DEFENSE & STRATEGY

NATO's Spending Targets Are Measuring the Wrong Thing

Why Defense Capability Cannot Be Read Off A GDP Percentage

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IDEA IN BRIEF

THE PROBLEM

NATO's burden-sharing debate is framed entirely around financial inputs: what share of GDP each member spends on defense. But defense capability is not a linear function of financial inputs, it is an emergent property of co-evolved systems: technical architectures, industrial bases, and institutional frameworks that must develop in synchrony before spending converts into actual military capability.

THE ARGUMENT

GDP-share targets treat defense as a purchasing exercise, however procurement without the surrounding architecture of interoperable systems, domestic production capacity, trained workforce pipelines, functioning procurement institutions, does not produce capability, creating instead expenditure. The Spain case illustrates the problem precisely: a country can be formally non-compliant on the metric while being strategically correct, because the metric measures inputs rather than outputs.

THE IMPLICATION

The binding constraint on European defense is not the spending target, it is the set of architectural preconditions that determine whether spending translates into capability at all. Part II examines why Europe's current spending surge risks failing this test—and how the money is flowing in ways that deepen, rather than resolve, the underlying structural problem.

NATO's 2% GDP target was never a military doctrine. It originated as a political signal—a burden-sharing shorthand designed to demonstrate commitment to alliance partners. When it was formalized at the Wales Summit in 2014, in the aftermath of Russia's annexation of Crimea, it was explicitly framed as non-binding; as such, NATO's founding treaty contains no GDP-denominated obligation. Member states agree to "maintain and develop their individual and collective capacity to resist armed attack"—a capabilities commitment, not a financial one.

The target became entrenched for institutional reasons that have little to do with defense strategies. GDP share, however, is legible, comparable, and negotiable across 32 sovereign governments that would never agree on a common capability benchmark. It is a metric optimized for alliance politics, not military effectiveness; an optimization that is now producing visible costs.

The 5% target being currently discussed amplifies the problem. It is not derived from any assessment of what European defense actually requires, but is a number generated by a political demand—that allies demonstrate greater financial commitment to a US-led security architecture—rather than by any analysis of the gap between current and required military capability. And contrary to popular belief, larger inputs fed into an unreformed system do not produce proportionally larger outputs.

GDP-share targets and capability targets operate very differently and should not be treated as interchangeable.

CAPABILITY IS AN ARCHITECTURE PROBLEM

Defense capability emerges when three types of systems co-evolve: technical architecture (weapons systems, communications, interoperability standards), industrial architecture (production capacity, supply chains, maintenance ecosystems), and institutional architecture (procurement, command integration, burden-sharing governance). Military effectiveness requires all three to function as a coordinated system. *Figure 1* illustrates the relationship.

Spending targets address only the financial dimension, and only on the input side. The assumption embedded in them is that if countries spend enough money, the architectures will follow. But this assumption has no empirical basis and substantial evidence against it.

Consider what actually determines whether defense spending produces capability:

Interoperability—the ability of allied forces to communicate, coordinate, and operate together—depends on technical standards that take years to develop and adopt. A NATO member that rapidly scales spending without those standards in place produces platforms that cannot communicate with allied systems.

Industrial capacity—the ability to produce and maintain equipment domestically—takes a decade or more to build from a standing start. A country that surges procurement spending while its industrial base is underdeveloped simply imports that capability from whoever already has the architecture, most commonly the United States.

Workforce capacity—the trained personnel to operate and maintain complex systems—compounds over time and cannot be purchased quickly. No amount of procurement spending creates an experienced military engineering corps in two years.

The result is that defense spending functions as a capability multiplier *only when* the surrounding architectures already exist. Without them, spending is not wasted in the sense of producing nothing—it produces weapons and equipment. But it does not produce the emergent property those weapons and equipment are meant to generate: autonomous, sustainable military capability.

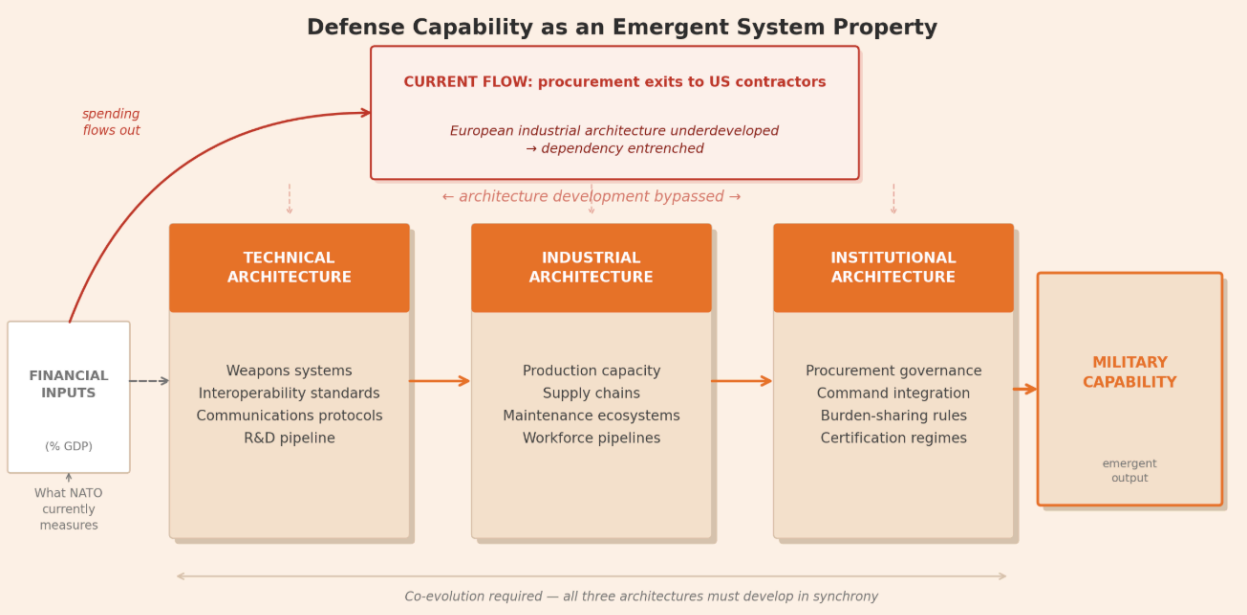


Figure 1: Defense capability as an emergent system property. Financial inputs enable architecture development but do not determine its pace or depth. Military capability emerges only when all three architectures co-evolve in synchrony. NATO's GDP-share metric measures inputs; the binding constraint is architectural co-evolution.

THE SPAIN CASE AS A DIAGNOSTIC

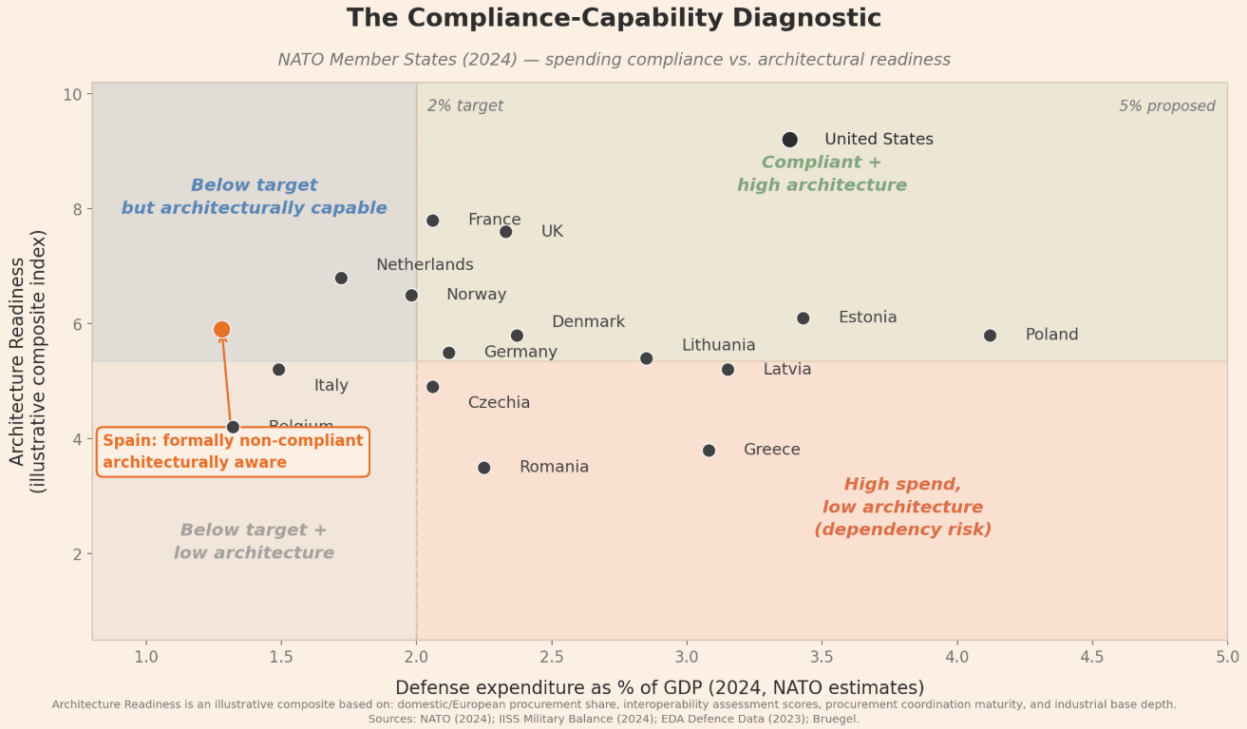
Spain's refusal to commit to the 5% target has been characterized as free-riding. But Prime Minister Sánchez's actual argument—that committing to 5% "would not make us any safer" because it "would only reinforce our dependence"—is architecturally correct, even if it is not articulated in those terms.

In recent years, the more Europe has spent on defense, the more that spending has flowed to American contractors rather than European ones, as the European defense industrial base has not scaled proportionally with European defense budgets. What *has* scaled is European financial dependence on American production architecture—including weapons systems with remote-disable capabilities and supply chains that deprioritize European customers in conflict scenarios.

This is not a side effect of defense spending. In fact, it is a predictable consequence of spending without the prior development of industrial architecture. When procurement institutions default to American contractors because European production capacity is insufficient, increasing the procurement budget does not solve the structural problem, instead amplifying the very outcome it is trying to avoid.

The Spain case is therefore diagnostic in a precise sense. *Figure 2* maps NATO member states by spending compliance against an illustrative architecture readiness index. The diagnostic reveals a pattern the GDP-share metric actively conceals: compliance and capability readiness are imperfectly correlated, and some non-compliant states are better positioned architecturally than states that meet the spending target by routing procurement through external contractors.

A country can be formally non-compliant on the GDP spending while being strategically correct because the metric measures inputs, not outputs.



THE UKRAINE STRESS TEST

The most direct empirical evidence for the architecture argument comes from Ukraine. When the war created sudden, acute demand for European defense production, the industrial architecture gap became impossible to conceal. European defense spending had been rising since 2014, although what had not been built, alongside the budgets, was the production architecture to convert that spending into real military output.

The most visible case was artillery ammunition. The EU announced in March 2023 that it would deliver one million 155mm shells to Ukraine within twelve months: a commitment backed by substantial financial pledges. The actual delivery by March 2024 was approximately 520,000 rounds: barely half the target. As *Figure 3* shows, pre-war European production capacity was approximately 300,000 shells per year, a fraction of Ukraine's peak consumption rate of roughly 3.5 million annually. Even with emergency ramp-up efforts and funding, EU capacity had reached only about 1.4 million rounds per year by end of 2024. The production architecture to absorb even the existing spending was simply not there.

This failure was not financial, as European governments had committed the funds. The constraint was industrial: machine tools, skilled workforce, supply chains for propellants and fuses, production lines that take years to build and cannot be conjured by budget announcements. Artillery shells are not such a sophisticated technology that Europe could not produce them at scale. So despite years of rising defense budgets, this is the clearest possible illustration of what happens when financial commitments flow through procurement systems that have not built the underlying production architecture.

The same pattern appeared across other categories. Air defense interceptors, armored vehicles, and anti-tank missiles all faced similar production bottlenecks. In each case, the constraint was not political will or financial resources, it was the industrial architecture that determines whether will and resources convert into output.

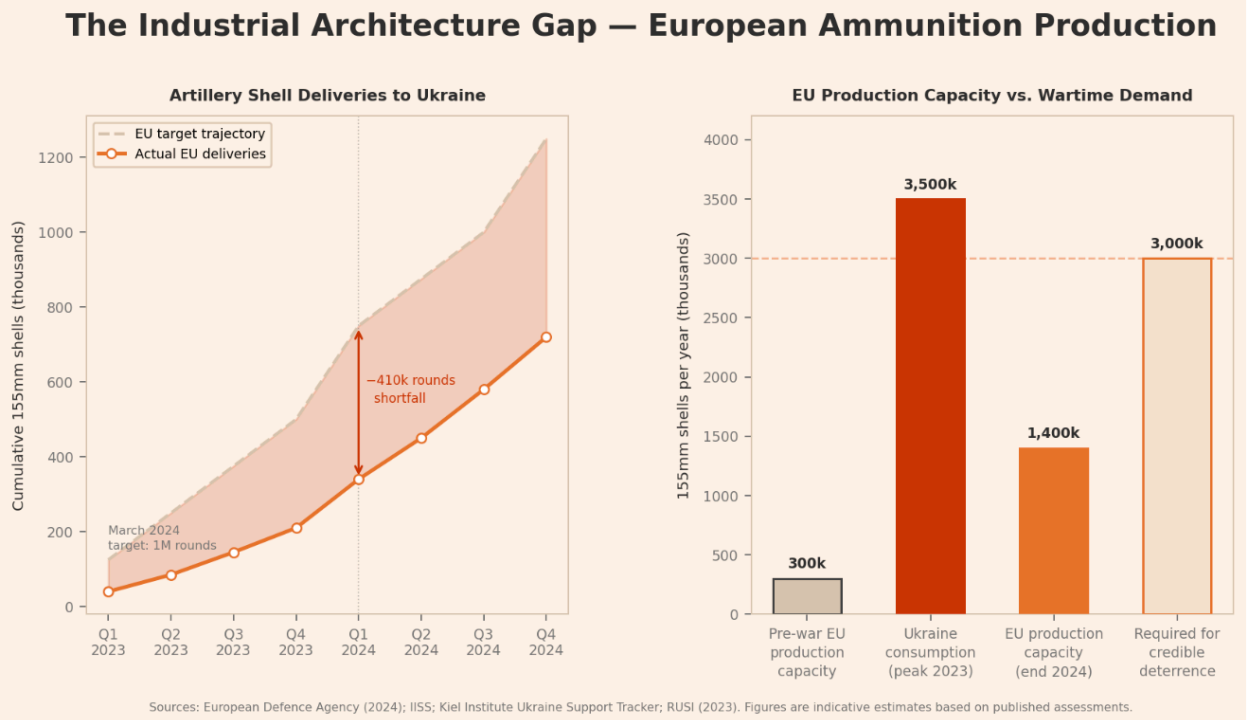


Figure 3: The industrial architecture gap. European ammunition production capacity before the Ukraine war was a fraction of wartime consumption requirements. Emergency ramp-up reached ~1.4 million shells/year by end 2024—still below credible deterrence requirements. The bottleneck was never funding; it was production architecture. Sources: EDA (2024); IISS; Kiel Institute Ukraine Support Tracker; RUSI (2023). Figures are indicative estimates based on published assessments.

WHAT THE METRIC CANNOT CAPTURE

NATO's choice of GDP share as its primary burden-sharing metric reflects an understandable institutional rationale: it is legible, comparable, and politically negotiable, and these properties have real value in a multilateral alliance. The problem is that legibility and strategic validity are different things, and the ease of measurement is not an argument for the validity of what is being measured.

A capability-based framework would ask different questions:

What share of defense procurement flows to domestic or European producers, building industrial capacity, versus to import-dependent supply chains that deepen structural dependency?

What is the interoperability status of existing equipment with NATO standards, and what is the timeline to remediate gaps?

What is the state of domestic production capacity for key platforms and munitions categories?

What are the workforce development pipelines for defense-relevant technical and operational specialisms?

These are harder to measure than a GDP percentage, because they require joint assessment methodologies, shared data, and institutional willingness to surface uncomfortable findings about structural gaps. They are also the questions that actually determine whether alliance spending converts into collective defense capability. The Ukraine experience has made them impossible to dismiss as theoretical concerns.

NATO has optimized for legibility over accuracy, and the Spain example illustrates the cost. A country that correctly identifies the structural dynamics of European defense dependency—that spending without industrial architecture deepens rather than resolves it—is nonetheless framed as non-compliant, while countries that hit the spending target by routing procurement through American contractors are framed as fulfilling their obligations.

THE ARCHITECTURAL PRECONDITION

The argument here is not that European defense spending is unimportant, because sustained investment in defense is necessary and overdue. The argument is about what must exist before that spending can do what it is politically intended to do.

Defense capability requires the co-evolution of three architectures: technical, industrial, and institutional. Financial commitments can contribute to that co-evolution if they are sequenced and directed correctly—toward building European production capacity, harmonizing procurement institutions, developing common standards, and funding workforce pipelines. But financial commitments that flow through unreformed procurement systems into existing supply chains do not build those architectures; they entrench the dependency those architectures are meant to replace.

The current NATO spending framework treats the financial commitment as the end point of the burden-sharing problem. It is not. It is the starting point of an architectural challenge whose binding constraints are not financial. Part II examines what happens when that challenge is not addressed, and why Europe's current rearmament trajectory risks reproducing the problem it is meant to solve.

This article draws on working papers by Sinéad O'Sullivan: Institutions as Coordination Architectures: Adaptive Bandwidth and The Dynamics of Economic Development and Market Formation as a Systems Engineering Problem. Copies available at s@sinead.co.