The Generational Opportunity in National Security

CENTER 15 CAPITAL

The Generational Opportunity

Throughout history, we have seen cycles of investment opportunities. Most are crystal clear only in hindsight. A handful form less quickly and more overtly, allowing for proper positioning and sizing. The opportunity to invest in private companies making critical technology for national security is one of the few where the cycle is in its infancy.

Critical technology is defined by the Office of Strategic Capital as: “Biotechnology, quantum science, future generation wireless, advanced materials, trusted AI and autonomy, integrated network of systems, microelectronics, space technology, renewable energy and storage, advanced computing and software, human machine interfaces, directed energy, hypersonic and integrated sensing and cyber.” [1]

Multiple tailwinds support the investing thesis for private companies in this area. First, **the global spend on national security continues to grow in a dramatic fashion**. Second, **there is a profound shift in worldwide critical technology dollars towards new domains** like unmanned vehicles, space, autonomy, and artificial intelligence. Third, **there is a supply/demand imbalance** in investment dollars relative to available market capitalization in the sector. Fourth, **the IPO market is poised to reopen** and welcome companies in the field of critical technology. Fifth, **there is a renewed sense of urgency** to rapidly get the best technology into the hands of the warfighter.

This confluence of factors leads to an enormous investment opportunity that is in its early stages and can generate outsized returns.

1: https://www.cto.mil/osc/critical-technologies/

The Backstory

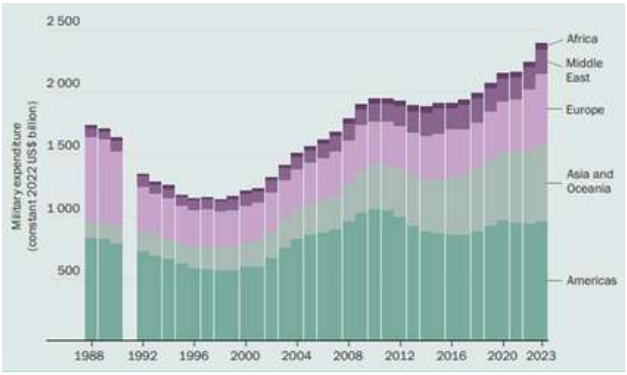
After a decisive victory in the Second World War, the Korean and Vietnam Wars triggered a sense of fear in the country. The Soviet Union was building an enormous capability in warfare, and the United States perceived they were a near-peer on the world stage. This fear and uncertainty led to a massive ramp in spending on national security in the 1980s which in turn played a significant role in the collapse of the Soviet Union. From the first Gulf War in 1990 through the Global War on Terror today, the United States was unmatched in every area of defense and could operate at will. Our hardware across every domain on the land, on the sea, and in the air was far more effective than any offering from the enemy. **This supremacy led to a sense of complacency** and a belief that global economic connectivity would be enough of a deterrent to any significant conflict again. Much has been written about "The Last Supper"[2] when, in 1993, the 50 existing defense primes were told to consolidate or go out of business. This meeting set in motion a decrease in competition, a slowdown in innovation, and a receding sense of urgency to get new technology into the hands of the warfighter. None of these drawbacks were a major issue, until everything changed in 2022 when Russia invaded Ukraine.

2: https://www.wbur.org/onpoint/2023/03/01/the-last-supper-how-a-1993-pentagon-dinner-reshaped-the-defense-industry

The Global Pie Expansion

“The world is a dangerous place.” This oft-used summary of the current situation is vague and accurate. Global uncertainty has led to an enormous increase in spending on national defense. Conflict and potential conflicts abound everywhere. Deterrence of future enemy incursions is replacing the neo-liberalism of the early 21st century as a worldwide ethos. In 2023, global military expenditures increased 6.8% to $2.4T, which was the steepest increase since 2009. The world military burden, which is military spend as a percentage of global GDP, increased to 2.3% in 2023. Average military spend, as a percentage of overall fiscal spending, rose by 40bps to 6.9%. World military spend per capita was the highest since 1990.

World military spending by region, 1968-2023 [3]



This ramp in spending has no sign of slowing down: more than 20 NATO members will meet the alliance's target of allocating at least 2% of GDP to defense this year, up from 10 members in 2019, highlighting how allies have raised military spending since Russia seized Crimea from Ukraine in 2014.[4]

3: https://www.sipri.org/publications/2024/sipri-fact-sheets/trends-world-military-expenditure-2023
4: https://www.reuters.com/world/europe/over-20-nato-allies-spend-least-2-gdp-defense-2024-says-stoltenberg-2024-06-17/

The Shift Within That Pie

The tactics of warfare are evolving more quickly than at any other time in history. Large platforms are less effective than ever versus weaponry with a much smaller footprint. Software is now a much larger factor on the battlefield relative to hardware. Expensive and exquisite systems are much less cost-effective per dollar than unmanned drones that are both cheap and attributable. New domains for battle are forming both in the cyber world and in space. This shift requires a new process around fund allocation within the Department of Defense. In 2023, the U.S. spent 9.4 percent more in real terms on RDT&E (Research Development Test & Evaluation than in 2022). The U.S. has prioritized RDT&E spending, in relative terms, over all other military spending categories since around 2014.[5]

Artificial Intelligence will continue to gain a greater share of defense spending on both the strategic and tactical levels. The reality is AI changes the speed of decision making and expands the vision of the battlefield. Generative models will help battle planning and overall strategy while focused AI will make hardware more intelligent, autonomous, and resistant to enemy tactics.

Two new programs epitomize this shift in mentality: **“Replicator”** and **“Collaborative Combat Aircraft.”**

The Replicator Initiative: Kathleen Hicks, the United States Deputy Secretary of Defense said as China focuses on the sheer mass of its military, the U.S. will "out-match adversaries by out-thinking, out-strategizing and out-maneuvering them." Under the strategy, coined by Hicks as the replicator initiative, the Department of Defense will field thousands of autonomous systems across multiple domains within the next 18 to 24 months. Hicks revealed the strategy during her remarks at the National Defense Industrial Association's Emerging Technologies for Defense conference in Washington. "Replicator is meant to help us overcome the PRC's biggest advantage, which is mass," she said. "More ships. More missiles. More people." She said, through the initiative, the U.S. will augment its manufacturing and mobilization capabilities "with our real comparative advantage, which is the innovation and spirit of our people." [6]

5: https://www.sipri.org/sites/default/files/2024-04/2404_fs_milex_2023.pdf
6: https://www.defense.gov/News/News-Stories/Article/Article/3507514/hicks-underscores-us-innovation-in-unveiling-strategy-to-counter-chinas-militar/

The CCA Initiative: The proposed Collaborative Combat Aircrafts will comprise a new breed of significantly less expensive, highly autonomous, mission-focused, unmanned collaborative combat aircraft to fly along with fifth-generation and newer human-crewed fighter jets. Equipped with a mix of sensors, weapons, and other tactical systems, the CCAs will be different in form and function. They will utilize cutting-edge artificial intelligence-driven autonomous software to enable seamless and effective collaboration and augment the performance of manned combat aircraft by providing comprehensive situational awareness, greater lethality, and improved survivability in highly contested environments. CCAs will be interoperable with different types of USAF aircraft and designed to operate either as a manned aircraft teammate, an individual autonomous platform or as part of a swarm of collaborative drones without direct human supervision.[7]

7: https://www.airforce-technology.com/projects/collaborative-combat-aircraft-cca-usa/?cf-view

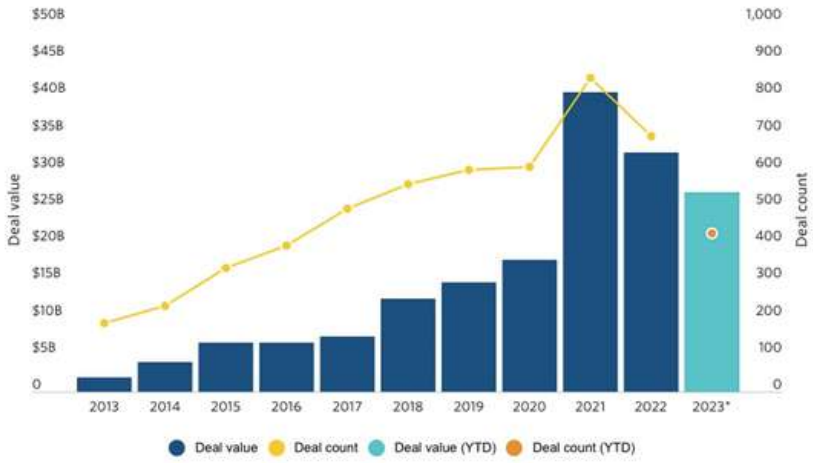
Image from Shield AI

Supply and Demand Imbalance

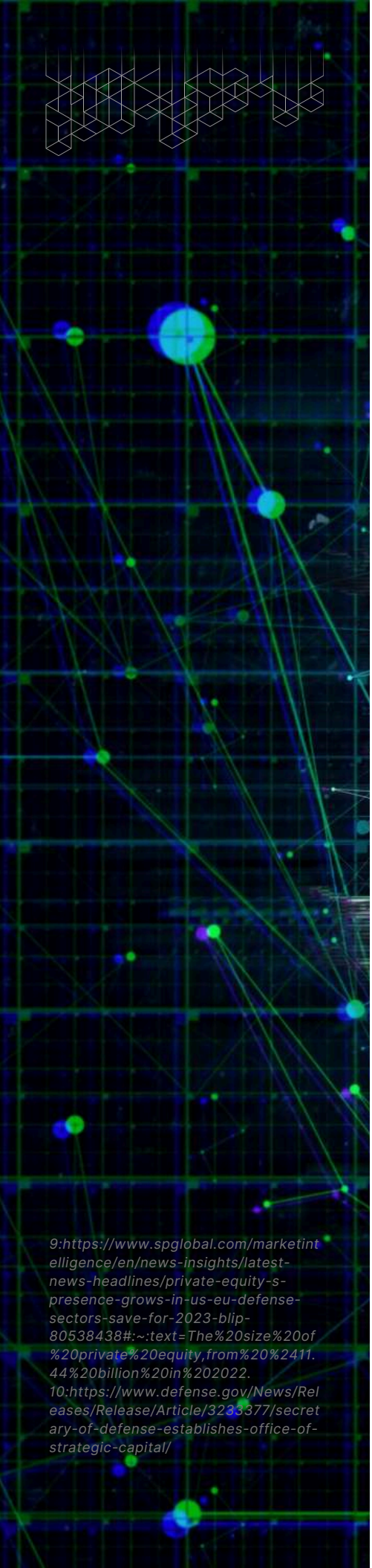
In simple terms, **there is a lot of capital chasing a somewhat limited market capitalization for critical tech.** Investor interest surged in the last three years in startups developing satellite imagery, artificial intelligence, space tech, cybersecurity, autonomous robotics, and other defense tech. US-based companies in the defense technology collected nearly $100 billion in VC funding over the last three years, which is about 40% higher than what was invested in the seven prior years combined.

> “Global uncertainty has led to an enormous increase in spending on national defense.”

US VC deal activity in defense tech [8]



8: https://pitchbook.com/news/articles/defense-tech-boom-ukraine-china-israel



Firms that focus specifically on defense technology are raising multiple funds. As recently as a decade ago, a handful of private equity firms specialized in aerospace and defense investments, but their number is quickly growing. Since 2017, 178 different private equity or venture capital firms have made US or European defense sector investments, Market Intelligence data shows.[9]

The Government is now a venture capitalist in everything but name only. The Office of Strategic Capital has created a new program to add further leverage to investments into companies that compete in critical technology for national security. “As an office overseen by the Secretary of Defense, the OSC will have an advisory council that includes the Under Secretaries of Defense. The OSC will work across policy, acquisition, and research efforts to increase the amount of capital available to critical technology companies. OSC will also help counter non-market actions by strategic competitors that use U.S. capital markets to advance their own technology goals.”[10] Essentially, VC funds can use government funds to increase the size of their investments into defense technology companies.

Within a relatively short period of time, Defense Department officials have created a vast infrastructure designed to provide funding support to defense tech companies. For example, in 2015, the Pentagon established a U.S. taxpayer-funded venture capital firm, DIUx (Defense Innovation Unit-Experimental, now called DIU) for financing small startups developing products for military applications. That same year, it also created MD5 (renamed the National Security Innovation Network)—billed as a “national security technology accelerator”—to speed up the development of technologies useful to the Pentagon. All major armed branches of the U.S. military now have a range of organizations designed to streamline DoD’s “innovation ecosystem.”

9:https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/private-equity-s-presence-grows-in-us-eu-defense-sectors-save-for-2023-blip-80538438#:~:text=The%20size%20of%20private%20equity,from%20%2411.44%20billion%20in%202022.
10:https://www.defense.gov/News/Releases/Release/Article/3233377/secretary-of-defense-establishes-office-of-strategic-capital/

As these Pentagon initiatives have grown in number and size, VC and private equity firms have dramatically expanded their investments in defense tech startups, signaling a shift in how military technologies are developed and deployed—and demonstrating how VC is anticipating future trends in Defense Department expenditures.[11]

Col Elliott J. Leigh is the Director of AFWERX and the Chief Commercialization Officer for the Department of the Air Force. He leads the strategy and execution of approximately $1.3 billion per year across the Air Force and Space Force through AFVentures, Spark, Prime, SpaceWERX, the Small Business Innovation Research, and the Small Business Technology Transfer programs.[12]

The Department of the Navy (DoN) Rapid Innovation Fund (RIF) is administered by the Office of the Secretary of Defense (OSD). It is a technology transition program that allows the military to collaborate with small businesses to provide innovative technologies that can be rapidly inserted into acquisition programs that meet specific defense requirements. The RIF program is a point of entry for small businesses to win research and acquisition contracts with the DoN.

RIF refines technology from military science and technology investments and adapts commercially available technology, funding the final maturation, testing, certification and/or integration needed to ensure that the products successfully make it to operational users.[13]

The Army Applications Lab (AAL) uses its Alignment Blueprint to coordinate projects, resources, and communities against critical Army problems. “Each year, we synthesize lessons learned to evolve and help US Army leaders or Units access better, more affordable solutions from the commercial industry.”[14]

The United States is not the only Defense apparatus investing in new technologies. NATO has formed an innovation accelerator (DIANA) to foster collaboration with start-ups and other tech companies and has announced the €1 billion NATO Innovation Fund focused on dual-use technologies.[15]

11: https://home.watson.brown.edu/research/research-briefs/transforming-military-industrial-complex
12: https://afwerx.com
13: https://www.nre.navy.mil/work-with-us/rapid-innovation-fund
14: https://aal.army/about-us/
15: https://vcwire.tech/2024/07/03/eif-and-nato-innovation-fund-sign-mou-to-mobilize-private-capital-for-europes-defence-and-security-future/

Defense Primes and other corporations realize that investing in early-stage critical technology companies both in a minority fashion and through full acquisition is a key to their future growth. These companies have fortress balance sheets and spend very little on internal research and development. These venture activities are relatively new and add fuel to the sector. Companies like Booz Allen, Raytheon, 3M, Lockheed, L3, and Airbus have all either established new internal venture funds or increased existing investing activities.

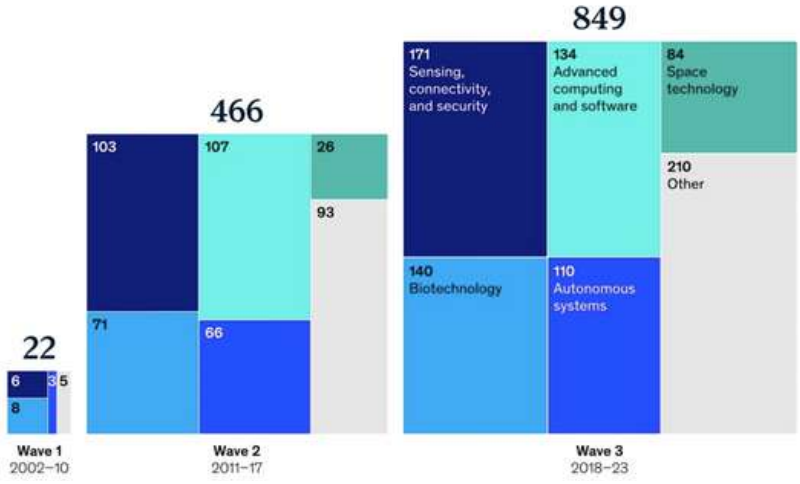
Traditional VCs are excited about the sector. Until very recently, it was culturally unacceptable for many venture funds to invest in anything related to national defense. There has been an aversion to the government's history as a very difficult customer and it taking years before giving contracts to early-stage companies. This resulted in venture capitalists having to support these companies for an untenable period. There was a mentality that defense companies were pro-war and, in largely liberal settings like Silicon Valley, this was a non-starter for an investment thesis. Those impediments are no longer in place. The government programs mentioned earlier have shortened the "Valley of Death" dramatically thereby reducing the time that the VC funds need to support these companies on their own.

More importantly, the Russian invasion of Ukraine, changed the narrative about defense companies. They are now seen as a deterrent to war. This shift in dogma cannot be overestimated. As a result, traditional venture capitalists are allocating more dollars to investment in critical technology for national security.

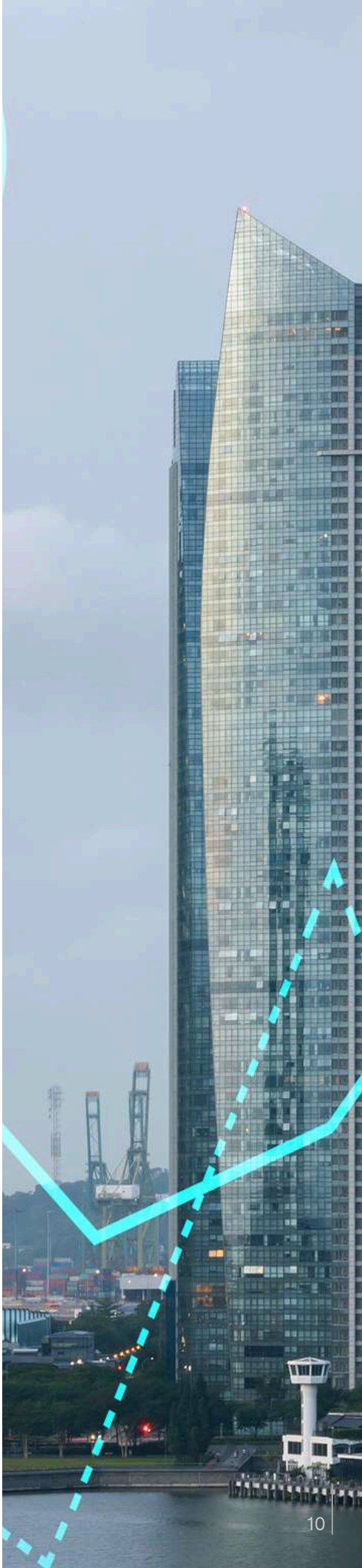
The IPO Market is Primed for Critical Technology

The IPO market has been in an arctic freeze for the last thirty months. The pendulum swung back after a bonanza in exits in 2020 and 2021. In 2022, rates spiked, SPACs returned capital, and fundraising became near impossible for any private company, less the greatest ones on the planet. The IPO market is seeing green shoots as public equities makes new highs, but there is still a noticeable absence of new issuance. That is about to change in the critical and defense technology sectors. For many years, there were only a handful of private dual use defense technology companies that were mature enough to go public. Palantir eventually did go public after fifteen years and SpaceX remains private today. The chart below shows the company formation in the last five years relative to the previous fifteen years.

U.S. defense technology start-up proliferation, number of seed funding rounds 2002-2023 [16]



16: https://www.mckinsey.com/industries/aerospace-and-defense/our-insights/a-rising-wave-of-tech-disruptors-the-future-of-defense-innovation



The numbers alone speak to more companies reaching the escape velocity necessary to exit into the public markets. Institutional sponsorship from crossover funds and traditional venture funds has also accelerated the ability of these companies to go public. The perception around defense is that it is recession proof, and that the world will remain on edge for the foreseeable future. Add in the increased use of autonomy and artificial intelligence by defense companies and new open-ended domains like space and the recipe is in place for an enormous appetite for these companies to go public. That is a main tenet of the thesis on why to invest now in critical technology. There will be a lot of exits in a relatively short period of time.

Tailwinds for Defense Technology Investment:

1. Growth of global spending in national security
2. Shift in worldwide critical technology dollars towards new domains like unmanned vehicles, space, autonomy, and artificial intelligence
3. Supply/Demand imbalance in investment dollars relative to available market capitalization in the sector
4. IPO market poised to reopen
5. Renewed sense of urgency to rapidly get the best technology into the hands of the warfighter

Sense of Urgency

"The thing we see across all the wargames is that there are major losses on all sides. And the impact of that on our society is quite devastating," said Becca Wasser, who played the role of the Chinese leadership in the Select Committee's wargame and is head of the gaming lab at the Center for a New American Security. "The most common thread in these exercises is that the United States needs to take steps now in the Indo-Pacific to ensure the conflict doesn't happen in the future. We are hugely behind the curve. Ukraine is our wake-up call. This is our watershed moment."[17]

"There is a bipartisan consensus on the fact that China poses a broad challenge to the United States across multiple domains," said Patricia Kim, an expert on US-China relations at the Washington-based Brookings Institution.[18]

17: https://www.politico.com/news/magazine/2023/06/09/america-weapons-china-00100373
18: https://www.theguardian.com/us-news/2023/feb/26/chinese-balloon-bipartisan-capitol-hill-risk
19: https://ssi.armywarcollege.edu/SSI-Media/Recent-Publications/Display/Article/3738629/war-with-china-a-view-from-early-2024/

Since the dissolution of the Soviet Union, the end of the United States' war on terrorism campaigns, and the rise of a bolder China under Xi Jinping, Beijing has become Washington's greatest rival. At the same time, China is the most powerful potential adversary the United States has ever faced. Beijing wants to eliminate US military activity in the regions surrounding its borders—activity Beijing finds threatening and destabilizing—which means great-power balancing is a central regional dynamic.

China seeks great-power status on its terms. Despite pursuing many pragmatic policies, the risk that Beijing will precipitate conflict involving the United States appears to be growing in probability and consequence as China's national power expands.[19]

> **"... the United States needs to take steps now... to ensure the conflict doesn't happen in the future. We are hugely behind the curve."**

Conclusion

Often on Wall Street, investors and observers ask: “Why is that asset rising in price?” Many old-timers reply sardonically: “There are more buyers than sellers.” While the answer may sound snarky, there is also an element of truth to the response. In the case of critical technology companies for defense and national security, this answer nicely sums up the discussion points above. There is more demand globally for critical technology than supply right now. The demand for new technologies like space, cyber, AI, and unmanned is outstripping the ability of these companies to make product. The amount of capital coming into the sector from all types of investors is far larger than the available supply of market capitalization. For these reasons, we believe this the greatest opportunity in a generation to invest in critical technology for national security.

Contact

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