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Tech Arms Race

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1 China is gaining the lead in the space race with rapid-response launch capabilities and in-orbit satellite servicing. Can the U.S. catch up? What are the implications? *How to invest.*

For a decade, we have argued that an escalating [tech-arms race](#) and the contest to dominate space could determine global leadership in the 21st century. In *WILTW* [May 17, 2018](#), we warned that a war to dominate space was coming, and the U.S. was not ready. *As geopolitical tensions continue to escalate between China, Russia, and the U.S., space conflict is closer than ever.*

The two key categories of the space-launch business are “economic launch” and “responsive launch,” explains a recent *Payload Research* [analysis](#). Economic launch is the capability to lift payloads into orbit at low-cost, which is dominated by SpaceX. Responsive launch is the ability to quickly access and launch commercial and military vehicles with payloads during a crisis or conflict.

The space race is intensifying for three primary reasons: (1) militaries seek to gain land, sea, air, and electromagnetic dominance via space; (2) trillions of dollars of natural resources exist on the Moon and asteroids, creating mining opportunities; and (3) manufacturing certain products in microgravity provides enhanced performance characteristics. More than 80 countries now have a presence in space. **The global space economy is on track to become a \$1.8 trillion industry by 2035**, up from \$630 billion in 2023, [according](#) to the World Economic Forum.

China has rapidly emerged to challenge and potentially overtake the U.S. in space capabilities by the early 2030s. In April, Xi Jinping announced a major

reorganization of the People's Liberation Army (PLA), prioritizing strengthening China's military presence in space. **China's new space station, the Tiangong, will soon be the only outpost in orbit, as the International Space Station is set to be decommissioned in 2031.** Some experts have recently warned it is increasingly possible that China could beat the U.S. in its return to the moon, given that NASA recently pushed back its planned return to the Moon from 2025 to 2026 (see *WILTW* [March 7, 2024](#)).

Space has already become essential to warfare on Earth. China and Russia have made major investments in designing and testing space weapons to “deny, disrupt or destroy satellites and space services,” notes a U.S. Space Force [report](#). China has the most advanced space-based weaponry, including satellites with grappling arms and microwave machines that can jam or destroy satellites.

Rapidly declining launch costs are fueling the space race. Satellite launches have increased at a 50%+ CAGR since 2019 as launch prices have decreased by 10x during the last 20 years. Now, SpaceX's Falcon Heavy rocket seats cost \$1,520/kg. Per-kilo payload launch costs should drop 40% by 2035 to below \$1,000/kg.

Rapid-response launch capabilities are key to improving the resiliency of space assets, including satellites. Critical rapid-response capabilities include in-orbit servicing, debris deorbiting, improved space situational awareness, and satellite “tugging”/orbital relocation. **During a conflict, the country that can maintain and/or quickly reconstitute its on-orbit capabilities would have a significant strategic advantage.**

Consider the following:

- **China leads the world in responsive launch capability and in-orbit servicing of satellites.**
- **China and Russia have already deployed satellites designed to inspect and repair other spacecraft.**
- **Recognizing the growing threat to its satellite infrastructure, the U.S. is moving to develop advanced-responsive launch capability.**

- **The U.S. is deploying a fleet of orbital platforms to service, repair, or de-orbit damaged satellites, representing a potential market opportunity in the tens of billions of dollars.**
- **The 13D Defense Index is a primary beneficiary of the escalating space race.** Also compelling is **Rocket Labs** (RKLB). [Firefly Aerospace](#), a private company, appears to be well-positioned in the space race.

2 | **The quest for powerful AI is emerging as the focal point of the global tech-arms race, akin to nuclear weapons during the last Cold War. *How to invest.***

China and the U.S. are raising the stakes in the burgeoning AI-arms race, with both nations vying for intellectual property, technological innovation, and strategic resources needed to build and power the systems. A new type of Cold War is imminent that will be characterized by rivalries between companies and among countries for the acquisition of the biggest new weapon, whether it is a financial weapon or a competitive weapon or an actual weapon. China is rapidly closing the gap with the U.S. on large language models and will likely focus on scaling AI software to compensate for U.S. tech export restrictions in the near- to intermediate-term. China now produces nearly half of the world's top-AI researchers, its competitive advantage in electricity and nuclear-power construction costs could give it a long-term competitive advantage in the AI race. The 13D Automation Index will benefit.

3 | **The U.S.-China race for technological supremacy crosses the point of no return. China has committed to replacing imported U.S. IT systems with locally-manufactured alternatives by 2027. What are the implications? *How to invest.***

We have argued since 2016 that the escalating tech-arms race between the U.S. and China will determine the global leaders of the 21st century (see [WILTW reports](#)).

The U.S. sees China as the only country with the intent and resources to challenge its technological dominance. Therefore, the U.S. has increased technology-export restrictions, and China has begun retaliating (see [WILTW reports](#)). China has been making significant strides in developing a semiconductor-value chain to lead the next generation of technologies, including quantum communications, military weapons, and space commercialization (see [reports](#)).

China is committed to eliminating the use of foreign technology in its systems. A *Wall Street Journal* [article](#) published last week cements our long-standing thesis. The article notes that “Document 79,” the set of guidelines first issued in 2020 by the central body governing China's numerous state-owned enterprises (SOEs), represents a fundamental shift in the nation's approach to technological independence.

Document 79 requires SOEs in banking, energy, and other critical sectors to shift from foreign hardware and software to domestic procurement by 2027. This strategic realignment reinforces China's objective of economic and technological sovereignty.

Swift technological advances drive China's propensity towards technology localization. Beijing has intended to achieve self-sufficiency in critical

sectors, including semiconductors and other next-generation technologies, for many years. However, the superiority of Western products and the lack of technological progress onshore slowed the migration. *Now, the circumstances are shifting in China's favor.*

China's push for "Xinchuang" (loosely translated as IT innovation) has become increasingly urgent in its quest to build secure and trustworthy domestic technologies. America's intensifying technology-export restrictions have motivated the Chinese government and private companies to develop and integrate domestic systems.

The technological decoupling between the two superpowers is taking shape with immense ramifications for global supply chains. China, a large market for international technology companies, has an edge over the competition with its increasingly innovative ecosystem.

Consider the following:

- China's science and technology funding is increasing consistently to boost R&D.
- The evidence is increasing to demonstrate that Western firms are losing clout in China.
- Chinese companies are making significant progress in competing with their Western counterparts.
- China's domestic chip design and manufacturing is gaining momentum.
- China is also ramping up innovation in semiconductor equipment.
- China is strategically amending laws to increase its options for responding to U.S. sanctions.
- China's technology talent availability provides an edge over the U.S.
- The investment implications are broad and significant. Chinese technology companies on our watchlist include **NAURA Technology Group** (002371 CH) and **Advanced Micro-Fabrication Equipment, AMEC** (688012 CH).

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