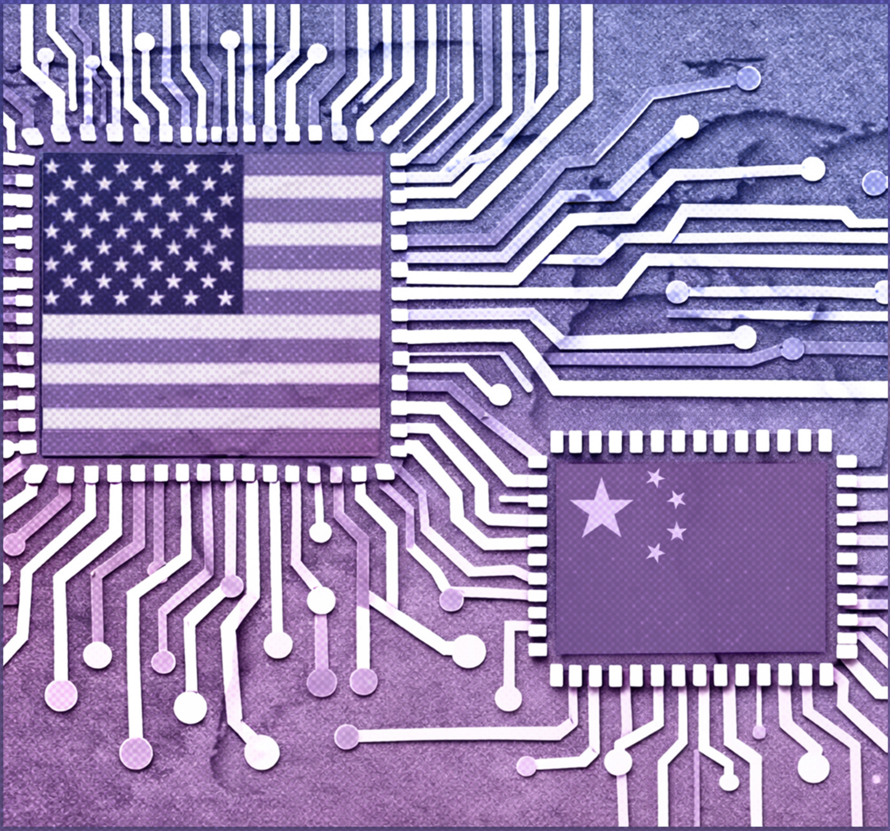
Tricontinental Interventions

CONJUNCTURAL ANALYSIS FROM ASIA



Breaking the Stranglehold:
How China is Shattering US Technological Hegemony

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Imperialism, Technology, and the Crisis of Monopoly

For over a century, imperial power has rested not merely on military force or financial dominance, but on monopolistic control over the most advanced means of production. From the industrial revolution through the age of digital platforms, successive imperial cores have secured global dominance by capturing technological frontiers, extracting monopoly rents, and using those rents to finance further technological leadership. This cycle produced what appeared to be a self-reproducing hierarchy: the imperial core monopolised technology and capital, the periphery supplied labour and resources, and unequal exchange transferred value upward, even in the absence of formal colonial rule. The pattern was encoded in theories of comparative advantage and development stages, and institutionalised through World Bank orthodoxy and IMF structural adjustment.

The rise of China has placed that system under strain. The United States' escalating campaign of export controls, sanctions, and technology embargo against China is widely described as a 'great power competition'. Such framings obscure the real stakes. This is not simply a rivalry between two nations but a confrontation between two fundamentally different logics of technological development: one rooted in monopoly and rent extraction, the other in production, scale, and diffusion. At stake is not only US primacy, but the viability of technological monopoly as the foundation of contemporary imperialism.

Lenin identified imperialism as the monopoly stage of capitalism. Samir Amin specified five controls reproducing this system; control over technology, natural resources, finances, communications, and military force. These mechanisms work together, but control over technology is foundational and enables dominance across all other domains. Intellectual property regimes, standards control, platform dominance, and control over critical chokepoints enable firms based in the imperial core to extract rents far exceeding what competitive production would allow. Over $1 trillion in cross-border intellectual property payments flow annually, overwhelmingly to the advanced capitalist core. These rents finance financialisation, military power, and the next wave of innovation, sustaining the imperial cycle.

This monopoly structure rests on a specific international division of labour. Low-margin, energy-intensive, environmentally damaging, and labour-intensive production was progressively outsourced to the Global South, while the core retained design, branding, finance, and intellectual property. Over time, this produced highly financialised economies in the core, increasingly divorced from production itself. Share buybacks, asset inflation, and rent extraction displaced investment in productive capacity. The result was not only deindustrialisation, but the erosion of the human capital, process knowledge, and industrial ecosystems required to sustain technological leadership.

This monopoly on technology now faces disruption. US leadership in critical technologies has sharply eroded from 60 of 64 areas (2003–2007) to only 7 (2019–2023), while China rose from 3 to 57 in the same period. This marks the first systematic Global South breakthrough of the imperialist technology monopoly. For decades, China's rise was tolerated, even welcomed, so long as it remained confined to manufacturing without control over high-value technological bottlenecks. That equilibrium collapsed when China began compressing the gap between adoption and mastery, not by replicating Western monopoly strategies, but by undermining them.

China's development strategy has been centred on production, not rent extraction. Through long planning horizons, state coordination, mass technical education, and disciplined capital allocation, China has systematically built complete industrial ecosystems across multiple advanced sectors simultaneously. Crucially, the socialist state has prevented domestic capital from consolidating into monopoly forms capable of extracting sustained super-profits. Firms are compelled to compete on cost, quality, and process innovation rather than relying on intellectual property rents. As a result, China has repeatedly transformed technologies that the imperial core treated as rent-generating monopolies into competitive, low-cost commodities. In doing so, it has attacked the material foundation of imperial power itself.

The US response to this challenge has been to weaponise interdependence. Export controls on semiconductors, restrictions on advanced manufacturing equipment, bans on AI chips, and pressure on allies to align are all premised on a single assumption: that control over technological chokepoints can permanently arrest development elsewhere.

That assumption is false because technology is not a static commodity. It is a productive force embedded in material processes, skills, and industrial systems. Where sufficient productive capacity exists, restriction does not freeze development. Rather, it compels substitution, learning, and indigenous innovation. When the option to buy disappears, the option to build becomes unavoidable.

This issue of Tricontinental Interventions: Conjunctural Analysis from Asia examines how this dynamic between US technological monopoly and Chinese productivity unfolds across key sectors that define modern production: semiconductors, artificial intelligence and robotics, energy systems, critical minerals, industrial supply chains, and the military-industrial base. We begin with the sector the US believed to be its most secure stronghold: semiconductors.

The Semiconductor Battleground

On 17 December 2025, Reuters reported what Washington had spent years trying to prevent. Earlier in the year, Chinese scientists unveiled a working prototype of an extreme ultraviolet (EUV) lithography machine, capable of generating 13.5-nanometre (nm) wavelength light, the indispensable foundation of advanced semiconductor manufacturing. Classified under national security, the project is being described as China's Manhattan Project, reflecting its strategic significance. Although not yet producing working chips, its very existence demolishes the centrepiece of the US containment strategy: that denying China EUV access would permanently arrest its semiconductor development.

The US treated the EUV lithography capabilities of ASML Holding – a Dutch corporation that dominates the production of lithography machines – as the ultimate chokepoint. The most advanced chips, manufactured at 7 nm and below, require EUV lithography machines. These devices represent the apex of precision manufacturing. Each machine contains over 100,000 components. Only one company in the world had mastered this technology: ASML of the Netherlands. US policy rested on the belief that without EUV capability, China could not produce chips below 7 nm, consigning Chinese semiconductor manufacturing to a permanent technological lag.

The Siege

The formal opening of the chip war came on 7 October 2022, when the US Bureau of Industry and Security announced the most sweeping semiconductor export controls in decades. The regulations targeted three 'chokepoints': advanced computing chips needed for AI and smartphones, the lithography machines used to manufacture chips, and the electronic design automation (EDA) software required to design them. US National Security Advisor Jake Sullivan described this as the 'small yard, high fence' strategy, promising targeted restrictions while preserving broader commercial ties.

The semiconductor siege did not emerge fully formed. It evolved through an escalation cycle. The foundation was laid during the campaign against Huawei by the first administration of President Donald Trump. The first shots were fired in 2018, when Huawei CFO Meng Wanzhou was arrested in Canada on a US request. In 2019, Huawei was placed on the Entity List, cutting off its access to US technology. Through 2021, these restrictions were expanded by President Joe Biden's administration to cover hundreds of Chinese companies.

Modern semiconductors are perhaps the most complex manufactured objects in human history. The most advanced chips contain billions of transistors etched at scales measured in nanometres, billionths of a metre, using machines that cost hundreds of millions of dollars and require decades of accumulated expertise to operate. The entire supply chain depends on a handful of firms: ASML in the Netherlands for EUV lithography machines, TSMC in Taiwan for the most advanced foundry services, and a small cluster of US, Japanese, and European companies for design software and manufacturing equipment. The US believed that controlling these chokepoints could permanently arrest Chinese semiconductor development at a level two or three technological generations behind the frontier.

However, within months of restrictions, the 'small yard' began expanding. Controls initially focused on advanced AI chips extended to manufacturing equipment, servicing agreements, third-country re-exports, and even the movement of technical personnel. The fence kept rising. The yard kept growing.

Within two years, over seven hundred Chinese entities would be added to the Entity List. The Foreign Direct Product Rule was extended to ensure that chips manufactured anywhere in the world using US technology could not be sold to restricted Chinese companies. Allied nations were pressured into alignment: the Netherlands restricted ASML's sales, Japan limited exports of semiconductor manufacturing equipment, and South Korea's chip giants found themselves caught between their largest customer and their security guarantor.

The silicon siege represents the most ambitious peacetime economic warfare apparatus in modern history. Its scope exceeds the Cold War-era Coordinating Committee for Multilateral Export Controls restrictions on the Soviet Union, goes beyond sanctions regimes imposed on Iran or the Democratic People's Republic of Korea, and targets not an isolated economy but the world's second-largest economy and largest manufacturing base. The expectation was clear: the costs would fall on China.

The Breakout

On 29 August 2023, Huawei quietly launched the Mate 60 Pro smartphone. There was no fanfare, no press event, no keynote presentation. The timing was deliberate: US Secretary of Commerce Gina Raimondo was in Beijing that very day, meeting with Chinese officials to discuss the semiconductor restrictions her department had imposed the previous year. The launch was a message delivered not in words but through silicon.

The phone's processor, the Kirin 9000s, was manufactured by China's Semiconductor Manufacturing International Corporation (SMIC) using a 7nm process. This was not supposed to be possible. SMIC was expected to be stuck at 14 nms, lacking the EUV lithography equipment and EDA software necessary to advance further. Yet there it was, etched in silicon, working inside millions of smartphones: proof that Chinese engineers had found a way.

The Mate 60 Pro revealed only the surface of a deeper shift. Behind it lay the rapid construction of the entire domestic semiconductor ecosystem. Semiconductor manufacturing requires dozens of specialised machines: lithography systems that project patterns, etchers that carve those patterns into silicon, deposition systems that add layers of material, inspection systems that detect defects, and testing systems that verify functionality. Export controls forced Chinese foundries to replace foreign equipment from US firms like Applied Materials, Lam Research, and KLA, along with Japanese and European suppliers, with domestic alternatives. Firms such as Naura, Advanced Micro-Fabrication Equipment (AMEC), and SiCarrier expanded rapidly, backed by state support. In early 2025, Naura and AMEC recorded revenue growth of 30% and 44%, respectively. SiCarrier unveiled more than 30 tools covering nearly the entire manufacturing process. The report of the working EUV prototype became the symbolic culmination of this trajectory.

The calculation that had sustained decades of Chinese technology procurement, that it was cheaper and faster to buy than to build, had been eliminated by US policy. When the buy option disappeared, the build option became not just viable but necessary.

China's semiconductor investment programme, already substantial through two prior phases of the 'Big Fund' totalling over $50 billion since 2014, was dramatically escalated. By May 2024, Beijing launched Big Fund III with $47.5 billion, the largest single allocation in history. Provincial governments followed and universities expanded semiconductor engineering programmes. Thousands of engineers who might have joined foreign firms were recruited into the national project of technological self-reliance. The scale of mobilisation was staggering.

China's mature-node semiconductor production, chips at 28nm and above, expanded rapidly, reaching 31% of global capacity by late 2024. While these were not the cutting-edge chips, they represented the bulk of semiconductor demand and applications: automotive systems, industrial controls, consumer electronics, and telecommunications infrastructure. This strategy aligns with China's broader manufacturing model: consolidating dominance where scale and cost matter most rather than chasing monopoly rents at the frontier.

The economic consequences for US industry mounted rapidly. By 2024, the Information Technology and Innovation Foundation (ITIF) estimated annual revenue losses of $77 billion for US semiconductor firms from the Chinese market. The US Chamber of Commerce projected $83 billion in losses and 124,000 US jobs at risk. Reduced revenue translated directly into reduced research and development. Full decoupling, ITIF warned, would cut US semiconductor research and development investment by 24%, roughly $14 billion annually. In a cutting-edge industry where technological leadership depends on enormous ongoing investment, the US was choosing to defund itself.

The Collapse of Containment

Early in 2025, the Trump administration imposed a near-total ban on Nvidia's AI chip sales to China, including the H20, a deliberately downgraded chip designed to comply with earlier restrictions on H100 and H200 by the Biden administration. The goal was to close every remaining loophole. Nvidia's stock fell sharply as China had accounted for roughly 13% of its revenue. By mid-year, the company had written down $4.5 billion in unsold H20 inventory. Chinese buyers turned increasingly to Huawei's Ascend chips, while NVIDIA CEO Jensen Huang lobbied desperately for relief.

On 29 September 2025, the Bureau of Industry and Security implemented the '50% Affiliates Rule', in a direct attack on China, extending export controls to any foreign entity majority-owned by blacklisted companies. The rule affected more than 20,000 firms worldwide. The next day, the Dutch government invoked a Cold War-era law to seize control of Nexperia, whose Chinese parent, Wingtech, had been Entity-Listed months earlier. China's response was immediate. Nexperia's China operations, responsible for 80% of its global production, were blocked from exporting components. European supply chains seized and automotive manufacturers warned of critical shortages. Nearly half of Europe's carmakers, most medical device producers, and much of the defence industry faced disruption. Volkswagen, BMW, and Stellantis announced production shutdowns.

On 9 October, Beijing retaliated against the 50% Affiliates Rule itself. The Ministry of Commerce imposed export controls on rare-earth elements – materials essential to chips, motors, and weapons systems. China controls roughly 70% of global rare-earth mining and 90% of processing. The restrictions included extraterritorial provisions and a Chinese version of the 50% rule. Prices surged and global supply chains seized. Defence contractors in the US and Europe faced shortages. Three weeks later, at a bilateral meeting between Trump and Chinese President Xi Jinping, the US capitulated. Treasury Secretary Scott Bessent announced a one-year suspension of the 50% Affiliates Rule in exchange for a parallel suspension of China's rare-earth controls. The empire had discovered that chokepoints cut both ways.

On 8 December 2025, the US approved Nvidia H200 sales to China, which had been previously restricted by the Biden administration. Chinese firms placed orders exceeding two million chips for 2026. Nvidia rushed to expand production. However, Beijing acted again, with the Cyberspace Administration restricting H200 use in state-backed data centres and directing them toward domestic chips. At the same time, China formalised a mandate requiring new semiconductor fabs to use at least 50% domestically manufactured equipment, forcing structural transformation away from US dependence.

The pattern was unmistakable. China's retaliation to US restrictions was starting to seriously hurt the US, forcing it to capitulate, while China itself was becoming increasingly confident about cutting its cords of dependency on the US.

The End of Illusions

The semiconductor siege reveals a deeper misunderstanding. Technological leadership is not maintained by hoarding artefacts. Technology is a productive force. Its value lies in application, not scarcity. A society with industrial depth, scientific capacity, and organisational coordination can reproduce most technologies when compelled to do so. Restriction provides the compulsion.

Semiconductors were meant to be the unbreakable stranglehold. Instead, they became the first clear demonstration that monopoly logic fails when confronted with organised production at scale. The lesson reverberates far beyond silicon and set the pattern for what followed in artificial intelligence, energy, materials, and war.

Embodied Intelligence vs. Algorithmic Rent-Seeking

On 20 January 2025, a small Chinese AI startup called DeepSeek sent shockwaves through Silicon Valley by releasing an AI model that matched the most advanced US models built by Google, OpenAI, and Anthropic – systems that had required tens of billions of dollars and the most advanced chips.

DeepSeek accomplished this feat using Nvidia H800 chips, deliberately crippled versions that the US government had mandated for export to China. The result was a model that cost a fraction to train and run, achieving comparable results with inferior hardware. More jarring still: the company released it as open-source, with Application Programming Interface (API) pricing orders of magnitude times cheaper than OpenAI. Within days, Nvidia's stock began cratering, wiping out $600 billion in market capitalisation on 27 January, the largest single-day loss in stock market history.

This was the predictable outcome of US export controls. Denied access to cutting-edge chips, DeepSeek engineers were forced to innovate in efficiency, as opposed to brute force tactics used by US AI Labs. The containment strategy had produced its opposite: accelerated innovation under constraint.

Competing AI Visions

The dominant US narrative centres on pursuing Artificial General Intelligence (AGI) or human-like intelligence – the so-called ‘holy grail’ of AI. The belief was that simply scaling up model size would unlock new emergent capabilities and deliver a decisive global advantage. This approach aligned neatly with venture capital logic: raise billions, entrench early movers, and extract monopoly rents through platform monopolies and proprietary models. Focus on speculation, not deployment.

China has taken a different path. Its firms have focused on engineering efficiency, open-source development, and cost discipline. DeepSeek demonstrated that high-performance models can be built without massive capital expenditure. The emphasis was on distribution and integration, producing competitive models at radically lower prices, making them attractive across the Global South and even among Western AI startups.

A partner at the leading venture capital firm Andreessen Horowitz, admitted publicly that nearly 80% of AI startups pitching for funding were running on Chinese open-source models. If this trend continues, China will become the default supplier of global AI infrastructure, while US firms remain burdened by debt structures that assume monopoly pricing in markets they may no longer dominate.

In the US, hollowed out by decades of deindustrialisation and financialisation, AI has been channelled largely into content creation, advertising, platform lock-in, and white-collar automation – algorithms that write, recommend, and trade. AI serves capital’s appetite for profit without production. However, in China, AI is embedded directly in the material base of production. Factories hum with ‘embodied intelligence’, robots guided by sensors and algorithms that weld, assemble, and package with precision. This application is not automation of office work, but transformation of manufacturing itself.

Robotics and Embodied Intelligence

In Xiaomi's 'dark factory' in Beijing, the future of manufacturing has already arrived. The factory floor is silent except for the hum of machinery. There are no voices, no footsteps, and no shift changes. The lights are off; there is no need for illumination when no human eyes are watching. In the darkness, robotic arms move with inhuman precision, assembling components, testing connections, and packaging finished products. A smartphone emerges every three seconds, around the clock, seven days a week.

Opened in 2023, the 81,000 square metre facility produces ten million flagship devices annually. The system self-diagnoses problems, optimises processes, and 'evolves by itself'. Eleven production lines operate continuously with zero human involvement on the production floor. This factory is not a demonstration but a functioning facility producing goods at scale.

The Robot Surge

China deployed 2.027 million industrial robots by 2024, comprising 54% of global installations. Robot density surged to 470 units per 10,000 workers in 2024, surpassing Germany and Japan, nations synonymous with industrial automation. Since 2023, Chinese factories have installed more robots than the rest of the world combined.

Meanwhile, the US lags dramatically. Despite having among the world's highest manufacturing wages, the US ranks only tenth in robot density, approximately 49% below what wage levels would predict. China has built over 30,000 basic-level smart factories as part of nationwide industrial digitalisation, alongside 1,200 advanced-level and 230 excellence-level smart factories. State-led initiatives such as 'AI Plus' and '5G plus Industrial Internet' integrate connectivity, sensors, and automation across entire manufacturing ecosystems.

Beyond industrial robots bolted to factory floors, a new frontier emerges: humanoid robots for general-purpose tasks. Unitree's G1 humanoid reached the market at approximately $16,000, one-sixth the price of comparable Western offerings.

Compounding Advantages

The result of these developments is a distinct model of socialist industrial modernisation. Rather than treating AI as a speculative asset, China deploys it as a tool for upgrading productive forces. By lowering costs, improving quality, and increasing capacity through automation, China is positioned to outcompete rivals globally. The ability to iterate product development rapidly, enabled by nearby manufacturing capacity and affordable costs, represents a critical advantage. Robotics systems increasingly manufacture other robotics systems, generating a production flywheel that continuously compounds advantage.

This dynamic rests on a deeper material foundation: energy. Training models, operating datacentres, and running automated factories require vast and reliable power. The US already faces grid constraints and rising electricity costs. China's rapid expansion of renewable generation and grid capacity places it in a far stronger position to sustain energy-intensive AI deployment. This energy foundation, the material base of intelligent production, is the subject of the next chapter.

Powering Production in the 21st Century

In late 2024, datacentres across the US states of Virginia, Texas, and Oregon began hitting power supply limits. Regional grid operator PJM Interconnection announced a $9.3 billion increase in capacity costs, sending electricity prices soaring. Meanwhile, China added 277 gigawatts of solar capacity in a single year, more than the entire cumulative solar capacity built by the US over decades. The contrast reveals a fundamental asymmetry: while the US struggles to power its AI ambitions, China has systematically transformed energy into a strategic advantage.

Energy is not simply an input to production. It is the material foundation upon which all advanced technology rests. AI, datacentres, semiconductor fabs, and automated factories depend on abundant, affordable power. The country that solves the energy equation gains compounding advantages in technological competition. Yet the US and China have pursued radically different paths: China through state-coordinated renewable transformation at unprecedented scale, and the US through fragmented markets paralysed by financialisation and fossil fuel lock-in.

China's Renewable Revolution

China's renewable revolution is nothing short of breathtaking. Beyond the 277 GW solar capacity added in 2024, its 520 GW of wind capacity exceeds that of Europe and the US combined. By 2024, nearly half of its clean-tech exports – EVs, batteries, and solar panels – were headed to the Global South, and clean-tech investment had surged to $940 billion, with green industries contributing a tenth of China's GDP.

China's socialist planning system identified renewables as strategic industries, directed massive subsidies and cheap finance, absorbed early failures, and scaled up successes. State enterprises, public banks, grid overhauls and industrial policy allowed coordination on a national scale. The result is not just speed, but coherence: factories, grids, research, and supply chains all developed together. A whole ecosystem of companies – BYD in EVs, CATL in batteries, Goldwind in wind turbines, and Longi in solar panels – has been nurtured. The result is historic: Chinese companies produce 97% of solar wafers, 85% of solar cells, and 80% finished panels globally. This domination extends to 80% of batteries and 70% of electric vehicles. Their solar panels cost less than half of US or European panels due to massive scale, vertical integration, and lower input costs. China is now not just leading, but dominating every corner of clean energy.

China's State Grid Corporation invested $84 billion in grid infrastructure in 2024. 42 ultra-high voltage projects have been constructed, enabling long-distance electricity transfer from renewable-rich western regions to coastal centres. Grid reserve margins of 80-100% treat overcapacity as essential redundancy. Integration of 1,889 GW renewable capacity requires coordinating generation, transmission, storage, and grid management – a transformation achievable only through state coordination. China builds nuclear reactors in 6.4 years through standardised designs and continuous construction that maintains workforce expertise, compared to the decades wasted on fragmented US nuclear projects. Even in long-horizon fusion energy research, China has positioned itself ahead of the US, committing more than $2 billion in 2025, compared to approximately $800 million in US federal funding.

Financialisation, Fragmentation, and Fossil Lock-In

US energy policy remains mired in fossil fuel interests. The oil and gas industry spent over $124 million on federal lobbying in 2023 alone, with political action committees distributing another $32 million to sympathetic legislators. Even modest clean energy policies spark immediate backlash from fossil fuel companies, automotive lobbies, and politicians dependent on their campaign contributions. The result is policy incoherence: renewable subsidies undermined by continued fossil fuel tax breaks, grid modernisation stalled by regulatory capture, and even modest climate commitments abandoned when political winds shift.

The US grid crisis has multiple dimensions. The physical infrastructure is ageing: over 70% of transmission lines are over 25 years old, with many still operating after over 50 years. Over 3,000 utilities operating under 50 state regulatory regimes with no central coordinating authority create system-wide paralysis. Each utility optimises individual returns rather than enabling system transformation.

In 2022, investor-owned utilities distributed 86% of earnings directly to shareholders, averaging $25 billion annually, even as infrastructure aged and climate risks intensified. Between 2020 and 2023, the top five US utilities spent $43 billion on share buybacks and dividends while deferring critical grid upgrades. This is financialisation in its purest form: extracting value rather than building capacity, prioritising shareholder returns over infrastructure investment that generates no immediate profit.

The Schneider Electric analysis projects that by 2033, US electricity demand will exceed available supply by 175 GW, roughly equivalent to the output of 175 large power plants. This shortfall threatens not merely economic growth but the technological ambitions that US strategy depends upon. The grid crisis is also an AI crisis.

Energy and Imperial Power

Imperial control has historically operated through energy scarcity – restricting hydrocarbon access, controlling shipping routes, and manipulating prices. The US faces a deepening contradiction: imperial control requires energy scarcity, but climate commitments and technological development require abundance. Reshoring renewable manufacturing while maintaining cost competitiveness proves economically impossible without Chinese-scale state coordination. Each mechanism preserving scarcity-based control contradicts abundance requirements. The impossible choice is whether to maintain an energy monopoly or enable technological development.

For the Global South, renewables offer energy sovereignty. Chinese equipment at 20-40% discount enables transitions previously prohibitive at Western monopoly pricing. Material possibility exists for energy independence rather than permanent fossil fuel dependence mediated through imperial supply chains.

Energy operates as a microcosm of broader competition. The country solving energy abundance, making it cheap, available, and scalable, gains a foundation for all technological development. By that measure, China has established a strategic advantage that the US, absent systemic transformation, cannot overcome.

Yet energy abundance is not self-contained. Solar panels, wind turbines, batteries, electric motors, and grid infrastructure depend on vast quantities of processed materials, from lithium and cobalt to rare-earth elements and advanced magnets. Control over energy systems depends on control over the material inputs that make them possible. It is here, in the hidden layers of minerals, processing, and refining, that the next critical chokepoint emerges, and where China's advantage proves even more consequential. That material foundation is the subject of the next chapter.

The Rare Earths the West Forgot

On 9 October 2025, Beijing deployed what analysts immediately recognised as China's most consequential weapon in the escalating trade war. The Ministry of Commerce announced sweeping export controls on rare-earth elements. Foreign companies would now require special approvals from Beijing to export any product containing more than 0.1% of Chinese-sourced rare earths, or manufactured anywhere in the world using Chinese extraction, refining, or magnet-making technology. This extraterritorial reach marked China's first deployment of its own Foreign Direct Product Rule, turning the US weapon back against its creator. Applications for military purposes would be automatically rejected.

President Trump threatened, within hours, to impose an additional 100% tariff on all Chinese goods and restrict exports of critical software. Three weeks later, at a hastily arranged meeting in the Republic of Korea, Treasury Secretary Scott Bessent announced a one-year suspension of the US '50% Affiliates Rule' in exchange for a parallel suspension of China's rare-earth controls – the empire capitulated.

The Ultimate Chokepoint

The term 'rare earths' misleads. These 17 elements, 15 lanthanides plus scandium and yttrium, are not particularly rare in Earth's crust. The challenge lies not in extraction but in separation and refinement – requiring over 50 chemical stages involving over 2,000 chemical reactions to isolate individual elements at 99.99%

purity. The process generates toxic waste: acidic slurries, radioactive thorium byproducts, and heavy metal contamination.

China has a near-global monopoly over rare-earth processing and the downstream supply chains underpinning critical industrial and military applications. While they have about half the world's rare-earth reserves, they control roughly 70% of global rare-earth mining, 90% of separation and processing, and close to 100% of the heavy rare-earth processing.

Every wind turbine depends on neodymium-dysprosium permanent magnets for its generator. China produces 93% of these magnets. Electric vehicle motors, smartphone screens, hard disc drives and industrial robotics – all rely on these rare earths most people have never heard of. Each F-35 fighter jet contains 417 kilograms of rare-earth elements. An Arleigh Burke-class destroyer requires 2.4 tonnes, while a Virginia-class nuclear submarine requires 4.2 tonnes. Tomahawk missiles, radar systems, night vision devices, Predator drones, and precision-guided munitions all rely on rare-earth magnets and alloys. The material base of advanced imperial warfare runs through Chinese processing plants.

Advanced semiconductor fabrication requires specialised rare-earth compounds. They improve transistor performance in advanced nodes, polish silicon wafers, and host lasers for lithography equipment. These applications consume smaller volumes than magnets but demand extreme purity. Even trace contaminants destroy chip functionality. China's share of these specialised heavy rare earths is close to 100%.

The Contradiction That Imperialism Built

China's dominance in rare earths emerged not through geological accident but through deliberate industrial strategy combined with Western abandonment. During the 1990s and 2000s, US and European rare-earth processing facilities closed due to environmental compliance costs and the neoliberal logic of offshoring industries to the Global South. Mountain Pass mine in California, once the world's largest rare-earth producer, ceased operations in 2002. Western capital retreated to high-margin design while leaving the 'low-end' industrial base to China.

The Chinese state embraced what Western capital rejected. Through patient capital investment and systematic supply chain integration, China built processing capacity from mining through magnetic alloy production. By 2024, China processes rare earths at volumes and purities that Western facilities have not matched in decades. Western attempts to rebuild non-Chinese supply chains will face years of capacity development, billions in required investment, and the fundamental challenge that processing expertise cannot be purchased.

Rare earths are not merely an accidental chokepoint; they are a node within a far larger production network. It is this systemic integration, spanning from mines to factories to final assembly, that defines the next terrain of competition.

Industrial Supply Chains: The Material Basis of Power

In April 2025, BYD announced a stunning price cut. The Seagull electric vehicle, offering up to 252 miles of range, would sell for just $7,800, roughly one-sixth the price of comparable Western electric cars. For US and European automakers struggling to produce EVs profitably even at $50,000, BYD's pricing appeared impossible. Yet the company remained profitable, maintaining a 6.4% operating margin despite slashing prices by as much as 34% across 22 models. BYD doesn't compete on price alone: its premier model touts 400 km charging in five minutes compared to roughly 100 km under comparable conditions from the top US EV-maker, Tesla.

The explanation lay not in labour arbitrage or state subsidies alone, but in something far more structural: complete supply chains. BYD controls or coordinates every major stage of production, from lithium extraction and battery chemistry to power electronics, final assembly, and logistics. These activities are geographically clustered, enabling design changes, supplier coordination, and production scaling in weeks rather than years. Cost reductions are cumulative, systemic, and difficult to replicate.

This completeness, the integration of raw materials, intermediate goods, specialised tooling, logistics, energy, and accumulated skills across entire industrial ecosystems, represents China's most formidable competitive advantage. It marks the first time a Global

South country has mastered system-level production across multiple advanced sectors simultaneously.

EVs, Batteries, and Materials

Consider the 'New Trio' of exports that now defines China's industrial emergence: electric vehicles, lithium batteries, and solar panels. In EVs, BYD sold 4.6 million vehicles in 2025, surpassing Tesla in both unit sales and revenue. BYD's secret lies in 'vertical integration' – the company manufactures approximately 75% of its vehicle components internally, compared to just 46% for Tesla's China-made Model 3.

In batteries, Chinese manufacturers CATL and BYD together control 55% of the global market. Chinese factories produce 80% of the world's battery cells, and crucially, China commands 98% of LFP cathode production that goes into these batteries. The battery pack that costs $139 per kilowatt-hour in Europe costs just $94 in China.

The solar industry presents perhaps the starkest picture. Chinese companies control 97% of global wafer production, 85% of cell production, and 80% of module assembly. Chinese-made solar panels cost 50% less than European and US equivalents.

Chemicals, APIs, and Pharmaceuticals

The same pattern appears in chemicals and pharmaceuticals. China produces over 40% of global chemical intermediates and roughly 80% of global generic active pharmaceutical ingredient (API) supply. This dominance is not accidental. By expanding chemical manufacturing, China preserved the material base upon which pharmaceuticals, polymers, fertilisers, and advanced materials depend.

Shipbuilding, Drones, Robots, and Tools

China's dominance in shipbuilding underscores the same logic. Chinese yards now account for 70% of global ship output by tonnage, outproducing the US by more than 200 times. Shipbuilding requires steel, engines, electronics, logistics coordination, and skilled labour. Once lost, such capacity cannot be reconstituted quickly, regardless of defence budgets.

In drones and robotics, Chinese firms benefit from proximity to electronics manufacturing, motors, sensors, and precision tooling. Chinese company DJI dominates the global civilian drone market with a 70% global market share. Chinese robotics firms now command 40% share of the global robotics market and dominant shares in collaborative robots, service robots, and mobile robots.

Precision tools themselves – computer numerical control (CNC) machines, industrial sensors, bearings – form another critical layer. China is now the world's largest producer of machine tools, producing around a third of the global production, a sector that underpins every other industrial activity. Mastery of tooling determines who can manufacture advanced goods at scale. Here too, China's advantage is systemic.

Imperialist Response to the 'Second China Shock'

The imperialist bourgeoisie understands the stakes. Western pundits' repeated warnings about 'overcapacity' reveal the class interests at play. *China already accounts for 30% of the world's manufacturing output. It cannot rapidly grow that share without causing displacement globally*. The displacement they fear is not of workers but of profits.

The policy response has been instructive. The US imposed 100% tariffs on Chinese EVs. The EU followed with tariffs reaching 45.3%. Policy documents now explicitly invoke the 'Second China Shock', warning that, unlike the first shock of the early 2000s, this one threatens to 'hollow out advanced manufacturing' in the imperialist core.

Yet tariffs cannot solve the fundamental problem. Decades of financialisation have hollowed out the supplier ecosystems and skilled workforces that Chinese industrial policy systematically cultivated. The industrial flywheel, production driving innovation, innovation driving production, has no equivalent in the West's financialised capitalism centred on share buybacks and financial engineering.

Industrial prowess and technological development are dialectically linked. China's ability to break technology strangleholds in semiconductors, AI hardware, and energy systems rests on its industrial depth. Production capacity enables experimentation, learning, and substitution when access is denied.

This material base shapes geopolitics, not the other way around. Imperial powers cannot fully decouple because alternative supply chains do not exist and cannot be rebuilt on meaningful timescales. Infrastructure, skills, and ecosystems cannot be sanctioned into existence. In the military-industrial domain, manufacturing capacity translates directly into strategic power. It is there we turn next.

The Military-Industrial Complex and the Question of War

In July 2024, the bipartisan Commission on the National Defence Strategy delivered its report to Congress. Buried in the technical assessments was a startling admission: in a conflict with China, the US would exhaust its munitions inventories in as few as three to four weeks, with anti-ship missiles lasting only days. Meanwhile, a single Chinese shipyard has more capacity than all US shipyards combined. The report concluded with unprecedented candour: 'The United States last fought a global conflict during World War II, which ended nearly 80 years ago. The nation was last prepared for such a fight during the Cold War, which ended 35 years ago. It is not prepared today'.

The report revealed the fundamental hollowing out of US military-industrial capacity despite spending more on its military than the next ten countries combined. Modern warfare is fundamentally industrial – it consumes material at staggering rates. Thousands of artillery shells daily, hundreds of drones destroyed weekly, and naval vessels requiring years to replace. Industrial capacity, not military budgets, determines outcomes when nations mobilise for sustained conflict. By this measure, the United States confronts its most dangerous contradiction: an empire built on military dominance whose industrial foundation has crumbled beneath it.

The Pentagon's Industrial Nightmare

A leaked US Naval Intelligence briefing revealed that China's shipbuilding capacity exceeds the US by 232 times, 23 million tonnes versus less than 100,000. A single Chinese shipbuilder, China State Shipbuilding Corporation, constructed more commercial vessels in 2024 than the entire US industry has built since 1945. The US Navy struggles to maintain 290 ships while the People's Liberation Army Navy operates over 370 vessels and adds 25-30 to its fleet annually.

The ammunition crisis exposes even deeper rot. US artillery shell production crawled from 14,500 rounds a month before 2022 to just 40,000 by mid-2025, still 60% below target. No domestic TNT production has existed since 1986. All artillery propellant comes from a single Canadian plant. The combustible cartridge cases essential to every 155mm round are manufactured at one facility. A July 2025 Government Accountability Office report found only one foundry in the entire country capable of producing the large titanium castings required for weapons systems.

Washington's dependency on the very nation it designates as an adversary compounds this fragility. 41% of Pentagon weapons systems rely on Chinese semiconductors. Each F/A-18 fighter contains 5,000 Chinese semiconductors; each destroyer nearly 6,000. When Lockheed Martin discovered Chinese-origin magnets in F-35 supply chains, production had to be halted. Raytheon's CEO publicly admitted that decoupling from China would be 'impossible' given thousands of Chinese suppliers. The Govini 2025 defence report concluded bluntly: 'The US defence industrial base is dangerously unprepared for the demands of great power competition'.

China's Integrated Military-Industrial Capacity

China's military strength must be understood not as separate from, but as emerging from, its manufacturing dominance. Commercial shipyards building container vessels can produce destroyers. Drone factories supplying global markets manufacture military systems at one-fifteenth to one-twentieth the cost of US equivalents. A Chinese Wing Loong II combat drone costs $1-2 million; the comparable US MQ-9 Reaper costs $30-35 million.

The shipbuilding advantage illustrates the pattern. China's 13 major shipyards operate with continuous workflow, skilled workforces retained across projects, and supply chains optimised for speed. US yards struggle with sporadic orders, workforce attrition between contracts, and fragmented supplier networks. China can surge production; the US cannot. This is not a problem money can solve, it requires industrial capacity that takes decades to build.

The Closing Window and the Danger of War

Here we arrive at the dialectical core of imperial crisis. US ruling circles recognise this industrial gap cannot be closed through 'reshoring' initiatives that would take decades. This creates what strategists call 'closing window' psychology. The dangerous calculation that acting now, before the gap widens further, represents the only hope to preserve US hegemony. Washington's response reveals desperation rather than confidence. The danger of war in our era does not arise from miscalculation alone, but from the collision between declining industrial foundations and an imperial system unwilling to accept material limits. Such a war risks nuclear escalation, which RAND Corporation assesses as 'always a plausible scenario', threatening human civilisation itself.

Breaking the Stranglehold

China's development represents not an episodic challenge but a historical rupture. Across semiconductors, artificial intelligence, energy systems, materials, and manufacturing, Chinese firms have demonstrated that advanced production can be mastered, scaled, and deployed without monopoly pricing. Technologies long treated as rent-extracting chokepoints have been transformed into commodities. Each such transformation removes a pillar of unequal exchange. Each cost reduction narrows the space for imperialist monopoly.

This rupture is only intelligible in systemic terms. A capitalist firm cannot rationally invest billions to build industries that yield only average profits. Monopoly is not a distortion of capitalism but its condition of survival at the frontier. A socialist state, by contrast, can invest to expand productive capacity even when monopoly rents disappear. What appears as 'overcapacity' within capitalist logic is, from the standpoint of socialist logic, simply sufficient capacity to meet social needs at an affordable cost. By preventing domestic capital from consolidating into monopolies, the socialist state structurally blocks the transition to the monopoly stage of capitalism and, with it, the material basis of imperialism. The conflict, therefore, is not between two nation-states but between two organising principles of production: scarcity for profit versus abundance for development.

The imperial response has been predictable. Sanctions, export controls, tariffs, and military encirclement were deployed to arrest this process but ultimately failed. Technology denial accelerated indigenous capability. Tariffs redirected production rather than stopping it. Decoupling exposed dependence rather than eliminating it. Coercion revealed the extent to which industrial ecosystems, once dismantled, cannot be reconstructed on command. Monopoly was defended by force, but force could not recreate the material foundations that monopoly requires.

What emerges from this breakdown is the possibility of a rupture from imperialism. For the Global South, access to affordable technology and infrastructure expands the horizon of development beyond permanent subordination. More importantly, China's trajectory demonstrates empirically that technological sovereignty is possible. The ideology of inevitability, the insistence that there is no alternative to the existing global division of labour, has been shattered.

For the imperial core, the loss of monopoly entails the erosion of the surplus that sustained post-war social compromises. As unequal exchange weakens, stagnation, inequality, and political instability intensify. This crisis is not imposed from outside. It is the consequence of an accumulation model that externalised production while clinging to monopoly rents.

This does not mean the end of imperialism, nor the end of conflict. The imperial core retains immense military and financial power and will not relinquish dominance voluntarily. The danger of war is real. But the foundations of the existing order are shaking as the productive forces of the Global South increasingly outgrow the limits imposed by monopoly capitalism.

The multipolar world is not a future aspiration. It is a present condition. For the first time in five hundred years, liberation for the Global South from the Western-dominated order built on genocide, slavery and loot, and later sustained through unequal exchange, appears to be materially possible.

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ट्राईकॉन्टिनेंटल: सामाजिक शोध संस्थान *एक आंदोलन प्रेरित अंतरराष्ट्रीय संगठन है, जिसका मकसद जनहित के सवालों पर बौद्धिक बहस को गति और दिशा देना है।*

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