently developing emerging technologies and applications such as BeiDou navigation, big data and Internet of Things, focusing on national defense and security, satellite applications, smart city, smart transportation and smart tourism.
2	CASIC Defense Technology Academy (CASIC 2nd Academy)	Formerly known as the Institute of Aerospace Science and Technology of the Fifth Research Institute of China, it was responsible for the development of ground-to-ground missile control systems and ground/ship-to-air missile weapon systems, as well as the production of China's first solid submarine strategic missiles and solid land-based tactical missiles. Specializing in microelectronics, optoelectronics and electro-mechanical technologies in the areas of weapon system integration, missile integration, precision guidance, radar detection, target features and target identification, simulation technology, military computers and common software, ground equipment and launch technology and advanced manufacturing technology.

	Name of Company	Primary Service
3	CASIC Aviation Technology Academy (CASIC 3rd Academy)	China's only aerospace missile research and production base that integrates research, design, testing and production.
4	China Space Sanjiang Group Corp (CASIC 4th Academy and 9th Academy)	A merger and restructuring of the former CASIC Academy IV and Academy IX, it is in charge of the R&D of China's solid carrier rockets, special off-road vehicles and chassis, specializing in commercial aerospace, laser industry, special vehicles and heavy equipment, energy equipment industry.
5	CASIC Academy for Drive Technology (CASIC 6th academy)	Originally the Research Institute for Solid Propulsion Systems of the Ministry of National Defense of the PRC, it is capable of developing, designing, producing and testing solid propulsion systems and has supplied more than 80 types of solid rocket propulsion systems to China's strategic tactical missile and aerospace industries.
6	China Aerospace Construction Group Co (CASIC 7th Academy)	Responsible for the consultation, design, survey and construction of large-scale aerospace projects in China, and having made significant contributions to manned spaceflight, lunar exploration and BeiDou navigation, with business areas covering aerospace, chemical engineering, petrochemicals, pharmaceuticals, oil and gas, power, metallurgy, railway, highway, electronic communication, radio and television, civil aviation, municipal engineering, building materials, etc., and dealings with 20 countries including the U.S., Germany, France, the UK, Australia, Russia and Japan.
7	Aerospace Jiangnan Group Co	R&D, production and sales of tactical missile weapon systems, aerospace products, ground equipment, satellite applications, radar, special batteries, small & special electrical machines, electronic components and other related products, automotive parts and accessories, petroleum equipment and instruments, agricultural machinery, industrial infrastructure, special encrypted 2D code anti-counterfeit data terminals, and other electronic information products; aerospace technology development and consulting.

	Name of Company	Primary Service
8	Hunan Aerospace Ltd	Aerospace products, magnetic materials and devices, computer hardware and software products, etc.
9	Aisino Co	Engaged in information security for the Chinese government and enterprises, and responsible for key projects such as the "Golden Tax," "Golden Card" and "Golden Shield" in China, specializing in cryptography, blockchain, big data and AI.
10	China Huateng Industrial Co	The main platform for CASIC's international operations and the main conduit for its international trade development.
11	Shenzhen Aerospace Industry Technology Research Institute Co	R&D and testing platforms for aerospace/airborne products; R&D in smart manufacturing, laser radar, optoelectronic information and AI technology; computer software development and technology transfer; and incubation of cutting-edge emerging technology enterprises.
12	Aerospace Communications Holdings Group Co	Formerly known as Zhejiang Zhonghui (Group) Co, it is a re-invested enterprise with CASIC as its largest shareholder, covering a wide range of fields such as communications, textiles, construction and security.
13	Aerosun Corp	Originated from the Qing Empire's Jinling Machinery Manufacturing Bureau, it is now a large-scale integrated machinery manufacturer directly under CASIC, and is also the biggest research and production base for metallic hoses and corrugated compensators in Asia and the fifth manufacturer of RTP pipes in the world. It applies aerospace technology in a wide range of fields such as special vehicles, engineering machinery, flexible pipe fittings and pressure vessels.
14	China Aviation Automotive Co	With a focus on civilian use, the company develops automobiles (including sedans), engines, scooters and spare parts, and is an integrated civil-military industry in the fields of automotive power, automotive parts, new energy vehicles and logistical support equipment.

	Name of Company	Primary Service
15	CASICloud-Tech Co	It is responsible for building the "Aerospace Cloud Network" industrial Internet public service platform, which is based on "Internet + Smart Manufacturing" and aims to create a secure and controlled environment for Industrial Internet (IIoT) in China and build a "Cloud Manufacturing" industrial cluster ecosystem to establish a new Internet economy. It has taken the lead in formulating the "Integration Requirements for Manufacturing Resources/Capabilities Access for Smart Manufacturing Service Platform," which is the first international standard on smart manufacturing service platform in the world.
16	Addsino Co	Formerly the state-owned Fuzhou Power Equipment Factory in China, the company is currently responsible for military and civilian communications technologies, with its main businesses encompassing five major areas: digital blue army and blue force gear, 5G communications and command-control equipment, cyberspace security, microsystems, and marine information gear.
17	Honghua Group Limited	The only overseas listed company under CASIC, it is a world-renowned manufacturer of land drilling equipment and an exporter of large-scale land-based oil rigs in China, positioning itself as the primary platform for the development of aerospace industry energy equipment. Its products are sold to major oil-producing regions in the world, such as North America and the Middle East, as well as emerging markets such as South America, India, Russia and Africa.
18	Henan Aerospace Industry Co	One hundred percent owned by CASIC, the company is engaged in the following activities: aviation and spacecraft related ancillary products, pumps, valves, pipes and fittings, pressure vessels, test and inspection instruments and equipment, compressors and mechanical equipment, industrial automatic control system devices, electronic components and electrical and mechanical component equipment, general components, automotive components, technology development, etc.

	Name of Company	Primary Service
19	Aerospace Precision Products Inc	Responsible for the R&D, production and sales of high-end fasteners in the aviation and aerospace fields, with primary business lines including: mechanical parts and components, rubber and plastic products, various standard parts and fasteners for military and civilian use, and import and export thereof.
20	Aerospace Science & Industry Finance Co	A non-banking financial institution jointly invested by CASIC and its 15 subsidiaries, it offers a wide range of financial services to CASIC and its affiliated enterprises.
21	Aerospace Science & Industry Asset Management Co	A platform for the incubation of new and innovative industries and equity investments by CASIC, it is engaged in capital management and asset management.

Source: Official website of CASIC at http://www.casic.com.cn/n12377654/n12378699/n12379906/index.html; official websites of affiliated enterprises; other publicly available information, etc.

As shown by the above two tables, there is a distinct division of work within China's two major military aerospace industry groups, which are gradually expanding the commercial application of their software and hardware technologies in a variety of fields, in addition to their main business of developing missile weapon systems.[19] This tendency is associated with the reform of China's central SOE, which can also dilute the military dimension of their military research and production organizations and facilitate international cooperation and technology transfer in the form of enterprises or through their affiliated enterprises that are close to relevant foreign high-tech sources.

Secondly, the key technologies in the aerospace field, ranging from launch vehicle power technology, satellite application technology, spacecraft power and propulsion technology, inertia-related technology, measurement and control communication technology, etc., to satellite launch, map surveying and mapping,

[19] The missile weapon systems developed and produced by China's two major aerospace and defense groups include the Falcon, Flying Leopard and Flying Eagle anti-aircraft missile systems, the M20 ground tactical missile system, the Super Patrol supersonic cruise missile systems, the Rainbow drones, the Fei Teng precision-guided bombs, the East Wind 5B and East Wind 15B missiles, etc.

and even software development, satellite networking, and the application of aerospace technology to automobiles and oil excavation, etc., are all in the hands of the major research institutes of the two military aerospace industry groups. This underlines the aforementioned priority given to military applications in China's aerospace science and technology, with commercial applications being promoted and operated by enterprises under the two leading military aerospace industry groups. As regards the incubation of new industries and equity investment in private enterprises, it is convenient to draw in advanced technology from private enterprises or foreign countries.

5. Technology Transfer from Other Advanced Countries

It is noteworthy that while China's aerospace science and technology boasts long-established R&D capabilities, it has suddenly taken a leap forward in recent years. In terms of global aerospace technology patents from 2016 to 2021, the top three are all Chinese companies, with Boeing only in fourth place.[20] Breakthroughs in critical Chinese aerospace technologies are largely transferred from other advanced countries by way of overseas trade, corporate mergers and acquisitions or international cooperation. For example:

(1) Ukraine: China has taken advantage of Ukraine's political corruption and economic downturn to introduce key space technologies such as liquid rocket engines, spacecraft power systems and space capsule systems. Ukraine was a prime site for the development of military and aerospace science and technology in the former Soviet Union, and the Yuzhnoye State Design Office, a leading company, developed a variety of weapons such as intercontinental missiles, medium-range ballistic missiles and spacecraft in the former Soviet era. The Yuzhnoye State Design Office has been assisting China in its lunar exploration project since 2014. On top of duplicating the engine for the lunar module and assisting China in developing the power system for the lunar

[20] "China Once Said It Couldn't Put a Potato in Space. Now It's Eyeing Mars," *CNBC*, June 29, 2021, https://www.cnbc.com/2021/06/30/china-space-goals-ccp-100th-anniversary.html.

spacecraft, the two countries are also working together on projects such as developing a cargo spacecraft system and setting up a colony on the Moon.[21]

(2) Russia: China has picked up a lot of space equipment and technology, either explicitly or implicitly, from Russia, which has a lot of experience in space development but a stagnant economy. China has bought equipment from Russia to build its Tiangong space station, modelled its space suits and launch vehicles on Russian products, provided substantial funding for technical cooperation in satellite technology, planetary exploration and materials for drones, and is scheduled to establish a permanent research base with Russia on the south pole of the Moon in 2030. China also acquired the latest Russian heavy-lift rocket engine technology through academic exchanges, resulting in the conviction of a Russian rocket expert who leaked the secrets.[22]

(3) Israel: China has secured advanced technologies or high-end semiconductor chips from Israel through affiliated companies of its central SOE. For example, the Changchun Institute of Optics, Fine Mechanics and Physics under the Chinese Academy of Sciences is responsible for the overall design and R&D of satellites, and its subsidiary Changguang Yuanchen Microelectronic Technology Co has acquired the complete technology for chip design and production through a collaboration with Tower Jazz, an Israeli semiconductor company, and has leveraged Tower Jazz's collaborative platform to develop the world's highest resolution full-frame image sensor and set up related production lines. Not to mention the fact that China has also acquired from

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[21] Li-ling Chiu, "Revealed: The Key to China's Aerospace and Defense Technology Surge: Beijing's Pal Ukraine," *CredereMedia*, February 20, 2019, https://reurl.cc/YOqzRL; "Ukraine Increases Cooperation with China in Aerospace Technology," *Voice of America*, April 10, 2016, https://www.voachinese.com/a/voa-news-ukraine-china-space-cooperation-20160410/3278359.html.

[22] Andrew E. Kramer and Steven Lee Myers, "Russia, Once a Space Superpower, Turns to China for Missions," *New York Times*, July 29,2021, https://www.nytimes.com/2021/06/15/world/asia/china- russia-space.html; "Representative of China's Ministry of Aerospace Industry Discusses Vision of Russian-Chinese Military-technical Cooperation in Space," *Sputnik*, September 17, 2016, https://big5.sputniknews.cn/opinion/201609071020697665/; "China Seeks New Rocket Engine Technology, Russia Charges Scientists," *Voice of America*, August 5, 2021, https:// reurl.cc/zW5q5y.

Israel advanced technologies such as missiles, chips, communications and AI.[23] Despite the tightening of technology export controls by the U.S. and the EU, China is still looking for ways to bring in critical technologies from other countries that are integral to the creation of an "aerospace powerhouse".

III. The Development of China's Aerospace Industry

The world's aerospace industry is currently dominated by the manufacture of hardware equipment such as missiles, rockets, satellites, spacecraft and space probes, but in the foreseeable future it will develop towards the provision of various aerospace services such as commercial rocket launches and commercial satellite applications (communications, navigation, positioning, remote sensing). Aerospace products are considered to be one of the key industries of next generation, as they can be applied in a wide range of fields beyond military, such as communications, navigation, positioning, traffic management, meteorological forecasting, underground mining, marine observation, disaster monitoring and rescue, etc., and can play a role in economic growth and social development.

China has long recognized the potential of the aerospace industry and has been promoting it with vigor since 2014, focusing on commercial applications such as rocket launches and satellite manufacturing, positioning, navigation and remote sensing. Its aerospace products include the Long March rockets, satellites of various types and applications, the Shenzhou manned spacecraft, cargo spacecraft, the Chang'e planet probes, the Tiangong space station, as well as satellite application services and advanced materials, etc. It is now aggressively developing the Dragon-series commercial rocket launch program, such as the Jie Dragon and Teng Dragon. The market size of China's aerospace industry has reached 1 trillion yuan RMB by 2020 and is projected to surpass US$210 billion by 2025, in which the total output value of the satellite navigation and positioning services

[23] "Exclusive: Documents Leak Secrets of China's Theft of Israeli Tech," *The Epoch Times*, August 4, 2021, https://www.epochtimes.com/b5/21/8/3/n13134887.htm.

industry has hit 403.3 billion yuan RMB by 2020, which holds great potential for development.[24] Furthermore, with the "One Belt, One Road" initiative in place, China is stepping up its efforts to promote China-led commercial aerospace applications, such as commercial launches, piggyback services and export of whole satellites, to countries in the Near East, Southeast Asia, Africa and Central America, in order to realize its "Space Silk Road" idea.[25]

The development blueprint of China's aerospace industry lies in the establishment of the "Five Clouds and One Vehicle" service and Industrial Internet Platform. The "Five Clouds and One Vehicle" refers to the following five projects: the "Flying Cloud" project for drone-borne regional cloud networks, the "Fast Cloud" project for near-Earth spacecraft-borne local cloud networks, the "Traveling Cloud" project for satellites-borne narrowband global mobile Internet, the "Rainbow Cloud" project for satellites-borne broadband global mobile Internet, the "Turn Cloud" project for flights between space and high altitude on Earth, and the "High-Speed Flying Train" project for supersonic trains using superconducting magnetic suspension technology and vacuum tubes. The Industrial Internet Platform refers to CASICloud, the first industrial Internet platform in China.[26]

The basic structure of China's aerospace industry is dominated by state-owned enterprises and complemented by private companies. It consists of CASTC, CASIC and the Chinese Academy of Sciences, together with relevant military research institutes, universities and other higher research institutions, as well as about 160

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[24] VentureBond Research Center, "Ready to Take off: China Commercial Aerospace Research Report 2021," *VZKOO*, June 2, 2021, https://reurl.cc/Gb5v8p; "Total Output Value of China's Satellite Navigation and Location Services Industry Reaches 403.3bn Yuan," *Xinhuanet.com,* May 18, 2021, http://www.xinhuanet.com/2021-05/18/c_1127460035. Htm.

[25] By Sept 2020, China had made 49 commercial launches, exported 14 whole satellites for 21 countries and international organizations, and exported various space products to all continents. AVIC Securities Finance Research Institute, *China Aerospace in the New Era* (Beijing: AVIC Securities, September 8, 2020), p. 16. For more information on the geopolitical deployment of China's BeiDou system, see: Hsiu-wen Wang, "The Recent Status of China's BeiDou System and its Geopolitical Deployment," *Defense Security Biweekly*, No. 30, October 15, 2021, pp. 11-17.

[26] "CASIC's 'Five Clouds, One Vehicle' Project Makes Series of Important Progress," *xinhuanet.com,* October 20, 2020, http://big5.xinhuanet.com/gate/big5/www.hb.xinhuanet.com/2020-10/20/c_1126631811.htm; "CASICloud 5th Anniv: Deepening the Industrial Internet to Seize the Frontier of the Times," *Xinhuanet.com,* June 16, 2020, http://www.xinhuanet.com/2020-06/16/c_1126120249.htm.

small and medium-sized private enterprises and numerous start-ups. The aerospace clusters are concentrated in Beijing, which is home to aerospace research institutes in China, and the Zhongguancun Science Park, where a wide range of start-ups are clustered, followed by Xi'an, China's main aerospace base, and Changchun, Tianjin and Wuhan.[27]

China's commercial aerospace industry is classified into five main categories: missiles, launch vehicles, satellites, spacecraft and space probes, with rocket manufacturing/launching and satellite manufacturing being the dominant ones. A brief overview of each industry can be found below.

1. Missile Industry

The global missile market is growing at an accelerated rate due to geopolitical uncertainty. Major international events such as the uncontrollable COVID-19 pandemic in 2021, the unstable situation in the Middle East due to the withdrawal of U.S. troops from Afghanistan, and the frequent movements of Chinese and European and U.S. warships in the South China Sea have led to a significant increase in global demand for missiles, which is estimated to reach a production value of over US$130 billion from 2019 to 2027.[28] China's domestic demand for missiles has also grown as a result of its military strengthening policy, and its missile supply chain is shown below (Table 9-4).

As can be found in Table 9-4, the military-industrial complex plays a leading role in the design and manufacture of missiles, while only some systems such as electronic components, guidance, navigation, and control systems and composite materials allow for the participation of private companies. This also demonstrates the relationship between the private enterprises involved in the supply chain of missile manufacturing and the Chinese military, and possibly even the equity investment by the military industrial group. However, are these Chinese private

[27] VentureBond Research Center, "Ready to Take off: China Commercial Aerospace Research Report 2021," *VZKOO*, June 2, 2021, https://reurl.cc/Gb5v8p.

[28] AVIC Securities Finance Research Institute, *China Aerospace in the New Era* (Beijing: AVIC Securities, September 8, 2020), p. 31.

enterprises listed overseas to raise funds? Is there any foreign capital invested?[29] It may be worthwhile for the governments of the countries concerned to look into this matter.

2. Launch Vehicle Industry

As China has been building up its aerospace infrastructure, the market for launch vehicles, which are capable of delivering various space vehicles to Earth orbit, is extremely promising, with the launch vehicle supply chain tabulated as follows (Table 9-5).

Table 9-4 China's Missile Supply Chain

Phase	Task	Related Listed Companies			
Planning	Design	Addsino, Zhongtian Rocket, Tian'ao Electronics, DongHua Testing, Xinguang Optoelectronics, Watertek Information, Beetech, Up Optotech			
Manufacture	Prototype validation, finalization and mass production	Components	Spare parts	Forged parts, thermal protection, sealing materials	Avic Heavy Machinery, Zhongtian Rocket, Anhui Truchum Advanced Materials, Shanghai Hugong Electric, Fushun Special Steel, Kuang-Chi Technologies, Baoji Titanium, Guangwei Composites, Loncin Motor, Guangyunda Optoelectronics, Beijing Cisri-Gaona Materials & Technology, NCS Testing Technology, Xinjiang Machinery, PRET Composites, Hunan Boyun New Materials, Kingstrong Technology, Tongda, Qinchuan Machine Tool, Pengqi Technology, Tianjian Tech, Zhongjian Technology

[29] In Taiwan, there are around 30 mutual funds holding stocks of Chinese military companies such as Hikvision Co, AVIC Aviation High-Tech Co and Shenyang Aircraft Corp. See Kuo-chiang Cheng, "Investors Become Accomplices in China's Aircraft Harassing Taiwan? List of 28 Taiwan Funds Buying China's Military Industry Revealed," *Yahoo! Stock Market*, August 11, 2021, https://reurl.cc/6Dl82M.

Phase	Task	Related Listed Companies			
			Electronic components	Electronic components, Semiconductor devices	Space Appliance, Long March Launch Vehicle Technology, CASTC, Glarun Technology, GCI Science and Technology, Zhenhua Science & Technology, AVIC Jonhon Optronic Technology, Sai MicroElectronics, Hangjin Technology, Wantong Technology, HTC, Hongyuan Electronic, Quanxin Cable, Tellhow Sci-Tech, Red Phase, Shenzhen H&T Intelligent Control, Kingstrong Technology, DongHua Testing, Guide Infrared, Haige Communications, Jingjia Micro, Torch Electron, Zhejiang Dali Technology, YaGuang Technology, Shenglu Telecommunication
			Others	Propellants, pyrotechnic devices, optical devices	Haohua Chemical Science, Shaanxi Xinghua Chemistry, Xinyu Guoke Technology, Fujian Forecam Optics, Sichuan Tianyi Science & Technology
		Subsystems/ components	Projectile structure		Aerospace Communications
			Power system		Zhongtian Rocket
			Guidance and control systems		Long March Launch Vehicle Technology, North Electro-Optic, Glarun Technology, Aerosun, North Navigation Control, Kangtuo Infrared, Jiuzhiyang Infrared, Uroica Precision Information, Sai MicroElectronics, Huaxun Ark System Technology, Chenxi Aviation, Changshu Tianyin Electromechanical, Gaode Infrared, StarNeto Technology Development, Harbin New Optoelectronics, Weixing Industrial Development, Leike Defense, Shenzhen SDG Information, Toyou Feiji Electronics, Zhejiang Dali Technology, Red Phase
			Combat systems		North Industries Group Red Arrow, GreatWall Military Industry, Guangdong Ganhua Science & Industry
			Others		Aerospace Changfeng, CASTC, Shenyu Communication, Quanxin Cable, Kangda New Materials, Guangdong Ganhua Science & Industry, Beijing Relpow Technology, TongHe Technology
Maintenance	Life extension		Harbin New Optoelectronics, Watertek Information		

Source: AVIC Securities Finance Research Institute, *China Aerospace in the New Era* (Beijing: AVIC Securities, September 8, 2020), p. 46.

According to the "Aerospace Transportation System Development Roadmap 2017-2045" released by CASTC in 2017, the development progress of China's launch vehicles (i.e. the aforementioned "aerospace transportation system") is as follows: by 2020, the mainstream launch vehicles of the Long March series will reach international first-class standards, and the low-cost medium-sized launch vehicle Long March 8 will complete its maiden flight; by 2025, the development of a reusable launch vehicle will be completed and suborbital space tourism will be realized; by 2030, the inaugural flight of a heavy-lift launch vehicle will be achieved and a manned lunar landing will be prepared; by 2035, the launch vehicle will be fully reusable, the first flight of a new-generation launch vehicles will be accomplished, and intelligent space transportation systems will be widely used; by 2040, a new-generation launch vehicles will be in use, a combined power two-stage reusable vehicle will be developed, a major breakthrough will be made in nuclear-powered space shuttles, and asteroid mining and solar power stations in space will be realized; and by 2045, access to space and space transportation will have undergone a revolutionary change, and it is hoped that the construction of sky ladders, Earth stations and space stations will be implemented.[30] This provides a glimpse of China's long-term plans for the development of launch vehicle technology and commercial applications, with a view to capturing a share of the global launch vehicle market.

[30] "China Releases Roadmap for Future Aerospace Transport System," *Chinese government portal*, November 17, 2017, http://www.gov.cn/xinwen/2017-11/17/content_5240308.htm.

Table 9-5 China's Launch Vehicle Supply Chain

Phase	Task	Related Listed Companies			
Planning	Design	Zhongtian Rocket, China Electric Power Research Institute, DongHua Testing			
Manufacture	Prototype, production, assembly	Components	Spare parts	Forged parts, thermal protection, sealing materials	Zhongtian Rocket, Avic Heavy Machinery, Anhui Shenjian New Materials, Fushun Special Steel, Shanghai Hugong Electric, Xinjiang Machinery, Beijing Cisri-Gaona Materials & Technology, Bichamp Cutting Technology (Hunan), Wuhan Huazhong Numerical Control, Zhejiang Dayuan Pumps Industry, Western Superconducting Technologies, Hunan Boyun New Materials, Anhui Truchum Advanced Materials, Luoyang Bearing Science & Technology, Anhui Antai Technology, Xi'an Bright Laser Technologies, Baoji Titanium, China Molybdenum, Nancal Technology, Zhejiang XCC Group, Fujian Longxi Bearing, Hubei Feilihua Quartz Glass, Xining Special Steel, Kuang-Chi Technologies, Harbin Electric Corporation Jiamusi Electric Machine, Haohua Chemical Science, Zhongjian Technology, Guangwei Composites, Sichuan Sunny Seal
			Electronic components	Electronic components, Semiconductor devices	Addsino, Long March Launch Vehicle Technology, Space Appliance, Zhenhua Science & Technology, AVIC Jonhon Optronic Technology, China Marine Information Electronics, YaGuang Technology, Galaxy Biomedical Investment, Sai MicroElectronics, Torch Electron, DongHua Testing, Zhuhai Orbita Aerospace, Hongyuan Electronic, Quanxin Cable, Shenzhen H&T Intelligent Control
			Others	Propellants, pyrotechnic devices, optical devices	Chongqing Sanxia Paints, Fujian Forecam Optics, Haohua Chemical Science, Shaanxi Xinghua Chemistry, Sichuan Tianyi Science & Technology, Xinyu Guoke Technology
		Subsystems/ components		Rocket body structure	N/A
				Propulsion system	Avic Heavy Machinery, Zhongtian Rocket
				Control system	Long March Launch Vehicle Technology, Xinguang Optoelectronics

Phase	Task	Related Listed Companies		
			Flight measurement safety system	Long March Launch Vehicle Technology, YaGuang Technology
			Other systems	Long March Launch Vehicle Technology, Zhongtian Rocket, Beijing Relpow Technology, Quanxin Cable, Guangzhou Hi-Target Navigation Tech, Harbin Electric Corporation Jiamusi Electric Machine
Launch	Launch		N/A	

Source: AVIC Securities Finance Research Institute, *China Aerospace in the New Era* (Beijing: AVIC Securities, September 8, 2020), p. 53.

3. Satellite Industry

The satellite industry is the largest aerospace industry in terms of number of products and market size, and can be divided into low-Earth-orbit (LEO) satellites, medium-Earth-orbit (MEO) satellites, geostationary-orbit (GEO) satellites and sun-synchronous-orbit (SSO) satellites, depending on their orbital altitude. Additionally, they can be categorized into communication satellites, navigation satellites, remote sensing satellites that use electromagnetic waves to observe the Earth, and other satellites for scientific experiments, technical verification and military surveillance.

China has launched the BeiDou global navigation system for navigation satellites and the Gaofen and Fengyun series for remote sensing satellites. Particularly in 2018, China has significantly increased the number of launches of various satellites in order to catch up with the satellite network deployments by advanced countries, making it the world's largest launcher. Further, China's constellation of remote sensing satellites and communication satellites was being deployed from 2020 onwards, and the inclusion of the "Satellite Internet" in the "New Infrastructure Construction" program has led to a very promising outlook for China's satellite industry, with an estimated market size of over 315 billion yuan RMB from 2020 to 2025 and 80 percent of these satellites being small low-orbit

communication satellites and navigation microsatellites.[31] The Chinese satellite supply chain is listed below (Table 9-6).

As the missile industry and the launch vehicle industry, the key technologies in satellite hardware manufacturing are mostly in the hands of the two major aerospace and military conglomerates and the Chinese Academy of Sciences, with private enterprises only allowed to supply a small proportion of spare parts and electronic components. Compared to the missile and launch vehicle supply chain, nevertheless, the satellite supply chain has seen more participation from small and medium-sized private enterprises in downstream applications and operations such as ground-based measurement and control, data processing, communications, navigation, remote sensing and other sectors.

Table 9-6 China Satellite Supply Chain

Phase	Task	Related Listed Companies			
Planning	Design etc.	China Spacesat, Shenzhen SDG Information, Hwa Create			
Manufacture	Prototype, assembly, mass production	Components	Spare parts	Forged parts, thermal protection, sealing materials	China Spacesat, Anhui Truchum Advanced Materials, Anhui Yingliu Electromechanical, Pengqi Technology, Sinoseal Holding, Zhejiang XCC, Haohua Chemical Science, TDG Holding, Grinm Advanced Materials, Xinjiang Machinery, Guangwei Composites, Zhongjian Technology
			Electronic components	Electronic components, Semiconductor devices	Long March Launch Vehicle Technology, Addsino, Zhenhua Science & Technology, Hongyuan Electronic, Shanghai Hugong Electric, HC SemiTek, Sichuan Haite High-Tech, Torch Electron, Leike Defense, YaGuang Technology, Sanan Optoelectronics, Maxscend Microelectronics, Quanxin Cable, Shenzhen H&T Intelligent Control, Shenglu Telecommunication, Zhuhai Orbita Aerospace, Hwa Create
			Others	Electric machinery, optics,	Shanghai Moons' Electric, Haohua Chemical Science, Uroica Precision Information, Fujian Forecam Optics, Zhejiang Dali Technology

[31] Source: AVIC Securities Finance Research Institute, *China Aerospace in the New Era* (Beijing: AVIC Securities, September 8, 2020), p. 79.

Phase	Task	Related Listed Companies		
		Subsystems/ components	Communication satellite	Aerospace Communications, Long March Launch Vehicle Technology, Hwa Create
			Navigation satellite	Long March Launch Vehicle Technology, Tian'ao Electronics
			Remote sensing satellite	Long March Launch Vehicle Technology
			Structural system	N/A
			Survey and control system	Long March Launch Vehicle Technology, Aerosun, CASTC, Leike Defense, Hangzhou Prevail Optoelectronic Equipment
			Attitude and orbit control	Long March Launch Vehicle Technology, Changshu Tianyin Electromechanical
			Thermal control system	Long March Launch Vehicle Technology, Shanghai Hugong Electric
			Power supply systems	China Spacesat, CETC Energy, Aerospace Changfeng, Shanghai Hugong Electric, Quanxin Cable, Beijing Relpow Technology
			Other: ground side control network, data processing, etc.	Long March Launch Vehicle Technology, CETC Energy, Aerospace Communications, Glarun Technology, China Spacesat, Piesat Information Technology, Unigroup Guoxin Microelectronics, Daheng New Epoch Technology, Shanghai Hugong Electric, Sichuan Zhongguang Lightning Protection Technologies, Toyou Feiji Electronics, Leike Defense, Up Optotech, Kaile Science and Technology, Zhuhai Orbita Aerospace
Operation	In-orbit testing, operations management	Satellite remote sensing		China Spacesat, Long March Launch Vehicle Technology, Piesat Information Technology, Tianjin 712 Communication & Broadcasting, Leike Defense, Zhuhai Orbita Aerospace, Donghua Remote Sensing, Geovis Technology

Phase	Task	Related Listed Companies	
		Satellite navigation	China Spacesat, Long March Launch Vehicle Technology, Sun-create Electronics, China Greatwall Technology, CASTC, Tian'ao Electronics, Ningbo Joyson Electronic, Hunan Copote Science and Technology, TKD Science and Technology, Tsinghua Tongfang, Shanghai Huace Navigation Technology, Quectel Wireless Solutions, Nanjing Doron Technology, Tianjin 712 Communication & Broadcasting, Sai MicroElectronics, Huizhou Speed Wireless Technology, Chengdu Corpro Technology, Hwa Create, Beijing Jiaxun Feihong Electrical, Guangzhou Hi-Target Navigation Tech, Wuhan Yangtze Communication, Jiangsu Xinning Modern Logistics, Guangzhou Haige Communications, Leike Defense, Beijing UniStrong Science and Technology, NavInfo, Anhui Shenjian New Materials, Beijing BDStar Navigation, Sichuan Jiuzhou Electronic, Shenzhen Neoway Technology, Zhejiang Weixing Industrial Development, Hangjin Technology, Shaanxi Fenghuo Electronics, Zhejiang Dali Technology

Source: AVIC Securities Finance Research Institute, *China Aerospace in the New Era* (Beijing: AVIC Securities, September 8, 2020), p. 94.

Secondly, as noted above, one of China's main objectives in developing its aerospace industry is to advance the "Belt and Road Spatial Information Corridor" in an effort to fulfill its vision of a "Space Silk Road." China is capitalizing on the BeiDou system, various satellite applications and space station diplomacy in the hope of partnering with countries along the "Belt and Road" route in the fields of communication, navigation, remote sensing and space research.

At present, China has over 200 satellites in orbit, including meteorological satellites, resource satellites, ocean satellites, high-resolution Earth observation satellites, navigation and communication satellites, etc. Regarding satellite communications, in addition to launching Asia Pacific communication satellites, China has succeeded in establishing a beachhead in the ASEAN member states

by providing Laos with a "whole-satellite export" model ranging from satellite launching, in-orbit delivery, operation and maintenance, to ground station infrastructure. Meanwhile, by assisting Belarus in launching its communications satellites, China has for the first time rendered a "whole-satellite in-orbit delivery" service to a European customer. With regard to satellite remote sensing services, China has set up permanent bases in South America and Africa to provide remote sensing services on a global scale. With respect to satellite navigation, China has forged partnerships with Russia, the Arab League, Pakistan and ASEAN countries via the BeiDou navigation system. As regards international cooperation on the space station, China has decided to conduct 9 space science experiments with 17 countries and 23 institutions by means of open recruitment and competition.[32]

It is envisaged that the Chinese commercial space market will see a swift growth with the intensive launch of various spacecraft, the conclusion of several satellite constellation projects and the mass production of reusable rockets.

IV. Conclusion

By summing up the above analysis, preliminary conclusions are drawn as follows:

First, the initial and primary purpose of China's development of aerospace science and technology is for military applications. Notwithstanding China's repeated statements that its development of aerospace science and technology is for the sake of world peace, its "original intent" of military applications should not be overlooked. Since the inception of the "Two Bombs and One Satellite" project, China has laid down the "Three-Step Development Strategy" for aerospace science and technology under the direction of the government, and has committed and allocated funds, manpower and other relevant resources to inspect and accept the results of each stage along the way. While lagging behind the U.S. in some areas of

[32] "CASTC: Partnering with the Aerospace World for Win-win," The State Council State-owned Assets Supervision and Administration Commission, January 8, 2021, https://reurl.cc/ZjZg0p.

expertise, China's space military capability, developed through the integration of various technologies, poses a definite threat to the U.S.

Second, China has developed aerospace science and technology primarily with the aid of the aerospace and military–industrial complex and the Chinese Academy of Sciences. As can be noted from Tables 9-2 and 9-3, the development of China's aerospace science and technology rests on the two major military aerospace industry groups, with clear internal divisions of work in place. Everything ranging from the development of key technologies such as power and inertia, to satellite launching and mapping, to software development, satellite networking, and the application of space technology to automobiles and oil exploration is all spearheaded by the two leading military aerospace industry groups. In addition, under the policy of civil-military integration, China has also strived to acquire advanced technologies from private enterprises and through its affiliated enterprises from Ukraine, Russia, Israel and other countries.

Third, China's aerospace science and technology, by leveraging its strengths in emerging technologies like AI, has developed considerable space capabilities, such as the BeiDou satellite navigation system, Gaofen Earth observation systems, space station docking and Mars landing. For the U.S., the progress of China's counterspace capabilities such as space situational awareness, physical kinetic attacks, electronic attacks, and directed energy weapons warrants close attention. As far as our country is concerned, has China's approach to warfare against Taiwan changed as a result of its advancements in space capabilities, such as by waging intelligent warfare, using satellites to direct unmanned weapons for precision attacks, or using laser and electromagnetic pulse weapons to strike at our critical infrastructure, rather than physically destroying it? Perhaps this could serve as a reference for our military simulations.

Fourth, China is capitalizing on BeiDou navigation and satellite applications to swell its geopolitical sphere of influence. Laos has embraced the "export of whole satellites" model, in which all satellites are manufactured, launched and managed by China, effectively putting it in China's aerospace sphere of influence. Will this model be duplicated in Central and South America, Africa, the Middle East and

other regions? In the future, if the satellite Internet and space stations are put in place, China's "Space Silk Road" may be completed sooner than the ground-based infrastructure under the Belt and Road Initiative.

Fifth, in terms of the space confrontation between the U.S. and China, the U.S. government has not only created a space force, but also tightened export controls on Chinese related technologies and products, and added a number of Chinese aerospace enterprises to its Entity List. But the fight for space technology must be backed by strong economic and financial support. Will the two countries be able to sustain the race for R&D and investment in space technology? Whether China's huge national budget dedicated to the realization of its space dreams by the 100th anniversary of the founding of the PRC would repeat the mistakes of the former Soviet Union, which collapsed in the end due to an economic meltdown in the wake of a space race with the U.S. warrants further attention.

Chapter 10

Tightening Social Control under the 100th Anniversary of the Chinese Communist Party

Caroline Chen

I. Introduction

Since November 2020, China has introduced more than 50 regulations on anti-trust, Internet and data security, finance and education, as well as culture and entertainment, and the news industry, far more frequently than in previous years. Online technology giants such as Ant Group have been subject to rectification; the ride-hailing platform DiDi, the logistics platforms Yunmanman and Huochebang, and the job bank Boss Direct Hire were investigated subsequent to the celebration of the 100th anniversary of the Chinese Communist Party in July 2021. China's Ministry of Education issued a "Double Reduction" education policy, "tainted celebrities" are being blacklisted and the National Development and Reform Commission (NDRC) imposed a ban on non-publicly owned capital in the news media business. The Western press and academics have leveled severe criticism that Xi Jinping's move represents a relapse into the "leftist" ways. The Economist argues that Xi Jinping is mounting a campaign to sweep away capitalism, treating the growing disparity between rich and poor and the pollution of spiritual

* Policy Analyst, Division of Chinese Politics, Military and Warfighting Concepts, Institute for National Defense and Security Research.

civilization as a mockery of Marxism, and therefore rolling out the notion of "common prosperity" to clean up private enterprises and raising the red banner of patriotism to clamp down on people's voices and activities.[1] However, China denies these claims, with Ministry of Foreign Affairs spokesman Wang Wenbin on September 8, 2021 stressing at a press conference that "The Chinese government has stepped up anti-monopoly regulation and cracked down on unfair competition behaviors to uphold the order of fair competition … Such efforts are the common practice of managing economic activities in many countries," and that "Opening-up is China's basic national policy that will never waver."[2]

On top of private enterprises, China has also issued stern warnings to specific groups in society, such as the military and social organizations. Xi Jinping insists that "the Party commands the gun" and that one should "firmly listen to the Party and follow the Party" to strengthen ideological and political education. To contribute to the creation of a safe social environment for the celebration of the centenary of the Communist Party of China, the Ministry of Civil Affairs of the People's Republic of China (PRC) has since March 2021 launched a three-and-a-half-month campaign to eradicate illegal social organizations, in the hope that the government-led public-private partnership can stem the "harm of illegal social organizations to society" at source and maintain social stability. Meanwhile, China has also made a concerted effort to Sinicize its ethnic minorities, dismissing "ethnic separatism" as a "pernicious influence" and underscoring the single identity of all ethnic groups with respect to the Chinese nation.

In the short run, as China's 20th National People's Congress in 2022 is drawing near, Xi Jinping's re-election and staffing plans hinge on social stability. In the long run, China must eliminate risks in all areas before it can basically achieve the long-term goal of socialist modernization by 2035. Is the Chinese government's strict crackdown on the financial, economic, cultural and media spheres an attempt by Xi Jinping to emulate Mao Zedong in his desire to establish a highly totalitarian

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1 "China's New Reality is Rife with Danger," *The Economist*, October 2, 2021, https://bit.ly/3Ab3jcY.

2 "Ministry of Foreign Affairs Spokesman Wang Wenbin Hosts a Regular Press Conference on September 8, 2021," *Ministry of Foreign Affairs of the People's Republic of China*, September 8, 2021, https://www.fmprc.gov.cn/web/fyrbt_673021/jzhsl_673025/t1905563.shtml.

regime by assuming control of order and authority, or is it a move to quell the opposition within the Party? Or is it a step-by-step move by the state to tighten its grip on society? This paper attempts to collect information on China's tightened regulatory measures at all levels of society, and infer the factors behind the current wave of tougher regulatory requirements and future developments.

II. Tightened Government Supervision at All Levels of Society

1. Rectification of "Potentially Threatening" Online Platforms

According to the observations of Yang Minggang, a research fellow at Beijing Boya, there are five main areas in which the Beijing Government regulates online platforms: (1) anti-monopoly measures against e-commerce; (2) domains that shape public opinion, such as social networking sites; (3) those associated with young people or social trends, such as online games and fan culture; (4) those related to personal privacy and big data security; and (5) those involving financial order.[3] China, in particular, sees online platforms that influence public opinion and hold a wealth of data as "thorns in the side" of the regime.

The Cyberspace Administration of China (CAC) announced on July 2, 2021 that "To protect against national data security risks, safeguard national security and protect public interests," it would impose cybersecurity censorship on the ride-hailing platform "DiDi," the "Yunmanman" and "Huochebang" under China's freight and logistics platform Full Truck Alliance and the job bank "BOSS Direct Hire" in compliance with relevant laws and regulations. DiDi has 377 million users and 13 million drivers in China; Yunmanman and Huochebang operate in over 300 cities and collect data on over 2.8 million truck drivers; and BOSS Direct Hire has data on over 85 million job seekers and 6.3 million companies. In addition to the above enterprises, more than 33 apps, including WeChat and Baidu, were also accused of gathering personal information from users in violation of the law and were either interviewed or asked to rectify the situation. Moreover, in the wake of

[3] "End of 'Winner-takes-all' Era for Tech Giants," *Sing Tao Daily*, September 15, 2021, https://bit.ly/3GkArmA.

the COVID-19 pandemic, various e-learning courses such as "New Oriental" and "Good Future" have sprung up, and the number of student users of these platforms has grown by about 44 percent, reaching a grand total of 2.3 million and 6.7 million respectively, and indirectly holding a large amount of user data.

In general, all of these companies are in possession of an enormous body of private user information, have businesses related to critical information infrastructure in China, and are listed in the U.S. According to Deputy Director Li Keshun of the Jiangsu "Big Data Exchange and Distribution Engineering Laboratory," enterprises under censorship in China have access to at least 80 percent of in-depth data in their respective fields, which can directly or indirectly reveal the distribution of population, business activities, population movement, cargo flow and business operations across China's regions.[4] Since this year (2021), China has rolled out the "Data Security Law 2021," the "Personal Information Protection Law of the PRC," and the Regulation on Protecting the Security of Critical Information Infrastructure; released the Provisions on the Management of Network Product Security Vulnerabilities and "Several Provisions on the Management of Automotive Data Security (trial version)," and amended the "Measures for Cybersecurity Review." In late August, Reuters reported on China's plans to ban initial public offerings (IPOs) in the U.S. by technology companies that run the risk of data security.[5] Speaking at the launch of the "National Cyber Security Promotion Week 2021" in Xi'an on October 17, Director General Sun Weimin of the CAC Bureau of Network Security Coordination said that data security and personal data protection, critical infrastructure security information protection and new technologies, and new application risk prevention are the key items in China's national cyber security top-level design.[6]

Therefore, what the Chinese government is really concerned about is the online platform that holds strategically valuable big data and the potential risk of data

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4 "Internet Faces Most Stringent Censorship," *Economic Daily News*, July 8, 2021, https://bit.ly/3Gb88aa.

5 "China Plans to Ban Tech Companies with Data Security Risks from IPOs in U.S.," *Reuters*, August 27, 2021, https://bit.ly/3jvAphS.

6 "This year's National Cyber Security Week to Focus on Personal Information Protection Hotspots," *People's Daily Online*, October 1, 2021, https://bit.ly/3omcbKq.

leaving the country. "Data security" has been regarded as part of China's national security, and has become as important as the barrel of a gun and the barrel of a pen in governing. Consequently, it is imperative that the "Party controls data," and it is impossible to risk the leakage of critical data to other countries and leave it in the hands of private enterprises.

2. Tightening the Public Voice

On the other hand, China has begun a major overhaul of its cultural, entertainment and news industries. In May 2021, the CAC's Deputy Director Sheng Ronghua attended the "Clear and Bright campaign 2021" press conference and said that the campaign aimed to crack down on historical nihilism on the Internet, remedy the online environment during the Lunar New Year holidays, combat an Internet Water Army, traffic falsification, and black PR firms, manage the abuse of algorithms, rectify the Internet environment for minors, tackle the disorder in the ranking of online cultural recreation activities and hotspots, and regulate the operation of website accounts, as well as fix the problem of PUSH pop-ups.[7] On the 15th of June, the CAC announced the initiation of a two-month "Clear and Bright — Remediation of the Fan Circle Mess" campaign, which targeted five types of fan group disorder: (1) inducing underage fans to raise funds, spend large sums of money, and vote on charts; (2) fans tearing each other apart and hurling abuses, stomping on each other, creating rumors and mounting attacks, doxing, and violating privacy; (3) instigating fans to compare and show off their wealth and extravagance; (4) calling on fans, employing a water army, or "manipulating multiple social media accounts" to control comments; and (5) interfering with public opinion and influencing the order of communication by "newsjacking" and creating a buzz. On the 27 of August, the CAC published the "Notice concerning Further Strengthening Control over the Fan Circle Mess," rolling out 10 work measures, while social networking sites such as Weibo and TikTok also started to clean up themselves. On September 6, Weibo announced a

[7] "Press Conference on 'Clear and Bright' Campaign 2021," *Chinese Government Portal*, May 9, 2021, http://www.gov.cn/xinwen/2021-05/09/content_5605434.htm.

30-day ban on postings to a group of 21 South Korean entertainment-themed fan accounts, while social media platform Douban took the same day to suspend its reply function for seven days without warning, after which a number of Douban entertainment groups stated that they would no longer accept posts with sensational news. On September 7, bilibili, China's largest interactive video site, followed suit by announcing a complete ban on "abbreviated, simplified and distorted terms for personal attacks," and on October 1, TikTok issued a statement to further step up its efforts to "rectify the disorderly situation of fandoms" by disbanding more than 1,900 fan groups in one fell swoop.

In addition to requiring the relevant platforms to rectify the chaotic situation of fan groups, China has also tightened control over the news media and online speech. The CAC Report Center, the official WeChat account of the CAC, published statistics on September 9, revealing that since the CAC announced on August 27 that it had started a special rectification of commercial website platforms and "self-media," 2,929 "self-media" accounts have been dealt with, of which 1,793 accounts have been shut down and banned, including three accounts with more than 1 million followers.[8] The National Development and Reform Commission of the PRC (NDRC) on October 8 released on its official website the "Negative List for Market Access (2021 Version)," soliciting public views and adding to the negative list the "Prohibition of non-compliant news media-related businesses," imposing broader and deeper restrictions on the participation of non-public capital in news gathering/editing, broadcasting and other operations. Should the law be enforced in China in the future, the dependence of the privately owned media outlets will gradually be eroded away, leaving the state media as the only legitimate source of news for the Chinese public.

As a matter of fact, Xi Jinping said at the 2014 symposium on literature and art work that "The leadership of the Party is the fundamental guarantee for the development of socialist literature and art. The fundamental aim of the Party is to serve the people wholeheartedly, while the fundamental aim of literature and art

[8] "Swift Action! A Number of Financial 'Black Mouth' Accounts Shut down and Banned," *CAC Report Center*, September 9, 2021, https://mp.weixin.qq.com/s/fviuAfYLRjSAtW1CEZmXag.

is to produce works for the people. By keeping a firm grip on this foundation, the link between the Party and the arts can be correctly managed, and the relationship between the Party and the people, and between political stance and freedom of creation can be properly established."[9] In 2017, Xi Jinping emphasized at "The Party's News and Public Opinion Work Symposium" that "The media outlets run by the Party and the government is the propaganda front of the Party and the government, and must serve the Party. All the work of the Party's press and media must embody the Party's will and reflect the Party's ideas."[10]

Following this logic, Chinese films, television programs, literary works, and even news reports must be highly aligned with China's political stance, and within this framework, the cultural and entertainment industries can enjoy limited freedom of creation, while the opposite will be forcibly suppressed. In August 2020, for example, Xi Jinping issued a directive to "put an end to food and drink waste," and in April 2021, the "Anti-food Waste Law" was passed, but in May, a clip was released of the Chinese talent show "Youth With You 3," in which fans bought milk in bulk from a sponsor to support their idol but dumped it all in the end, blatantly running counter to China's policy. The arrest of artist Kris Wu has led to a series of rescue operations by fans on various platforms, prompting the People's Daily to criticize his fans for not even taking the bottom line for their idol, a perverse fan group culture that tries to challenge the authority of the government and the law, which must be addressed.

The Beijing Government has further pushed the power of the state into the community by addressing the disarray in the cultural and entertainment industries and the journalism industry, and by imposing restrictions on the topics and language applied in online forums, and even on the usage time and medium, in an attempt to curtail the powerful online and offline social mobilization capability of "key opinion leaders" (KOLs) and "influencers" "writers" In the Chinese context,

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[9] "(Authorized) Xi Jinping: Speech at the Symposium on Literature and Art Work," *Xinhuanet.com*, October 14, 2015, http://www.xinhuanet.com//politics/2015-10/14/c_1116825558.htm.

[10] "Xi Jinping: Adhering to the Right Direction and Innovating Methods and Means to Boost the Power of News and Media Dissemination and Guidance," *Xinhuanet.com*, February 19, 2016, http://www.xinhuanet.com//politics/2016-02/19/c_1118102868.htm.

the Party is, and can only be, the biggest KOL in the country.

3. Building a "Solid Military Image" to Promote Social Unity

Although on the surface Xi Jinping appears to have consolidated his military power, "military instability" remains the biggest concern at his core amidst a prolonged period of strong anti-corruption efforts that have eroded the interests of established generals and the increasingly obvious challenges to China's domestic and foreign affairs. In addition to safeguarding Xi Jinping's leadership authority in the military, creating a "solid military image" is also conducive to social harmony and stability.

From 2012 to 2021, Xi Jinping's talks on "strengthening education on Party history and military history and glorious traditions" and ensuring that officers and soldiers "firmly listen to the Party and follow the Party" were excerpted by the Qiushi journal in July 2021.[11] It can be observed that "upholding the absolute leadership of the Party over the military" and "firmly listening to the Party and following the Party" are considered the most important elements, and the "theory" that carried wide-ranging contents had gradually evolved into a "scientific theory" in 2014 and an "innovative theory" in 2020. In 2013, the phrase "ensure the absolute loyalty, purity and reliability of the troops" was introduced for the first time; in 2014, "the leadership of the Party reaches the grassroots and the soldiers"; and in 2021, more emphasis is placed on the "ideology building" in the army. The People's Liberation Army's (PLA) "ideology" is shaped by Xi Jinping's thinking on strengthening the military, including "firmly listening to the Party and following the Party" (adhering to the Party's absolute leadership of the army), "capable of winning battles" (ready to respond to the call, to fight, to win the war) and "excellent ethos" (absolute loyalty, absolute purity and absolute reliability).[12] According to the "Guidelines on Promoting Ideological and Political Education within the Chinese Military in the New Era" promulgated in April 2021, it is clear

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[11] "Strengthen Education on Party History and Military History and Glorious Traditions to Ensure that Officers and Soldiers Firmly Listen to the Party and Follow the Party," *qstheory.cn*, July 31, 2021, https://bit.ly/3oz8jpg.

[12] "A Study on the Development of Xi Jinping's 'Strong Army Thought'," *Navy Professional Journal*, Vol. 53, No. 3, June 2019, p. 122.

that "following the Party" (actually "following Xi's command") is the crucial part of Xi Jinping's thinking on strengthening the military, and is also his Achilles' heel, which must be reinforced through a series of Party history studies and education, and by stressing that military personnel should be loyal to the "Xi's core position" to bolster political security.

In addition, China has also made great efforts to create a "glorious image" of the military and build up mutual trust between the military and the society. For example, it has released a list "The Most Outstanding Revolutionary Military Personnel of the New Era" and produced such melodramatic films as "The Battle at Lake Changjin" and "The Sacrifice," which feature servicemen and portray "love for the Party, love for the country and love for the military," and promoted them vigorously among student groups and veterans in order to consolidate the unity between the government and the armed forces and between the people and the armed forces.

4. Stepping up Efforts to Combat Social Mobilization Capabilities

On March 20, 2021, the Chinese Ministry of Civil Affairs and more than 10 central government departments held a meeting on "Further Combating and Rectifying Illegal Social Organizations" and mounted a three-and-a-half-month campaign against organizations that had not registered with the competent authorities, nor with the relevant agencies, market supervision agencies, nor with Hong Kong, Macao, Taiwan or other countries or regions and that were carrying out activities in the name of social organizations, private non-enterprise entities and foundations without permission, as well as those that continued to operate as social organizations after their registration certificates had been revoked or suspended. The investigation focused on six items, including: (1) illegal social organizations that operated in the economic, cultural and charitable fields on the pretext of national strategies such as "rural revitalization"; (2) illegal social organizations that bore the words "China," "Chinese," "national," "Strait," etc., or were in the guise of entities affiliated to state agencies or enterprises, etc., and committed fraud and accumulated wealth by unfair means; (3) illegal social organizations that carried out activities in collusion with legally registered ones, or that passed

off as something they were not; (4) illegal social organizations that launched selection and award activities on the pretext of marking the 100th anniversary of the founding of the Chinese Communist Party (CCP); (5) illegal social organizations that engaged in false health, sinology and mysticism activities, as well as those that operated under the banner of religion; and (6) other illegal social organizations that might endanger national security or the safety of people's personal property.[13]

On March 22, 2021, the Ministry of Civil Affairs of the PRC (MCA) and 22 other departments issued another "Notice on Removing the Breeding Ground for Illegal Social Organizations and Cleansing the Ecological Space of Social Organizations," setting out seven requirements.[14] Recently, China had seen an uptick in the number of illegal social organizations driven by interests, said the official in charge of the ministry during a press briefing, adding that to create a clean and upright social environment and a peaceful and festive atmosphere for the centenary of the CCP, illegal social organizations must not be allowed to act as "stumbling blocks" to the kick-off of the 14th Five-Year Plan. As of November 2021, the MCA has published six batches of lists (Table 10-1) containing 61 illegal social organizations and 67 websites or new media accounts of illegal organizations, while the civil affairs offices across the country have also announced a total of 516 illegal social organizations in eight stages. Judging from the lists, the central list is mostly composed of professional (teachers, artists), clan (Yu Clan Association, Xiong Clan Association) and voluntary associations (Volunteer Association, Recitation Association), while the regional lists consist of many religious groups that are regarded as thorns in the side of the government.[15] China

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[13] "China Deploys a Special Campaign to Further Crack down on Illegal Social Organizations," *Chinanews.com*, March 20, 2021, http://www.chinanews.com/gn/2021/03-20/9436720.shtml.

[14] The seven requirements are: Business entities and social organizations shall not have ties with illegal social organizations; Party members and cadres shall not participate in the activities of illegal social organizations; the press shall not publicize the activities of illegal social organizations; public service facilities and venues shall not cater for illegal social organizations; Internet enterprises shall not facilitate the online activities of illegal social organizations; financial institutions shall not facilitate the activities of illegal social organizations; and the cost of breaking the law for illegal social organizations shall be raised. "China's Crackdown on Illegal Social Organizations Escalates Again," *China News Service*, March 23, 2021, https://bit.ly/3vGSSwP.

[15] "China's 'Crackdown on Illegal Social Organizations' Campaign Spreads to Five Types of Groups," *Radio Free Asia*, March 26, 2021, https://bit.ly/3BcywwP.

has been aiming for "de-socialization," forbidding any other organizations to operate on their own, and attempting to prevent all people from being exposed to the influence of social organizations such as families, churches (temples), and civil societies (including recreational groups). On the contrary, only the Chinese government can inculcate an ideology that will integrate the masses and enable all social classes to be "united to the Party." This time, China's central and local governments are stepping up efforts to clean up illegal social organizations, and over the course of the investigation, they have taken the opportunity to establish a national database of social organizations, indicating the country's attempt to create a positive social atmosphere for the July 1 centenary of the Party, and to keep track of the developments of social organizations at all levels with the aid of data, so as to preclude local self-organizations from growing and posing a threat to the country's rule.

5. Tightened Surveillance of Ethnic Minorities and Inculcation of "Worship Xi Education"

In August 2021, Xi Jinping said at the Central Work Conference on Ethnic Affairs that it was imperative to prevent major risks and dangers in the ethnic areas, actively and steadily deal with ideology issues involving ethnic factors, continue eliminating ethnic separatism, and strengthen international cooperation on counter-terrorism.[16] The talk, for the first time, characterized ethnic separatism and religious extremism as "pernicious influence," and was seen by outsiders as a sign that China would intensify its policy of genocide and that those in the religious community would also be treated as a "cancer" and subject to various restrictions and purges.

Marking the 70th anniversary of China's liberation of Tibet in 2021, the State Council on May 21 released a white paper entitled "Tibet Since 1951: Liberation, Development and Prosperity," claiming that Tibet has scored a "comprehensive victory" in the fight to alleviate poverty, and that the society is stable and the

[16] "Resolve to Prevent Major risks and Dangers in Ethnic Areas, Says Xi Jinping," *Radio France Internationale*, August 28, 2021, https://bit.ly/3l4iSPl.

people are living happily. However, according to human rights group Tibet Watch, several incidents of China's repression of Tibetans have occurred in Tibet since 2021, such as the secret arrest of six Tibetan dissidents, including Tibetan writer Gangkye Drubpa Kyab, and the repeated military raids by the Snow Wolf Commando Unit (part of the Chinese armed police) on the hometown of dissident Tenzin Nyima in Dza Wonpo, as well as numerous arrests of families and individuals in possession of photographs of the 14th Dalai Lama. Moreover, there are rumors in Qinghai and Sichuan provinces that their governments are demanding that all Tibetan schools use Mandarin as the medium of instruction and that they may face closure if they refuse to cooperate. In August 2021, two young Tibetans were detained by the police after they criticized the local government in a Tibetan chat group for making it mandatory for Tibetan schools to use the new version of Chinese textbooks in the new school year.

Table 10-1 List of Illegal Organizations in China Published by the Ministry of Civil Affairs

Batch	List	Batch	List
Batch 1 (10)	1. Chinese Society for Aesthetic Research 2. China Blockchain Committee 3. China-Africa Cultural Friendship Association 4. Chinese Patriotic Artists Association 5. China Volunteers Association 6. China Cultural Development Committee 7. International Chinese Arts Association 8. Chinese Society for the Study of Party History 9. Chinese Yu Clan Association 10. China Versatile Talent Training Association	Batch 2 (10)	1. China Association for the Promotion of Industrial Development 2. China Tea Industry Management Association 3. China Quality Certification Supervisory Committee 4. Asian Language Artists Association 5. National Institute of Health Services Development 6. China Vocational and Technical Education Development Institute 7. China Green Energy and Environmental Protection Industry Association 8. Elderly Health, Sports and Welfare Association 9. International Chinese Artists Association 10. Chinese Medicine Association

Batch	List	Batch	List
Batch 3 (11)	1. Chinese International Feng Shui Association 2. Chinese Recitation Association 3. China Modern Hard Pen Calligraphy Society (legally registered as China Hard Pen Calligraphy Association) 4. China Famous Brand Products Joint Development and Promotion Association 5. China State Guesthouse Association 6. China Interior Design Association (legally registered as China Interior Decoration Association) 7. Chinese Society for Teacher Development 8. China Association for Barrier Free Access 9. China Federation of Teaching Entrepreneurs 10. China Folk Martial Artists Association 11. National Thermal Insulation Material Technology and Information Association	Batch 4 (12)	1. China Education Service Industry Association 2. Xiong Clan Association 3. Chinese Le's Cultural Research Society 4. Chinese Traditional Culture Exchange Association 5. China Shanghai School National Apparel Art Association 6. Chinese I Ching Philosophers Association 7. China Railfan Association 8. Chinese Celebrity Biographical Society 9. China Martial Arts Calligraphers and Painters Association 10. China Youth Calligraphy and Painting Institute 11. International Society of Bilingualism 12. International Martial Arts Development Association

Batch	List	Batch	List
Batch 5 (8)	1. China Cosmetic and Hairdressing Association (legally registered as China Hairdressing and Cosmetic Association) 2. Society of Contemporary Artists 3. China Yogi Accreditation Association 4. China Bangshu Art Society 5. China Art Collection and Authentication Professional Committee 6. China Huaxia Photographers Association 7. Chinese Yang Culture Research Society 8. China Engineering Construction Management Association	Batch 6 (10)	1. China Enterprise Structure Association 2. Chinese Literary Development Association 3. China City Recitation Alliance 4. Chinese Society of Lifestyle Medicine 5. China Framing Industry Manufacturers' Federation 6. China National Range Supervisory Association 7. China Practical Shooting Association 8. China Seamen's Association 9. China Quality Certification Development Association 10. China National Quality Certification Review Committee

Source: Compiled by the author from the official website of the Ministry of Civil Affairs of China at http://www.mca.gov.cn/.

It was no coincidence that tens of thousands of people staged protests and schools organized a boycott against Inner Mongolia in September 2020 after it called for the substitution of Chinese language teaching materials for the local Mongolian language. In March this year, Xi Jinping attended the deliberations of the Inner Mongolia representatives at the National People's Congress (NPC) and said Inner Mongolia should firmly push for the adoption of national textbooks, "correct misconceptions about culture and ethnicity" and make efforts to popularize the common language and script. On September 28, the Chinese government released the "Outline for the Development of Children (2021-2030)," in which the phrase "respect and protect the right of ethnic minorities to receive education in their own language and script" was deleted from Article 4 of "Children and Education" and replaced by an emphasis on "step up efforts to promote the common national language and characters." According to Dilxat Raxit, a spokesperson for the World Uyghur Congress, China's political aim is

to further intensify the indoctrination of Chinese culture, language and script from childhood, thereby eradicating and eliminating the traditional culture of the Uyghur people. This is not just directed at the Uyghurs, but also Tibetan culture and Mongolian culture.[17] Professor Yang Haiying pointed out that the language policy was first tested in Hubei Province, and that China first tried it out in places with little ethnic minority influence, such as Hubei and Hunan provinces, before extending it to Inner Mongolia, Xinjiang and Tibet. In the past, it usually took one to two years for the ethnic minority policy that was launched to be applied to other provinces in China, but now it seems that assimilation measures have been introduced nationwide, suggesting that China has expedited a full-scale sinicization of its ethnic minorities.[18] China has replicated the experience of the 2012-2016 crackdown on Tibet by monitoring the autonomous regions such as Xinjiang and Inner Mongolia, and the "re-education camps" in Xinjiang have been applied to Tibet, demonstrating that China's model of ethnic minority policy is one of "regional experimentation," "repeated verification" and "large-scale implementation."

It is worth noting that in late 2020, a craze for "rugged good looks" hit the Chinese Internet, with a Tibetan teenager named Ding Zhen bursting onto the scene with his kind and simple nature. Meanwhile, the Chinese state media seized the opportunity to "tell the story of a simple Tibetan young man with the Party," with China Central Television (CCTV) interviewing Ding Zhen about what he wanted to see in Beijing, to which he replied: "The raising of the national flag. The People's Daily immediately advertised the event with the hashtag "# Ding Zhen says he wants to come to Beijing to see the national flag being raised." Later on, the Chinese state media also ran such features on ethnic minority Internet celebrities as "Run like a Tibetan girl, Cao Mojie" and "Little Zhuoma, a 4-year-old Tibetan girl from Sichuan." In October 2021, a clip of a 10-year-old Inner Mongolian boy

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[17] "Language Curriculum Removes 'Respect for Ethnic Minorities' Clause, Requiring Mandarin Instruction from Primary School," *Radio Free Asia*, September 30, 2021, https://bit.ly/3A4RcxO.

[18] "Likely Backlash from Tibetans, Mongolians and Xinjiangers as China Accelerates Assimilation," *Voice of America*, October 19, 2021, https://bit.ly/30Nzp2a.

galloping across the grasslands and promoting his hometown in both Mandarin and Mongolian appeared on the Chinese Internet (Figure 10-1). This suggests that the use of minority stock characters for publicity purposes seems to have made it to the stage of "repeated verification," and it is worth following up whether similar characters will be portrayed in other regions such as Hong Kong and Taiwan in the future.

Figure 10-1 China's Portrayal of the Minority "Stock Character"

Sources: Sina Weibo # Little Zhuoma on the grassland? #, @litangdingzhen, Bastille Post.

III. Summary: Conclusion

In August 2021, after Li Guangman, the editor-in-chief of the former Central China Electric Power News, touted the Chinese government's regulatory action as a "profound change," his article was picked up by major Chinese state media outlets, but Global Times editor-in-chief Hu Xijin refuted that Li had misinterpreted the country's general policy and that the regulatory action was not intended to subvert the existing order. These two articles have led to a debate on

"the future direction of China's development and the possibility of a repeat of the Cultural Revolution." Liu Yawei, Director of the Carter Center's China Program, said that the debate revealed a heated argument within the CCP about the value of reform and openness, about the state of social and political stability in China today, and about what kind of country China wants to become.[19] According to academic Deng Yuwen, the Cultural Revolution had four characteristics: a dispute over the lines facing the top leader, large-scale mass political movements initiated by the top leader, a mass rebellion against the leaders, and a dominant ideology. Except for the fourth point, Xi Jinping's current actions do not conform to the characteristics of the Cultural Revolution, and they are more like creating a "clean society."[20] Katja Drinhausen, an expert at the Mercator Institute for China Studies (MERICS) in Berlin, argued that while the tactics and rhetoric employed by Xi Jinping against his opponents are "strikingly similar" to those used by Mao Zedong during the Cultural Revolution, his aim is to ensure political stability within the country, the power of the Party and the rise of China as a world economic and technological power.

Under the "new normal" of U.S.-China tensions, the CCP is concerned that the U.S. and other Western countries will exercise market power to influence the development of China's technology industry and national security, and may even shake the foundations of its rule. In addition, Xi Jinping's desire to extend his rule at China's 20th National Congress in 2022 calls for domestic political, economic and social stability. In the meantime, the many social grievances that have sparked public discontent and threatened the prestige of the CCP's leadership, as well as the legitimacy of Xi's re-election, have become a key reform priority. Xi Jinping said at the opening ceremony of the training course for young and middle-aged cadres at the Central Party School in the autumn semester of 2021, "As the great rejuvenation of the Chinese nation enters a critical period, the risks and challenges

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[19] "Hu Xijin's Confrontation with Li Guangman Implies Anxiety about the Direction of Xi Jinping's Policies," *Central News Agency*, September 10, 2021, https://bit.ly/3nrcFNi.

[20] "Guest Commentary: Xi Jinping's 'Clean Society'," *Deutsche Welle*, September 13, 2021, https://bit.ly/3uAErtQ.

confronting U.S. have increased significantly, and it is unrealistic to want to live in peace and not to fight. We must dispel our illusions and be brave enough to fight, not give an inch on matters of principle, and protect the sovereignty, security and development interests of our country with unprecedented quality of will."[21]

From the above remarks, it can be seen that Xi Jinping's recent series of regulatory policies are not intended to take a more "leftist" route of the "New Cultural Revolution," nor are they based on the belief that the regime is on shaky ground, but rather on the idea that the challenges facing China are becoming more and more dire, and that a more consolidated Party spirit and a more cohesive and stable society are what is needed to rise to these challenges. As such, Xi's grip on the Internet and the media, on the military and social groups, and even on ethnic groups, serves not only to consolidate his own authority, but also to strengthen the Party's leadership at all levels of society, so that the CCP can govern effectively in the long term. Against this backdrop, it is expected that China will see a more powerful and centralized "Xi core status" in the future, which will lead to more frequent, extensive and in-depth regulatory policies in various areas in response to its huge industrial upgrading requirements and social development goals such as "common prosperity" and building a prosperous society.

[21] "Xi Jinping: China's Risks and Challenges Grow, We Should Dispel Illusions and Fight," *Hong Kong Economic Times*, September 1, 2021, https://bit.ly/3A5xqSP.

Conclusion

Kuan-Chen Lee, Ming-Te Hung

The year 2021 is an important year for China to achieve its first 100-year goal of alleviating poverty and building a moderately prosperous society on the 100th anniversary of the CCP, which is emblematic of the Chinese regime and Xi Jinping's personal leadership. In 2020, problems such as the COVID-19 pandemic, U.S.-China relations and the domestic economy have posed a challenge to the CCP's governance. In 2021, China is not only exposed to these relentless headwinds, but must also confront new crises and challenges. For example, unlike the former Trump administration, the U.S. President Joe Biden has taken a different approach to China, but his administration persists in its containment of China as the competitive situation and value differences between the two countries remain unchanged. As a result, to facilitate further understanding of China's policies, challenges and responses on the 100th anniversary of the CCP, this report looks into the political, military and socio-economic aspects of China, with the conclusions of each chapter set out below:

Firstly, the politics part consists of four articles. The first chapter aims to examine the 14th Five-Year Plan and 2035 Visionary Goals, and the changes in China's economic strategy, identifying the following two policies that may have a bearing on the development of state capitalism in China. China's "new nation-wide system" will lead the development of strategic technologies. China attaches importance to the role of enterprises in innovation and R&D, and to those that possess strategic technologies or hold R&D potential. China's management of state-owned enterprises (SOEs) will shift from "enterprise management" to "capital management" by: (1) reinforcing the state's role to SOEs as capital contributors,

and downplaying the hierarchical relationship between the upper and lower levels; (2) stressing the efficiency of state-owned capital investments, and emphasizing the importance of investment returns and the growth of state-owned capital. Therefore, the Chinese government's involvement in economic affairs in the future will focus on exercising the legitimate rights of a shareholder as a channel for the state to intervene in corporate governance or influence industrial development, for example, by becoming an "investor state," where the CCP holds a stake in a private company with investment potential through the power of state-owned capital or even by treating companies run on state-owned capital as the core, and creating corporate groups with cross-shareholdings in each other, in a bid to grow state-owned capital and strengthen Chinese-funded enterprises.

The second chapter is devoted to an exposition of the realignments and shifts in China's Taiwan policy in 2021, with the Tsai Ing-wen administration taking office and China's unilateral approach to Taiwan and its unilateral threats. Nevertheless, when other policy approaches such as wolf warrior diplomacy are taken into consideration, it can be seen that China is reinforcing its internal propaganda by taking a hard line externally. With regard to the Taiwan policy, the Taiwan Affairs Office and the Ministry of Foreign Affairs of the PRC have frequently taken a tough stance in their Taiwan-related remarks, in addition to the various policies they have steadily introduced on a unilateral basis. Overall, under the "Xi's Five-Point Plan," a policy of integrated development, information warfare, disinformation and cognitive warfare, as well as military threat against Taiwan, have been carried out without interruption.

Chapter 3 deals with the division of tasks regarding Taiwan-related issues between the Ministry of Foreign of the PRC and the Taiwan Affairs Office, as well as the strategies adopted by the two agencies, with the former responsible for external affairs, while the latter for Taiwan affairs. In terms of strategy, the foreign affairs ministry adopts a hard-line stance on external affairs with "wolf warrior diplomacy" and occasionally intervenes in Taiwan-related issues against the Taiwanese government, while the Taiwan affairs office takes a "hard and soft-handed" approach towards the Taiwanese government and the private sector

respectively. However, this has not worked well as the use of "wolf warrior diplomacy" not only is greeted with disapproval in the international community and tarnishes China's global image, but also is detrimental to the development of the cross-strait relations and offsets the soft tactics employed by the Taiwan affairs agency. Finally, the Taiwanese government and the private sector should respond to the respective statements made by the two Chinese agencies, with the former advised to resort to democratic values, technological mutual assistance and pandemic prevention experience and the latter to adopt a scientific approach to evaluating the efficacy of Chinese vaccines or procured international vaccine brands, allowing the public to make an objective judgement without being influenced by political propaganda or false information.

Chapter 4 focuses on the risks and controversies arising from China's "One Belt, One Road" initiative, indicating that the main purpose of the initiative is to tackle its own domestic overcapacity problem and to enhance the internationalization of Chinese enterprises. In this regard, the international community is aware of the huge debt problem that the Belt and Road Initiative poses to the countries along the route. Debt diplomacy has become a convenient and powerful diplomatic tool for China, helping to expand its political and economic influence. Consequently, in response to the implications and challenges brought about by the Belt and Road Initiative, major countries such as the U.S. and Japan have rolled out their own infrastructure projects, which may lead to more intense competition for infrastructure among countries in the future. In addition, the exchange and trade between regions will not only lead to the spread of invasive species, but also increase the risk of importing diseases, and there may be occasions for Taiwanese businessmen to engage in related construction projects in the future, and some of the countries along the "Belt and Road" route overlap with the target countries of the "New Southbound Policy," which may expose our country to ecological and health risks.

Secondly, the military part contains three articles, with Chapter 5 examining the evolution of Chinese military aircraft flying over the sea, pointing out that the pattern of flight training has shifted from crossing over the median line of the

Taiwan Strait and encircling Taiwan to disrupting Taiwan's southwestern airspace. Chinese military aircraft have frequently made their way into the southwest airspace to highlight Taiwan's defensive weaknesses arising from its emphasis on deployment to the north, to deplete Taiwan's air power and logistical supply capabilities, to demonstrate the PLA's ability to launch multi-directional and multi-domain attacks against Taiwan, and to threaten the outlying islands of Pratas and Spratly. In response, Taiwan should deploy a new type of early-warning radar, build up its southwest airspace surveillance capabilities, enhance its air defense capabilities, strive for the procurement of electronic warfare (EW) aircraft, and foster cooperation and exchanges with its allies on anti-submarine warfare, electronic warfare and surveillance.

Chapter 6 concerns the military preparedness of the People's Liberation Army (PLA) in the South China Sea. After Xi Jinping came to power, strengthening "warfare infrastructure" has become the cornerstone of military preparedness in the South China Sea. On the one hand, the PLA has been dredging up coral reefs and creating artificial islands in the South China Sea, while on the other, it has been demonstrating its military presence in the South China Sea through military patrols. In terms of the combat activities involved in offshore exercises or distant sea training, China has placed a premium on stepping up the two major operational systems of landing on islands and reefs and joint multi-services operations, accelerating the integration of the new main warships with the existing forces in an effort to meet the need for greater deterrence and intimidation of foreign forces. Meanwhile, the confrontation between the U.S. and Chinese naval forces in the South China Sea has intensified, but the PLA has avoided escalating the standoff or even clashing with U.S. forces. As for underwater patrols and demonstrations of military power, China holds back foreign forces in the South China Sea to a limited extent, but benefits from a degree of "home turf advantage" due to its greater control over the limited underwater shipping lanes in the region. Therefore, "telling the story of the PLA's deterrence in the South China Sea" has become the main instrument for the PLA to showcase its military strength in the South China Sea.

Chapter 7 examines how the PLA takes to social media for military propaganda.

By looking at the four official Weibo accounts of the PLA, it identifies the dissemination and the trend of public opinion created by the PLA. The study found that the PLA's propaganda is highly strategic, capitalizing on seemingly random postings to draw audiences into the its channels and facilitate the implantation of the military's ideas and positions. At the same time, the PLA's propaganda campaigns aim to be more effective by posting messages at the right time, and the proportion of different types of articles is tailored to the area of responsibility of different theater commands. On the whole, the PLA's propaganda is strategic, timely and targeted, moving towards an information-based approach and an enhanced strategic deterrent effect. In the future, the possible weaponization of propaganda in conjunction with artificial intelligence (AI) warrants our utmost attention and vigilance.

Finally, the economic and social part comprises three articles. Chapter 8 probes into the economic situation in China and its semiconductor industrial policy in 2021, suggesting that China's economic performance in the first half of 2021 was strong, but weak in the second half, in the wake of the U.S.-China tensions and the COVID-19 pandemic. China's dual circulation policy and the 14th Five-Year Plan, which seek to drive economic growth through domestic demand and achieve technological autonomy on the back of semiconductor support programs, are proving difficult as China's economic growth is still dependent on government-led investment. Prior to the U.S.' technology embargo, China's semiconductor development was booming, but it still relied heavily on foreign imports for high-end chips. At this stage, despite the Chinese government's continued backing for the local wafer industry in the form of equity investment, tax and fee reductions and preferential loans, the future growth of chip manufacturing will be significant, but it remains to be seen whether it will be able to catch up with its foreign competitors.

Chapter 9 delves into China's aerospace science and technology and industrial development, firstly finding that its aerospace science and technology development is primarily aimed at military applications. While still lagging behind the U.S. in some areas of expertise, its development of space military capabilities has posed

a certain military threat to the U.S. Second, China develops aerospace science and technology principally with the aid of the aerospace and defense industry and the Chinese Academy of Sciences, spearheading the development of critical power and inertia technologies, satellite launching, mapping, software development, and satellite networking. Third, by incorporating its strengths in emerging technologies such as AI, China has developed considerable space capabilities, such as the BeiDou satellite navigation system, space station docking and Mars landing. Forth, China utilizes BeiDou navigation and satellite applications to expand its geopolitical sphere of influence. For example, Laos has fully embraced the Chinese model of "whole-satellite export," which is tantamount to being integrated into its aerospace sphere of influence. Whether this model will be replicated in other regions remains to be seen.

Chapter 10 deals with China's intensified regulatory measures at all levels of society, the reasons for their tightening, and the future development of the country, pointing out that to preclude Western countries such as the U.S. from undermining the foundations of the CCP's governance by influencing the development of China's technology industry and national security, and to help maintain domestic political and economic stability to sustain Xi Jinping's rule, China is addressing social issues that have caused public discontent and may threaten the authority of the Party's leadership and Xi's re-election. In other words, China needs a more solid Party spirit and a more united and stable society in response to increasingly grave challenges. Thus, Xi Jinping's stricter control over the Internet and the media, the military and social organizations, and even ethnic groups, will not only help to consolidate his own authority but, more importantly, strengthen the Party's leadership position for its long-term effective rule of China. It is expected that China will continue to step up its regulatory efforts in various sectors by means of a tougher and more centralized government system to cope with the huge demands of industrial upgrading and to avert the severe challenges posed by worsening social problems.

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