

ACADEMIC SUMMARY NOTE

"AI for Americans First"

US AI Protectionism, Reshaping of the Global Technological Order
and Consequences for France and Europe (2026–2030)

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Abstract

This study analyzes the mechanisms and consequences of US AI protectionism under the Trump 2.0 administration, integrating four dimensions typically treated separately in the literature: energy, semiconductors, compute, and regulation. Based on a 2020–2026 empirical diagnosis, the construction of a Compute-Adjusted Competitiveness Index (CACI), and a 2×2 scenario matrix, the research demonstrates that the combination of tariffs (25%, Section 232) and export controls creates a measurable structural competitive advantage (US/EU CACI ratio of 7 to 12:1), paradoxically accelerates the construction of an alternative Chinese AI ecosystem, and fragments the global technological order into competitive blocs. The comparative analysis of regional responses (Europe, South America, Asia) reveals fundamentally differentiated dependency trajectories. For France, the study identifies a 2026–2028 strategic action window and recommends targeted strategic autonomy based on the nuclear advantage, the AI champion Mistral, and the European regulatory framework.

Keywords: artificial intelligence, technology protectionism, semiconductors, export controls, sovereign compute, AI geopolitics, France, United States, China

1. Research Question and Scope

Artificial intelligence has established itself since 2023 as the primary driver of economic innovation and geopolitical competition. The AI value chain exhibits unprecedented concentration: the United States controls 74% of global AI compute, five US hyperscalers (Microsoft, Amazon, Alphabet, Meta, Oracle) plan \$660 to \$690 billion in capital expenditure for the year 2026 alone, and Nvidia holds approximately 80% of the AI accelerator market.

In this context, the Trump 2.0 administration has transformed the export controls initiated by Biden (2022–2025) into a hybrid protectionist regime, combining tariffs and regulatory restrictions. This study poses the following question: to what extent does US AI protectionism create a measurable structural competitive advantage, and what are the differentiated consequences for France, Europe, and other regions of the world?

The originality of this research lies in the integration of four dimensions treated separately in the literature: data center energy trajectories, the semiconductor market, AI compute distribution, and US regulatory chronology. No economic study had previously formalized an integrated 'Trump 2.0 — AI protectionism' scenario; this research fills that gap.

2. Methodological Framework

The methodology rests on three pillars. First, a longitudinal empirical diagnosis (2020–2026) based on IEA, McKinsey, SIA, Epoch AI data and regulatory sources (BIS, White House, European Parliament). Three critical curves are reconstructed: data center energy consumption by region (TWh), semiconductor market (value, AI share), and AI compute distribution (GW IT load, FLOPs by region).

Second, the construction of a Compute-Adjusted Competitiveness Index (CACI), a composite index integrating four variables: available peak FLOPs (weighted 40%), energy cost per FLOPs (25%), AI human capital (20%), and regulatory access to compute (15%). The CACI enables quantification of the structural asymmetry between regions and projection of divergence trajectories.

Third, a 2×2 scenario matrix crossing two axes (US protectionism intensity: moderate/strong; European response: passive/active) to generate four 2026–2030 scenarios, each calibrated on the CACI and tested against three empirical tipping points (EU energy saturation 2028, China foundry consolidation 2029, alternative chips maturity 2030).

3. Key Findings

3.1 A three-tier protectionist architecture

The analysis identifies a three-level cumulative protectionist architecture. The first tier consists of export controls (inherited from Biden, transformed by Trump) that segment the world into three tiers: unlimited access for 20 close allies (Tier 1), quantitative caps for the rest (Tier 2), prohibition for adversaries (Tier 3). The second tier, a Trump innovation, resides in the 25% tariffs (Section 232, January 15, 2026) on advanced AI semiconductors, creating a direct cost differential between US firms (exempt) and non-US firms. The third tier is the capital gravity effect: \$660–690 billion in annual capex, Japanese (\$550 billion) and Emirati investments converge on US soil, self-reinforcing compute concentration without additional regulatory intervention.

3.2 Measured competitive advantage

The CACI quantifies a US/EU ratio of 7:1 to 12:1, reflecting a compute gap (US: 75 GW, EU: 35 GW), a FLOPs cost differential (\$0.5/TFlop US versus

\$1.2-1.8/TFlop EU), and an AI productivity gap (+30% US, +12% EU in AI-intensive sectors). Four transmission mechanisms are identified: training cost asymmetry (GPT-4: \$100M US vs \$500M EU), cloud concentration (72-80% of European AI workloads on US hyperscalers), the productivity gap, and innovation rent capture (scale effects + network effects).

3.3 Systemic paradoxical effects

The study demonstrates that protectionism produces three paradoxical effects. First, restrictions accelerate the construction of an autonomous Chinese AI ecosystem (Huawei Ascend 910c, DeepSeek-V3, investments of \$125+ billion in 2025) rather than neutralizing it. Second, Tier 2 countries (Brazil, India, ASEAN) are pushed toward Chinese technology partnerships (ByteDance: \$38 billion in Brazil, \$8.8 billion in Thailand), creating a global technological bifurcation. Third, Tier 1 allies (Japan, Korea) co-finance US supremacy (Japan: \$550 billion invested on US soil) rather than building their own autonomy. The result is not a unipolar order but a world fragmented into technological blocs.

4. Comparative Regional Analysis

The study conducts a differentiated analysis of AI protectionism's impact across five regions, revealing structurally distinct dependency trajectories.

Region	Tier	Primary Dynamic	Strategic Asset	Key Risk
France / Europe	1	GPU+cloud dependency on US (72-80%); InvestAI €200B response	Nuclear (70%), Mistral, ASML, AI Act	Geopolitical vendor lock-in; marginalization if US-Asia bloc closes
Brazil / S. America	2	US-China competition ground; TikTok/Scala megaprojects	83% renewable energy mix; dynamic fintech market	Triple fracture (North-South, East-West, intra-regional)
Japan / Korea / Taiwan	1	US co-investment (\$550B); production transfer to US	HBM (SK hynix), TSMC 90% advanced chips, materials	Asymmetric partnership; Taiwan silicon shield erosion
India	2	Global South pivot; \$200B+ ambition; 'compute export' strategy	1.4B population, tech talent, zero-tax cloud policy	Structural gap (1.4 GW vs 53.7 US); Tier 2 GPU caps
China	3	Forced autonomization; Huawei/DeepSeek alternative ecosystem	1.4B domestic market; \$125B+/yr investments	2-3 generation GPU lag; technological isolation

The analysis reveals that geopolitical position (Tier 1/2/3), energy endowment, and proximity to value chains determine trajectories irreducible to a single model. France benefits from its Tier 1 status but suffers from a structural compute gap. Brazil, classified Tier 2, is the direct theater of US-China rivalry. Japan, the most integrated ally, co-finances American supremacy. India attempts a 'third way.' China is building a parallel ecosystem.

5. Strategic Recommendations for France

The study formulates recommendations structured along five axes and three time horizons.

Axis 1 — Compute Infrastructure. Accelerate the 13 European AI Factories (operational by end 2027), implement Special Compute Zones (expedited permits, reduced taxation), deploy the 5 InvestAI AI Gigafactories (€20 billion). Target: 30-40% of sensitive AI workloads on certified sovereign cloud by 2029.

Axis 2 — Nuclear Energy. Leverage France's unique advantage (70% decarbonized nuclear electricity). EDF has identified four industrial sites totaling 2 GW, with the Nuclear for AI initiative (250 MW by end 2026). Accelerate the 6 EPR 2 reactors (Penly, Bugey, 9,900 MW, construction 2027), confirm 8 optional reactors, support SMRs (NUWARD, Newcleo, Stellaria).

Axis 3 — Technology Alliances. Consolidate the ASML-Mistral partnership (€1.3 billion, ASML as largest shareholder at 11%). Negotiate a second TSMC investment in Europe on advanced nodes. Conclude bilateral EU-Japan and EU-Korea agreements on supply security (HBM memory, equipment). Build strategic GPU reserves (6-12 months).

Axis 4 — Offensive Regulation. Transform the AI Act into a competitive lever: priority to European models in public AI Factories, Brussels Effect through mutual recognition agreements, creation of a European 'CLOUD Act Shield.'

Axis 5 — Talent. AI scholarships and European talent visas (before end 2026), guaranteed frontier compute access for European researchers (Fluidstack 500,000 GPUs, Mistral Compute, EuroHPC AI Factories).

The critical action window lies between 2026 and 2028: beyond that, the identified energy and compute tipping point crystallizes dependencies.

6. Contributions, Limitations, and Extensions

This research contributes to the literature on four fronts: (i) the analytical integration of typically siloed trajectories (energy, semiconductors, compute, regulation, productivity), (ii) the proposal of the CACI index as a framework for measuring compute-adjusted competitiveness, (iii) the demonstration of systemic paradoxical effects of AI protectionism (acceleration of the Chinese ecosystem, push of Tier 2 toward China, co-financing of US supremacy by allies), and (iv) the unprecedented comparative analysis of regional responses revealing structurally distinct dependency trajectories.

Limitations stem from regulatory uncertainty (the BIS final rule of January 2026 could be modified by July 2026), the heterogeneity of compute data (the CACI remains an exploratory index), and the time horizon (post-2030 technological breakthroughs could redistribute advantages). Three extensions are necessary: empirical calibration of the CACI on survey data, extension to Africa (a continent absent from this study), and dynamic modeling via computable general equilibrium models integrating compute as a factor of production.

7. Conclusion

AI compute is on the verge of becoming the fourth factor of production, structuring access to productivity gains and innovation. The July 2025 US AI Action Plan now treats the AI stack as an instrument of geopolitical alliance, comparable to the Marshall Plan: compute access is conditioned on strategic alignment. Faced with this reshaping, three options present themselves for France: subordinate integration (Japan model), sovereignist confrontation (China model, unrealistic by 2030), or the targeted strategic autonomy this study recommends: sovereignty over segments of comparative advantage (nuclear, ASML, Mistral, AI Act) combined with interoperability with the US ecosystem. The objective is not technological autarky but the capacity to choose. The question is no longer whether the reshaping of the global technological order will occur — it is underway — but whether we will be its architects or its subjects.

Complete Study Structure

Ch.	Title	Pages	Notes
I	Theoretical framework: technological protectionism and AI	12	22
II	Methodology: scenario matrix and CACI index	8	10
III	Empirical diagnosis 2020-2026	11	20
IV	Mécanismes de l'avantage compétitif US	9	19
V	Prospective scenarios 2026-2030 and tipping points	11	16

VI	Conséquences pour la France et l'Europe	10	14
VI bis	Conséquences pour l'Amérique du Sud et le Brésil	11	19
VI ter	Conséquences pour l'Asie	12	16
VII	Strategic recommendations	11	18
Concl.	Du protectionnisme IA à la recomposition de l'ordre technologique	8	3
Total		103	157

Notes

1 Euronews (February 2026), 'Will Big Tech's AI Spending Crush Europe's Data Sovereignty?' 2026 Capex: Amazon \$200B, Alphabet \$185B, Microsoft \$145B, Meta \$135B, Oracle \$50B. Total: \$660-690B.

2 The CACI index is developed in Chapter II. It draws on 'compute-adjusted competitiveness' metrics identified as missing by McKinsey (2024) and the World Economic Forum (2025).

3 Pillsbury Law (January 2026), 'Trump Admin Targets Advanced AI Semiconductors.' Section 232: 25% tariff on Nvidia H200, AMD MI325X for re-export. US domestic exemptions. BIS final rule of January 15, 2026.

4 Bruegel (2025), 'Why Artificial Intelligence Is Creating Fundamental Challenges for Competition Policy.' Exponential training costs as barrier to entry. CFG (2025): EU AI compute = 5% global vs US 75%. McKinsey (2025): productivity +30% US, +12% EU.

5 Carnegie Endowment (May 2025): control/promotion/leverage trilemma. IBTimes India (February 2026): China \$125B+ AI infrastructure 2025. Construction Today (November 2025): Japan \$550B invested in US. Bloomberg/DCD (2025): ByteDance \$38B Brazil (Pecem).

6 European Commission (April 2025), AI Continent Action Plan. 13 AI Factories, InvestAI €200B. CFG (October 2025), 'Special Compute Zones: Europe's Recipe.' Julien Simon, Medium (January 2026), 'AI Sovereignty in Europe: A Decision Framework.'

7 World Nuclear News (February 2025): EDF 4 sites, 2 GW. Enki AI (February 2026): EPR 2 (9,900 MW), 20 reactor life extensions (26 GW). Introl Blog (2025): France AI investments €109B, Fluidstack €10B/1 GW.

8 McKinsey (December 2025), 'Accelerating Europe's AI Adoption: The Role of Sovereign AI.' AI scholarships and talent visas to launch before end 2026. 44% of European tech leaders cite data security as a barrier.

9 CM Trade Law (July 2025), 'America's AI Action Plan.' Pillar III: 'export the full AI technology stack to countries willing to join the US AI alliance.' Four principles: allied exports, enforcement, global alignment, protective measures.

Key References

International institutions: IEA (2025-2026), World Bank (2025), World Economic Forum (2025-2026), CEPALC/CENIA — ILIA 2025.

Think tanks and research: Bruegel, Brookings Institution, Carnegie Endowment for International Peace, CSIS, Hudson Institute, ITIF, Centre for Future Generations (CFG), Epoch AI.

Consulting firms and analysts: McKinsey & Company, S&P Global, Arizton, Gartner, Futurum Group, Deloitte.

Regulatory sources: White House / BIS (AI Diffusion Rule, AI Action Plan, Section 232), European Parliament, European Commission (AI Continent Action Plan, Apply AI Strategy, Chips Act), ANSSI (SecNumCloud).

Specialized press: Euronews, Bloomberg, DCD, Financial Times, Foreign Policy, Pillsbury Law, CM Trade Law, Introl.