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Winning the Defining Contest: The US-China Artificial Intelligence Race

In the waning months of 2022, two earthquakes rattled technology and national security policy, inaugurating a new era of US-China innovation competition: the release of ChatGPT in November, and the Biden administration's first wave of semiconductor export controls a month before. Narratives of US artificial intelligence (AI) leadership collapsed in January 2025 after the announcement of DeepSeek's innovative large language model (LLM) that rivals premier US AI models and realigns the basis of competition. Since then, China and the United States have reached a new stage of jockeying for control over dual-use AI as generative AI—a type of AI that creates new information based on real and synthetic data—alters the technological map.

The US-China struggle for AI and innovation leadership is the defining geopolitical contest of the twenty-first century. Xi Jinping has framed this struggle as the "front line and main battlefield of international competition," and since 2022 it has prompted a recalibration in US policy to counter Xi's ambition.[1] The competition is decadal, and the stakes will not permit either nation to relent. China and the United States are vying for the commanding heights of innovation by concentrating on AI to fuel economic growth, embrace a revolution in military affairs, secure digital sovereignty, attain biosecurity, and deter adversaries.

At Xi's direction, the Chinese Communist Party (CCP) has set its economic agenda during 2024's Third Plenum and 2025's Two Sessions around dominating

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what he terms the "new productive forces" of emerging technologies, principally AI that will shape innovation in robotics, biotechnology, and quantum. Xi asserts that these new productive forces will enable China's economy to sustain high economic growth during a technology paradigm shift with myriad societal, economic, and geopolitical consequences. As Asia expert Evan Feigenbaum assesses, Xi's new economic rallying cry is far from "empty Communist sloganeering."[2] By organizing the economy around innovation, China aims to secure its central position in the world economy, achieve self-sufficiency against potential US restrictions, and ensure Xi and the CCP's resilience against economic storms. Xi's determination is now galvanizing the CCP and the country to prepare China for the magnitude of the challenge and outpace the United States in AI.

Actors across China are hammering out the strategies and methods which are ensnaring cities and companies—the dual engines of Chinese innovation at the provincial and municipal level—in response to orders from above. There is no certainty this model is fit for purpose in a race where the United States and its allies successfully prevent technology transfer into China. Regardless, this race will shape the global order in the twenty-first century. Xi's insistence on a new front of innovation competition occurs at a critical moment where US policy has coalesced around industrial policy, export controls, and outbound investment restrictions to preserve US advantage to innovate rapidly in AI while ceasing to underwrite China's progress.

This US-China competition is reminiscent of the US-Soviet technology rivalry during the Cold War, but with a contemporary twist. Like its Cold War predecessor, today's technological and economic contest is bipolar. But strikingly, the comparison does not extend further due to decades of engagement. US policymakers confront a landscape where enmeshed US-China economies call for an adaptive playbook to develop, integrate, and diffuse the technologies and talent necessary to outcompete a strategic rival. At stake is global dominance of the principal instruments of national competitiveness that will either upset the balance of power or sustain the United States' historic leadership on the world stage as AI advances into a general-purpose, normal technology that will be ubiquitous in daily life, akin to electricity or the internet.

AI is advancing to be ubiquitous in daily life, akin to electricity or the internet

Spanning decades, this competition compels US policy to reckon with the dual challenge of a protracted rivalry and the whirlwind pace of an AI transformation rewriting the rules of global power. This essay outlines the state of US national-level AI policy and the stakes of the competition, examines Xi's strategy and methods to cement the nation as the preeminent science and technology

superpower, and analyzes China's AI sector. US decisionmakers can pull a number of policy levers to compete with China by embracing innovation, and this essay concludes by suggesting recommendations to preserve preeminence in this defining contest. Policymakers must welcome nationwide AI adoption, especially in government, without undue regulation that exaggerates AI's risks. Ultimately, China is a peer competitor in AI. The United States must run faster and wield policy instruments like export controls and outbound investment restrictions strategically to preserve its leadership in AI while also propelling the nation to benefit from AI's paradigm shift as AI increasingly integrates into physical systems.

The Policy and Technology State of Play

The Trump administration's stewardship of AI policy arrives at a critical juncture when AI advancements shape not only US-China relations, but also the way we live, work, and innovate. Underlying the competitive dynamics lies the tantalizing prospect of Artificial General Intelligence (AGI)—a theoretical system capable of rivaling or surpassing human intelligence. Although predicting AGI's arrival is speculative, its promise has ignited fierce rivalries between US and Chinese AI labs, each striving to outpace the other. At the beginning of his second term, Trump's early policy documents on the subject laid out an ambitious blueprint: fortify the United States' AI capabilities and secure its dominance on the global stage. These initial documents articulate a vision of reinvigorating AI leadership to preserve strategic advantage that contrasts with the Biden administration's emphasis on mitigating risks and curbing AI hardware exports to adversarial states. In the broader context of intensifying bipolar competition, Trump's AI strategy underscores the profound stakes of technological progress, as AI not only amplifies digital vulnerabilities, but also redefines the physical realities of modern life.[3]

Robotics and biotechnology exemplify the accelerating shift of AI from the abstract virtual domain into the tangible physical realm. The convergence of AI and robotics is catalyzing a new era of general-purpose robotics equipping robots with cognitive capabilities which transcend traditional automation. Through the application of LLMs and generative AI, roboticists are training robots by using speech, images, imitation learning, and reinforcement training. This methodological fusion enables autonomous robotic operation in real-world environments. Humanoid robots are emerging as an arresting example of this innovation. Humanoid robots fuse AI with advanced hardware to execute tasks that integrate them seamlessly into human-centric spaces. As the global robotics market intensifies, US and Chinese firms are vying for dominance,

with China focusing on large-scale adoption and autonomy to sustain its manufacturing advantage while the United States more slowly adopts autonomous production.

In biotechnology, early fears of unchecked AI-driven biosecurity threats have yielded to more measured optimism about its transformative potential to revolutionize human health in the near future. AI is unlocking unprecedented opportunities in drug discovery, protein folding, acute diagnostics, and personalized medicine. The integration of AI-powered robotic automation with biotechnology is set to accelerate biomanufacturing and slash the time necessary for discovery, evaluation, and production to speed drug development. At the same time, AI labs such as Google's DeepMind, OpenAI, and Anthropic are pioneering novel methods to tailor AI for biotechnological applications, ensuring it becomes a cornerstone of future health advancements and AI competition with China.

China's New Productive Forces and the DeepSeek Shock

In January 2025, the Chinese AI lab DeepSeek unveiled its open-source AI model that competes with the best US models to global acclaim, highlighting both Chinese researchers' ingenuity and the stakes of the technological rivalry. DeepSeek's achievement demonstrates that resourceful Chinese researchers will innovate, producing an open-source AI model that is freely accessible for modification. This spirit of openness contrasts with the proprietary, closed-source approach prevalent in much of the US AI sector (Meta being an exception). The Chinese AI ecosystem, vibrant and determined, is betting on offering cheap and accessible solutions to global users, a strategy that could shift the balance of power in the AI race.

Chinese AI firms are leveraging affordability and accessibility, a strategy that could erode US leadership

This divergence has strategic implications: Chinese AI firms are leveraging affordability and accessibility to appeal to global users, a strategy that could erode US leadership. DeepSeek's announcement sent ripples through financial markets, causing NVIDIA's stock price to tumble, and similar disruptions are likely as the US-China AI race continues to seesaw. For US policymakers, staying ahead in this competition demands an unwavering commitment to innovation-forward policies *and* restricting the flow of AI hardware. "Money has never been the problem for us," DeepSeek CEO Liang Wenfeng explained in an interview in 2024, "bans on shipments of advanced chips are the problem."[4]

DeepSeek's achievement aligns with Xi Jinping's broader strategic pivot toward technological self-reliance, a pillar of China's ambition to establish itself as the global leader in the twenty-first century.

As Xi looks to the future, his focus on innovation will be a principal element of his legacy and China's claim to world power. In 2024, he cemented his vision at the CCP's Third Plenum, also reinforced in 2025's National People's Congress as well as the Chinese People's Political Consultative Conference, known as the Two Sessions. Xi previously voiced concerns that structural bottlenecks impeded China's capacity for innovation at the dawn of a new industrial revolution.[5] His solution is to champion a top-down strategy to accelerate new productive forces that he believes will usher in a paradigm shift in China's favor. This approach places progress in AI and innovation as central drivers of economic and strategic competitiveness. The emphasis on securing technological advancements will only grow more pronounced as political actors in both Beijing and Washington grapple with the implications of China's economic policies. Under the banner of new productive forces, the struggle for technological dominance is set to intensify, sculpting the contours of global economic and strategic competition.

In a June 2024 address ahead of the Third Plenum, Xi emphasized the urgent need for accelerating China's indigenous innovation, framing it as essential for ushering in an era of new productive forces. He acknowledged China's shortcomings in "original innovation capabilities," citing foreign control over technologies and a lack of top scientific talent as significant barriers to leading a new industrial revolution. He insisted scientists must embrace a "new sense of urgency" to battle "in the front line and main battlefield of international competition." Facing off primarily against the United States, he insisted on unleashing the new productive forces by stimulating "the deep integration of S&T innovation and industrial innovation." In the lead-up to the Third Plenum, Xi wove innovation into his broader economic vision that sets the stage for its pivotal role in China's future geopolitical and economic strategy.[6]

The Third Plenum is historically significant for both groundbreaking shifts in economic policy and routine deliberations, and the 2024 meeting's value rose as faults in China's growth model become more pronounced. Notable previous Third Plenums include Deng Xiaoping's 1978 introduction of economic reforms that preceded opening China and 2013's embrace of the market to allocate resources that ostensibly welcomed capitalism. The Third Plenum, in other words, is the perfect forum for debuting grand economic policy reorientations.

The Third Plenum's culminating document, the Decision, outlined Xi's vision for propelling China's tech-led modernization through the new productive forces. The document marks the culmination of the 2013 reforms and acknowledges the challenges China faces as it stands on the brink of a new phase of technological

competition with profound economic consequences. The Decision declares that "high-quality development" is the foremost priority, directing China's industrial policy toward innovation in "new industries, new business models, and new growth drivers." This involves mobilizing venture capital, state funds, and patient capital to drive technological advancements across various fields. While the Decision references the value of traditional industries, the document signals the Party's commitment to the emerging technologies of AI, robotics, biotechnology, quantum, advanced manufacturing, and energy.[7]

To align China cohesively behind this vision, Xi and municipal governments are updating what sociologist Ya-Wen Lei calls the "bird cage" model for China's technology development. In this model, the state manages the cage and provides resources to nurture the new birds of emerging technologies while sidelining older, low-tech industries. This approach creates winners and losers within China. Ambitious Party members who ride this technological wave can climb the political ladder. Xi's own rise from governor of Zhejiang province to CCP General Secretary exemplifies this upward mobility, as he leveraged China's burgeoning internet and platform economy in the 2000s to gain power. Steeped in this political economy, Xi is projecting it onto his vision for China's future. This model incentivizes politicians and corporate executives to align closely with Xi's agenda and enhance their standing in his eyes by emulating his ascendance.[8]

Xi has orchestrated a comprehensive, top-down economic strategy for China, providing both the framework and directives necessary for implementation. As Feigenbaum writes, this constitutes the core of China's strategy. Moving forward, with Xi's clear strategic imperatives, US national security officials should anticipate a significant escalation in the competition for AI innovation. China's arsenal of tactics for importing scientific knowledge and technology—spanning espionage, smuggling, coerced technology transfers, cyber-enabled intellectual property theft, front companies, along with mergers and acquisitions—will persist. Industrial policy will stay aggressive, bolstered by heavy investment in education and talent programs aimed at luring foreign scientists. But the true methods to achieve Xi's strategic imperatives are concentrated in China's cities, where the relentless pursuit of innovation may reshape global power dynamics.[9]

Delivering the New Productive Forces: China's Innovation Engines

How is China poised to implement its methods and strategies to cement its status as a science and technology superpower? The answer lies in the synergy between top-down CCP initiatives—where the CCP weds cities, companies, and society

to state objectives—with a bottom-up push from municipalities. This model was instrumental for China's climb into the ranks of science and technology superpowers in less than twenty years. In 2022, for instance, local and municipal governments provided two-thirds of China's science and technology funding, highlighting the essential role of regional governance in this endeavor.[10] However, a decline in real estate and tax revenues poses a serious threat to this model, raising important questions about the sustainability of China's lofty technological aspirations. Despite these challenges, the grassroots movements in cities and provinces are likely to continue driving China's technological ambitions forward.

China has a synergy between top-down initiatives and a bottom-up push from municipalities

The city of Hefei stands as a striking example of this "top-down, bottom-up" synergy. Since 2008, Hefei has emerged as a powerhouse of high-tech industry, particularly in electric vehicles, sustainable energy, and cutting-edge fields like quantum computing. In 2008, Hefei's politicians redirected city resources toward high-tech manufacturing and created investment funds specifically designed to stimulate high-tech industries. Today, Hefei manages twelve specialized government-backed venture capital government guidance funds (GGFs) to foster advancements in emerging technologies. These funds leverage a combination of capital investment and generous real estate policies to attract both domestic and international businesses. The city nourishes an ecology where talent, capital, startups, and technology cross-pollinate. Hefei's academic institutions, particularly the University of Science and Technology of China, also play a key role by providing a steady pipeline of skilled talent to the tech sector that allowed Hefei to blossom into a standard bearer for technology competition with the United States.[11] The "Hefei Model" illustrates an evolution from an unassuming city into a metropolitan tech hub—engineered by GGFs—that positions Hefei and other cities as the vanguard of the new productive forces.

Other cities like Shanghai, Hangzhou, and Shenzhen are championing physical AI centers and waving the new productive forces banner by leveraging capital to incubate innovation in semiconductors, robotics, biotechnology, and other chokepoint technologies that could otherwise undermine China's self-sufficiency. Shanghai's initiative is characterized by a robust regulatory framework designed to oversee and mitigate risks associated with emerging technologies such as corruption. The regulations are infused with a vigilance against capital misuse which might engender corruption. Shanghai's program provides a

telling example of the fierce competition among cities within China striving to dominate the new productive forces.[12]

While cities remain pivotal in China's innovation landscape, unforeseen collaborators are also entering the fray, redefining the dynamics of the new productive forces. One of the most illustrative examples of Chinese society's alignment with this campaign is the unexpected investments of Moutai, a state-owned enterprise. Moutai, one of China's largest producers of the traditional liquor *baijiu*, garnered attention for creating two funds as vehicles to boost China's innovation capacity in semiconductors and biotechnology. Why would Moutai champion the cause of the new productive forces? The answer lies less in patriotism and more in the pragmatic reality of the CCP's political economy. The Guizhou province owns a controlling stake in Moutai, and the company can leverage capital reserves to benefit the provincial government by investing in emerging technologies while also backing Xi's push for private sector investment. Moutai's pivot into high-tech investments represents the CCP's broader strategy of co-opting economic actors into the state's grand strategy. This ensures that corporate strategies are tightly interwoven with state objectives, collapsing the distance between economic and political spheres.[13]

Can China surpass the United States in AI, unleashing the economic might of new productive forces, or simply fast follow? Xi has acknowledged that China has yet to achieve major breakthroughs like mRNA vaccines, fusion ignition, or LLMs. But the potential for China to make significant strides, especially in AI, remains high. Xi is mobilizing the CCP, local governments, and companies to propel innovation and usher in a new phase of economic growth and security. The outcome is uncertain, making this the defining contest of the twenty-first century. Xi and the CCP are committed to cultivating the innovation which could trigger a geopolitical paradigm shift, with AI at the forefront of this gambit.

China's Road to Leading the AI Revolution?

Since ChatGPT's introduction in 2022, harnessing the revolutionary potential of AI for national power has animated strategists in Beijing, Washington, and most global capitals. AI is the dual-use technology that will transform economic and military power and, as international security and technology researcher Jeffrey Ding writes, it will gradually integrate into all aspects of daily life as a general-purpose technology like electricity.[14] AI has numerous applications which range from analyzing mass data streams and image classification to managing routine enterprise processes.

Although Xi routinely cites the gravity of robotics, biotechnology, advanced manufacturing, and quantum for China's future, he promotes AI as the critical

enabler for China's claim on the economic fruits and prestige of a geopolitical power shift. Xi and the CCP envision an AI-enabled future which optimizes the CCP's whole-of-society control—from sewers to surveillance—while boosting productivity across sectors. The Third Plenum's *100 Questions Study Guide* directly refers to AI as the "strategic technology leading the current round of scientific and technological revolution and industrial transformation." Noting potential risks that require safety regulation, the authors acknowledge that AI has entered a period of "explosive growth" that will fuel the new productive forces.[15]

China's AI sector boomed starting in the 2010s, but made remarkable strides, particularly since 2019, in AI research and talent cultivation which have solidified its status as a formidable AI competitor. According to data collected by MacroPolo, starting in 2019, China's ranking at least doubled in categories such as countries with most elite AI researchers, the best AI talent, and where elite AI researchers work. Tsinghua and Peking universities compete with leading US institutions such as Google, Stanford, MIT, and Carnegie Mellon in producing cutting edge AI research.[16]

Capital was a primary catalyst for this boom. A confluence of government funding and corporate incentives propelled the country to the forefront of global AI development due to a combination of state investments, the promise of substantial returns, and the influx of foreign direct investment (FDI). Tech giants like Baidu and Alibaba poured resources into integrating AI across their enterprises, vying for competitive advantage in a rapidly evolving market. Meanwhile, a wave of early funding from both domestic and foreign venture capitalists invigorated China's burgeoning startup ecosystem. Between 2015 and 2021, surprisingly, US outbound investment channeled over $40 billion into Chinese AI ventures. Not to be outdone, Chinese capital backed 9,600 companies and startups to the tune of $184 billion from 2000 to 2023. Yet, while capital played a crucial role, it was not the only fuel for China's frenetic AI expansion.[17]

China's authoritarian political system has also been a driving force behind the explosive growth of its AI sector. The combination of regulatory policies, market dynamics, and constrained civil liberties has fostered a unique environment which nurtures indigenous AI. Chinese firms have swiftly advanced and deployed AI applications—including image, voice, and facial recognition—catering to a market that was hungry for such innovation. The CCP actively promoted this growth by establishing a pro-business climate and regulatory regimes. Progress, nevertheless, unfolded against a backdrop of restricted civil liberties where citizens could not protest intrusive surveillance measures and AI tools tested on civilians facilitated military AI.[18]

To deter the United States and claim a global share of the arms market, the People's Liberation Army (PLA) will be a primary beneficiary of China's push

to dominate AI. The PLA aims to integrate AI and autonomy to compete, deter, and defeat adversaries across domains and the spectrum of conflict. This initiative is a cornerstone of the PLA's doctrine of "intelligentized" warfare, part of a significant military modernization effort that Xi launched in 2015. Since then, PLA doctrine has crystallized around the notion that modern warfare is fundamentally a contest of systems. In its quest to deter the United States, the PLA and the CCP believe that harnessing AI will provide a crucial systemic military edge on the battlefield and cognitively, potentially allowing them to leapfrog US capabilities. However, a 2023 RAND report reveals a more complex reality in China: beneath the surface of technological ambition lies a palpable sense of insecurity regarding its standing in the military balance of AI power with the United States. Analyses of Chinese writings on AI stretching from 2017 until 2022 in PLA, CCP, and associated military journals document a nuanced interplay of fervent optimism and underlying skepticism. Regardless, US policymakers should not assume that the PLA will cautiously embrace military AI systems in its bid to overtake the United States' military AI capabilities.[19]

The People's Liberation Army (PLA) will be a primary beneficiary of China's push to dominate AI

Navigating the opaque terrain of the PLA's strategic thinking is notoriously challenging, yet the PLA and Chinese defense firms are investing in a new era of intelligentized warfare suffused by the hopes of somersaulting over the United States. Open-source analysis has illuminated specific cases for the PLA's plan to leverage AI to defeat the United States' warfighting capabilities. Chinese defense industry firm Norinco has demonstrated AI-enabled capabilities of improved command and control, kinetic effects in a digitized battlefield, intelligence collection, drone swarms, and cognitive disruption which culminate in an avenue for the PLA to materialize Xi's dreams. His ambition to wield AI's myriad economic, strategic, and innovation effects propels China forward by capitalizing on AI and overcoming domestic hurdles for nation-wide adoption of generative and frontier AI.[20]

Adopting generative AI and the next generation of frontier AI will demand agility from the CCP. Although censorship casts a shadow over generative AI, regulators at the city and provincial level have approved pro-growth measures subsidizing endeavors to boost compute—the computational power required to train AI systems—in data centers. Meanwhile, the framework for legal support of generative AI is gaining traction in China's judiciary, protecting Chinese

AI firms from legal threats, while nationally, CCP regulators are codifying regulations routinely to nurture the startup industry.[21]

After DeepSeek's narrative-altering release, renewed questions about open-source AI adoption and chip constraints reappeared. China tech experts Paul Triolo and Kendra Schaefer highlight that a number of Chinese firms previously relied on open-source models like Meta's Llama 3 prior to DeepSeek. With a cutting-edge model that bests US rivals, Chinese AI users will now turn to DeepSeek or similar indigenous open-source AI models instead of relying on US models.[22]

Potential Constraints on China Leading the Way

As China technology expert Paul Triolo writes, Xi and CCP elites are committed to AI supremacy, yet a number of factors may slow China. Prior to DeepSeek's intervention into the AI race, China's technology funding picture remained murky. Contrary to the myth that the CCP funds a research and development juggernaut, the current financial landscape for capital-intensive startups is not unlimited. Tech giants and venture capital heavyweights like Alibaba, Tencent, HongShan, Meituan, and Sinovation Ventures invested early in leading startups Moonshot, MiniMax, Zhipu, Baichuan, 01.AI, and StepFun. Major cities with GGFs such as Shanghai, Beijing, Shenzhen, and Hefei participated in initial funding rounds, with smaller cities demanding more stringent mandates for AI applications to align with local industrial needs. To offset China's capital limits for long-term investment capital (known as patient capital), the CCP launched a public-private vehicle to channel investment funds for technology development.[23]

> Will the engines of Chinese capital be sufficient to sustain long-term growth in AI?

While companies like Moutai provide modest streams of patient capital, the critical question remains: Will the engines of Chinese capital be sufficient to sustain long-term growth in the AI sector? It is telling that DeepSeek's funding was independent through the CEO's hedge fund and not channeled through outside investors, state funding, or FDI. Chinese Premier Li Qiang's 2025 report on the Work of the Government pledged China's assistance for "extensive application of large-scale AI models." Doubling down on the top-down, bottom-up model of China's technology sector growth—and potentially to remedy a shortfall of patient capital—the CCP's National Development and Reform Commission announced in March 2025 the creation of a $138 billion public-private state venture capital guidance

fund to provide patient capital for technology development. This investment vehicle will inject capital to further Xi's goal of a nation that wields technology to lead the world and deter adversaries.[24]

Beyond funding, three elements drive AI advancements—algorithms, data, compute—and limiting compute power can hinder AI breakthroughs, providing the best chokepoints to slow China's advances. Compute hinges on specific hardware such as graphics processing units (GPUs) that are among the most sophisticated hardware manufactured today. Researchers and companies use many types of chips to train AI models, but GPUs are critical for processing mass data. GPUs built by NVIDIA, Intel, AMD, and other companies accelerate AI models by rapidly performing complex, simultaneous calculations across enormous data sets. One AI industry outlet predicted that the world will split into a divide of GPU-rich and GPU-poor nations, where compute may hold the key to national power, corporate competitiveness, and the mantle of global AI leadership.[25] The DeepSeek's CEO's admission that export controls hinder LLM development reveals that chip restrictions preserve a US lead, for now, as Chinese companies innovate more efficiently in algorithms. Few options exist to acquire the tens of thousands of newest NVIDIA GPUs to train, fine-tune, and deploy frontier AI models. China's AI ambitions, nevertheless, face more than just GPU roadblocks.[26]

Fulfilling Xi's ambition may hinge on China's near-term ability to overcome US export controls to cap its AI compute power. In response to US restrictions, the CCP launched the third round of the colossal $47.5 billion China Integrated Circuit Industry Investment Fund, often referred to as the Big Fund. As AI policy expert Gregory Allen writes, the CCP's push to launch an indigenous semiconductor ecosystem predates US export controls. The Big Fund's first round in the 2010s was marred by corruption. Billions of dollars vanished into ill-fated projects, such as at Wuhan's Hongxin Industrial Facility, where fabrication plants' failure to produce a single chip illustrated the obstacles of establishing an indigenous semiconductor industry. Confronted with US export controls after 2022, the CCP envisions this third iteration of the Big Fund as a route to cultivate a semiconductor industry that is self-sufficient, innovative, competitive, and resilient against US restrictions.[27]

In the wake of US export controls, Chinese companies Huawei, Biren, and Moore Threads intensified research and development toward designing and manufacturing semiconductors tailored for AI. Huawei's unveiling of the seven-nanometer Kirin 9000 and Ascend 910 AI processor series garnered significant international attention. The Ascend 910 series has been lauded for innovation despite US restrictions. Nevertheless, questions linger if Huawei can scale the 910B and 910C production at China's Semiconductor Manufacturing International Corporation to meet the immediate demand. Striking the right

balance between scaling production and quality control will be instrumental in defining Huawei's—and, by extension, China's—position within the global AI hardware hierarchy in a race against the United States.[28]

Xi's drive to compete with the United States and realize the new productive forces is placing immense pressure on its innovation system to indigenously produce AI hardware. The CCP is centralizing control over innovation within the Central Science and Technology Commission, intensifying pressure on ministries such as the Ministry of Science and Technology to channel their institutional heft into fostering breakthroughs in chokepoint technologies such as GPUs and semiconductors. However, the current landscape of semiconductor technology presents significant challenges. Cutting-edge semiconductors require extreme ultraviolet lithography tools and a complex global supply chain. US export controls have restricted the flow of essential tools, capital, and expertise to China. In response, Chinese semiconductor manufacturers embarked on a buying spree, spending over $26 billion in 2024 on older generation lithography tools, according to Chinese customs data. This surge in acquisitions is fueling a dramatic expansion of China's semiconductor sector, which is projected to account for approximately one-third of global production in legacy chips that will likely balloon.[29]

In the long arc of technological adoption and diffusion, China may well establish a self-sufficient yet oversaturated semiconductor sector, where it seeks to control global manufacturing to crowd out economic competitors in a contentious international trade environment. How soon China will attain a peer status with the United States in AI remains unclear, and DeepSeek affirms that strategic surprise could occur. Holistically, China's formidable investments attest to why this technological rivalry is the defining contest of the twenty-first century.[30]

How soon China will attain a peer status with the United States in AI remains unclear

US Directions for the Defining Contest

In the coming decades, the bipolar contest between the United States and China will pivot on harnessing the fruits of innovation to shape the trajectory of international politics. AI will be the most fiercely contested arena in this race, especially in the pursuit of AGI. AGI and the diffusion of AI as a general-purpose technology will be Janus-faced, loaded with opportunities and risk. As the Trump administration outlines, the government's imperative is to encourage the United States's AI sector while integrating LLMs and frontier AI into

government at the speed of relevance. While biotechnology, robotics, advanced manufacturing, and quantum will also play pivotal roles, the nation that successfully diffuses AI will unlock its revolutionary potential and gain a decisive edge. What is at stake? First-movers and adopters will capitalize on economic gains, the next generation of robotic manufacturing to boost productivity, biotechnology innovation and production, and infuse deterrence with advantages in decision, readiness, and lethality. Far from another race between great powers, AI's diffusion into a general-purpose technology will alter how great powers shape the international system.

The Trump administration stands at a pivotal crossroads before a potential appearance of AGI, armed with a suite of tools to secure America's competitive stature against China. Foremost among them is the urgent task of fueling domestic innovation—a delicate dance of speed and restraint, where progress must be tempered with nurturing regulation. This entails encouraging the right investment climate for data center construction, open-source AI, and fabricating AI hardware at home. In other words, the United States must run faster, adopt AI rapidly in government, and wield its power strategically. As AI transitions from models to systems capable of reasoning that alter our physical realm, export controls must evolve to shield US leadership, empower industry, and ensure AI's transformative potential reaches every corner of the country.

We stand at a pivotal crossroads before a potential appearance of Artificial General Intelligence (AGI)

DeepSeek's CEO Liang Wenfeng's admission demonstrates that export controls will likely slow Chinese AI. For how long? That remains unpredictable as Chinese manufacturers innovate in models, algorithms, and hardware with an indigenous supply chain, and still access semiconductors legally or through smuggling. Firms like DeepSeek will usher in novel AI innovation to process efficiently, but his comments illustrate that export controls have achieved their stated goals. US export controls should be seen as political instruments which force China to invest substantial capital in building an industry while equally imposing time and technology delays. Chinese chip foundries' capacity to scale production of indigenous AI chips to meet near-term demand is unproven. Soon enough, however, Huawei's AI chips will achieve technological parity, despite lingering questions of China's ability to scale to fulfill domestic demand. Meanwhile, Chinese open-source models will steadily carve out their place, capturing global market share and the loyalty of users worldwide.

Increasingly, the competition for AI leadership is turning to the domain of global governance and standards, where US allies and partners are an

unparalleled asset. By maintaining coordination with allies on AI military use, diplomacy, and open-source models, Washington can set the global AI agenda. Xi and the CCP understand the critical importance of AI norms, standards, and convening authority in the global AI race. In response, Xi has announced China's entry into the contested terrain of global dialogue with the Global AI Governance Initiative with outreach to the Global South, an initiative reinforced during a May 2025 Politburo study session on AI. The CCP will use its convening power to counterbalance any weaknesses in Chinese AI to ensure Beijing's voice remains influential in AI governance. A whole-of-government approach is necessary to advocate governance that prioritizes an affirmative vision for the world's adoption of US-led AI. This model will boost soft power and preserve the United States as the primary destination for AI talent.

The trajectory of the United States' talent potential remains uncertain. Political scientists Amy Zegart and Jeffrey Ding have written convincingly on the atrophying of education, immigration, and the institutions to support incubating talent. According to MacroPolo's comparative AI data, the United States continues to be a net importer of talent, relying heavily on Chinese minds to maintain preeminence. Sustaining this trend is crucial for US innovation and soft power. While attracting bright foreign minds is essential, significant investment in domestic education and upskilling is also necessary to prepare for the challenges ahead.[31]

As the United States contends with its own set of challenges, China faces a series of significant obstacles that question Xi's ability to inaugurate a new era powered by AI and the new productive forces. The spectrum of dilemmas is stark: demographic collapse, a slowing economy, overproduction, repression of business leaders, an adversarial environment for technology transfer, declining FDI, an ossifying political system, struggles to diffuse technology, and domestic malaise. None of these factors, however, will dim Xi's vision. In fact, they are convincing Xi to recalibrate. Most notably, Xi has reversed course on the CCP's crackdown on technology companies and executives. Xi's February 2025 warm reception of technology executives abandoned the CCP's crackdown on the private sector, revealing his awareness that these companies are the essential ingredients for AI competition and the new productive forces.[32]

Critically, US policymakers must avoid policies that continue to underwrite China's AI sector. In addition to hardware export controls, restrictions on outbound investment are a primary instrument to prevent the United States from financing AI startups for AI-infused robotics and biotechnology firms. Screening the high volume of outbound US investment is arduous but vital. The United States and its allies must also prevent Chinese firms from discreetly manufacturing GPUs and other hardware in Taiwan and stanch the flow of talent and tools to maintain China's semiconductor fabrication facilities. Policymakers should not succumb to bluster that exaggerates China's and Huawei's capacity to

produce GPUs and semiconductors that rival the cutting-edge chips' quality at scale. Nor should US leaders overestimate the health of China's venture capital landscape.

The United States must forge a unified front in its competitive strategy against Xi's China, which is mobilizing across all levels of society in a bid to outpace its rival. That China's best and brightest are responding to this call leaves little doubt that China is the United States' foremost technological competitor. Xi's relentless drive will harness China's capital, AI ecosystem, and talent to fuel his ambitions. While China's push to mobilize state and private capital positions it as a leader on the global stage, the combination of public and private investment in the United States will remain crucial to its own competitiveness. Financial constraints will necessitate that presidents, agencies, and Congress allocate federal funds wisely, while also promoting private and venture capital to support innovation.

Although China already leads the world in certain technologies, this development does not herald an inevitable decline for the United States. Nevertheless, it will require strategic measures to prevent Chinese advancements from dominating global markets with open-source AI or exploiting the openness of scientific inquiry. The contest will unfold over decades, with the race for AI supremacy shaping the future of this rivalry. Yet, there may come a time when US and Chinese diplomats, perhaps over a glass of Moutai, find common ground to address humanity's most pressing challenges.

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