

Artificial Intelligence and the Transformation of International Relations: A Comparative Study
of the United States, China, and the European Union

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Abstract

Artificial intelligence has become a central object of geopolitical competition, yet conventional descriptions of an “AI race” often obscure the different forms of power that the technology enables. This paper asks how artificial intelligence is transforming the distribution and exercise of power in international relations and why the United States, China, and the European Union have adopted distinct but interdependent strategies. It develops a structured comparison across innovation and capital, computing and semiconductor leverage, state–market coordination, military and security applications, data and regulatory philosophy, and external influence through alliances and standards. The paper argues that AI is best understood as a **layered power infrastructure** rather than a discrete technology. The United States converts deep capital markets, frontier firms, cloud platforms, and alliance-centered supply-chain control into ecosystem and network power. China combines party-state coordination, industrial scaling, and sovereignty-centered governance to mobilize resources and reduce external dependence. The European Union translates market size, legal authority, and rights-based legitimacy into regulatory power, despite weaker performance in frontier-model production and private investment. Four original visual analyses based on Stanford AI Index 2026 public data show that research volume, model production, private investment, institutional composition, and regulatory trust produce different rankings. The result is an asymmetric international order in which no actor dominates every layer. AI intensifies

geoeconomic rivalry and military uncertainty, but it also preserves interdependence because semiconductor supply chains, research networks, cloud infrastructure, and technical standards remain transnational. Effective governance therefore requires competition-management mechanisms that recognize differentiated capabilities rather than treating AI as a unitary arms race.

Keywords: artificial intelligence; international relations; United States; China; European Union; structural power; technological sovereignty; AI governance

Introduction

Artificial intelligence has become a central arena of international competition. Governments link AI to economic productivity, military modernization, information security, and diplomatic influence, while firms designing chips, operating cloud platforms, or training foundation models have acquired strategic relevance that blurs the boundary between public authority and private innovation. AI alters international relations through the interaction of material capability, network position, institutional coordination, military organization, legal authority, and normative legitimacy, not through a single technological variable (Granados & De la Peña, 2021).

The rhetoric of an "AI race" misleads analytically by collapsing research output, commercial scale, military deployment, regulatory reach, and legitimacy into a single hierarchy and by implying national autarky. Advanced AI depends on transnational flows of capital, talent, data, semiconductor equipment, fabrication capacity, and cloud services. The United States, China, and the European Union are leading centers of policy formation, but none constitutes an autonomous technological island. A systematic comparison must therefore explain both rivalry and dependence: actors compete to control crucial layers while relying on one another and on third countries for indispensable inputs.

This paper asks how AI transforms the distribution and exercise of power in international relations and why these three actors pursue distinct but interdependent strategies. Its central argument is that AI should be understood as a layered power infrastructure linking

semiconductors, computing capacity, data, research talent, capital markets, platforms, military organizations, standards, law, and diplomatic coalitions. The United States leads in ecosystem orchestration, frontier firms, and alliance-based control over chokepoints. China leads in state-directed mobilization, industrial scaling, and sovereignty-centered governance. The European Union leads in market-mediated regulation and rights-based legitimacy, while depending heavily on non-European firms for frontier models and hyperscale cloud capacity.

The analysis advances three contributions. First, it distinguishes capability from conversion: scientific knowledge becomes geopolitical power only when institutions combine it with compute, finance, and deployment channels. Second, regulatory authority is treated as genuine international power, though regulatory reach does not guarantee faithful implementation of intended values (Almada & Radu, 2024). Third, the analysis resists technological determinism: AI can compress decision time and amplify cyber–nuclear entanglement, but those effects are mediated by doctrine, organizational design, and crisis communication (Johnson, 2019b). The study applies consistent questions across six dimensions—innovation and capital; compute and semiconductor leverage; state–market coordination; military applications; data and regulatory philosophy; and external influence—consistent with findings that China prioritizes research and application, the European Union social impact, and the United States institutional responsibility (Wang et al., 2025). Evidence combines twenty peer-reviewed sources and descriptive data from the Stanford AI Index 2026; quantitative material illuminates mechanisms rather than producing composite rankings, and one data-synchronization discrepancy between the public CSV and the report PDF is acknowledged explicitly.

AI as a Layered Infrastructure of Power

International-relations theory distinguishes resources from the relationships that render them politically consequential, and the AI ecosystem reinforces that distinction: algorithms do not function independently of data centers, chips, electricity, skilled labor, organizations, and legal permissions. A state may lead in research yet lack capital and compute to train frontier models;

another may host dominant firms while depending on foreign equipment; a third may lag in development yet govern a market large enough to shape global compliance. AI power is therefore relational and infrastructural, contingent on an actor's network position and on whether institutions can convert assets across layers into coordinated policy. Granados and De la Peña describe AI as an endogenous element of international-system structure capable of deepening center–periphery inequality rather than simply redistributing power among advanced states (Granados & De la Peña, 2021).

The first layer—material and innovative capacity—comprises scientific knowledge, engineering talent, capital, compute, and firms capable of integrating these inputs. Material indicators are necessary but not sufficient: publication counts indicate research breadth, notable-model tallies signal frontier capability, and investment data reflect private funding while obscuring public procurement and strategic subsidies. The analytic task is to identify institutional mechanisms connecting indicators to operational capacity. Market-centered coordination reinforced by security policy characterizes one conversion system (United States), party-state mobilization another (China), and research capacity combined with legal coordination a third (European Union), each yielding distinct trade-offs in speed, accountability, and resilience.

Layer of AI power	Principal assets	Conversion mechanism	Characteristic vulnerability
Material and innovative	Talent, capital, compute, data, firms, energy	Research commercialization, procurement, deployment at scale	High cost, concentration, talent dependence
Network and geoeconomic	Chokepoints in chips, cloud, finance, platforms, standards	Surveillance, denial, licensing, alliance coordination	Substitution, retaliation, fragmentation
Institutional	State capacity, market organization, bureaucratic coordination	Priority setting, subsidy, regulation, implementation	Policy lag, capture, incoherence, overcentralization
Military and security	ISR, command systems, cyber tools, autonomy, logistics	Operational integration and doctrinal adaptation	Opacity, escalation, brittle automation, misperception
Regulatory and normative	Market access, law, standards, rights legitimacy	Compliance diffusion, certification, agenda setting	Symbolic compliance, standards capture, weak enforcement
Diplomatic and coalition	Alliances, development ties, multilateral forums	Rule projection, interoperability, coalition building	Bloc formation, exclusion, regime fragmentation

The second layer—network position—addresses asymmetric hubs in global economic networks. Farrell and Newman show that jurisdictional control over such hubs enables a "panopticon effect" for information gathering or a "chokepoint effect" for denying essential services (Farrell & Newman, 2019). U.S. export controls on advanced semiconductors illustrate

nodal coercive leverage, though weaponized interdependence is costly: targets invest in substitutes, firms lose market access, and networks fragment. Such controls are now analyzed as a "security grey zone" mixing economic and national-security objectives while generating long-term autonomy incentives (Schneider Rasador & Moreira Cunha, 2025).

Institutional coordination constitutes a third layer. Comparative analysis of governmental AI documents finds convergence on transparency, fairness, non-maleficence, responsibility, and privacy, yet persistent disagreement over interpretation and enforcement (Cath et al., 2018) (Jobin et al., 2019) (Dixon, 2023). Military effects—spanning intelligence processing, logistics, and command-and-control—depend on doctrinal integration; budget data offer only a partial view because spending is often classified (Hunter et al., 2023). Escalation risk rises when automation compresses decision time and nuclear and nonnuclear systems share sensors (Johnson, 2019b). Gill cautions that civilian diffusion and private technology holders require broader institutions than nuclear-era arms control (Gill, 2019).

These layered interactions yield differentiated power. The key empirical question is not who "wins AI" abstractly but how each actor converts its strongest layers into influence, how weaknesses constrain that conversion, and how these strategies interact within a shared international system.

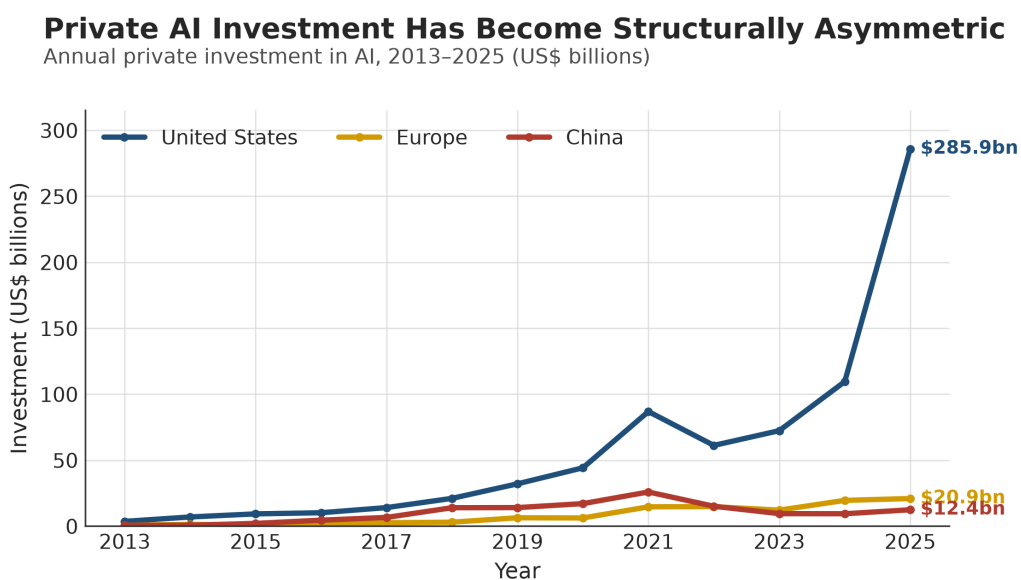
Divergent Strategies in a Shared Technological System

United States: Ecosystem Power and Alliance-Centered Control

The United States approaches AI through a market-centered system that is increasingly strategic in direction. Its principal advantage is an ecosystem linking research universities, venture capital, frontier laboratories, semiconductor designers, hyperscale cloud providers, and an extensive alliance network. Private actors mobilize exceptional resources while government shapes the environment through federal research funding, export licensing, and alliance diplomacy—producing a market–security complex in which private actors control critical assets even as public policy treats advanced AI and computing infrastructure as matters of national

power. Schmidt argues that AI leadership requires sustained national investment, institutional reform, and allied cooperation rather than isolated technical breakthroughs (Schmidt, 2022).

The scale of U.S. private finance confers pronounced conversion capacity. Figure 1 reports annual private AI investment, 2013–2025, from Stanford AI Index public data: U.S. investment reached \$285.9 billion in 2025, compared with \$20.9 billion for Europe and \$12.4 billion for China, making the U.S. total roughly twenty-three times China's and almost fourteen times Europe's. The U.S. series accelerates sharply after 2020 and again in 2025 while other series remain compressed. These data do not prove the United States spends twenty-three times more on AI overall, since they exclude state-backed finance and procurement; they demonstrate, however, a structural advantage in attracting private capital to compute, foundation-model development, and enterprise growth.



Source: Stanford AI Index 2026 public data, Figure 4.2.11 (Quid). Europe is the source-defined region, not an EU-27 aggregate.

Figure 1. Private AI investment has become structurally asymmetric. *Note.* Annual private investment in AI, 2013–2025, in billions of U.S. dollars. Source: Stanford AI Index 2026 public data, Figure 4.2.11 (Quid). "Europe" is the source-defined region rather than an EU-27 aggregate.

Financial depth matters because frontier AI is infrastructure-intensive. Platform power amplifies this advantage, concentrating outsized influence over access, safety practices, and international availability among a small set of corporations whose commercial incentives do not

always align with national objectives—a tension governance documents acknowledge while placing considerable responsibility on industry (Cath et al., 2018). U.S. firms and legal authorities additionally occupy central positions across semiconductor design, specialized accelerators, fabrication equipment, and cloud services, enabling Washington to deploy export controls as instruments of geoeconomic statecraft. Farrell and Newman's theory of weaponized interdependence explains how network centrality creates coercive options even when production remains global (Farrell & Newman, 2019). Controls carry costs, however: restrictions incentivize domestic alternatives and risk fragmentation, potentially protecting U.S. leadership short-term while accelerating geoeconomic decoupling over time (Schneider Rasador & Moreira Cunha, 2025).

Alliances extend the geographic reach of U.S. rules, making access to advanced technology conditional on membership in security and compliance networks. Military applications amplify strategic stakes; AI applied to intelligence analysis, sensor fusion, and command support can improve decision speed while generating vulnerabilities tied to opacity and adversarial manipulation (Johnson, 2019a), and ambiguity about intent in dual-use networks can migrate risk across conventional and nuclear domains (Johnson, 2019b). Domestically, governance remains institutionally fragmented; policy-text analysis finds stronger emphasis on government responsibility than the laissez-faire label implies, though this pluralist structure complicates presentation of a coherent external regulatory model (Wang et al., 2025). American leadership will therefore depend less on preserving technical monopoly than on maintaining a coalition that regards U.S.-centered infrastructure as innovative, secure, and politically acceptable.

China: State-Directed Mobilization and Sovereignty-Centered Governance

China's AI strategy rests on a conception of public authority connecting AI to economic upgrading, scientific capability, administration, and national security. Implementation operates through ministries, provincial governments, universities, state-owned enterprises, platform companies, and startups that interpret policy and compete for resources. As Roberts and

colleagues show, the 2017 New Generation Artificial Intelligence Development Plan combines high-level strategic direction with local experimentation and commercial incentives (Roberts et al., 2021). The system is state-directed rather than wholly state-produced: government defines priorities and supplies coordination while firms and subnational actors undertake scaling.

AI policy is embedded in manufacturing, digital infrastructure, urban governance, and security programs so that large domestic markets generate deployment opportunities and state procurement accelerates diffusion. The objective is integration of AI into economic and administrative systems and reduction of foreign-supplier vulnerability—not merely competitive model development. This orientation explains why Chinese policy emphasizes research and application more strongly than social-impact categories in comparative text analysis (Wang et al., 2025). Evaluations based solely on private venture investment consequently understate resources mobilized through guidance funds, public infrastructure, and procurement.

Figure 3 illustrates institutional composition differences across research ecosystems. Academia supplies a majority of AI and computer-science publications in all three cases, but secondary coalitions vary: industry accounts for approximately 24% of U.S. output, compared with 18% in China and 17% in Europe. Government institutions account for about 25% of China's output—more than twice the U.S. share and above Europe's 17%. These proportions reveal institutional pathways consistent with a national innovation project in which public laboratories and state-supported institutes play direct roles.

The Three AI Ecosystems Mobilize Different Institutional Coalitions

Sector composition of AI/CS publications, 2024

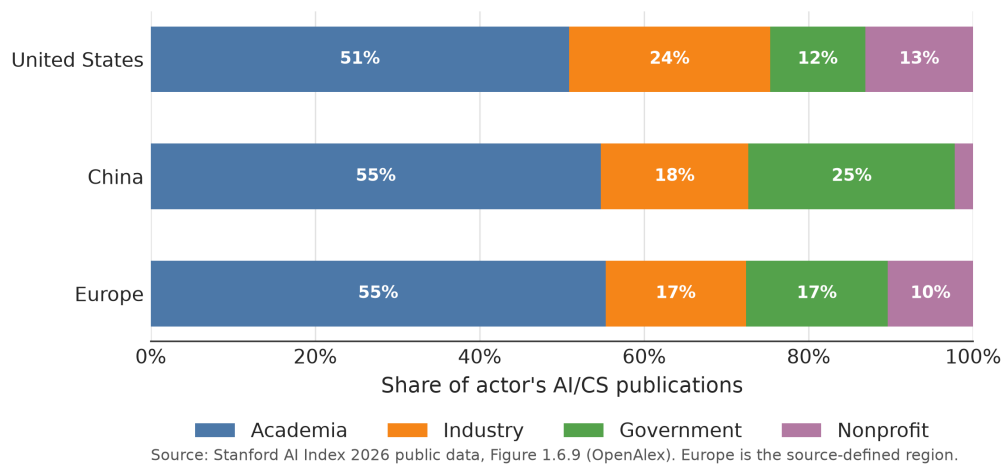


Figure 3. The three AI ecosystems mobilize different institutional coalitions. *Note.* Sector composition of AI/CS publications in 2024. Source: Stanford AI Index 2026 public data, Figure 1.6.9 (OpenAlex). "Europe" is the source-defined region.

State coordination can mobilize cross-sector resources effectively but does not eliminate implementation problems, including duplication and politically favored investments. Roberts and colleagues identify overlap with European concerns—fairness, privacy, responsible development—while emphasizing that institutional purpose and enforcement differ (Roberts et al., 2023). In the Chinese context, sovereignty justifies governmental control, developmental autonomy, and prevention of external actors from controlling data, compute, and standards—purposes distinct from European discourse linking sovereignty to regulatory capacity and individual rights (Pohle & Thiel, 2020). Semiconductor restrictions have intensified this autonomy drive, converting hardware bottlenecks into acknowledged strategic vulnerabilities. Competing U.S., Chinese, and European ambitions for global AI governance proceed through different institutional and normative pathways (Mokry & Gurol, 2024), while AI-driven compression of tactical decision cycles raises stability risks when mutual understanding about human control remains low (Qi, 2021).

European Union: Regulatory Power and Strategic Dependence

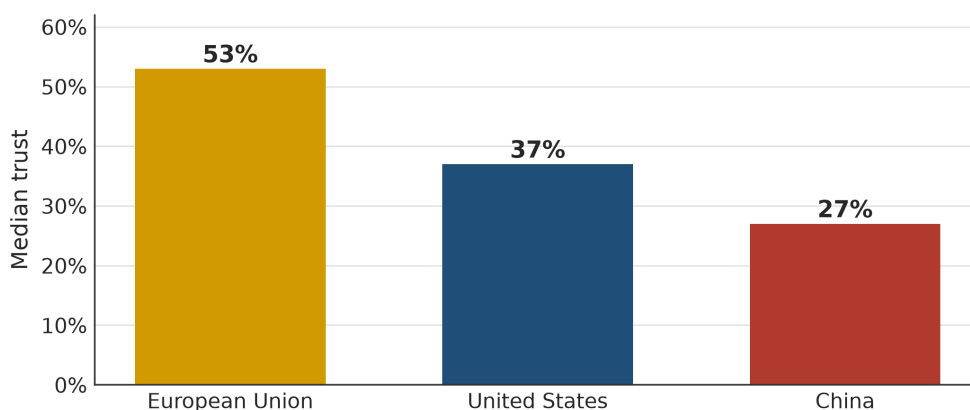
The European Union combines supranational legal authority with a common market rather than a unitary state. Competences over the internal market, product regulation, competition, and fundamental rights allow the EU to condition market access and shape firm design choices. In AI policy the Union has deployed a risk-based architecture classifying applications and linking technical compliance to safety and rights concerns—reflecting institutional comparative advantage: the EU cannot replicate U.S. private capital or Chinese party-state mobilization, but it can translate market size and legal authority into binding requirements that influence global product design.

The Brussels Effect captures how firms conform globally to a single compliance regime rather than produce fragmented variants, but AI complicates that logic because models are adaptable, supply chains are multi-layered, and obligations depend on downstream use context. Almada and Radu argue that the AI Act may diffuse internationally without exporting EU substantive values, because its legal basis in internal-market and product-safety law privileges calculable technical risk while some fundamental-rights harms resist such framing; standardization and private conformity assessment can shift consequential decisions away from legislatures and courts (Almada & Radu, 2024). Regulatory reach cannot therefore be conflated with normative success: rules may spread while implementation narrows the values they were intended to protect.

Public perceptions underscore this distinct form of authority. Figure 4 summarizes a 2025 cross-national survey: across twenty-five countries the median share trusting the EU to regulate AI effectively was 53%, compared with 37% for the United States and 27% for China. This aggregate masks substantial cross-national variation and does not demonstrate greater effectiveness, but it indicates that institutional credibility is distributed differently from technical and financial capacity.

Regulatory Legitimacy Is a Distinct Form of International Power

Median share across 25 countries trusting each actor to regulate AI effectively, 2025



Source: Stanford AI Index 2026 public data, Figure 9.3.2 (Pew Research Center, Spring 2025 Global Attitudes Survey).

Figure 4. Regulatory legitimacy is a distinct form of international power. *Note.* Median percentage across twenty-five countries trusting each actor to regulate AI effectively in 2025. Source: Stanford AI Index 2026 public data, Figure 9.3.2 (Pew Research Center, Spring 2025 Global Attitudes Survey).

Broader governance literature confirms frameworks often converge at the level of vocabulary while diverging over enforcement (Jobin et al., 2019). Europe sustains strong research institutions but produces fewer frontier models and attracts substantially less private AI investment than the United States; reliance on non-EU cloud providers and advanced accelerators creates exposure to decisions made elsewhere, and internal coordination challenges across member states with differing industrial structures further constrain the EU's influence over procurement norms and dual-use controls (Gill, 2019). Digital sovereignty discourse introduces additional tension between democratic self-determination and protectionism, with coherence contingent on investments that reduce dependence rather than merely regulate foreign providers (Pohle & Thiel, 2020). Without credible enforcement and investment sufficient to produce alternatives in critical infrastructure, regulatory power risks producing dependence rather than autonomy.

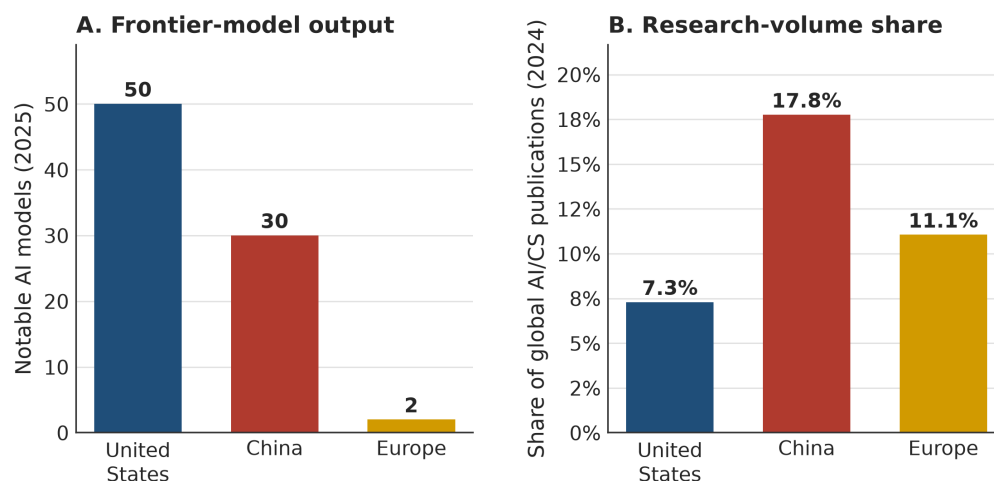
Comparative Findings: Asymmetric Power and Persistent Interdependence

The three cases resist reduction to a single rank order: each actor manifests functionally distinct strengths across the value chain. The United States leads in private finance, frontier firms, cloud platforms, and high-value network nodes. China combines a broad research base with

state-directed deployment, industrial scale, and explicit autonomy objectives. The European Union has weaker frontier-model capacity but stronger regulatory instruments and higher external trust in its governing role. Power is layered: the actor leading at one stage may be constrained at another.

Figure 2 operationalizes the distinction between knowledge production and frontier conversion. China accounted for 17.8% of global AI and computer-science publications in 2024, Europe for 11.1%, and the United States for 7.3%. The 2025 model dataset records fifty notable models associated with the United States, thirty with China, and two with Europe. Publication volume is not quality-adjusted, and notable-model counts are curated rather than exhaustive; both caveats are material. Nevertheless, the inversion between publication share and visible model outputs is analytically significant. The strategic variable is therefore institutional capacity to combine knowledge with complementary assets—capital, compute, firms, and procurement—rather than knowledge in isolation.

Research Volume and Frontier-Model Production Are Not Equivalent



Sources: Stanford AI Index 2026 public data, Figures 1.1.2 (Epoch AI) and 1.6.6 (OpenAlex).
The public CSV records 50 U.S. and 30 Chinese models; the report PDF reports 59 and 35. The chart uses the reproducible CSV release.

Figure 2. Research volume and frontier-model production are not equivalent. *Note.* The left panel reports notable AI models in 2025; the right panel reports each actor's share of global AI/CS publications in 2024. Sources: Stanford AI Index 2026 public data, Figures 1.1.2 (Epoch AI) and 1.6.6 (OpenAlex). The downloadable CSV records

fifty U.S. and thirty Chinese models, while the final report PDF reports fifty-nine and thirty-five; the figure uses the reproducible CSV release.

Comparative dimension	United States	China	European Union	Resulting form of power
Innovation and capital	Deep private finance, frontier firms, hyperscale cloud	Broad research base, public and private mobilization, industrial scaling	Strong research institutions, weaker scale-up and frontier conversion	U.S. ecosystem power; Chinese developmental power; European research strength with a conversion gap
Compute and semiconductor position	Central design, accelerator, cloud, and alliance nodes	Large demand and manufacturing ecosystem but exposure at leading nodes	Important specialized assets but dependence on external compute and cloud	Chokepoint leverage, substitution incentives, and resilience competition
Coordination model	Distributed market system increasingly shaped by security policy	Party-state direction through multiple implementing organizations	Multilevel legal coordination through market competences and member states	Different speeds, accountability structures, and policy instruments
Military integration	Broad defense innovation base and alliance interoperability	Intelligentization and civil–military integration	Member-state and NATO capabilities; stronger role in norms and dual-use governance	Uneven operational capacity with shared stability risks
Regulatory philosophy	Sectoral, pluralist, innovation- and security-oriented	Sovereignty-, security-, and state-capacity-oriented with targeted ethics	Rights- and risk-based horizontal regulation	Competing rules for data, safety, accountability, and market access
External influence	Alliances, firms, export controls, cloud access	Market scale, standards, infrastructure ties, state diplomacy	Market access, legal diffusion, trusted regulatory institutions	A multiplex order with no uniform hierarchy

These differences clarify contemporary meanings of sovereignty. American strategy prioritizes resilience of a largely private ecosystem; Chinese strategy prioritizes state authority and developmental autonomy; European strategy prioritizes a regional legal order protecting citizens and market autonomy. Pohle and Thiel's account of digital sovereignty explains why similar terminology can mask distinct institutional projects (Pohle & Thiel, 2020). Such divergence complicates negotiation because disputes framed around "sovereignty" may concern state control, corporate freedom, individual rights, or collective administrative capacity.

Interdependence remains the defining constraint on unilateralism. Advanced chips require design knowledge, equipment, fabrication, and software scattered across multiple economies; frontier models depend on international research communities and globally mobile talent. Wholesale nationalization would reduce innovation, yet dependence is politically unstable where states fear coercion. The most probable equilibrium is selective securitization: governments will restrict a narrow set of advanced capabilities, subsidize alternatives, and screen partnerships while preserving broader exchange. The ability to offer interoperable, affordable, and trustworthy

systems may ultimately produce more durable influence than the ability to demand formal alignment.

Security, Strategic Stability, and the Global Governance Problem

Military AI demonstrates that technical capacity does not map directly onto predictable political effects. Faster intelligence processing, autonomous navigation, and decision support can enhance operational performance while creating brittle dependencies when training data are incomplete, models behave unpredictably outside familiar conditions, or adversaries manipulate inputs. Johnson's analysis emphasizes the interaction between technical properties and strategic context rather than a universal advantage from autonomy (Johnson, 2019a). Qi shows how expectations that outpace reliability and mutual suspicion about American and Chinese military transformations can worsen instability (Qi, 2021). Technological affordances yield effects only through organizational practices, doctrines, and the incentives of rival states.

Four mechanisms merit attention. Decision acceleration can improve defense, yet leaders may feel compelled to delegate authority or act before contradictory evidence is assessed. Opacity undermines confidence when commanders cannot explain system recommendations or determine whether unusual output reflects reality, error, or adversarial manipulation. Dual-use infrastructure links cyber, conventional, space, and nuclear risks such that an intrusion intended for intelligence collection may be interpreted as preparation to disable warning systems. Finally, competitive narratives about decisive first-mover advantages can encourage premature deployment and lower testing thresholds where failure is catastrophic.

Stability mechanism	Potential benefit	Principal risk	Governance response
Decision acceleration	Faster warning and coordination	Pressure to delegate or act on incomplete evidence	Deliberate decision buffers, human authorization, crisis protocols
Machine inference	Improved pattern detection	Opaque errors and automation bias	Explainability suited to operators, independent testing, red teaming
Cyber–AI integration	More adaptive defense	Data poisoning, ambiguous intrusion, cross-domain escalation	Network segmentation, redundancy, incident communication
Autonomous functions	Operation in dangerous or high-speed environments	Unpredictable interaction and unclear responsibility	Bounded autonomy, audit logs, fail-safe design, doctrine disclosure
Coalition interoperability	Shared situational awareness	Propagation of common vulnerabilities	Joint assurance standards and diversified systems

These risks are conditional rather than inevitable. Meaningful human control requires operators to have time, information, authority, and technical understanding; a nominal human-in-the-loop becomes procedural fiction if systems move too quickly or organizational culture penalizes disagreement with machine outputs. Confidence-building measures—communication about AI's role in nuclear-related systems, shared autonomy terminology, and incident hotlines—can reduce the danger that defensive automation will be misread as preparation for disarming attack (Gill, 2019) (Johnson, 2019a) (Qi, 2021).

The governance challenge extends beyond bilateral security because the same models and chips carry both civilian and military applications. Traditional arms-control analogies are strained because general-purpose software diffuses rapidly and verification is more difficult when functionality changes through updates rather than visible hardware; governance should therefore target high-risk practices and critical contexts (Schmitt, 2022). The United States, China, and the EU pursue governance with different comparative advantages, and these ambitions differ enough in institutional preferences and political values to complicate alignment (Mokry & Gurol, 2024). Barriers including value disagreement, rapid technical change, and difficulty coordinating public and private actors mean that pathways forward require a layered architecture matching obligations to risk (Roberts et al., 2024). AI can reinforce center–periphery inequalities when technological capacity overlaps existing economic advantages, making access to research infrastructure and meaningful participation in standards a prerequisite for legitimate international order (Granados & De la Peña, 2021).

Implications for International Order and Conclusion

Artificial intelligence reshapes international relations by reorganizing structural power across multiple layers—capital, chips, cloud infrastructure, data, models, law, standards, and alliances—rather than by introducing a single decisive capability. The United States commands the most dynamic frontier-firm ecosystem and allied network leverage; China coordinates state and market actors around developmental objectives while exploiting scale; the European Union shapes behavior through market-access conditions and regulatory legitimacy despite material dependence in critical technological layers. Influence depends on combining layers, not on any single metric.

Four conclusions follow. First, research output is not equivalent to strategic capability: China's publication share may exceed that of the United States, yet the United States produces more notable models because research is embedded in capital, compute, and integrated firms. Second, interdependence is both efficiency-enhancing and a vector for coercion, but repeated coercion incentivizes costly substitution and fragmentation. Third, regulatory legitimacy constitutes international power, shaping coalitions and corporate conduct independently of material leadership. Fourth, security outcomes are institutionally mediated: AI can intensify escalation through speed, opacity, and cyber entanglement, yet doctrine, human authority, and communication determine whether those hazards materialize.

These findings complicate technological determinism and simple bipolar portrayals. Selective securitization will deepen around advanced compute while broader interdependence endures, making modular agreements on testing, incident response, and crisis communication more feasible than a comprehensive treaty. The most consequential actors will be those capable of coordinating layered capabilities while preserving interdependence; the future AI order will be determined as much by who makes systems governable and trusted as by who builds the most capable ones.

The comparative evidence also implies that effective strategy must align the instrument of power with the actor's actual institutional advantage. The United States is most likely to preserve leadership when export controls remain narrowly connected to credible security objectives, allied participation, and continued innovation at the controlled nodes; indiscriminate restrictions would accelerate substitution and weaken the network centrality that makes them effective (Farrell & Newman, 2019; Schneider Rasador & Moreira Cunha, 2025). China's long-term position will depend on whether state coordination can reduce chokepoint vulnerability without sacrificing the openness, competition, and transnational knowledge flows required for scientific advance. The European Union, meanwhile, must complement legal diffusion with compute capacity, commercialization, and consistent enforcement if regulatory authority is to produce strategic autonomy rather than regulated dependence. Across all three cases, modular cooperation on incident reporting, assurance methods, critical infrastructure, and crisis communication offers a more realistic path than immediate agreement on a comprehensive global regime (Mokry & Gurol, 2024; Roberts et al., 2024).

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