

Testimony of
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“Winning the AI Arms Race against the Chinese Communist Party”
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Good morning Chairman Mast, Ranking Member Meeks, and Members of the Committee. Thank you for inviting me to participate in today’s hearing. My name is Oren Cass. I am the chief economist at American Compass, where we recently published a report titled: *Stop Selling the Rope: Protecting American AI Dominance from China’s Globalization Playbook*.¹

My primary message to the committee is this: **To maintain and grow our advantage in AI, which is vital to both our economic competitiveness and our national security, the United States must prohibit all sales of advanced AI chips and semiconductor manufacturing equipment to China.**

- The United States and its allies hold decisive advantages in artificial intelligence semiconductor design and manufacturing—two of the few critical technology sectors where American leadership remains intact. China’s domestic AI chip production remains severely constrained, with chips lagging U.S. technology by at least one generation.
- Since China’s accession to the WTO, wave upon wave of western corporations have surged into the Chinese market, hoping to gain a foothold that could translate into long-term growth and profits. The result has always been the same: technology transfer, rapid gains by CCP-favored indigenous firms, loss of leadership. The United States cannot allow this to happen in AI.

I. Introduction

The United States today faces a choice: learn the lessons of the past quarter-century, or trade away American leadership in a vital future technology with the hope that following the same playbook will somehow yield a different outcome. Over the past 25 years, the U.S. has surrendered sector after sector to China in a misguided pursuit of the promises of globalization. From solar panels and electric vehicles to telecommunications to rare earths, China now has effective dominance, leaving American supply chains vulnerable to severe disruption, American producers with little market share, and American workers with fewer opportunities and lower wages.

The design of advanced semiconductors, especially the GPUs used to train and run AI models, remains one domain where the United States maintains a decisive global advantage. Firms from the U.S. and allied nations, most notably Japan, the Netherlands, and Taiwan, as well as Germany and South Korea, also maintain a decisive advantage in the machinery and facilities needed to produce those chips. As a result, China is currently lagging well behind the U.S. in its ability to produce leading-edge “compute”—the computational power that allows for the training and running of AI models.

China already has the motive to close that gap. By selling either chips or chipmaking equipment to the CCP, the U.S. is providing the means. Unfortunately, the same arguments made by business leaders decades ago, which led to trading away past technological leadership in critical sectors, are being echoed today in this sector: *America needs to “addict” China to American technology. If U.S. firms gain a toehold in China, their technologies will become the Chinese standard. But if we stay out of China, the Chinese will quickly develop alternatives.*

These arguments were bad in 1999. They are unforgivable in 2025, when everyone knows that China grants access to its market only for as long as it takes to steal technology, transfer know-how, and then push foreign firms out. Rather than transfer its advantage and enrich an adversary, the United States should maintain the advantage and transform it into era-defining leadership.

Failure by Congress to act poses a severe risk to U.S. national security and economic competitiveness.

Any export of advanced AI chips or chipmaking equipment to China must be understood as supporting its military, either by empowering its leading AI labs or by directly providing computing power to the People's Liberation Army (PLA). Ultimately, the dual-use nature of AI makes civilian/military distinctions meaningless—a reality the CCP will exploit through its Military-Civil Fusion approach to critical technology.² The same AI capabilities used in commercial markets to optimize supply chains can be used to coordinate military logistics; the same optical systems used to inspect factories can guide weapons.

With trillions of dollars of potential value on the table, from both sales of AI chips and AI-driven productivity gains across sectors, the economic stakes are also extremely high. At best, selling advanced AI chips to China would mean accelerating China's economic progress and strengthening its competitiveness relative to America's. At worst, it would mean selling the Chinese Communist Party the rope with which to hang the United States, its allies, and the democratic world broadly, trading away our hard-earned advantage for short-sighted, short-term gains today.

The AI Action Plan released by the White House in July observes:

Advanced AI compute is essential to the AI era, enabling both economic dynamism and novel military capabilities. Denying our foreign adversaries access to this resource, then, is a matter of both geostrategic competition and national security.³

Unfortunately, executive branch implementation of these principles has been inconsistent and the recent decision to license Nvidia's H200 chip for export to China⁴ represents an especially dangerous misstep. Congress must reassert its prerogative to ensure that the nation's export control regime advances the national interest.

II. China's Disadvantage, America's Window to Act

The United States and its close allies dominate the advanced AI chip supply chain. Given the technological complexity of the design and manufacturing processes, China is and will remain reliant on these suppliers for these chips for years to come.

The U.S. directly controls the design stage of the AI chip supply chain, with three American companies accounting for over 75% of advanced chip design.⁵ U.S. partners control the manufacturing process, particularly Taiwan: TSMC manufactures 80–90% of sub-7nm chips (mainly in Taiwan, though with increasing output in Arizona).⁶ Two of the three companies that produce high-bandwidth memory (HBM) are Korean (Samsung and SK Hynix) and one is American (Micron).⁷

The U.S. and a few key allies together control the production of the semiconductor manufacturing equipment (SME) required to conduct that manufacturing. The Dutch company ASML is the sole producer of the extreme ultraviolet (EUV) lithography machines needed to make the most advanced

chips. According to the U.S. government, “the United States, Japan, and the Netherlands account for 90 percent of semiconductor manufacturing equipment market share.”⁸

This concentration leaves China dependent on U.S., Japanese, and Dutch SME and makes effective control possible—if the U.S. acts now and denies China’s attempts to use access to U.S. technology to steal the advantage.⁹

A. Semiconductor Manufacturing Equipment

With respect to SME, the United States already imposes various export restrictions on sales to China, as do key SME-producing allies like Japan and the Netherlands. These restrictions have successfully impeded China’s advanced production capabilities. However, as detailed in a recent investigation by the House Select Committee on the Strategic Competition between the United States and the Chinese Communist Party, this control regime has significant gaps.¹⁰ The Select Committee finds that “five restricted (i.e., on the U.S. Government’s Chinese military company list, investment restriction list, or Entity List) semiconductor companies in China were also top customers of each Toolmaker [meaning the key U.S., Japanese, and Dutch SME producers] from 2022 to 2024.” For four of these producers, currently restricted Chinese companies accounted for 45% of combined revenue between 2022 and 2025, demonstrating the appetite of Chinese purchasers—a majority of which are state-owned enterprises—for whatever SME is available.¹¹

The U.S. and its allies apply some countrywide export controls on SME to China, but only on the most cutting-edge technology. This has succeeded in denying China access to ASML’s EUV lithography (capable of producing chips 5nm and under, though also used for 7nm chips), for example—but not to all of ASML’s less advanced but still highly capable deep ultraviolet (DUV) lithography, which is used to produce chips between 40nm and 7nm. According to the Select Committee report, China is attempting “to use DUV to produce even smaller nodes, including 5nm,” and while such SME produces advanced chips at reduced efficiency and with reduced yield, China is attempting to make up the difference through sheer volume by actively acquiring as many of ASML’s DUV machines as possible.¹² Seventy percent of ASML’s DUV sales in 2024 were to China.¹³ Nor do American countrywide export controls apply to node-agnostic SME, the equipment that is needed to produce chips of any kind, advanced or otherwise.

The U.S. also imposes entity-specific SME export controls, which can reduce acquisition by entities of concern, but ultimately represents merely a hurdle to overcome, not an outright denial. Chinese companies are adept at “entity obfuscation,” and BIS itself has approved a majority of license applications for exports of SME even to listed entities.¹⁴ Nor are U.S. and allied export control regimes well-aligned. U.S. SME producers face greater constraints relative to allied producers, which continue to sell to China in large volumes.

While working cooperatively with allies to impose controls is ideal, these meaningful gaps in the current SME control regime must be addressed—unilaterally if necessary. Because U.S. technology is so deeply integrated throughout the supply chain, the U.S. can and should use the Foreign-Produced Direct Product Rule (FDPR)—which allows the Department of Commerce to restrict foreign-to-foreign transactions of products that incorporate U.S. technology—to exercise unilateral control over export of components that sit outside of direct American control but utilize American technology. To minimize conflict with allies over unilateral action, the U.S. should consider establishing an escalation process, whereby allies can meet key thresholds for imposing their own export controls before FDPR kicks in. In addition, the U.S. should begin by taking a surgical approach to FDPR enforcement, focusing on the least intrusive means of accomplishing the goal of limiting SME exports to China. (For example, restricting the sale by Japanese firms of a critical component of DUV lithography machines when the final buyer is in the PRC.)¹⁵

Finally, the controls should come with positive incentives for allies. What incentives are most suitable will depend on the interests of the nation in question, but increased cooperation on critical mineral supply chain resilience would be a good place to start. China has repeatedly used its chokehold on the global critical mineral supply chain as a tool of geopolitical power—including as a means of signaling its own aspiration to control the global semiconductor supply chain and AI stack.¹⁶ The U.S. and its allies will require mutual cooperation on this front.¹⁷

B. Advanced AI Chips

When it comes to selling chips themselves, the United States has vacillated from prohibition to permissiveness. In response to restrictions imposed by the Biden administration, Nvidia designed its H20 chip specifically for sale to China. In April 2025, the Trump administration announced it would ban the H20's sale to China. A few months later, the administration reversed course, announcing it would allow H20 sales.¹⁸ Most recently, in December, it announced that it would license sales of far more powerful H200 chips instead,¹⁹ on the same day its Department of Justice announced an indictment for smuggling those same chips into China, which “threatens our Nation’s security by funneling cutting-edge AI technology to those who would use it against American interests.”²⁰

Despite its military and economic ambitions, China meaningfully trails the United States in artificial intelligence, due to its limited capabilities in the design and manufacture of advanced AI chips.²¹ Producing leading-edge chips requires both sophisticated designs and the ability to produce chips at the 3nm node, both of which China currently lacks. On design, China lags the U.S. by several years, in large part because there is no reason to design chips they cannot produce. On production, however, they are far behind. Despite shortcomings, current export controls on SME have kept China from producing leading-edge chips, while limits on imported HBM (which is packaged in the final chip) have constrained overall capacity.

According to *SemiAnalysis*, China’s production capability is severely limited: about 500,000 Ascend units (mostly 910Bs) in 2024 and about 800,000 (about 650,000 of which were the more advanced 910Cs) in 2025. Citing limitations on HBM, *SemiAnalysis* predicts production of only 250,000–300,000 Ascend 910Cs in 2026.²² This is compared to U.S. production of 3.7 million Nvidia B300-equivalent chips in 2025. (Each B300 is roughly five times more powerful than a 910C chip, so this is the equivalent of about 18 million 910C chips.)²³

China’s hardware deficit is serious—for now. As recently as 2021, Epoch AI estimated that China’s total capacity for AI computation exceeded U.S. capacity. Thanks to rapid investment in the United States coupled with restrictions preventing China from accessing leading-edge technology, that balance has shifted dramatically. In 2025, Epoch estimated that U.S. capacity exceeded Chinese capacity by a factor of five.²⁴

Of 22 notable Chinese AI models, only two were allegedly trained on Chinese chips.²⁵ DeepSeek’s market share collapsed after it confronted a shortage of Nvidia H20 chips, despite its cost advantages.²⁶ Chinese clusters need 300,000 Huawei Ascend 910C chips to match 100,000 Nvidia B200s.²⁷ Huawei CEO Ren Zhengfei’s admission to *People’s Daily* is telling: “The United States has exaggerated Huawei’s achievements. Huawei is not that great. We have to work hard to reach their evaluation. ... Our single chip is still behind the U.S. by a generation.”²⁸ ASML CEO Christophe Foquet estimates that SME export controls have left China “10 to 15 years behind the West” in chip production.²⁹

III. The National Security Threat

In the Chinese military's view, mitigating the U.S. advantage in AI and allowing rapid AI development in China would enable it to achieve parity with American military capabilities—or leapfrog them.³⁰ The Chinese Communist Party (CCP) frames its AI ambitions in these terms, invoking the desire not only for economic strength but military might. AI dominance is integral to the CCP's military strategy.

President Xi Jinping has expressed his desire for the People's Liberation Army (PLA) to “basically complete” its modernization by 2035.³¹ The PLA conceptualizes this modernization as a process of technological development: from “mechanization” (deploying modern weapons systems and other military platforms) to “informatization” (linking those modern systems to GPS and other networks) and finally to “intelligentization” (the integration of AI and other leading tech for purposes of “intelligent warfare”).³² As far back as 2020, the PLA understood itself to have “basically achieved mechanization and made significant progress in informationization.”³³ Intelligentization is the domain in which the PLA believes it has a “rare strategic opportunity...to overtake others.”³⁴ The PLA is aggressively seeking to demonstrate significant progress on this front by 2027—the PLA's centenary and the next CCP-set milestone on the path to 2035 and 2049.³⁵

One of the PLA's “core operational concepts” is that the future of military conflict will require dominance in “Multi-Domain Precision Warfare.”³⁶ According to Jacob Stokes of the Center for a New American Security, the concept:

... posits that the very networking that gives the U.S. military its power creates interdependencies between its forces, which are also vulnerabilities that can be exploited. Thus, rather than needing to destroy U.S. enemy forces directly—ship-to-ship or tank-to-tank—China can attack the weak points linking U.S. systems and domains together and thereby neutralize or overwhelm U.S. advantages.³⁷

“PLA strategists,” according to the U.S. Department of Defense, “view warfare as a science,” and believe that achieving fully “intelligentized” warfighting capability requires AI leadership across a range of applications:

PLA strategists have stated new technologies will increase the speed and tempo of future warfare, and that operationalization of AI will be necessary to improve the speed and quality of information processing by reducing battlefield uncertainty and providing decision making advantage over potential adversaries. The PLA is researching various applications for AI including support for missile guidance, target detection and identification, and autonomous systems. The PLA is exploring next-generation operational concepts for intelligentized warfare, such as attrition warfare by intelligent swarms, cross-domain mobile warfare, AI based space confrontation, and cognitive control operations. The PLA also considers unmanned systems to be critical intelligentized technologies, and is pursuing greater autonomy for unmanned aerial, surface, and underwater vehicles to enable manned and unmanned hybrid formations, swarm attacks, optimized logistic support, and disaggregated ISR, among other capabilities.³⁸

According to the U.S. Intelligence Community's 2025 Annual Threat Assessment report, “China almost certainly has a multifaceted, national-level strategy designed to displace the United States as the world's most influential AI power by 2030.”³⁹ This includes the CCP's Military-Civil Fusion strategies, through which “the CCP is acquiring the intellectual property, key research, and technological advancements of the world's citizens, researchers, scholars, and private industry in order to advance military aims,” and

which thus render the distinction between military and civilian technological development meaningless.⁴⁰ This strategy is personally supervised by Xi and results in “joint research institutions, academia, and private firms... all being exploited to build the PLA’s future military systems—often without their knowledge or consent.”⁴¹

Senior U.S. State Department officials confirm PLA integration of commercial AI systems, with DeepSeek models directly aiding military applications.⁴² The PLA also reportedly submitted multiple requests for Nvidia H20 chips in 2025, underscoring the military applications of this technology.⁴³

Advanced AI capacity will be critical to the future of warfare and military dominance. The CCP understands itself to be in an aggressive arms race with the United States for that capacity. The United States currently has a decisive advantage in that race. The CCP’s military ambitions require closing that gap; its quickest path to that goal is American willingness to freely sell it the chips and chipmaking equipment it needs.

IV. The Economic Urgency

AI is poised to become the next general-purpose technology, with applications ranging from biomedical research to education to fashion design to drone warfare. The United States currently dominates much of the AI “stack,” from leading-edge semiconductor design to world-leading labs that train and deploy AI models. If the U.S. can maintain this lead, the benefits will compound over time, creating lasting advantages. If it chooses to carelessly sell its edge away to a near-peer adversary, the loss will be generational.

As AI diffuses throughout the economy, its benefits will directly scale with computing capacity. The U.S. currently hosts roughly 75% of global compute, while China lags behind at 14%.⁴⁴ This advantage means that America can deploy proportionally more AI capacity across every economic sector, creating compounding advantages in drug discovery, logistics, research, manufacturing, and innovation itself.⁴⁵

For its part, China is desperate for an AI-driven economic boom. In August 2025, the State Council of China released its official view on the matter.⁴⁶ Its *Opinions on Deeply Implementing the “Artificial Intelligence Plus” Action* calls for embedding AI in every facet of economic life, from industry and consumer applications to science and technology, with the goal of creating an AI-powered “intelligent economy”—and ultimately an “intelligent society”—in the next few years.⁴⁷ The State Council’s stated goal is to:

*[P]romote the broad and deep integration of artificial intelligence with all sectors and domains of the economy and society, reshape paradigms of human production and daily life, foster a revolutionary leap in productivity and profound changes in production relations, and accelerate the formation of a new form of intelligent economy and intelligent society... Guided by Xi Jinping Thought on Socialism with Chinese Characteristics.*⁴⁸

When CCP policymakers say they are betting China’s future economic dominance on AI, U.S. policymakers should believe them.

American chip designers may wish to expand their market share in China to further globalize their reach, but in some cases their exports do not simply boost China’s fortunes but actively reallocate capacity away from the United States in the process. The AI chip industry faces significant bottlenecks and has repeatedly struggled to meet demand. In early 2025, OpenAI CEO Sam Altman reported that its GPT 4.5

model release was delayed due to a lack of compute capacity.⁴⁹ Upon release, Nvidia's Blackwell chip was reportedly sold out for the following year.⁵⁰ On Nvidia's August 2025 earnings call, CEO Jensen Huang boasted that "everything's sold out,"⁵¹ while the *Wall Street Journal* reported that "supply-chain constraints" are a key limiting factor on the company's growth.⁵² In November, Huang again declared that "cloud GPUs are sold out."⁵³ Beyond capacity for fabricating the chips themselves, bottlenecks are also emerging in the advanced packaging process known as "Chip-on-Wafer-on-Substrate" (CoWoS) and in supply chains for the high-bandwidth memory (HBM), both necessary for advanced AI chips to function.⁵⁴

Most analysts estimate the economic value of leading-edge AI computing power in the trillions of dollars,⁵⁵ dwarfing any incremental revenue that chipmakers could secure by filling Chinese demand.⁵⁶ In celebrating the mutual gains from trade, economists assume that the parties to the exchange face the full costs and capture the full benefits of the deals they make. And indeed, selling chips to China may be an entirely rational choice for the profit-maximizing chipmaker. But where the security risk and economic opportunity for the nation dwarf the narrow pecuniary concerns of the deal, free trade can grievously harm the national interest. It is for policymakers, not CEOs, to decide whether the United States benefits more from dominating AI compute or cashing a few extra checks.

V. Learning from Past Mistakes

On March 1, 2000, the Clinton administration issued a press release celebrating the U.S.-China WTO Accession deal. Calling the deal "A Clear Win for U.S. High Technology," the White House gloated that China would "open its internet and telecom markets to investment and services, and provide stronger protection of intellectual property. This will allow the United States to participate in building China's information infrastructure."⁵⁷ A group of 200 high-tech CEOs agreed, declaring that not only would permanent normal trade relations (PNTR) with China expose "the Chinese to our American business practices, values and perspectives," but that it would "also facilitate the development and spread of information technologies, including the Internet, ensuring that American firms will be in a position to help shape the continued evolution of China's economic and social environment."⁵⁸

Of course, the United States did indeed participate in building China's information infrastructure—by handing over American technology, which China studied, replaced domestically, and then sought to displace globally. China obtains foreign technology through joint ventures or forced transfers, develops domestic alternatives, uses predatory subsidies to destroy global competition, then leverages market dominance for geopolitical ends. The "addiction thesis"—the belief that China would remain dependent on U.S. technology, benefiting both nations and creating American leverage—proved decisively and disastrously wrong. In industry after industry, the U.S. traded away technological dominance for short-term financial gain and is now paying the price.

This pattern is demonstrable in many sectors. Huawei is now the leading provider of 5G infrastructure in the world.⁵⁹ China's global market share of solar panels grew to over 80% by 2021, despite the United States pioneering much of the underlying technology.⁶⁰ China controls 90% of global rare earth processing⁶¹ and 75% of global lithium-ion battery production, both of which are other sectors once dominated by the United States before offshoring to China.⁶²

Advanced AI chip design and manufacture is one of the few critical sectors in which the U.S. and its allies retain the kind of dominance the U.S. once enjoyed in many others.

The answer is not to send China the technology the CCP wishes to dominate. It is a policy of full denial of access to the technology that can most effectively accelerate China's AI progress. Without that access,

the CCP will continue to struggle. Even exporting non-leading-edge (by American standards) chips to China, such as the Nvidia H20, extends the country's AI capabilities by months, if not years.⁶³ Conversely, constraining China's compute access has compounding benefits over time: as each generation of AI model demands more compute, it will fall further and further behind.

Some argue that gaining a foothold in China is critical to maintaining the U.S. lead because it will reduce the incentive for Chinese industry to build its own indigenous capacity. Yet this is precisely the playbook China has utilized repeatedly to great success. Selling SME to China will only facilitate development of its own leading-edge chips and semiconductor ecosystem. Access to this technology, and the expertise required to deploy it, will only accelerate development of indigenous alternatives that can and will be substituted when they are ready. The CCP will not relent in its push for indigenization, and the American technology will simply function as a bridge until Chinese firms can catch up.

Direct chip sales are no safer. Access to more compute now will not slow China's push for indigenous alternatives, which is driven not by firm-level profit motives but by the CCP's commitment to its geopolitical and economic goals. While it is true that advanced AI chips require proprietary software ecosystems that benefit from scale, making models built for those ecosystems difficult to port elsewhere, there is no reason to believe that China's short-term operation within those ecosystems would slow the development of Chinese alternatives. Faith in the power of an American ecosystem fails twice over:

1. It assumes that expanding China's AI compute capacity in the short-term in return for a slightly slower path to indigenous alternatives will leave China in a weaker position. It will not. The capacity provided by American chips today will simply serve as a bridge until China is able to fully indigenize.
2. It is already evident in the U.S. market that firms can and will resist lock-in to one platform. Hyperscalers are developing their own chips; leading AI labs are shifting to be chip-agnostic. If American companies can see through the problem of dependence on a single chip provider and invest to avoid it, so can the Chinese Communist Party.

From a corporate perspective, the massive Chinese market is tempting. But short-term corporate profits for a few American companies and minimal revenue to the U.S. Treasury are not worth trading away the most valuable economic advantage in modern history or helping America's main geopolitical adversary achieve military parity.

In a September interview, Nvidia CEO Jensen Huang said of CCP leaders, "They also publicly say, and rightfully I believe they believe this, that they want China to be an open market. They want to attract foreign investment. They want companies to come to China and compete in the marketplace, and I believe that." He continued:

*They want to attract foreign investment. They want companies to come to China and compete in the marketplace and I believe that. ... I do hope because they say it—their leaders say it. And I take it at face value. And I believe it because I think it makes sense for China that what's in the best interest of China is for foreign companies to invest in China, compete in China, and for them to also have vibrant competition themselves.*⁶⁴

Such embarrassing naivete from the leader of a major corporation is shocking, though perhaps understandable insofar as it aligns so well with the short-term pecuniary interests of that corporation. Policymakers must now allow it to override the national interest.

END NOTES

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⁹ Select Committee on the Chinese Communist Party, *Selling the Forges of the Future*.

¹⁰ *Ibid.*

¹¹ *Ibid.*

¹² *Ibid.*

¹³ *Ibid.*

¹⁴ *Ibid.*

¹⁵ These suggestions are broadly consonant with the Select Committee's recommendation to "dramatically expand country-wide controls for the PRC, with a licensing policy of presumption of denial, to apply to any SME and related components and consumables, that can be used in an advanced or foundational fab, utilizing FDPR if necessary."

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- ²² Dylan Patel et al., “Huawei Ascend Production Ramp: Die Banks, TSMC Continued Production, HBM is The Bottleneck,” *SemiAnalysis*, September 8, 2025, <https://newsletter.semianalysis.com/p/huawei-ascend-production-ramp>. Chinese production is severely hampered by HBM availability and low manufacturing yields (the percentage of functional chips produced from a wafer). Reliable estimates are hard to come by, but industry experts suggest a range of 30–50% yields, compared to more than 90% yields for U.S.-allied manufacturers.
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