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China's Quest for Military Technology through Foreign and Civil Sources: Strategic Trends under Xi Jinping and Tactical Adjustments amid Geopolitical Challenges

by Yifei Zhu & Niklas Swanström

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POLICY RECOMMENDATIONS

- Establish a comprehensive oversight framework for dual-use technology transfer to facilitate consensus-building and collective actions within the union.
- Strengthen negotiations and coordination with the US to effectively align policies and bridge regulatory gaps.
- Avoid assuming a leading position in the international technology control regime to hedge against geopolitical risks from a potential second Trump Administration and an increasingly uncooperative China.

Keywords

China

Military Technology

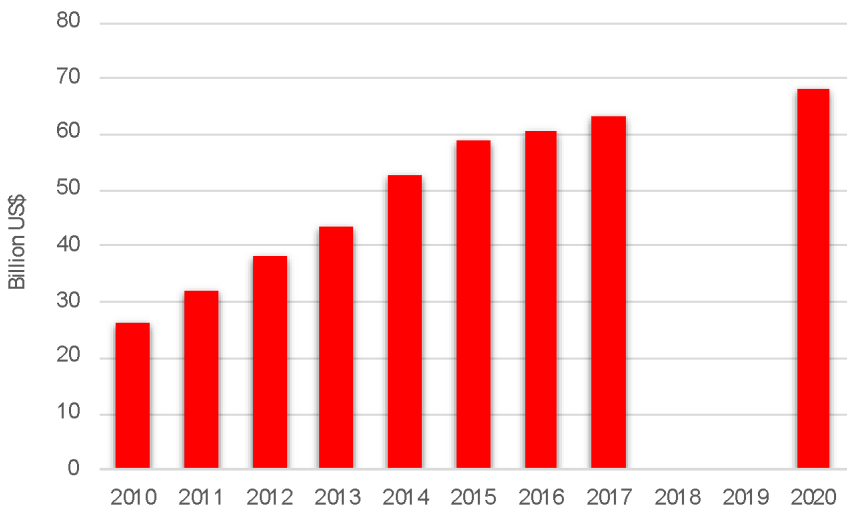
Quest Strategies

GeoPolitics

Forms and Channels of China's External Acquisition

Over the past decades, the military capabilities of the People's Republic of China (PRC) have witnessed remarkable developments. The Chinese People's Liberation Army (PLA) has transformed from a large yet outdated force into a modern great power, with *significant advancements* in air base attack capabilities, air superiority, anti-surface warfare, counterspace operations, cyberwar capabilities, nuclear strength, etc. These achievements are driven by a concentrated campaign for military modernization with a reinforced emphasis on technological upgrading. As the bard chart below illustrates, from 2010 to 2020, the nation's annual military equipment expenditure increased from 26.2 billion US$ to 68.2 billion US$, with the proportion of total military spending increasing to as high as 41.1%.

Chart 1: China's Spending on Military Equipment



Sources: *CSIS China Power Project, UN Office for Disarmament Affairs*

In addition to indigenous innovation within the nation's defense industry, the acquisition of external technology, spanning from military to *dual-use* (i.e., both military and civilian), has played a pivotal role in driving this progress. It's essential to clarify that the term "external" here refers to acquisitions beyond the narrowly defined domestic defense industry, which encompasses mainly arsenals and defense contractors. In this context, China employs two primary forms of external technology acquisition.

Foreign acquisition

This has long been instrumental since the founding of the PRC, with the strategy being applied perhaps more systematically than elsewhere. A joint military-civilian bureaucracy oversees this process, led by the Central Military Commission's *Equipment Development Department* (EDD, 装备发展部) and its civilian counterpart, the *State Administration for Science, Technology, and Industry for National Defence* (SASTIND, 国防科技工业局). Ten state-owned *defence conglomerates*, including Poly Tech., China New Era Tech., and others, are designated for military trading.

Foreign military technology is primarily *obtained* through imports and transfers, with Russia being the top supplier. *Israel* also transferred technology extensively until the early 2000s. However, its engagement with China has significantly decreased afterwards due to strong opposition from the US. Western sources now contribute mainly through dual-use sectors like *commercial aviation*. Additionally, collecting and analyzing open-source information allows Chinese researchers to stay current with global tech advancements. *Overseas talent* exchange and recruitment also play an important role, alongside questionable methods such as *industrial espionage and cyber spying* on both allies and rivals.

Military-Civil Fusion (MCF)

The MCF development was introduced in 2005 and gained momentum after Xi Jinping took power. It is a nationwide initiative aiming to integrate economic growth with security plans to bolster military modernization across various sectors. The *Central Commission for MCF Development* (中央军民融合发展委员会), headed by Xi, serves as the highest policy-making and evaluation authority. Coordinating and implementing agencies under EDD and SASTIND jointly supervise MCF initiatives. The civilian end mainly consists of state-controlled and private commercial enterprises, universities, and other research institutions.

MCF operates by eliminating barriers between military and civilian applications, emphasizing dual-use technology development through investments in homegrown research and development (R&D) and talent acquisition abroad. It also involves expanding civilian participation in defense industry R&D by simplifying review procedures, broadening participation scopes, and subsidizing relevant R&D activities.

Strategic Trends Since Xi Jinping's Power Consolidation

Since ascending to power in 2012, Xi Jinping has committed to expediting the defense and military modernization process with *bold reforms* in the command structure and *robust investment* in military capabilities. With his consolidation of power across the party-state and the army apparatus, his strategic visions are progressively manifested into actionable policies and initiatives, delineating two strategic trends in China's pursuit of defense-related technology.

Technological Autonomy

The predominant goal is increasingly shifting toward technological autonomy. Xi and his advisors contend that essential Chinese technologies in critical sectors remain under foreign influence. Consequently, his defense reforms emphasize nurturing *indigenous, state-of-the-art technologies* imperative for national security, thus maximizing the utility of local technologies and diminishing reliance on external sources. Indicative of this shift is China's reduction in advanced military imports, particularly from Russia, in favor of domestic development.

Contrary to perceptions of diminished foreign technology reliance, China remains actively engaged in acquiring strategically significant technologies that are beyond its current domestic capabilities. Concurrently, it intensifies efforts in *secondary innovation and reverse engineering* of imported knowledge and joint technology projects, especially with *Russia*, expediting the assimilation of external advancements into localized defense capabilities.

Integrating Foreign Quest with MCF

Moreover, a secondary trend is the concerted effort to integrate foreign acquisitions with MCF initiatives. The dual oversight by military and governmental agencies validates this observation. This involves recruiting overseas talent for *dual-use sectors* such as artificial intelligence, quantum communications, and advanced materials. It also includes a *dual-phased approach* where civilian bodies procure dual-use technology under international standards and subsequently channel it into military applications within the domestic MCF framework. This enables China to leverage civilian technologies' military potential and circumvent Western restrictions on military technology access. Notable products include aviation, microchips, advanced computers, and drones, as per a *US official briefing*.

Recent Geopolitical Challenges

The US Tech Restrictions

The US has responded to China's swift military advancement by labeling it a "pacing challenge" in the 2022 *National Defense Strategy*. A series of *measures* have thus been implemented to restrict Beijing's access to military-related advanced technologies, the focus of

which is on the dual-use domain as arms transactions with China have long been prohibited since 1989. Originating during the Trump era, continued and in some instances intensified under the Biden Administration, these measures encompass sanctions against specific Chinese entities, legislation to limit technology-related trade and investment, enhanced scrutiny on cooperation and exchanges, strengthened anti-espionage actions, and heightened coordination with allies and partners to collectively address the challenges posed by China.

The impact of these restrictions remains to be fully assessed, but Washington's "tech choke" strategy has notably limited China's access to critical technology, talent, and, to a lesser extent, capital. For instance, US chip sanctions aim to curb China's progress in emerging technological fields by blocking access to advanced *semiconductor technologies* essential for modern computing and military applications. Consequently, countries, especially those closely allied with Washington, have grown more reluctant to share advanced technologies with China, fearing US-imposed sanctions. This hesitancy affects not only technology transfer but also the *recruitment and retention* of high-tech industry professionals, as access to leading-edge technology is crucial. Additionally, the overall *cautious investment climate*, especially in areas directly targeted by US sanctions, signals broader economic implications.

Russo-Ukrainian War

Russia's invasion of Ukraine in 2022 has further complicated China's geopolitical environment, exacerbating the US-China rivalry. Although not a direct participant, *Beijing faces pressure* from all sides—Russia, Ukraine, and the West—to declare its stance and support their respective goals. Russia seeks various forms of support, especially military-capable hardware and technologies, whereas the US and its European allies expressly demand that Beijing abstain from aiding Russia in ways that contradict their sanctions, with warnings of potential secondary sanctions on Chinese entities.

The ongoing war and deepening West-Russia discord have ripple effect on China's defense defense technology strategy. Combined with secondary sanctions and growing mistrust from the West, there's an acceleration in the de-coupling or de-risking efforts in technology and essential supply chains, as another *EuroHub4Sino policy paper* discuses. Additionally, the war has *interrupted China's arms acquisitions* from Russia and Ukraine, historically significant sources of advanced weaponry for the PLA. The use of *technologies on the battlefield*, such as Ukrainian forces' employment of Starlink satellite links for communication and the destruction of expensive Russian military assets with cost-effective drones adapted from commercial products, has offered Beijing invaluable insights into the future of warfare shaped by emerging technologies.

Tactical Adjustments and Counter-Measures

Beijing asserts that its pursuit of advanced defense technology is a *legitimate sovereign right* and has vowed not to succumb to external pressures. In response to the intensifying "tech choke" efforts, particularly since the onset of the Russo-Ukrainian War, it has adopted a series of tactical adjustments and counter-measures.

Accelerating Technological Autonomy

Beijing has promoted five *prominent scientists* to the second highest decision-making body, underscoring its commitment to technological self-reliance. From 2018 to 2023, *fiscal spending* on science and technology saw an annual increase of 6.4%, reaching 105.67 billion RMB (146 billion USD), while *defense spending* grew by about 7% annually to *1.58 trillion RMB* (0.22 trillion USD). Concurrently, there's been a notable decline in reliance on Russia, although it remains the primary source of China's foreign military procurements. The *reduction in arms imports* by 44% from 2019-2023, compared to the previous five years, indicates positive results toward indigenous development, particularly in sectors like software and microchips. That being said, the efficacy of this strategy remains to be seen, due to Beijing's stringent governance model, entrenched military corruption, sporadic purges of generals, and emerging economic challenges.

Maintaining Strategic Discretion

Previously high-profile initiatives like "*Made in China 2025*" and the "*Thousand Talents Plan*" have been scaled back in visibility. This strategic shift to a more covert approach likely serves to minimize international scrutiny while preserving the momentum of China's technological advancement undetected. However, it complicates external assessments of Beijing's intentions and tactics.

Creating Division and Seeking Cooperation

Beijing exploits the reluctance of European, Japanese, and South Korean entities to decouple or de-risk from the Chinese economy, aiming to *sow division* among US allies and discourage participation in US-led tech restrictions. Meanwhile it seeks to *secure cooperation* to access alternative technology and investment sources, especially from European countries. Yet, this tactic faces limited success, especially among high-tech producers who are increasingly *aligning with Washington's* containment strategies.

Enhancing Anti-sanction Readiness

Despite unprecedented restrictions, Beijing has cautiously avoided retaliatory measures by far due to its limited leverage in cutting-edge technologies. Instead, it focuses on *building legal and administrative frameworks* to counteract future sanctions more effectively. This

includes regulating critical *raw material exports*, signaling China's readiness to employ economic measures as a counterbalance to external pressures.

Policy Recommendations to the EU

In conclusion, China's active procurement of military and dual-use technologies through foreign sources and its MCF strategy represents a concerted effort toward defense and military modernization via technological advancement. This initiative, spearheaded under Xi Jinping's leadership, faces significant challenges from US-imposed "tech choke" and the geopolitical complexities introduced by the Russo-Ukrainian War. To counter these impediments, Beijing is pushing for technological autonomy, tactically exercising strategic discretion, leveraging divisions for cooperative gains, and improving measures to counteract sanctions.

Given this context, it is imperative for the EU to:

Establish a comprehensive oversight framework for dual-use technology transfer to Chinese entities. This should synchronize policies across member states to prevent technological exploitation. Acknowledging China's "divide and cooperate" tactics, the EU must vigilantly monitor trade interactions with China and endeavor to facilitate consensus-building and collective actions within the union.

Strengthen negotiations and coordination with the US on the scope and implementation of technology restrictions. The goal is to enhance the EU-US dialog to align policies and bridge regulatory gaps, which is vital to maintain effective control over sensitive technology and deter China from exploiting transatlantic differences.

Carefully calibrate measures to avoid assuming a leading position in the international technology control regime. Adapting to shifting geopolitical landscapes is crucial. The EU should prudently evaluate its position, especially considering the possibility of a second Trump administration reverting to unilateralism and policy unpredictability. The EU must also consider the consequences of diminishing influence over China—a critical partner in addressing issues from the Ukraine conflict to global climate governance.

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