EU Security and Defense Funds: A Brief Analysis of Threat Exposure and Financial Support to Member-States

João Reis * and Pedro Alexandre Marques

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Article

EU Security and Defense Funds: A Brief Analysis of Threat Exposure and Financial Support to Member-States

João Reis [1,2,3,*] and Pedro Alexandre Marques [3]

[1] Centre for Research, Development, and Innovation (CINAMIL), Portuguese Military Academy, Rua Gomes de Freire 203, 1169-203 Lisbon, Portugal

[2] Research Unit on Governance, Competitiveness and Public Policies (GOVCOPP), Campus Universitário de Santiago, 3810-193 Aveiro, Portugal

[3] Industrial Engineering and Management, Faculty of Engineering, Lusófona University and RCM2+, Campo Grande, 1749-024 Lisbon, Portugal

* Correspondence: joao.reis@ulusofona.pt

Abstract

The allocation of European Union (EU) funds to security and defense is central for solidarity among Member States. Yet, as geopolitical instability and hybrid threats continue to grow in the EU, concerns have emerged about whether the current distribution of EU funding adequately reflects the varying degrees of exposure among states. Taking this problematic in consideration, this article draws on the findings from the UDebDS project, which examines how funds are currently allocated and whether the states facing the highest security risks are receiving commensurate support. To achieve our goals we used a multidisciplinary, data-driven approach. That approach included the development of a comprehensive dataset and a set of measurable risk indicators (MRIs), capable of capturing vulnerabilities and deficits. Based on the MRIs, our research proposed an alternative model to support a more balanced and responsive EU funding. By doing so, we expect to inform ongoing policy discussion around equity and the future of shared defense investments in the Union. Further steps should build on the refinement of our model through sensitivity testing and a simulation-based studies to examine how alternative allocation models can influence the EU defense posture.

Keywords: Security and defense; solidarity; geopolitical instability; hybrid threats; measurable risk indicators; EU funding; policy discussion

1. Introduction

The European Union's commitment to collective security and defense has become evident with the current geopolitical instability and the proliferation of hybrid threats. These challenges have encouraged the EU to reinforce its ambition for autonomy and to deepen intra-EU solidarity through shared defense initiatives and funding instruments, such as the European Defense Fund (EDF) and the European Peace Facility (EPF). Despite the formal commitment to burden-sharing and cohesion [1], preliminary evidence suggests that current funding mechanisms may not be adequately enough to reflect the diverse and asymmetrical risk profiles faced by individual Member States.

Moreover, despite strong political rhetoric surrounding cohesion and burden-sharing, our analyses also indicate that EU defense funding may not be systematically aligned with national levels of threat exposure or strategic need. That is, while several studies have examined the institutional design of EU defense funding instruments [2] and the political economy of military capability development in Europe [3], relatively little attention has been paid to the spatial and strategic equity of funding allocation in relation to objectively measurable risk factors. To the bet of our knowledge, existing research tends to focus on governance [4] and integration dynamics [5], rather than

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distributional justice or strategic responsiveness. As such, a gap remains in the literature concerning how funding allocation patterns correspond to the differentiated security risks and military pressures encountered by EU Member States, especially those on the EU's external borders or exposed to persistent hybrid activity.

Hence, this article analyses the extent to which the European Union's security and defense funds are aligned with the actual security needs of its members, and questions whether those most exposed to emerging threats are receiving proportionate support. We seek to address the gap in the literature by examining the following research question: To what extent does the current allocation of European Union security and defense funds reflect the actual security risk profiles of Member States, and are those facing the highest levels of threat receiving proportionate support?

To provide a credible outcome, we focused on empirical findings on the UDebDS project – The (Un)Sustainable Distribution and Application of European Security and Defense Budgets Among Member States – as this study adopted a multidisciplinary and data-driven methodology to evaluate the current distribution of EU security and defense funds. The UDebDS project was supported by the Portuguese Armed Forces and integrated quantitative risk modelling, geopolitical analysis, and budgetary data to assess the correlation between Member States' risk exposure and the funding they received. Building on this analysis, our article introduces a model in measurable risk indicators that includes three important indicators, such as the proximity to conflict zones, the strategic infrastructure vulnerability, and the operational readiness deficits.

This article follows the IMRaD (Introduction, Methods, Results, and Discussion) structure [6]. Hence, the next section outlines the data-driven and multidisciplinary approach used in the UDebDS project, including the development of risk indicators and the analytical model applied to assess funding patterns. The results section then presents the empirical results, highlighting discrepancies between Member States' risk exposure and the funding they received, and introduces an alternative model for risk-based allocation. Finally, the discussion examines the theoretical and political contributions of the study. It also identifies its main limitations and proposes directions for future research.

2. Methods

This study adopted a multidisciplinary and data-driven methodological approach to evaluate whether the allocation of EU security and defense funds aligns with the differentiated threat exposure of Member States. As mentioned before, the analysis was conducted within the framework of the UDebDS project and combined quantitative risk modelling.

The first step involved assembling a comprehensive dataset covering all EU Member States. A geopolitical and threat exposure data were collected from the European Union Institute for Security Studies (EUISS), the European Parliamentary Research Service (EPRS), the EU Critical Entities Resilience (CER) Directive reporting, the European Union Agency for Cybersecurity (ENISA) threat assessments, NATO basing data, and other open-source repositories. These sources provided a baseline, since they captured the most recent full-year data available at the time of analysis (mid-2025).

To assess security needs in a reproducible manner, our study developed a set of measurable risk indicators (MRIs), capable of capturing vulnerabilities and deficits. In doing so, three primary dimensions were modelled. The first, (1) Proximity to Conflict Zones (PCZ), quantified the geographic distance between Member States and major active or latent conflict areas adjacent to EU borders, subjective by the intensity and persistence of instability in those theatres. The second, (2) Strategic Infrastructure Vulnerability (SIV), measured the concentration of high-value critical assets located within geopolitically exposed regions, including ports, Liquefied Natural Gas (LNG) terminals, undersea cables, NATO and national military installations, nuclear power plants, and space-related infrastructure. The third, (3) Operational Readiness Deficit (ORD), assessed the gap between required and existing defense capabilities by integrating national defense spending as a percentage of Gross Domestic Product (GDP), personnel per capita, the status of equipment

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modernization, and NATO Readiness and Deployability Ratings (RDRs). Each indicator was normalized on a scale from 0 (low) to 3 (high), with the composite MRI score representing the sum of these three components, producing a unified 0–9 scale of relative exposure.

Following the construction of these indicators, the study examined the relationship between Member States' composite MRI scores and the relative share of EU security and defense funding they received. The comparative analysis enabled the identification of discrepancies between the level of strategic exposure and the volume of EU financial support, highlighting cases where high-risk Member States were systematically underfunded relative to their assessed threat environment.

Building on these findings, our study designed an alternative allocation model intended to align the EU funding practices more closely with actual risk. This model converted MRI scores into a tiered system of funding priorities, establishing three levels of access. Member States scoring seven or above were designated as Tier 1, eligible for mandatory baseline allocations and simplified procedures; those with scores between five and six were placed in Tier 2, receiving enhanced co-financing and targeted proposal support; and those with scores of four or below retained baseline access under competitive conditions. This design expects to preserve competitiveness and innovation incentives; but, at the same time, correcting structural inequities by ensuring that Member States most exposed to external threats were systematically prioritized.

Finally, to ensure robustness and practical applicability, preliminary outputs of the model were reviewed with 17 defense-policy specialists from academia, and 5 independent think tanks. Expert feedback informed the refinement of indicator weighting and validation of the model's operational plausibility within the current EU funding architecture. That said, we believe that our framework offers an empirical assessment of current allocation practices and a policy-relevant proposal for enhancing an improved strategic coherence and solidarity in EU security and defense spending.

3. Results

3.1. Funding Misalignment with Risk Exposure and Inequity in Distribution Patters

The UDebDS project found that EU security and defense funds are not consistently aligned with Member States' current threat exposure. States on the EU's external borders or those subject to persistent hybrid threats are underrepresented in funding allocation relative to their risk profile. EU Member States perceive threats differently, Eastern states focus on Russian aggression, while southern countries emphasize instability along the Mediterranean. Despite this diversity, EU funding instruments generally lack prioritization based on measurable threat indicators like proximity to conflict zones, hybrid threat exposure, or infrastructure vulnerability [7].

Funding mechanisms, like the EDF, depend heavily on grant proposals, industrial capacity, and co-financing ability, not on vulnerability or threat level. Member States that already have strong defense industries and high capacity to co-fund projects tend to win more, regardless of their geographic risk exposure. This market-driven approach disproportionately benefits countries with established defense industrial bases, robust R&D ecosystems, and the financial flexibility to engage in co-funded projects. Consequently, states located on the geopolitical frontlines of the Union, such as those bordering Russia or regions affected by instability in the Sahel and Eastern Mediterranean, find themselves at a disadvantage. These countries may face persistent hybrid threats, host critical strategic infrastructure, or be exposed to direct military escalation. Yet, their access to EU defense funding remains limited due to insufficient industrial ecosystems or constrained fiscal space. This structurally sidelines smaller, frontier countries with limited industrial bases, despite facing greater hybrid or kinetic threats. Hence, independent analysts and institutions [7] argue for moving toward a threat-based approach, using systematic risk assessment to align budget planning and fund distribution. A refined Strategic Compass grounded in measurable risk metrics, rather than political or industrial capacity, is necessary to close this alignment gap.

Recent data shows EU defense spending is rising dramatically, estimated at €326 billion (~1.9% of GDP) in 2024, up more than 30% since 2021, alongside record levels of collaborative investment

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via EDF and other mechanisms [8]. But there is no evidence these investments are systematically targeted at the highest-risk Member States. The increase seems driven by general cohesion and aggregate investment goals, rather than allocating based on risk-level.

Table 1. Structural Drivers of Misalignment Between EU Defense Funding Allocation and Member State Threat Exposure.

Issue	Key Point
Divergent threat perceptions	Eastern vs. Southern EU states face different risks, but current funding doesn't account for these variations
Funding mechanics favor capacity	Access depends on industrial readiness and co-funding, not geographic exposure or hybrid threat levels.
Massive increase in spending	EU defense investment is up >30%, but still not aligned with national risk profiles.
Expert recommendations for redesign	Analysts call for integrating threat indicators into allocation frameworks to ensure strategic equity.

States on the EU's eastern and southern flanks, such as the Baltics, Poland, Romania, Greece, and parts of the Mediterranean, face a sustained hybrid or geopolitical risks. This ranges from Russian disinformation campaigns and cyberattacks to instability and irregular migration pressures originating from North Africa and the Middle East. Despite the intensity and persistence of these threats, these frontline states do not receive proportionally higher funding from EU defense mechanisms. This imbalance shows a structural flaw in current EU funding architecture as it rewards industrial and financial capability, not strategic necessity. The implication is stark, Member States facing the most acute operational challenges are often least prepared to compete under market-driven allocation systems like those underpinning the EDF and related instruments. These frontline countries may lack the defense-industrial maturity or fiscal elasticity required to develop competitive proposals, mobilize national co-financing, or engage in complex, multi-stakeholder projects, criteria that remain central to accessing EU funds. Moreover, this misalignment is a matter of procedural inefficiency and a strategic EU vulnerability. Underfunding those Member States that sit on the EU's most exposed geopolitical fault lines creates capability gaps precisely where deterrence and resilience are most needed. It undermines the credibility of EU collective defense aspirations and increases reliance on NATO or bilateral arrangements to fill the void often with uneven results and limited EU-level visibility or control. If uncorrected, this funding asymmetry risks deepening internal divisions and eroding solidarity across the Union. It may lead frontline Member States to perceive EU defense mechanisms as politically disconnected from operational realities, further straining cohesion at a time of heightened geopolitical instability. Calls for a threat-based allocation model are thus not only technically justified but politically urgent. In this context, an EU-wide threat-based resource distribution model is seen as essential. Such a model should integrate intelligence-based assessments, hybrid threat indices, and proximity-to-threat indicators directly into funding decisions. This can involve establishing minimum funding thresholds or ring-fenced allocations for high-risk Member States, creating flexible funding tracks tailored for countries with low industrial capacity but high exposure, or revising evaluation criteria to prioritize strategic risk over co-financing ability. Ultimately, without a shift from capacity-driven funding to threat-informed investment, the EU's growing defense budget risks entrenching existing disparities rather than addressing them. Ensuring that the Strategic Compass and related policy tools evolve in this direction is critical to achieving both strategic equity and operational credibility across the Union.

3.2. Measurable Risk Indicator (MRI)

To capture differentiated exposure among EU Member States in a quantifiable manner, our study operationalized a set of MRIs that joins geopolitical and infrastructural vulnerabilities in comparable, policy-relevant metrics. The first dimension, PCZ (Table 2), shows the disadvantage

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faced by states located closest to unstable or adversarial regions beyond EU borders. As shown in Table 2, Estonia and Poland are in less than 200 km from active or latent conflict theatres linked to Russian and Belarusian activities around Ukraine. This assigs them a "very high" risk weight. Romania and Greece, located 250–300 km from zones of persistent instability in the Black Sea, Eastern Mediterranean, and Libya, are classified as "high" risk, whereas Italy, more distant from direct conflict yet still exposed to Mediterranean security pressures, is scored "moderate." By contrast, Germany and Portugal are geographically insulated, at distances of 1,000 km and over 1,500 km, respectively, from external conflict interfaces, which results in "low" or "very low" scores. This distance-based assessment shows a basic structural asymmetry: states in closer proximity to potential kinetic or hybrid escalation are objectively more exposed, yet do not necessarily receive proportionate EU financial reinforcement.

Table 2. Proximity to Conflict Zones (PCZ).

State	Proximity to Major Conflict Zones (km)	Conflict Zone	Risk Weight
Estonia	~100 km	Russia (Ukraine Border)	Very High
Poland	~200 km	Belarus, Ukraine	Very High
Romania	~250 km	Black Sea, Ukraine	High
Greece	~300 km	Eastern Mediterranean, Libya	High
Italy	~400 km	Tunisia, Libya	Moderate
Germany	~1,000 km	N/A	Low
Portugal	>1,500 km	N/A	Very Low

Data source: EUISS [9], EPRS [10], Google Earth measurements. Risk Score (0–3 scale): Very High = 3, High = 2, Moderate = 1, Low/Very Low = 0.

The second dimension is the SIV, which evaluates the density and criticality of assets that, if compromised, can degrade national and collective security. As detailed in Table 3, Poland, Romania, and Greece all register high concentrations of exposed infrastructure, each with more than a dozen high-risk assets such as LNG terminals, NATO logistics corridors, Black Sea ports, Aegean maritime facilities, and undersea communication cables located in geopolitically sensitive regions. These assets function as operational lifelines for national defense and EU-level deterrence, and their geographic exposure increases their strategic liability in crisis scenarios. Germany and France exhibit slightly lower but still significant levels of vulnerability, mainly due to concentrations of energy pipelines, nuclear plants, space assets, and major ports that remain essential for EU force projection and resilience. Portugal, with only a small number of maritime nodes and cable landing sites exposed to external threats, represents the lower end of the vulnerability spectrum when compared with others.

Table 3. Strategic Infrastructure Vulnerability (SIV).

Country	# High-Risk Assets (2024)	Exposed Infrastructure	SIV Score
Poland	17	LNG terminals, NATO bases, rail/road to Ukraine	3
Romania	13	Black Sea port (Constanța), oil/gas platforms	3
Greece	15	Aegean ports, undersea cables, border surveillance	3
Germany	11	Pipelines, communications hubs	2
France	12	Nuclear plants, space assets, ports	2
Portugal	5	Maritime ports, cable landings	1

Data sources: EU CER Directive reporting [11], ENISA threat outlook [12], NATO basing data [13]. Measures the concentration of high-value, critical infrastructure near exposed regions, based on the EU Critical Entities Resilience Directive – CER Directive, 2022/2557 [14]. Key Infrastructure

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Categories Considered: Gas and electricity interconnectors, Undersea cables, Military installations (NATO and national), Nuclear power plants, Satellite/space infrastructure, Ports and maritime chokepoints.

The PCZ and SIV indicators provide complementary views. On one hand, PCZ takes the positional risk of being geographically "forward deployed" relative to external threats; on the other hand, SIV shows the internal fragility arising from the clustering of critical assets in areas susceptible to hostile interference or disruption. Both factors are crucial for a holistic appraisal of risk. A Member State geographically insulated but hosting a dense concentration of strategically indispensable infrastructure (e.g., communications hubs, LNG terminals) may still represent a high-priority target for hybrid operations, whereas a frontier state with limited industrial or infrastructural density may experience acute operational pressure simply due to its geographic exposure. In combination, these indicators allow policymakers to identify where strategic gaps between exposure and financial support are most consequential for EU collective defense and resilience.

3.3. Operational Readiness Deficit (ORD)

In this section we analyze the ORD that assesses the internal capacity of Member States to respond effectively to crises. This indicator shows the gap between the defense capabilities that are required to meet contemporary threat environments and those available at the national level. The ORD integrates several dimensions of force generation and sustainability, which includes the defense expenditure as a percentage of GDP, the availability of military personnel relative to population size, the pace of equipment modernization, and NATO Readiness and Deployability Ratings (RDRs). These variables provide a preliminary measure of how prepared a state is to project, sustain, and integrate military power when facing hybrid or conventional escalation.

As summarized in Table 4, disparities can be seen across Member States. Poland and Estonia exhibit comparatively high levels of defense investment. They are both above NATO's 2% GDP benchmark, with Estonia at 3.1% and Poland at 4.0%. Both are also register high NATO RDR scores, which shows that their forces are deployable and combat-ready on short notice. Consequently, their ORD risk level is assessed as "low", indicating that, although they are geographically exposed, they possess credible defensive capacity to mitigate immediate operational shortfalls. Romania and Greece reveal a more mixed profile. Both allocate substantial resources to defense, 2.1% and 3.2% of GDP, respectively, and their NATO RDR scores indicate medium readiness. These states face "medium" ORD risk that suggests that additional investment in modernization or personnel availability would be required to fully offset the pressures of their geostrategic position.

Table 4. Operational Readiness Deficit.

Country	Defense Spending (% GDP, 2024)	NATO RDR Score	ORD Risk Level
Estonia	3.1%	High	Low
Poland	4.0%	High	Low
Romania	2.1%	Medium	Medium
Greece	3.2%	Medium	Medium
Italy	1.5%	Low	High
Germany	1.6%	Medium	High
Portugal	1.4%	Low	High

Data sources: NATO Annual Report 2024, EDA defense Data 2024, SIPRI (2025). These includes the % of GDP spent on defense, defense personnel per capita, equipment modernization index, NATO readiness and deployability ratings (RDRs). ORD Score (0–3 scale): Low readiness = 3, Medium readiness = 2, High readiness = 1.

By contrast, Italy, Germany, and Portugal demonstrate cases of structural vulnerability despite being core EU members with historically significant defense roles. Italy and Portugal maintain

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defense spending levels of only 1.5% and 1.4% of GDP, respectively, both below NATO's guideline, and exhibit low NATO RDR scores, resulting in "high" ORD risk. Germany, despite its economic weight, spends just 1.6% of GDP on defense and achieves only medium readiness, also placing it in the "high" ORD risk category. Hence, our results highlight an important asymmetry. Some Member States geographically insulated from immediate threats nevertheless contribute disproportionately to EU operational risk by maintaining insufficient deployable capacity, whereas others positioned on the Union's geopolitical frontlines demonstrate comparatively higher readiness despite fiscal or industrial constraints.

In our view, this discrepancy between exposure and readiness is strategically significant. A state with high geographic and infrastructural risk but low ORD may lack the ability to defend its own territory or contribute effectively to collective EU or NATO missions, thereby increasing the burden on allies. Conversely, a state with high readiness and forward-deployed capabilities can act as both a stabilizing factor and a deterrent, reducing the net vulnerability of the Union as a whole. The ORD indicator therefore complements PCZ and SIV by bridging external exposure with internal capability. Taken together, the three dimensions produce a more precise and actionable understanding of where EU resources should be directed. Our analysis is not only focused on those countries at greatest risk, but also to those where investment can meaningfully enhance the Union's collective deterrence and crisis response capacity.

3.4. Composite MRI Score (0–9 Scale)

To interpret the multidimensional assessment of risk in a single, actionable metric, the three measurable risk indicators: Proximity to Conflict Zones, Strategic Infrastructure Vulnerability, and Operational Readiness Deficit, were combined in a composite MRI score. This integration gives a consolidated representation of each Member State's relative exposure. This allows for direct comparison across the Union and facilitates the development of funding allocation criteria that are evidence-based and policy-relevant. Each dimension contributes equally to the aggregate score on a 0–9 scale to ensure that geographic, infrastructural, and readiness-related vulnerabilities are balanced in their influence.

As shown in Table 5, the composite analysis reveals four Member States: Poland, Estonia, Romania, and Greece, that clustered at the highest tier. Each country scores a total of seven points. This group combines either high or very high geographic exposure with concentrated strategic infrastructure and at least medium levels of operational deficit. Moreover, these states constitute the EU's functional "frontline," where external pressure converges with internal capacity limitations. This creates an increased risk of operational strain and strategic instability. In practical terms, this means that failure to direct sufficient resources toward these states leaves them individually vulnerable and generates cascading risks for the Union's collective deterrence and response posture.

Table 5. MRI Score of the selected EU Member-States.

Country	PCZ	SIV	ORD	Total MRI Score
Poland	3	3	1	7
Estonia	3	3	1	7
Romania	2	3	2	7
Greece	2	3	2	7
Germany	0	2	3	5
Portugal	0	1	3	4
France	0	2	2	4

Interpretation & Application: MRI ≥ 7 → Priority Tier 1 Funding: Mandatory access to ring-fenced funding and simplified procedures; MRI 5–6 → Priority Tier 2 Funding: Enhanced co-financing, proposal support services; MRI ≤ 4 → Baseline Access: Competitive funding under standard conditions. This composite indicator should be embedded in future iterations of the

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Strategic Compass, EDF criteria, and the EU's Capability Development Plan (CDP) to ensure that strategic risk drives investment.

Taking a closer look at Table 5, we can see that Germany presents a composite score of five. This falls into an intermediate risk category. Although geographically insulated (PCZ score of zero), Germany possesses significant concentrations of strategic infrastructure (SIV score of two) and carries a high ORD risk (score of three) due to its insufficiently deployable military capabilities relative to its economic size and political weight. This profile highlights a critical issue of the model, which is "risk is not synonymous with proximity". A state may be structurally central to EU defense credibility yet underperform in readiness. This produces a latent vulnerability that, in crisis, can delay or dilute collective action.

Regarding France and Portugal, both scored four. These countries occupy the baseline tier of the composite risk distribution. Their lower scores reflect a combination of geographical distance from active theatres, moderate levels of strategic infrastructure vulnerability, and relatively weak readiness profiles. These states face less immediate pressure, and they remain integral to the Union's overall resilience, particularly in terms of sustaining logistics, industrial capacity, and political cohesion during protracted security crises.

This three-tier classification provides a structured framework for calibrating EU funding instruments. Member States scoring seven or above represent Tier 1, for which ring-fenced funding, simplified access procedures, and targeted capacity-building should be prioritized to ensure immediate reinforcement of the Union's most exposed regions. States scoring five or six constitute Tier 2, warranting enhanced co-financing rates, proposal-development support, and targeted capability improvement measures. Those scoring four or below remain eligible under standard competitive conditions, reflecting a lower degree of urgency but preserving their role within the broader strategic architecture.

When embedding this composite scoring logic into the allocation processes of instruments such as the European Defense Fund, the European Peace Facility, and the EU Capability Development Plan, decision-makers can transition from politically balanced yet strategically blunt funding models toward data-driven, risk-responsive allocation mechanisms. Such a shift will enhance deterrence credibility, reduce intra-EU asymmetries, and strengthen the Union's capacity to act collectively in an increasingly contested security environment.

3.5. Proposal of a New Allocation Model

If we build on the composite assessment of Member State exposure, we can see that our study proposes an alternative funding allocation model. This model aligns with the EU security and defense resources and is empirically defined by the strategic need, and not on the administrative convenience or industrial capacity. Our model addresses a fundamental shortcoming of existing mechanisms, that are, the current funding allocation that is largely shaped by the ability of states to submit competitive proposals, the mobilization of national co-financing, and the leverage established by industrial ecosystems. We acknowledge that the previous allocation model was procedurally efficient. However, that capacity-driven approach presents structural disadvantages for those states that face the highest levels of external pressure and yet lack equivalent institutional or industrial leverage. Thereby, in our view, this was creating a misalignment between need and support.

Our model integrates four core dimensions of vulnerability. Hence, our main intention was to transform these dimensions into measurable and actionable funding criteria. First, we considered the proximity to conflict zones, which remained a primary determinant of exposure, as states geographically adjacent to unstable theatres or adversarial actors are inherently at higher risk of hybrid and conventional escalation. Second, the exposure to hybrid threats. These includes cyberattacks, disinformation operations, and coercive energy or migration tactics. These threats were selected as they make part of the contemporary character of conflict, in which pressure is increasingly exerted below the threshold of open war. Third, the vulnerability of critical infrastructure, which accounts for the clustering of indispensable assets in geopolitically sensitive regions, where

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disruption can generate systemic consequences for national and EU-wide operational continuity. Last and fourth, the gaps in operational readiness, to capture the capacity dimension and measure whether Member States possess sufficient deployable forces, modern equipment, and trained personnel to transform financial support in credible deterrence and crisis response.

The indicators above form what we believe to be a multidimensional risk profile that can be systematically mapped across the Union. The model operationalizes this profile by assigning Member States to differentiated priority tiers. States in Tier 1, those with the highest composite risk, would receive guaranteed access to ring-fenced funds, simplified administrative procedures, and tailored capacity-building packages aimed at closing critical capability gaps. Tier 2 states, represent those with moderate composite risk. These states would benefit from enhanced co-financing rates, proposal-development support, and targeted incentives for multinational projects that address shared vulnerabilities. Tier 3 states are assessed as comparatively low risk. These states would continue to access competitive funding under existing EDF and EPF structures, ensuring that innovation, industrial collaboration, and strategic diversity remain incentivized across the Union.

This approach carries several advantages over the status quo. We shifted emphasis from administrative and industrial capacity to threat-informed strategic necessity. This ensures that limited EU resources generate maximum impact on collective security and deterrence. If we embed intelligence-based, reproducible indicators in the allocation process, transparency will be enhanced and can reduce the risk of politicization or perceptions of inequity. Finally, by creating structured pathways for high-risk but low-capacity states to access support, it reinforces solidarity, strengthens deterrence at the Union's external borders, and reduces dependency on ad hoc NATO or bilateral solutions that may not reflect EU priorities.

Table 6. Proposed Risk-Based EU Security and Defense Funding Allocation Model.

Tier	Composite Risk Profile	Priority Criteria	Funding Mechanism	Intended Impact
Tier 1	MRI ≥ 7 (High Risk)	• Proximity to conflict zones (≤ 300 km) • Persistent hybrid threat exposure (cyber, disinformation, energy coercion) • High concentration of critical infrastructure in exposed regions • Operational readiness gaps limiting autonomous response	Ring-fenced funding allocations; simplified procedures; tailored capacity-building packages; reduced national co-financing requirements	Immediate reinforcement of EU's most exposed borders; enhanced deterrence credibility; crisis-response resilience
Tier 2	MRI 5–6 (Moderate Risk)	• Moderate proximity to external threats • Selective hybrid threat exposure • Medium concentration of critical infrastructure • Partial readiness deficits	Enhanced co-financing rates; proposal development support; targeted multinational project incentives	Strategic capability strengthening; improved interoperability; gradual closure of readiness and resilience gaps
Tier 3	MRI ≤ 4 (Low Risk)	• Geographically insulated • Limited exposure to hybrid threats • Low concentration of critical infrastructure in sensitive regions	Competitive funding under standard EDF/EPF/CDP conditions; innovation-driven project selection	Sustained innovation ecosystem; industrial collaboration; long-term capability development without urgent prioritization

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	• Mature operational readiness profiles

In practical terms, implementing this model will require adjustments to the evaluation criteria of key funding instruments, including the European Defense Fund, the European Peace Facility, and future iterations of the EU Capability Development Plan. Moreover, integration of composite risk scoring into these instruments will allow for dynamic, periodically updated allocations that evolve alongside the threat environment. Over time, such a model can transform EU security and defense funding from a politically balanced and in a data-driven, adaptive tool capable of responding to the complexities of twenty-first century conflict.

4. Discussion

4.1. Theoretical and Political Contributions

The findings of this study show a structural misalignment between the European Union's security and defense funding architecture and the differentiated risk environment faced by its Member States. Despite unprecedented increases in collective defense expenditure and growing political emphasis on solidarity and strategic autonomy, current allocation mechanisms are primarily driven by administrative capacity and industrial maturity instead of empirically assessed threat exposure. As demonstrated through the composite MRI framework, some of the states most exposed to external aggression or hybrid destabilization receive comparatively limited financial reinforcement. While, more industrially advanced, but strategically insulated states, continue to capture a disproportionate share of available funds.

This imbalance carries theoretical and political implications. From a governance perspective, this imbalance exposes a tension between distributive justice and market-driven efficiency within EU defense policy. Funding allocation based on industrial capacity and proposal competitiveness may optimize technological innovation. But it risks undermining collective security by failing to reinforce the regions where deterrence gaps are most acute. From a strategic perspective, the misalignment weakens the Union's credibility as a coherent security actor. Under-resourced frontline states are forced to rely on NATO or bilateral mechanisms to fill urgent capability shortfalls, thereby diluting EU visibility.

Our (proposed) risk-based allocation model addresses these challenges by introducing transparent, data-driven criteria capable of reconciling efficiency with equity. We integrated four measurable dimensions, which are: proximity to conflict zones, exposure to hybrid threats, vulnerability of critical infrastructure, and operational readiness deficits. The above model enables policymakers to rank Member States according to objective strategic need. The tiered structure it produces prioritizes resources for the most exposed regions and maintains incentives for innovation and fiscal discipline among all Member States. In doing so, our model shifts EU defense spending from a politically balanced instrument toward an adaptive, capability-focused tool of collective security governance.

The political value of this shift is equally important. A funding mechanism that is explicitly risk-informed reduces perceptions of arbitrariness and enhances trust among Member States. Particularly, those on the European Union's external borders, who have viewed EU defense initiatives as politically distant from their realities. Our recommendation is therefore to ensure that financial solidarity is reinforced where threats are most persistent. Furthermore, embedding intelligence-based assessments into the formal criteria of major funding instruments, the EU is institutionalizing a more agile, evidence-based planning culture that is better suited to an era characterized by rapidly evolving hybrid and conventional threats.

At the same time, the findings must be interpreted considering several limitations. The MRI framework is necessarily a simplification of a highly dynamic security environment. If we weight each dimension equally, we may overlook context-specific factors such as political will, alliance

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interoperability, or industrial surge capacity in crisis conditions. Moreover, access to sensitive intelligence remains uneven across Member States, which potentially constrain the precision of threat exposure scoring. Finally, any reform of EU funding architecture is inevitably a political process that turns technical recommendations in policy change, and this will require negotiation and consensus-building across multiple governance layers.

4.2. Smaller or Lower-Capacity Member States

Smaller or lower-capacity Member States such as Portugal are not structurally excluded from EU security and defense funding, but they face competitive disadvantages when compared with larger industrial actors. Under the current funding architecture, most instruments, particularly the EDF, privilege multinational consortia over individual national initiatives. This regulatory design creates a challenge and an opportunity. It is a challenge because states without strong defense industries may lack the institutional networks needed to build competitive proposals; and, it is an opportunity because collaboration with other Member States can compensate for national capacity limitations.

Portugal can improve its access to EU defense funding by proactively engaging in collaborative projects with partners that share strategic interests or complementary industrial strengths. For example, joining or co-leading multinational consortia with countries such as Spain, France, Italy, or Greece allows Portugal to align with larger programs, while contributing niche capabilities that are politically and operationally valuable. Niche specialization is particularly relevant in areas where Portugal has comparative advantages, such as maritime domain awareness, critical infrastructure protection in the Atlantic, autonomous naval systems, and dual-use technologies with civilian and military applications. These contributions, while smaller in scale, increase the competitiveness of a consortium by covering technical or operational gaps that larger partners may overlook.

Thematic or regional coalitions provide another pathway. Groups of states sharing similar vulnerabilities, such as those on the EU's southern flank, can jointly submit projects addressing maritime security, irregular migration, or hybrid threats in the Mediterranean. Similarly, Atlantic nations can cooperate on the protection of undersea cables, secure logistics corridors, and resilient naval command-and-control systems. If aligned with partners on specific geographic or functional priorities, Portugal can get a position as a trusted contributor to EU-level capability development even without a major domestic defense industrial base.

National policy of smaller-, lower-capacity member states, can reinforce this approach by ensuring predictable co-financing. That is, the EU funding mechanisms require Member States to contribute a share of project costs. For countries with smaller defense budgets, delays in mobilizing matching funds often result in missed opportunities. A national defense innovation co-fund or pre-approved financial envelope can ensure that when consortium opportunities arise, Portugal or other small countries is able to participate immediately without administrative or fiscal delay. Similarly, strategic industrial partnerships with major European prime contractors can integrate Portuguese companies into supply chains. This allows the industry to deliver specialized subsystems, software modules, or testing environments that support larger projects and increase national visibility in EU procurement cycles.

Finally, to align proposed projects with EU-level strategic documents, the Strategic Compass, the Permanent Structured Cooperation (PESCO) framework, and the Capability Development Plan (CDP) should be included in project submission. This approach increases the countries evaluation score and political traction. EU funding increasingly favors proposals that directly address capability gaps identified in these frameworks.

In practical terms, Portugal's pathway to greater EU defense funding is not to compete on scale but on relevance and collaboration. If combined targeted partnerships, niche capability contributions, national co-financing readiness, and strategic alignment with EU priorities, Portugal can transform its geographic and industrial limitations into leverage points. This approach allows to access more

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European resources and to reinforce its position as a credible partner in the collective security and defense architecture of the Union.

4.3. Limitations and Future Research Directions

Future research can explore two avenues. First, the refinement of the MRI model through sensitivity testing and integration of classified intelligence may improve its predictive accuracy. Second, simulation-based studies examining how alternative allocation models would have influenced EU defense posture during past crises could provide empirical evidence of their operational value.

In sum, our study demonstrates that the European Union has significantly strengthened its collective security ambitions. Its current funding distribution mechanisms fall short of the strategic equity. If adopted a risk-informed allocation model, grounded in measurable indicators and aligned with operational priorities, the Union will have the opportunity to transform its defense budget from a symbolic instrument of political cohesion in a decisive lever of credible and forward-looking collective security.

Institutional Review Board Statement: This research was conducted under the Declaration of Helsinki and therefore followed the strictest ethical standards.

Informed Consent Statement: In the context of data collection, this study participants provided their commitment to fully engage in all training and research activities. Participation was entirely voluntary, and all data were anonymized to ensure confidentiality. Furthermore, participants' identities and associated data were securely destroyed following the completion of data analysis and the preparation of the results and discussion sections.

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