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Can “China Model” Compete? Evolving State Capitalism and Military-Civil Fusion Strategy

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Abstract

This article seeks to attain a better understanding of the development of US-China competition over technological innovation by focusing on the Military-Civil Fusion (MCF) strategy strongly promoted by the Chinese Communist Party. Based on an examination of the characteristics of China’s system of political economy, this article posits that the MCF strategy should be understood as a new type of industrial policy which has the aim of enhancing overall competitiveness in high-tech sectors and argues that the current administration’s approach differs substantially from prior attempts in such critical aspects as the underlying motivation, range of policy measures, and institutional arrangements for policy implementation. Regarding policy effects, this study draws on an original dataset of policy documents to demonstrate that despite wide-ranging efforts to mobilize political, administrative, and economic resources, the MCF strategy at its current stage has fallen far short of the hopes of promoting cooperation between the defense and commercial sectors, and the prospects for enhancing competitiveness and technological innovation remain uncertain.

1. Introduction

Chinese policymakers, including President Xi Jinping, have recently taken to declaring that there is a “Chinese way” to development that may hold lessons for other developing countries. The Chinese people, Xi proclaimed in 2016, “are fully confident in offering a China solution to humanity’s search for better social systems.” A year later, he declared that China was “blazing a new trail for other



developing countries to achieve modernization.”¹ Such claims come as the Chinese Communist Party (CCP or the party) has been reasserting its dominance over society and the economy, and has been expanding its influence overseas, causing sharp concerns within the US government, whose policymakers have come to officially portray China as a peer competitor.

With the escalation of US-China competition, the relationship between domestic systems of governance and interstate relations is gaining renewed attention. Many western observers have connected Xi’s stated confidence in a “Chinese way” to the regime’s willingness to spread it, concluding that the US-China rivalry has taken on the aspect of a system-to-system competition.² On the face of it, this observation gives rise to multiple questions: What is distinctive about the Chinese way and how do the Chinese leaders define it? Are they willing to export it? To what extent does the recent intensification of US-China rivalries result from the dynamics of systemic competition? If a systems competition is taking place, how does it affect the governing institutions of each country’s political economy?

This article seeks to understand the development of systems competition between the US and China, with a focus on the Military-Civil Fusion (MCF) strategy strongly promoted by the CCP to enhance competitiveness in high-tech industries. As many observers have noted, if the claim that the US and China have entered a full-scale systems competition suggests an active proliferation of political ideology and development model, it does not necessarily fit the actual situation.³ On the other hand, it is true that *both* the US and China are respectively setting out new resource mobilization strategies with a view to competing with each other over technological innovation. And as far as such strategies are concerned, systems competition has already begun.⁴ Against this background, the MCF initiative,

¹ “Secure a Decisive Victory in Building a Moderately Prosperous Society in All Respects,” October 18, Delivered at the 19th National Congress of the Chinese Communist Party (http://www.chinadaily.com.cn/china/19thcpnationalcongress/2017-11/04/content_34115212.htm).

² For example, see Aaron L. Friedberg, “Competing with China,” *Survival*, 60(3), 2018, pp. 7-64; Hal Brands, “China’s Master Plan: Exporting an Ideology,” June 11, 2018 (<https://www.bloomberg.com/opinion/articles/2018-06-11/china-s-master-plan-exporting-anideology>); Odd Arne Westad, “The Sources of Chinese Conduct: Are Washington and Beijing Fighting a New Cold War?” *Foreign Affairs*, September/October 2019, pp. 86-95; Thomas J. Christensen, “There Will Not Be a New Cold War: The Limits of US-Chinese Competition,” *Foreign Affairs*, March 24, 2021 (https://www.foreignaffairs.com/articles/united-states/2021-03-24/there-will-not-be-new-cold-war?fbclid=IwAR23chDFO2gDk9sod5oEYDhXvkKGDDBGJx8QJogvR45FNRnZYCD_2lZAl0v0)

³ For the ongoing debate over China’s systemic challenge to the existing liberal order, see Alastair Iain Johnston, “China in a World of Orders: Rethinking Compliance and Challenge in Beijing’s International Relations,” *International Security*, Vol. 44, NO. 2, Fall 2019, pp. 9-60; Jessica Chen Weiss and Jeremy L. Wallace, “Domestic Politics, China’s Rise, and International Liberal Order,” *International Organization*, 2021, pp. 1-30.

⁴ For Washington’s reactions, see The White House, “National Strategy for Critical and Emerging Technologies,” 2020 (<https://www.whitehouse.gov/wp-content/uploads/2020/10/National-Strategy-for-CET.pdf>); “United States Strategic Approach to the People’s Republic of China,” 2020 (<https://www.whitehouse.gov/articles/united-states-stratetegic-approach-to-the-peoples-republic-of-china>).



which has been upgraded as a new national strategy, provides good material for observing this novel and critical aspect of the systems competition between the US and China.⁵

In situating the MCF strategy in the context of systems competition, I argue that the existing focus on civilian-military technology transfer and defense modernization has become less effective in understanding and explaining the drivers and the actual unfolding of the strategy, as well as in assessing the challenges it confronts.⁶ More specifically, this article demonstrates that the current administration's approach to MCF differs substantially from previous attempts in many important respects, including the underlying rationale, the key objectives, the range of policies, and institutional arrangements for policy implementation, which suggests that MCF strategy at its current stage should be approached from a perspective that brings in much broader elements of Chinese political economy to the equation.

In addition to offering an appropriate context for assessing the development of MCF strategy, this article seeks to contribute to existing debates over the evolution of Chinese state capitalism by providing important observations regarding how growing security concerns influence the way in which the Chinese state organizes industrial and market capabilities. Although there is substantial evidence that recent industrial and technology policies are increasingly reflective of the changing perceptions of leaders toward the security environment, many questions remain unanswered regarding its effects on policy processes and the overall system of governance. This study attempts to fill this void.

This article proceeds as follows. First, I briefly discuss the gaps in recent debates about US-Chinese systemic competition and highlight the need to examine how China has sought to create and leverage resources to fulfil its security and developmental needs, a question in part addressed in the extensive literature on Chinese state capitalism. Discussions on core arguments surrounding state capitalism in China and their implications for MCF strategy will follow. Second, I examine the motivation, institutional development, and policy processes for MCF strategy, with a particular

⁵ For a more comprehensive review of debates about the US-China systems competition, see Jessica Chen Weiss, "An Ideological Contest in U.S.-China Relations? Assessing China's Defense of Autocracy," in Avery Goldstein and Jacques deLisle, eds., *After Engagement: Dilemmas in U.S.-China Security Relations*, Brookings Institution Press, 2021.

⁶ Some analysts have recognized this point. For example, Cheng and Hagt notes that MCF "moves beyond central level planning to execution within a complex subnational political economy." Tai Ming Cheng and Eric Hagt, "China's Efforts in Civil-Military Integration, Its Impacts on the Development of China's Acquisition System, and Implications for the U.S.," University of California San Diego and Naval Postgraduate School, 2020, p. 1, pp. 12-15. For an account attaching particular emphasis to the role of local governments, see Eric Hagt, "China's Civil-Military Integration: National Strategy, Local Politics," PhD Dissertation, Johns Hopkins University, 2019. In a more critical tone, Kania and Laskai, citing the Trump administration's definition of MCF as "actions to acquire and divert foreign technologies," point out that foreign policymakers often fail to recognize the complexities and the nascent character of MCF. Elsa B. Kania and Lorand Laskai, "Myths and Realities of China's Military-Civil Strategy," Center for a New American Security, 2021, pp. 4-5.



emphasis on its characteristics as a *new* type of industrial policy. In the third section, I draw on an original dataset of policy documents relating to MCF to show whether, and to what extent, the upgraded initiatives have translated into policy implementation and impacted the reality on the ground. The conclusion summarizes the findings of this paper and their implications for technological competition.

2. US-China Systemic Competition and Chinese State Capitalism

Unlike largely unproductive discussions about the “new cold war” meme, systemic competition among states is a central theme in both international politics and international relations theory. Yet recent debates on US-China rivalries appear to have paid only scant attention to the subject, particularly as regards the systemic determinants of technology competition.

2.1. Does Autocracy Have Merits in Technological Competition?

While not rigorously developed, there is a conventional wisdom which is developing that democratic political systems will never be able to compete with ruthless and efficient autocratic competitors. This developing wisdom that some call “autocratic advantage theory” usually begins from the assumption that autocracies can set out consistent, long-term strategic courses, while policy directions in a democracy change with elections. Autocrats worry less about bureaucratic bickering or public outcry because a strongman can overrule dissent and keep the nation on a steady course. In addition, autocracies can take big, bold actions in implementing national strategy. When autocratic leaders make an important decision, they can impose their will on the whole nation, and concentrate resources behind key policies, while political opposition or potential losers are excluded or coerced into compliance.⁷ Globalization, which was initially expected to spread democratic values, has ended up increasing the tools of autocrats for resource extraction to pursue national goals.⁸

Such claims of autocratic advantage can readily be found in recent discussions on Sino-American competition. For example, Friedberg notes that the failure of America’s China strategy fundamentally stems from “the resilience, resourcefulness, ruthlessness of the Chinese Communist Party and the determination of its leaders to retain their monopoly on domestic political power.”⁹ In

⁷ Matthew Kroenig, *The Return of Great Power Rivalry: Democracy versus Autocracy from the Ancient World to the U.S. and China*, Oxford University Press, 2020, pp. 38-39.

⁸ For example, see Henry Farrell and Abraham L. Newman, “Weaponized Interdependence: How Global Economic Networks Shape State Coercion,” *International Security*, Vol. 44, No. 1, Summer 2019, pp. 42-79.

⁹ Aaron L. Friedberg, “Competing with China,” 2018, p. 12 (emphasis added).



the realm of technological advances, the party's resoluteness manifests itself in the state's "deliberate, long-term focus" which has successfully lifted China from "a country that largely steals and imitates technology to one that now also improves and even pioneers it."¹⁰ Further showcasing China's strength in innovation drive, according to many observers, is the MCF policy, a whole-of-society strategy that will enable China's robust manufacturing base and government support to "translate research breakthroughs into applications and commercialize new technologies more quickly than the United States and at a fraction of the cost."¹¹

Of course, not everyone agrees with the notion of autocratic advantage. When it comes to economic governance, a number of scholars have raised doubts about the sources of autocratic strength. Assuming that a country's economic institutions are primarily shaped by its political institutions, they argue that the authoritarian elite have incentives to put in place economic institutions that disproportionately benefit themselves but fail to enhance the economic welfare of broad sectors of society.¹² Such logic holds particularly true for technological innovation. Autocratic governments are less comfortable with the tumult and disruption necessary for radical innovation. Thinking outside the box and challenging standard practices is generally discouraged because it might threaten their ability to control society.¹³ The autocratic resoluteness here turns into a major impediment to technological innovation.

Turning to the context of US-China technology competition, despite the "innovation imperative" that has forced Beijing to elevate the pursuit of innovation to the status of national interest,¹⁴ China has yet to outperform its major competitors and some of the causes, according to some observers, are systemic. For instance, the top-down nature of the political system has limited the space for policy

¹⁰ Christopher Darby and Sarah Sewall, "The Innovation Wars: America's Eroding Technological Advantage," *Foreign Affairs* 100, no. 2 (March/April 2021), pp. 142-153. Also see Graham Allison, "Is China Beating America to AI Supremacy?" *National Interest*, December 22, 2019 (<https://nationalinterest.org/feature/china-beating-america-ai-supremacy-106861>).

¹¹ James Mulvenon, "A World Divided: The Conflict with Chinese Techno-Nationalism Isn't Coming – It's Already Here," *War on Rocks* (<https://warontherocks.com/2021/01/a-world-divided-the-conflict-with-chinese-techno-nationalism-isnt-coming-its-already-here>), January 28, 2021.

¹² Most famously, see Daron Acemoglu and James Robinson, *Why Nations Fail: The Origin of Power, Prosperity, and Poverty*, Crown Publishing Group, 2012. It is worth noting that Acemoglu and Robinson recognize that by putting in place inclusive economic institutions, autocrats could fix this economic problem in theory. But they argue that this is difficult, if not impossible, in practice because it would undermine the autocrats' own base of power by enriching individuals and businesses outside of the government.

¹³ Matthew Kroenig, *The Return of Great Power Rivalry: Democracy versus Autocracy from the Ancient World to the U.S. and China*, Oxford University Press, 2020, p. 21.

¹⁴ Andrew B. Kennedy and Darren J. Lim, "The Innovation Imperative: Technology and US-China Rivalry in the Twenty-first Century," *International Affairs*, Vol. 94, No. 3, 2018, pp. 553-572. According to the authors, it is imperative that the rising, particularly middle-income, states like China become more efficient through innovation as they have passed the first stage of industrialization, for which further capital investment faces diminishing returns.



experimentation, much less for innovative practices on the ground.¹⁵ Others point out that due to its essentially statist and protectionist approach to S&T development, the Chinese government has been, and will continue to do so, struggling to leverage its massive resources and assets to deliver desired effects.¹⁶

In short, there are seemingly incompatible perspectives as to how well China can compete with the US, particularly in the sphere of technological innovation. What is missing here, therefore, is the possibility that the governing system of China has both weaknesses and strengths, some of which are attributable to its authoritarian character but some of which are not. Though largely overlooked in the current geopolitical context, political economists focusing on China have long discussed what characterizes the state's approach to formulating strategies for resource allocation and implementing them, a question recently addressed under the theme of Chinese state capitalism.¹⁷ The next section examines various arguments surrounding China's political economy and distils some key implications to be explored in the following empirical sections.

2.2. Shifting the Focus: The Mechanisms and Evolution of State Capitalism in China

For the past few decades, scholars of the political economy of development have recognized a range of productive roles for the state in guiding economic development, with some even heralding the arrival of "state capitalism" as a viable alternative to market-oriented development.¹⁸ Debates on the relationship between state intervention and a range of important phenomena, from economic growth and competitiveness to political stability and inclusion, still rage on as scholars attempt to identify the precise mechanisms of intervention and test the effects they create.

In the case of China, the nature of state involvement in the economy has long been debated, mainly in an attempt to explain its rapid economic growth during the reform era. For example, economist Barry Naughton identifies that one of the key factors that led to the dramatic economic

¹⁵ Ryan Haas, "China Is Not Ten Feet Tall: How Alarmism Undermines American Strategy," *Foreign Affairs*, March 3, 2021 (<https://www.foreignaffairs.com/articles/china/2021-03-03/china-not-ten-feet-tall>).

¹⁶ Peter Cowhey, et al, *Meeting the China Challenge: A New American Strategy for Technology Competition*, The 21st Century China Center, UC San Diego School of Global Policy and Strategy, November 16, 2020; Arthur R. Kroeber, *China's Economy: What Everyone Needs to Know*, Oxford University Press, 2016, pp. 64-66.

¹⁷ While recognizing the limits of and controversies over state capitalism as an analytic concept, it is beyond the scope of this article to examine the analytic efficacy of the concept across various fields of discipline. For a recent critique of state capitalism, see Ilias Alami and Adam D. Dixon, "State Capitalism(s) Redux? Theories, Tensions, Controversies" *Competition & Change*, Vol. 24, No. 1, 2020, pp. 70-94.

¹⁸ Peter Evans, *Embedded Autonomy: States and Industrial Transformation*, Princeton University Press, 1995; Stephan Haggard, *Developmental States* (Elements in Politics of Development Series), Cambridge University Press, 2018; Aldo Musacchio and Sergio G. Lazzarini, *Reinventing State Capitalism: Leviathan in Business, Brazil and Beyond*, Harvard University Press, 2014.



development was an authoritarian political system that successfully evolved out of socialist planning. China's transition strategy was the "re-purposing" and "incentivizing" of government bodies; re-purposing was intended for co-opting existing organizations into the new economic environment, and incentivizing was for aligning government officials with economic growth.¹⁹ In a similar vein, economist Chenggang Xu attributes China's spectacular growth to a "regionally decentralized authoritarian system" in which highly motivated subnational governments "initiate, negotiate, implement, and resist economic reforms."²⁰

Looking deeper into the mechanisms of central-local dynamics, which has been the central theme of reform-era China's political economy, political scientist Yuen Yuen Ang argues that China's economic development was realized as a result of what she refers to as "directed improvisation." That is, central reformers direct (not dictate) by authorizing the boundaries of localization through nationally issued mandates, but it is the local governments that improvise solutions to locally specific and ever evolving problems.²¹ The consequence is a whole variety of subnational political economies within China where the pattern of success varies across time and place. If there is a common ground to the wide-ranging development models, it is the party's role as a "director," allowing policy innovation tailored to changing conditions by providing the bureaucracy with direction and incentives.²²

By highlighting the distinctive role of the party, Ang's argument implicitly sheds light on the critical aspects of the fragmented authoritarianism often referred to in the context of Chinese policy processes. Its chief proposition is that the authority for policy formulation and execution in China is not concentrated at the party center, but instead diffused across a complex structure in which the bureaucratic systems of the party, government and military are intricately woven together both vertically and horizontally. As such, policy processes in China are more of a negotiation than coercion, and more incremental than sweeping, enabling ground-level actors to effectively adapt to shifting conditions.²³

Meanwhile, more recent debates about Chinese state capitalism have centered on the role of state-owned enterprises (SOEs), which, according to many commentators, represent a remarkable

¹⁹ Barry Naughton, "China's Distinctive System: Can It Be a Model for Others?" *Journal of Contemporary China*, Vol. 19, No. 65, 2010, pp. 454-456.

²⁰ Chenggang Xu, "The Fundamental Institutions of China's Reforms and Development," *Journal of Economic Literature*, 2011, Vol. 49, No. 4, pp. 1078-1079.

²¹ Yuen Yuen Ang, *How China Escaped the Poverty Trap*, Cornell University Press, 2016, pp. 73-102.

²² Yuen Yuen Ang, "The Real China Model: It's Not What You Think It Is," *Foreign Affairs*, June 29, 2018 (<https://www.foreignaffairs.com/articles/asia/2018-06-29/real-china-model>). For a similar observation, see Kellee Tsai, "Off Balance: The Unintended Consequence of Fiscal Federalism in China," *Journal of Chinese Political Science*, Vol. 9, No. 2, 2004, pp. 1-27.

²³ Kenneth Lieberthal and Michel Oksenberg, *Policy Making in China: Leaders, Structures, and Processes*, Princeton University Press, Ch.1.



change in the way the Chinese state intervenes in the economy.²⁴ For example, Naughton and Tsai contend that since the early 2000s a “stable and mutually reinforcing arrangement of political and economic institutions” has emerged in China, with the “state sector” – firms that are majority owned by various levels of the party-state – as its core element. As a consequence, the position of SOEs has stabilized, and the role that they play in the overall economy has changed in important ways. Most notably, political leaders have developed new justifications for state enterprises in which security – including traditional national defense and now “economic security” as well – is increasingly invoked as a rationale for state ownership.²⁵

However, it is also worth noting that more radical efforts have been made, especially since the start of the Xi administration, to expand the reach of the party-state with a view to integrating fragmented elements both within the state and the market. To be sure, some commentators discount the novelty of recent shifts, noting that similar efforts have been made in the past,²⁶ while others raise questions about their effectiveness. For example, characterizing the Belt and Road Initiative (BRI) as a national mobilization campaign, Ye argues that while originating from the need to deal with shifting domestic and international challenges, BRI and mobilization under its name intensifies fragmentation and results in the decentralized implementation that diverges from the rhetoric of the strategy.²⁷

Nevertheless, an increasing number of observers are now calling attention to significant changes to the political and economic architecture that have characterized Chinese state capitalism, whether the new construct be stylized as a “CCP Inc.”²⁸ or “hybrid capitalism”²⁹ or “the investor state.” For instance, Chen and Rithmire document the rise of a novel form of state intervention – the expansion

²⁴ Barry Naughton and Kelee Tsai, eds., *State Capitalism, Institutional Adaptation, and the Chinese Miracle*, Cambridge University Press, 2015; Yasheng Huang, *Capitalism with Chinese Characteristics: Entrepreneurship and the State*, Cambridge University Press, 2008; Li-Wen Lin and Curtis J. Milhaupt, “We Are the (National) Champions: Understanding the Mechanisms of State Capitalism in China,” *Stanford Law Review*, Vol. 65, No. 4, 2013, pp. 697-759; Roselyn Hsueh, *China’s Regulatory State: A New Strategy for Globalization*, Cornell University Press, 2011; Mark Wu, “The China ‘Inc.’ Challenge to Global Trade Governance,” *Harvard International Law Journal*, Vol. 57, 2016, pp. 1001-1063; Chen Li, “Holding ‘China Inc.’ Together: The CCP and the Rise of China’s Yangqi,” *China Quarterly*, Vol. 228, 2016, pp. 927-949.

²⁵ Naughton and Tsai 2015, *op. cit.*, pp. 9-11.

²⁶ Kjeld Erik Brødsgaard, ed., *Chinese Politics as Fragmented Authoritarianism: Earthquakes, Energy, and Environment*, Routledge, 2018, Ch. 1.

²⁷ Min Ye, “Fragmentation and Mobilization: Domestic Politics of the Belt and Road in China,” *Journal of Contemporary China*, Vol. 28, No. 119, 2019, pp. 696-711. A similar observation can also be found in Yuen Yuen Ang, “Demystifying Belt and Road: The Struggle to Define China’s Project of the Century,” *Foreign Affairs*, May 22, 2019, where the author attributes the widespread confusion surrounding BRI to Beijing’s policy-making traditions, including the ‘policy campaign’ and ‘deliberate ambiguity.’

²⁸ Jude Blanchett, “From ‘China Inc.’ to ‘CCP Inc.’: A New Paradigm for Chinese State Capitalism” *China Leadership Monitor*, No. 66, Winter 2020, pp. 1- 12. See also Nicholas R. Lardy, *The State Strikes Back: The End of Economic Reform in China?*, Peterson Institute for International Economics, 2019; Elizabeth C. Economy, *The Third Revolution: Xi Jinping and the New Chinese State*, Oxford University Press, 2018.

²⁹ *The Economist*, “Blooming for the Glory of the State,” August 15, 2020.



of state capital beyond ownership of state firms. The investor state, as they argue, is different from the existing model in its introduction of new agents to distribute state capital to firms and new mechanisms through which states monitor and influence business actors.³⁰ More fundamentally, Milhaupt and Zheng challenge the standard dichotomy between SOEs and private enterprises by arguing that the current institutional environment results in virtually all large firms – irrespective of ownership – having close connections to state actors and agencies, access to state largesse, and a role in carrying out the policies of the party.³¹

In short, at the most basic level, it is apparent that understanding Chinese state capitalism as a unitary control of economic entities by the central government may lead to a misunderstanding of China's policies. Yet this does not mean that policy implementation is rarely aligned with the intentions of the central leadership, because the carefully designed incentive mechanism based on the party's power over personnel decisions has functioned to ensure consistency for policy processes.

Simultaneously, debates continue over whether and how state capitalism has transformed itself as China finds herself in a different stage of development, and faced with an increasingly competitive international environment. Key questions include: Does the party still define and practice its role as a director rather than a dictator? Will the same incentive mechanism, which successfully instructed local bureaucrats to achieve rapid growth, be equally effective in responding to more complex developmental needs such as technological innovations? To what extent are Chinese SOEs functioning as the agents of transformation, and what has been the focus of SOE reforms? What policy instruments and resources has the new administration mobilized in order to enhance industrial competitiveness?

The MCF strategy, provided the assumption that it is an integral element of the whole-of-society approach to building a technologically advanced and militarily powerful state is correct, will provide fertile ground for exploring these questions, particularly with regard to the evolving character and mechanisms of Chinese state capitalism. Furthermore, examining the structure and processes of MCF policy development will advance our understanding of how effectively new actors and methods are operating in resource allocation and management. The next section begins by providing a definition of the MCF strategy and discussing some of the main underlying drivers.

³⁰ Hao Chen and Meg Rithmire, "The Rise of the Investor State: State Capital in the Chinese Economy," *Studies in Comparative International Development*, 55, 2020, pp. 257-277.

³¹ Curtis Milhaupt and Wentong Zheng, "Beyond Ownership: State Capitalism and the Chinese Firm," *Georgetown Law Journal*, 103, 2015, pp. 665-722.



3. The Political Economy of Military-Civil Fusion Strategy

3.1. What is MCF?

Before exploring the institutional arrangements and policy processes of the MCF strategy, I would like to clarify as a starting point that MCF is one of the most ambitious industrial policies that the Chinese state has put forward in recent years to reform the sectoral structure of the economy.³² Specifically, the aim of the initiative is to strengthen the competitiveness of selected industries, particularly in high-tech sectors, by means of a wide range of military-civilian cooperation and competition. Hence, as far as the principal motive is concerned, a commonly-held view of MCF as a strategy designed to advance weapons production by promoting private injections – particularly in the form of capital or technology – into the defense sector represents only part of the whole picture. As will be shown below, the MCF strategy targets a range of strategic sectors, with a focus on efforts for reforming R&D, production, and procurement systems within those sectors.³³

Still, simply stating a desired or expected outcome is not enough to indicate the extent of ambition associated with the MCF initiative, as well as its novelty, even if that statement is issued by an authoritative entity. To be considered as an industrial policy, there has to be a *costly intervention* into the real economy with significant resource efforts, including the direct cost of subsidies and preferential taxation, or the indirect cost of regulatory barriers and protectionist policies used to nurture a targeted sector. Furthermore, as discussed in the previous section, the Chinese state appears to have made significant efforts to recalibrate party-state relations, restructure its bureaucracy, and even mobilize private agents to respond to emerging developmental and strategic imperatives.³⁴ As will be

³² Here I adopt a narrower, more clearly specified, definition of industrial policy as “selective, targeted government intervention that attempts to change the sectoral structure of the economy that are expected to offer better growth than would occur in the (non-interventionist) market equilibrium.” For a brief discussion over the definition of industrial policy, see Barry Naughton, 2021, *The Rise of China’s Industrial Policy, 1978-2020*, Universidad Nacional Autonoma de Mexico, pp. 18-20.

³³ Some may object to characterizing MCF as an industrial policy. For example, Naughton, despite acknowledging that MCF “will be a long-term trend in China’s military industrial management system,” discounts that “on balance, it makes sense to treat the defense sector as a *special case*, driven primarily by *non-economic* considerations.” Naughton 2021, *Ibid.*, p. 26 (emphasis added). Yet, as will be shown below, challenging – even negating – the *special* status of the defense sector is precisely the proclaimed goal of key MCF policies, and it is hardly simple to distinguish between non-economic and economic factors that may affect China’s recent industrial policies, which makes them even more distinctive from previous policy efforts. For the latter point, see, for instance, Loren Brandt and Thomas G. Rawski, eds., *Policy, Regulation, and Innovation in China’s Electricity and Telecom Industries*, Cambridge University Press, 2019, pp. 21-22.

³⁴ This “political” cost of an industrial policy has been overlooked or underexplored in the existing economic and management literature. Yet, given the ‘negative externalities’ generated from, for instance, Xi’s efforts at centralizing policy processes, this lack of attention may lead to misunderstandings of the staying power of associated initiatives.



shown in the next sections, the MCF strategy entails a substantial amount of political, administrative, and economic resource efforts, resulting in a gradual upgrading of related industries that otherwise would not have occurred.

3.2. Why MCF?

The MCF strategy is a groundbreaking move, but the Xi administration was not the first to conceive the idea of enhancing manufacturing and R&D capabilities through military-civilian spillovers. As many commentators have noted, efforts at restructuring military-civilian relations toward economic development can be traced back to the early years of the reform era, and the SOE reform policies of the late 1990s share a motivation to boost the competitiveness of the defense industry.³⁵ In addition, most of the individual policy measures currently being implemented were proposed by the Hu Jintao administration under the then new slogan of “military-civil fusion.”³⁶

However, this continuity with previous administrations and their policies does not undermine the groundbreaking nature of the MCF policies driven by the Xi administration. Of particular notice is that barrier-free cooperation and competition between the defense and civilian sectors for technology innovation are positioned as a new development model that binds the military and economy together.³⁷ Behind this new positioning, along with the present leadership’s intention to differentiate its policies from previous administrations, lies an important change in the strategic environment, specifically the intensification of strategic competition with the US.

A related and equally important factor is the sputtering Chinese economy. Growing strategic competition with the US has made it an urgent priority to construct a national defense system capable of coping with perceived changes in the strategic environment, such as the advancement of military technologies and changes in the forms of war, which require an investment of resources exceeding

³⁵ For Deng Xiaoping’s earlier initiative at reforming the defense industry, see Tai Ming Cheng, *Fortifying China: The Struggle to Build a Modern Defense Economy*, Cornell University Press, 2009, Ch. 3; National Institute for Defense Studies, *NIDS China Security Report 2021: China's Military Strategy in the New Era*. For the efforts at reforming the defense industry in the Jiang Zemin era, see Evan S. Medeiros, et al, *A New Direction for China’s Defense Industry*, Rand Corporation, 2005, pp. 22-49.

³⁶ For the contents of and specific challenges faced by the MCF policy in the Hu-era, see National People’s Congress Financial and Economic Affairs Committee, ed., *A Study on Military Civil Fusion Development Strategy*, China Financial and Economic Publishing House, 2010 (NPC Study on MCF thereafter). Although titled as a study, the book is a collection of exceptionally candid reports about the challenges of MCF policy implementation compiled by the responsible entities across the government and the military.

³⁷ “Opinion on the Integrated Development of Economic Construction and National Defense Construction” (July 2016) was published as a theoretical basis to upgrade the military-civil fusion policy into a national strategy as discussed below.



previous levels in terms of both quality and quantity.³⁸ On the fiscal front, however, preferential and additional allocations of resources to national defense construction cannot be expected, due to slowing economic growth and increased social welfare costs. In addition, the patterns of budget allocation within the military indicate that efforts at reducing costs through personnel downsizing, among others, are not enough to meet the expanding needs for equipment modernization.³⁹

However, this growing financial pressure confronted by the People's Liberation Army (PLA) represents only a part of the challenge that current strategic competition with the US poses to Beijing.⁴⁰ Given that China's defense R&D expenditure, for instance, comes from mostly non-military and gradually diversified sources of funding,⁴¹ more fundamental issues stem from the changed nature of military technology and innovation. Recent studies on military innovation claim that military technology has become dramatically complex, so much so that copying advanced weapon systems and replicating their performance have not become easier, as many believe, but rather have become more difficult.⁴² Citing the case of China's decades-old endeavor to copy fifth-generation jet fighters, Gilli and Gilli show that China has struggled enormously to replicate some of the most advanced military technology (in this case, turbofan engines and avionics), even with its expanding domestic investment and global access to foreign technology.⁴³ Although few studies have explicitly suggested that this

³⁸ National Institute for Defense Studies, *NIDS China Security Report 2021: China's Military Strategy in the New Era*, p. 59.

³⁹ The State Council Information Office (2019), *China's National Defense in the New Era* (p. 23).

⁴⁰ Another explanation for MCF focuses on the perceived shift in the form of warfare from "informatized" (信息化 *xinxihua*) to "intelligentized" (智能化 *zhinenghua*) war. For example, Richard A. Bitzinger, "China's Shift from Civil-Military Integration to Military-Civil Fusion," *Asia Policy*, Vol. 16, No. 1 (January 2021), pp. 5-35; NIDS China Security Report 2021, p. 58.

⁴¹ For an evidence-based discussion on China's defense expenditure, see Nan Tian and Fei Su, *A New Estimate of China's Military Expenditure*, SIPRI, January 2021; Meia Nouwens and Lucie Beraud-Sudreau, "Assessing China's Defense Spending: Proposal for New Methodologies," IISS, March 20 2020.

⁴² Michael C. Horowitz, *The Diffusion of Military Power: Causes and Consequences for International Politics*, Princeton University Press, 2010; Peter J. Dombrowki and Eugene Gholz, *Buying Military Transformation: Technological Innovation and the Defense Industry*, Columbia University Press, 2006; Andrea Gilli and Mauro Gilli, "The Diffusion of Drone Warfare? Industrial, Infrastructural, and Organizational Constraints," *Security Studies*, Vol. 25, No. 1 (Winter 2016); Yu-Ming Liou, Paul Musgrave, and J. Furman Daniel III, "The Imitation Game: Why Don't Rising Powers Innovate Their Militaries More?" *Washington Quarterly*, Vol. 38, No. 3 (Fall 2015), pp. 157-174; Eugene Gholz, "Systems Integration for Complex Defense Projects," in Guy Ben-Ari and Pierre A. Chao (eds), *Organizing a Complex World: Developing Tomorrow's Defense and Net-Centric Systems*, Center for Security and International Studies, 2009, pp. 50-65.

⁴³ Andrea Gilli and Mauro Gilli, "Why China Has Not Caught Up Yet: Military-Technological Superiority and the Limits of Imitation, Reverse Engineering, and Cyber Espionage," *International Security*, Vol. 43, No. 3 (Winter 2018/2019), pp. 141-189. Instead, scholars have pointed out that China's performances in "absorbing" foreign military technology have been uneven across different sectors but overall brought significant success. See Tai Ming Cheng (ed), *Forging China's Military Might: A New Framework for Assessing Innovation*, Johns Hopkins University Press, 2014; Tai Ming Cheung (ed), *The Chinese Defense Economy Takes Off: Sector by Sector Assessments and the Role of Military End Users*, Institute on Global Conflict and Cooperation, University of California, 2013.



technological challenge has led to Beijing's increased interest in integrating military and civilian sectors, the discussion below clearly indicates that growing complexity of military technology provides the CCP leadership with powerful imperatives to further the development of MCF.

3.3. Politics of MCF Strategy

As an initial response to worsening economic and strategic situations, the previous administration under Hu Jintao rolled out a set of MCF policies from a number of directions. However, due to structural problems inherent both in policy implementation and the defense industrial system, Hu's new policy initiatives were not able to bring a sufficiently broad range of changes to deliver outcomes as expected. To be sure, this is not to say that the Hu administration's attempts to further boost MCF policy failed to make any difference. Rather, they laid bare what constituted the core impediments to implementing the urgent task of enhancing the innovative capacity of China's defense industry among others, and what measures must be taken to overcome them. This was the starting point from which Xi began to grapple with the new and old issues of MCF.

In order to reinvigorate the momentum of MCF policy to carry out specific reforms, the Xi administration came up with two institutional innovations. First, Xi presented an ideational foundation on which relevant actors share the goal of MCF and coordinate their preferences on policy priorities and means. Secondly, Xi made significant changes to the organizational structure for policy implementation by strengthening the party's coordinating capacity, which culminated in the establishment of the Central Commission for Military-Civil Fusion Development (CCMCFD) in January 2017. In short, Xi's innovations are clearly intended to address and overcome the fragmented nature of China's policy processes, a necessary condition to ensure that an industrial policy of this scale can deliver results as expected.

3.3.1. Redefining Purpose

Various reports note that prior to 2012, it was widely believed among policymakers that a major obstacle to implementing MCF was the lack of a shared understanding about the long-term goal, priorities, and implications of the initiative. Even after recognizing this as a (somewhat natural) result of a growing conflict of national and sectoral interests, internal observers stressed the need to entwine MCF policy into the overall socio-economic development strategy, thereby creating a shared sense of



purpose across the bureaucracy.⁴⁴ More specifically, they proposed to elevate MCF policy to a national strategy, and draw up comprehensive and specific plans in tandem with the national Five-Year Plan.⁴⁵

Since he took office in late 2012, Xi frequently mentioned in public his willingness to inherit and develop Hu's initiatives on MCF. For instance, speaking at an expanded meeting of the CMC in December 2012, a critically important event in which a new commander-in-chief assesses the previous leadership's achievements and states his overall policy agenda, Xi noted that "we have only just emerged from an initial phase of MCF-style development."⁴⁶ It was as early as March 2014 that Xi referred to MCF as a national strategy, explaining that MCF development concerns both national security and China's overall development. Further, at the plenary meeting of the PLA delegation at the session of the National People's Congress held in March 2015, Xi remarked that he ponders how to balance development and security in the formulation of the overall national strategy, and that the elevation of MCF development into a national strategy represents an answer.

The watershed moment for MCF policy came on July 2016 when the Opinion on the Integrated Development of Economic Construction and National Defense Construction (2016 Opinion) was released by the CCP Central Committee, the State Council, and the Central Military Commission (CMC). Two points deserve special attention. One is that the issuing authority encompasses the party, the state, and the military, which represented a significant departure from the preceding years during which Xi's remarks on MCF were primarily directed at a military audience. It now became apparent that MCF policy was placed on the list of tasks for which the party is responsible.

Another related and notable feature of the 2016 Opinion is its content. First, it attaches a special importance to MCF policy by positioning it as a new strategy for governing the relationship between economic and military development. It may have reminded policy insiders of Jiang Zemin's attempt to redress the relationship between economic and military development in 1997, which signaled a radical reform of the defense industry. Secondly, the 2016 opinion not only proclaimed the upgraded status of MCF as a national development strategy but also specified the main domains for policy formulation and implementation.⁴⁷ Thirdly, it is also noteworthy that the document used the term goal

⁴⁴ Examples of conflicts of interests in the realm of MCF include the fear of the defense enterprises that the increased entry of civilian entities may lead to encroachment of the concentrated, monopolized structure of the defense industry, as well as concerns on the part of the military about the possibility of losing posts due to the "outsourcing" of various military services. NPC Study on MCF, 2010, p. 7.

⁴⁵ NPC Study on MCF, 2010, p. 23.

⁴⁶ Zhongguo Renmin Jiefangjun Zongzhengzhibu [The People's Liberation Army General Political Department], *Xi Jinping Guanyu Guofang he Jundui Jianshe Zhongyao Lunshu Xuanbian* [Collection of Xi Jinping's Important Speeches on National Defense and Military Construction], 2014, p. 50, 52.

⁴⁷ Six key domains were identified, which include fundamental (基础 jichu), manufacturing (产业 chanye), science and technology (科技 keji), education resources (教育资源 jiaoyu ziyuan), social services (社会服务 shehui fuwu), and emergency and public safety (应急和公共安全 yingji he gonggong anquan).



(目标 *mubiao*) to denote a navigational point toward which effort should be directed, rather than the intended effect from deepening MCF.⁴⁸ In short, the 2016 Opinion is believed to be the only public (partial summary) authoritative document on MCF development to date. Since then, MCF has come to the fore and entered a stage of rapid development.

3.3.2. Making Bureaucracy Work

Another institutional innovation that Xi put in place to promote MCF policy was the strengthening of the party's role in guiding and coordinating policy implementation.⁴⁹ Prior to 2012, nearly all policymakers and commentators pointed out that a lack of high-level guidance ("top-level design" in Chinese terms) and overall coordination represented the biggest impediment in the push for the MCF strategy. Contrary to the conventional view that Hu Jintao lacked both the will and the skills to coordinate the competing interests of China's increasingly fractious bureaucracy, Hu made some important moves intended for doing this. Of particular relevance regarding MCF was the establishment of the Ministry of Industry and Information Technology (MIIT), a new cabinet-level ministry in 2008, and a bureau-level agency specializing in civil-military integration within it.

This administrative reform merits emphasis in two respects. First, it suggested that MCF had already begun to be considered as an independent policy area that requires focused, comprehensive organizational support. It is worth noting in this regard that the Commission for Science, Technology, and Industry for National Defense (COSTIND), a ministry-level agency that regulates Chinese defense R&D and production, was merged into MIIT and renamed as the State Administration for Science, Technology, and Industry for National Defense (SASTIND). This radical move,⁵⁰ according to Cheng and others, inherited an ongoing effort to introduce a more independent regulatory structure for China's defense industry, while linking it to broader regulatory frameworks over strategic industries.⁵¹

⁴⁸ Stone and Wood, *China's Military-Civil Fusion Policy*, 2021, p. 26.

⁴⁹ For discussions on the strengthening of the party's role in policy processes, see David M. Lampton, "Xi Jinping and the National Security Commission: Policy Coordination and Political Power," *Journal of Contemporary China*, Vol. 24, No. 95, 2015, pp. 759-777; Barry Naughton, "Shifting Structures and Processes in Economic Policy-making at the Center," in Sebastian Heilmann and Matthias Stepan, ed., *China's Core Executive: Leadership Styles, Structures, and Processes under Xi Jinping*, Mercator Institute for China Studies, June 2016.

⁵⁰ As a result of reform, COSTIND's status was demoted by two administrative ranks from a state commission to a state administration subordinate to MIIT.

⁵¹ Tai Ming Cheng, "An Uncertain Transition: Regulatory Reform and Industrial Innovation in China's Defense Research, Development, and Acquisition System," in Tai Ming Cheng (ed), *Forging China's Military Might: A New Framework for Assessing Innovation*, Johns Hopkins University Press, 2014, pp. 50-51; Yeo Yookyung, "Remaking the Chinese State and the Nature of Economic Governance? The Early Appraisal of the 2008 'Super Ministry' Reform," *Journal of Contemporary China*, Vol. 18, No. 62, 2009, pp. 729-743.



Second, a related issue was the coordination of an increasing number of entities involved in MCF. It is conceivable that at the time of the reform, MIIT as a “super ministry” was expected to play a coordinating role, minimizing turf wars that had previously stymied policy-making and enforcement.

Along with this government restructuring, the Hu administration also launched a process for enacting a national law especially designed to promote MCF. The idea behind the initiative to draft a “MCF promotion law” [军民融合促进法 *Junmin Ronghe Cujinfa*] was that such a law would act as an effective coordination mechanism by giving clear guidelines about the policy priorities and responsibilities of relevant agencies and departments, among others.⁵² These efforts to provide a legal foundation for MCF were inherited by the Xi administration in which the law-drafting processes were taken over by the National Development and Reform Commission (NDRC) and the PLA’s Strategic Planning Department.⁵³

Compared to Hu’s approach, Xi’s solution to the issue of overall coordination was innovative in two ways. First, he created a new national-level coordinating body, the CCMCFD and placed it within the party hierarchy. This represents a marked break with the Hu-era (and the early years under Xi) when the main coordinating authority was vested with MIIT, a government entity within the State Council.⁵⁴ Second, by becoming the chair of the body, Xi demonstrated his personal commitment to enforcing the MCF strategy, according it much-needed “central” authority. To be clear, however, the creation of CCMCFD was not unique given the proliferation of party-based coordinating mechanisms in the Xi-era.⁵⁵ As Lampton notes in his explanation for the establishment of the Central National Security Commission, Xi sought to “make the party the key instrument in both developing and implementing policy.”⁵⁶

In addition to exhibiting the central leadership’s commitment, the creation of CCMCFD served to signify which organizations were to play a leading role in policy coordination. For example, leaders were present at a CCMCFD meeting in October 2018 from the following entities: NDRC, State-owned Assets Supervision and Administration Commission (SASAC), All-China Federation of Industry and

⁵² NPC Study on MCF, 2010, pp. 23-26.

⁵³ Guofang Daxue Guofang Jingji Yanjiu Zhongxin, *Junmin Ronghe Fazhan Baogao 2013* [Report on the Development of Military-Civil Fusion 2013], Guofang Daxue Chubanshe, 2013, pp. 5-6, 14-15; Elsa B. Kania, “Strategic Planning in China’s Military: Which organizations are responsible for the PLA’s high-level thinking on reform and innovation?” *The Diplomat*, June 7, 2017. The PLA’s Strategic Planning Department was established in 2011 as a second-level department subordinate to the General Staff Department.

⁵⁴ Specifically, starting in late 2012, an inter-governmental (including relevant military entities) coordinating organ (军民结合部际协调小组 *Junmin Jiehe Buji Xietiao Xiaozu*) was established with the MIIT head as the group leader. Guofang Daxue Guofang Jingji Yanjiu Zhongxin 2013, *op. cit.*, p. 17.

⁵⁵ For the formation of “cross-system” small leading groups in the Xi-era, see Wen-Hsuan Tsai and Wang Zhou, “Integrated Fragmentation and the Role of Leadership Small Groups in Chinese Politics,” *The China Journal*, No. 82, pp. 1-22.

⁵⁶ David M. Lampton, “Xi Jinping and the National Security Commission: Policy Coordination and Political Power,” *Journal of Contemporary China*, Vol. 24, No. 95, 2015, p. 779 (emphasis added).



Commerce, the CMC Strategic Planning Office (SPO), Tsinghua University, Shaanxi Province, Qingdao City, and Aviation Industry Corporation of China, Ltd. Particularly salient on the list were NDRC and CMC SPO which jointly replaced MITT as the main coordinating bodies for the government and the military.⁵⁷ The implication was clear: the authority of overall coordination was shifted from the government to the party, and the new coordination mechanism contained the much-needed connection between the government and the military, strengthening its coordinating capacity.⁵⁸

Taken together, Xi's approach to revamping the organizational configuration of policy coordination for MCF shows both his personal agenda and the institutional strategy to realize it. Following such moves by the party center, a wave of creation of province-level commissions for Military-Civil Fusion Development has spread across China along with the emergence of various mechanisms for military-civilian cooperation.⁵⁹

3.4. Economics of MCF Strategy

With the goals redefined and coordination structure revamped, a series of specific policies were rolled out to enable the “deep fusion” to take place. Though it covers a wide range of issues, MCF strategy from the onset has stressed its implications for the defense industrial sector. In other words, the nature of MCF as an industrial policy is obvious given the timing of its emergence and the relative weight of concrete policy initiatives. This section discusses first where MCF is focused, and then the implications for the defense industry.

3.4.1. Consolidating and Opening Up Defense Industry

As noted earlier, the origin of MCF strategy can be in part traced back to earlier efforts starting in the late 1990s to transform China's defense industry. Following these reforms, a general consensus has emerged that China's defense industry gained a higher degree of efficiency and competitiveness. Indicators include overall improvements in the quality of domestically manufactured weapon systems

⁵⁷ It was after the promulgation of the 2016 opinion that NDRC installed a bureau in charge of coordinated development between economy and national defense, and this bureau was incorporated into the CCMCFD as a directing office together with CMC SPO.

⁵⁸ Brian Lafferty, “Civil-Military Integration and PLA Reforms,” in Philip C. Saunders, et al., eds., *Chairman Xi Remakes the PLA: Assessing Chinese Military Reforms*, National Defense University Press, 2019, pp. 627-660.

⁵⁹ Mei Yang and Ji Jianqiang, “Tiaokuai Zhili: Junmin Ronghe Fazhanzhong de Difang Zhengfu” [Governance under Vertical Lines and Horizon Lumps: Local Government in Civil-Military Integration Development]. *Journal of Beijing Institute of Technology* (Social Science Edition) Vol. 23, No. 3, 2019, pp. 133-142.



and a significant drop in the import of weapons, especially from Russia.⁶⁰ In their 2005 study, Medeiros et al. find that “China’s defense sectors are producing a wide range of increasingly advanced weapons that, in the short term, are relevant to a possible conflict over Taiwan but also to China’s long-term military presence in Asia.”⁶¹ This resonates with the general evaluation of insiders that efforts to restructure the defense industry resulted in a marked progress in defense R&D and production capabilities, which placed the industry at an initial stage of a new “small core, large collaboration” structure.⁶²

Nevertheless, even prior to 2012, there was a growing awareness that under the new circumstances of a sluggish economy and intensifying strategic competition with the US, China’s defense industry required a deeper transformation. Based on interviews with relevant actors in 2012, Tai Ming Cheng summed up the worries as follows:

There is a real risk that the defense industry could find itself trapped partway through a transition in which key segments are left unreformed or partially reformed because of strong opposition from various interest groups. The negative consequences from such selective reform has so far been masked by the abundance of resources that have flowed through the defense industry and RDA (R&D and acquisition) system since the late 1990s. But any tightening in budgets because of slowing economic growth could expose the fragility of this deeply fragmented and flawed system.⁶³

It is thus no coincidence that central policymakers and scholars have labelled the erection of an advanced defense S&T and industrial base as the top priority of MCF.⁶⁴ The principal strategy here is a “deep fusion” with the civilian industrial base. Although key objectives in this domain have not been well defined, clearly identified priorities include, (1) the restructuring of the defense technological industrial base (DTIB), and (2) the further opening up of the defense market to civilian entities.

⁶⁰ The U.S.-China Economic and Security Review Commission, “Chapter 4 Section 2 – An Uneasy Entente: China-Russia Relations in a New Era of Strategic Competition with the United States,” in *2019 Report to Congress of the U.S.-China Economic and Security Review Commission*, pp. 324-326.

⁶¹ Medeiros et al. 2005, p. 1. For a similar assessment, see Richard A. Bitzinger, 2016, “Reforming China’s Defense Industry,” *The Journal of Strategic Studies*, Vol. 39, No. 5-6, pp. 766-768. According to Bitzinger, aside from a few “pockets of excellence,” the Chinese military-industrial complex by the late 1990s demonstrated little capacity for designing and producing relatively advanced conventional weaponry.

⁶² Guojia Guofang Keji Gongyeju Xinwen Xuanquan Zhongxin (ed). *Guofang Keji Gongye Kexue Fazhan Wenji* [Collected Works on National Defense S&T and Industry Development], Beijing: Renmin Chubanshe, 2010, pp. 3-10.

⁶³ Tai Ming Cheng, 2014, p. 43.

⁶⁴ Huang Yusen, Ji Jianqiang, and Guo Qin, “Zhongguo Tese Xianjin Guofang Keji Gongye Tixi Neihan yu Shixian Lujing,” [The Connotation and Realization Path of the Advanced Defense Science and Technology Industrial Base], *Kexue Jinbu yu Duice* [Science & Technology Progress and Policy], No. 15, August 2019.



One of the problematic features of the Chinese defense industry, which many have claimed is the biggest obstacle to enhancing innovative capacity, is “sectorization,” that is, the monopolistic structure of each sector and, more precisely, each conglomerate. The latter controls a host of subsidiaries, research institutes, and factories within a vertically integrated structure.⁶⁵ Critics maintain that this “self-contained system” [自成体系 *zicheng tixi*] has its merits (i.e., fulfilling pre-set manufacturing goals) but clearly is flawed in generating genuine competition, which, in turn, may lead to a “disruptive” (instead of adaptive) type of innovation. A case in point is the industrial R&D structure. While essentially forming the “central force” of China’s defense R&D capabilities, a great number of research institutes nested within individual defense enterprises have proven unable to engage in long-term, foundational research projects due to their prioritization of sectoral (or group) interests and short-term production needs.⁶⁶

The monopolistic and closed nature of defense enterprises stands out even against the standards of Chinese state capitalism. As Lin and Milhaupt note, the governance structure of China’s SOEs can generally be characterized as a “networked hierarchy.” Each conglomerate tends to be vertically integrated and narrowly focused on a particular sector but “individual groups are often linked through joint ventures and equity ownership to groups in the same or complementary industries,”⁶⁷ allowing them to exploit complementarities to further advance state interests.⁶⁸ While military experts argue that China should benchmark against western defense contractors, such as Lockheed Martin, in pursuing “specialized” development,⁶⁹ the structural problems the defense industry retains indicates that a priority will be placed on bringing the industry more up to the standard practice of Chinese state-owned firms in other strategic industries.⁷⁰

While intersectoral barriers within the industry remain in place, observers recognize that over the years the barriers have been somewhat lowered between civilian and defense industrial bases. This

⁶⁵ The state-owned enterprise reforms of the late 1990s created a management structure in which the entire process, from research and development to production of related equipment, is managed by a dozen defense conglomerates. Such enterprise groups have been formed in each area of the defense industry such as shipbuilding, weapon production, and aviation.

⁶⁶ Yan Jianfeng and Tang Bo, “Woguo Jungong Keyan Yuansuo de Gongneng Dingwei ji Fenlei Gaige” [Reform of Our Country’s Defense R&D Institutes’ Functions and Categories] *Xibeigongye Daxue Xuebao* [Academic Report of Xibeigongye Daxue University], No. 2, 2018, pp. 88-95.

⁶⁷ Li-Wen Lin and Curtis J. Milhaupt, “We are the (National) Champions: Understanding the Mechanisms of State Capitalism in China,” *Stanford Law Review*, Vol. 65, No. 4, 2013, p. 699.

⁶⁸ The missile sector, long considered as a “pocket of excellence” within China’s troubled defense-industrial establishment, differs from other sectors in that not all missiles are produced by the subsidiaries of only two conglomerates in the aerospace sector. Instead, companies controlled by other sectoral conglomerates, such as aviation and weapon systems, are also involved in missile research, development, and production. Evan S. Medeiros et al., *A New Direction for China’s Defense Industry*, pp. 52-53.

⁶⁹ Jiang et al., *Initial Discussion on the Military-Civil Fusion Strategy*, pp. 78-79.

⁷⁰ Indeed, there was a widely-held belief that the narrowness of the industry is much more serious than other sectors. NPC Study on MCF, 2010, pp. 29-35.



is the result not just of the long-running practices of defense firms that manufacture commercial products (军转民 junzhuamin), but also of efforts to increase the entry of civilian entities into the defense market (民参军 mincanjun). It should be noted, however, that the latter attempt has primarily been focused on increasing the industry's efficiency by outsourcing low-efficiency and high-cost elements to the private sector. Specifically, private enterprises have been mainly involved in parts or auxiliary products and their input only happens at a later stage of the production process (see Figure 1).

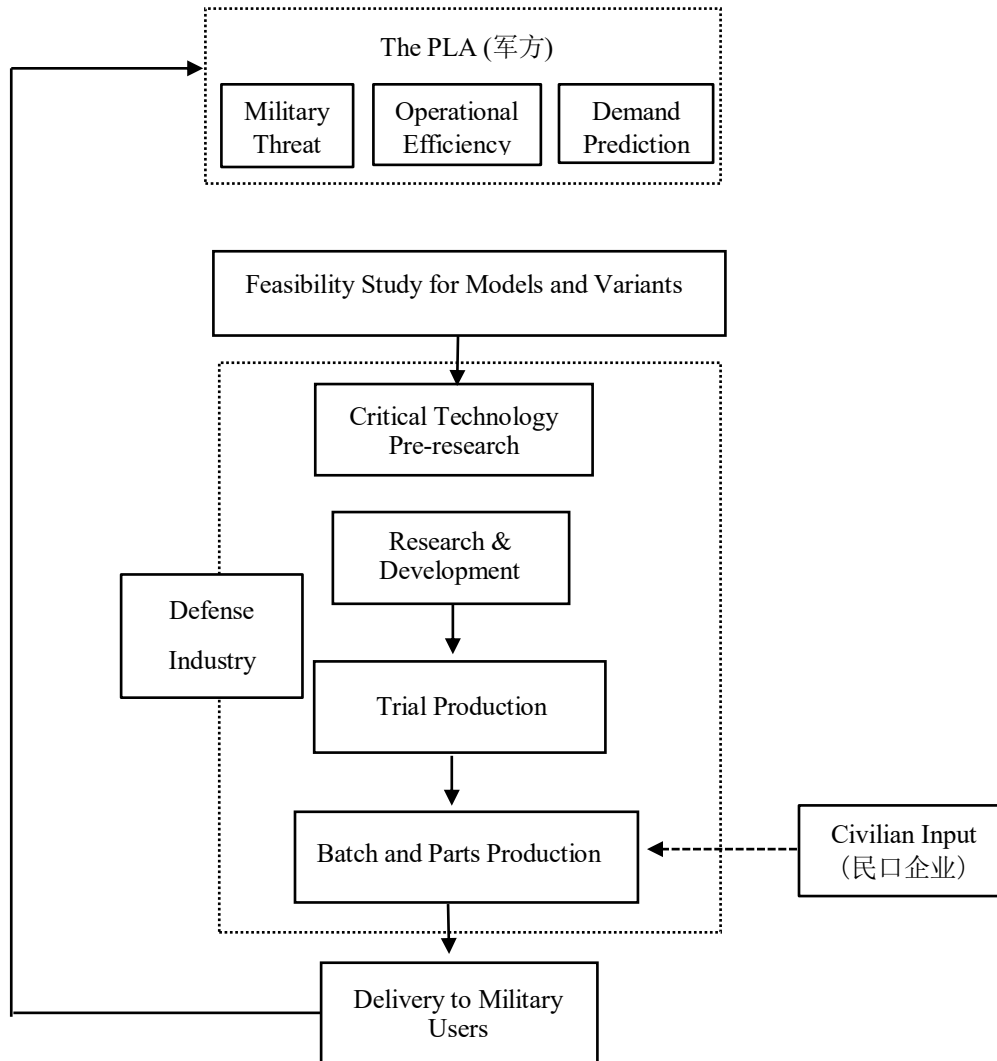


Figure 1: Defense R&D and Production Process under the Current Sectorized System

(Source: Zeng Li, ed., *Zhongguo Tese Junmin Ronghe Guofang Ziyuan Peizhi yu Guanli Tansuo* (part I) [Research on the Military-Civil Fusion National Defense Resource Allocation and Management with Chinese Characteristics], Jingji Guanli Chubanshe, 2016, p. 200)



As such, there has been little discussion regarding the potential channels through which civilian entities can join the upper chain of the production, and enhance the industry's overall innovative capacity.⁷¹

What concrete policy measures then have been set forth to further MCF development in this critical domain? The most authoritative guiding document was Document No. 91 released by the State Council in November 2017.⁷² It outlined 29 measures in seven broad areas and called for the formation of a “small core, large collaboration, specialized and open research & production system.”⁷³ According to the document, “small core” refers to core strategic capabilities that are likely to remain in the hands of state-owned defense conglomerates. “Large collaboration” and “openness” characterize an approach to essential and general capabilities that entail the joint development of state and market forces.

At the center of efforts to form a “small core” is the ownership reform of defense conglomerates. With the exception of industries engaged in strategic weapons development, defense groups and their subsidiaries are required to reform their shareholding systems.⁷⁴ Despite being a core agenda in Hu Jintao's MCF strategy, the ownership reform failed to materialize under Hu. It was advanced in earnest a decade later in July 2017, when the State Council issued an ultimatum ordering a complete transition of central SOEs from “people-owned” to “wholly state-owned” to be completed by the end of 2017.⁷⁵ This transition is the prerequisite for subsequent reforms aimed at introducing private capital into the system through a variety of channels, often referred to as “market-based diversified financing.” If the transition happens smoothly, the defense industry landscape, at both the parent company and subsidiary levels, is expected to shift considerably through a host of activities, including reorganization, restructuring, privatization, asset sales, and mergers and acquisitions.⁷⁶

Finally, the key measures for “large collaboration and openness” include an action plan to reduce the number of licenses that are mandatory for civilian companies. In October 2017 the CMC Equipment Development Department (EDD) announced that two of four licenses had been merged,

⁷¹ Zeng Li, ed., *National Defense Resource Allocation and Management with Chinese Characteristics under Military-Civil Fusion (Part 1)*, p. 176-178.

⁷² The full name of the document is the “Guanyu Tuidong Guofang Keji Gongye Junmin Ronghe Shendu Fazhan de Yijian” [Opinion on the Promotion of National Defense S&T Industry's Deep Development of Military-Civil Fusion].

⁷³ Tai Ming Cheng and Eric Hagt, *China's Efforts in Civil-Military Integration, Its Impacts on the Development of China's Acquisition System, and Implications for the U.S. Acquisition Research Program Sponsored Report Series*. Monterey, CA: Naval Postgraduate School, 2020, pp. 24-27, 31-32.

⁷⁴ Categories include wholly state-owned, state-owned absolute control, state-owned relative control, and state-owned equity participation, etc.

⁷⁵ “69hu Yangqi Jituan Rengwei Quanmin Suoyouzhi? Niandi qian Quanbu Gaiwei Gongsizhi!” [Are 69 Central SOEs still people-owned? All Should be Corporatized by the Year-end!] (www.gov.cn/zhengce/2017).

⁷⁶ Some analysts in China believe that the current state of China's defense industry corresponds to the beginning of the “Golden Decade” of the 1990s in the U.S., characterized by mergers and acquisitions among large defense contractors.



reducing the total number to three and reducing the required time to obtain one by roughly six months. The three licenses include: (1) the Classified Qualification Permit, (2) the Weapons and Equipment Research and Production Certificate, and (3) the Equipment Manufacturing Unit Qualification Permit. Additionally, the 2018 version of the Weapons and Equipment Research and Production License Catalogue issued by SASTIND and EDD includes 285 items in seven categories, a 62% reduction compared to the 2015 edition catalog. The 2018 edition reportedly only retained items that have a significant impact on national security and public safety, thereby dramatically reducing the number of licenses private companies must acquire before producing certain products.

3.4.2. Let Many MCF Industries Bloom

Despite being a core objective, transforming the defense industry does not represent the whole MCF project being pushed by the Xi administration. The more ambitious – and more distinctive from previous endeavors – element is an initiative to create and develop what is termed as the MCF industry (军民融合产业 *junmin ronghe chanye*) in the localities. This is ambitious because realizing this goal not only necessarily requires commitment from local governments to the overall direction of the MCF strategy, but it also needs their enthusiasm and creativity to be organized in order to deal with expanding and more complex markets.⁷⁷ As discussed in the second section, decentralization has been a key feature of Chinese state capitalism which has proven effective in incentivizing local actors to pursue capitalist agendas. Yet given the challenges specific to MCF policy, most notably of coordinating military and civilian needs, as well as the seemingly changed dynamics of central-local relations, past success does not necessarily guarantee future success.

To date, the rationale of fostering the MCF industry across the nation is relatively clear: leveraging the fruits of civilian innovation for the defense industry, or vice-versa, to promote regional economic development. This is a remarkable shift from the Hu-era when the government mostly emphasized the importance of taking into account national defense needs when planning, for instance, a regional infrastructure-building project.⁷⁸ However, unlike the initiative to restructure DTIB, no central guiding document has been promulgated in this domain and there does not appear to be any shared, if not centrally authorized, standards on procedures and priorities in building local MCF industries. Rather, the central government thus far has been focused on putting in place institutional “platforms” to facilitate communications and collaborations between various public (particularly

⁷⁷ The World Bank and the Development Research Center of the State Council of PRC, *Innovative China: New Drivers of Growth*, World Bank Group and DRC, 2019, p. 31.

⁷⁸ NPC Study on MCF, 2010, pp. 81-82.



military) and private entities.⁷⁹ A case in point is the emergence of various types of MCF service platforms (军民融合服务平台 *junmin ronghe fuwu pingtai*) through which potential participants, including small and medium-sized private companies, can acquire relevant information regarding financial benefits, among others.⁸⁰

Despite the lack of specific action plans and the resulting opportunistic – and messy – behaviors of local enterprises,⁸¹ it can be argued that central planners have been far better positioned to undertake this novel initiative. First, all provincial governments now have a separate organization for policy implementation, which stands in contrast to previous years during which central agencies in charge of MCF affairs (e.g., MIIT bureau of civil-military integration) found it hard to locate local counterparts. A second element that will profoundly influence the way in which governments, defense companies, and private enterprises interact is the tidal wave of government industrial guidance funds (政府产业引导基金 *zhengfu chanye yindao jijin*, or industry funds). Industry funds are initially supplied by the state at multiple levels, for example, central ministries, provincial or municipal governments, and so forth, but are then matched by private funds and managed by private capital management companies.⁸² While these efforts encompass a wide range of traditional and emerging industrial sectors, it consciously links defense and civilian production and R&D capabilities. Indeed, among the now thousands of industry funds that exist, explicit MCF projects have risen as an important portfolio of many local government sponsored industry funds.⁸³

To be sure, the mere creation of another vertical policy system, albeit armed with new financial resources, does not guarantee that local governmental and private entities can create and develop MCF industry with efficiency, and show promise for technological innovation. Nevertheless, provided that the strengths of China's economic governance lie in the creative responses taken at local levels, the central leadership may be cognizant that it is better not to impose excessive regulations and control over policy implementation. It is therefore expected to make efforts to align the preferences of local leadership to the policy intentions of central leadership as far as is possible by providing appropriate incentives, while preventing the overheating of related businesses.

⁷⁹ Yan Jiawei, et al., “Difang Zhengfu Cujin Junmin Ronghe Chanye Fazhan Zhuyao Zuofa” [Main Approaches of Local Governments to Promoting MCF Industrial Development] *Zhongguo Junzhuannmin*, pp.82.

⁸⁰ All provinces have set up similar platforms.

⁸¹ See Guanyu Guifan yi “Junmin Ronghe” Mingyi Kaizhan Youguan Huodong de Tongzhi [Notice on Regulating Activities Conducted in the Name of Military-Civil Fusion], promulgated by the CCMCDP in December, 2017. Examples of the messy reality are abundant. For instance, China's numerous industrial parks and special development zones help create conditions for the development of industry clusters, such as major initiatives for artificial intelligence and high-performance computing in Tianjin. However, these local initiatives can be inconsistent despite efforts for greater standardization.

⁸² Chen and Rithmire, “The Rise of the Investor State,” 2020, pp. 261-262.

⁸³ For some figures of MCF GGF, Cheng and Hagt, “China's Efforts in Civil-Military Integration,” 2020, pp. 18-19.



4. Measuring and Assessing Policy Effect: A First Cut at the Data

A comprehensive evaluation of an industrial policy is generally hard to make, and impossible in the case of China given the paucity of available information. The same holds particularly true for MCF strategy given the nascent nature of its policy development. Thus, in this section I will mainly be concerned with showing the current state of policy processes, particularly by identifying how Xi's institutional innovations have changed bureaucratic structures and processes for policy formulation and implementation, and assessing the impact on key priority areas identified in the previous section.

In doing so, I use an original dataset of MCF-related policy documents promulgated during the years of Xi's leadership (2013-2020). During this period, more than 30 different central organizations affiliated with the party, government, and military issued, independently or jointly, no less than 150 policy documents pertaining to the promotion of MCF.⁸⁴ These documents take a whole variety of forms, ranging from decisions to opinions to formal laws, and they represent the diversity of policy instruments as well as the scope of the resources Beijing seeks to leverage. To be sure, most policy documents do not directly address an evaluation of the policy effect on, for example, the behaviors of ground-level actors, or the innovation capacity of target industries.⁸⁵ Nevertheless, these documents do contain information regarding the status of policy implementation at various levels, including many

⁸⁴ The data collection took place in two steps. First, we searched for and obtained policy documents that contain either an explicit reference to or a separate clause about MCF through government-affiliated official databases: 国家法律法规数据库 (<https://flk.npc.gov.cn/index.html>) and 北大法宝 (<https://www.pkulaw.com>). Second, we checked the homepages of both provincial commissions and information platforms in charge of MCF affairs to ensure that the web-based databases cover the whole range of central and local policy documents. Each observation in the dataset consists of (1) the title of the document, (2) the text content of the document, (3) the issuing agency, and (4) the year and date of issuance. In collecting documents and building the dataset, we extend on the method used in the following articles: Yu Dongping and Mao Zhen, "Zhongguo Junmin Ronghe Shendu Fazhan Zhengce Wenben Lianghua Yanjiu" [A Quantitative Study on the Policy Text of the In-depth Development of Civil-Military Integration in China], *Beijing Hangkong Hangtian Daxue Xuebao*, No. 2, 2020, pp. 1-9; Cheng Zhuo, "Woguo Junmin Yitihua Chuangxin Tixi Gainian, Yanjin he Jucuo Yanjiu: Jiyu Zhengce Wenben de Lianghua Fenxi" [A Study on the Concept, Development, and Policy of the National Military-Civil Innovation System: Quantitative Analysis of Policy Text], *Junmin Liangyong Jishu yu Chanpin*, No. 6, 2019, pp. 30-34.

⁸⁵ As Cheng and Hagt point out, the notion of output for a MCF economy must differ "because one is not just looking at technological innovations emerging from the system, but the level of collaboration and integration between the civilian and defense sectors that generated the output." Cheng and Hagt, 2020, p. 42.



forms of civil-military interactions around the country, which, under close scrutiny, enables us to get some grasp of the development of MCF.

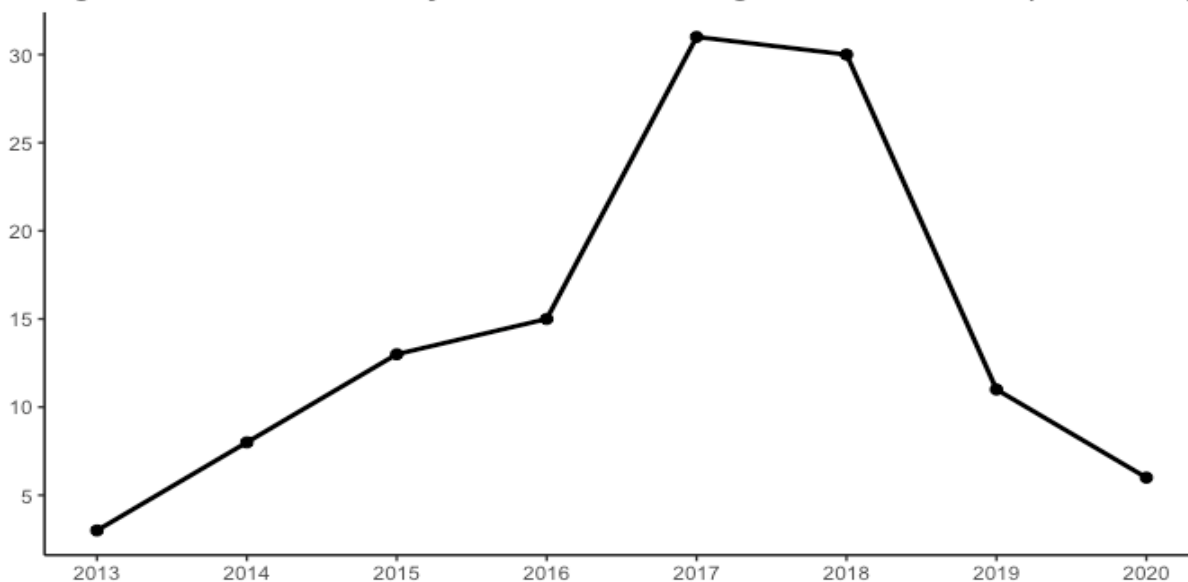
4.1. Policy Process Transformed?

It is true that Xi's attempts to repurpose the pre-existing MCF initiative and establish a national level coordinating body, or CCMCFD, represent a remarkable institutional development in their own right, which has led many observers to forecast a forceful execution – and success – of MCF strategy. The arguments over Chinese state capitalism, however, express some reservations on such optimistic forecasts. Significantly, there remains a question concerning the extent to which this institutional breakthrough can resolve the fragmentation of authority in policy processes, or enhance the Chinese state's coordinating capacity for promoting an industrial upgrade. Given the inertia of pre-existing arrangements, together with the increasing number of stakeholders in MCF, it is hard to presume that the conflicting interests and behaviors of government and military organizations can easily be coordinated toward maximizing policy effects.

Figure 2 shows that the number of policy documents increased steadily during the first four years of the Xi leadership and that there was a sharp hike in 2017 and 2018, which was followed by a significant drop, a trend that has continued to date. The surge in 2017 and 2018 can be attributed to the promulgation of the 2016 Opinion and the establishment of the CCMCFD in January 2017. This interpretation is supported in part by Figure 3 which indicates that the CCMCFD itself constituted an important source for policy documents issued in those years.

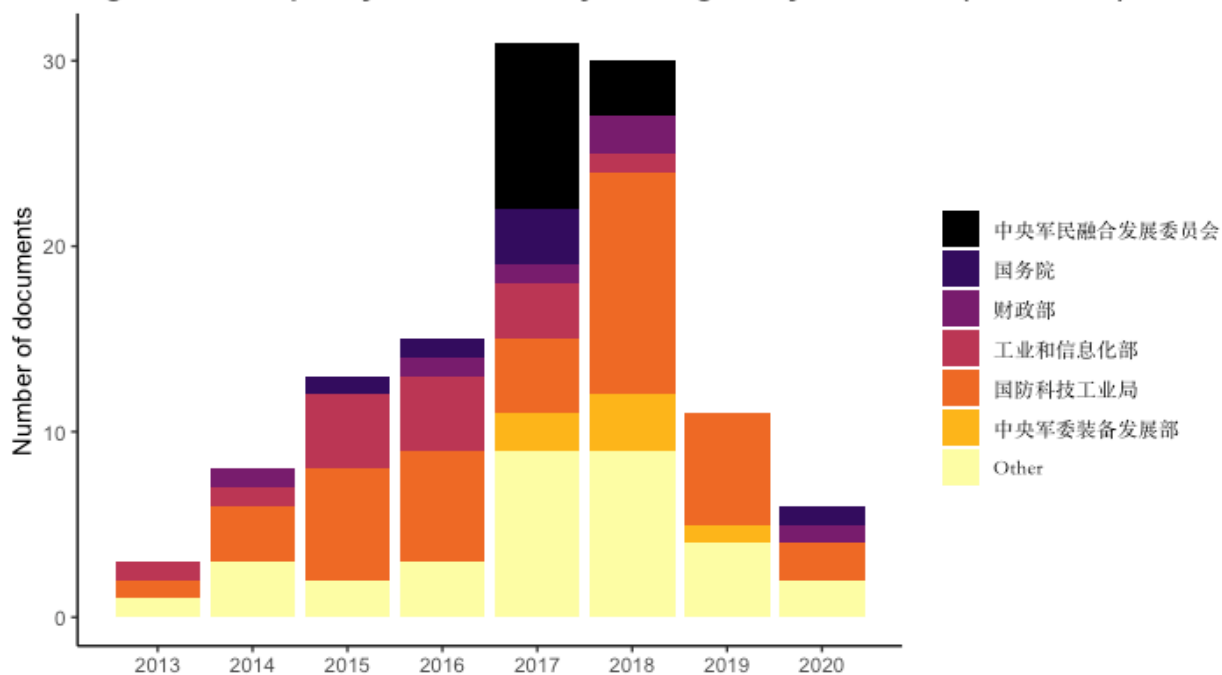


Figure 2. Number of Policy Documents relating to MCF over time (2013-2020)



Data Source: MCF documents dataset ver.1

Figure 3. MCF policy documents by issuing entity over time (2013-2020)



Data Source: MCF Documents Dataset Ver.1

However, the central coordinating role of the CCMCFD seems to have lessened in more recent years. Most notably, as Figure 4 shows, the new commission ceased to issue policy documents after 2019 – at least publicly. Moreover, since its second meeting in October 2018, no official statements



have been publicized regarding the CCMCFD's activities, including on new formal meetings. What accounts for the CCMCFD's sudden "disappearance" from the MCF policy scene? A possible explanation is that now that central guiding mandates have been promulgated, the MCF strategy has entered into a new phase of policy implementation, with coordinating authority delegated to other agencies, for instance, NDRC and CMC SPO that have been designated as new secretariats of the CCMCFD. In other words, it is possible that other agencies may have taken over the CCMCFD's role. In which case, which organization is now taking a leading coordinating role?

Figure 4. Central MCF policy network between 2013 and 2016

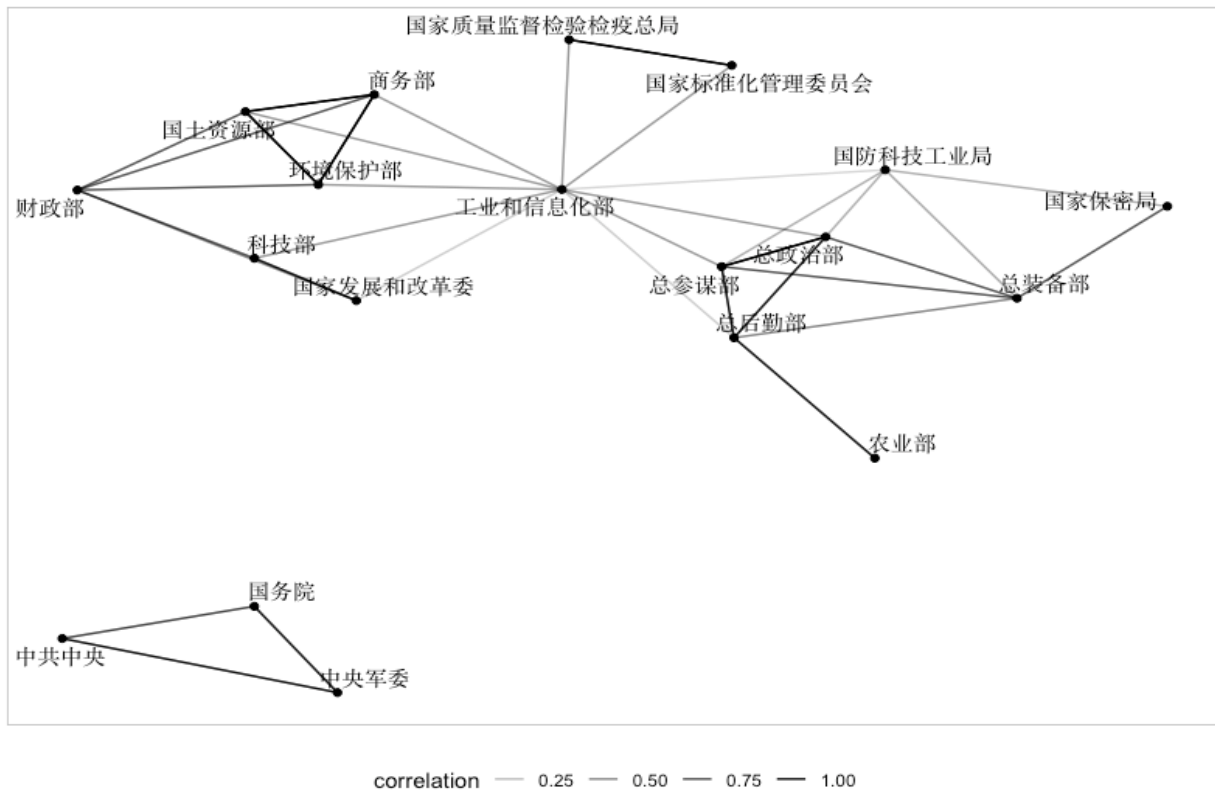
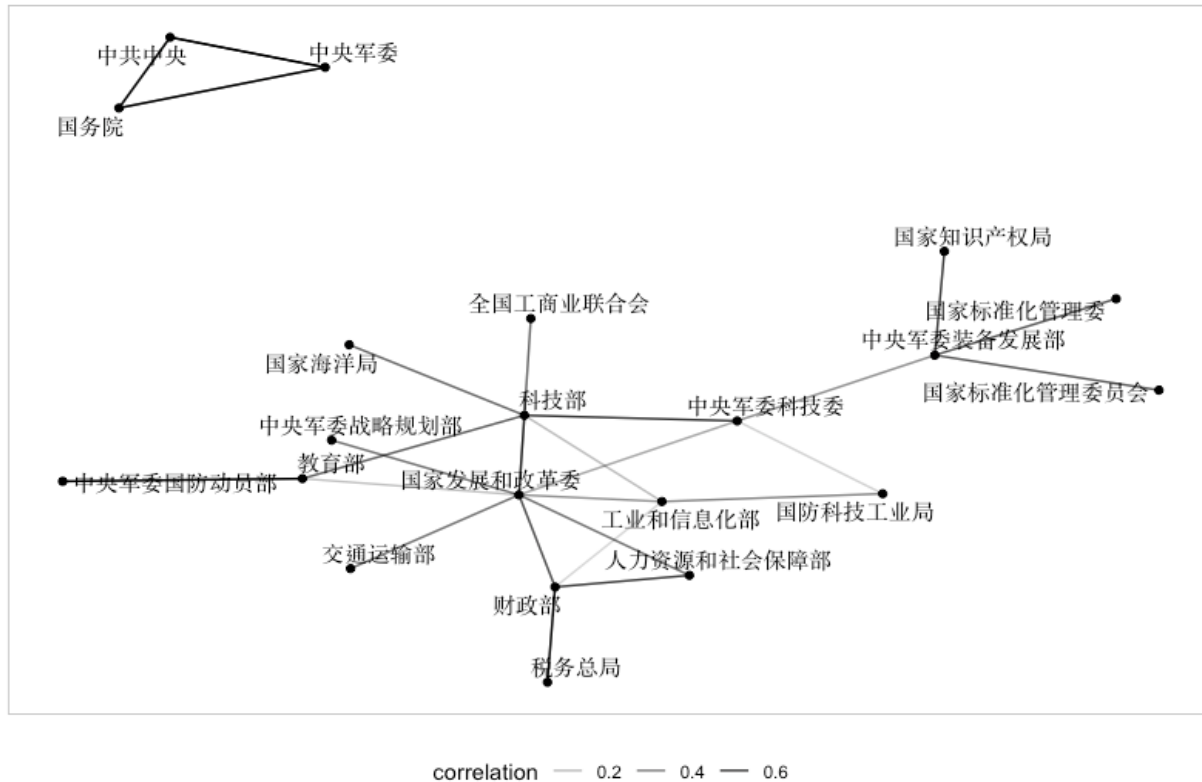




Figure 5. Central MCF policy network between 2017 and 2020



Figures 4 and 5 demonstrate the structures of organizational linkages before and after 2017, which are constructed by drawing on the fact that many policy documents are issued jointly by multiple agencies.⁸⁶ Prior to 2017, it appears that the MIIT served as the main coordinating body, illuminating the significance of the 2008 administrative reform as discussed above. The centrality of the MIIT is especially salient in linking relevant entities from the government and the military. However, since the establishment of the CCMCFD in January 2017, the MIIT seems to have been somewhat marginalized and instead, the NDRC has apparently played a larger role in coordinating government agencies. On the military side, there seems to be no central actor as yet who connects PLA actors involved in MCF.⁸⁷ In short, the formation of the CCMCFD has spawned a central bureaucratic environment in which an increased number of government and military agencies are creating more diverse policy coalitions, reflecting a substantial expansion both in scope and resources for the MCF strategy.

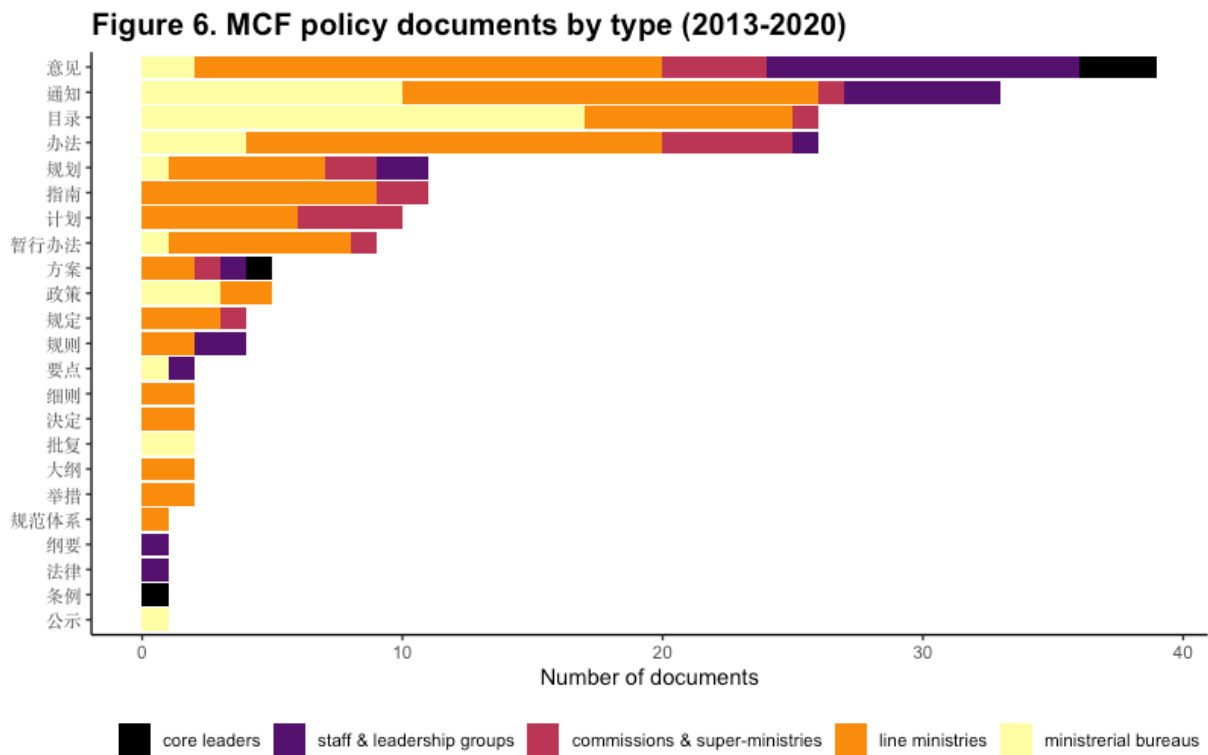
This diffuse nature of policy processes is also reflected in the type of policy documents. As Figure 6 shows, there are as many as 23 different types in which MCF-related policy documents have been promulgated. The most common types include Opinions [意见 yijian], Notices [通知 tongzhi], Lists [目录 mulu], and Methods [办法 banfa], which in total account for about 60 percent of the types

⁸⁶ About 60 percent of the policy documents are issued by multiple agencies.

⁸⁷ This is mainly due to ongoing military reforms in which pre-existing general departments were dismantled.



of documents. This variation in document forms is in part due to the large number of agencies involved in MCF, as well as the different administrative rank of issuing agencies. That said, as Figure 6 also indicates, there is no direct relationship between a document type and the authority level of the issuing entity, as is evidenced by the documents issued under the title of Opinion. In this connection, it is also important to note that only 1 MCF-related law has been promulgated thus far. Given the emphasis that policymakers have consistently put on the enactment of a national MCF law, its delay strongly suggests the difficulty with coordinating the conflicting interests of relevant stakeholders.

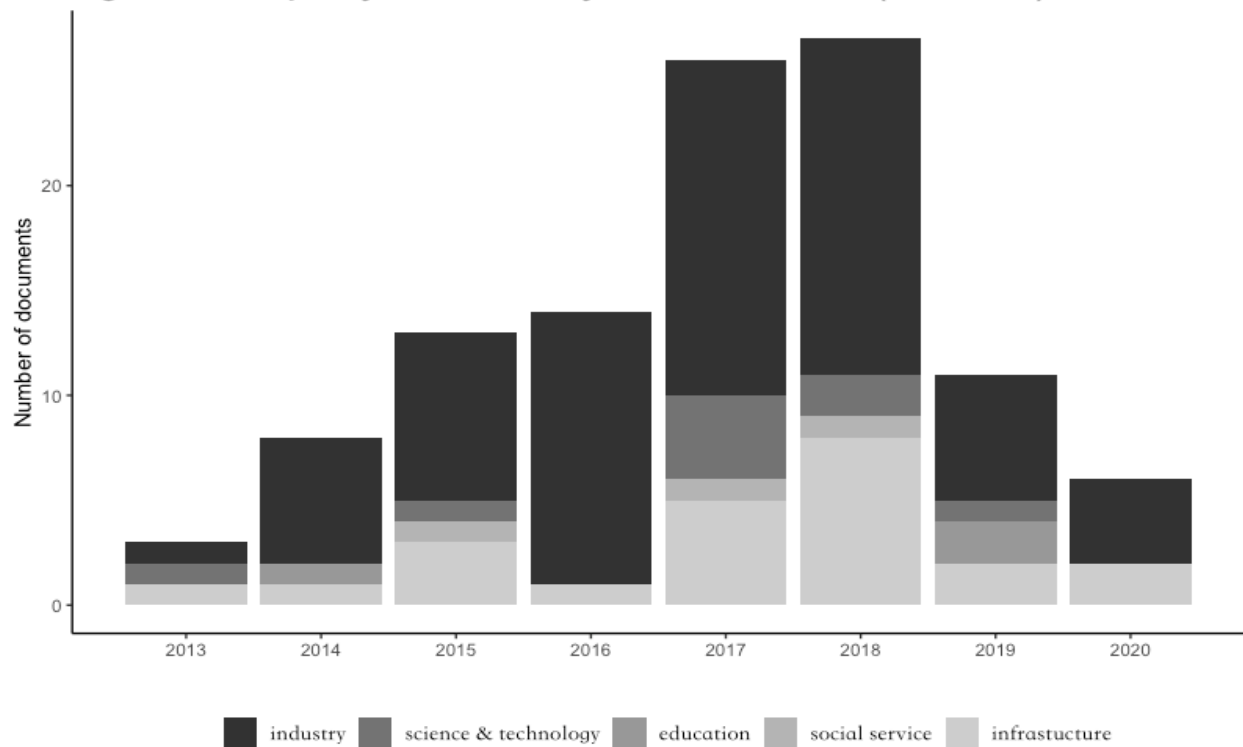


4.2. The Defense Sector Upgraded?

If coordination is a problem that is hard to resolve because of the potential stakes in a policy change, one of the biggest stakeholders in implementing MCF strategy would be the defense industry. As discussed earlier, central planners have made it clear that state-owned defense firms are both the main targets as well as the key enforcers of the MCF strategy. Indeed, as Figure 7 exhibits, the industry domain has been dominating the MCF policy scene, a trend that has further stood out since 2017.



Figure 7. MCF policy documents by domain over time (2013-2020)



Data Source: MCF Documents Dataset Ver.1

Despite the heightened attention, the policy effects on the defense industry have been limited. First, when it comes to the formation of “small core,” there has been little progress in consolidating individual sectors, much less breaking up sectoral barriers for the upgrading of the entire industry. For example, the process of reforming the ownership structure of defense firms as a prerequisite for consolidation has been slow, with, according to a government report, the combined rate of asset securitization stalled at 49 percent as of 2018.⁸⁸ This rate, despite being a marked increase from 22 percent in 2007,⁸⁹ is still remarkably low compared to the level of the overall central SOEs. A greater opening to the capital markets offers the potential both for a large, new source of financing and, perhaps more importantly, the introduction of greater accountability and competitiveness into a closed defense enterprise system.

Second, the reform of the R&D structure of the defense industry has also encountered considerable difficulty. In July 2017, SASTIND issued an Opinion announcing the initiation of

⁸⁸ Shangwubu Touzi Cujin Shiwuju [The Investment Promotion Bureau of the Chinese Ministry of Commerce], 2018, “Junmin Ronghe Keji Zhuangbei Chanye Touzi Cujin Baogao” [Report on Investment Promotion in Military-Civil Fusion S&T and Equipment Industry], p. 11. A different source estimates the industry’s rate of asset securitization at 33 percent. Cheng and Hagt, p. 231.

⁸⁹ NPC Study on MCF, 2010, p. 23.



ownership structure reforms for the first group of 41 defense research institutes.⁹⁰ As noted earlier, this is another sensitive area where similar efforts were initiated by previous administrations but had resulted in little concrete progress. A SASAC researcher pointed out that these institutions were formerly classified as “public institutions” dependent on state financing and which largely operated outside of the market economy, leading to low rates of commercialization. SASTIND had hoped to complete the first round of reform with a group of 41 institutions by the end of 2018, but progress has been slow. China South Industries Group’s Automation Research Institute, which is also known as No. 68 Institute, appears to be the only one in the group to have actually begun the process in 2018.⁹¹

In short, the Xi administration is facing significant challenges in restructuring the defense industry as the top priority of, and as a necessary pre-condition for, a successful pursuit of MCF strategy. To be sure, as far as the goal of technological upgrading and innovation is concerned, ownership structure reforms, and the “financial fusion” that it desires to achieve, represent only a part of the broader spectrum of MCF-related policy options. Indeed, after 2017 when the central bureaucratic structure was reorganized, massive mergers of defense conglomerates took place in the nuclear and shipbuilding sectors. While conducted under the rubric of sectoral consolidation, these mergers entailed a significant process of asset reorganization by which some private companies with technological resources were incorporated into the industry.⁹²

4.3. MCF Industry Blossomed?

What results have been achieved, then, by the goal of fostering the MCF industry in local regions? One focus when considering this question is the effectiveness of industry investment funds, as new financing schemes, in “guiding” private sector investment and related companies into the defense industry sector. Some previous research has indicated the proliferation of funds openly purporting to invest in “MCF,” among the thousands of industry funds established by local governments. Specifically, it has been pointed out that all province-level governments and many city- and county-

⁹⁰ “Guanyu Jungong Keyan Yuansuo Zhuanzhi wei Qiye de Shishi Yijian” [Opinion on the Corporatization of the Defense Research Institutes], 7 July, 2017

(<http://www.sastind.gov.cn/n152/n6759510/n6759511/c6793425/content.html>).

⁹¹ “Diyu Yuqi? Shoupi 41jia Jungong Keyan Yuansuo Gaizhi Shangbannian Nanwancheng” [Lower than expected? The corporatization of the first 41 group of defense research institutes will be unlikely to be completed in the first half of this year], 24 February, 2019.

(<https://baijiahao.baidu.com/s?id=1626358690683142358&wfr=spider&for=pc>).

⁹² Meia Nouwens, “Is China’s Shipbuilding Merger on Course?” The International Institute of Strategic Studies, Military Balance Blog, 4 September, 2020 (<https://www.iiss.org/blogs/military-balance/2020/09/china-shipbuilding-merger>).



level governments have established industry funds specializing in MCF, and that the scale of these had already grown to USD 40.0 billion by the start of 2019.

However, the effectiveness of policies cannot be judged simply from this growth in the scale of funds. This is because it is uncertain whether these industry funds were actually used in accordance with the original stated purpose of fostering MCF industries. For example, it is unclear whether or not many industry funds established by local governments were actually used effectively to finance SMEs and start-ups with technological capabilities. Recent research has indicated that much of the investment from local government industry funds has been directed towards conventional development projects such as infrastructure and construction, and not towards the strategic industries and emerging industries designated by the central government.⁹³ In other words, for local government, industry funds represent a way to circumvent the limitations currently placed on borrowing through conventional capital markets. In reality, this unchanged focus on conventional investment targets is reflected in the fact that the establishment and management of investment funds are directed by funds management platforms established by local governments.

An even more important issue with regard to the policy effect of industry funds is the fact that these funds remain largely unused. As described above, industry funds characteristically use “social capital” collected through policy support (and small amounts of capital investment) by governments as the source to finance their investment activities. They do not actually invest the money received from governments. For example, one report points out that, as of the end of 2018, only around 40% of the money ostensibly collected for industry funds had actually been invested. This is, the report argues, due to the failure to secure sufficient funds from the private sector.⁹⁴ It has been pointed out that private sector fund managers hesitate to invest in industry funds because of the lack of institutional guarantees regarding market exit (the withdrawal of funding from related projects).

The same sort of defects in the institutional environment designed to encourage participation and investment by private sector companies can be observed in the case of MCF. One issue often cited is the lack of common criteria for identifying the “MCF industries” and “MCF companies” that are to receive policy support. Specifically, the “MCF industries” designated by the party and central government include an extremely broad range of industries, from sectors dominated by defense firms (maritime, space, cyber, etc.), to emerging sectors where private sector companies have technological dominance (new materials, bio, AI, etc.), as well as the development and production of parts and products for both military and civilian use.⁹⁵ One result of this is the regional disparity between

⁹³ Fenghua Pan, et al, “State-led Financialization in China: The Case of the Government-guided Investment Fund,” *China Quarterly*, 247, September 2021, pp. 761-765.

⁹⁴ Cheng and Hagt, 2020, ft 49.

⁹⁵ 师玉朋, 刘海林《军民融合产业内涵及范畴》 [The Meaning and Scope of Military-Civil Fusion Industry], 国防科技, No. 6, 2018, pp. 66-71.



definitions of the “MCF industry,” despite some common elements. In Beijing, for example, aerospace, IT, new materials, advanced equipment, and new energies are classified as “MCF industries,”⁹⁶ while in Hunan Province, a wide variety of industries are designated as key fields for “MCF industries” including, among others, aerospace, shipbuilding and maritime equipment, electronic and satellite communications systems, nuclear energy and nuclear equipment, special materials, and advanced transport methods.⁹⁷

This lack of common criteria regarding target industries has led to a diverse range of policies adopted by local governments with the stated aim of developing “MCF industries.” For example, in the case of Liaoning Province, home to a concentrated collection of weapons equipment manufacturers, policies to support “MCF industries” are centered on tax reductions and rebates, and also include measures such as preferential treatment in obtaining bank loans, increased scientific research funding and scholarships for related research projects, and preferential treatment in government goods procurement. Industry funds are not designated as a policy choice.⁹⁸ By contrast, Sichuan Province, which also has a large number of state-owned defense firms, has not only adopted preferential taxation measures but also established several MCF industry zones within the province, mainly financed by MCF industry funds. The first MCF industry fund set up by Sichuan Province in 2017 targeted 10 projects led by central and local SOEs and private sector companies.⁹⁹

In sum, it must be said that the issue of developing the “MCF industry” has become widely detached from the original policy goal of linking defense firms and private sector companies, and utilizing the strength of each to further boost productivity and technological innovation. This is despite the various support policies currently implemented by local governments (especially provincial-level governments). The status of policy implementation not only reflects regional differences in industry structure but also indicates that the centralization of systems to implement policy attempted by the Xi Jinping government has not achieved the expected results in terms of radically changing the policy behavior of local governments. Of course, it is still too early to declare the failure of MCF policies in local regions. What is certain, however, is that the effectiveness of these policies largely depends on the will and creativity of local governments.¹⁰⁰

⁹⁶ 闫嘉玮, 舒本耀, 万秉承《地方政府促进军民融合产业发展主要做法》 [Main Approaches of Local Governments to Promoting MCF Industrial Development] 中国军转民 [Chinese Military-Civil Transfer], 2019, pp. 81-2.

⁹⁷ 杜家毫《抓住机遇发挥优势做大做强湖南军民融合产业》 [Grab Opportunity and Leverage Advantage to Grow and Strengthen Hunan's Military-Civil Fusion Industry], 军民融合 [Military-Civil Fusion Industry], 2016, p. 91.

⁹⁸ 张儀《辽宁军民融合发展财政支持政策初探》 [An Initial Survey on Liaoning's Financial Support Policy for Military-Civil Fusion Development], 国防科技 [National Defense S&T], 2018, No. 6, pp. 66-71.

⁹⁹ 熊运莲, 危劲松《推动军民融合深度发展的财税政策研究: 以四川为例》 [A Study on Fiscal and Taxation Policy Promoting the Deep Development of Military-Civil Fusion], 西南科技大学学报, 2020, No.1, pp. 6-10.

¹⁰⁰ For a study that argues that the influence of local governments, especially province-level governments, has not dwindled but actually been strengthened under the Xi Jinping government, see Kyle A. Jaros and Yeling Tan,



5. Conclusion and Policy Implications

This article has offered a new perspective on the MCF strategy. Shifting the focus to Chinese state capitalism and its evolving institutional ecology exposes the connection and similarities between the MCF initiative and new industrial policies underway under the current party leadership. This perspective suggests that MCF strategy accompanies a wide range of policy efforts for resource mobilization and allocation – some of which are groundbreaking and some of which are more traditional – aimed at technological upgrading and innovation. Much attention has been directed at the reorganization of the defense industry, particularly central SOEs with no less an emphasis placed on incentivizing private and commercial entities to join and fostering various types of MCF industry in localities.

At the same time, this study demonstrates that this accelerated pursuit of MCF strategy has come at a high cost and that its prospects for successful execution remain uncertain. Politically, while seeking to present a broader rationale for the initiative, the central leadership has also put significant efforts into creating a new organizational constellation for policy implementation in which the party, or Xi himself, took over the role of both overall coordinator and forceful enforcer. This move certainly constitutes an institutional breakthrough, but thus far MCF does not appear to have functioned as a mechanism to coordinate between the interests of governments and related sectors of the military. Economically, while a wide range of financial and institutional resources have already been leveraged to incentivize interactions among state-owned defense firms and private and commercial entities at multiple levels, the outcomes largely diverge from the rhetoric and the goals stated in policy documents.

Given the status of policy implementation, it is difficult to imagine the formation of a system at the national level (a national innovation system) that organically fuses various funding sources from the defense and private sectors, at least in the short term. At the same time, of course, the desire and efforts of the Chinese Communist Party aimed at technological innovation cannot be ignored. As already described, China has dramatically improved research, development, and productive capacity in its defense industry through almost perennial reform efforts. That being said, however, the current MCF strategy does not aim simply to enhance the level of the defense industry. The aim is rather to find a way to fuse together institutions that have functioned independently up until now: the government and the military, defense and private sector companies, existing strategic industries and emerging industries, S&T and industry. This process of experimentation, trial and error will no doubt continue for the time being.

“Provincial Power in a Centralizing China: The Politics of Domestic and International ‘Domestic Space’”, *The China Journal*, 2020, No. 83, pp. 79-104.



In the long run then, will China be able to become more competitive in high-tech industries, and gain the upper hand in technological competition with the US? Obviously, we cannot predict the outcome of strategic competition just by analyzing the endeavors of one of the competitors, because the policy outcome may depend on the response of other competitors. However, the focus of policy implementation in China's case has clearly shifted to the efficient mobilization and utilization of domestic resources. While the international development of MCF through cooperation with foreign companies is put forward as an ideal, it remains almost entirely absent from actual policy. If the purpose of these policies is to build autonomous systems within China, then it is not clear how effective export restrictions and other countermeasures might be in encouraging China to change its strategy.

In this context, if the present study has any significance in considering the future of technological competition with China, then this significance lies in its proposition of the need to completely renew our understanding of the Chinese strategy and policies underlying the term "MCF." At the risk of repetition, the substance of China's current MCF strategy, generally speaking, consists of various policies aimed at enhancing the competitive strength of industries, implemented in line with the various interests and capabilities of diverse actors including related sections of the military and government, SOEs and private sector companies, and central and local governments. Therefore, it is not sufficient to simply interpret the directions and messages emanated from the central party leadership in order to understand the policy effects and long-term influence. Rather, it is necessary to analyze not only the policy choices made by the relevant actors, but also the institutional norms that dictate their behavior, and the interaction between the various organizations. This, then, would be an analysis of the "China model" of policy processes. This point must be stressed, especially given the fact that today, even as the term "MCF" is gradually disappearing from official policy documents, China's strategic policies aimed at building autonomous technological innovation systems are likely to continue into the future.