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Update on the US-China Military Balance of Power

In early 2021, we published a series of reports assessing the overall balance of power between the United States and China in military, economic, and diplomatic terms. In early 2023, we provided an update to our analysis. The current report is the next in what we intend to be a biennial series on the subject. Looking comprehensively at both countries' power and sources of power, we assess that, while the US retains the greater military capacity to influence the world and protect its interests, China continues to close the gap, perhaps at an accelerating pace. For example, China continues to expand its lead in the number of combat-capable ships in its navy, it has gained valuable operational experience, and it can deploy enormous forces to the South China Sea, the East China Sea, and the Taiwan Strait. China's coastal military forces are now strong enough to potentially deter the US from intervening in a crisis around Taiwan.

In this report, we provide an update to the numerical comparison and our analysis of China's military development over the last two years. We emphasize critical areas such as China's continuing buildup of its strategic nuclear arsenal and how that could spur a destabilizing new global arms race. We conclude with the implications for investors.

China's Military Resources

The US Department of Defense, in its "2024 China Military Power Report," details

Chinese General Secretary Xi's longstanding directive to the People's Liberation Army (PLA) to transform itself into a "world-class military" by 2049. The report also discusses newer, interim goals for modernization and development by 2035 and 2027. The report shows that China continues to flood the PLA with resources, boosting its capabilities to the point where it is now ahead of the US in several key areas.

Manpower. A country's potential military power ultimately derives from the size and quality of its population, economy, industrial base, and technological skills. China has the advantage of being the world's second-most populous country. The United Nations Population Division estimates that China's population in mid-2024 was 1.423 billion people, including a military-age population (ages 16-49) of 654.4 million. China has many more people than the US, whose population in mid-2024 stood at 342.4 million, with 154.7 million people of military age.

- China's population is declining, while the US's is still growing. China's military-age population peaked in 2011 and has fallen by roughly 100 million since then, while the US's military-age cohort has been growing by about 638,000 annually over the same period.
- Despite that disparity, China will likely retain an advantage in the number of available soldiers for years to come. A more important demographic challenge for China is that virtually all of its soldiers, sailors, and airmen are their

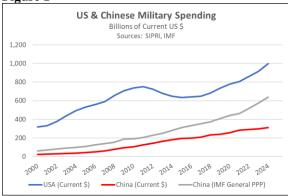
family's only child, owing to the country's past one-child policy. In a major conflict with mass casualties, thousands of Chinese parents would lose their only child, potentially inspiring political pushback on the government.

Economy. China and the US have the two largest economies in the world. In nominal terms, the US economy is larger; however, adjusted for the purchasing power of its currency, China's economy takes the top spot. The International Monetary Fund estimates that, in terms of purchasing power parity, China's 2024 gross domestic product (GDP) had a value of \$38.2 trillion versus the US's GDP of \$29.2 trillion. Chinese leaders, therefore, have plenty of financial resources to sustain and develop their military forces without imposing an onerous burden onto the country's economy.

- Data from the Stockholm International Peace Research Institute and official Chinese statements suggest the country spent \$313.7 billion on defense in 2024, a 5.7% increase from 2023. However, the most recent US Department of Defense report on Chinese military power asserts that actual Chinese military spending exceeds official numbers by 40-90%, implying \$440-600 billion of actual spending. According to the Chinese government, it will increase its military spending by 7.2% in 2025.
- For comparison, the <u>US spent about</u> \$997.3 billion on defense in 2024. That's a lot higher than China's outlay (see Figure 1), but the US total reflects the costs of a well-established global hegemon, with its hundreds of military bases all over the world, many foreign security commitments, and global interests. With the US's global defense commitments in mind, we note that its 2024 defense spending was equal to

\$5,208 for every square mile of the Earth's surface excluding Antarctica. If we assume China's current core interests extend only over the eastern half of the Northern Hemisphere (one-quarter of the Earth's surface), its total adjusted spending in 2024 equaled \$12,960 per square mile of its defense sphere.

Figure 1



Technology. China's large and varied land mass possesses many key natural resources. Its rapid economic development, forced or illicit technology transfers, state-sponsored hacking, and espionage have also given it formidable technological resources. China's "military-civilian fusion" policy (led personally by General Secretary Xi as chairman of the Central Commission for Military-Civil Fusion Development) ensures that the private sector's industrial capacity, technological discoveries, data, and intelligence are shared seamlessly with the military to make it more powerful. The US is trying to retain its technological edge by clamping down on advanced technology exports to China, but China has already closed much of the gap and is improving its ability to innovate and develop its own new, cutting-edge technologies.

Order of Battle

An exhaustive list of all Chinese military assets is beyond the scope of this report. The discussion below merely highlights China's key assets and the current modernization and

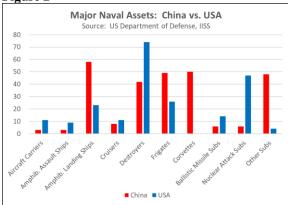
readiness efforts for each service, based mostly on the Defense Department's latest China Military Power Report.

Naval Forces. Since a US-China war would likely be fought in the waters around China, tracking China's naval strength is critical. In numerical terms, the PLA Navy (PLAN) is now the world's largest, with an overall battle force of more than 370 ships and submarines, including more than 213 major surface combatants. Reflecting the potential for a major naval war with the US and the growing need to project Chinese power globally, China has invested heavily in its navy. It now consists mostly of modern, multi-role vessels with advanced anti-ship, anti-air, and anti-submarine weapons and sensors, rather than the obsolete, limitedcapability coastal defense ships of old. China's investment in its navy will soon enable long-range precision strikes against land targets using cruise missiles launched from a range of vessels, greatly boosting its power projection capability and giving it a true "blue water navy."

- China's naval battle force grew by at least 30 ships compared with the figures we used in our 2023 report, despite having transferred 60 Houbei-class coastal patrol ships to the coast guard. Most of those were replaced by new, highly modern hulls, so the PLAN coastal patrol force shrank by only 24. The only other category to see a reduction was submarines, decreasing by 11, since the PLAN retired older, obsolete boats at a faster rate than new ones came online. Otherwise, the battle force grew across the board.
- As shown in Figure 2, the US Navy continues to outnumber the PLAN in the largest, most capable platforms such as fixed-wing aircraft carriers, cruisers, destroyers, ballistic missile submarines

(SSBNs), and nuclear-powered attack subs (SSNs); however, the PLAN has heavily invested in amphibious landing ships, which would serve a vital role in a Taiwan invasion scenario, far surpassing the US in this category. It also possesses a sizable advantage in less-capable submarines that would play a limited but effective role in denying US access to waters close to China, including those surrounding Taiwan.

Figure 2



In 2019, China commissioned its first domestically built aircraft carrier, the *Shandong*, based on the design of its Soviet-built *Liaoning*. Both carriers use a ski-jump aircraft launch system. In mid-2022, China launched a more advanced domestic carrier, the *Fujian*, which uses a modern electromagnetic catapult system similar to the latest US carriers. This will enable Fujian and future carriers to support more aircraft types and faster flight operations. Fujian began sea trials in 2024 and will enter operational service in late 2025 or early 2026. China is also developing nuclearpowered carriers that rival the latest US designs, with plans to deploy two carrier strike groups each to the Western Pacific and the Indian Ocean. China is also upgrading, modernizing, and expanding its fleet of amphibious assault ships,

which could be used to invade Taiwan or other coastal areas.

Air Forces. At nearly 3,000 fixed-wing aircraft (excluding trainers and drones), of which roughly 2,400 are combat aircraft, PLA air force (PLAAF) and naval aviation together constitute the largest air force in the Indo-Pacific region and the third largest in the world. China's 2019 defense white paper reports that the air force's mission and tasks are transitioning from "territorial air defense" to "offensive and defensive operations." Its commander has tasked the service with developing a truly strategic capability that can project power at long range. The Defense Department assesses that China "is rapidly catching up to Western air forces" as it takes delivery of more modern, domestically built planes and drones and intensifies pilot training.

- Most of China's roughly 2,200 operational fighters are modern fourth-generation or above aircraft, including 24 Su-35 fighters bought from Russia in 2016. China has also deployed at least 200 of its domestically built fifth-generation J-20 fighters. The J-20's original Russian engines are being replaced with new, superior engines designed and manufactured in China, helping it rival the US's F-22 Raptor. China also continues to develop the smaller FC-31/J-31 for export or for the next generation of Chinese aircraft carriers.
- China's bomber force consists of variants of the Soviet Tu-16 "Badger." The bomber force is relatively old, but China continues to produce modernized versions by integrating standoff weapons and more efficient engines for greater range. The new H-6N, which is capable of aerial refueling and can carry nuclear weapons, again gives China a triad of nuclear delivery options, i.e., land-based, submarine-based, and airlaunched. Its H-20 subsonic stealth bomber, which is still under development, will

eventually give China the ability to strike US bases in Guam, Japan, and even Hawaii.

The Chinese have one of the world's largest arsenals of advanced, long-range surface-to-air missile systems (SAMs), which would be of critical importance in a potential conflict with the US in the Taiwan Strait. Along with long-range, state-of-the-art S-400 and S-300 systems from Russia, the Chinese are also developing their own advanced SAMs and anti-ballistic missile defenses.

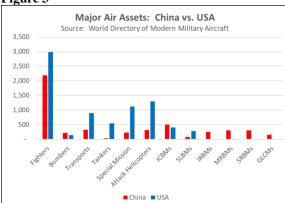
Ground Forces. The PLA has the world's largest standing ground force, with approximately 995,000 active-duty troops in combat units. Perhaps because of the greater likelihood of a naval war with the US and the need to prioritize a blue-water navy, China's ground forces have advanced relatively slowly. Vehicle and weapons upgrades have been proceeding, but just as much emphasis has been placed on building up flexible, more lethal combined-arms brigades at lower echelons and introducing more intense and realistic training.

Strategic Rocket Forces. China is working hard to strengthen its "strategic deterrent" forces and integrate them into broader operational plans. For instance, in 2023, elements of the rocket force participated in a joint exercise together with air and naval assets, simulating operations against Taiwan. Another key aspect of China's effort is its huge and growing arsenal of short- and intermediate-range missiles. Those missiles provide saturated, redundant coverage over the waters touching China's coast out to the "first island chain" running from Borneo up through the Philippines to Japan and beyond. The missiles are a key part of China's "Anti-Access/Area Denial" (A2/AD) strategy to keep the US out of any conflict surrounding Taiwan. Since our initial report two years ago, China has also

initiated a potentially more important effort to boost its long-range, intercontinental nuclear missile force, whose implications we discuss in a later section.

China's conventional rocket force includes many mobile ground-launched short-, medium-, and intermediate-range ballistic missiles and ground-launched cruise missiles to supplement its air- and sea-launched precision strike force. It also continues to expand its inventory of modern, nuclear-capable intermediaterange ballistic missiles (IRBMs). While the US retains a vast predominance over China in fixed-wing aircraft and helicopters, China's arsenal of missiles is far larger and more diverse than that of the US (see Figure 3). The US disadvantage in missiles largely reflects the arms control treaties of the Cold War era. Even as those treaties are abandoned, it will take years for the US to catch up to the Chinese arsenal.

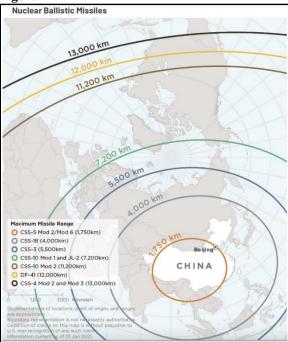
Figure 3



China's long-range, strategic nuclear force is becoming even more menacing and concerning. China is fielding new static and road-mobile intercontinental ballistic missiles (ICBMs) capable of carrying multiple independently targeted reentry vehicles (MIRVs), many of which can strike the Continental US (see Figure 4). China is also building several

new solid-fuel ICBM silo fields in the isolated western parts of its country. The Defense Department estimates that at least 300 silos have been completed. If each of these eventually houses a MIRV missile with 10 warheads, those alone would have twice the 1,550 available nuclear weapons that the US currently has in its ground silos, bomber aircraft, and submarines. The Defense Department forecasts that China will have more nuclear warheads than the US can deploy by 2035.

Figure 4



(Source: US Dept. of Defense, 2022)

Beyond boosting the numbers of missiles in its arsenal, China also continues to upgrade its technology, especially in hypersonics (missiles that can travel at several times the speed of sound and are very hard to intercept).

China's YJ-21 is a dedicated anti-ship hypersonic missile with a terminal speed of Mach 10. Even more alarming, in late 2021, China successfully tested a "fractional orbital bombardment system" with a maneuverable hypersonic glide

vehicle designed to deliver nuclear warheads. This missile goes into orbit for as long as its operator determines, then reenters the atmosphere and releases a hypersonic glide vehicle that can maneuver to avoid anti-missile defenses. China, like Russia, remains far ahead of the US's plodding efforts at hypersonic technology.

Space and Cyber Forces. China devotes abundant resources to a set of organizations for the conduct of strategic space, cyberspace, electronic, information, and psychological warfare. These capabilities had been part of the "Strategic Support Force" (SSF) since 2015. In 2024, China disbanded the SSF and realigned its parts to report directly to the Central Military Commission, considering them too strategically important to reside at any other level. This realignment reflects Beijing's belief that "achieving information dominance and denying adversaries the use of the electromagnetic spectrum is necessary to seize and maintain the strategic initiative in a conflict." Chief among these functions:

The Cyberspace Force carries out and coordinates all of China's information warfare missions, including cyberwarfare, technical reconnaissance, electronic warfare, and psychological warfare. It is instrumental in China's military strategy to establish local dominance in the information, maritime, and air domains. It also carries out missions and tasks related to the PLA's "Three Warfares" concept (undermining an adversary through psychology, public opinion, and legal warfare). It works to shape foreign perceptions, weaken the enemy's will to fight, and craft diplomatic and political narratives to advance China's interests globally.

The *Aerospace Force* (ASF) is responsible for all PLA space operations, including space launch and support, space surveillance, satellite communications, and space warfare. The ASF aims to assist in future conflicts by enabling long-range precision strikes and denying adversaries the use of space assets. China has put scores of spacecraft into orbit in recent years, including more than 60 communications satellites. Its constellation of BeiDou-2 and BeiDou-3 communications and navigation satellites will allow China to end or reduce its reliance on its US counterpart, GPS. China is also focused on the development of heavy-lift vehicles that could support lunar and interplanetary exploration, while the PLA continues to develop counterspace capabilities such as kinetic-kill missiles, ground-based lasers, and orbiting space robots.

Leadership Concerns

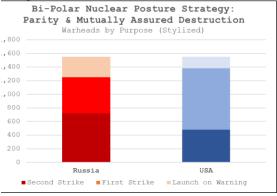
In recent years, the PLA has suffered expansive purges among its top-level leadership. General Secretary Xi himself initiated and drove these purges in response to the discovery of widespread corruption, which often involved false reports of military capabilities and called into question the readiness of key weapons systems. For example, a recent purge of the rocket force removed at least 70 people and uncovered widespread malfeasance. According to one report, some ICBMs' fuel tanks were filled with water instead of rocket fuel. These discoveries call into question the capability of the entire PLA to perform in combat, especially against a truly capable military such as the US; however, in our view, the extent and vigor of the purges also show the seriousness with which Chinese leadership is pursuing its strategic goals.

Impact on Great-Power Nuclear Strategy

The military expansion program we have described in this report is entirely consistent with China's goal of displacing the US as the world's hegemon. It also helps explain why the US and its allies, alarmed by China's increasing geopolitical aggressiveness, are now boosting their own defense spending and crimping China's access to cutting-edge technology. China's rapidly growing nuclear weapons arsenal is especially destabilizing. In this section, we highlight some of the issues that could lead to even greater frictions between China and the West, potentially triggering a risky new nuclear arms race.

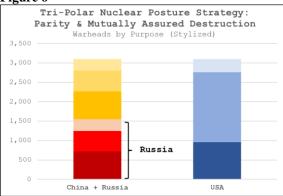
During the decades-long standoff between the US and the USSR, "bipolar" nuclear stability relied on *parity* (similar numbers of nuclear weapons on each side) and mutually assured destruction (MAD, the certainty that a nuclear attack would incur a retaliatory strike). Cold War arms-control treaties such as the New START agreement prescribed a US-Russia parity at a maximum of 1,550 deployed nuclear weapons each. The US and Russian arsenals are also still designed for MAD. Some of each side's arsenal is set to "launch on warning," i.e., ready to be launched as soon as incoming missiles are detected but before they hit. Part of each arsenal is designated for a "first strike" against the adversary, and a third is designed to survive a first strike and be ready for a "second strike" (see Figure 5).

Figure 5



As China expands its nuclear arsenal to match or surpass that of the US, the new "tripolar" nuclear world will be less amenable to parity and MAD. The US, China, and Russia will all need to deter and potentially defend against two other nuclear powers, which may or may not be cooperating with each other. If one nation, such as the US, tries to keep parity with both adversaries, it would end up with more weapons than either individual adversary (see Figure 6). Not only would that violate parity, but it might also tempt the US into thinking it could attack one of its adversaries, such as China, without being destroyed itself. Since China is drawing Russia closer into its geopolitical camp, China and Russia may cooperate against the US. In this scenario, Russia might attack the US in retaliation for an attack on China. Russia could also take advantage of the situation to attack both China and the US while they are damaged.





This implies that China's accelerating nuclear weapons program will likely spark a new global arms race. Since New START is already weakened by accusations of Russian violations, the treaty might finally be abandoned, freeing the US to dramatically expand its arsenal even beyond its current nuclear modernization program. As each side tries to keep up with two adversaries, parity will never be reached, inducing a higher risk of accidental or catastrophic conflict than was seen even at the height of the Cold War.

Investment Implications

China's continued effort to strengthen its military power versus the US is likely to further exacerbate the already escalating tensions between the two countries and their respective geopolitical blocs. China is not only buying more weapons systems and boosting its capabilities, but it is also intensifying and improving its forces' training, logistics, and joint military exercises with like-minded countries. The resulting increase in tensions is likely to further disrupt trade, technology, and capital flows between the US and China blocs, potentially leaving investors flat-footed. Sudden new decoupling measures such as the Trump tariffs have the potential to affect

asset values and undermine corporate operations in unpredictable ways.

In this environment, Chinese stocks and the equities of countries allied with China are likely to be especially at risk. In contrast, if the US seeks to offer economic and security incentives to its allies and neutral countries to wean them away from China, those countries' stocks might benefit. Similarly, US companies with extensive supply chains or markets in China or its bloc could be at heightened regulatory risk. Firms that produce and sell mostly within the US-led geopolitical bloc may be relatively safe. With tensions boosting defense budgets all over the world, we continue to believe that defense industry stocks have bright prospects. This may be especially true for European defense companies as countries of the EU respond to the growing Russian threat and the perceived need to gain independence from the US.

As rising tensions drive the US-led bloc to further decouple from the China-led bloc, the severing of supply chains and the establishment of new, more resilient supply chains within the US bloc will likely exacerbate consumer price inflation and prompt higher interest rates. That outcome will likely be negative for bonds. We continue to believe that geopolitical fracturing will also involve a displacement of commodity supplies, especially for the mineral commodities that are likely to be weaponized by the China-led bloc. We believe these conditions will put persistent upward pressure on commodity prices and lead to a period of unusually strong commodity returns in the coming years.

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Military Balance of Power:		vs. USA	
Selected Indicato Sources: UN, IMF, U.S. Dept. of Defense, Naval Register, IISS, Glob		n, Bull. Of At	omic Scientists
Asset	China	USA	Advantage
	CHINA	ODA	navantage
Resource Base Total Population (Millions, 2023)	1,424.3	342.4	China
Military-Age Population (16-49, Millions, 2023)	654.4	154.7	China
Average Annual Growth Rate, Last Five Years	(0.0)	0.0	USA
Gross Domestic Product (Trillion \$ PPP, 2023)	34.5	27.7	China
Gross Domestic Product (Trillion \$, 2023)	17.8	27.7	USA
Average Growth Rate, Real, Last Five Years	0.1	0.1	USA
Foreign Military Bases (2023)	1.0	545.0	USA
Formal Treaty Allies	1.0	53.0	USA
Naval Forces			
Total Battle Force	370	295	China
Major Surface Combatants	213	154	China
Fixed-Wing Aircraft Carriers	3	11	USA
Amphibious Assault Ships	3	9	USA
Amphibious Landing Ships	58	23	China
Cruisers Destroyers	8	11 74	USA USA
Frigates	42	26	China
Corvettes	50	0	China
Submarines	60	65	USA
Ballistic Missile Submarines	6	14	USA
Nuclear Attack Submarines	6	47	USA
Other Submarines	48	4	China
Air Forces			
Fixed-Wing Aircraft	2,989	5,675	USA
Fighters & Close Air Support	2,185	2,979	USA
Bombers	219	141	China
Transports	324	894	USA
Tankers	35	543	USA
Special Mission Aircraft	226	1,118	USA
Helicopters	976	5,061	USA
Attack (Multi-Role, Gunship, Anti-Sub, etc.)	320 613	1,299	USA
Transport Other	332	3,194 568	USA
Rockets (Launchers; Missiles May Be Greater)	1,572	680	China
ICBM (Range > 5,500 km)	500	400	China
SLBM (Range > 5,500 km)	72	280	USA
IRBM (Range 3,000 to 5,500 km) *	250	0	China
MRBM (Range 1,000 to 3,000 km) *	300	0	China
SRBM (Range 300 to 1,000 km) *	300	0	China
GLCM (Range > 1,500 km) *	150	0	China
Land Forces **			
Active-Duty Personnel in Combat Units	995,000	618,350	China
Main Battle Tanks	4,700	2,640	China
Other Armored Vehicles ***	15,380	50,381	USA
Artillery Pieces	9,620	6,520	China
Notes			
* U.SRussia INF Treaty banned U.S. from developing these	; treaty abro	gated in 201:	9.
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