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AI FOR AMERICANS FIRST

Technical, Geopolitical, and Operational Deep Dives

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About this document

This second volume compiles **25 complementary questions** focused on the technical, geopolitical, and operational dimensions of the study. Each question is tagged by the likely questioner profile: *Economist, Geopolitician, Industrialist, Jurist, Academic*. This document is designed to be read independently from Volume 1.

Repository: https://mo0ogly.github.io/America-First-IA/

PART I — The Economist Challenges You

Q1. You claim that compute is a "fourth production factor." That is a very strong assertion. What is your basis? *[Economist]*

The claim rests on the structural analogy with electricity, formalized by Bresnahan and Trajtenberg (1995) in their General Purpose Technology theory. Electricity did not merely improve existing factories—it restructured the entire industrial production system. AI compute does the same: it transforms the very nature of work across all sectors simultaneously.

Three empirical tests confirm this. First, the IMF (WP/25/067) estimates that AI productivity gains reach 14–50% depending on the task—magnitudes comparable to electrification. Second, global AI capex ($675B in 2026) already exceeds annual investment in electricity generation. Third, Brynjolfsson et al. (2019) show that firms investing in “AI complementary assets”—including compute—capture self-reinforcing productivity rents.

This is not a metaphor: compute is literally the physical substrate without which AI does not function, just as electricity is for machines.

Q2. Your CACI treats raw compute (F) as the dominant component. But don’t efficiency gains (like DeepSeek) change the equation? *[Economist]*

The econometric decomposition (Model 4, §A.5.1) tests exactly this question. The coefficient on ln(F) is **0.301 ($p < 0.01$)**, dominating all other components. The energy cost coefficient $\ln(E^{-1})$ is non-significant (-0.009, $p = 0.94$), suggesting energy operates primarily through its effect on compute accumulation rather than as an independent constraint.

But architectural efficiency (DeepSeek-type) is not in F—it is in the utilization of F. A more efficient model allows more to be done with the same compute, which increases AI productivity (the dependent variable) for a given F. This does not invalidate the CACI: it means the β coefficient potentially underestimates the total effect, because high-compute countries are also those that innovate most in efficiency (learning effects).

The IEA (2025) documents the Jevons rebound effect: efficiency gains increase usage, absorb savings, and restart demand for raw compute. DeepSeek made AI accessible to more actors—which increases total compute demand, not decreases it.

Q3. Is the US/EU ratio of 7–12:1 structural or cyclical? Can it close? *[Economist]*

This is the core of the prospective analysis. The ratio is driven by three components with different time horizons.

The cyclical component (Section 232 tariffs, Nvidia logistics prioritization) can evolve with a change in US administration. If Section 232 is lifted, the 25% surcharge disappears —but that only represents a 1.25× factor on the total ratio.

The structural component (compute concentration, capital gravity, energy differential) is far more inert. The $675B in annual capex creates an installed US compute mass that produces self-reinforcing agglomeration effects. Even if tariffs disappear, the compute stays where it is.

The systemic component (Nvidia's technological lead, TSMC's position, brain drain) is quasi-irreversible by 2030. You cannot build a leading-edge foundry in 5 years, nor a cloud ecosystem in 3.

Scenario D ("Massive EU Response") is the only one where the ratio closes significantly—and it requires $200B in investment and unprecedented political mobilization. Hence the urgency of the 2026–2028 window.

Q4. You use McKinsey and Deloitte data that are not peer-reviewed. What scientific validity? *[Academic]*

McKinsey, Deloitte, and Accenture data are industry data—not peer-reviewed. This is acknowledged (§2.2.3) and addressed through three methodological precautions.

Systematic triangulation: no figure relies on a single industry source. The semiconductor market is cross-referenced from SIA, McKinsey, and WSTS. Compute is cross-referenced from Epoch AI (research), Hawkins et al. (academic, SSRN), and CFG Europe (policy).

Hierarchization: primary sources (IEA, BIS, Eurostat, EIA) are prioritized for factual data. Consultants are used for projections—a domain where they have a genuine informational advantage (access to corporate data).

Identified bias favors the thesis: consultants overestimate markets but underestimate geopolitical risks. If McKinsey already estimates a significant compute gap, reality is probably more severe.

Q5. Why not use a computable general equilibrium (CGE) model to quantify the scenarios? *[Economist]*

Because CGE models do not capture compute as a production factor—which is precisely the gap this study identifies. Standard CGEs (GTAP, GEM-E3) model capital, labor, energy, and materials, but not computational capacity. Integrating compute into a CGE would itself constitute a thesis project.

Moreover, CGEs assume rational optimization behavior and continuous market adjustments—hypotheses ill-suited to an environment dominated by discretionary political decisions (Trump tariffs, GPU quotas, sanctions). The scenario method (Schwartz, 1991) is explicitly designed for situations where key variables are political, non-linear, and partially unpredictable.

Dynamic CGE modeling integrating compute is however explicitly recommended as a future research avenue in the conclusion.

PART II — The Geopolitician Asks

Q6. Section 232 is not aimed at Europe. Aren't you overdramatizing the EU impact? *[Geopolitician]*

That is correct: the January 2026 Section 232 primarily targets re-exports to China, not Europe directly. European firms purchasing GPUs for domestic use do not pay the 25% tariff. But three indirect effects already affect Europe.

The prioritization effect: US domestic exemptions mean Nvidia delivers US data centers first. During structural shortages (the case since 2023), EU deliveries are pushed back. **The announcement effect:** the proclamation explicitly provides for possible expansion by July 2026—creating regulatory uncertainty. **The gravity effect:** investors (including Japan at $550B) converge on the US to benefit from exemptions.

The study does not say Europe is targeted today—it says the mechanism is in place and the trajectory leads to expansion. Scenarios B, C, and D cover this possibility.

Q7. Farrell & Newman discuss weaponized interdependence for networks (SWIFT, fiber). Is the analogy with compute legitimate? *[Geopolitician]*

The analogy is structurally exact. Farrell and Newman (2019, then 2025 in Foreign Affairs) identify two mechanisms: the "panopticon effect" (surveillance via control points) and the "chokepoint effect" (coercion via bottlenecks). AI compute exhibits both.

Identical chokepoints: TSMC for chips (92% of global leading-edge), ASML for EUV lithography (100% market share), Nvidia for AI GPUs (~80%). These concentrations exceed that of SWIFT in the financial system.

Identical weaponization: the October 2022 export controls and then Section 232 explicitly use these chokepoints as levers. Trump even proposed monetizing access (25% of Chinese sales revenues, September 2025). The only difference is that AI compute is a more recent issue—meaning resistance mechanisms are less developed. This strengthens, not weakens, the analogy.

Q8. Couldn't Europe simply ally with China to bypass US dependency? *[Geopolitician]*

That is exactly what Tier 2 countries are doing—and the study documents it (Chapters VI bis and ter). Brazil hosts a $38B TikTok data center. ASEAN turns to ByteDance and Huawei. But Europe cannot take this path for three reasons.

Hardware dependency: Huawei Ascend chips are 2–3 generations behind Nvidia. **Geopolitical constraint:** NATO and the transatlantic partnership make a Chinese pivot politically unthinkable. **Regulatory constraint:** the EU AI Act imposes transparency requirements that Chinese technologies do not meet.

This is why the study recommends targeted strategic autonomy—neither subordinated integration with the US nor a pivot to China, but building indigenous capacity on segments of European comparative advantage.

Q9. Japan invests $550B in the US. Isn't that rational rather than subordination?
[Geopolitician]

It is rational in the short term and potentially suicidal in the medium term—a textbook case of the paradox identified. Japan invests in the US because the return on investment is better (denser compute, cheaper energy, larger market). Individually, each investment is optimal.

But collectively, these investments reinforce US compute concentration, increase Japanese dependency, and reduce the incentive to build locally. It is a **prisoner's dilemma:** each actor optimizes individually, but the collective outcome is a loss of technological sovereignty for all allies.

Japan retains an advantage in critical supply chain links (HBM memory via Kioxia, equipment via Tokyo Electron) but loses control of the compute layer—meaning the value-added from AI applications is captured in the US, not Japan.

Q10. What about India? Isn't it the real game-changer with its population and talent? *[Geopolitician]*

India has the human capital (350,000 AI professionals, the world's largest STEM workforce) but not the compute. Its CACI is among the lowest in the panel: an immense workforce diluted across a high GDP with limited compute. It is the perfect counter-example to the "talent is enough" thesis—without compute, talent does not convert into AI productivity.

India is classified Tier 2: it faces caps on importable GPU volumes. Its strategy is "applicative sovereignty without hardware sovereignty"—developing AI applications on US and Chinese cloud infrastructure. Viable but fragile: the day the US restricts Indian cloud access (Scenario B), India's AI industrial base collapses within months.

The game-changer is not India alone—it is the US-China competition for India. Documented in Chapter VI ter.

PART III — The Industrialist Wants Concrete Answers

Q11. Concretely, should a French SBF 120 company worry? *[Industrialist]*

Critical exposure: companies where AI is core (fintechs, healthtechs). A 25–50% GPU surcharge or a 6-month delivery delay can kill their competitive advantage. **High exposure:** large companies using AI for productivity. Time-to-market is extended 25–40% versus US competitors. 72% of EU AI workloads depend on US cloud. **Moderate exposure:** companies in the AI adoption phase.

Practical recommendation: audit cloud dependency (what % of AI workloads on US infrastructure?), secure long-term GPU contracts (18–36 months), and explore European alternatives (OVHcloud, Scaleway, Mistral via AI Factories).

Q12. Doesn't the EU AI Act worsen the problem by adding compliance costs? *[Industrialist]*

This is the European regulatory paradox. In the short term, the AI Act adds compliance costs (estimated at 3–5% of AI budget). The combined burden (more expensive compute + heavier compliance) can reach 30–50% additional total cost compared to an unregulated US competitor.

But in the medium term, the AI Act can become an asset—via the "Brussels Effect." If the European framework becomes the global standard (as GDPR did for personal data), AI Act-compliant companies will have a first-mover advantage in regulated markets (the majority by 2030). Moreover, the AI Act can serve as a negotiating lever: conditioning EU market access to compute localization commitments.

Chapter VII recommendation: "transform the AI Act into a competitive lever"—priority to European models in public AI Factories, mutual recognition with third countries, targeted relief for innovative SMEs.

Q13. Can Mistral really compete with OpenAI, Google, and Anthropic? *[Industrialist]*

Not head-on—and that is not what the study recommends. The foundation model market is a natural oligopoly (training fixed costs of $200M+, data network effects, compute-data-performance feedback loop). Direct competition on generalist models is lost.

But Mistral occupies a strategic niche: sovereign models, AI Act-compliant, hosted in Europe, optimized for European languages and regulated use cases (health, finance, defense). ASML invested €1.3B (11% of capital)—a strong signal of industrial credibility.

The relevant analogy is Airbus vs. Boeing: Airbus did not replace Boeing—it built a credible alternative that gives Europe the capacity to choose. The question is not "Can Mistral beat OpenAI?" but "Can Europe afford to be without Mistral?" The answer is no.

Q14. French nuclear is an asset, but aren't the construction timelines (EPR, SMR) prohibitive? *[Industrialist]*

The immediate asset (2026–2027) rests on the existing fleet: ~63 GW nuclear, EDF has identified 2 GW dedicable to data centers via Nuclear for AI (250 MW by end 2026). No new construction required.

Medium term (2028–2030): 6 EPR 2 reactors programmed (Penly, Bugey, 9,900 MW). EPR 2 benefits from the learning curve and simplified design.

Long term (2030+): SMRs (NUWARD, Newcleo, Stellaria), 50–300 MW reactors sized to power individual data centers. First prototypes expected 2030–2032.

The message: France has the only EU energy mix that enables a credible trajectory toward sovereign compute.

Q15. What must European Compute Zones do to be credible? *[Industrialist]*

The Special Compute Zones concept (proposed by CFG Europe, Chapter VII) rests on four pillars.

1. Derogated energy: $50–60/MWh via nuclear PPAs, exempt from carbon taxes during the bootstrap phase. Sine qua non—without competitive energy, no hyperscaler invests in the EU.

2. Accelerated permits: 6–12 months maximum (vs. 3–5 years currently) for data center construction in designated zones.

3. Guaranteed compute: EU framework contracts with Nvidia, AMD, Intel Foundry. EuroHPC AI Factories (Fluidstack 500,000 GPUs, 2026–2027).

4. Regulatory sovereignty: data processed in Compute Zones remains under EU jurisdiction, without US CLOUD Act application. This is what differentiates an EU Compute Zone from a simple AWS data center in Ireland.

PART IV — The Jurist and the IE Expert

Q16. Section 232 is a trade policy instrument. Can it legally target semiconductors? *[Jurist]*

Section 232 of the Trade Expansion Act (1962) authorizes the President to impose tariffs on imports that threaten national security. Its application to AI semiconductors is a significant legal extension but not without precedent.

The legal reasoning of Proclamation 11002: advanced AI GPUs are essential to national defense (military AI, cybersecurity, intelligence), therefore their dependence on TSMC production in Taiwan (a potential conflict zone) constitutes a threat. The Supreme Court has given broad deference to the President on Section 232 matters.

The real question is not legality but scope: if AI semiconductors are national security, nearly all tech is. This is a ratchet toward generalized technological protectionism—what the study documents as the “third tier.”

Q17. As an IE expert, how do you analyze the US informational strategy around AI? *[IE Expert]*

The US informational strategy operates across three registers that Economic Intelligence classically identifies.

Protection: export controls are pure defensive IE—protecting the technological lead by controlling access to critical components. The tier classification (Tier 1/2/3) is a world segmentation by trust level, a classic information security technique.

Influence: the America’s AI Action Plan (July 2025) is explicitly compared to the Marshall Plan by its drafters. Conditioning compute access to strategic alignment is applied weaponized interdependence.

Competition: Section 232 with domestic exemptions is offensive IE—creating competitive advantage for one’s own companies via the regulatory instrument. My IE/Intelligence Warfare background allows reading this as an integrated economic influence operation—not classical trade policy.

Q18. Is cybersecurity a factor in AI protectionism? *[IE / Cyber]*

Absolutely. The dependence on US cloud for European AI workloads (72% per Synergy Research) creates a considerable informational attack surface—not in the hacking sense, but in the critical dependency sense.

The US CLOUD Act (2018) authorizes US authorities to access data stored on American company servers, even outside US soil. An AI model trained by a French company on Azure or AWS is potentially accessible to US justice. This is a sovereignty risk.

Moreover, the Nvidia GPU concentration creates a single point of failure: a CUDA firmware vulnerability, a hardware backdoor, or simply a restrictive license update could compromise the entire European AI infrastructure within hours.

Q19. Can the EU AI Act serve as an offensive economic intelligence weapon? *[IE Expert]*

That is exactly the recommendation of Axis 4, Chapter VII. The AI Act, viewed through an IE lens, is a competitive standardization instrument—"regulatory entrepreneurship." Europe demonstrated with GDPR that it could impose its norms as a global standard ("Brussels Effect"). The AI Act can do the same.

Three offensive levers: (1) Access conditionality—requiring AI Act compliance from non-European providers (OpenAI, Google, Anthropic) to operate in the EU, advantaging native actors (Mistral, Aleph Alpha). (2) Mutual recognition—equivalence agreements with Japan, Korea, Singapore creating an alternative regulatory bloc. (3) CLOUD Act Shield—requiring critical AI workloads under EU jurisdiction.

The AI Act is not a suffered constraint—it is a lever of power, provided it is conceived as such.

PART V — Trick Questions

Q20. Doesn't your study primarily serve Nvidia's interests by dramatizing the shortage? *[Academic]*

The study demonstrates the opposite. The diagnosis identifies Nvidia as a de facto monopoly (~80% AI GPU market share) that is itself a vulnerability factor—not a champion to support.

Recommendations explicitly favor diversification: accelerating alternative ASICs (Google TPU, Amazon Trainium, Intel Gaudi), investing in neuromorphic architectures. The CACI is source-agnostic. If anyone benefits from the study, it is Europeans becoming aware of the dependency—not Nvidia creating it.

Q21. Isn't generative AI a bubble? The compute gap could become an advantage for Europe that didn't overinvest. *[Academic]*

Three facts contradict this thesis. First, Big Tech capex ($675B in 2026) is financed by profitable companies—not speculative VC. Microsoft, Google, Amazon invest from net profits. Second, measured productivity gains are real: IMF (WP/25/067) and McKinsey document 14–50% gains confirmed by randomized controlled trials. Third, the Jevons rebound effect (IEA, 2025) shows compute demand only increases—a signal it is driven by real uses, not speculation.

But even if AI were a partial bubble, not investing in compute would be worse: the bubble eventually bursts for speculators, not for those who have infrastructure. Data centers, energy, and AI skills remain after a burst. Those who did not invest find themselves without infrastructure and without skills—the worst of both worlds.

Q22. Your study is France-centric. Isn't that a bias? *[Academic]*

It is a deliberate choice, not a bias. The study is written from Paris, for a French academic audience, and the recommendations explicitly target France and Europe. Having a situated perspective is not a methodological flaw—it is a condition of operational relevance.

That said, the empirical diagnosis and the CACI are multinational (12 countries, 3 geographic zones). The analytical framework is transferable: a Brazilian, Indian, or Japanese researcher could use the same CACI and scenario matrix from their own perspective. The tool is universal; the recommendations are localized.

The academic literature on AI protectionism is overwhelmingly American (CSIS, Carnegie, Brookings) or British (Oxford, Chatham House). A French voice analyzing from the "receiver's" perspective of protectionism is precisely what was missing.

Q23. What distinguishes this from a think tank report? Why call it academic research? *[Academic]*

Four elements distinguish this study from a think tank report.

An explicit theoretical framework: Bresnahan & Trajtenberg (GPT), Farrell & Newman (weaponized interdependence), Brynjolfsson et al. (productivity J-curve). An IFRI or Bruegel report does not systematically formalize its theoretical anchors.

An original methodological tool: the CACI, with its formal definition, calibration, explicit limitations, and econometric validation (panel, Hausman, robustness). No think tank has proposed a comparable index.

A refutable approach: hypotheses are explicit, scenarios falsifiable, data reproducible (panel CSV and Python script provided). A think tank report draws conclusions; academic research builds a framework that can be discussed, criticized, and improved.

A critical apparatus: 157 footnotes, ~120 sources, methodological limitations explicitly discussed. The volume and rigor of sourcing exceed the think tank standard.

Q24. Will this study be obsolete in six months? *[Academic]*

Specific regulatory data, yes—Section 232 could be modified. But the durable contributions number three.

The CACI as a framework: designed to be recalculated annually with updated data. Its value lies in the measurement structure, not the 2024 figures.

The three-tier mechanism demonstration (denial + tariff + gravity): even if specific instruments change, the logic of technological protectionism is durable.

The econometric validation: the CACI-productivity link remains valid regardless of the regulation of the moment. The right analogy is a 2003 article on US trade protectionism (steel, Section 201): specific tariffs changed, but the analytical framework is still valid twenty years later.

Q25. What impact do you hope for from this research? *[Personal]*

Academic impact: establish compute as the missing variable in competitiveness analysis, and the CACI as the first measurement tool. If a researcher at Oxford, MIT, or Sciences Po takes up the CACI to refine it, the contribution will be validated.

Policy impact: inform French and European decision-makers (DGE, Parliament, Commission) about the urgency of the 2026–2028 window. The 7–12:1 ratio, quantified and sourced, is a more powerful argument than qualitative intuition for unlocking investments.

Strategic impact: contribute, at my scale, to ensuring that Europe is an architect of its position in the global technological order rather than a spectator. The question is not whether the reshaping will occur—it is underway—but whether we will be its subjects or its architects.

— END OF VOLUME 2 —

“The objective is not technological autarky but the capacity to choose.”

— Fabrice Pizzi, AI for Americans First, 2026

This document can be read independently from Volume 1 (thesis, CACI, methodology, scenarios, limitations).

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