AI FOR AMERICANS FIRST

Q&A DOCUMENT

Defense and Presentation of the Study

Fabrice Pizzi — Sorbonne University

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> *This document compiles 25 questions likely to be asked during a thesis defense, professional presentation, or academic discussion, along with sourced and well-argued answers. It covers: the central thesis, methodology, the CACI, empirical results, scenarios, recommendations, limitations, and positioning within the literature.*

PART I — THE THESIS AND ITS POSITIONING

Q1. What is your central thesis, in one sentence?

The United States has built, under Trump 2.0, a three-tier protectionist architecture (export controls, Section 232 tariffs, capital gravity) that transforms access to AI compute into a geopolitical lever, creating a US/EU competitiveness ratio of 7 to 12:1 as measured by the CACI index—a ratio that, without a structured European response by 2028, will become irreversible.

Q2. What do you contribute beyond the existing literature?

Four original contributions. First, the analytical integration of four dimensions treated separately in the literature: data center energy trajectories, the semiconductor market, AI compute distribution, and US regulatory chronology. No study had previously cross-referenced these four dimensions.

Second, the introduction of the CACI—the first formalized Compute-Adjusted Competitiveness Index, econometrically validated on a panel of 12 countries. Neither Hawkins et al. (Oxford), nor the IMF, nor the Fed had constructed such an indicator.

Third, the demonstration that AI protectionism produces paradoxical systemic effects: acceleration of an alternative Chinese ecosystem, a push of Tier 2 countries toward China, and co-financing of US supremacy by the allies themselves.

Fourth, a comparative analysis of three geographic zones (Europe, South America, Asia) showing structurally different dependency trajectories that cannot be reduced to a single model.

Q3. Why is this topic relevant in 2026?

Because three events converge between January and July 2026 that make the analysis urgent. First, Trump's Section 232 (January 15, 2026) imposes 25% tariffs on advanced AI GPUs—the first time AI semiconductors have been treated as a national security issue comparable to steel. Second, cumulative Big Tech US capex reaches $675 billion in 2026, creating an unprecedented concentration of compute on American soil. Third, the BIS final rule is due for an update by July 2026, with potential tightening toward Tier 1 allies.

The topic is not theoretical: it concretely determines whether a French industrial SME will or will not be able to access the compute necessary to remain competitive in 2028–2030.

Q4. Why come from cybersecurity to address this topic? What legitimacy?

Precisely because cybersecurity trained me to think in terms of dependency chains, attack surfaces, and control points. AI protectionism operates through the same mechanisms as cyber threats: identifying chokepoints (TSMC for chips, ASML for lithography, Nvidia for GPUs), exploiting monopoly positions, and weaponizing interdependencies—a concept formalized by Farrell & Newman (2019) that I apply to compute.

My Master's in Economic Intelligence, oriented toward Intelligence Warfare, provides the complementary analytical framework: EI is the ability to understand and anticipate economic power dynamics, which is exactly the subject of this study. The dual EI/cyber background is actually an advantage: few researchers bridge these two worlds.

PART II — THE CACI INDEX

Q5. The CACI does not appear in any other publication. Isn't that a problem?

It's the opposite: it is the contribution. The CACI didn't come from nowhere—it is the formalization of a need explicitly identified by six strands of the literature. Hawkins et al. (Oxford, 2025) measure compute by region but do not construct an index. The Fed Board (October 2025) notes verbatim that "the absence of a unified AI capacity indicator makes transatlantic comparisons difficult." Martens/Bruegel (2024) identifies barriers but proposes no metric. The IMF has an AI Preparedness Index with no compute component.

The CACI is the missing piece that everyone was calling for. The fact that it is new is its raison d'être, not its weakness.

Q6. How do you justify the multiplicative rather than additive formula?

The formula $CACI(r) = [F(r) \times E(r)^{-1}] / [GDP(r) \times L(r)]$ is multiplicative because the factors are complementary, not substitutable. Abundant compute without the human capital to exploit it does not produce competitiveness (the UAE case). Talent without access to compute doesn't either (the case of certain African countries with strong STEM human capital).

The econometric validation confirms this choice: the model with alternative weightings (linear combination F:40%, E:25%, L:20%, Reg:15%) loses significance ($p = 0.40$), while the multiplicative formula yields $\beta = 0.25$ significant at 1%. The data settles the theoretical debate.

Q7. Your panel has only 60 observations. Isn't that too few?

It is an acknowledged and explicitly discussed limitation (§A.6). With 12 countries × 5 years, degrees of freedom are modest—which is why we use clustered robust standard errors and systematically test sensitivity to outlier exclusions.

But three arguments put this limitation in perspective. First, the CACI β coefficient is significant at 1% across all three specifications (OLS, FE, RE), which is remarkable for such a compact panel. Second, the within R^2 reaches 0.69—the CACI explains 70% of within-country variance, which would be good even with 600 observations. Third, no AI competitiveness index existed before: a first validation on 60 observations is better than no validation at all. The extension to 25–30 countries and 10 years is explicitly recommended as a research avenue.

Q8. Isn't there an endogeneity problem? Productive countries invest more in compute.

Yes, and it is acknowledged (§A.6). Reverse causality is the main risk: countries with high AI productivity accumulate more compute, creating an upward bias on β. This is why the fixed-effects model (preferred by the Hausman test) absorbs time-invariant country characteristics, and time effects capture common trends.

But we do not claim to demonstrate strict causality—that would be premature with this panel. What we demonstrate is a robust and statistically significant association, consistent with theory (Bresnahan & Trajtenberg, Brynjolfsson et al.), and that the CACI has real predictive power. For formal causality, we propose an instrumental variable approach (instrumenting the CACI by nuclear energy endowment, exogenous to AI productivity) as a priority avenue.

Q9. Is the 7–12:1 US/EU ratio credible? It seems enormous.

It is enormous—and that is precisely the message. But the ratio is consistent with four independent sources. US Big Tech capex ($675B) versus EU AI investments (~€40B) yields a ratio of ~17:1 in investment flows (McKinsey, January 2026). The cost per TFlop for training is $0.5/TFlop in the US versus $1.2–$1.8/TFlop in the EU (Bruegel/Epoch AI), a ratio of 2.4–3.6:1 on costs alone. Installed compute (US: 75 GW IT load, EU: ~35 GW per CFG Europe) gives a raw ratio of ~2:1, which rises to 7–12:1 once normalized by GDP and adjusted for energy costs.

If you think 7–12:1 is too high, it's probably because the actual gap is larger than intuition suggests. That is precisely what the CACI makes visible.

PART III — METHODOLOGY

Q10. Why scenarios rather than traditional econometric modeling?

For three fundamental reasons (detailed in §2.1). First, key variables are political and discretionary: Trump's decision to impose or not impose GPU quotas on Europe cannot be modeled by regression. Second, interactions are nonlinear and systemic: a GPU restriction cascades into changes in energy investment flows, data center location decisions, and the competitive structure of entire sectors. Third, compute data is partially confidential—no public database of FLOPs by country exists.

The scenario method (Schwartz, 1991; Shell methodology) is precisely designed for situations of high political and technological uncertainty. This is not a default choice: it is the most rigorous methodological choice for this type of problem. The econometric appendix (CACI panel) provides the quantitative complement.

Q11. Are your compute data reliable? No official census exists.

Not entirely, and this is explicitly stated (§2.4.4). Installed FLOPs data by country are estimates, not censuses. We use four cross-referenced sources: Epoch AI for training compute, Hawkins et al. for cloud infrastructure, CFG Europe for European capacity, and the Top500 for public HPC. Triangulation reduces bias but does not eliminate it.

But the CACI is designed to be comparative (ratio between regions), not absolute. If we underestimate US compute by 20% and EU compute by 20%, the ratio remains the same. Systematic errors cancel out in comparative mode. This is a design choice: the CACI measures orders of magnitude, not absolute values. And even with a 30% margin of error, a 7–12:1 ratio remains a massive structural gap.

Q12. Why didn't you conduct interviews or field surveys?

This is an acknowledged limitation and an explicitly recommended research avenue. The study is based on secondary sources (institutional reports, public data, academic literature) and on the construction of an original tool (the CACI). A qualitative fieldwork component (interviews with corporate decision-makers, industrial policy officials, data center operators) would considerably strengthen validity—particularly for the scenarios and recommendations.

The choice was to prioritize analytical integration and the construction of measurement tools by a single researcher, reserving fieldwork for a later phase or a collaborative extension. This is a classic research trade-off: analytical depth vs. empirical breadth.

Q13. Aren’t the McKinsey, Deloitte, and Accenture sources biased?

Yes, and this is explicitly acknowledged (§2.2.3). Consulting firms have a systematic optimism bias—they have an interest in overvaluing markets to justify their advisory mandates. This is why we never rely on a single source. Each figure is triangulated with at least two sources of different orientations: IEA (institutional), McKinsey (industry), Bruegel (academic/think tank), BIS (regulatory).

Moreover, consultants’ biases are rather conservative regarding geopolitical risks (they have no interest in frightening their clients). If McKinsey already estimates a significant compute gap, reality is probably worse, not better.

PART IV — RESULTS AND SCENARIOS

Q14. What is “three-tier protectionism” and what is new about it?

First tier: export controls (inherited from Biden, transformed by Trump) that segment the world into three tiers of compute access. This is the most documented mechanism.

Second tier: Section 232 tariffs (25% on AI GPUs, January 2026). This is the Trump innovation: for the first time, AI semiconductors are treated as a national security issue comparable to steel. The domestic exemption creates a direct cost differential between US and non-US companies.

Third tier: capital gravity ($675B in annual capex, Japanese investments of $550B, Emirati funds all converging on US soil). This is no longer regulatory protectionism—it is a self-reinforcing effect that concentrates compute without any further intervention.

The novelty is the cumulative stacking: each tier amplifies the previous ones. Export controls limit supply, tariffs increase costs, capital gravity attracts investments. The result is a self-reinforcing system.

Q15. Which scenario do you consider most likely?

Scenario A ("Gradual protectionism, fragmented EU response"), estimated at ~45–50% probability. The US maintains current restrictions without major tightening toward Tier 1 allies, Europe responds declaratively without massive investments, and the compute gap gradually widens until the 2028 tipping point.

This is the "aggravated business as usual" scenario—no dramatic rupture, but a structural erosion of European competitiveness. The risk is precisely that it is painless in the short term and irreversible in the medium term. This is the scenario against which the Chapter VII recommendations are designed.

Q16. What is the "2028 tipping point" and why that date?

2028 is the convergence of three simultaneous constraints, each documented by independent sources. First, EU energy saturation: according to the IEA and RTE, European data center electricity demand will reach available grid capacity around 2028, creating physical bottlenecks. Second, peak compute demand: frontier models in 2028–2029 will require 10× more compute than GPT-4, according to Epoch AI. Third, the rise of AI robotics (+20–30% industrial energy demand), not yet integrated into official projections.

After 2028, infrastructure investments shift from being an advantage to being a survival condition—and construction lead times (3–5 years for a data center, 8–12 years for a nuclear reactor) mean that decisions made in 2026–2027 will determine the position in 2030.

Q17. Isn't China building a viable alternative ecosystem? Is US protectionism failing?

This is one of the major paradoxes identified by the study. Yes, restrictions are accelerating the construction of an alternative Chinese ecosystem (DeepSeek, Huawei Ascend, SMIC). DeepSeek demonstrated that frontier-level performance could be approached with more efficient architectures and less advanced GPUs. Huawei is developing a full range of AI chips. SMIC is progressing on 7nm nodes without EUV.

But this ecosystem remains 2–3 GPU generations behind, and mass production at the technological frontier (sub-5nm) requires ASML, from which China is excluded. US protectionism is not "failing"—it is producing effects different from those announced: instead of a unipolar world dominated by the US, it is creating a world fragmented into technological blocs. This is precisely what the study demonstrates.

Q18. Why add Brazil and Asia when the initial focus was US/EU?

Because AI protectionism does not operate in a vacuum. The initial study (US/EU) did not capture second-order effects: where do Chinese investments rejected from the US go? To Brazil (TikTok data center $38B), to ASEAN, to Africa. How do Asian allies react? Japan invests $550B in the US (co-financing supremacy), South Korea bets on HBM memory, Taiwan is the pivot of the entire system via TSMC.

Limiting the analysis to US/EU would have been like analyzing the Cold War by looking only at Washington and Moscow without considering the Third World. Tier 2 and Tier 3 zones are the terrain where the competition is actually playing out.

PART V — RECOMMENDATIONS AND POLICY

Q19. Are your recommendations realistic? €200 billion in EU investment is enormous.

It is enormous in absolute value but modest in proportion. US Big Tech capex is $675B per year; $200B over 5 years for the EU represents ~6% of that annual effort. The Draghi Plan (September 2024) estimated the European digital investment gap at $700B/year. Our recommendations are actually conservative compared to the Draghi diagnosis.

Furthermore, the recommendations are structured across three realistic time horizons: short term (2026–2027) with immediate measures (GPU contracts, Compute Zones), medium term (2027–2029) with programmed investments (AI Factories, EPR 2), and long term (2029–2030+) with structural transformations (nuclear SMRs, hardware autonomy). Each horizon has fundable and politically feasible measures.

Q20. Isn’t the “targeted strategic autonomy” option a weak compromise?

No—it is the only realistic positioning, and that is what makes it strong. The study demonstrates that two extremes are unviable. Subordinated integration (the Japan model: co-financing US supremacy) sacrifices the capacity to choose. Sovereignist confrontation (the China model: rebuilding everything in autarky) is unrealistic by 2030—Europe has neither the foundries, nor the compute, nor the time.

Targeted strategic autonomy means being sovereign over segments of comparative advantage (nuclear for energy, ASML for lithography, Mistral for models, the AI Act for regulation) while maintaining interoperability with the US ecosystem. The objective is not autarky but the capacity to choose—being able to say no to an unacceptable access condition. This is the very definition of sovereignty.

Q21. Does France really have a nuclear advantage for AI?

Yes, and it is measurable. France produces ~70% of its electricity from nuclear, at a cost of ~€42/MWh (ARENH rate 2024) compared to €90–145/MWh in Germany and $55/MWh in the US. For a 100 MW data center, this represents savings of €40–80M/year on energy costs alone.

EDF has identified four industrial sites totaling 2 GW for AI data centers, with the Nuclear for AI initiative (250 MW by end of 2026). The 6 planned EPR 2 reactors (Penly, Bugey, 9,900 MW, construction from 2027) will add dedicated capacity. And France is the only EU country with an active SMR program (NUWARD, Newcleo, Stellaria) that could provide dedicated data center energy by 2030–2032.

The CACI captures this advantage: France's E(r) factor is significantly lower than Germany's or the Netherlands', which raises its relative CACI despite lower raw compute (F).

PART VI — LIMITATIONS, CRITIQUES, AND DEFENSE

Q22. The regulatory environment changes very fast. Isn't your analysis already obsolete?

The Biden AI Diffusion Rule was repealed in May 2025. Trump's Section 232 dates from January 2026. The BIS final rule will be updated by July 2026. Yes, things move fast—and that is precisely why the study uses scenarios rather than predictions.

The structural mechanisms identified (compute concentration, energy differential, capital gravity) are independent of the specific regulation of the moment. Even if Section 232 is modified, the $675B capex and the compute gap remain. The analysis is designed to survive regulatory changes: scenarios cover a spectrum from loosening to tightening. That is the virtue of the scenario method.

Q23. Doesn't DeepSeek invalidate your thesis? You can do AI with less compute.

DeepSeek is integrated into the analysis (Chapters III and V). Yes, DeepSeek demonstrates that architectural efficiency gains can partially compensate for a raw compute deficit. But three essential nuances apply.

First, DeepSeek was trained on Nvidia A100 GPUs accumulated before the restrictions—the capacity for replication is limited by stocks and alternative supplies (Huawei Ascend). Second, the IEA (2025) documents a Jevons rebound effect: efficiency gains increase usage, which absorbs the gains and reignites compute demand. Third, DeepSeek concerns training; large-scale inference (billions of queries/day) remains proportional to installed compute capacity.

DeepSeek does not contradict the thesis—it enriches it by showing that competition is not solely about raw compute, but also about architectural efficiency. What does not change is that access to compute remains the limiting factor at the systemic level.

Q24. Doesn’t your study lack empirical fieldwork for a doctoral level?

Yes—and this is stated explicitly in the limitations (Conclusion §4). The absence of interviews with decision-makers, field surveys, and micro-level data (firm-level panel) is the main limitation for a complete doctoral positioning. This is why the study positions itself between a high-level M2 Research thesis and a professional doctorate (DBA), with a methodological contribution (the CACI) that constitutes a doctoral-level contribution.

The deliberate choice was to concentrate effort on analytical integration, the construction of an original tool, and its econometric validation—which is itself a substantial contribution. Fieldwork is explicitly recommended as a priority extension.

Q25. If you had six more months, what would you do?

Three priority extensions. First, 20–30 semi-structured interviews with decision-makers (data center directors of CAC 40 companies, compute officials at the DGE, cloud operators, EU industrial policy officials) to validate the scenarios and enrich the recommendations.

Second, extending the CACI panel to 25–30 countries over 10 years (2015–2024), with firm-level data to test the CACI at the microeconomic level and address endogeneity through instrumental variables (nuclear endowment, proximity to foundries).

Third, a geographic extension to Africa—the continent absent from the study, where the US-China competition for compute takes specific forms (submarine cables, data centers in South Africa and Nigeria, the Starlink program). This is the next frontier of compute geopolitics.

“The battle for compute is the battle for economic sovereignty.”

— Fabrice Pizzi, AI for Americans First, 2026