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Military expenditure and economic sustainability: implications of the SAFE program

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Abstract. *This paper analyses the compatibility between the expansion of military spending generated by the SAFE (Strategy, Armament, Financing, Efficiency) programme and the long-term fiscal sustainability of the European Union Member States, with a focus on the cases of Romania, Poland and Hungary. Starting from a dual theoretical framework: the crowding-out effect versus the Keynesian multiplier, the research applies the public debt sustainability equation ($\Delta d = r - g \cdot d + pb$) and the fiscal multiplier analysis to assess the allocative efficiency of the programme. The results of the longitudinal comparison (2021–2026) demonstrate that the economic impact of the SAFE programme is non-linear and critically dependent on industrial absorption capacity: Poland transforms defence into a competitive advantage (multiplier > 1), while Romania experiences a structural deterioration in the trade balance (−1.2% of GDP). The conclusions emphasize that the economic sustainability of SAFE requires the localization of production, the implementation of the Fiscal Golden Rule, and the stimulation of public-private partnerships.*

Keywords: military expenditure, fiscal sustainability, SAFE programme, defence multiplier, crowding-out, Eastern Flank.

JEL Classification: E62, F52, H56, H62, H63.

1. Introduction

The dividend paradigm (Samuelson, 1948), which dominated European fiscal policies after 1989, has given way to the imperative of strategic security. The reconfiguration of the defense architecture through the SAFE program raises a fundamental political economy issue: the compatibility between the expansion of military spending and long-term fiscal sustainability.

Military spending can no longer be viewed exclusively as an unproductive consumption of resources, but as an "investment in institutional stability", without which financial markets cannot operate efficiently (Hartley, 2011). However, the pressure exerted by SAFE comes at a time of post-crisis fiscal vulnerability. Economic sustainability, the capacity of a state to honor its financial obligations without compromising future growth (Blanchard, 2021), is being tested by the accelerated growth of deficits. The risk of a crowding-out effect (Benoit, 1978) coexists with evidence of positive technological externalities (Mazzucato, 2013) and the non-linear impact of military spending on growth (Dunne & Tian, 2015).

The objective of this paper is to analyze the mechanisms through which the SAFE program can be integrated into a sustainable growth model. The central hypothesis argues that, by stimulating research and development (R&D) and by creating value-added chains at European level, military spending can generate positive externalities that compensate for the initial fiscal burden. Through comparative methodology and analysis of macroeconomic indicators of Romania, Poland and Hungary in the period 2021–2026, the paper identifies the conditions under which defense investment becomes a pillar of resilience, not a source of fiscal fragility.

2. Theoretical framework

2.1. The Crowding-Out Effect: Civil Resource Eviction Mechanisms

The "crowding-out" effect postulates that an increase in budgetary allocations for defense leads to the reallocation of financial, human and technological resources from the civilian productive sectors (Smith, 1980). The primary mechanism operates through budgetary constraint: increasing military spending requires either increasing taxes or reducing other public spending, highlighting the "security-welfare trade-off" (Heo, 1998). According to the IS-LM model, financing through public debt issuance increases the demand for money, making credit more expensive for the private sector and crowding out private investment in civilian technology (Barro, 1981). Additionally, the defense sector absorbs highly skilled labor, limiting the transfer of knowledge through confidentiality barriers (Smith, 2009).

"Every dollar invested in the military-industrial complex represents a social opportunity cost, reflected in unbuilt schools or degraded civilian infrastructure (Deger, 1986)."

The sustainability of the SAFE program therefore depends on minimizing these distortions through policies supporting dual-use technologies.

2.2. The Keynesian Perspective: Multiplier and Spin-off Effects

The neo-Keynesian perspective approaches military spending as a component of countercyclical fiscal policy. State orders activate collateral sectors (metallurgy, electronics, energy), reducing unemployment and stimulating private consumption (Dunne & Smith, 1990). The multiplier is optimized if production is localized regionally, avoiding extra-community capital "leakage".

The central argument for sustainability lies in technical progress. Romer (1990) emphasizes that the stock of technical knowledge is the main engine of long-term prosperity. Historically, fundamental innovations, such as the Internet (ARPANET), GPS, emerged as a result of military financing (Mazzucato, 2013). The SAFE program, by focusing on artificial intelligence, cybersecurity and new materials, can create an "innovation ecosystem" that fuels the competitiveness of European civilian industry. The integration of dual-use technologies reduces financial risks for private firms, allowing the adaptation of military solutions for commercial markets (Vernick et al., 2017).

2.3. Economic Sustainability in the Context of the Pre-Defense Economy

In the standard literature, fiscal sustainability is the capacity of a state to maintain its spending policies without jeopardizing government solvency (Blanchard, 1990). The 2026 context requires a recalibration: in a pre-defense economy, the lack of military investment becomes, in itself, a threat to sustainability, as systemic uncertainty discourages foreign direct investment and increases the cost of capital.

"An economy cannot be considered sustainable if its critical infrastructure and trade routes are vulnerable to major external disruptions (Draghi, 2024)."

The focus shifts from allocative efficiency to resilience: maintaining surplus production capacities, strategic stocks and secure supply chains (Nordhaus, 2021). Although inefficient by traditional cost-benefit calculations, these measures ensure the survival of the system in shock conditions. However, Smith (2017) warns that "military overstretch" can generate a crisis in public finances that paradoxically weakens the defense capacity that the state is trying to strengthen.

3. The SAFE program: objectives and mechanisms

3.1. Genesis and Quadrilateral Architecture

The SAFE (Strategy, Armament, Financing, Efficiency) programme is the integrated institutional response to the need for a "defense readiness" economy. Its genesis lies in the recognition of the fragmentation of European defense markets, which generates annual inefficiencies of tens of billions of euros through the duplication of weapons systems (EPRS, 2023). SAFE goes beyond previous forms of cooperation (PESCO, EDF), synchronizing the demand of member states with the industrial supply and avoiding critical dependence on external suppliers (Biscop, 2024).

The Strategy Pillar defines long-term priorities (2030–2040), mapping the vulnerabilities of supply chains with a focus on microelectronics and autonomous systems. The Armament Pillar addresses standardization and interoperability, pursuing economies of scale through incentives for joint acquisitions, being a direct response to the historical problem of the multiplicity of European systems compared to the unitary American model (Hope & Valasek, 2021). The Financing Pillar introduces innovative mechanisms such as "Defense Bonds" and proposes "investment clauses" in European fiscal rules, allowing the partial exclusion of SAFE expenditures from the calculation of the structural deficit (European Commission, 2025). The Efficiency Pillar aims to optimize procurement through centralized digital platforms, maximizing the return on each euro invested (Draghi, 2024).

3.2. Financing Mechanisms: European Funds vs. National Budgets

SAFE's hybrid model combines the non-repayable grants and loan guarantees of the European Defence Fund (EDF) and the EDIRPA Instrument with the pressure on national budgets to reach the 2–3% of GDP target (European Commission, 2025). Centralised funding reduces entry barriers for states with smaller economies, eliminating the high fixed costs of military R&D.

"Supranational financing does not undermine sovereignty, but corrects the chronic under-investment generated by the negative externalities of uncoordinated security (Vandenbussche & Aksoy, 2023)."

The "Defense Golden Rule" proposed under SAFE would allow member states to treat capital expenditures for the program as productive investments, excluding them from the calculation of the excessive deficit (Eichengreen, 2024). Mobilizing private capital through "security bonds", with the integration of ESG criteria for the sustainable defense industry, completes the financing architecture (Credit Suisse, 2025).

3.3. Public-Private Partnerships and Industry Integration

The SAFE program marks the transition from the "client-supplier" model to a collaborative ecosystem based on PPPs, overcoming budgetary limitations by transferring operational risk to the private partner (Parker & Hartley, 2023). Long-term maintenance (Life-Cycle Costing) can represent up to 70% of the total cost of an armament program (Jones, 2025), efficiency aiming to optimize it through continuous innovation. The creation of "innovation hubs" facilitates the spin-in effect (civilian technology adopted by the military), reducing implementation time and development costs.

"Integrating the defense industry into civilian value chains through PPPs is the only sustainable method to maintain a technological advantage without depleting the state's fiscal resources (European Defence Agency, 2024)."

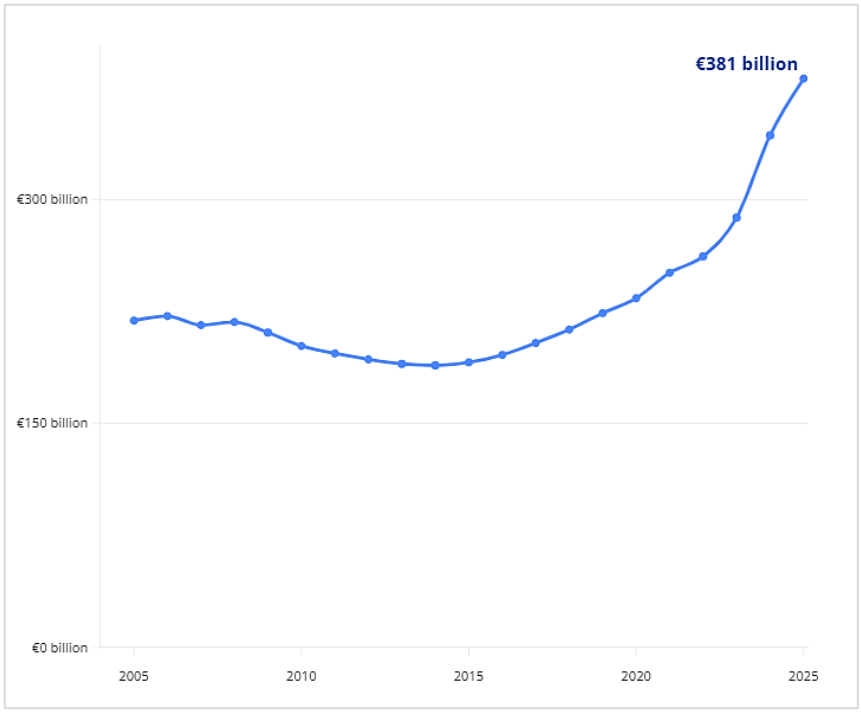
The SAFE framework imposes transparency audits and "technological sovereignty" clauses to prevent regulatory capture, ensuring that critical assets remain under the strategic control of member states (Stiglitz & Bilmes, 2023).

4. Results: evolution of defense spending and macroeconomic implications

4.1. Dynamics of Defense Spending in Europe (2005–2025)

Total defense spending of European Member States followed a two-phase trajectory. Between 2005 and 2014, a reduction from ~€220 billion to ~€185–190 billion reflected post-crisis austerity policies and reduced perceptions of security risks. Starting in 2015, a sustained upward trend visibly accelerated post-2020, reaching ~€381 billion in 2025, representing a 32% increase compared to 2023. This trajectory validates the hypothesis of the "neighbourhood effect": budgetary decisions are not isolated, but propagate in the network, generating synchronised increases in the context of a deteriorating regional security environment.

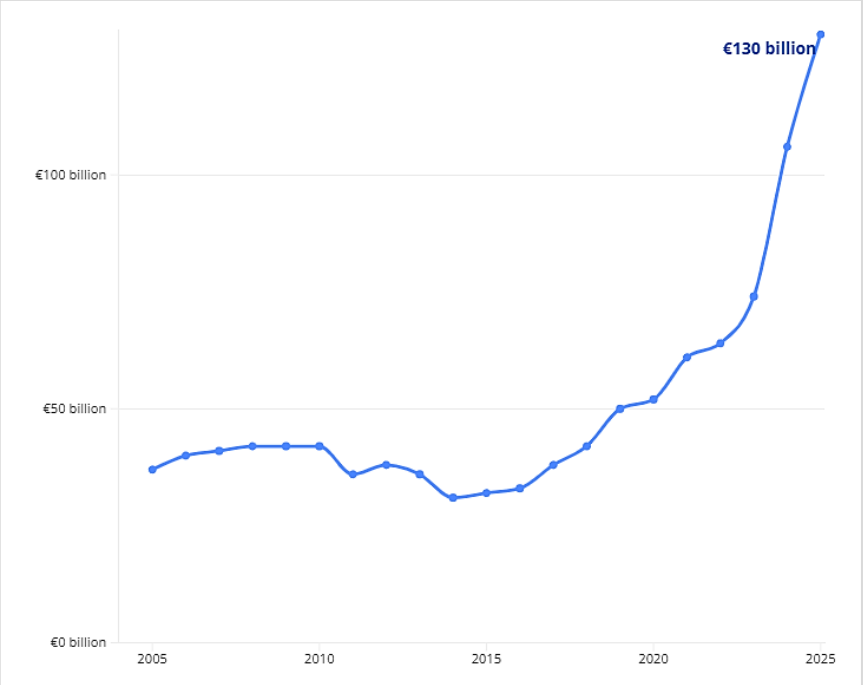
Figure 1. *Evolution of defense spending of European member states (2005–2024)*



Source: European Defence Agency

Defense investments (modernization component) have seen an even more pronounced increase: from ~30 billion euros in 2013–2014 to ~130 billion euros in 2024, a 74% increase compared to 2023. This paradigm shift, from a reactive to a proactive approach based on deterrence, justifies, from a SAFE perspective, the use of defense as a form of insurance against future risks.

Figure 2. *Defense investments (2005–2024)*



Source: European Defence Agency

4.2. The Neighborhood Effect: Analysis of Regional Interdependencies

The evolution of Romania's military spending cannot be explained by isolated internal factors, but by regional interdependencies. During the period 1990–2014, Romania followed the European model of "perceived peace balance", reducing spending from >4.5% of GDP to ~1–1.5% of GDP, a convergence facilitated by NATO and EU guarantees. The post-2014 rupture, dramatically accentuated post-2022, illustrates the mechanism of "strategic contagion": Romania reacts not only to the conflict in Ukraine, but also to the massive increase in the Polish military budget, being a signal of regional "competitive alignment".

A "geographical gradient of security" is manifested in Eastern Europe: the closer a state is to the conflict zone, the faster and more intense the budgetary reaction. Romania is positioned intermediately: more exposed than Western Europe, but less than the Baltic states or Poland, which is reflected in significant but not extreme increases. The neighborhood effect also has an anticipatory dimension: defense decisions reflect expectations regarding the future behavior of regional actors, not just retrospective reactions.

4.3. The Impact on the Deficit and Public Debt

Applying the debt sustainability equation $d_t = ((1 + r) / (1 + g)) \cdot d_{t-1} - pb$ in the context of the SAFE program allows for a rigorous assessment of Romania's fiscal trajectory (debt of ~50% GDP, r ≈ 2.5%, g ≈ 3.5%).

Figure 3. *Romania's public debt sustainability scenarios under the SAFE program*

Scenario	Interest rate (r)	GDP Growth (g)	Primary deficit (pb)	Est. Debt (% of GDP)
Baseline	2,5%	3,5%	2,0%	51,5%
Adverse	3,0%	1,5%	2,0%	52,75%
Favorable (spin-off)	2,5%	4,5%	2,0%	51,05%

The analysis confirms that the critical variable is the difference $r - g$: as long as economic growth exceeds the cost of financing, the SAFE program can be compatible with debt stability. In the adverse scenario, the increase in military spending amplifies the risks of fiscal slippage, highlighting the need for economic policies that support growth and limit the primary deficit.

A central element of the SAFE program is the negotiation of "flexibility clauses" within the excessive deficit procedure (EDP). Armament spending can be considered relevant mitigating factors, conceptualized as a "strategic investment" the absence of which would generate much higher economic costs in the future (Buti & Messori, 2024). However, long-term sustainability depends on the temporary versus structural nature of these exceptions (Thygesen et al., 2025).

4.4. The Defense Multiplier: Comparative Economic Efficiency

Figure 4. *Comparative Fiscal Multiplier by Types of Public Expenditure*

Expenditure Type	Multiplier (short-term)	Productivity Impact (long-term)
SAFE Program (Military R&D)	0,8 – 1,2	High (spin-off effects)
Civilian Infrastructure	1,0 – 1,5	High (reduction in transport costs)
Social Transfers / Consumption	0,4 – 0,6	Low (transitory impact)

The defense multiplier varies cyclically (Barro & Redlick, 2011): 0.6–0.8 in expansionary periods, >1.0 in recessionary periods. Applying $m \approx 0.7$ for an additional allocation of 1% of GDP (~3 billion euros) through SAFE, the estimated impact is $\Delta Y \approx 0.7\%$ of GDP (~2.1 billion euros). If the multiplier reaches 1.1 (underutilization conditions), $\Delta Y \approx 3.3$ billion euros, the program is partially self-financing. In comparison, infrastructure generates $\Delta Y \approx 4.5$ billion euros ($m \approx 1.5$), and education $\Delta Y \approx 2.7$ billion euros in the short term with superior effects in the long term.

However, including the "crowding-in" effect of private investment (conservatively estimated at 0.3) and reducing import losses generated by the SAFE structure (focus on domestic production) increases the effective multiplier to ~1.0–1.2, bringing it closer to the efficiency of civilian infrastructure. According to Moretti et al. (2022), public investment in military R&D stimulates private research in adjacent technological sectors, balancing the efficiency balance.

4.5. Social Sustainability: Opportunity Cost and Public Acceptance

The social sustainability of SAFE, represented by the capacity of governments to maintain cohesion in the face of resource reorientation, is analyzed through Peacock & Wiseman's (1961) hypothesis on the "displacement effect". Public acceptance is mediated by transparency and the local impact of investments: the SAFE program strengthens social

sustainability if it generates highly qualified jobs in disadvantaged regions, transforming military spending into an instrument of territorial cohesion.

Eurobarometer (2025) confirms that support for increasing defense budgets is directly proportional to the level of trust in European institutions and the perception of the efficiency of the use of funds, which gives the Efficiency pillar of SAFE a social legitimization function, not just an accounting one (Bove et al., 2023). The major risk remains "strategic fatigue": if inflationary pressure or the degradation of civil services becomes visible, the social contract may be strained (Stiglitz, 2023).

5. Comparative analysis: Romania, Poland and Hungary

5.1. Strategic Divergences on the Eastern Flank

The implementation of SAFE in the Eastern Flank generated three distinct models of economic sustainability, conditioned by the pre-existing fiscal space and industrial absorption capacity (Eurostat, 2026; SIPRI, 2025):

Figure 5. *Comparative Macroeconomic Indicators: Romania, Poland, Hungary (2021–2026)*

Member State	Defense % of GDP 2021	Defense % of GDP 2026 (Est.)	Debt % of GDP 2021 (Est.)	Debt % of GDP 2026 (Est.)	Industrial Multiplier (Est.)
Poland	2,20%	4,50%	53,80%	59,20%	1,15
Romania	2,00%	2,50%	48,90%	52,40%	0,85
Hungary	1,60%	2,10%	76,80%	73,10%	0,92

Poland is the "champion" of the SAFE implementation, transforming military spending into incentives for national heavy industry through massive procurement and technology transfer partnerships. Using the Armed Forces Support Fund, a financial vehicle external to the state budget, similar to the SAFE architecture, Poland maintains sustainability through an economic growth rate higher than the interest rate (Eichengreen & Panizza, 2024). Romania faced structural constraints: a significant part of the increases fueled the current account deficit through mainly foreign procurement, placing it under the pressure of the excessive deficit procedure (Fiscal Council, 2025). Hungary adopted a hybrid approach, using SAFE for regional reindustrialization (Rheinmetall factories), managing to reduce public debt by increasing value added (Hagemejer & Mućk, 2024).

5.2. Post-Implementation Macroeconomic Indicators

The military fiscal expansion generated inflationary pressures through supply bottlenecks in high-tech sectors: ECB (2025) confirms core inflation above the 2% target. In Romania, imported inflation through exchange rate depreciation during peak purchasing periods amplified structural vulnerabilities (BNR, 2025). Financial markets' perception reflects these divergences in CDS spreads:

Figure 6. *Sovereign Risk Indicators (CDS Spreads and Bond Yields 2021 vs. 2026)*

Member State	5Y CDS Spread – 2021	5Y CDS Spread – 2026 (Est.)	10Y Bond Yield (2026)
Poland	50 bps	85 bps	5,80%
Romania	95 bps	180 bps	7,20%
Hungary	80 bps	165 bps	6,50%

Markets penalize Romania and Hungary more severely for accumulated deficits, perceiving their fiscal space as more vulnerable to financing shocks. Poland benefits from a lower risk premium due to its solid industrial base (Eichengreen, 2024). Regarding the balance of payments, Poland managed to partially offset imports through component exports (substitution effect), Hungary stabilized its current account by localizing production (localization effect), and Romania recorded a structural deterioration of ~1.2% of GDP without compensating export flows (Eurostat, 2026). Therefore, the sustainability of SAFE depends on the "localization multiplier": in states where investment remained in the domestic economy, macroeconomic pressures were absorbed more easily.

6. Discussion, limitations and research directions

6.1. Methodological Limitations

The first limitation lies in the volatility of forecast data: when analyzing the implementation of SAFE in the horizon 2024–2026, many indicators are estimates based on current trajectories, perturbed by exogenous geopolitical or energy shocks (Arslanalp & Eichengreen, 2023). The second limitation is the lack of transparency specific to the defense sector: details of offset contracts and the exact structure of R&D costs are not always public, requiring the use of econometric proxies with margins of error (Dunne & Smith, 1990). The third limitation concerns the quantification of spin-off effects: this requires an observation period of >10 years; empirical confirmation for SAFE will only be possible in the post-implementation phase (Mazzucato, 2013).

6.2. Directions for Future Research

Future research should pursue three priority directions. The transition from aggregate macroeconomic analyses to Input-Output modeling would allow for the precise identification of civilian sectors that benefit from centralized military orders (Smith, 2023). Longitudinal assessment of the inflationary impact, carried out through comparative analyses post-2026, will determine whether the military fiscal expansion generated real crowding out of private consumption or whether technological investments sufficiently increased aggregate supply (ECB, 2025). Comparative studies on the efficiency of PPPs in states that have resorted to private capital under SAFE guarantees versus those with classical budgetary financing will provide fundamental conclusions about the optimization of the cost of capital and the management of country risk (Müller & Bellmann, 2024).

7. Conclusions

The research demonstrates that the impact of the SAFE program on the economy is not univocally negative, but critically depends on the institutional architecture and industrial absorption capacity. The analysis generates three fundamental conclusions.

First, the duality of the economic impact: SAFE functions as a Keynesian stimulus in economies with solid industrial bases (the case of Poland, multiplier md > 1), but generates crowding-out effects and deterioration of the trade balance in import-dependent economies

(the case of Romania). Second, the reconstruction of the concept of sustainability: the 2021–2026 data suggest that financial markets accept higher levels of public debt directed towards the "Armament and Efficiency" pillars of SAFE, perceived as "insurance" against catastrophic geopolitical shocks. Third, the importance of technology transfer: the success of the program does not lie in the volume of acquisitions, but in the ability to generate spin-off effects; dual-use technologies represent the only way in which the fiscal burden can be transformed into a civil innovation dividend.

To ensure the economic sustainability of SAFE, especially for states with limited fiscal space such as Romania, three lines of action are needed: (1) Localization of production and strategic offset, by conditioning acquisitions on the integration of local companies into European supply chains, minimizing capital "leakage"; (2) Implementation of the Fiscal Golden Rule, by formalizing at EU level the exclusion of SAFE investment expenditures from the calculation of the structural deficit, subject to interoperability and R&D projects; (3) Stimulating PPPs, by reducing the pressure on public debt by attracting private capital into defense infrastructure.

The SAFE program should not be seen as an alternative to investments in social welfare, but as a necessary foundation for it in the context of 2026. The major challenge remains managing "security inflation" and preventing a new sovereign debt crisis. Deeper European integration in defense is the only solution that can provide economies of scale capable of making collective security compatible with sustainable economic prosperity.

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