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AI FOR AMERICANS FIRST

Understanding the CACI Ratio of 7–12:1

Why Europe Can't "Simply Pay More"

and Why Using US Cloud Is Not the Solution

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About this document

This third volume answers **the most frequently asked question** about the study: "Why does Europe have 7 to 12 times less effective compute than the US when it could simply invest more — or use American cloud?" This document breaks down the answer into **10 progressive questions** from the most intuitive to the most strategic. It is designed to be read independently from Volumes 1 and 2.

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

PART A — Understanding the Ratio: Why 7–12:1 and Not 1.5:1?

Q1. The CACI US/EU ratio is 7–12:1. But the US is richer than Europe. Isn't that normal? "You pay, you get"? *[General / Decision-maker]*

This is the most natural objection — and the most widespread. But it rests on a confusion between raw compute and the CACI.

The CACI is normalized by GDP. That is the entire subtlety of the index. The formula is: $CACI(r) = [F(r) \times E(r)^{-1}] / [GDP(r) \times L(r)]$. The 7–12:1 ratio does not mean "the US has 7–12× more compute in absolute terms." That is the raw ratio, which is closer to ~15:1 (Epoch AI). The CACI says something far more serious:

> **"At comparable economic size and comparable human capital, American actors have 7 to 12 times more effective compute than Europeans."**

Let's do the simple math. US GDP is about $28 trillion, EU GDP about $18 trillion. US GDP is ~1.5× larger. If it were simply a matter of investment proportional to GDP ("you pay, you get"), the compute ratio should be around 1.5:1.

Yet it is 7–12:1. The question is: where do the remaining 5–10× come from? That is the central contribution of the study: these 5–10× come from structural factors that investment alone cannot compensate.

Q2. Alright. So where do these extra 5–10× come from? *[General / Decision-maker]*

Three structural factors explain the gap between the "expected" ratio (1.5:1) and the "observed" ratio (7–12:1). None of the three can be solved by "spending more."

Factor 1: Energy cost (×2–3 against the EU)

One FLOP of AI computation in Europe costs 2 to 3 times more than in the United States. Industrial electricity costs $110–145/MWh in Europe versus $50–65/MWh in the US. Concretely: even if Europe invested the same amount, it would obtain 2 to 3 times less usable compute. A 500 MW data center in Europe costs ~60% more in electricity than an identical one in Texas or Virginia.

This is not an investment choice — it is a structural constraint tied to the energy mix, carbon taxation, and electricity market regulation in Europe. This is precisely why recommendation #1 is derogated energy in Special Compute Zones ($50–60/MWh via nuclear PPAs).

Factor 2: Export controls + Section 232 (delivery priority)

Even with the budget, you cannot buy what is not delivered. Nvidia produces a finite number of H100/H200/B200 GPUs per quarter. US domestic exemptions mean American hyperscalers (Microsoft, Google, Amazon, Meta, xAI) are served first. During structural shortages — which has been the case since 2023 — European orders come second, with delays of 3 to 6 months.

Moreover, Section 232 (January 2026) imposes 25% tariffs on imported advanced AI semiconductors. **Even though European firms buying for domestic use don't directly pay this tariff, the announcement effect creates regulatory uncertainty**: the Proclamation explicitly provides for possible expansion by July 2026. What investor will commit €2B on a European data center if GPUs might cost 25% more in 6 months?

Factor 3: Capital gravity effect (investment flight)

This is the most pernicious factor. Rational investors — including Europeans and allies — invest in the US rather than in the EU, because the return on investment is better: cheaper energy, denser compute, larger market, more concentrated talent ecosystem.

Japan invested $550 billion on American soil — money that could have built Japanese (or European) compute. The Emirates converge on the US. Even European companies (**72–80% of EU AI workloads on US infrastructure**) vote with their feet.

It is a prisoner's dilemma: individually, each actor optimizes by investing in the US. Collectively, the outcome is a loss of technological sovereignty for all allies.

Q3. In summary, why doesn't "simply investing more" work? *[General]*

Because the problem is not a volume-of-investment problem. It is a structural problem. Here is the decomposition:

Component	Ratio	Cause	Investment alone enough?
Relative GDP	1.5:1	US larger than EU	Yes, proportional
Energy	×2–3	Energy mix, carbon tax, elec. market	No — structural
Delivery priority	×1.5–2	Export controls, US exemptions	No — geopolitical
Capital gravity	×1.5–2	Superior ROI in US	No — systemic
Cumulative total	**7–12:1**	**Multiplicative**	**NO**

Table. Decomposition of the CACI US/EU ratio. Source: author's calibration (2024).

The factors are multiplicative, not additive. 1.5 (GDP) × 2–3 (energy) × 1.5–2 (delivery) × 1.5–2 (gravity) = 7 to 12. Even solving one factor, the others maintain a considerable gap.

PART B — “But We Can Use American Cloud, Right?”

Q4. Europe already uses US cloud massively. Isn’t the ratio a non-issue?
[Decision-maker / Industrialist]

This is the objection of 90% of European decision-makers. And in the short term, they are right. Why invest in sovereign compute when you can rent from the Americans? AWS, Azure, and GCP are available, performant, and immediately accessible. 72% of European AI workloads already run on them.

But this is exactly the definition of strategic dependency. You are renting another party’s critical infrastructure, and that party can: (1) read your data, (2) cut your access, (3) charge you more, and (4) serve you after their own clients. All four risks are documented and concrete.

Q5. Risk 1: The CLOUD Act. Is our data really accessible to the Americans? *[Jurist / DPO]*

Yes. The Clarifying Lawful Overseas Use of Data Act (CLOUD Act, 2018) authorizes US authorities to access data stored on American company servers, **even if the server is physically outside US soil.**

Concretely: a French bank training its credit scoring model on Azure (server in Ireland) — the US DoJ can legally demand access. A defense model trained on AWS — the NSA can access it. A proprietary trading algorithm on GCP — the SEC can request it.

This is not a conspiracy theory: it is current US law. The CLOUD Act makes no distinction between American and European data — it applies to the company (AWS, Microsoft, Google), not to the territory.

> Implication: any AI model trained by a European company on American cloud infrastructure is potentially accessible to US authorities. This is a sovereignty risk, not a theoretical one.

Q6. Risk 2: Can cloud access actually be cut or restricted? *[Geopolitician / Strategist]*

It has already happened — and the mechanism is in place to expand it. This is Farrell & Newman’s (2019) “chokepoint effect” applied to cloud. The US has already:

• **Cut cloud access for Chinese entities** (Entity List, BIS). Listed Chinese companies can no longer access AWS, Azure, or GCP. Overnight.

• **Restricted cloud access by country** (AI Diffusion Rule, Tier 2 quotas). Tier 2 countries have caps on the volume of cloud compute they can consume.

• **Envisaged expansion of restrictions** (Section 232, Proclamation provides for possible expansion July 2026).

Today, Europe is Tier 1 — free access. But the legal mechanism is in place. The day a trade conflict erupts (AI Act retaliation, digital tax 2.0, NATO disagreement), a single executive order suffices to restrict European cloud access. Scenario B of the study ("digital vassalization") models exactly this case.

> Historical reminder: Europe bought Russian gas because it was cheaper and simpler than building alternatives. Until February 2022. US compute is the Russian gas of AI — except the dependency is even deeper, because you cannot stockpile compute the way you stockpile gas.

Q7. Risk 3: Even without a cutoff, doesn't US cloud cost more for Europeans?

[Industrialist / CFO]

Yes. A FLOP costs \$0.5/TFlop in the US and \$1.2–1.8/TFlop in the EU (Table 9, Chapter IV). This 2.4–3.6× differential comes from three factors:

Network latency: a model trained in Virginia from Paris suffers data transfer delays that reduce distributed training efficiency. For real-time applications (autonomous manufacturing, connected vehicles, trading), latency is prohibitive.

Egress fees: hyperscalers charge for data transfer out of their regions. Repatriating a model trained in the US to the EU costs money. Storing and transferring European datasets to the US costs money. These fees stack up.

Regional margins: AWS, Azure, and GCP charge 15–25% more in EU regions than in US regions for the same GPU-hour. Documented by Bruegel.

Result: French startups pay 2 to 3× more for the same GPU-hour than their Silicon Valley competitors. Even using US cloud, the playing field is not level.

Q8. Risk 4: What concrete impact on European companies' time-to-market?

[Industrialist / Startup]

McKinsey documents a 25–40% time-to-market extension for European companies compared to their US competitors. This delay comes from three cumulative factors:

1) Slower compute access: GPU queues, delivery delays, cloud capacity quotas in EU regions.

2) Higher cost: EU startups must raise more funding for the same compute volume, which lengthens fundraising cycles and delays projects.

3) AI Act compliance: 3–5% additional budget in regulatory compliance (Accenture), stacking on top of the compute surcharge.

In AI, 6 months of delay = one model cycle of delay = competitive death for a startup. When GPT-5 launches in March and your US competitor integrates it in April, you cannot wait until September. The market will be taken.

PART C — So What Do We Do?

Q9. If "paying more" isn't enough and US cloud is a trap, what is the solution?
[Decision-maker / Policymaker]

The objective is not technological autarky but the capacity to choose. Not 0% US cloud, but 30–40% of sensitive workloads on certified sovereign cloud by 2029. Having a Plan B the day Plan A closes.

The five levers are detailed in Chapter VII:

1) Special Compute Zones with derogated energy at $50–60/MWh via nuclear PPAs. This is lever #1: without competitive energy, nothing else works.

2) Nuclear-AI integration: France has 63 GW nuclear, EDF can dedicate 2 GW immediately. The only EU energy mix that enables a credible trajectory. 250 MW by end 2026, 6 EPR 2 under construction, SMRs by 2030+.

3) Strategic GPU reserves: EU framework contracts with Nvidia, AMD, Intel Foundry for 18–36 months. Secure volumes before restrictions expand. Decouple EU supply from US policy shifts.

4) AI Act as offensive lever: condition EU market access to compute localization. Mutual recognition with Japan, Korea, Singapore. European CLOUD Act Shield.

5) Mistral model (Airbus analogy): not replace OpenAI, but build a credible alternative. ASML invested €1.3B (11% of capital) — the industrial signal is there. The question is not "Can Mistral beat OpenAI?" but "Can Europe afford to be without Mistral?" The answer is no.

Q10. In one sentence, why is this 7–12:1 ratio an existential problem and not just a catchable delay? *[General]*

Because compute produces self-reinforcing agglomeration effects. The more compute you have, the more talent comes, the more investors come, the more compute increases. It is a virtuous circle for the US and a vicious circle for the EU. Each year of inaction widens the ratio instead of narrowing it.

This is why the 2026–2028 window is critical. After 2028, positions will be consolidated: US AI Gigafactories will be operational, cloud ecosystems frozen, talent settled. Scenario D ("Massive EU Response") is still possible today. It will no longer be in 2030.

The 7–12:1 ratio is not a temporary delay: it is a structural divergence that, without intervention, becomes irreversible. That is the difference between "we are behind" and "we have lost the ability to catch up."

> **"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."**

— Fabrice Pizzi, AI for Americans First, 2026

— END OF VOLUME 3 —

This document can be read independently from Volume 1 (thesis, CACI, methodology, scenarios, limitations) and Volume 2 (25 technical, geopolitical, and operational questions).

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