Defense Procurement & Acquisition: The Link Between Strategic Autonomy and Warfighting Capability Enhancement in Defense Procurement

Nijs, Pieter de

DEFENSE PROCUREMENT & ACQUISITION

The Link Between Strategic Autonomy and Warfighting Capability Enhancement in Defense Procurement

P.C. de Nijs, MSc

International Relations & Organizations

Universiteit Leiden

--- page intentionally left blank ---

Political Science MSc Thesis:

–

DEFENSE PROCUREMENT & ACQUISITION

–

‘The Link Between Strategic Autonomy and Warfighting Capability Enhancement in Defense Procurement’

_____

P.C. de Nijs, MSc

S2989115

MSc Political Science: International Relations and Organizations

Dr. R. Hagen *(Supervisor)*

&

Dr. S. Ćetković *(Second Reader)*

APA 7th Edition

A. Abstract

The growing complexity of global security challenges has reignited discussions on European defense and strategic autonomy. Amid shifting geopolitical landscapes and increasing uncertainties surrounding transatlantic partnerships, European states are reassessing their defense procurement strategies to ensure security, economic stability, and technological independence. While prior research has mainly explored the theoretical trade-offs between domestic and foreign sourcing, very few have empirically quantified these effects. To address this gap, this study analyzes several European states with the use of a cross-sectional research design to assess how procurement sentiment influences efficacy, operational readiness, and long-term sustainability. Using a combination of quantitative data from official defense reports, policy documents, and industry analyses, the study evaluates whether a shift toward strategic autonomy enhances procurement outcomes and warfighting capability.

B. List of Abbreviations

AShM: Anti-Ship Missile

CARD: Coordinated Annual Review on Defense

(D-) GBARD: (Defense-) Government Budget Allocations for Research and Development

DIB: Defense Industrial Base

DPE: Defense Procurement Efficacy

DPP: Defense Procurement Process

DPS: Defense Procurement Sentiment

EC: Economic Considerations

EDA: European Defense Agency

EDF: European Defense Fund

ESE: External Strategic Environment

FMS: Foreign Military Sales

ISE: Internal Strategic Environment

MBT: Main Battle Tank

MEV: Military Equipment Value

MPI: Military Performance Indicator

MRF: Multi-Role Fighter

MRI: Military Readiness Index

OTS: Off-the-Shelf Procurement

PEI: Procurement Emphasis Index

PESCO: Permanent European Structured Cooperation

PVI: Procurement Value Index

R&D: Research and Development

R&T: Research and Technology

SALW: Small Arms and Light Weapons

TIV: Trend Indicator Value

UCBC: Upstream Capacity Building Commitment

C. TABLE OF CONTENTS

--- page intentionally left blank ---

I. INTRODUCTION

Matters regarding European defense have once again re-emerged as a critical domain of strategic importance amid the rapidly evolving challenges that mark an increasingly volatile international security environment (Varma, 2024). Increased deliberation over the sustainability of transatlantic partnerships, shifts within established inter-state alliances, intensifying geopolitical rivalries, and the strain of successive regional and international crises have given European states an impetus to collectively reassess their position within the global system (Kilic, 2024). As a result, there exists a growing consensus that greater strategic self-reliance may no longer be optional, but instead necessary to safeguard their security, economic stability, and democratic values (Kilic, 2024). In this context, the concept of European Strategic Autonomy (hereafter: strategic autonomy) has gained renewed urgency to secure and enhance the continent's security, economic resilience, and democratic integrity.

Strategic autonomy refers to Europe's capacity to define, pursue, and achieve its political and diplomatic objectives through independent decision-making and operational capacity, without limitations set or imposed by external actors (Järvenpää et al., 2020). This conceptualization of strategic autonomy was first introduced in official EU policy discussion in 2013 (Borrel, 2020; General Secretariat of the European Council, 2013), but its intellectual underpinnings rest on longstanding realist interpretations of the international system: true autonomy in international affairs requires the material capacity to act independently (Kapstein, 1992). Within this understanding, strategic autonomy is not merely a matter of political will or institutional coherence, but necessitates robust and sovereign defense capacities, including the ability to deter and respond to threats independently and the capacity to sustain defense readiness through domestic means, without relying on external assistance. As such, the realization of strategic autonomy is inextricably tied to the development and strengthening of national defense structures, particularly in the domain of defense procurement.

Europe's response to the Russian invasion of Ukraine in 2022 accentuates the crucial role of defense capacity and capability in theoretical conceptualizations and practical applications of strategic autonomy. The resurgence of interstate war on Europe's eastern flank has shattered long-held assumptions about the stability of the post-Cold War order and revealed significant flaws in

European security architecture and defense preparedness (Groitl, 2023). For decades, European states consistently relied on peace dividends and security guarantees provided by the United States and NATO, leading to a systemic pattern of deprioritizing national defense apparatuses and the defunding of military capabilities (Giegerich & Nicoll, 2012). Consequently, this observed pattern and the tendency to rely on external actors and parties in matters of defense have resulted in the erosion of critical military capacities and assets (Peets, 2024), the decline in national arms production capabilities, and a significant loss in defense-industrial competitiveness vis-à-vis the US and China (Bushnell et al., 2024). Europe's initial response to the war in Ukraine[1] reflects the consequences of long-term de-prioritization in matters of national defense, as the continent's support for Ukraine was systematically hampered by depleted ammunition stockpiles, underdeveloped logistical chains, and an inability to scale arms production and distribution (Groitl, 2023). Although a united political will to support Ukraine in all its defense needs existed in both the EP (European Parliament, 2025) and EC (European Commission, n.d.), European goals in the East could only be achieved through substantial US reinforcement and support. The dependency on external actors ingrained in European foreign policy actions, as observed in its political and material maneuvers regarding Ukraine, reinforces the notion that coherent conceptualizations of strategic autonomy cannot be realized without first addressing Europe's defense sector.

This understanding comes at a time of growing uncertainty about the future of transatlantic relations. Since 2016, the United States has taken an increasingly unpredictable approach to global politics, characterized by shifting foreign policy priorities and strategic inconsistency (Bentley & David, 2022; Borg, 2024). This volatility has raised concerns about Washington's long-term commitment to the liberal international order and its security assurances to Europe (Wertheim, 2025). In response, Europe has shown increased momentum toward greater self-reliance (Kilic, 2024): strengthening strategic autonomy is now seen not only as a way to boost internal defense capabilities and reduce dependence on external actors, but also as essential for building resilient and independent security structures (Varma, 2024). Within this context, defense procurement has become a key policy focus in advancing Europe's strategic autonomy.

[1] Despite early setbacks in delivering equipment and coordinating supply chains, EU countries have since improved their mechanisms for aid distribution (Hellberg & Lundmark, 2025).

Defense procurement is understood to be the processes of sourcing, producing, and acquiring the necessary military equipment to ensure that armed forces remain equipped to respond to threats to the state. Although procurement is an extremely complex process, two main approaches can be identified which are able to characterize the strategic orientations of states within procurement processes: autonomous production and foreign acquisition. These two approaches (hereafter collectively referred to as 'procurement sentiment') and their interpolated dynamics have become a central issue in discourse on European defense equipment markets and strategic policy. Existing research on sentiment dynamics has primarily focused on descriptively exploring the risks and benefits associated with the general procurement approaches (Blankenship & Joyce, 2019; Kluth, 2017; McCarl, 2011) but has not yet sought to empirically quantify the effects of adopting either orientation. This gap in the literature is significant given the growing momentum of autonomy-oriented policies in the EU: understanding whether strategic autonomy translates into tangible improvements in defense capabilities, rather than remaining merely a rhetorical or political aspiration, may be crucial for shaping informed policy. By quantifying the effects of sentiment on procurement efficacy, future analyses would be able to provide a clearer understanding of how the observed pursuit of strategic autonomy influences the outcomes of defense procurement, thereby offering insights for future policy and decision-making.

This study aims to address this knowledge gap by pioneering a novel framework for analysis that is able to assess whether a greater emphasis on either domestic procurement or strategic autonomy leads to enhanced procurement efficacy, specifically in terms of cost efficiency, operational readiness, and long-term sustainment of national defense structures. By employing novel operationalizations of strategic autonomy and procurement efficacy, specially developed databases, and generalized linear model regression analysis, this study helps determine whether a strategic autonomy focus in procurement not only enhances national control over defense capabilities but also leads to measurable improvements in procurement outcomes relating to military readiness and raw military 'value.' Guiding the central objectives of this research is the following research question:

"To what extent does a causal relationship exist between the efficacy of European defense procurement and Defense Procurement Sentiment?"

II. LITERATURE REVIEW

2.1. Defense Procurement

To better understand the effects of procurement sentiment on procurement efficacy, it is essential to first define the processes that constitute defense procurement and explore the underlying theories that are able to inform the driving factors of military equipment acquisition. In his work on procurement, Kapstein (1992) advances a realist-inspired perspective which asserts that states are predominantly focused on safeguarding territory and interests within an international system that is shaped by the presence of potential adversaries, as identified by the state itself. This conceptualization of state behavior implies that the central challenge of procurement lies in ensuring that the armed forces are equipped with the (military) capabilities necessary to defend against these perceived adversaries. Compounding this theory, Uttley (2018) identifies four core objectives that underpin state procurement strategies, effectively addressing the fundamental question of *why* states engage in procurement. First, Uttley argues that states are driven by external factors to equip their armed forces with state-of-the-art military technology. Studies on military technology development (Kapstein & Oudot, 2009; Rogerson, 1994) reveal a recurring action-reaction dynamic: emerging external threats create strategic imbalances, prompting states to seek technological advancements to restore a security-equilibrium. Similarly, breakthroughs in military technology can disrupt the existing balance of power, compelling states to modernize their arsenals to maintain a competitive edge. Head (1974) argues that this 'cycle' underscores the persistent drive for acquiring the most advanced weaponry available, as maintaining strategic stability often necessitates continuous technological upgrades. Ultimately, when determining what material to procure, states prioritize the latest military systems to ensure operational superiority, deterrence capability, and alignment with evolving security challenges.

Secondly, arguably most relevant to the topic under study, is to secure national autonomy in the acquisition, improvement and replacement of weapon systems, thereby ensuring long-term control over military capabilities. States aim to reduce dependence on foreign suppliers, as relying on external sources may introduce significant risks, including supply chain disruptions (Baldwin & Freeman, 2022) price manipulation (ECB, 2023), and the withholding of spare parts

or system upgrades due to political or economic pressures[2] (Kliem, 202). To mitigate these vulnerabilities, states prioritize self-sufficiency by investing in indigenous defense-industrial capacity, enabling them to develop, produce, and maintain critical military systems domestically (Rossiter et al., 2025). States with well-established defense industries often restrict the procurement of strategic equipment to local suppliers to strengthen national security, sustain technological expertise, and foster economic growth (Kozyulin, 2011). Meanwhile, states without such capabilities seek to minimize external reliance by negotiating local production rights and technology transfers in arms agreements, ensuring greater control over their defense infrastructure (DeVore, 2016). The third objective suggests that states aim to capture indirect national benefits such as economic growth, technological advancements, industrial development, and job creation through defense procurement. Carril and Duggan (2020) concur, stating that unlike most civilian markets, where multiple buyers participate, defense procurement is unique in that governments serve as the sole legitimate purchasers of major systems, allowing them to shape domestic industries by influencing where and how equipment is sourced. By balancing national security imperatives with economic gains, political decision-makers weigh the benefits of domestic production against the potential advantages offered by foreign suppliers, such as advanced technology and cost efficiencies. Finally, Uttley argues that states focus on achieving 'value-for-money' by procuring equipment that meets stringent performance criteria at the lowest overall cost and within required timelines. Reflecting public sector purchasing principles (Caldwell et al., 2010), defense procurement policies predominantly aim to prioritize technical efficiency and cost-effectiveness.

Kapstein's (1992) theorization of the international environment and Uttley's (2018) synthesis of state objectives put forward the practical assumption that procurement appears to be a narrow and straightforward task, namely the simple act of constructing or the purchasing the necessary goods and services that are able to meet the demands of the armed forces, while simultaneously aiming to secure potential peripheral economic benefits and mitigate external vulnerabilities. While this perception aligns with the *visible* outcomes of procurement (the acquisition[3] of military capability), a closer examination of defense procurement processes

[2] Recently observed with the withholding of spare parts for Israeli F-35A platforms by the Netherlands (a JSF-program partner state) in response to the ongoing Israel-Palestine conflict (Gerechtshof Den Haag, 2024);
[3] Within military studies and economics, procurement and acquisition are differentiated into two separate concepts: 'procurement' involving the locating, purchasing, and obtaining goods, services, or works. 'Acquisition' pertains to

(DPPs) reveals that procurement is far more than a technical or administrative function. Instead, it constitutes a multifaceted policy domain intricately shaped by competing political interests, institutional frameworks, and enduring national strategic imperatives, extending from the initial articulation of military requirements to the acquisition, integration, and lifecycle sustainment of defense capabilities; DPPs involve a complex architecture of interdependent planning, deliberation, and coordination mechanisms operating across multiple tiers of government and specialized defense agencies (Migone et al., 2023). In essence, DPPs involve several strata of interlocking planning, decision-making, and coordination initiatives across multiple levels of government and subsidiary defense agencies (Migone et al., 2023), which in turn require a careful balancing of the immediate needs of the military with long-term strategic goals of the state, considering factors such as technological advancements, budgetary constraints, supply chain resilience, and relations with other states (Kapstein & Oudot, 2009). It is essential to recognize that each decision in the procurement process chain must take into account not only the operational requirements of the military but also the broader political, economic, and technological landscape in which the state operates (Rogerson, 1994). For example, while procurement of certain types, variants, or number of military equipment may affectively address the immediate defensive needs of the state, as dictated by military assessment, the acquisition process of this materiel may not always align with the broader strategic visions of the state (Droff & Malizard, 2023); While the inclusion of foreign vendors in DPPs may reduce costs significantly, it can also undermine a state's position, exposing it to political pressures from vendor-states or supply chain disruptions during crises, whereas relying solely on national vendors may impose financial burdens and institutional demands that exceed the state's capacity (Lundmark & Oxenstierna, 2015)

Ultimately, it is the state which determines what it procures, and through what means. Within this context, Droff & Malizard (2023) argue that procurement sentiment, the strategic orientation and inclination of the state towards either strategic autonomy or foreign acquisition, plays a pivotal role in shaping procurement decisions, policies, and outcomes. A shift in procurement sentiment may fundamentally alter how procurement strategies are developed, which suppliers are chosen, and how military capabilities are sustained over time.

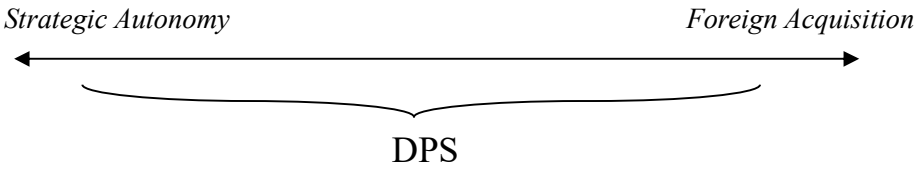
---

gaining possession beyond goods and services (i.e. service, maintenance). For the sake of academic brevity, the two concepts are used interchangeably.

2.2. DPS Process Factors

Synthesizing- and building on the interpretations of procurement outlined in Chapter 2.1, it becomes evident that a complex set of interrelated factors shape the *strategic orientation* of states within their DPPs, hereafter referred to as defense procurement sentiment (DPS). DPS functions as a guiding principle that determines the extent to which procurement strategies prioritize strategic autonomy over foreign acquisition schemes. Procurement sentiment is herein theorized to exist on a spectrum: at one end lies an emphasis on strategic autonomy, characterized by strong support for domestic defense industries, efforts to retain control over defense technologies, political initiatives aimed at developing national DIBs, and the minimization of dependence on external actors for military capability.

Figure 1
DPS Spectrum Theorization



The existing literature provides a solid basis for understanding the formation of DPS, identifying three primary dimensions that significantly shape its development: the external strategic environment, the internal strategic environment, and economic considerations. Collectively, these dimensions offer a comprehensive lens through which to analyze how states determine the balance between autonomy and dependence in their defense procurement strategies.

2.2.1. External Strategic Environment

The External Strategic Environment (ESE) plays a crucial role in shaping DPS by defining the broader international and geopolitical environment in which states operate. It influences how states assess threats, determine strategic priorities, and allocate defense resources. Droff and Malizard (2023) argue that the ESE outlines the nature, existence, and intensity of external threats, prompting states to evaluate their security environment based on factors such as

existing military capabilities, institutional resilience, and regional power dynamics. These assessments help identify specific vulnerabilities and guide procurement decisions; For example, if a state perceives a growing naval threat from a neighboring adversary, it may respond by acquiring technologically advanced AShMs or investing in modern naval platforms to restore the security equilibrium and maintain a credible defense posture, in line with Utley's first objective.

Beyond threat assessments, the ESE encompasses the broader geopolitical landscape. As Droff and Malizard (2023) emphasize, this includes considerations such as alliance memberships, which significantly influence DPS. According to Becker (2000), alliances often impose mutual defense obligations and interoperability requirements, compelling states to prioritize equipment that ensures seamless cooperation with allies, which may also lead to joint procurement initiatives and cost-sharing arrangements, further shaping procurement priorities and reducing financial burdens (Becker, 2000; Liechtenberg, 1995). In this way, the ESE not only determines what capabilities are necessary but also how states should structure their procurement strategies to align with international commitments.

2.2.2. Internal Strategic Environment

The internal strategic environment (ISE) pertains to the domestic landscape in which a state evaluates its defense capabilities and defines its policy direction. First, Droff & Malizard (2023) state that ISEs relate to the presence and size of its defense industrial base (DIB), which plays a critical role in the development, construction, and ongoing support of the military equipment deemed necessary to address the threats as identified in the ESE. Hartley (2007) further emphasizes that the strength and production capacity of the DIB significantly influence procurement decisions, and that there is a direct relation between size of the DIB and DPPs as a robust domestic defense industry can significantly reduce reliance on foreign suppliers, offering strategic advantages such as reduced vulnerability to international disruptions, enhanced sovereignty over defense capabilities, and the ability to tailor military technologies to the specific needs of a state's security architecture. Second, Lichtenberg (1995) argues that the ISE extends beyond the manufacturing and technological prowess of the defense sector and also includes the policy environment that supports and regulates the DIB. This includes the creation of favorable

R&D conditions, securing funding for defense projects, implementing procurement policies that encourage innovation, and ensuring a legal and regulatory framework that protects national security interests while promoting industry growth.

2.2.3. Economic Considerations

Economic considerations (EC) directly influence the feasibility and scope of DPPs. First, the national defense budget of a state reflects its fiscal capacity to determine the national priorities of procurement and the extent to which it is able to invest in new procurement processes; Budget constraints often require decision-makers to balance military needs with broader economic responsibilities, making financial planning a key aspect of procurement strategies. Droff & Malizard (2023) posit that states with low defense budgets are more likely to adhere to foreign-dependence related DPPs (such as OTS and FMS) due to the higher costs related to national or regional production and acquisition, meaning that ECs are directly influencing DPS. Second, aligning with Uttley's third objective, when economic considerations allows for it, states pursue economic benefits through procurement wherever possible, often leveraging industrial participation, technology transfers, and offset agreements to stimulate domestic industries and enhance technological capabilities, thus shifting towards strategic autonomy-related procurement processes, as these offset agreements stimulate domestic industries and enhance technological capabilities. These measures not only support national economies but also reduce long-term dependency on foreign suppliers. Ultimately, states strike a balance between operational needs and financial sustainability, ensuring that procurement-sentiment decisions provide long-term strategic value without placing excessive strain on other government functions (Droff & Malizard, 2023).

2.3. Issues Regarding Efficacy in Defense Procurement

The concept of efficacy in procurement does not lend itself to a single, unified definition. In general terms, efficacy is understood as the degree to which procurement processes achieve their intended objectives (Kakwezi & Nyeko, 2019). However, the multiplicity of state objectives in DPPs (Chapter 2.2) ranging from cost-efficiency to strategic independence and industrial competitiveness, renders this definition highly context dependent. Traditional literature often views procurement success through a managerial or economic lens, focusing on the widely known 'Iron Triangle' of cost, time, and performance (Markowski et al., 2010). Applying this framing to defense, effective procurement is then that which delivers those military capabilities within budget, on schedule, and at the required technical performance. Reinforcing this view is the fact that these criteria are central to most government audits and MoD evaluations (Australian National Audit Office, 2024; DCAA, n.d.; Taylor, 2023), as well as its application in defense economics literature (Suchman & Eyre, 1992). However, more recent contributions in existing literature have criticized this narrow focus as insufficient for capturing the wider strategic dimensions of defense procurement. For instance, Dunne at al. (2013) emphasized that procurement outcomes must also be assessed in relation to long-term security objectives, industrial development, and strategic resilience, while according to Hartley (2024), efficacy includes not only the successful acquisition of material but also the ability to sustain capabilities over time, promote innovation within the domestic defense industry, and minimize strategic dependency on external actors. The shift in literature form efficiency towards the broader notions of effectiveness has led to the identification of interrelated dimensions of procurement efficacy.

Contributing to this perceived shift is the preliminary work by Arena et al. (2006), which explored how different procurement models influence cost structures, with some findings suggesting that multinational projects may reduce unit costs but face higher integration expenses. Another important aspect is the operational readiness of procured systems, which refers to their ability to support military readiness through considerations such as logistics, maintenance, and training. Studies such as Maulny & Di Bernardini (2019) have highlighted that procurement decisions that fail to plan for sustainment can result in readiness gaps, even if delivery is successful. Increasingly, there is a focus on how well-procured systems align with long-term strategic needs. The concept of 'strategic fit' explores whether procurement decisions enhance

national or alliance-level deterrence and adaptability. Louth and Taylor (2020) argue that procurement should be assessed not just for technical specifications but for its contribution to national defense strategy, especially under uncertain conditions.

2.3.1. Efficacy in the European Context

In Europe-centric defense discussions, the pursuit of industrial and technological sovereignty has emerged as a critical priority, reflecting growing concerns about maintaining a competitive and autonomous defense-industrial base where efficacy is tightly linked to technological innovation, supply chain resilience, and domestic economic benefits such as job creation (Fiott, 2020; Béraud-Sudreau & Pannier, 2021). The underlying rationale challenges the attractiveness of foreign procurement due to its potential to increase long-term strategic dependencies and reduce national or European control over critical technologies and capabilities. The European defense procurement landscape adds an additional layer of complexity due to the fragmented nature of its market and the intergovernmental framework underpinning EU defense cooperation. Reports from the European Defense Agency (EDA, 2021) and the European Court of Auditors (ECA, 2019) highlight systemic inefficiencies, including duplication of efforts, lack of interoperability, and diverging national priorities. In this context, the efficacy of procurement is viewed as a collective European problem: how to achieve common defense capabilities efficiently while preserving national sovereignty. Scholars such as Biscop (2021) and Patrucco et al. (2024) argue that without deeper coordination and integration in procurement strategies, European states risk continued capability gaps and wasteful spending. Despite various initiatives like PESCO and EDF, empirical assessments of collaborative procurement outcomes remain limited. Most studies tend to focus on descriptive analyses of institutional developments or funding levels rather than offering rigorous evaluations of effectiveness across procurement models.

2.4. Theoretical Gaps

It is clear that the field of defense studies must work toward a more cohesive theoretical foundation for understanding procurement efficacy, integrating currently fragmented theoretical perspectives. While the foundational contributions of scholars such as Kapstein (1992) and Uttley (2018) offer a conceptual basis for linking procurement behavior to broader state objectives, these works remain complemented, but not fully unified, by competing views on the trade-offs between domestic and international procurement. These perspectives underscore the tension between maintaining sovereign control over critical defense capabilities and leveraging the efficiency, performance, and cost advantages of foreign sourcing.

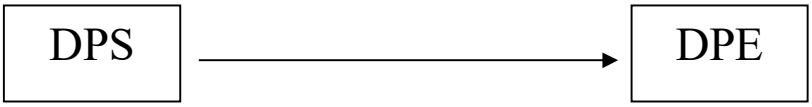
The existing literature provides valuable insights into the drivers of defense procurement. However, as the previous chapter demonstrates, there is still limited empirical consensus on how different strategic orientations along the DPS spectrum influence procurement outcomes. Although studies such as Arena et al. (2006), Maulny and Di Bernardini (2019), and Louth and Taylor (2020) have advanced efforts to measure outcomes like cost-efficiency, operational readiness, and strategic alignment, they often examine these variables in isolation from broader procurement orientations. This disjointed approach reveals a critical gap in the literature: the absence of an integrated empirical framework capable of systematically assessing how variations in procurement sentiment, particularly the emphasis on strategic autonomy, shape the multidimensional effectiveness of defense procurement. Most existing research treats procurement orientation and procurement efficacy as separate analytical concerns, rather than viewing them as interdependent, while the broader analytical field tends to bifurcate its focus, prioritizing either the technical outcomes of procurement or the political rationale behind procurement decisions, with few studies effectively bridging the two domains.

III. THEORETICAL FRAMEWORK

3.1. Introduction

A review of existing literature reveals not only a fragmented and often ambiguous landscape of defense procurement research, but also a clear need for a structured, comparative, and empirically grounded approach to evaluating procurement outcomes. The framework introduced in this chapter is intentionally comparative and relational in nature: it does not presume the inherent superiority of any particular procurement sentiment, as normative judgments lie beyond the scope of this study. Instead, it aims to empirically assess whether varying procurement orientations produce differing outcomes in terms of measurable performance.

Figure 2
The hypothesized relationship between Defense Procurement Sentiment and Defense Procurement Efficacy



3.2. The Dependent Dimension

The dependent dimension of this analysis centers on defense procurement efficacy (DPE). At its core, DPE seeks to evaluate the extent to which defense acquisition activities translate into tangible improvements in military capability, operational readiness, and strategic alignment. As outlined in Chapter 2.3.2, one of the central challenges in this area stems from the lack of a consolidated academic framework for empirically measuring procurement efficacy within defense contexts. While a substantial body of literature exists on the mechanics of procurement, covering areas such as acquisition cycles, program management, contracting practices, and cost controls (Arena et al., 2006; Maulny & Taylor, 2019) these works tend to emphasize process compliance and fiscal discipline rather than strategic outcomes. In many cases, the success of a defense procurement project is assessed by whether it was delivered on time and within budget, rather than whether it meaningfully enhances the capabilities of the armed forces or aligns with

broader national defense strategies[4] (Louth & Taylor, 2020). The problem is further compounded by the limited availability of standardized, cross-national metrics that link procurement activities with military performance outcomes. While some datasets track arms transfers, budgetary expenditures, or industrial outputs, these sources often lack the granularity needed to assess how specific procurement decisions contribute to force readiness. This analysis responds to this gap by proposing a dual-index variable that operationalizes procurement efficacy through two proxy measures:

1. DVI-1: Procurement Value Index (PVI)
2. DVI-2: Military Readiness Index (MRI)

3.2.1. Procurement Value Index

Borrowing from the literature discussed in Chapter 2.3.2., efficacy in the context of defense procurement refers not only to fiscal efficiency or timely project execution, but to the tangible value and operational utility derived from procured military capabilities. This focus on military value, rather than project delivery timelines or cost-saving, recognizes that in security contexts, procurement efficacy is best measured in terms of increased capacity for deterrence, response, and force projection (Maulny & Taylor, 2019). However, the notion of 'value' in military procurement presents significant conceptual and methodological challenges; A high-end, multirole fighter aircraft and a fleet of armored personnel carriers are fundamentally different instruments of war, serving different tactical and strategic purposes, meaning that their relative value cannot be directly compared on a purely financial basis or by raw quantity alone. Likewise, states may acquire high-performance platforms in limited numbers or opt for larger inventories of mid-range systems, both of which may be strategically rational but produce different value patterns. Both approaches may be rational within their respective strategic environments and budgetary contexts, yet they generate distinct value patterns that must be evaluated with nuance. In response to these divergent value patterns and the complexity surrounding applying numerical values to military systems, the Procurement Value Index (PVI) is constructed as a standardized, performance-adjusted measure of the value derived from DPPs, grounded in observable system

[4] This does not imply that such assessments are never carried out; It can reasonably be assumed that DoDs/MoDs and related organizations conduct them regularly, though their confidential nature prevents them from being publicly disclosed.

characteristics and output efficacy. PVI rests on an evaluative principle that states that military procurement should deliver measurable capability gains from DPPs that reflect strategic objectives and optimize resource allocation.

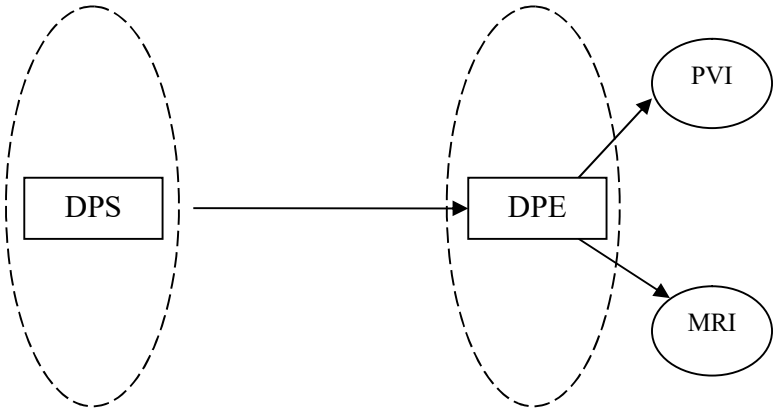
3.2.2. Military Readiness Index

The second dependent variable indicator employed in this analysis is the Military Readiness Index (MRI), a composite metric designed to approximate a state's baseline capacity to project, sustain, and regenerate military force. Unlike momentary assessments of combat effectiveness, the MRI focuses on the enduring structural, institutional, and fiscal components that collectively shape a state's readiness posture over time. At its conceptual core, military readiness includes a spectrum of critical dimensions such as unit cohesion, the frequency and quality of combat training, the operational availability and reliability of platforms and systems, the efficiency of logistical and resupply chains, and the speed with which a force can be mobilized and deployed in response to emerging threats. Ideally, a robust readiness index would integrate highly granular, operational-level data, such as unit-level training cycles, equipment uptime rates, real-time deployment capacities, munition stockpile levels, and results from stress-tested military exercises. These data points offer the most precise insight into a force's ability to perform across diverse operational scenarios, from short-notice expeditionary deployments to prolonged engagements in contested environments. However, in practice, access to such data is highly constrained. Due to its sensitivity, most national defense institutions treat concrete readiness metrics as classified information, shielding them from public dissemination to protect strategic vulnerabilities. As a result, real-time indicators of force are largely inaccessible for academic studies.

Given this significant barrier to direct measurement, the MRI serves as a proxy-based solution that leverages publicly available and internationally standardized data to provide a credible approximation of national military readiness. Instead of attempting to measure readiness in its most granular form, the MRI focuses on three core dimensions that are broadly recognized in strategic studies and defense economics as reliable indicators of a country's potential to

generate and sustain combat power: active military personnel, defense spending as a percentage of GDP, and spending per active servicemember.

Figure 3
Visual representation of research dimensions



3.3. The Independent Dimension (DPS)

The independent dimension of this analysis pertains to DPS, the strategic orientation a state adopts with regard to its defense procurement practices, particularly in balancing between strategic autonomy and foreign acquisition. As outlined in Chapter 2.2, DPS is a highly contextual and politically loaded concept that reflects both material considerations (e.g., industrial capacity or technological expertise) and normative aspirations (e.g., sovereignty, alliance preferences, or geopolitical alignment). In this context, DPS is understood to exist on a spectrum (*Figure 1*); At one end lies an emphasis on strategic autonomy, characterized by strong support for domestic defense industries, efforts to retain control over defense technologies, political initiatives aimed at developing national DIBs, and the minimization of dependence on external actors for military capability. At the other end lies a preference for foreign acquisition, which entails a pragmatic orientation toward external procurement based on efficiency, cost-effectiveness, and technological advantages, even if this implies strategic or logistical dependencies on non-domestic suppliers. Importantly, DPS is not static; it evolves over time in

response to shifting ESEs, ISEs, and ECs (Chapter 2.2). As such, DPS is best understood not as a fixed policy stance but as an aggregation of tendencies, priorities, and behaviors observed in a state's procurement decision-making over time.

The conceptualization of DPS introduces certain challenges for its operationalization. As a multidimensional construct that encompasses both ideological commitments and practical considerations, DPS does not lend itself easily to binary classification. Instead, it necessitates a gradient-based analytical approach that captures the degree to which states prioritize autonomy approaches. In addition, the politicization of DPS means that interpreting it through media narratives or official policy declarations risks generating mismatches between rhetorical commitments and tangible behavior. For instance, a state may publicly endorse strategic autonomy while continuing to engage heavily in extra-European procurement, thereby undermining its stated objectives (Scheppele et al., 2020). As such, DPS must be strictly interpreted through a triangulation of quantitative indicators, grounded in observable procurement behavior over time, rather than inferred solely from normative or political claims. Given the complexities of DPS, the analytical framework categorizes DPS as a continuous process which informs the latent strategic orientation of states in DPPs. To comprehensively address the issues surrounding this complexity, and the nature of European approaches towards strategic autonomy, the independent dimension is split into two separate, but complementary independent variables:

1. IV1: Upstream Capacity Building Commitment (UCBC)
2. IV2: Procurement Emphasis Index (PEI)

3.3.1. Upstream Capacity Building Commitment

IV1, Upstream Capacity Building Commitment (UCBC) is designed to capture the long-term strategic intent of states to emphasize strategic autonomy through sustained investments in innovation and capability development. Rather than focusing on immediate procurement outcomes, UCBC reflects a structural and anticipatory posture: it gauges the extent to which states are willing to lay the groundwork for future strategic independence by cultivating domestic R&D ecosystems in the defense sector. The rationale for using defense R&D as an indicator of autonomy-oriented strategies is grounded in both policy guidance and theoretical reasoning. First, from a policy perspective, key strategic documents issued by the European Union, including the EU Global Strategy, CARD, and the EDF guidelines, consistently emphasize the central role of

R&D investment in achieving technological sovereignty (EDA, 2024; European Union, n.d.). Consequently, in this context, national investments in defense R&D are a tangible demonstration of alignment with the EU's broader agenda for strategic autonomy, signaling a commitment to strengthening Europe's collective defense industrial and technological base. Second, from a conceptual standpoint, defense R&D functions as the essential upstream input into the defense innovation pipeline (Moretti et al., 2023), underpinning the development of indigenous capabilities across the full spectrum of defense technologies, from advanced sensors, missile, and command systems to basic industrial production schemes for ammunition and clothing; High levels of investment in defense R&D contribute to nurturing a self-reliant industrial base capable of designing, producing, and maintaining complex defense systems domestically or within broader EU frameworks. This forward-looking investment orientation, often independent of immediate procurement choices, indicates a proactive and strategic effort to emphasize future autonomy, and subsequently aligns with theoretical foundations as outlined by Utley's (2013) second objective (Chapter 2.1).

UCBC is constructed by collecting data pertaining to a state's GBARD (Government Budget Allocations for R&D) earmarked for defense R&D, representing the share of public funding explicitly dedicated to defense-related research and innovation activities. By measuring national commitment to defense R&D, UCBC allows for cross-national comparison of how states prioritize foundational capability development; While high UCBC scores indicate a strong and deliberate orientation toward future autonomy, lower scores may suggest either constrained fiscal capacity, alternative strategic priorities, or a continued reliance on allies and global suppliers for innovation. Importantly, UCBC does not assess the *outcomes* of these investments (e.g., successful systems developed), but rather the *intention and capacity-building efforts* embedded in national budgetary commitments, leading to the following hypothesis:

***H1**: "Higher levels of domestic R&D investments are positively associated with improved procurement efficacy outcomes."*

3.3.2. Procurement Emphasis Index

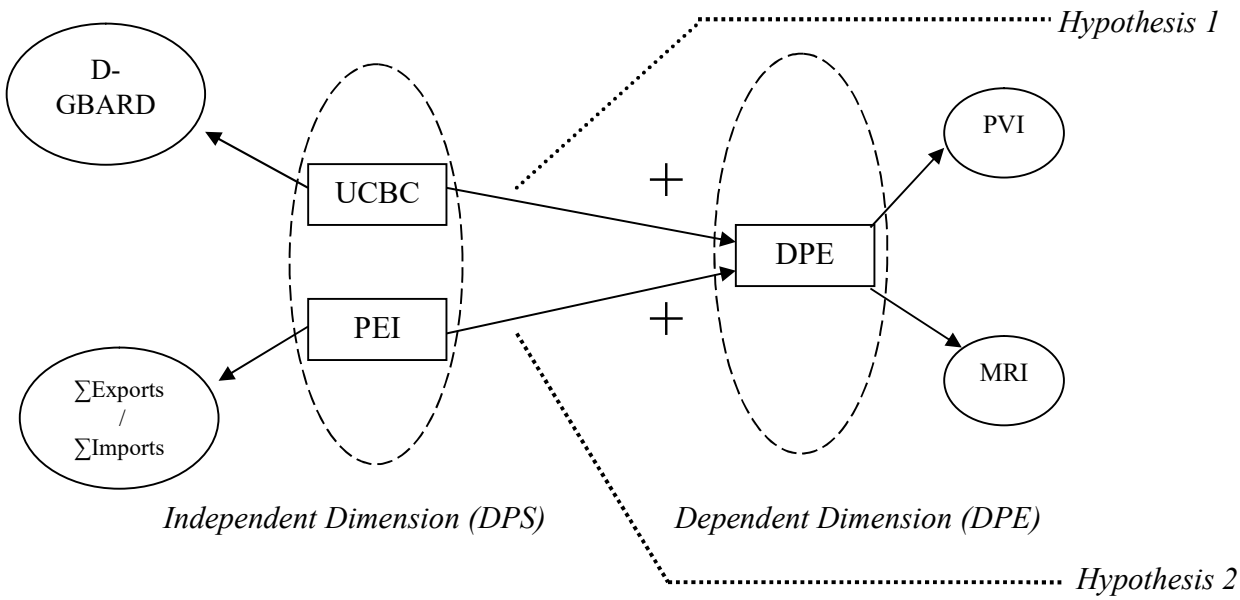
While UCBC captures upstream commitment to strategic autonomy through investments in defense innovation and capacity building, IV2 (PEI) is designed to evaluate actual procurement behaviors along the DPS spectrum. To construct PEI, this analysis relies on a core quantitative measure: the ratio of a state's defense imports to its defense exports, which serves as a proxy for gauging the degree to which a country depends on foreign sources for its defense needs versus its ability to rely on domestic production or closely integrated regional partnerships. At its essence, the PEI captures how much of a country's defense capability is externally sourced as opposed to internally generated or shared through trusted alliances, thereby offering a data-driven lens on procurement behavior in practice. This empirical measure serves as a bridge between strategic orientation and operational outcomes, enabling a systematic comparison of how different procurement stances and therefore allowing the study to move beyond stated policy goals to assess the tangible implications of procurement choices across diverse strategic contexts. Furthermore, the PEI does not aim to evaluate the normative desirability of a state's procurement strategy, whether it is better to be autonomous or interdependent is a matter of broader strategic doctrine, economic feasibility, and alliance dynamics. Instead, the index provides an empirical positioning of states along a continuum that ranges from high external reliance to substantial internal capability, in relation to procurement efficacy; It reveals how defense procurement strategies manifest in practice and how they align with, or diverge from, stated goals of strategic autonomy (Chapter 2.1). This leads to the following hypothesis:

H2: *"A lower import reliance, as indicated by a higher import/export ratio, is positively associated with improved procurement efficacy outcomes."*

The basic structure of the index involves two key data points: the total volume of defense imports and the total volume of defense exports for a given state, typically through standardized trade volume units as reported in major defense trade databases such as those compiled by SIPRI or national arms trade registers. By dividing imports by exports, the resulting ratio indicates the relative balance between inward and outward defense trade activity. A higher import-to-export ratio suggests that a state is more dependent on external suppliers for its defense needs, reflecting limited domestic industrial capacity, a strategic preference for acquiring advanced technologies not available locally, or reliance on specific geopolitical alliances for security guarantees,

Figure 4

Visual representation of the relationship between the independent and dependent dimensions



IV. RESEARCH DESIGN

4.1. Introduction

The observations on procurement emphasis and sentiment, along with the subsequent theorization of conceptual indicators, necessitate rigorous operationalization. In the following chapter, the study outlines the design employed to translate these theoretical constructs into measurable variables.

4.2. DVI-1: PVI Operationalization

In this analysis, the PVI is limited to self-propelled frontline combat systems: weapons platforms that provide immediate or near-term combat value (see Table 1). This focus deliberately excludes auxiliary or support platforms (e.g. logistic vehicles, engineering units, non-combat aircraft, missile defense systems etc.) and SALWs, which, although essential to broader military functionality, fall outside of the scope of this value-based performance framework[5] due to issues relating to the application of the value classification method proposed hereafter and missing procurement data.

The PVI is built upon two core quantitative components:

3. The Military Performance Indicator (MPI)
4. The Trend Indicator Value (TIV). Within-category

These indicators are integrated into the following formula, which reflects a per-system-category performance yield and allows for an aggregated PVI to be derived:

$$PVI = (MPI * TIV) * \Sigma\, Procured\ Systems$$

[5] Lack of publicly available data also contributed to the exclusions of these systems.

4.2.1. Military Performance Indicator (MPI)

While there is little (public) work conducted on the standardized measurement of military equipment quality, this does not imply that the subject is in its entirety unexplored. While much of the work in this area remains proprietary, or based on classified sources (Bychenkov et al., 2021), select contributions have laid the conceptual groundwork for transparent assessment methodologies. Olsson (2020) represents a particularly valuable precedent, offering a methodological approach to constructing standardized evaluative models for military assets, which this thesis applies to procured weapon systems. Rather than attempting to measure equipment quality in abstract or absolute terms, Olsson proposes a relative performance model, whereby each system is assessed against a carefully selected reference platform within its class. This comparative approach acknowledges the vast diversity of military systems, also within a single categories, and provides a practical solution for normalizing evaluations across states and procurement data:

$$MPI_i = \frac{\left(\frac{x_i 1}{x_r 1} + \frac{x_i 2}{x_r 2} + \cdots + \frac{x_i n}{x_r n}\right)}{n} * 100$$

Where:

- x represents a criterion for the given system's category (see Table 1);
- x_i represents the value of the system criteria under consideration;
- x_r represents the corresponding value for the reference system[6];
- n represents the number of system criteria under consideration.

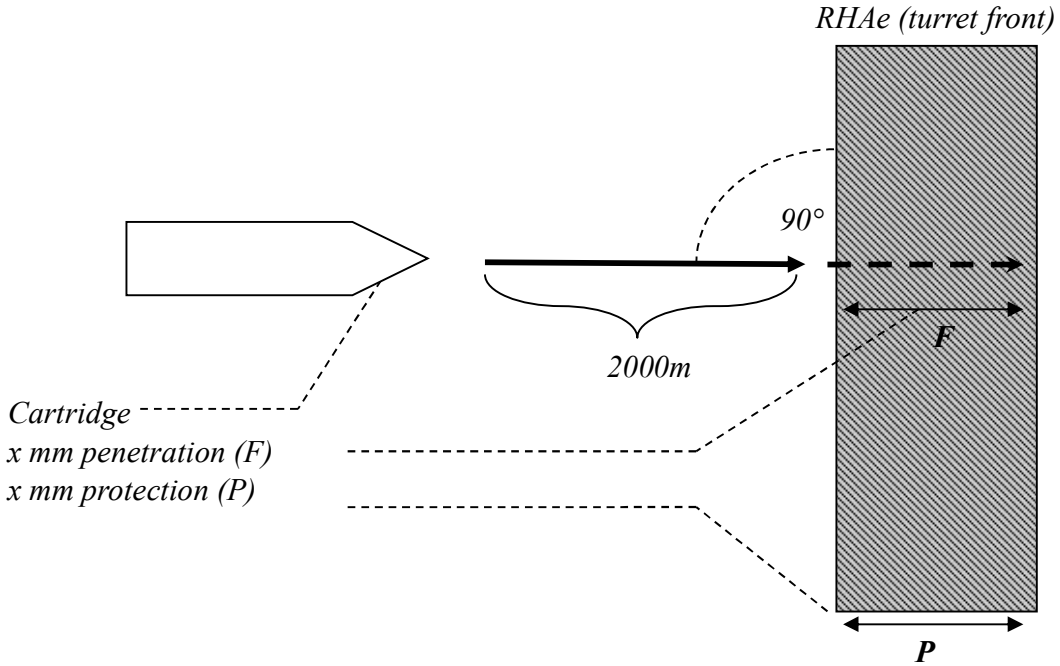
Olsson's methodology is structured around the identification and quantification of key performance variables that are specific to the operational role of each platform under evaluation. Utilizing the MBT category as an example, the performance variables of its systems would focus on firepower, protection, and mobility, each of which can be logically ascertained to be vital to this vehicle class's overall utilization in the field and relative combat effectiveness parameters. Each performance variable is quantified using a standardized metric tailored to its operational

[6] Reference platforms are selected based on operational prominence during the entire observation period. For example, Abrams M1A1 for MBTs, F-16C, for MRF, etc. (see Appendix 10.4. for identified reference systems), ensuring cross-national consistency while acknowledging platform specific performance variation.

dimensions. Using available (non-classified) metrics, firepower can be operationalized through the penetration capability of the tank's primary armament (Figure 5), specifically using APFSDS[7] shells (standard AT-ammunition used by modern MBTs). The performance of these rounds is measured in terms of the depth of penetration (in millimeters) against rolled homogeneous armor equivalent[8] (RHAe) at normal incidence (90°), at turret front. The chosen testing distance is standardized at 2,000 meters, reflecting realistic combat engagement range for contemporary tank operations. The resulting penetration value serves as the quantitative input for the firepower variable. Armor protection is evaluated using the same RHAe framework but approached from the defensive perspective, the maximum armor strength against APFSDS penetration. This provides a directly comparable, reciprocal measure to the firepower metric and reflects the platform's survivability against similar kinetic threats. Mobility is operationalized through a power-to-weight ratio, calculated as the vehicle's horsepower divided by its total combat weight (laden) in metric tons. Table 1 outlines the vehicle categories under assessment and their performance indicators.

Figure 5

MBT Firepower/Protection Indicator Example



[7] Armor-piercing, fin-stabilized, discarding sabot.
[8] Common benchmark used for armor performance comparisons (Hu et al., 2002)

Table 1

Platform Category Value Criteria

Criteria / *System Category*	*1*	*2*	*3*	*4*
MBT	Firepower (*penetration depth APFSDS against. RHAe at 2000m*)	Mobility *(hp/ton)*	Protection	
Surface Fleet[9]	Displacement[10]			
SPG	Firing range	Mobility *(hp/ton)*	RPM	Shell Variety
IFV	Muzzle Velocity *(main armament, m/s)*	Mobility *(hp/ton)*	Armor *(front, in mm)*	Crew Size
APC	Main armament diameter (mm)	Mobility *(hp/ton)*	Crew Size	
MLRS	Firing Range	Mobility *(hp/ton)*	Warhead Payload *(HE/kg)*	Rocket Diameter (*mm*)
Combat Helicopters	Main armament diameter *(mm)*	Max Speed *(hp/ton)*	MTOW *(max takeoff weight, kg)*	Service Ceiling

Within the surface fleet category, multiple different ship types are included (i.e., frigate, destroyers, MCM-vessels), each serving distinct operational roles. Treating these ships as equal units in strategic analysis fails to capture the diversity of their contributions and capabilities, which is why statistical weights would need to be applied to the MPI-calculation outputs (see Table 2).

[9] Including Helicopter Landing Docks (LHDs), destroyers, frigates, MCMs, corvettes, patrol ships, and missile boats.
[10] According to Alves De Almeida & Cabral (2018), naval assets' capabilities are more complex than smaller units under consideration and argues that displacement of these vessels may be used to substitute more complex assessments of value.

Table 2

Surface Fleet Ship Class Statistical Weights (Alves De Almeida & Cabral, 2018: p.26)

Warship Class	**Weight**
Frigate	4
MCM	1
Missile boat/corvette	3
Patrol vessel	0.75
Ocean-going patrol vessel	3
LHD	5
Destroyer	5

4.2.2. *MRF Value Criteria*

The application of Olsson's formula, while effective for evaluating ground- and sea-based platforms proves problematic when extended to MRFs due to the complexity and multidimensionality of their capabilities. MRFs are inherently versatile platforms designed to perform a wide array of tasks, including air-to-air combat, SEAD, EW, and reconnaissance, often within a single sortie. As such, they integrate a broad spectrum of systems, including avionics, radar, stealth features, weapons payloads, and maneuverability characteristics, which interact in ways that are not easily reduced to a linear, platform-to-platform comparison. Preliminary statistical testing conducted as part of this study confirmed that applying Olsson's relative performance formula directly to MRFs produced skewed and unreliable values. These distortions highlighted the methodological limitations of a 'one-size-fits-all' criteria framework when applied to platforms as operationally flexible and technologically integrated as MRFs. To address this challenge, this thesis adopts the evaluative criteria proposed by Mach et al. (2024), which provides a more nuanced and mission-centered approach to MRF performance assessments through the evaluation of aircraft based on their effectiveness within mission-relevant performance domains (see Table 3).

Table 3

MRF Value Criteria

STRATEGIC AWARENESS	
NATO Compatible Datalink (NCDL)	Yes = 100, No = 0
Radar Range	In km
Forward Looking Infrared / Infrared Search and Track (FLIR/ISTR)	Both = 100, 1 = 50, No = 0
STEALTH	
Radar Cross Signature (RCS (σ))	(W/m^2, frontal scattering)
Electronic Warfare Capability (EW)	Yes = 100, No = 0
Infrared Reduction (IR. Reduction)	Yes = 100, No = 0
Super cruise Cap.	Yes = 100, No = 0
MOBILITY	
Wing Load	(kg/m^2)
Max G.	
Thrust-to-Weight Ratio	
Max. Indicated Airspeed (Max. IAS)	In km/h

The presence of OR-type criteria in the value-criterion framework for MRFs (e.g., NCDL, EW capabilities) necessitates a preliminary transformation of the dataset before any standardized scoring, such as that used in Olsson's formula, can be meaningfully applied. These binary or categorical variables must first be converted into a uniform scoring format, assigning full points (100) for the presence of a capability and zero for its absence, to ensure consistency with the scoring logic used for continuous performance variables. For continuous performance criteria (such as radar detection range, maximum sustained G-force, or wing loading), the data must be ranked and normalized using a relative performance method. In this approach, the platform with the highest observed performance value for each criterion is designated as the reference system, receiving the maximum score of 100 points for that specific metric. All other platforms are then

scored proportionally in relation to the reference system using a simple ratio-based transformation:

$$\text{Total Criteria (Value } System_i) = \ 100 - \left(\frac{(System_i - System_r)}{System_r} * 100 \right)$$

For example, when assessing maximum wing loading, which is used as a measure of maneuverability and stress tolerance, the F-16 achieves the highest value among the evaluated platforms (689 kg/m²) and is therefore set as the *benchmark* for that variable category. A comparative system, such as the JAS-39C Gripen (max wing loading = 283 kg/m²), is then scored using the following formula:

$$\text{Total Criteria Value } (JAS - 39C) = 100 - \left(\frac{(283 - 689)}{689} * 100 \right) = 41$$

See Appendix Table A.13.2. for full category conversion

4.2.3. Trend Indicator Value

An early methodological challenge encountered in the development of the PVI arises due to the inclusion of relative scoring based on reference systems. While this approach is effective for standardizing performance evaluations within a given platform category, it introduces limitations when comparing systems across categories. Specifically, because each system is evaluated *relative* to a reference platform within its own class, most final scores tend to cluster around a narrow range (typically around the 100-point baseline), creating a distortion when attempting to assess the broader contribution of different systems to broader military readiness or procurement efficacy. For example, an APC variant receiving an MRI score of 95 may appear to be nearly equivalent in value to an MRF variant with an MRI score of 115. However, this apparent similarity in scores belies significant differences in strategic utility, combat capability, and cost structure: MRFs typically offer exponentially greater force projection potential, technological complexity, and operational versatility than APCs, and their production and acquisition costs are correspondingly higher. To address this cross-category comparability problem and correct for scale disparities, this thesis incorporates the Trend Indicator Value (TIV)

as a statistical weighting mechanism. Developed by SIPRI, the TIV is a metric that assigns standardized values to procured weapons systems in order to assess the *relative transfer* of military resources between states. Crucially for this analysis, the TIV is not a direct representation of financial expenditure, nor is it intended to reflect precise procurement costs. Instead, it is designed to approximate the *resource value* embedded in arms transfers, based on the known unit production costs of a core set of weapons systems. Additionally, SIPRI adjusts the TIV per procured system based on the nature of the procurement contract (e.g., secondhand assets and state aid are assigned lower TIVs then new production models) and the age of the system (older systems are assigned lower TIVs). The TIV is used to normalize MRI scores across different system categories by serving as a multiplier that reflects the relative strategic "weight" of a given system type. Using the previous example, while an APC and a multirole fighter may both score highly within their respective performance classes, the fighter's higher TIV ensures that its contribution to overall readiness or procurement value is properly amplified in the aggregate analysis, allowing for a more realistic portrayal of force composition.

4.3. DVI-2: Military Readiness Indicator

The Military Readiness Index (MRI) is a comprehensive metric designed to assess a country's military readiness by evaluating key aspects of its defense capabilities. It combines three critical indicators: Active Military Personnel per 1,000 Inhabitants (R_1), Defense Expenditure per Active Soldier (R_2), and Defense Spending as a Percentage of Gross Domestic Product (R_3), in order to offer a multidimensional understanding of a nation's ability to mobilize and sustain military operations:

4.3.1. Active Military Personnel per 1,000 Inhabitants (R_1):

This indicator measures the ratio of active-duty military personnel relative to the size of a country's population. It serves as a proxy for the potential deployable human force, adjusted for the demographic scale of the state. A higher ratio suggests a stronger capacity to mobilize and sustain human resources for military operations, particularly under conditions of short-notice deployment or protracted conflict. This is operationalized as:

$$R_1 = \left(\frac{A}{P}\right) * 1000$$

Where:

- A = Number of active military personnel
- P = Total population

4.3.2. Defense Expenditure per Active Soldier (R_2):

This indicator reflects the financial resources allocated per service member, thereby offering an indirect assessment of the quality and sustainability of the armed forces. Higher values may indicate greater investment in areas such as training, equipment, maintenance, health services, and other critical enablers of operational effectiveness. This is calculated as:

$$R_2 = \frac{D}{A}$$

Where:

- D = Total defense budget[11] (in constant USD (2024))
- A = Number of active military personnel

4.3.3. Defense Spending as a Percentage of Gross Domestic Product (R_3):

This sub-indicator captures the relative prioritization of defense in national fiscal policy. Expressing defense expenditure as a share of GDP provides insight into the political and economic weight assigned to national security. While high values do not always translate directly into readiness, they do signal a sustained strategic commitment to maintaining a capable military:

[11] Defense expenditure/budget figures are not included in a state's D-GBARD (used in IV1: UCBC).

$$R_3 = \left(\frac{D}{GDP}\right) * 100$$

Where:

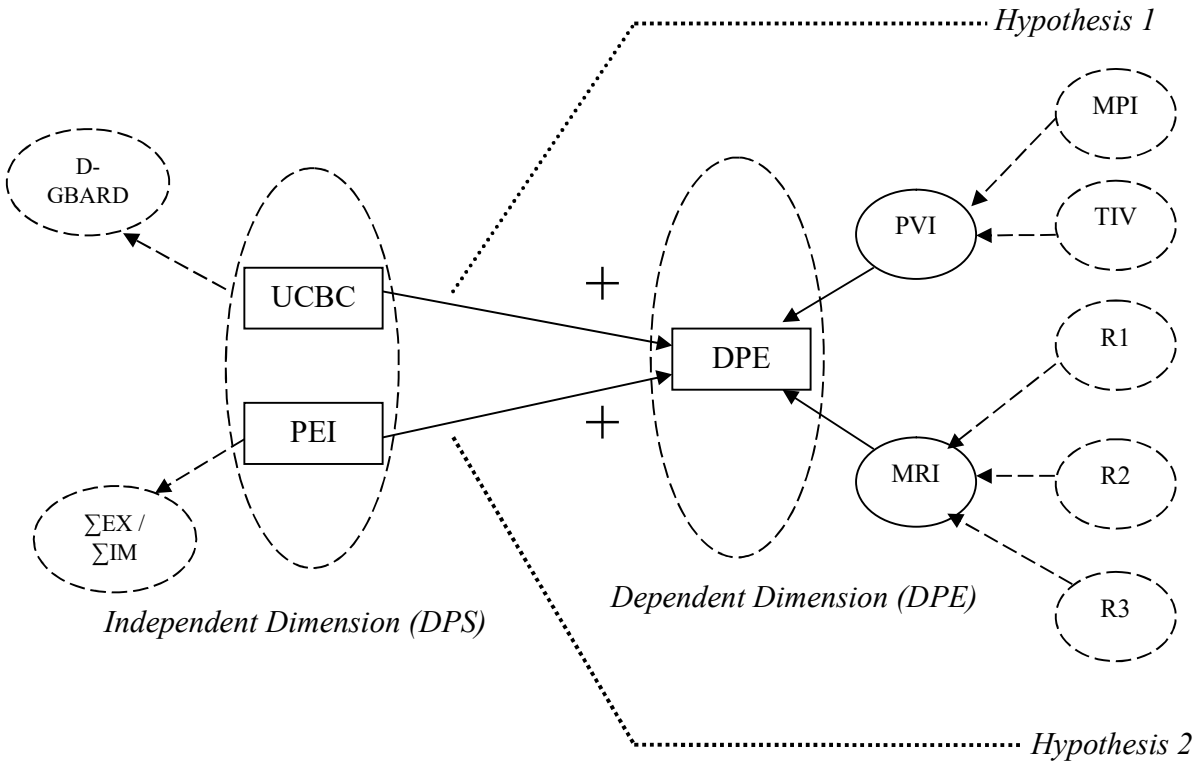
- D = Total defense budget (in constant USD (2024))
- GDP = Gross Domestic Product (in constant USD, 2024)

The final MRI-indicator is computed as the arithmetic mean of the three sub-indicators:

$$MRI = \frac{R_1 + R_2 + R_3}{3}$$

This composite score provides a balanced and multidimensional measure of readiness by incorporating both meso-level structural capacity and macro-level policy commitment, while avoiding over-reliance on any single metric and enabling cross-national comparisons by standardizing population and economic size. While the MRI does not capture every nuance of readiness, such as doctrine, training cycle frequency, or force posture, which are impossible to include without access to confidential data, it is able to offer a transparent and replicable method for assessing baseline readiness conditions across states using publicly accessible data. It is especially useful in comparative procurement studies where readiness must be contextualized within broader defense resource frameworks.

Figure 5
Visual representation of hypothesized relationships



V. METHODOLOGY

5.1. Research Design & Case Selection

This study adopts a cross-sectional time series (panel data) design to investigate the relationship between the proposed dependent and independent dimensions. Selected for its capacity to combine comparative and longitudinal analyses, this design allows for a robust understanding of how structural factors influence procurement outcomes over time. Similar approaches have been adopted in previous studies within defense-economic literature, including recent studies analyzing military expenditures across EU and NATO states (Kuokštytė & Kuokštis, 2024; Topal et al., 2021). The analysis spans a 20-year period from 2005 to 2024, divided into four five-year intervals (see Table 4). This segmentation captures shifts in geopolitical dynamics and evolving defense priorities, allowing for a more granular examination of trends and inflection points. It also facilitates consistent data aggregation and enables the tracking of longitudinal developments in procurement policies, investment behaviors, and readiness indicators.

Table 4

Period Intervals

P1	P2	P3	P4
2005 – 2010	2010 – 2014	2015 – 2019	2020 – 2024

To ensure institutional coherence while retaining analytically valuable variation, the study restricts its sample to states that are simultaneously members of the EU and NATO. This dual membership criterion serves two purposes; First, it guarantees that all states included in the dataset operate within (broadly) comparable frameworks of international governance and security architecture, thus minimizing the influence of exogenous institutional confounders, such as incompatible procurement norms or divergent strategic alignments (Cavatorta & Smith, 2017). Second, despite shared institutional affiliation, these states exhibit substantial diversity in

domestic defense policies, procurement governance mechanisms, and defense-industrial capabilities, allowing the research to focus on endogenous drivers of procurement performance, such as R&D intensity, budgetary prioritization, and domestic production capacities (Giumelli & Marx, 2023; Kleczka et al., 2023). The case selection strategy is further informed by the principle of maximum variation sampling. The selected states encompass a broad spectrum of defense-industrial models: from countries with expansive, export-oriented defense industries (e.g., France, Germany), to those with modest or emerging domestic industrial bases (e.g., Czech Republic, Portugal), to states that rely heavily on external procurement channels (e.g., Latvia, Slovakia), allowing the study to analyze how structural and institutional variation within a shared geopolitical context translates into differential procurement outcomes.

Table 4
States under analysis

1.	Belgium
2.	Bulgaria
3.	Czech Republic (Czechia)
4.	Denmark
5.	Estonia
6.	France
7.	Germany
8.	Greece
9.	Hungary
10.	Italy
11.	Latvia
12.	Luxembourg
13.	Netherlands
14.	Poland
15.	Portugal
16.	Romania
17.	Slovakia
18.	Spain
19.	United Kingdom (UK)[12]

A central challenge in working with defense procurement data is the fragmented and often inconsistent nature of public reporting, especially for indicators related to procurement disaggregation, R&D funding, and industrial output. These limitations are well-documented in the literature on arms transparency and data collection, with studies noting the significant variance in how states report procurement activity and budgetary allocations (IISS, 2024; Wezeman et al., 2020). To mitigate these challenges, this study adopts a structured and replicable approach to managing missing data, aiming to balance methodological rigor with empirical feasibility. The data cleaning process involved excluding countries that exhibited pervasive and systemic gaps in key procurement variables across multiple time periods. Countries that lacked basic reporting continuity were deemed unsuitable for inclusion in the final dataset due to the considerable risk of skewing longitudinal comparisons (Wezeman, 2020). For the remaining countries, where missing data occurred within otherwise continuous time series, linear interpolation and three-year moving averages were applied to estimate values for intermediate years, a technique consistent with established quantitative practices in cross-national defense spending research (Scarazzato et

[12] The UK has been included in this study, despite not being a member of the EU since 2016, due to its continued alignment with defense policies and regulatory frameworks relevant to the research.

al., 2024). A more tailored approach was required for states with large domestic defense industrial base (i.e., France, Germany, Italy), as SIPRI's database omits data on indigenous production that does not enter international transfer markets. For these countries, SIPRI data was cross-referenced with national defense white papers, strategic planning documents, and industry reports to capture missing elements of domestic procurement and platform acquisition (EDA, n.d.; Wezeman, 2020).

As a result of these procedures, the final dataset comprises 76 country-period observations, representing nineteen countries (Table 4) across four periods, forming the empirical foundation for the quantitative analysis presented in the subsequent chapters.

5.2. Data Sources

This study draws upon a range of authoritative data sources to construct a comprehensive dataset. The primary source for procurement data is SIPRI's Arms Transfers Database, which provides detailed records of major arms transfers, including information on suppliers, recipients, and the type and quantity of military equipment delivered. SIPRI's standardized methodology and consistent reporting practices over time make it uniquely suited for longitudinal analysis. Additionally, SIPRI's calculations of TIV values have been used to construct the PVI-indicator (See Chapter 4.1.3.).

In addition, the study gathered supplementary data on military platform characteristics (Appendix 10.4.) using publicly accessible sources. These included manufacturer specifications, defense industry catalogues, and military assessment platforms such as the Worldwide Equipment Guide, Army Recognition, SteelBeasts.com[13], and Military Today. This database was used to assign standardized relative capability values to each platform based on attributes such as firepower, protection, mobility, and systems integration. These values serve as the basis for the MPI metric.

[13] See Olsson, 2020: p.97.

5.3. Variable Transformations

To ensure the validity and interpretability of the statistical models, several transformations have been applied to key variables prior to analysis. These transformations address issues of scale, distribution, and comparability, and align the empirical treatment of the data with both theoretical expectations and methodological best practices. First, DPE has been standardized through z-score normalization, re-scaling the composite index to have a mean of zero and a standard deviation of one across the sample, thereby enabling meaningful interpretation of effect sizes and comparability across periods and countries. Given that the DPE index is constructed from multiple components that operate on units, normalization is introduced to ensure analytical consistency and to prevent any single component from dominating the composite score due to its numerical range rather than substantive importance. Secondly, PEI was transformed from a raw ratio (export-PVI / import-PVI) to a log-ratio, defined as:

$$PEI = \log\left(\frac{\sum ExportPVI_{p(x)}}{\sum ImportPVI_{p(x)}}\right)$$

(p(x) = period (number))

The resulting metric is symmetric and unbounded, ensuring that the variable appropriately reflects the directional nature of strategic orientation: a value of zero indicates parity between exports and imports, positive values reflect greater emphasis on exporting (i.e., autonomy and outward capability), and negative values reflect import dependence. For example, a PEI of -1,24 implies that a country imported approximately 72% more capability than it exported. Lastly, UCBC has been log-transformed (Appendix 10.3) as well in order to correct for skewness and reduce the undue influence of extreme values in the upper range of the distribution (see chapter 6.1).

VI. RESULTS

6.1. Distributional Properties and Descriptive Statistics

Table A.1[14], Table A.2, Figure A.1., and Figure A.2. illustrate the distributional characteristics of the procurement imports and exports of the nineteen units of analysis. Between 2005 and 2024, these states collectively procured 24.633 weapons platforms across 178 different vehicle types, amounting to a total of 11.886.616 PVI points, and exported 22.440 units across 156 vehicle types., amounting to a total of 18.995.814 points. Table 5 presents the descriptive statistics and measures of central tendency for the independent and dependent dimensions.

Table 5
Variable Descriptives

	N	Minimum	Mean	Maximum	St. Deviation	Median	Sum	Skew	Kurtosis
DPE	76	-1,07	0,00	4,36	0,82	-2,00	N/A	2,638	10,760
UCBC	76	0,00	313,67	3810,58	712,94	12,58	23838,84	0,325	-0,838
PEI	76	-6,26	-1,08	5,50	2,52	-0,41	N/A	0,145	-0,165

As displayed in Table 5, DPE exhibits a substantial skew (2,638) and extreme kurtosis (10,760), indicating a non-normal distribution characterized by a rightward skew and heavy tails, consistent with leptokurtic distributions, thus indicating the presence of outliers in the data, or states exhibiting extreme procurement outcomes. The non-normality of DPE was subsequently confirmed through visual inspection of its QQ-plots (Graph A.1.) The existence of non-normality is consistent with the characteristics of panel data, as time-series correlation and unobserved (contextual) effects lead to skewed distributions (Alejo et al., 2015). In contrast, UCBC and PEI demonstrate relatively symmetric distributional patterns with skewness values of 0,325 and 0,145 respectively, and kurtosis values of -0,838 and -0,165, indicating the presence of platykurtic distributions within acceptable limits.[15]These findings confirm that the variable transformation

[14] References to tables, graphs, or figures formatted as **A.**X are located exclusively in the appendix.
[15] Thresholds skewness/kurtosis values = ±3 and ±10 respectively (Kline, 2011).

processes (log-transformation, Appendix 10.3.) effectively reduced distributional distortions in the original data. Normality was confirmed with visual inspections of QQ-plots (Graph A.2., Graph A.3.).

6.2. Diagnostic Tests and Model Assumptions

In order to conduct regression analyses, the data has to meet model assumptions. Visual inspections of the residuals, plotted against fitted values, reveals an (approximately) linear relationship between the dependent and independent dimensions (Graph A.4.); No evident curvature is observed and residuals appeared to be centered around zero. However, the residuals seemingly display a fanning pattern against higher fitted values, suggesting the presence of heterogeneity. To formally assess heteroscedasticity of the residuals, Levene's tests for Equality of Variances was conducted. The test returned a statistically significant result ($p < 0,01$), dictating the rejection of its null hypothesis of homoscedasticity and confirming non-constant error variance. The log-transformation process conducted on the independent variables seems to have no effect on the outcome of this test, suggesting that the variance irregularity is not a simple function of data scale, but more likely attributable to the influence of variables not included in this study. Given the presence of heteroscedasticity, heteroscedasticity-consistent estimators, or robust standard errors, have to be used in subsequent model specifications to ensure the validity of inferences from the regression tests.

Multicollinearity was assessed using common diagnostics; Both UCBC and PEI exhibited VIF values well below stricter thresholds[16] (VIF = 1,175), suggesting that the variables are not linearly correlated (Table A.5.). Tolerance values for both variables were above the threshold values[17] (0,851), further confirming that multicollinearity is not a concern in this mode, thus indicating that both variables can be interpreted as conceptual and statistically independent predictors of DPE.

Due to the violation of normality and the presence of heteroscedasticity in the data, an alternative approach to standard linear regression was necessary to obtain valid regression results. As previously noted, heteroscedasticity was addressed by incorporating robust standard errors

[16] VIF $\geq$ 2.5 indicates considerable collinearity (Johnston et al., 2017).
[17] $1 - R^2 > 0,2$ indicates collinearity (Kim, 2019)

into the model, whereas the departure from normality requires the use of non-normal parametric tests within a generalized linear model (GLM).

6.3. GLM Regression Results

Table 6 presents the parameter estimates for the full GLM tests. The model is statistically significant, with an F-statistic of 4,896 (*df* = 20, 55, p < 0,001), which indicates that the independent variables explain meaningful proportions of variance in DPE; The model's R^2 value (0,645) implies that 64,5% of DPE can be explained by the predictors. The adjusted R^2 value remains strong at 0,515, confirming that the model retains explanatory power even after penalizing for potential overfitting (due to model complexity). The η^2-value for UCBC and PEI is 0,108 and 0,200 respectively, indicating moderate effect sizes on DPE.

Table 6
Between- Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	32,199[a]	20	1,610	4,986	,000	,645
Intercept	3,207	1	3,207	9,932	,003	,153
UCBC	2,144	1	2,144	6,639	,013	,108
PEI	4,441	1	4,441	13,754	,000	,200
StateID	16,466	18	,915	2,833	,002	,481
Error	17,758	55	,323			
Total	49,957	76				
Corrected Total	49,957	75				

a. R Squared = ,645 (Adjusted R Squared = ,515)

Table 7 displays the parameter estimates of the generalized linear model. UCBC exhibits a positive and statistically significant relationship with DPE (B = 0,542, SE = 0,210, p < 0,05), indicating that a one-unit increase in UCBC is associated with a 0,54-unit increase in DPE scores

(holding other variables constant). Contrary to prior expectations, PEI reveals a negative and statistically significant relationship with DPE (B = -0,147, SE = -0,040, P < 0,05), unexpectedly suggesting that stronger emphases on strategic autonomy may correspond with lower efficacy scores.

Table 7
Parameter Estimates

Parameter	B	Std. Error	t	Sig.	95% Confidence Interval		Partial Eta Squared
					Lower Bound	Upper Bound	
Intercept	-,779	,760	-1,025	,310	-2,301	,744	,019
UCBC	,542	,210	2,577	,013	,120	,964	,108
PEI	-,147	,040	-3,709	,000	-,226	-,068	,200

6.4. HC3 Estimators

To assess the robustness of the initial GLM estimates in the presence of non-constant residual variance, the model was re-estimated using heteroscedasticity-consistent robust standard errors (HC3-errors). The new estimates are presented in Table 8. Under HC3 specification, the coefficient for UCBC remains equal to the original estimates (B = 0,542) but loses its conventional significance as the standard error increases to 0,287, yielding a p-value of 0,064. Although this value slightly exceeds the typical significance threshold of 0,05, the effect remains substantively meaningful. The partial effect size for UCBC under robust specification is η^2 = 0,061, indicating smaller effects. PEI continues to exhibit a negative relationship with DPE and retains its statistical significance; The coefficient also remains unchanged, retaining its original value of -0,147, while the standard errors increase to 0,064. This finding underscores the robustness of the negative relationship between PEI and DPE, even when correcting for heteroscedasticity. H^2 decreases significantly from the original GLM estimation to a new value of 0,089.

Table 8
Parameter Estimates with Robust Standard Errors

Dependent Variable: DV

Parameter	B	Robust Std. Error[a]	t	Sig.	95% Confidence Interval		Partial Eta Squared
					Lower Bound	Upper Bound	
Intercept	-,779	1,039	-,750	,457	-2,860	1,303	,010
UCBC	,542	,287	1,888	,064	-,033	1,117	,061
PEI	-,147	,064	-2,313	,025	-,274	-,020	,089

a. HC3 method

VII. DISCUSSION

7.1. Result Interpretation and Theorization: UCBC-DPE

The first major result of the GLM tests confirm a significant positive relationship between UCBC and DPE, particularly under standard assumptions of homoscedasticity. This relationship suggests that states allocating a greater proportion of their defense-related budgets to R&D tend to achieve superior results in procurement performance, measured in terms of both procurement value and broader indices of military readiness. This result provides empirical validation for long-standing theoretical propositions within defense literature, such as the prevalent idea that investments in indigenous R&D capacity serve as a foundational element in developing a robust and technologically capable DIB. This positive association is theoretically coherent with innovation system models that posit R&D as a primary pipeline input, shaping downstream outputs such as platform quality, system reliability, technological integration, and overall strategic performance. The decision to prioritize R&D spending within defense budgeting frameworks reflects more than just fiscal allocation—it signals a deliberate strategy to develop structural capacities capable of transforming financial resources into advanced capabilities. The positive linkage with DPE implies that such investments are not merely nominal; rather, they functionally enhance procurement performance, presumably by fostering technological spillovers, reducing dependency on foreign technologies, and facilitating the integration of cutting-edge systems into national inventories. Moreover, sustained investment in R&D contributes to the expansion of the DIB, both quantitatively, in terms of the number and variety of firms involved, and qualitatively, through improved innovation capacity, quality control mechanisms, and design capability. The DIB's growth, in turn, enhances the likelihood that procured platforms and systems will meaningfully contribute to a state’s warfighting capabilities. Procurement, in this sense, becomes not only a transactional exercise but a strategic one, deeply embedded within a broader technological and industrial ecosystem. The fact that UCBC is positively associated with DPE, even without direct measurement of innovation outputs (e.g., patents, product prototypes, localized manufacturing), indicates that upstream investments are yielding systemic benefits that enhance the effectiveness and value of procurement activities.

Nevertheless, the loss of statistical significance under the HC3 model suggests that the relationship is sensitive to violations of homoscedasticity, implying that the strength of this association may vary across the data space. The interpretation of the UCBC-DPE relationship should therefore be nuanced; It is possible that in states with lower procurement volumes or weaker institutional capacity, increased R&D funding alone may not generate proportional improvements in DPE. This observation introduces the possibility of diminishing returns or threshold effects in R&D-driven procurement strategies: while R&D investment is necessary, it may not be sufficient on its own to guarantee high procurement efficacy unless it is supported by a conducive institutional and industrial environment. In states with lower procurement volumes, weaker governance structures, or underdeveloped DIBs, increased R&D expenditure may not translate into proportional gains in procurement performance.

The positive, but statistically fragile nature of the UCBC-DPE relationship underscores the importance of taking a systems-level view when interpreting R&D investments in defense contexts. While increased R&D spending is a positive indicator, it must be viewed as part of a broader network of strategic enablers, including regulatory frameworks, educational institutions, fiscal oversight, and international collaboration mechanisms

7.2. Result Interpretation and Theorization: PEI-DPE

In contrast to the nuanced and positive relationship between D-GBARD spending and DPE, the results indicate a negative relationship between an autonomous procurement emphasis and procurement efficacy. This counterintuitive result challenges the prevailing assumption that strategic autonomy necessarily enhances procurement outcomes and instead appears to be contrary to policy discourse that states that factoring greater national control over defense supply chains, DIB expansion, and heightened emphases on autonomy may in fact detract from procurement efficacy. The fact that PEI's negative relationship with efficacy remains robust even under heteroscedasticity-adjusted estimations indicates a rejection of hypothesis 2. Several interpretations can be posited for this unexpected result, drawing on the potential dynamics of prioritizing domestic industry over international sourcing. Firstly, pursuing autonomy often involves favoring domestic suppliers or requiring local content, which, while serving political or industrial goals, may undermine efficiency if domestic options are less competitive in terms of

cost, delivery, or technological sophistication. This can lead to procurement processes becoming politicized or distorted by protectionist logics. Secondly, strategic autonomy can retroactively limit procurement options by reducing the pool of eligible suppliers, which in turn weakens the buyer's negotiating position and potentially leads to inflated costs or less innovative solutions. A lack of adequate domestic alternatives can also extend timelines. Thirdly, the policy emphasis on autonomy can introduce complexity in planning, as states try to balance self-reliance with demands for interoperability, cost-efficiency, and innovation. Reconciling these competing objectives can reduce institutional agility, particularly if procurement agencies are subject to political pressure.

7.3. Limitations

Despite the potential theoretical contributions of this research to the broader field of international security and defense studies, it is important to acknowledge a series of significant limitations that constrain the interpretation of its findings. As is often the case with estimations of defense capability, the indices developed and used in this study, though grounded in established conceptual frameworks, ultimately remain imperfect representations of the multifaceted realities they aim to capture. PVI specifically exemplifies these limitations; While useful for quantifying frontline military systems, it does not include the strategic value of ancillary capabilities. Critical components such as support infrastructure, cyber operations, logistics chains, and maintenance units contribute significantly to the overall effectiveness of a nation's military apparatus. Their exclusion from the primary measurement framework creates a skewed perspective, which may lead to an overemphasis on hardware procurement at the expense of evaluating broader systemic readiness and sustainability. Consequently, the interpretation of procurement quality and alignment with strategic objectives may be distorted.

Another fundamental constraint arises from the opacity of national defense data. Due to confidentiality concerns and security considerations, comprehensive and standardized reporting on defense-related activities is limited, especially in the realm of R&D, logistics, and personnel readiness. Many states do not publicly disclose detailed breakdowns of defense expenditures, particularly when it comes to distinguishing between investments in R&D, new acquisitions, lifecycle maintenance, and support services. Even where some information is available, it is often

presented in an inconsistent manner, with differing definitions, classification standards, and reporting cycles. As a result, the construction of a cross-nationally comparable dataset was impeded by gaps in the data, necessitating the use of interpolation, estimation, and averaging techniques. Although these are standard practices in quantitative political science and international relations, their use inherently introduces a level of measurement error. Moreover, the inconsistent availability of data across European states meant that the dataset had to be reduced significantly. A number of potentially valuable cases had to be excluded altogether, resulting in a final dataset of only 19 states, with a total of 76 country-period observations. While this temporal span permits some longitudinal analysis, the modest sample size limits the study's statistical power and the robustness of its inferences, constraining the degrees of freedom available for regression models, making it more difficult to detect subtle effects or confidently generalized findings.

7.4. Future Research Recommendations

The conceptual and methodological limitations of study mentioned in the previous chapter do not inherently invalidate its findings but rather highlight the need for continued refinement of methodologies and indicate promising directions for future research. One potential area is the incorporation of mediating and moderating variables that can help clarify the mechanisms by which inputs, such as defense spending or procurement volumes, translate into outputs like military readiness, capability, and performance. For instance, the integration of procurement governance indices that measure transparency, efficiency, and accountability, could provide deeper insights into how institutional quality shapes procurement outcomes. Additionally, variables capturing the maturity of defense bureaucracies, such as their professionalization, organizational cohesion, and inter-agency coordination, might explain why similar levels of investment yield widely divergent results across different national contexts.

Another critical step for future studies involves refining how defense procurement effectiveness is operationalized. Publicly available aggregate indicators may obscure important project-level details. Researchers with access to internal or semi-classified data such as those affiliated with national DODs/MODs or working in close partnership with defense institutions, could conduct more granular assessments. Information on cost overruns, project delays,

milestone achievements, and contractor performance would allow for a more nuanced understanding of how procurement processes function in practice. Moreover, blending such data with fieldwork, expert interviews, and qualitative insights would enrich the research, grounding abstract metrics in the practical realities of procurement decision-making, contract negotiation, offset management, and industrial collaboration. Future research should also consider the possibility of non-linear relationships and interaction effects within defense procurement systems. It is plausible that the returns on R&D spending will diminish after reaching a certain threshold, particularly if these investments are not complemented by robust procurement governance or effective organizational learning. Likewise, the negative effects of procurement inefficiencies might be mitigated under certain conditions.

Broadening the comparative scope of future studies is another key step. This research focused exclusively on countries that are dual members of both the European Union and NATO, a group characterized by relatively high institutional convergence, shared security commitments, and comparable economic development. While this scope enhances internal validity and facilitates more consistent data collection, it inherently limits external generalizability. Expanding the analysis to include emerging military powers, non-aligned states, or countries with different procurement traditions would provide a more global perspective. States such as India, Brazil, South Korea, and Indonesia offer valuable comparative cases. These states are undergoing rapid defense modernization while navigating unique geopolitical pressures and industrial policies, making them ideal for testing the transferability of models developed in the transatlantic context.

Finally, the relationship between political economy and defense procurement warrants more systematic exploration. Procurement decisions are deeply embedded in domestic political institutions and processes (Chapter 2.3; Political considerations can distort procurement outcomes, either by promoting strategic discipline or by introducing inefficiencies rooted in clientelism, partisanship, or bureaucratic inertia. Integrating political variables, such as government type, coalition stability, and legislative oversight into analytical models could reveal how political dynamics shape procurement behavior and outcomes. Such integration would help bridge the current gap between technical assessments of defense capability and the political realities that shape strategic choices.

VIII. CONCLUSION

This study explored the complex relationship between defense procurement sentiment (DPS) and defense procurement efficacy (DPE) in Europe. Against a backdrop of rising global security threats and shifting geopolitical dynamics, European countries are under pressure to strengthen defense capabilities and enhance strategic autonomy: the ability to act independently in foreign policy and security matters. While the concept of autonomy is often linked to stronger domestic defense systems, its actual influence on procurement outcomes has remained empirically underexplored. This study addressed that gap by examining how DPS, composited by Upstream Capacity Building Commitment (UCBC) and a Procurement Emphasis Index (PEI), affects DPE, captured through the Procurement Value Index (PVI) and Military Readiness Index (MRI). The research analyzed data from 19 EU-NATO countries over the 2005–2024 period using GLM regression models with robust standard errors.

The study hypothesized that a country's stance on the DPS spectrum, from favoring domestic industries and R&D (strategic autonomy) to prioritizing foreign acquisitions (efficiency), would significantly influence its procurement effectiveness. UCBC measured long-term investment in defense R&D as a commitment to building future autonomy, while PEI assessed reliance on domestic versus foreign procurement through import/export ratios. DPE was evaluated not just by traditional efficiency measures but by the value and operational utility of procured systems.

Key findings highlight a positive correlation between R&D investment (UCBC) and DPE. States that allocate more resources to R&D generally achieve higher procurement performance, reinforcing the notion that investing in indigenous capabilities strengthens domestic defense industries and system integration. However, while statistically significant, this relationship became marginal under robust error adjustments, suggesting that while R&D investment is beneficial, it may not yield strong procurement outcomes without supportive institutional and industrial conditions. Conversely, the findings for PEI were unexpected and counterintuitive. A higher PEI, indicating greater emphasis on domestic production, was negatively associated with DPE. This result challenges assumptions that domestic sourcing inherently improves procurement

outcomes. Possible reasons include reduced competition, inefficiencies in local industries, or political interference, which may compromise quality and cost-effectiveness. The strength of this negative relationship across different models suggests that emphasizing domestic procurement may incur real performance trade-offs. Together, these findings indicate that pursuing strategic autonomy is not a straightforward path to better procurement outcomes. While building long-term R&D capacity appears advantageous, over-reliance on domestic sourcing might reduce procurement efficiency. Strategic autonomy, therefore, must be understood as a multifaceted objective: some aspects can strengthen defense outcomes, while others may introduce inefficiencies or complexity.

This study's conclusions must be viewed in light of several limitations. The indices used, especially PVI, may not fully capture the breadth of defense effectiveness. Data limitations, including opacity and small sample size, affect the robustness and generalizability of results. Nevertheless, these constraints also point toward valuable directions for future research; Incorporating variables such as governance quality, procurement process maturity, or political economy factors could offer deeper insights into why similar procurement strategies yield different results across countries, while the use of non-public data may make the original analysis more robust.

IX. BIBLIOGRAPHY

9.1. Main Text References

Alejo, J., Galvao, A., Montes-Rojas, G., & Sosa-Escudero, W. (2015). Tests for normality in linear panel-data models. *The Stata Journal Promoting Communications on Statistics and Stata*, *15*(3), 822–832. https://doi.org/10.1177/1536867x1501500314

Alves De Almeida, F. E., & Cabral, R. {/. (2018). Navy Classification: Proposal for a Comparative Methodology. *Brazilian Journal of Strategy & International Relations*, *5*(10).

Ardil, C. (2022). Military Attack Helicopter Selection Using Distance Function Measures in Multiple Criteria Decision Making Analysis. *International Journal of Aerospace and Mechanical Engineering*, *16*(2), 20–27. https://www.researchgate.net/publication/358356781_Military_Attack_Helicopter_Selection_Using_Distance_Function_Measures_in_Multiple_Criteria_Decision_Making_Analysis

Australian National Audit Office (ANAO). (2024). *Defence's procurement and implementation of the MyClearance System*. https://www.anao.gov.au/work/performance-audit/defences-procurement-and-implementation-of-the-myclearance-system

Bentley, M., & David, M. (2022). Unpredictability as doctrine: Reconceptualising foreign policy strategy in the Trump era. In *Routledge eBooks* (pp. 36–59). https://doi.org/10.4324/9781003332190-3

Biscop, S. (2021). EU and NATO Strategy: A Compass, a Concept, and a Concordat. *Security Policy Brief*, *141*. http://aei.pitt.edu/103648/

Borg, S. (2024). "A Battle for the Soul of this Nation": How domestic polarization affects US foreign policy in Post-Trump America. *International Journal Canada S Journal of Global Policy Analysis*, *79*(1), 22–39. https://doi.org/10.1177/00207020241232986

Borrell, J. (2020). *Why European strategic autonomy matters*. EEAS. Retrieved April 10, 2025, from https://www.eeas.europa.eu/eeas/why-european-strategic-autonomy-matters_en

Bushnell, K., Wolff, G. B., Burilkov, A., & Kharitonov, I. (2024). Fit for war in decades: Europe's and Germany's slow rearmament vis-à-vis Russia. *Kiel Report*, *1*(1).

Bychenkov, V., Kotsyuruba, V., & Vlasov, I. (2021). Metrological support of weapons and military equipment at the stages of its life cycle. *Journal of Scientific Papers Social Development & Security*, *11*(5), 111–118. https://doi.org/10.33445/sds.2021.11.5.11

Caldwell, N., Bakker, E., & Read, J. J. D. (2010). The purchasing process in public procurement. In L. Knight, C. Harland, J. Telgen, K. V. Thai, G. Callender, & K. McKen (Eds.), *Public Procurement* (1st ed.). Routledge. https://doi.org/10.4324/noe0415394048

Carril, R., & Duggan, M. (2020). The impact of industry consolidation on government procurement: Evidence from Department of Defense contracting. *Journal of Public Economics*, *184*, 104141. https://doi.org/10.1016/j.jpubeco.2020.104141

Cavatorta, E., & Smith, R. P. (2017). Factor Models in Panels with Cross-sectional Dependence: An Application to the Extended SIPRI Military Expenditure Data. *Defence and Peace Economics*, *28*(4), 437–456. https://doi.org/10.1080/10242694.2016.1261428

DCAA. (n.d.). *Small business*. https://www.dcaa.mil/Small-Business/Small-Business-Presentations/Audit-Process-Overview/

DeVore, M. R. (2016). Reinventing the Arsenal: Defense-Industrial Adaptation in Small States. *Korean Journal of Defense Analysis*, *28*(1), 31–48. https://www.kci.go.kr/kciportal/ci/sereArticleSearch/ciSereArtiView.kci?sereArticleSearchBean.artiId=ART002083216

Droff, J., & Malizard, J. (2023). 50 shades of procurement: the European defense trilemma in defense procurement strategies. *The Economics of Peace and Security Journal*, *18*(1). https://doi.org/10.15355/epsj.18.1.18

EDA. (n.d.). *EU defence in numbers*. Consilium Europa. Retrieved May 2, 2025, from https://www.consilium.europa.eu/en/policies/defence-numbers/

EDA. (2024). *Coordinated Annual Review on Defence*. European Defence Agency. https://eda.europa.eu/docs/default-source/documents/card-report-2024.pdf

European Commission. (n.d.). *EU solidarity with Ukraine*. Retrieved April 4, 2025, from https://commission.europa.eu/topics/eu-solidarity-ukraine_en

European Parliament. (2025). *JOINT MOTION FOR A RESOLUTION on continuing the unwavering EU support for Ukraine, after three years of Russia's war of aggression* (RC-B10-0156/2025). https://www.consilium.europa.eu/en/policies/eu-response-russia-military-aggression-against-ukraine-archive/

European Union. (n.d.). *European Defence Fund (EDF) - official webpage of the European Commission.* Defence Industry and Space. https://defence-industry-space.ec.europa.eu/eu-defence-industry/european-defence-fund-edf-official-webpage-european-commission_en

General Secretariat of the European Council. (2013). *Conclusions of the European Council of 19/20 December, 2013* (EUCO 217/13). European Council. Retrieved April 12, 2025, from https://www.consilium.europa.eu/uedocs/cms_Data/docs/pressdata/en/ec/140245.pdf

Gerechtshof Den Haag. (2024, February 12). The Netherlands has to stop the export of F-35 fighter jet parts to Israel. *De Rechtspraak*. https://www.rechtspraak.nl/Organisatie-en-contact/Organisatie/Gerechtshoven/Gerechtshof-Den-Haag/Nieuws/Paginas/The-Netherlands-has-to-stop-the-export-of-F-35-fighter-jet-parts-to-Israel.aspx

Giegerich, B., & Nicoll, A. (2012). The struggle for value in European defence. *Survival*, *54*(1), 53–82. https://doi.org/10.1080/00396338.2012.657537

Giumelli, F., & Marx, M. (2023). The European Defence Fund precursor programmes and the state of the European market for defence. *Defence Studies*, *23*(4), 589–607. https://doi.org/10.1080/14702436.2023.2277440

Groitl, G. (2023). Russia's fall: resentful accommodation to grim Post-Cold war realities. In *Springer eBooks* (pp. 173–222). https://doi.org/10.1007/978-3-031-18659-2_5

Hartley, K. (2024). The case for markets in defence: Driving efficiency and effectiveness in military spending. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.4718138

Hellberg, R., & Lundmark, M. (2025). Transformation in European defence supply chains as Ukraine conflict fuels demand. *Scandinavian Journal of Military Studies*, *8*(1), 17–39. https://doi.org/10.31374/sjms.303

IISS. (2024). *Building Defence Capacity in Europe: an assessment*. The International Institute for Strategic Studies. https://www.iiss.org/publications/strategic-dossiers/building-defence-capacity-in-europe-an-assessment/

Järvenpää, P., Major, C., & Sakkov, S. (2020). European Strategic Autonomy. Operationalising a Buzzword. *SIRIUS - Zeitschrift Für Strategische Analysen*, *4*(2), 212–213. https://doi.org/10.1515/sirius-2020-2015

Johnston, R., Jones, K., & Manley, D. (2017). Confounding and collinearity in regression analysis: a cautionary tale and an alternative procedure, illustrated by studies of British voting behaviour. *Quality & Quantity*, *52*(4), 1957–1976. https://doi.org/10.1007/s11135-017-0584-6

Kakwezi, P., & Nyeko, S. (2019). Procurement Processes And Performance: Efficiency And Effectiveness Of The Procurement Function. *International Journal of Social Sciences Management and Entrepreneurship*. https://www.researchgate.net/publication/228504902_PROCUREMENT_PROCESSES_AND_PERFORMANCE_EFFICIENCY_AND_EFFECTIVENESS_OF_THE_PROCUREMENT_FUNCTION

Kapstein, E. B. (1992). The political economy of national security: a global perspective. *Choice Reviews Online*, *29*(08), 29–4761. https://doi.org/10.5860/choice.29-4761

Kapstein, E. B., & Oudot, J. (2009). Reforming Defense Procurement: Lessons from France. *Business and Politics*, *11*(2), 1–25. https://doi.org/10.2202/1469-3569.1264

Kilic, S. (2024). Half-Hearted or Pragmatic? Explaining EU Strategic Autonomy and the European Defence Fund through Institutional Dynamics. *Central European Journal of International and Security Studies*, *18*(1), 43–72. https://doi.org/10.51870/fslg6223

Kim, J. H. (2019). Multicollinearity and misleading statistical results. *Korean Journal of Anesthesiology*, *72*(6), 558–569. https://doi.org/10.4097/kja.19087

Kleczka, M., Vandercruysse, L., Buts, C., & Du Bois, C. (2023). The spectrum of strategic autonomy in EU defence supply chains. *Defence and Peace Economics*, *35*(4), 427–447. https://doi.org/10.1080/10242694.2023.2180588

Kozyulin, V. (2011). Transfer of Defense Technologies: Should They Be Included in the ATT? *Ideas for Peace and Security*, *1*. https://unidir.org/wp-content/uploads/2023/05/Transfer-of-Defense-Technologies-Should-They-Be-Included-in-the-ATT.pdf

Kuokštytė, R., & Kuokštis, V. (2024). A spatiotemporal analysis of NATO member states' defense spending: how much do allies actually free ride? *Political Science Research and Methods*, 1–8. https://doi.org/10.1017/psrm.2024.39

Lichtenberg, F. R. (1995). Economics of Defense R&D. In *Handbook of defense economics* (pp. 431–457). https://doi.org/10.1016/s1574-0013(05)80017-1

Maulny, J., & Di Bernardini, L. (2019, May). *Moving PESCO forward: What are the next steps?* IRIS. https://www.iris-france.org/en/137041-moving-pesco-forward-what-are-the-next-steps-2/

Migone, A., Howlett, A., & Howlett, M. (2023). Introduction: Procurement and Politics—The Defence policy consensus or aligning strategy and policy is necessary but not automatic. In *Springer eBooks* (pp. 1–12). https://doi.org/10.1007/978-3-031-25689-9_1

Ministry of Defence. (2021, March 26). *Defence and Security Industrial Strategy*. GOV.UK. https://www.gov.uk/government/publications/defence-and-security-industrial-strategy

Moretti, E., Steinwender, C., & Van Reenen, J. (2023). The Intellectual Spoils of War? Defense R&D, Productivity, and International Spillovers. *The Review of Economics and Statistics*, *107*(1), 14–27. https://doi.org/10.1162/rest_a_01293

Nicastro, L. A. (2022). *The U.S. Defense Industrial Base: Background and Issues for Congress* (No. R47751). US Library of Congress. https://www.congress.gov/crs-product/R47751

Olsson, P. (2020). Measuring quality of military equipment. *Defence and Peace Economics*, *33*(1), 93–107. https://doi.org/10.1080/10242694.2020.1851474

Patrucco, A. S., Kauppi, K., Di Mauro, C., & Schotanus, F. (2024). Enhancing strategic public procurement: a public service logic perspective. *Public Management Review*, 1–21. https://doi.org/10.1080/14719037.2024.2411630

Peets, I. (2024). The hidden cost of excess capabilities: a threat to future military readiness. *Defense and Security Analysis*, *40*(2), 211–234. https://doi.org/10.1080/14751798.2024.2325220

Rossiter, A., Kurç, Ç., & Novella, M. (2025). Defence industry policies of small and medium powers: an introduction to the challenges and prospects. *Defence Studies*, 1–11. https://doi.org/10.1080/14702436.2025.2472723

Scarazzato, L., Liang, X., Tian, N., & Da Silva, D. L. (2024). Developments in arms production and the effects of the war in Ukraine. *Defence and Peace Economics*, *35*(6), 673–693. https://doi.org/10.1080/10242694.2024.2381784

Scheppele, K. L., Kochenov, D. V., & Grabowska-Moroz, B. (2020). EU Values Are Law, after All: Enforcing EU Values through Systemic Infringement Actions by the European Commission and the Member States of the European Union. *Yearbook of European Law*, *39*, 3–121. https://doi.org/10.1093/yel/yeaa012

Schoeni, D. (2024). Corruption in Defense Procurement. In *Routledge Handbook of Public Procurement Corruption* (1st ed.). Routledge. https://www.taylorfrancis.com/chapters/edit/10.4324/9781003220374-10/corruption-defense-procurement-daniel-schoeni

Suchman, M. C., & Eyre, D. P. (1992). Military procurement as rational myth: Notes on the social construction of weapons proliferation. *Sociological Forum*, *7*(1), 137–161. https://doi.org/10.1007/bf01124759

Taylor, T. (2023). *Defence Committee's report on UK defence procurement: A missed opportunity*. Royal United Services Institute. https://www.rusi.org/explore-our-research/publications/commentary/defence-committees-report-uk-defence-procurement-missed-opportunity

Thomson, C., Mader, M., Münchow, F., Reifler, J., & Schoen, H. (2023). European public opinion: united in supporting Ukraine, divided on the future of NATO. *International Affairs*, *99*(6), 2485–2500. https://doi.org/10.1093/ia/iiad241

Topal, M., Unver, M., & Türedi, S. (2021). The military expenditures and economic growth nexus: Panel bootstrap granger causality evidence from NATO countries. *Panoeconomicus*, *69*(4), 555–578. https://doi.org/10.2298/pan170914002t

Uttley, M. (2018). Defence Procurement *. In *Routledge eBooks* (pp. 72–86). https://doi.org/10.4324/9781315650463-7

Wertheim, S. (2025). The End of Illusion: Why Europe Needs Independence from the United States. In The International Institute for Strategic Studies (IISS) (Ed.), *Survival: April-May 2025* (1st ed.). Routledge. https://www.taylorfrancis.com/chapters/edit/10.4324/9781003641049-2/end-illusion-europe-needs-independence-united-states-stephen-wertheim

Wezeman, P. D., Béraud-Sudreau, L., & Wezeman, S. (2020). Transparency in Arms Procurement: Limitations and Opportunities for Assessing Global Armament Developments. *SIPRI Insights on Peace and Security*, *2020*(10).

https://www.sipri.org/sites/default/files/2020-10/sipriinsight2010_transparency_in_arms_procurement_0.pdf

9.2. Economic/Demographic Indicators

Eurostat & Organisation for Economic Cooperation and Development (OECD). (2024). *GBARD by socioeconomic objectives (NABS 2007)* (04/04/2025 23:00) [Dataset]. https://doi.org/10.2908/GBA_NABSFIN07

Global Firepower. (2025). *Active Military Manpower by country (2025)*. www.GlobalFirepower.com. https://www.globalfirepower.com/active-military-manpower.php

Macrotrends. (2025a). *Military Size 1985-2025*. https://www.macrotrends.net/global-metrics/countries/pst//military-army-size

Macrotrends. (2025b). *Military Spending/Defense Budget by country*. MacroTrends. https://www.macrotrends.net/global-metrics/countries/ranking/military-spending-defense-budget

Statista. (2025, May 30). *Countries with the highest military spending 2023*. https://www.statista.com/statistics/262742/countries-with-the-highest-military-spending/

World Bank. (2025). *GDP (current US$)*. World Bank Open Data. https://data.worldbank.org/indicator/NY.GDP.MKTP.CD

World Bank Group. (2025). *Population*. World Bank Open Data. https://data.worldbank.org/indicator/SP.POP.TOTL

9.3. Procurement Data

Axe, D. (2020, November 30). *The Dutch Army eliminated all its Tanks—Then realized it had made a huge mistake*. Forbes. https://www.forbes.com/sites/davidaxe/2020/11/30/the-dutch-army-eliminated-all-its-tanks-then-realized-it-had-made-a-huge-mistake/

Bundesministerium der Verteidigung. (2023). *Bilanz der deutschen, militärischen Unterstützungsleistungen für die Ukraine*. https://www.bmvg.de/de/presse/bilanz-der-deutschen-militaerischen-unterstuetzungsleistungen-fuer-die-ukraine-5722620

Bundeswehr. (n.d.). *BV 206 S Hägglunds*. https://www.bundeswehr.de/de/ausruestung-technik-bundeswehr/landsysteme-bundeswehr/bv-206-s-haegglunds#:~:text=Das%20BV%20206%20S%20H%C3%A4gglunds%20in%20Aktion&text=In%20der%20Sanit%C3%A4tsvariante%20werden%20ein%20liegend%20oder%20drei%20Patienten%20sitzend%20transportiert.&text=In%20der%20Variante%20der%20Infanterie,Hinterwagen%20insgesamt%20zehn%20Soldaten%20Platz.&text=Vorder-%20und%20Hinterwagen%20sind%20mit%20einem%20hydraulischen%20Knickgelenk%20verbunden.

Bundeswehr. (2017, September 29). Rheinmetall beginnt Panzerumrüstung auf Leopard 2 A7V - bundeswehr-journal. *Bundeswehr-journal*. https://www.bundeswehr-journal.de/2017/rheinmetall-beginnt-panzerumruestung-auf-leopard-2-a7v/

Felstead, P. (2023, May 17). Bundeswehr orders 50 more Puma IFVs. *European Security & Defence*. https://euro-sd.com/2023/05/news/31550/bundeswehr-orders-50-more-puma-ifvs/

Geiger, W., & Heiming, G. (2021, November 3). Abstandsaktives Schutzsystem Trophy auf Leopard 2 A7A1 erfolgreich getestet. *ESUT - Europäische Sicherheit & Technik*. https://esut.de/2021/11/meldungen/30682/abstandsaktives-schutzsystem-trophy-auf-leopard-2-a7a1-erfolgreich-getestet/

Hartpunkt, R. (2024, December 18). *Bundestag billigt 38 Rüstungsvorhaben für rund 21 Milliarden Euro*. Hartpunkt - Monitor Für Defense Und Sicherheitspolitik.

https://www.hartpunkt.de/bundestag-billigt-38-ruestungsvorhaben-fuer-rund-21-milliarden-euro/

Hoffmann, L. (2023, October 16). Bundeswehr hat letzten von 104 Leopard 2A7V erhalten. *ESUT - Europäische Sicherheit & Technik*. https://esut.de/2023/10/meldungen/45012/bundeswehr-hat-letzten-von-104-leopard-2a7v-erhalten/

JOINT-FORCES.com. (2020a, April 20). *Bundeswehr Leopard 2 MBT at 40 ~ Part 4*. Joint Forces News. https://www.joint-forces.com/features/31256-bundeswehr-leopard-2-mbt-at-40-part-4

JOINT-FORCES.com. (2020b, April 20). *Bundeswehr Leopard 2 MBT at 40 ~ Part 5*. Joint Forces News. https://www.joint-forces.com/features/31402-bundeswehr-leopard-2-mbt-at-40-part-5

JOINT-FORCES.com. (2022, December 27). *Bundeswehr Schützenpanzer Puma AIFV ~ Part One*. Joint Forces News. https://www.joint-forces.com/features/60713-bundeswehr-schutzenpanzer-puma-aifv-part-one

KampfPanzer Leopard 2 A6 (BW). (n.d.). https://www.panzerbaer.de/types/bw_kpz_leopard_2_a6-a.htm

Lobitz, F. (2009). *Kampfpanzer Leopard 2: Entwicklung und Einsatz in der Bundeswehr*.

Ministère des Armées. (2005). *Les Chiffres Clés de la Défense*. DICoD. https://www.defense.gouv.fr/sites/default/files/ministere-armees/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202024%20FR.pdf

Ministère des Armées. (2006). *Les Chiffres Clés de la Défense*. DICoD. https://www.defense.gouv.fr/sites/default/files/ministere-armees/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202024%20FR.pdf

Ministère des Armées. (2007). *Les Chiffres Clés de la Défense*. DICoD. https://www.defense.gouv.fr/sites/default/files/ministere-

armees/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202024%20FR.pdf

Ministère des Armées. (2008). *Les Chiffres Clés de la Défense*. DICoD. https://www.defense.gouv.fr/sites/default/files/ministere-armees/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202024%20FR.pdf

Ministère des Armées. (2009). *Les Chiffres Clés de la Défense*. DICoD. https://www.defense.gouv.fr/sites/default/files/ministere-armees/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202024%20FR.pdf

Ministère des Armées. (2010). *Les Chiffres Clés de la Défense*. DICoD. https://www.defense.gouv.fr/sites/default/files/ministere-armees/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202024%20FR.pdf

Ministère des Armées. (2011). *Les Chiffres Clés de la Défense*. DICoD. https://www.defense.gouv.fr/sites/default/files/ministere-armees/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202024%20FR.pdf

Ministère des Armées. (2012). *Les Chiffres Clés de la Défense*. DICoD. https://www.defense.gouv.fr/sites/default/files/ministere-armees/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202024%20FR.pdf

Ministère des Armées. (2013). *Les Chiffres Clés de la Défense*. DICoD. https://www.defense.gouv.fr/sites/default/files/ministere-armees/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202024%20FR.pdf

Ministère des Armées. (2014). *Les Chiffres Clés de la Défense*. DICoD. https://www.defense.gouv.fr/sites/default/files/ministere-

armees/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202024%20FR.pdf

Ministère des Armées. (2015). *Les Chiffres Clés de la Défense*. DICoD. https://www.defense.gouv.fr/sites/default/files/ministere-armees/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202024%20FR.pdf

Ministère des Armées. (2016). *Les Chiffres Clés de la Défense*. DICoD. https://www.defense.gouv.fr/sites/default/files/ministere-armees/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202024%20FR.pdf

Ministère des Armées. (2017). *Les Chiffres Clés de la Défense*. DICoD. https://www.defense.gouv.fr/sites/default/files/ministere-armees/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202024%20FR.pdf

Ministère des Armées. (2018). *Les Chiffres Clés de la Défense*. DICoD. https://www.defense.gouv.fr/sites/default/files/ministere-armees/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202024%20FR.pdf

Ministère des Armées. (2019). *Les Chiffres Clés de la Défense*. DICoD. https://www.defense.gouv.fr/sites/default/files/ministere-armees/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202024%20FR.pdf

Ministère des Armées. (2020). *Les Chiffres Clés de la Défense*. DICoD. https://www.defense.gouv.fr/sites/default/files/ministere-armees/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202024%20FR.pdf

Ministère des Armées. (2021). *Les Chiffres Clés de la Défense*. DICoD. https://www.defense.gouv.fr/sites/default/files/ministere-

armees/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202024%20FR.pdf

Ministère des Armées. (2022). *Les Chiffres Clés de la Défense*. DICoD. https://www.defense.gouv.fr/sites/default/files/ministere-armees/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202024%20FR.pdf

Ministère des Armées. (2023). *Les Chiffres Clés de la Défense*. DICoD. https://www.defense.gouv.fr/sites/default/files/ministere-armees/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202024%20FR.pdf

Ministère des Armées. (2024). *Les Chiffres Clés de la Défense*. DICoD. https://www.defense.gouv.fr/sites/default/files/ministere-armees/Chiffres%20cl%C3%A9s%20de%20la%20D%C3%A9fense%20-%202024%20FR.pdf

Ministerie van Defensie. (2024a, October 15). *Met Leopard 2A8-gevechtstanks krijgt landmacht gepantserde vuist terug*. Nieuwsbericht | Defensie.nl. https://www.defensie.nl/actueel/nieuws/2024/10/14/met-leopard-2a8-gevechtstanks-krijgt-landmacht-gepantserde-vuist-terug

Ministerie van Defensie. (2024b, October 15). *Met Leopard 2A8-gevechtstanks krijgt landmacht gepantserde vuist terug*. Nieuwsbericht | Defensie.nl. https://www.defensie.nl/actueel/nieuws/2024/10/14/met-leopard-2a8-gevechtstanks-krijgt-landmacht-gepantserde-vuist-terug

Ministerie van Defensie. (2024c, October 15). *Met Leopard 2A8-gevechtstanks krijgt landmacht gepantserde vuist terug*. Nieuwsbericht | Defensie.nl. https://www.defensie.nl/actueel/nieuws/2024/10/14/met-leopard-2a8-gevechtstanks-krijgt-landmacht-gepantserde-vuist-terug

SIPRI. (2025). *SIPRI Arms Transfers Database* [Dataset]. https://armstransfers.sipri.org/ArmsTransfer/

Wiegold, T. (2016). *Noch viel Nachbesserungsbedarf beim „modernsten Schützenpanzer der westlichen Welt“ – Augen geradeaus!* https://augengeradeaus.net/2016/10/noch-viel-nachbesserungsbedarf-beim-modernsten-schuetzenpanzer-der-westlichen-welt/

Wiegold, T. (2018). *Neues vom Puma: Millionen-Nachrüstung für die VJTF – Augen geradeaus!* https://augengeradeaus.net/2018/01/neues-vom-puma-millionen-nachruestung-fuer-die-vjtf/comment-page-1/

Wikipedia contributors. (2025a, May 5). *List of equipment of the French Army*. Wikipedia. https://en.wikipedia.org/wiki/List_of_equipment_of_the_French_Army

Wikipedia contributors. (2025b, May 26). *List of modern equipment of the German Army*. Wikipedia. https://en.wikipedia.org/wiki/List_of_modern_equipment_of_the_German_Army

Wikipedia contributors. (2025c, May 27). *List of equipment of the Italian Army*. Wikipedia. https://en.wikipedia.org/wiki/List_of_equipment_of_the_Italian_Army

9.4. Vehicle Performance Indicator Data

Air Force. (n.d.). *F-16 Fighting Falcon*. https://www.af.mil/About-Us/Fact-Sheets/Display/Article/104505/f-16-fighting-falcon/

Airforce Technology. (2023, April 28). *FA-50 Light Combat Aircraft, South Korea*. https://www.airforce-technology.com/projects/-fa-50-light-combat-aircraft-south-korea/

Ajay. (2018, July 30). FPB 72 MKII Fast Patrol Boat. *Naval Technology*. https://www.naval-technology.com/projects/fpb-72-mkii-fast-patrol-boat/

Ajay. (2023, February 22). Avante 2200 combatant. *Naval Technology*. https://www.naval-technology.com/projects/avante-2200-combatant/

Army Guide. (n.d.). *V-12 MTCA*. https://www.army-guide.com/eng/product386.html

Army Recognition. (n.d.). *2S1*. https://armyrecognition.com/military-products/army/artillery-vehicles-and-weapons/self-propelled-howitzers/2s1-russia-uk

Army Recognition. (2016, July 24). *French shipyard OCEA launched the OPV 190 MKII "Fouladou" for the Navy*. https://armyrecognition.com/archives/archives-naval-defense/naval-defense-2016/french-shipyard-ocea-launched-the-opv-190-mkii-qfouladouq-for-the-navy-of-senegal

Army Recognition. (2022). *Marder 1A3 IFV*. https://armyrecognition.com/military-products/army/infantry-fighting-vehicles/tracked-vehicles/marder-1a3-ifv-tracked-armoured-infantry-fighting-vehicle-technical-data-sheet-specifications-pictures-video-10312164

Army Recognition. (2024a). *Leopard 2A7*. https://armyrecognition.com/military-products/army/main-battle-tanks/main-battle-tanks/leopard-2a7-mbt-main-battle-tank-technical-data-pictures-video

Army Recognition. (2024b). *Ocean Eagle 43 Ocean Patrol*. https://armyrecognition.com/military-products/navy/patrol-vessels/ocean-eagle-43-ocean-patrol

Army Recognition. (2025a). *Archer*. https://armyrecognition.com/military-products/army/artillery-vehicles-and-weapons/self-propelled-howitzers/archer-sweden-uk

Army Recognition. (2025b). *K9*. https://armyrecognition.com/military-products/army/artillery-vehicles-and-weapons/self-propelled-howitzers/k9-thunder-south-korea-uk

Army Recognition. (2025c). *Leopard 2A4*. https://armyrecognition.com/military-products/army/main-battle-tanks/main-battle-tanks/leopard-2a4-germany-uk

BAE Systems. (n.d.-a). *ARCHER Mobile Howitzer*. https://web.archive.org/web/20230608144504/https://www.baesystems.com/en/product/archer

BAE Systems. (n.d.-b). *CV90*. https://www.baesystems.com/en/product/cv90

Belgisch Militair Tijdschrift. (2016). *Voertuigen*. https://web.archive.org/web/20160628013235/http://www.mil.be/nl/material-type/voertuigen

Bell Helicopters. (n.d.). *The Bell AH-1Z Zulu*. https://web.archive.org/web/20131217015752/http://www.bellhelicopter.com/en_US/Military/AH-1Z/AH_1Z.html#/?tab=features-tab

Bertolin, G. (2011). *Dossier: VBCI*. Air-defense.net. https://web.archive.org/web/20110723004228/http://www.air-defense.net/pdf/VBCI.pdf

Bocquelet, D. (n.d.). *Freccia IFV (2006)*. https://tank-afv.com/modern/Italy/Freccia-IFV.php

Bush, S. (2013). *British Warships & Auxiliaries 2014/15*.

Chant, C. (2014). *A compendium of armaments and military hardware (Routledge Revivals)*. Routledge.

Chassillan, M. (2005). *Char Leclerc: De la guerre froide aux conflits de demain*. Editions Techniques pour l'Automobile et l'Industrie.

CMN-Group. (n.d.). *INTERCEPTOR HSI32* [Press release]. https://www.cmnnaval.com/wp-content/uploads/2022/08/HSI-32.pdf

DAEGEL. (n.d.). *JAS 39 Gripen*. https://www.deagel.com/Aerospace%20Forces/JAS%2039%20Gripen/a000532

Damen. (n.d.). *Sigma Corvette 7310* [Press release]. https://web.archive.org/web/20150318044432/http://products.damen.com/en/ranges/sigma-corvette/sigma-corvette-7310

Daolio, A. (2024, November 28). *Dassault Rafale*. The Aviationist. https://theaviationist.com/2024/11/28/dassault-rafale/

Dassault Aviation. (2022, February 17). *Rafale specifications and performance data*. Dassault Aviation, a Major Player to Aeronautics. https://www.dassault-aviation.com/en/defense/rafale/specifications-and-performance-data/

Dassault Aviation. (2024, June 4). *Military customer support: Mirage 2000*. Dassault Aviation, a Major Player to Aeronautics. https://www.dassault-aviation.com/en/defense/customer-support/operational-aircraft/mirage-2000/

DEAGEL. (2013). *German Army PzH 2000 Howitzer Test Fires Excalibur 155mm Artillery Projectile*. https://web.archive.org/web/20140810155806/http://www.deagel.com/news/German-Army-PzH-2000-Howitzer-Test-Fires-Excalibur-155mm-Artillery-Projectile_n000012199.aspx

Domingo, J. (2024, January 29). Challenger 3 Battle tanks to receive new modular armor system. *The Defense Post*. https://thedefensepost.com/2024/01/29/challenger-modular-armor-system/

Donald, D. (1997). *The complete Encyclopedia of World Aircraft* (1st ed.). Barnes Noble Books. https://archive.org/details/completeencyclop0000unse_z7c1

Du Fretay, H. (2025). *Australia Turns to Saab and TKMS to Equip MEKO A200 Frigates with AusCMS for Maritime Defense*. https://armyrecognition.com/news/navy-news/2025/australia-turns-to-saab-and-tkms-to-equip-meko-a200-frigates-with-auscms-for-maritime-defense#:~:text=The%20MEKO%20A%2D200%20frigate%2C%20developed%20by%20thyssenkrupp%20Marine%20Systems,displacement%20of%20approximately%203%2C700%20tons.

EDePro. (n.d.). *MLRS "GRAD" AND IT'S MODIFICATIONS* [Press release]. https://web.archive.org/web/20160305020310/http://www.edepro.com/files/R122_G2000_Cargo.pdf

ELBIT. (n.d.). *Elbit Systems / PULSTM* [Video]. https://www.elbitsystems.com/land/weapons-systems-and-munitions/launchers/puls

ELBIT. (2019). *Land Rocket Artillery Catalog*. https://elbitsystems.com/landing/wp-content/uploads/2019/08/Catalog-Rocket-Artillery_5-Web.pdf

ELBIT Systems. (2020). *ATMOS 155mm truck-mounted howitzer for increased mobility and enhanced firing capabilities* [Press release]. https://web.archive.org/web/20230605004635/https://elbitsystems.com/media/Atmos-Poland_4_Web.pdf

ESUT. (2020, August 17). Panzerhaubitze 2000 – Konzepte zur Schließung der Reichweitenlücke. *ESUT - Europäische Sicherheit & Technik*. https://esut.de/2019/11/fachbeitraege/ruestung/16730/panzerhaubitze-2000-konzepte-zur-schliessung-der-reichweitenluecke/

Fassmer. (n.d.). *OPV 90: 90m Offshore Patrol Vessel* [Press release]. https://www.fassmer.de/fileadmin/user_upload/10_Technical_Data_PDFs/fassmer-90m-offshore-patrol-vessel-technical-data.pdf

Flugrevue. (2004). *Korean Aerospace T-50 Golden Eagle*. https://web.archive.org/web/20100505130612/http://www.flug-revue.rotor.com/FRTypen/FRKTX-2.htm

Försvarsmakten. (2012). *Svenskt pansar igår, idag och imorgon*. Retrieved April 14, 2025, from https://www.docdroid.net/yg5vzDV/2012-11-08-stridsfordon-idag-och-imorgon-pdf

Foss, C. F. (1979a). *Jane's Armour and Artillery. 1st Ed: 1979-80*.

Foss, C. F. (1979b). *Jane's pocket book of Towed Artillery*.

Frisberg, B. (1998). Ada in the JAS 39 Gripen flight control system. In *Lecture notes in computer science* (pp. 288–296). https://doi.org/10.1007/bfb0055013

Gander, T. (1980). *Encyclopaedia of the Modern British Army* (P. Stephens, Ed.) [eBook]. Google Books.

Gelbart, M. (1996). *Tanks: Main Battle Tanks and Light Tanks*. Brasseys Uk Limited.

Genys, A. (2018). *CAESAR 8x8 155 mm self-propelled gun-howitzer* [Press release]. https://web.archive.org/web/20180523115324/http://www.military-today.com/artillery/caesar_8x8.htm

Groizeleau, V. (2019, November 26). Next-generation MCM systems for the Belgian and Netherlands Navies. *Mer Et Marine*. https://www.meretmarine.com/fr/defense/next-generation-mcm-systems-belgian-and-netherlands-navies

HANWA Defense. (2020). *K9 자주포*. https://web.archive.org/web/20210717092526/https://www.hanwha-defense.co.kr/kor/products/firearms-system-k9.do

Harding, S. (1997). *U.S. Army aircraft since 1947: An Illustrated Reference*. Schiffer Pub Limited.

Hartpunkt, R. (2024, September 6). *10x10-Radhaubitze: Artillery Gun Module auf Piranha-IV-Plattform*. Hartpunkt - Monitor Für Defense Und Sicherheitspolitik. https://www.hartpunkt.de/10x10-radhaubitze-artillery-gun-module-auf-piranha-iv-plattform/

Hobart, F. W. A. (1972). *The RARDEN Cannon*. Armor. https://tankandafvnews.com/2017/09/08/from-the-vault-the-rarden-cannon/

IISS. (2024). *The military balance 2024*. Taylor & Francis.

Israel Shipyards. (n.d.). *Israel Shipyards - Experience that empowers seagoing ventures worldwide*. https://www.israel-shipyards.com/naval-001.asp

IVECO. (n.d.). *Ariete C2*. iveco-otomelara.com. https://www.iveco-otomelara.com/ariete-c2/

Jane's Defense. (2000). *BOEING AH-64 APACHE*. https://web.archive.org/web/20080225163847/http://www.janes.com/defence/air_forces/news/jawa/jawa001013_1_n.shtml

Johnson, J., & Howard, M. (2022). Type 31 Frigate: Complex Warship Design for a Dynamic Operational Environment. *Conference Proceedings of INEC*. https://doi.org/10.24868/10665

Jung, H., Park, K., & Kim, N. (2017). Pressure analysis and conceptual design for indoor ballistic test range by numerical methods. *Journal of the Korea Institute of Military Science and Technology*, *20*(1), 55–62. https://doi.org/10.9766/kimst.2017.20.1.055

Karremann, J. (2023). *Castorklasse patrouilleschepen*. Marineschepen.nl. https://marineschepen.nl/schepen/castor.html

Karremann, J. (2025). *Karel Doormanklasse fregatten (M-fregatten)*. Marineschepen.nl. https://marineschepen.nl/schepen/kareldoorman.html

KMWEG. (2007). *Panzerhaubitze-2000* [Press release]. https://web.archive.org/web/20071028115025/https://www.kmweg.com/gb/frame.php?page=19

KNDS. (n.d.-a). *LEOPARD 1A5*. KNDS Group. https://knds.com/en/products/leopard/leopard-1A5

KNDS. (n.d.-b). *Leopard 2A6M*. KNDS Group. https://knds.com/en/products/leopard/leopard-2A6M

KNDS. (n.d.-c). *Leopard 2A7*. KNDS Group. https://knds.com/en/products/leopard/leopard-2A7V

KNDS Group. (n.d.). *RCH 155 – One of the world's most advanced barrelled artillery systems*. https://knds.com/en/products/systems/rch-155

Korea Defense Industry Association. (2021). *Korea Defense Products Guide*. https://web.archive.org/web/20220924054836/https://kodits.kotra.or.kr/upload_file/promotion/2019%20Korea%20Defense%20Products%20Guide.pdf

Lake, J. (2007). *Gripen C/D*. Key Publishing.

Leonardo. (n.d.-a). *Eurofighter Typhoon: multirole fighter aircraft*. Leonardo - Aircraft. https://aircraft.leonardo.com/en/products/eurofighter-typhoon

Leonardo. (n.d.-b). *F35 JSF Joint Strike Fighter*. Leonardo - Aircraft. https://aircraft.leonardo.com/en/products/f-35-lightning-ii

Lockheed Martin. (n.d.). *GMLRS*. https://www.lockheedmartin.com/en-us/products/guided-mlrs-unitary-rocket.html

Marina Militare. (2021). *Iniziano le prove in mare per nave Trieste - Marina Militare*. (C)2010 Marina.difesa.it. https://www.marina.difesa.it/media-cultura/Notiziario-online/Pagine/20210817_Fulge_super_mare_Risplende_sul_mare_la_nave_d_assalto_anfibio_multiruolo_trieste.aspx

MIL-A-12560. (n.d.). *POSCO Armor Plate*. https://web.archive.org/web/20220417011756/https://www.subcomsolutions.com/assets/pdf/POSCO-Armour-Plates.pdf

Military Factory. (n.d.). *BMP-1 (Boyevaya Mashina Pekhoty) Infantry Fighting Vehicle (IFV) / Light Tank*. www.MilitaryFactory.com. https://www.militaryfactory.com/armor/detail.php?armor_id=49

Military Today. (2015). *MOWAG Piranha V*. https://archive.ph/20160414012646/http://www.military-today.com/apc/mowag_piranha_v.htm#selection-43.0-46.0

Military Today. (2023). *ATMOS 2000 155 mm self-propelled gun-howitzer* [Press release]. https://web.archive.org/web/20230807124119/https://www.militarytoday.com/artillery/atmos_2000.htm

Ministère de la Defense. (2013). *FREMM Aquitaine (D 650)*. Defense.Gouv. https://web.archive.org/web/20141101200739/http://www.defense.gouv.fr/marine/decouverte/equipements-moyens-materiel-militaire/batiments-de-combat/fregates/fremm/fremm-aquitaine-d-650/caracteristiques

Ministerie van Defensie. (2025, February 27). *F-35 Lightning II-jachtvliegtuig*. Materieel | Defensie.nl. https://www.defensie.nl/onderwerpen/materieel/vliegtuigen-en-helikopters/f-35-gevechtsvliegtuig

Ministero Della Difesa. (2014). *Fregate Europee Multi Missione - FREMM*. Marina Militare. https://web.archive.org/web/20141025045603/http://www.marina.difesa.it/conosciamoci/comandienti/log_amm/marinalles/Pagine/FREMM.aspx

Ministry of Defence & Armed Forces of the Czech Republic. (n.d.). *History: Tank T-55/54 Ministry of Defence & Armed Forces of the Czech Republic*. https://www.mo.gov.cz/scripts/detail.php?id=6044

Mitsopoulos, D. (2022, November 12). *Hellenic Navy commissions its 7th and Final Roussen-class FACM*. Naval News. https://www.navalnews.com/naval-news/2022/09/hellenic-navy-commissions-its-7th-and-final-roussen-class-facm/#:~:text=About%20Roussen%2Dclass%20FACM&text=They%20have%20a%20length%20of,2%2C250nm%20with%2018%20knots.

MSM Group. (2021). *155 mm HE ER FB-BB (OFd M3-DV)*. https://web.archive.org/web/20220715081144/https://www.msm.sk/en/what-we-do/defence/ammunition/artillery-ammo/155-mm-he-er-fb-bb-ofd-m3-dv/

NAVAIR. (n.d.). *F-16 Fighting Falcon (Viper)*. Retrieved April 21, 2025, from https://www.navair.navy.mil/product/F-16-Fighting-Falcon-Viper

Navypedia. (n.d.-a). *AVEL GWALARN patrol boats (1984-1988)*. https://www.navypedia.org/ships/france/fr_cg_avel_gwalarn.htm

Navypedia. (n.d.-b). *COMMANDANT RIVIÈRE frigates (1962 - 1965, BALNY frigate (1970)*. https://www.navypedia.org/ships/france/fr_es_commandant_riviere.htm

Navypedia. (n.d.-c). *DIPIKAR patrol craft (1991/2012)*. https://www.navypedia.org/ships/cameroon/came_cf_dipikar.htm

ODIN. (2023). *ODIN - OE Data Integration Network*. https://odin.tradoc.army.mil/WEG/Asset/M109A5_American_155mm_Self-

ODIN. (2025). *ODIN - OE Data Integration Network*. https://odin.tradoc.army.mil/WEG/Asset/a912aa8b360f636e3d7e63a7534f1ad6

Owen, P. S. (2013). Eurofighter Technology and Performance: Sensors. *Eurofighter Typhoon*. https://web.archive.org/web/20141127103445/http://typhoon.starstreak.net/Eurofighter/sensors.html

Pape, A. (2008). *In a class of their own: new corvettes take centre stage*. Jane's Defense. https://web.archive.org/web/20100913191600/http://www.janes.com/news/defence/jni/jni090824_1_n.shtml

Patria Group. (2023, February 1). *Patria AMV XP - Number 1 in the battlefield | Patria*. Patria. https://www.patriagroup.com/products-and-services/protected-mobility-and-defence-systems/vehicles/patria-amv-xp-number-1-in-the-battlefield

Peruzzi, L. (2023, May 31). Offshore patrol vessels and shipbuilders in Europe. *European Security & Defence*. https://euro-sd.com/2023/05/articles/31365/offshore-patrol-vessels-and-shipbuilders-in-europe/

Pike, J. (n.d.). *Sandown Class Mine Countermeasures Vessels*. https://www.globalsecurity.org/military/world/europe/hms-sandown-specs.htm

Pima Air & Space. (2019, December 30). *Mil Mi-24D - Pima Air & Space*. https://pimaair.org/museum-aircraft/mil-mi-24d/

Praveen. (2016, March 8). RPB 33 offshore patrol boat. *Naval Technology*. https://www.naval-technology.com/projects/rpb-33-offshore-patrol-boat/

Rafale-C radar scattering simulation. (2023, June 12). Aircraft 101. https://basicsaboutaerodynamicsandavionics.wordpress.com/2023/04/08/rafale-radar-scattering-simulation/

Rheinmetall. (n.d.). *Armoured transport vehicle Boxer*. https://www.rheinmetall.com/en/products/tactical-wheeled-vehicles/wheeled-armoured-vehicles/boxer

Rheinmettal. (n.d.). *Lynx – The new-gen combat vehicle*. Rheinmetall. https://www.rheinmetall.com/en/products/tracked-vehicles/tracked-armoured-vehicles/lynx-infantry-fighting-vehicle

Roblin, S. (2024, May 24). The challenger 3 tank must address the harsh truths of war—or else. *Popular Mechanics*. https://www.popularmechanics.com/military/weapons/a60827379/challenger-3-tank-upgrade/

Royal Australian Navy. (n.d.). *HMAS Hobart (III)*. https://www.navy.gov.au/capabilities/ships-boats-and-submarines/hmas-hobart-iii

Ruitenberg, R. (2024, November 5). Europeans start work on next-generation combat ship for the 2040s. *Defense News*. https://www.defensenews.com/global/europe/2024/11/05/europeans-start-work-on-next-generation-combat-ship-for-the-2040s//

Russian Army Catalogue. (1999). *Self-propelled Artillery and Mortars*. Military Equipment of the Former USSR. https://web.archive.org/web/20100110045031/http://www.armscontrol.ru/atmtc/Arms_systems/Land/Artillery/Self_Propelled/Self_Prop_Art_Mortars.htm#2s9

Saint, V. (n.d.). *ASCOD*. https://armyrecognition.com/military-products/army/infantry-fighting-vehicles/tracked-vehicles/ascod-apc-general-dynamics-light-tracked-armoured-personnel-carrier-technical-data-sheet-specifications-pictures-video-11006155

Saint, V. (2025). *K239 Chunmoo*. https://armyrecognition.com/military-products/army/artillery-vehicles-and-weapons/multiple-launch-rocket-systems/k239-chunmoo

Sandberg, A., & Strömberg, U. (1999). Gripen: with focus on availability performance and life support cost over the product life cycle. *Journal of Quality in Maintenance Engineering*, *5*(4), 325–334. https://doi.org/10.1108/13552519910298082

Sea Forces. (n.d.-a). *La Confiance class Offshore Patrol Vessel OPV French Navy*. https://www.seaforces.org/marint/French-Navy/Patrol-Vessel/La-Confiance-class.htm

Sea Forces. (n.d.-b). *Type 125 Baden Wurttemberg class Frigate German Navy*. seaforces.org. https://www.seaforces.org/marint/German-Navy/Frigate/Type-125-Baden-Wurttemberg-class.htm

Sea Forces. (2013). *Surface Combatant Weapon System Mk-46 GWS (30mm gun weapon system)*. https://web.archive.org/web/20141102201055/http://www.seaforces.org/wpnsys/SURFACE/Mk-46-gun-weapon-system.htm

Seaforces. (n.d.). *OPV 70 Bir Anzaran class offshore patrol vessel Moroccan Navy*. https://www.seaforces.org/marint/Moroccan-Navy/OPV-70-Bir-Anzaran-class.htm

Secret Dèfense. (2008). *Les avisos vont être transformés en patrouilleurs*. https://web.archive.org/web/20090820090534/http://secretdefense.blogs.liberation.fr/defense/2008/10/exclusif-les-av.html

Skoff, G. (2008). Das Mobilitätssystem des Pandur II 8x8. *ATZoffhighway*, *1*(1), 50–59. https://doi.org/10.1007/bf03223639

Staff, D. (2024, December 9). *Tripartite class MineHunter: Overview & specs*. Defense Advancement. https://www.defenseadvancement.com/projects/tripartite-class-minehunter/#:~:text=Design%20and%20Features%20of%20the%20Tripartite%20Class%20Minehunter&text=The%20displacement%20of%20the%20vessels,tons%2C%20depending%20on%20the%20variant.

Steel Beasts. (n.d.-a). *Leopard 2A4*. https://www.steelbeasts.com/sbwiki/index.php/Leopard_2A4

Steel Beasts. (n.d.-b). *Leopard 2A6*. https://www.steelbeasts.com/sbwiki/index.php?title=Leopard_2A6

Stickland, R. (2011). *Jane's Armour and Artillery 2011-2012*. Ihs Global Incorporated.

STV Group. (n.d.). *Main Battle Tank T-72 M1*. https://www.stvgroup.cz/en/product/main_battle_tank_t-72

Tanks Encyclopedia. (2021). *Modern Romanian Armor*. https://tanks-encyclopedia.com/modern/romania

Tellis, A. J. (2011). Dogfight! India's Medium Multi-Role Combat Aircraft Decision. *Carnegie Endowment for International Peace*. https://www.researchgate.net/profile/Ashley-Tellis-2/publication/321596995_Dogfight_India's_Medium_Multi-Role_Combat_Aircraft_Decision/links/5a284df9aca2727dd886ff64/Dogfight-Indias-Medium-Multi-Role-Combat-Aircraft-Decision.pdf

Tringham, K. (2023, August 21). *OCEA despatches two more FPB 98 MKIs for Ukraine*. Default. https://www.janes.com/osint-insights/defence-news/sea/ocea-despatches-two-more-fpb-98-mkis-for-ukraine#:~:text=The%20FPB%2098%20MKI%20patrol,a%20beam%20of%208.3%20m.

TUSAS. (n.d.). *T129 ATAK*. https://web.archive.org/web/20210601200316/https://www.tusas.com/en/products/helicopter/co-development-production/t129-atak

U.S. Army. (2020). *Weapon Systems Handbook 2020-2021*. US DOD. https://www.army.mil/e2/downloads/rv7/2020-2021_Weapon_Systems_Handbook.pdf#page=196

Vasundhara. (2001, May 3). Frankenthal Class (Type 332). *Naval Technology*. https://www.naval-technology.com/projects/frankenthal/

Vasundhara. (2008, January 17). K130 Braunschweig Class Corvette. *Naval Technology*. https://www.naval-technology.com/projects/k130corvette/

Vasundhara. (2023, May 4). Gowind Class Corvette Multi-Mission Combatant. *Naval Technology*. https://www.naval-technology.com/projects/gowind_corvettes/

Vavasseur, X. (2022, March 18). *Fincantieri delivers first PPA 'Thaon di Revel' to Italian Navy*. Naval News. https://www.navalnews.com/naval-news/2022/03/fincantieri-delivers-first-ppa-thaon-di-revel-to-italian-navy/

Weaponsystems.net. (n.d.-a). *M109A5*. https://weaponsystems.net/system/1660-M109A5

Weaponsystems.net. (n.d.-b). *Wielingen class*. https://weaponsystems.net/system/1008-Wielingen+class

Wikipedia. (2025, April 6). *Panther KF51*. https://en.wikipedia.org/wiki/Panther_KF51

Zaloga, S., & Grandsen, J. (1984). *Soviet tanks and combat vehicles of World War Two*.

Zikidis. (2019). Early Warning Against Stealth Aircraft, Missiles and Unmanned Aerial Vehicles. In P. Karampelas & T. Bourlai (Eds.), *Surveillance in Action: Technologies for Civilian, Military, and Cyber Surveillance*. Springer International. https://doi.org/10.1007/978-3-319068533-5

Zikidis, K., Skondras, A., & Tokas, C. (2014). Low Observable Principles, Stealth Aircraft and Anti-Stealth Technologies. *Conference: 2nd Int'l Conf. On Applications of Mathematics and Informatics in Military Sciences (AMIMS)*. https://www.researchgate.net/profile/Konstantinos_Zikidis/publication/259503614_Low_Observable_Principles_Stealth_Aircraft_and_Anti-Stealth_Technologies/links/00b4952c58a741e39f000000.pdf

Юрко, С. В., Безлюдько, А. В., Ильющенко, Д. Н., Шарипов, Р. И., Янковский, И. Н., Министерство образования Республики Беларусь, & Белорусский национальный технический университет. (2016). *125-мм танковая пушка 2А46М* (By Министерство обороны & Военная академия Республики Беларусь) [Book]. БНТУ. https://rep.bntu.by/bitstream/handle/data/24318/125_mm_tankovaya_pushka_2A46M.pdf?sequence=1&isAllowed=y

X. APPENDIX

10.1: Data Comments

1. Monetary values (i.e. military budgets) are reflected current 2024 prices
2. For domestic equipment procurement (Germany, Italy, UK) no TIV values available. Solution:
    a. M-2000:
        i. MPI M2000 = 114, Rafale= 131
        TIV Value Rafale = 55
        55 * 0,87 = TIV M-2000
        = 47,9
    b. ARAVIS = 0.20
    c. LeClerc = same MPI as M1A1
    TIV M1A1= 1.6 = LeClerc
3. Tank Models: Only main chassis are considered, subvariants counted as one (i.e. Leopard 2-A7V, 2-A7A1, counted as 'Leopard 2-A7'
    a. Rationale: subvariants mostly concern optics, communications, and subsystems. Armor packages, gun upgrades, and other major modifications are usually considered different models (i.e. Leopard 2-A6 to A7 models)
4. Germany, Italy, UK: internal procurement data gathered from news sources, government reports & announcements – only credible data (dates, credible outlets, credible figures) are included.
5. Upgrades of military equipment are **included**, but influences the TIV value dramatically
6. 2024 GDP, population, and active personnel are ESTIMATES
7. IV2 indicator 'EXPORTS' is **WITHOUT** aid to Ukraine
8. T-55: Firepower is calculated with HEAT rounds @ 2000m due to lack of APFSDS rounds

10.2.: Supplementary Tables, Graphs, and Figures

Table A.1.
2005 – 2024 Vehicle Procurement Data (Import)

STATE	NR VEHICLES PROCURED	TOTAL PVI	AVERAGE PVI/PERIOD
Belgium	1679	643480	160870
Bulgaria	270	153164	38291
Czech Republic (Czechia)	783	278217	69554
Denmark	806	292463	73116
Estonia	458	33879	8470
France	999	1082036	270509
Germany	2920	1221499	305375
Greece	2413	949917	237479
Hungary	343	75487	18872
Italy	704	2301209	575302
Latvia	558	30759	7690
Luxembourg	153	2454	614
Netherlands	1011	658114	164529
Poland	4643	1892973	473243
Portugal	409	138350	34588
Romania	1717	447310	11828
Slovakia	434	87545	21886
Spain	351	8879	2220
United Kingdom (UK)	3982	1589881	397470
TOTAL	**24633**	**11887616**	**2871906**

Table A.2
2005 – 2024 Vehicle Export Data

STATE	NR VEHICLES EXPORTED	TOTAL PVI	AVERAGE PVI/PERIOD
Belgium	867	86612	21653
Bulgaria	585	26455	6614
Czech Republic (Czechia)	475	28003	7000
Denmark	32	36768	9192
Estonia	0	0	0
France	4181	5200492	1300123
Germany	6127	1673133	418283
Greece	100	526	13
Hungary	22	3901	975
Italy	5791	4637580	1159394
Latvia	0	0	0
Luxembourg	0	0	0

Netherlands	1378	1532031	383008
Poland	678	12726	3182
Portugal	14	42516	10629
Romania	7	86658	21664
Slovakia	113	6833	1708
Spain	1128	972295	243074
United Kingdom (UK)	942	4649285	1162321
TOTAL	**22440**	**18995814**	**4748833**

Figure A.1.:
PVI/Period Share

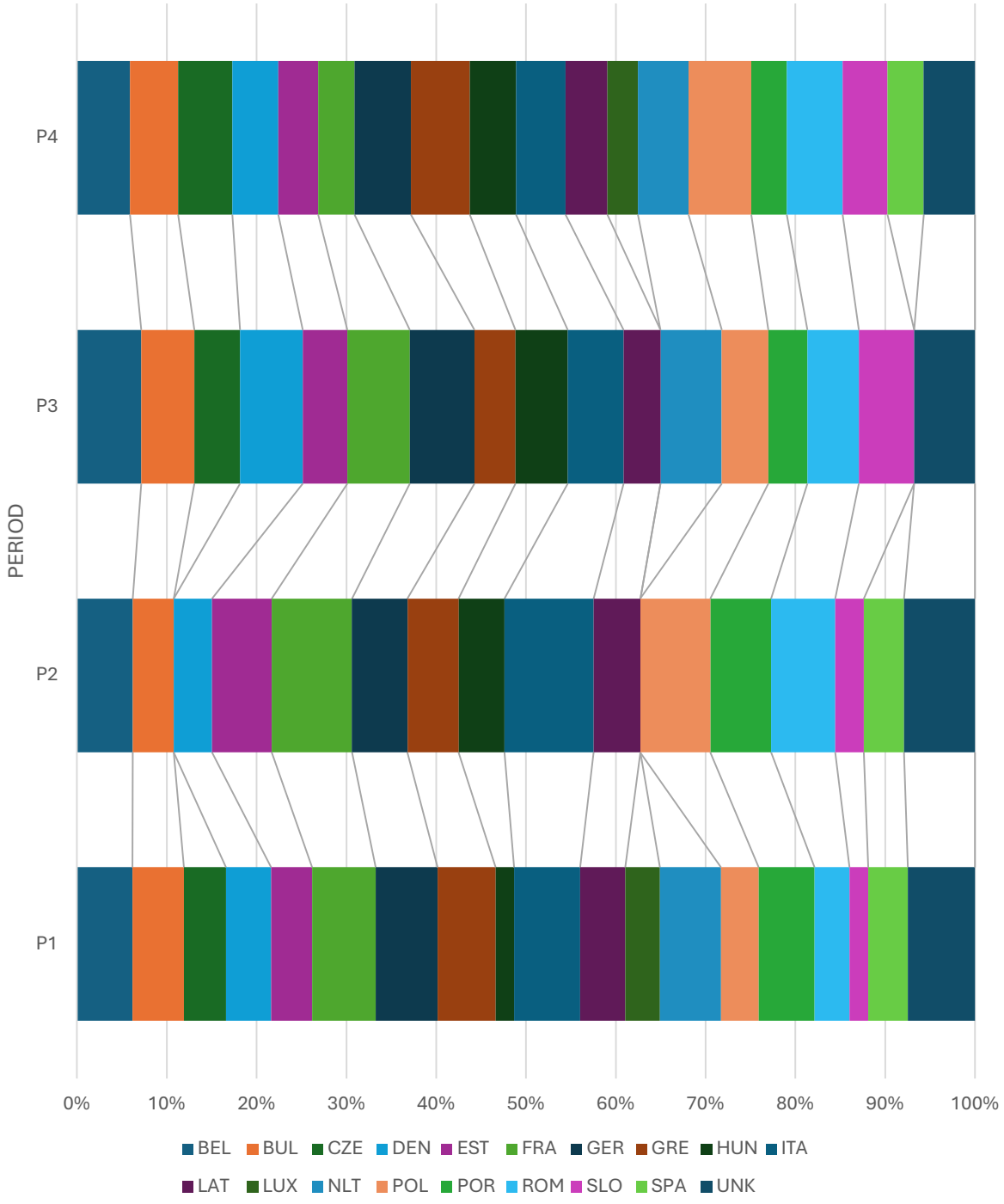


Figure A.2.
Equipment Shares

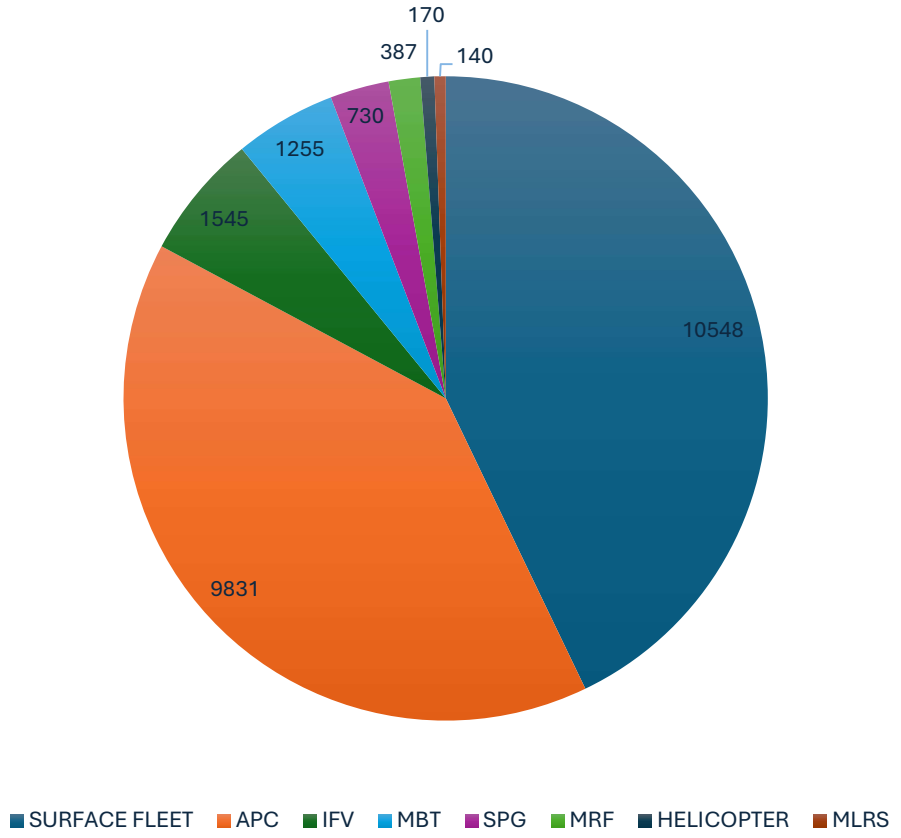
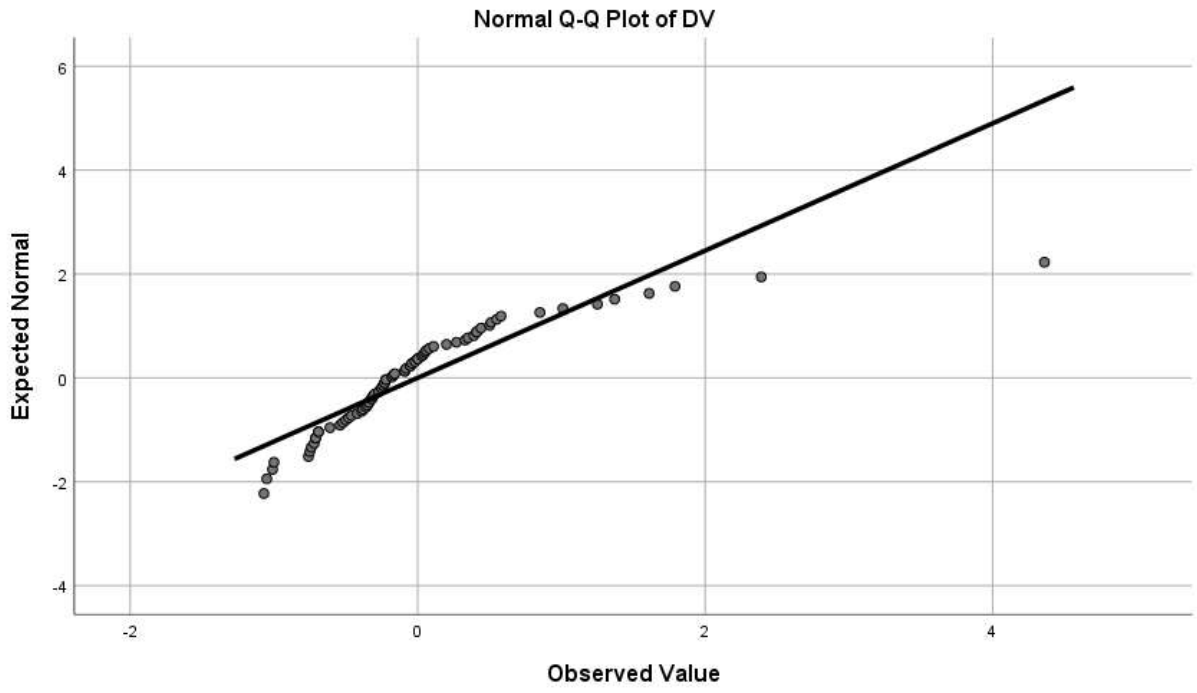


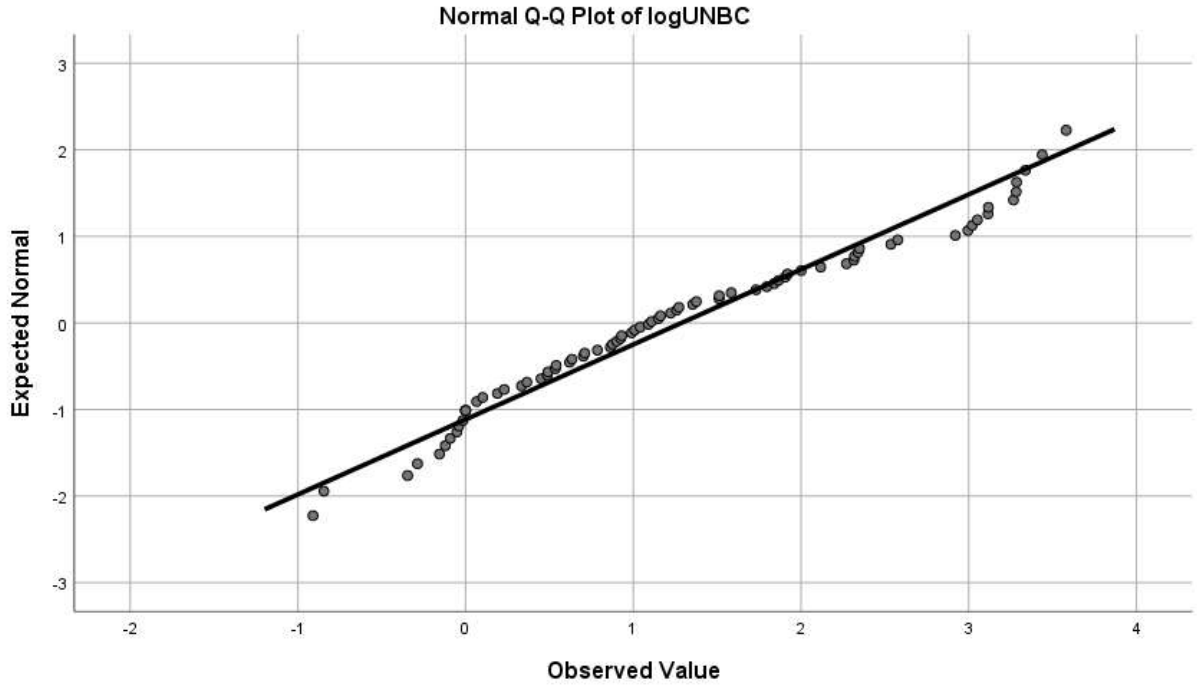
Table A.3
2005 – 2024 Equipment Shares

Designation	Number
SURFACE FLEET	10548
APC	9831
IFV	1545
MBT	1255
SPG	730
MRF	387
HELICOPTER	170
MLRS	140

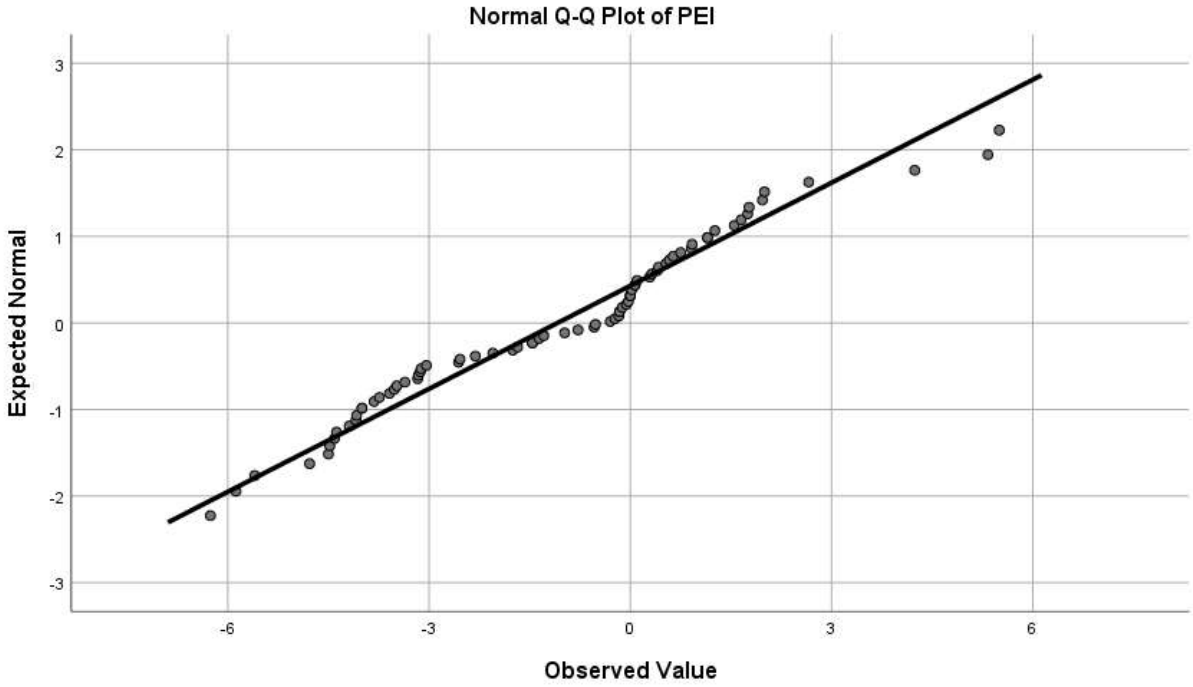
Graph A.1.
QQ-Plot DPE



Graph A.2.
QQ-Plot UCBC



Graph A.3.
QQ-Plot PEI



Graph A.4.
Residuals Scatterplot

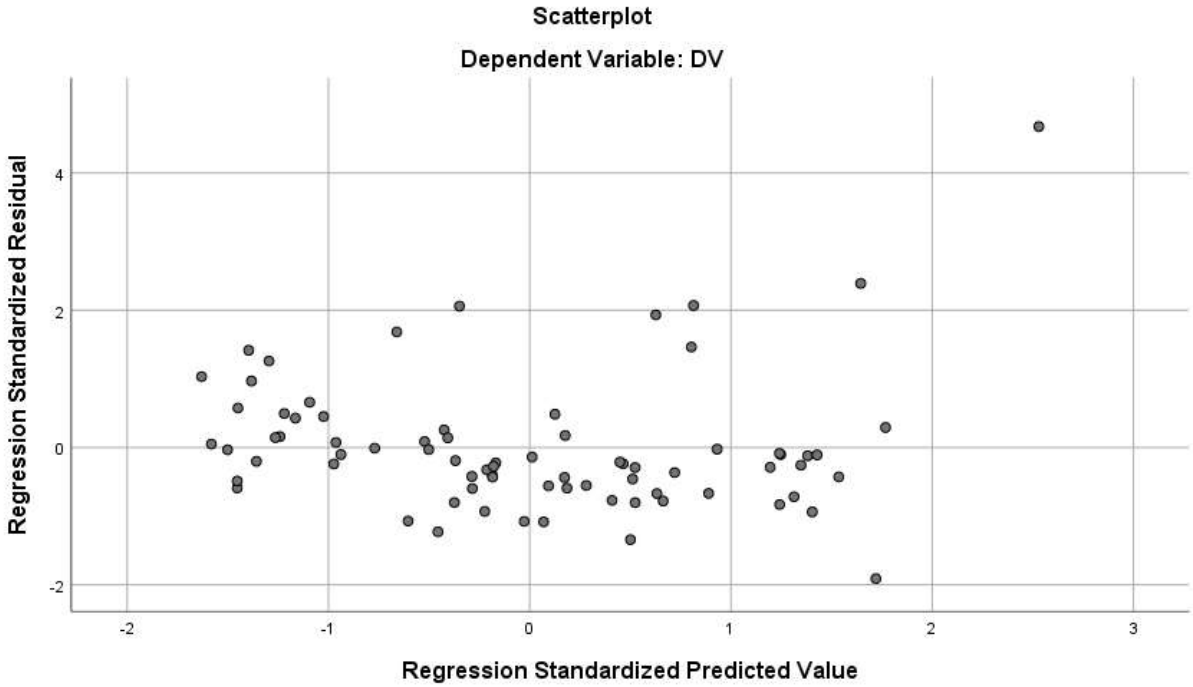


Table A.4.
Multicollinearity Statistics

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	-,666	,139		-4,783	,000		
	UCBC	,413	,074	,584	5,558	,000	,851	1,175
	PEI	-,124	,034	-,384	-3,653	,000	,851	1,175

a. Dependent Variable: DV

Table A.5.
Search Strings

Focus	**Strings**
Broad query	("defense procurement" OR "defense procurement" OR "defense acquisition" OR "defense acquisition") AND ("efficacy" OR "effectiveness" OR "efficiency" OR "performance") AND ("European Union" OR Europe* OR EU OR "European defense" OR "European defense") AND ("strategic autonomy" OR "strategic independence")
Focus on procurement efficacy/performance	("defense procurement" OR "defense acquisition") AND ("procurement efficacy" OR "procurement effectiveness" OR "procurement performance" OR benchmarking) AND (military OR defense OR defense)
Emphasis on European defense industry & capability gaps	("European defense" OR "European defense" OR "Common Security and Defense Policy" OR CSDP) AND (procurement OR acquisition OR armaments OR EDTIB) AND ("capability development" OR "capability gap*" OR "joint procurement")

Strategic autonomy lens (policy & industrial aspects)	("strategic autonomy" OR "strategic independence") AND (defense OR defense) AND (procurement OR acquisition OR "industrial base" OR EDTIB OR "European Defense Fund")
5. Comparative / efficiency-measurement studies	("defense procurement" OR "defense acquisition") AND (efficiency OR DEA OR "data envelopment analysis" OR benchmarking OR "cost overruns") AND ("cross-country" OR comparative OR "international comparison")
Policy instruments & collaborative programs	(PESCO OR "Permanent Structured Cooperation" OR OCCAR OR "European Defense Fund") AND (procurement OR acquisition OR "joint program*" OR "collaborative project*") AND (efficiency OR effectiveness OR outcome*)

Appendix 10.3.: Variable Master List

Table A.6
DVI-1: PVI

BELGIUM	P1	105752	P2	6150	P3	325077,3	P4	206505,6
BULGARIA	P1	48482,1	P2	608	P3	37008	P4	67065,62
CZECHIA	P1	6511,95	P2	0	P3	8299,2	P4	263405,9
DENMARK	P1	12323,61	P2	402,5	P3	239725,9	P4	40011,1
ESTONIA	P1	5454	P2	11912,12	P3	6541,02	P4	9971,55
FRANCE	P1	554968	P2	282953,1	P3	239842,8	P4	4272,45
GERMANY	P1	413772,6	P2	6022,1	P3	349307,8	P4	452397,2
GREECE	P1	191185,1	P2	3014,66	P3	3312	P4	752405,2
HUNGARY	P1	48,3	P2	1330,48	P3	30110,6	P4	43997,2
ITALY	P1	960056	P2	1183232	P3	62060	P4	95920
LATVIA	P1	12334	P2	1445,22	P3	1491,3	P4	15488,6
LUX	P1	1360,8	P2	0	P3	0	P4	1094,9
NL	P1	357549	P2	0	P3	179238,4	P4	121326,6
POLAND	P1		P2		P3		P4	

		2684		59945,46		9815,92		1820531
PORTUGAL	P1		P2		P3		P4	
		118928,4		13254		2315,74		3852
ROMANIA	P1		P2		P3		P4	
		1467,34		23765,12		25995,87		396081,7
SLOVAKIA	P1		P2		P3		P4	
		48,3		87		56000		31410,14
SPAIN	P1		P2		P3		P4	
		4132,8		540		0		4205,35
UK	P1		P2		P3		P4	
		1219341		68240,68		166183		136116

Table A.7
DVI-2: MRI (R1 + R2 +R3)

BELGIUM	P1		P2		P3		P4	
		105752		6150		325077,3		206505,6
BULGARIA	P1		P2		P3		P4	
		48482,1		608		37008		67065,62
CZECHIA	P1		P2		P3		P4	
		6511,95		0		8299,2		263405,9
DENMARK	P1		P2		P3		P4	
		12323,61		402,5		239725,9		40011,1
ESTONIA	P1		P2		P3		P4	
		5454		11912,12		6541,02		9971,55
FRANCE	P1		P2		P3		P4	
		554968		282953,1		239842,8		4272,45
GERMANY	P1		P2		P3		P4	
		413772,6		6022,1		349307,8		452397,2
GREECE	P1		P2		P3		P4	
		191185,1		3014,66		3312		752405,2

HUNGARY	P1	48,3	P2	1330,48	P3	30110,6	P4 43997,2
ITALY	P1	960056	P2	1183232	P3	62060	P4 95920
LATVIA	P1	12334	P2	1445,22	P3	1491,3	P4 15488,6
LUX	P1	1360,8	P2	0	P3	0	P4 1094,9
NL	P1	357549	P2	0	P3	179238,4	P4 121326,6
POLAND	P1	2684	P2	59945,46	P3	9815,92	P4 1820531
PORTUGAL	P1	118928,4	P2	13254	P3	2315,74	P4 3852
ROMANIA	P1	1467,34	P2	23765,12	P3	25995,87	P4 396081,7
SLOVAKIA	P1	48,3	P2	87	P3	56000	P4 31410,14
SPAIN	P1	4132,8	P2	540	P3	0	P4 4205,35
UK	P1	1219341	P2	68240,68	P3	166183	P4 136116

Table A.8.
DV Composite Score ((ZProc + ZMRI) / 2)
(Zprocurement =(x-$\bar{x}$) / σ & ZMRI(x-$\bar{x}$) / σ)

BELGIUM	P1	105752	P2	6150	P3	325077,3	P4	206505,6
BULGARIA	P1	48482,1	P2	608	P3	37008	P4	67065,62
CZECHIA	P1	6511,95	P2	0	P3	8299,2	P4	263405,9
DENMARK	P1	12323,61	P2	402,5	P3	239725,9	P4	40011,1
ESTONIA	P1	5454	P2	11912,12	P3	6541,02	P4	9971,55
FRANCE	P1	554968	P2	282953,1	P3	239842,8	P4	4272,45
GERMANY	P1	413772,6	P2	6022,1	P3	349307,8	P4	452397,2
GREECE	P1	191185,1	P2	3014,66	P3	3312	P4	752405,2
HUNGARY	P1	48,3	P2	1330,48	P3	30110,6	P4	43997,2
ITALY	P1	960056	P2	1183232	P3	62060	P4	95920
LATVIA	P1	12334	P2	1445,22	P3	1491,3	P4	15488,6
LUX	P1	1360,8	P2	0	P3	0	P4	1094,9
NL	P1	357549	P2	0	P3	179238,4	P4	121326,6
POLAND	P1	2684	P2	59945,46	P3	9815,92	P4	1820531

PORTUGAL	P1	118928,4	P2	13254	P3	2315,74	P4	3852
ROMANIA	P1	1467,34	P2	23765,12	P3	25995,87	P4	396081,7
SLOVAKIA	P1	48,3	P2	87	P3	56000	P4	31410,14
SPAIN	P1	4132,8	P2	540	P3	0	P4	4205,35
UK	P1	1219341	P2	68240,68	P3	166183	P4	136116

Table A.9.
IV1: UCBC

BELGIUM	P1	5,13	P2	4,171	P3	3,068	P4	38,362
BULGARIA	P1	0,451	P2	1,7	P3	0,516	P4	0,911
CZECHIA	P1	18,114	P2	16,713	P3	14,09	P4	9,766
DENMARK	P1	10,992	P2	8,386	P3	8,529	P4	12,315
ESTONIA	P1	0,81	P2	0,756	P3	3,466	P4	7,297
FRANCE	P1	3810,583	P2	1310,075	P3	831,399	P4	1301,726
GERMANY	P1	1126,191	P2	987,998	P3	1050,522	P4	2179,475
GREECE	P1	4,304	P2	3,43	P3	12,842	P4	23,76

HUNGARY	P1		P2		P3		P4
		1,164		0,964		0,888	32,403
ITALY	P1		P2		P3		P4
		222,816		83,22		186,78	377,984
LATVIA	P1		P2		P3		P4
		0,123		0,143		1,264	3,097
LUX	P1		P2		P3		P4
		0		0		0	2,819
NL	P1		P2		P3		P4
		80,356		69,189		62,524	218,688
POLAND	P1		P2		P3		P4
		22,579		53,953		131,057	343,394
PORTUGAL	P1		P2		P3		P4
		0,698		1,548		2,315	2,151
ROMANIA	P1		P2		P3		P4
		10,21		7,511		18,712	32,513
SLOVAKIA	P1		P2		P3		P4
		7,97		5,035		6,114	14,511
SPAIN	P1		P2		P3		P4
		208,423		100,26		73,433	206,607
UK	P1		P2		P3		P4
		2741,369		1850,878		1927,222	1918,103

Table A.10.
IV2: PEI

BELGIUM	P1	5,13	P2	4,171	P3	3,068	P4	38,362
BULGARIA	P1	0,451	P2	1,7	P3	0,516	P4	0,911
CZECHIA	P1	18,114	P2	16,713	P3	14,09	P4	9,766
DENMARK	P1	10,992	P2	8,386	P3	8,529	P4	12,315
ESTONIA	P1	0,81	P2	0,756	P3	3,466	P4	7,297
FRANCE	P1	3810,583	P2	1310,075	P3	831,399	P4	1301,726
GERMANY	P1	1126,191	P2	987,998	P3	1050,522	P4	2179,475
GREECE	P1	4,304	P2	3,43	P3	12,842	P4	23,76
HUNGARY	P1	1,164	P2	0,964	P3	0,888	P4	32,403
ITALY	P1	222,816	P2	83,22	P3	186,78	P4	377,984
LATVIA	P1	0,123	P2	0,143	P3	1,264	P4	3,097
LUX	P1	0	P2	0	P3	0	P4	2,819
NL	P1	80,356	P2	69,189	P3	62,524	P4	218,688
POLAND	P1	22,579	P2	53,953	P3	131,057	P4	343,394

PORTUGAL	P1	0,698	P2	1,548	P3	2,315	P4 2,151
ROMANIA	P1	10,21	P2	7,511	P3	18,712	P4 32,513
SLOVAKIA	P1	7,97	P2	5,035	P3	6,114	P4 14,511
SPAIN	P1	208,423	P2	100,26	P3	73,433	P4 206,607
UK	P1	2741,369	P2	1850,878	P3	1927,222	P4 1918,103

Table A.11.
UCBC Log-Transformation

BELGIUM	P1	5,13	P2	4,171	P3	3,068	P4 38,362
BULGARIA	P1	0,451	P2	1,7	P3	0,516	P4 0,911
CZECHIA	P1	18,114	P2	16,713	P3	14,09	P4 9,766
DENMARK	P1	10,992	P2	8,386	P3	8,529	P4 12,315
ESTONIA	P1	0,81	P2	0,756	P3	3,466	P4 7,297
FRANCE	P1	3810,583	P2	1310,075	P3	831,399	P4 1301,726
GERMANY	P1	1126,191	P2	987,998	P3	1050,522	P4 2179,475
GREECE	P1	4,304	P2	3,43	P3	12,842	P4 23,76
HUNGARY	P1	1,164	P2	0,964	P3	0,888	P4 32,403

ITALY	P1	222,816	P2	83,22	P3	186,78	P4 377,984
LATVIA	P1	0,123	P2	0,143	P3	1,264	P4 3,097
LUX	P1	0	P2	0	P3	0	P4 2,819
NL	P1	80,356	P2	69,189	P3	62,524	P4 218,688
POLAND	P1	22,579	P2	53,953	P3	131,057	P4 343,394
PORTUGAL	P1	0,698	P2	1,548	P3	2,315	P4 2,151
ROMANIA	P1	10,21	P2	7,511	P3	18,712	P4 32,513
SLOVAKIA	P1	7,97	P2	5,035	P3	6,114	P4 14,511
SPAIN	P1	208,423	P2	100,26	P3	73,433	P4 206,607
UK	P1	2741,369	P2	1850,878	P3	1927,222	P4 1918,103

10.4. MPI Value List

Table A.12
APC MPI Values

APC VALUES

APC	**Pass. (inc. crew)**	**MA (mm)**	**MOB *(hp/weight)***	**MPI**
Guardian APC	12	12,7	39	117
SandCat	5	0	66	119
LAV-3	10	25	21	131
M-1117	5	40	20	152
L-ATV	5	12,7	40	110
Piranha APC	8	12,7	31	107
Dingo-2	10	7,62	18	81
LMV	5	0	27	58
Griffon VBMR	10	12,7	16	91
Cougar MRAP	6	0	17	46
Eagle-5 4x4	5	0	35	70
DURO-3	12	0	16	67
MaxxPro	10	0	16	58
M-113	2	12,7	22	73
AAV-7A1	24	40	13	204
Ejder Yalcin	11	7,62	27	97
HMMWV-UA	4	12,7	67	148
Lynx KF-41	11	30	25	153
Spartan UK	7	7,62	17	69
Patria 6x6	13	0	18	71
BvS10	5	0	56	102
Serval VBMR	10	7,62	22	86
M-ATV	5	12,7	23	88
XA-180	18	12,7	18	121
ARMA	10	12,7	24	103
CV-90	11	50	26	207
NMS	11	7,62	26	100
RG-32	5	0	19	46
AMV	15	105	18	352
VAMTAC	4	0	70	119
Pandur-2	14	30	20	156
Bushmaster *(reference)*	10	12,7	20	100
PMMC-G5	14	0	22	80
MTV	4	12,7	23	82
RG-31 Nyala	8	12,7	37	116
Freccia APC	4	25	20	109
KLTV	9	12,7	32	112
Scout-SV	6	40	21	157

MXT-MV	12	12,7	19	102
Bronco	16	7,62	35	126
Boxer	4	105	20,6	320
TITUS	13	0	24	80
Cobra-2	10	0	23	68
Wolf-APC	12	0	40,7	102
ARAVIS	7	20	17,4	104
GFF4	11	0	17,76	66
BTR-60P	16	14,5	17,47	121
MT-LB	13	12,7	20	110
OT-64A	12	14,5	12,4	99
VAB-VTT	12	12,7	23	112
Sherpa	5	12,7	22	87
Bastion APC	12	12,7	15	98
Waran	8	7,62	20	80
TPz-1 Fuchs	12	7,62	12	80
VBTP Guarani	11	40	23	180
Puma-4	6	12,7	20	86
Dzik	13	12,7	32	130
Dozor-B	11	12,7	30	120
Saxon APC	12	7,62	14	62

Table A.13
MRF MPI Values

MRF Type	Criteria	Value	Measurement
F-16C	**SA**		
	NCDL	100	
	RR	80 km	
	FLIR/IRST	50	
	Stealth		
	RCS	4	
	EW	50	
	IR Red.	0	
	Supercruise	0	
	MOB		
	Wing Load	689	(kg/m2)
	Max G	9	
	Thrust-to-weight	1,1	
	Max IAS	2414	

FA-50	**SA**	
	NCDL	0
	RR	222
	FLIR/IRST	0
	Stealth	
	RCS	4
	EW	0
	IR Red.	0
	Supercruise	0
	MOB	
	Wing Load	
	Max G	8
	Thrust-to-weight	0,96
	Max IAS	1852
F-35A	**SA**	
	NCDL	100
	RR	200
	FLIR/IRST	100
	Stealth	
	RCS	0,005
	EW	100
	IR Red.	100
	Supercruise	100
	MOB	
	Wing Load	307
	Max G	9
	Thrust-to-weight	0,87
	Max IAS	1960
JAS-39C	**SA**	
	NCDL	100
	RR	120
	FLIR/IRST	100
	Stealth	
	RCS	1,5
	EW	100
	IR Red.	100

	Supercruise	0	
	MOB		
	Wing Load	283	
	Max G	8	
	Thrust-to-weight	1,06	
	Max IAS	1543	
Rafale	**SA**		
	NCDL	100	
	RR	200	
	FLIR/IRST	100	
	Stealth		
	RCS		
	EW	100	
	IR Red.	100	
	Supercruise	100	
	MOB		
	Wing Load	328	Kg/m2
	Max G	9	
	Thrust-to-weight	0,99	
	Max IAS	1960	Km/h
M-2000 Mirage	**SA**		
	NCDL	100	
	RR	100	
	FLIR/IRST	50	
	Stealth		
	RCS	2,5	
	EW	100	
	IR Red.	100	
	Supercruise	0	
	MOB		
	Wing Load	337	
	Max G	9	
	Thrust-to-weight	0,93	
	Max IAS	2336	

Eurofighter Typhoon	**SA**	
	NCDL	100
	RR	185
	FLIR/IRST	100
	Stealth	
	RCS	0,05
	EW	100
	IR Red.	100
	Supercruise	100
	MOB	
	Wing Load	312
	Max G	9
	Thrust-to-weight	1,1
	Max IAS	2400

Table A.13.2.
MRF-MPI Conversion Table

Point conversion Formula
*(value - highest) / highest *100*
100 - new value

Criterion	***Scale***	**F-16** (*Ref*)	**FA-50**	**F-35**	**JAS**	**Rafale**	**M2000 Mirage**	**Eurofighter Typhoon**
NATO Capable Data Link (NCDL)	Yes=100, No=0	100	0	100	100	100	100	100
Radar Range RR	Highest value = 100	36	100	90	54	90	100	92,5
FLIR/IRST Cap.	Both = 100, 1 = 50, 0 = 0	50	0	100	100	100	50	100
Radar Cross Section (EW)	Highest value = 100	0	0	100	40	0	2,5	50
Electronic Warfare Cap. (EW)	Yes=100, No=0	100	0	100	100	100	100	100
Infra-rRed Reduction Cap (IR Red).	Yes=100, No=0	0	0	100	100	100	100	100
Super Cruise	Yes=100, No=0	0	0	100	0	100	0	100
Wing Load	Highest value = 100	100	74	47	41	48	49	45
Max G	Highest value = 100	100	89	100	89	100	100	100
Thrust-to-weight	Highest value = 100	100	87	79	96	90	85	100
Max IAS	Highest value = 100	100	77	81	64	81	97	99
TOTAL COMPONENT		**686**	**427**	**997**	**784**	**909**	**784**	**987**

SCORE								
MPI SCORE	*(TCSi / TCSr) *100*	**100**	**62**	**145**	**113**	**131**	**114**	**143**

Table A.14.1.
Warship Class Weights

CLASS WEIGHTS	
Frigate	4
MCM	1
Missile boat/Corvette	3
Patrol vessel	0,75
Patrol vessel (ocean)	3
LHD	5

Table A.14.2.
Warship MPI Value

MCM	**Displ.**		**MPI**	**MPI WEIGHTED**
MCM-2730 (m)		2730	451	451
Tripartite (m) (ref)		605	100	100
Sandown (m)		600	101	101
Osprey class (m)		895	148	148
Frankenthal-class		650	107	107
Frigates	**Displ.**		**MPI**	**MPI WEIGHTED**
FREMM (f)		6000	186	744
Doorman Class *(f)* (ref)		3220	100	400
Type-31 (f)		5700	177	708
Wielingen Class (f)		2283	71	284
Bel-Net (ASWF-Class)		6400	199	795
Baden-Wurttenmberg		7200	224	894
MEKO-A200		3350	104	416
Commandant Riviere		2230	69	227
SIGMA-90		1692	53	210
Avante 2200		2419	75	301
LHD (Helicopter Landing Dock)	**Displ.**		**MPI**	**MPI WEIGHTED**
"Trieste"		38000	100	500

Destroyer			
Hobart Class	7000	100	500

PB (Coastal)	**Displ.**	**MPI**	**MPI WEIGHTED**
StanFlex-300 PC (pb)	320	196	147
Swath-125 (pb)	125	77	58
Island-PC (pb) (ref)	163	100	75
Castor (pb)	445	273	205
FPB-98	118	72	54
P-400	373	117	87
Gwalarn	67	41	31
FPB-72 / FPB-110	120	74	55
RPB-33	80	45	34
OPV-45	300	184	138
Ocean Eagle-43	90	54	41
Grebe	400	245	184
HSI-32	132	81	61

PB (Ocean)	**Displ.**	**MPI**	**MPI WEIGHTED**
Holland-OPV (pb) (ref)	3750	100	300
OPV-90	1900	51	153
Thaon do Revel Class	4994	133	399
Confiance	700	19	56
POM	1300	35	104
River Class	2000	53	160
OPV-70	800	21	64
OPV-190	500	13	40
OPV-90 / Gowind OPV	1450	39	116

Corv,	**Disp**	**MPI**	**MPI WEIGHTED**
Roussen Class(mb)	580	100	300
K-130	1840	368	1104
Baynunah	915	158	473

Table A.15.
MLRS MPI Values

MLRS VALUES

MLRS	**Range (km)**	**Rocket mm**	**Payload (kg)**	**Mobility**	**MPI**
M-142 HIMARS (GMLRS Unitary)	70	277	90,21 kg warhead * 6 541,26 kg HE	18	181
PULS	45 (LAR160)	160	46kg warhead, * 26 per vehicle = 1196kg HE	13	198
M-270A2 MLRS (M26A1 ER) (*ref*)	45	277	33g TNT per grenade *518 per missile = 17kg per missile,	25	100

			*12 rockets = 205KG total		
BM-21	30	122	20kg warheads *40 = 800	13	148
K-239 Chunmoo	45	227	17kg * 6 = 102kg	15	77

Table A.16.
SPG MPI Values

SPG VALUES

SPG	Range	Mobility	RPM	Shell Variety	MPI
Caesar-155 *(ref)*	42	25	6	7	100
2S1-122	22	19	5	5	71
ATMOS-2000	40	22	7	4	82
M-109A5	23	16	1	3	45
PzH-2000	54	17	10	6	112
K-9 Thunder	60	21	7	5	103
RCH-155	40	21	9	10	118
Archer-155	35	10	8	10	100

Table A.17.
Combat Helicopter MPI Values

HELICOPTER	Max Speed	Main Gun	MTOW (kg)	Service Ceiling	MPI
AH-64E Apache (Ref)	293	30mm	10433	6400m	100
AH-64E Apache Longbow	293	30mm	10433	6400m	100
AH-1Z Viper	411	20mm	8391	6100m	96
OH-58D	241	12,7mm	2495	4572m	46
Mi-24D/V	335	12,7mm	11500	4496m	86
T-129B ATAK	281	20mm	5056	4572m	70

Table A.18.
IFV MPI Values

IFV	MOB	Muzzle Velocity (m/s)	Armor (front) (mm)	Crew Size	MPI
Piranha-3	14	230	14	4	50
CV-90	26	1000	30	11	122
Marder-1A3 (Ref)	21	1100	20	9	100
Lynx KF-41	17	1405	20	9	102
ASCOD -	28	950	20	11	111
AMV-XP	18	1000	10	15	98
Pandur-2 IFV -	20	1080	10	14	100
Scout-SV REC -	21	1000	10	3	74

Piranha-5 IFV -	21	1080	14,5	11	98
Boxer IFV	17	1405	20	9	102
VBCI	17	1360	14	11	89
VBM Freccia	18	1100	30	11	115
BMP-1	19	960	30	10	146
BMP-2	21	960	33	10	154
BTR-80	19	960	10	10	84

Table A.19.
MBT MPI Values

MBT Type	**Criterion**	**Value**
M1A1 (*reference*)	*F*	750
	M	25,9
	P	1700
	MPI	**100**
M1A2	*F*	840
	M	23,1
	P	2450
	MPI	**113**
Leopard 1A5	*F*	530
	M	19,6
	P	480
	MPI	**58**
Leopard 2A4	*F*	600
	M	27,2
	P	1700
	MPI	**95**
Leopard 2A6	*F*	600
	M	24,2
	P	2970
	MPI	**116**
Leopard 2A7	*F*	620
	M	25,1
	P	2970
	MPI	**118**
Leopard 2A8	*F*	620
	M	25,1

	P	2970
	MPI	**118**
K-2 B. Panther	*F*	640
	M	27,3
	P	2140
	MPI	**105**
KF-51 Panther	*F*	820
	M	25,4
	P	2570
	MPI	**119**
FV-107 Scimitar		
	F	115
	M	20,5
	P	220
	MPI	**36**
Leclerc XXI	*F*	640
	M	27,5
	P	1900
	MPI	**101**
Ariete C2	*F*	573
	M	23,5
	P	500
	MPI	**66**
Challenger 3	*F*	600
	M	22,1
	P	2140
	MPI	**97**
T-72M1	*F*	400
	M	19
	P	430
	MPI	**51**
T-55	*F*	350
	M	21
	P	200
	MPI	**47**

APPENDIX 10.4.
STATE PROFILE: BELGIUM

Procurement Data

BELGIUM
P-1

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV/Unit	MEV	PVI
Italy	LMV	APC	2005	440	2008	3	58	0,15	8,7	**26,1**
Switzerland	Piranha-3 -	APC	2006	242	2015	9	107	0,3	32,1	**288,9**
France	NH-90 TTH	transport helicopter	2007	4	2014	7				
Germany	Dingo-2	APC	2005	220	2011	6	81	0,35	28,35	**6237**
Netherlands	Doorman	frigate	2005	2	2008	3	400	124	4960	**99200**
United States	C-130E Hercules	transport aircraft	2007	1	2009	2				
Portugal	A-330	transport aircraft	2009	1	2009	1				
TOTAL				910						**105752**

BELGIUM
P-2

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
France	Castor	patrol boat	2013	2	2015	2	**205**	**15**	**3075**	**6150**
Portugal	A-321	transport aircraft	2014	1	2014	1				
				3						**6150**

BELGIUM
P-3

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United States	F-35A Lightning-2	FGA aircraft	2018	34	2030	12	145	55	7975	**271150**
France	MCM-2730	MCM ship	2019	6	2026	7	451	18	8118	**48708**
France	Griffon VBMR	APC	2019	382	2030	11	91	0,15	13,65	**5214,3**
France	Jaguar EBRC	armoured car	2019	60	0					
TOTAL				485						**325072,3**

BELGIUM
P-4

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
France	CAESAR 155mm	self-propelled gun	2022	9	0	202 7	100	1,1	110	**990**
Netherlands	ASWF-Class (Bel-Net Frigate)	frigate	2023	2	0	202 6	795	124	9858 0	**197160**
United States	MQ-9 UAV	UAV	2020	4	0					

United States	L-ATV	APC	2020	322	2025	5	110	0,18	19,8	**6375,6**
Sweden	Skeldar	UAV	2020	5	0					
United States	RQ-21 Blackjack	UAV	2021	4	2022	1				
Germany	EC-145	light helicopter	2024	15	0					
France	CAESAR 155mm	self-propelled gun	2023	18	0		100	1,1	110	**1980**
TOTAL				370						**206505,6**

Export Data

BELGIUM
P-1

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV/Unit	MEV	PVI
Jordan	F-16C	FGA aircraft	2006	16	2009	3	100	11,14	1114	17824
Morocco	M-109A1 155mm	SPG	2006	43	2008	2	45	0,44	19,8	851,4
Jordan	M-113	APC	2005	10	2005	1	73	0,1	7,3	73
Jordan	M-113	APC	2005	48	2005	1	73	0,12	7,3	350,4
Jordan	Puma-4	IFV	2005	13	2005	1	86	0,36	30,96	402,48
Jordan	Spartan UK	APC	2005	143	2007	2	69	0,1	6,9	986,7
Benin	A-109	light helicopter	2007	4	2009	2				
Chad	AML	armoured car	2006	82	2010	4				
Benin	M-113	APC	2007	18	2007	1	73	0,1	7,3	7,3*18
United Nations**	Pandur	APC	2006	15	2006	1	156	0,12	18,72	280,8
Bulgaria	Wielingen	frigate	2008	2	2009	1	284	80	22720	45440
Bulgaria	Tripartite	MCM ship	2008	1	2009	1	100	22	2200	2200
Lebanon	Puma-4	IFV	2007	22	2010	3	86	0,36	30,96	681,12
Lebanon	M-113	APC	2007	12	2009	2	73	0,1	7,3	87,6
Uruguay	M-113	APC	2007	3	2008	1	73	0,1	7,3	21,9
Chile	M-113	APC	2008	21	2009	1	73	0,12	7,3	153,3
Jordan	M-113	APC	2007	18	2008	1	73	0,1	7,3	131,4
Bahrain	Puma-4	IFV	2007	42	2008	1	86	0,36	30,96	1300,32
Bahrain	M-113	APC	2007	8	2008	1	73	0,12	7,3	58,4
Morocco	Puma-4	IFV	2008	90	2009	1	86	0,36	30,96	2786,4
Morocco	M-113	APC	2008	20	2009	1	73	0,12	7,3	146
Morocco	M-113	APC	2009	13	2009	1	73	0,1	7,3	95,42
France	AS-565	helicopter	2009	2	2009	1				
TOTAL										**73870,64**

BELGIUM
P-2

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV/Unit	MEV	PVI
Jordan	F-16C	FGA aircraft	2010	9	2011	1	100	11,4	1140	10260
Jordan	M-113	APC	2010	6	2010	1	73	0,1	7,3	43,8
United Kingdom	BAe-146	transport aircraft	2012	2	2013	1				
Philippines	M-113	APC	2014	24	2015	1	73	0,1	7,3	175,2
Indonesia	M-113	APC	2014	150	2018	4	73	0,1	7,3	1095
Bahrain	M-113	APC	2014	45	2016	2	73	0,12	7,3	328,5
TOTAL										**11902,5**

BELGIUM P-3

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV/Unit	MEV	PVI
Indonesia	M-109A1 155mm	SPG	2016	36	2018	2	45	0,73	32,85	65,7
Austria	Pandur-2	APC	2015	7	2015	1	156	0,14	21,84	152,88
France	AS-565	helicopter	2017	4	2018	1				
Myanmar	EC-120 Colibri	light helicopter	2016	1	2016	1				
Indonesia	M-113	APC	2016	4	2018	2	73	0,12	7,3	29,2
TOTAL										**247,78**

BELGIUM P-4

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV/Unit	MEV	PVI
Ukraine	M-109A1 155mm	SPG	2022	28	2022	1	45	0,44	21,12	591,36
Canada	Alpha Jet	trainer/combat aircraft	2020	25	2022	2				
Germany	EC-145	light helicopter	2020	3	2021	1				
Pakistan	C-130H Hercules	transport aircraft	2021	7	2023	2				
Ukraine	MO-120-RT 120mm	mortar	2022	4	2022	1				
Ukraine	LMV	APC	2023	380	2024					
Ukraine	M-113	APC	2022	136	2023					
Ukraine	Leopard-1A5	tank	2023	27	2025					
Ukraine	BPz-2	armoured recovery vehicle	2023	5	0					
Ukraine	F-16C	FGA aircraft	2023	30	2028					
Ukraine	Tripartite	MCM ship	2024	3	2025					
TOTAL										**591,36**

D-GBARD Data

BELGIUM P-1	R&D EXPENDITURE	%of GBARD
2005	4,690	0,22
2006	5,217	0,28

	2007	5,739	0,24
	2008	5,630	0,19
	2009	4,375	0,18
TOTAL		**25,651**	**1,11**
AVERAGE		**5,130**	**0,222**

BELGIUM P-2	**R&D EXPENDITURE**	**%of GBARD**
2010	4,158	0,18
2011	4,215	0,17
2012	4,181	0,16
2013	4,131	0,15
2014	4,171	0,1
TOTAL	**20,856**	**0,76**
AVERAGE	**4,171**	

BELGIUM P-3	**R&D EXPENDITURE**	**%of GBARD**
2015	2,598	0,09
2016	2,402	0,09
2017	2,644	0,1
2018	3,067	0,14
2019	4,631	0,7
TOTAL	**15,342**	**1,12**
AVERAGE	**3,068**	

BELGIUM P-4	**R&D EXPENDITURE**	**%of GBARD**
2020	23,912	0,76
2021	27,802	1,08
2022	41,392	1,23
2023	47,487	1,25
2024	51,215	1,35
TOTAL	**191,808**	**5,67**
AVERAGE	**38,362**	

Military Budgets / GDP / R3 Calculations

BELGIUM P-1	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2005	4228,2	385,93	4,23	
2006	4307,9	408,28	4,31	
2007	5164,0	470,98	5,16	

	2008	6295,8	517,27	6,3	
	2009	5620,7	482,73	5,62	
TOTAL		**25616,6**	**2265,2**		
AVERAGE		**5123,3**	**453,04**		**1,131**
		5,1233			

BELGIUM P-2	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	
2010	5244,7	481,81	5,24	
2011	5499,4	523,24	5,5	
2012	5169,0	496,47	5,17	
2013	5263,2	521,8	5,26	
2014	5191,5	535,53	5,19	
TOTAL	**26367,8**	**2558,85**		
AVERAGE	**5273,6**	**511,8**		**1,030**
	5,2736			

BELGIUM P-3	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	
2015	4202,1	462,38	4,2	
2016	4255,5	475,934	4,26	
2017	4432,8	502,59	4,43	
2018	4840,1	543,55	4,84	
2019	4761,2	535,92	4,76	
TOTAL	**22491,7**	**2520,374**		
AVERAGE	**4498,34**	**504,074**		**0,892**
	4,4983			

BELGIUM P-4	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	
2020	5317,5	525,6	5,32	
2021	6239,4	601,3	6,24	
2022	6890,2	584,07	6,89	
2023	7629,4	632,4	7,63	
2024	7938,0	662,18	7,94	
TOTAL	**34014,4**	**3005,55**		
AVERAGE	**6802,88**	**601,11**		**1,132**

Active Personnel / Population / R1, R2, & MRI Calculation

BELGIUM P-1	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2005	37000	10480000				
2006	40000	10550000				
2007	39000	10630000				

	2008	39000	10710000				
	2009	39482	10800000				
TOTAL		**194482**	**53170000**				
AVERAGE		**38896**	**10634000**	0,668171672	0,131717914	1,131	**0,644**

BELGIUM P-2		**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
	2010	35736	10900000				
	2011	34050	11040000				
	2012	30700	11110000				
	2013	37500	11160000				
	2014	37600	11210000				
TOTAL		**175586**	**55420000**				
AVERAGE		**35117**	**11084000**	0,619956739	0,150256854	1,03	**0,600**

BELGIUM P-3		**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
	2015	36350	11270000				
	2016	33800	11330000				
	2017	32000	11380000				
	2018	31500	11430000				
	2019	26000	11490000				
TOTAL		**159650**	**56900000**				
AVERAGE		**31930**	**11380000**	0,580445922	0,140882242	0,892	**0,538**

BELGIUM P-4		**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
	2020	24000	11540000				
	2021	24000	11590000				
	2022	24000	11680000				
	2023	24500	11790000				
	2024	25000	11900000				
TOTAL		**121500**	**58500000**				
AVERAGE		24300	11700000	0,488116639	0,279953909	1,132	**0,633**

PEI-Calculation

BELGIUM	**EXPORT**	**IMPORT**	**∑EX/∑IM (LOG(∑EX/∑IM))**
P1	73.870,64	105.752,00	-0,16
P2	11.902,50	6.150,00	0,29
P3	247,78	325.077,30	-3,12
P4	591,36	206.505,60	-2,54

APPENDIX 10.5.
STATE PROFILE: **BULGARIA**

Procurement Data

BULGARIA P-1

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV/ Unit	MEV	PVI
Italy	C-27J -	transport aircraft	2006	3	2011	5				
France	AS-532 Cougar	transport helicopter	2005	12	2010	5				
France	AS-565M	helicopter	2005	3	2012	7				
Belgium	Wielingen	frigate	2008	2	2009	1	284	80	22720	**45440**
Belgium	Tripartite	MCM ship	2008	1	2009	1	100	22	2200	2200
United States	M-1117 Guardian	APC	2008	7	2008	1	152	0,4	60,8	**425,6**
Israel	SandCat	APC	2008	25	2010	2	119	0,14	16,66	416,5
TOTAL				53						**48482,1**

BULGARIA P-2

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV/ Unit	MEV	PVI
United States	M-1117 Guardian	APC	2014	10	2015	1	152	0,4	60,8	**608**
TOTAL				95						**608**

BULGARIA P-3

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV/ Unit	MEV	PVI
United States	F-16V Viper	FGA aircraft	2019	8	2026	7	100	**40**	4000	**32000**
United States	M-1117 Guardian	APC	2014	10	2015	1	152	**0,4**	60,8	**608**
Netherlands	Tripartite	MCM ship	2019	2	2020	1	100	**22**	2200	**4400**
Norway	AS-565M	helicopter	2018	1	2019	1				
TOTAL				21						**37008**

BULGARIA P-4

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV/ Unit	MEV	PVI
Germany	OPV-90	frigate	2020	2	2026	6	153	93	14229	**28458**
United States	F-16V Viper	FGA aircraft	2022	8	2028	5	100	40	4000	**32000**
Canada	LAV-3 -	APC	2023	93	2028	5	131	0,3	39,3	**3654,9**
Canada	Piranha-3 IFV --	IFV	2023	90	2028	5	50	0,6	30	**2700**
UAE	Guardian APC	APC	2020	12	2022	2	117	0,18	21,06	**252,72**
Czechia	Z-142	trainer aircraft	2020	4	2021	1				

Germany	IRIS-T SL	SAM system	2024	1	0					
TOTAL				210						67066

Export Data

BULGARIA P-1

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV/ Unit	MEV	PVI
Mali	Mi-24D	combat helicopter	2006	2	2007	1	86	3,3	283,8	567,6
Mali	BRDM-2	armoured reconnaissance vehicle	2006	44	2009	3				
Georgia	Su-25	ground-attack aircraft	2005	4	2005	1				
Mali	BTR-60PB	APC	2007	34	2009	2	121	0,17	20,57	699,38
Chad	2S1 122mm	SPG	2007	10	2009	2	71	0,4	28,4	284
Mali	Mi-24D	combat helicopter	2008	2	2009	1	86	3,3	283,8	567,6
Georgia	D-20 152mm	towed gun	2009	12	2009	1				
TOTAL										**2118,58**

BULGARIA P-2

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV/Unit	MEV	PVI
nknown recipient(s)	L-39Z	trainer/combat aircraft	2011	3	2013					
Cambodia	BTR-60PB	APC	2010	40	2010		121	0,1	4	160
Cambodia	BRDM-2	armoured reconnaissance vehicle	2010	4	2010					
Uganda	L-39Z	trainer/combat aircraft	2010	3	2012					
Georgia	D-30 122mm	towed gun	2011	12	2011					
Mali	Mi-24D	combat helicopter	2011	2	2012		86	3,3	283,8	567,6
Mali	BM-21 122mm	MLRS	2013	30	2013		148	0,24	35,52	1065,6
Tajikistan	BM-21 122mm	MLRS	2013	15	2013		148	0,24	35,52	532,8
Georgia	T-72M1	tank	2013	5	2013		51	1,04	53,04	265,2
DR Congo	D-20 152mm	towed gun	2013	12	2015					
Iraq	D-20 152mm	towed gun	2014	18	2014					
Angola	MT-LB	APC	2014	31	2015		110	0,25	27,5	852,5
Iraq	2B11 120mm	mortar	2014	400	2017					
Senegal	2B11 120mm	mortar	2014	8	2014					
Lithuania	2B11 120mm	mortar	2013	36	2014					
Angola	D-20 152mm	towed gun	2014	18	2015					
TOTAL										**3443,7**

BULGARIA P-3

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV/Unit	MEV	PVI
Iraq	BMP-1	IFV	2015	280	2016	1	146	0,36	52,56	14716,8
Nigeria	BTR-60PB	APC	2015	2	2015	1	121	0,1	12,1	24,2
Angola	D-30 122mm	towed gun	2015	27	2017					
Senegal	2B11 120mm	mortar	2015	24	2015					
Uganda	2B11 120mm	mortar	2015	10	2015					
Nigeria	BM-21 122mm	MLRS	2015	10	2015	1	148	0,24	35,52	355,2
Saudi Arabia	BTR-60P	APC	2016	24	2017	1	121	0,08	9,68	232,32
Cote d'Ivoire	Mi-24D	combat helicopter	2016	3	2017	1	86	3,3	283,8	851,4
Angola	BTS	armoured recovery vehicle	2017	5	2019					
Angola	BM-21 122mm	MLRS	2017	20	2019	2	148	0,24	35,52	710,4
Cote d'Ivoire	An-26	transport aircraft	2017	2	2018					
Uganda	L-39Z	trainer/combat aircraft	2018	2	2018					
Burkina Faso	Mi-24D	combat helicopter	2018	3	2021	3	86	3,3	283,8	851,4
Cote d'Ivoire	Mi-24V	combat helicopter	2019	2	2021	2	86	3,4	292,4	584,8
Angola	2S1 122mm	SPG	2018	9	2019	1	71	0,4	28,4	255,6
TOTAL										**18582,12**

BULGARIA P-4

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV/Unit	MEV	PVI
Iraq	BMP-1	IFV	2021	20	2022	1	146	0,36	52,56	1051,2
Iraq	T-72M1	tank	2021	10	2022	1	51	1,04	53,04	530,4
Uganda	T-55	tank	2021	31	2022	1	47	0,5	23,5	728,5
Senegal	2B11 120mm	mortar	2021	12	2022	1				
Ukraine	BTR-60PB	APC	2023	100	2024					
Nigeria	2B11 120mm	mortar	2023	75	2023	1				
Ukraine	2S1 122mm	SPG	2023	10	2024					
TOTAL										**2310,1**

D-GBARD Data

BULGARIA P-1 **R&D EXPENDITURE** **%of GBARD**

	2005	0,324	0,44
	2006	0,41	0,45
	2007	0,357	0,45
	2008	0,486	0,58
	2009	0,68	3,1
TOTAL		**2,257**	**5,02**
AVERAGE		**0,451**	

BULGARIA P-2	**R&D EXPENDITURE**	**%of GBARD**
2010	3,096	2,33
2011	2,25	1,66
2012	1,678	1,4
2013	1,433	0,04
2014	0,041	0,1
TOTAL	**8,498**	**5,53**
AVERAGE	**1,700**	

BULGARIA P-3	**R&D EXPENDITURE**	**%of GBARD**
2015	0,108	0,02
2016	0,016	0,61
2017	0,665	0,73
2018	0,833	0,7
2019	0,96	0,83
TOTAL	**2,582**	**2,89**
AVERAGE	**0,516**	

BULGARIA P-4	**R&D EXPENDITURE**	**%of GBARD**
2020	1,204	0,36
2021	0,603	0,41
2022	0,774	0,41
2023	0,867	0,44
2024	1,105	0,44
TOTAL	**4,553**	**2,06**
AVERAGE	**0,911**	

Military Budgets / GDP / R3 Calculations

BULGARIA P-1	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2005	667,7	29,87	0,67	
2006	715,7	34,38	0,72	
2007	990,2	44,43	0,99	
2008	1161,5	54,48	1,17	
2009	905,0	52,02	0,91	

TOTAL		**4440,0**	**215,18**			
AVERAGE		**888**	**43,04**			**2,063**
		0,8880				

BULGARIA P-2	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2010	832,5	50,69	0,833	
2011	757,9	57,68	0,76	
2012	722,1	54,3	0,722	
2013	811,6	55,82	0,812	
2014	747,5	57,08	0,75	
TOTAL	**3871,7**	**275,57**		
AVERAGE	**774,3**	**55,1**		**1,405**
	0,7743			

BULGARIA P-3	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2015	632,5	50,77	0,63	
2016	670,6	53,93	0,67	
2017	720,0	52,29	0,72	
2018	961,3	66,4	0,96	
2019	2158,6	68,89	2,16	
TOTAL	**5143,0**	**292,28**		**1,760**
AVERAGE	**1028,6**	**58,456**		
	1,0286			

BULGARIA P-4	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2020	1119,0	70,31	1,2	
2021	1275,2	84,1	1,28	
2022	1436,9	90,42	1,44	
2023	1918,4	101,61	1,92	
2024	2001,0	108,42	2,00	
TOTAL	**7750,6**	**454,86**		
AVERAGE	**1550,1**	**91,0**		**1,709**

Active Personnel / Population / R1, R2, & MRI Calculation

BULGARIA P-1	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2005	85000	7689000				
2006	75000	7601000				
2007	75000	7545000				
2008	75000	7493000				
2009	65315	7444000				
TOTAL	**375315**	**37772000**				
AVERAGE	**75063**	**7554400**	1,038871547	0,011830063	2,063	**1,038**

BULGARIA P-2	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2010	65315	7369000				
2011	47300	7348000				
2012	47300	7306000				
2013	47300	7265000				
2014	47300	7224000				
TOTAL	**254515**	**36512000**				
AVERAGE	50903	7302400	0,90149766	0,015211284	1,405	**0,774**

BULGARIA P-3	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2015	47300	7178000				
2016	31600	7128000				
2017	31000	7076000				
2018	36950	7025000				
2019	37000	6976000				
TOTAL	**183850**	**35383000**				
AVERAGE	36770	7076600	0,792111274	0,027973892	1,76	**0,860**

BULGARIA P-4	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2020	37000	6934000				
2021	37000	6878000				
2022	37000	6643000				
2023	37000	6447000				
2024	37000	6325000				
TOTAL	**185000**	**33227000**				
AVERAGE	37000	6645400	0,745680597	0,041894595	1,709	**0,832**

PEI-Calculation

BULGARIA	EXPORT	IMPORT	∑EX/∑IM (LOG(∑EX/∑IM))
P1	2.118,58	48.482,10	-1,36
P2	3.443,70	608,00	0,75
P3	18.585,12	37.008,00	-0,30
P4	2.310,10	67.065,62	-1,46

APPENDIX 10.6.
STATE PROFILE: **CZECH REPUBLIC**

Procurement Data

CZECHIA
P-1

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Spain	C-295 -	transport aircraft	2009	4	2011	2				
Germany	Dingo-2	APC	2007	4	2008	1	81	0,35	28,35	**113,4**
Italy	LMV	APC	2007	4	2008	1	58	0,15	8,7	**34,8**
Germany	Dingo-2	APC	2008	15	2008	1	81	0,35	28,35	**425,25**
Italy	LMV	APC	2008	15	2008	1	58	0,15	8,7	**130,5**
Austria	Pandur-2 -	APC	2009	107	2013	4	156	0,3	46,8	**5007,6**
Italy	LMV	APC	2009	90	2013	4	58	0,15	8,7	**783**
Germany	Dingo-2	APC	2008	2	2008	1	81	0,35	8,7	**17,4**
TOTAL				237						**6511,95**

CZECHIA
P-2

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United States	ScanEagle	UAV	2014	10	2015	1				
										0

CZECHIA
P-3

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV (MPI*TIV)	PVI
United States	UH-1Y	helicopter	2019	8	2024	5				
United States	AH-1Z Viper	combat helicopter	2019	4	2023	4	96	14,5	1392	**5328**
Spain	C-295 -	transport aircraft	2019	2	2021	2				
Austria	Pandur-2 -	APC	2017	20	2020	3	156	0,3	46,8	**936**
France	TITUS -	APC	2019	62	2024	5	80	0,27	21,6	**1339,2**
Italy	LMV	APC	2018	80	2023	5	58	0,15	8,7	**696**
United States	Enstrom-480	light helicopter	2017	4	2018	1				
TOTAL				180						**8299,2**

CZECHIA
P-4

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
France	CAESAR 155mm -	self-propelled gun	2021	52	2026	5	100	1,07	107	**5564**

Germany	Leopard-2A4 CV-90 Mk-4	tank	2022	14	2023	1	95	1,6	152	**2128**
Sweden	APC	APC	2023	36	2030	7	207	0,3	62,1	**2235,6**
United States	AH-1Z Viper	combat helicopter	2022	6	2026	4	96	9,57	918,72	**5512,32**
United States	UH-1Y	helicopter	2022	2	0					
Germany	Buffel ARV	armoured recovery vehicle	2022	1	2023	1				
France	CAESAR 155mm -	self-propelled gun	2022	10	2027	5	100	1,07	107	**1070**
Germany	Leopard-2A4	tank	2024	14	2026	2	95	1,6	152	**2128**
Germany	Buffel ARV	armoured recovery vehicle	2024	1	0					
Germany	Leopard-2A4	tank	2024	14	2025	1	95	1,6	152	**2128**
United States	F-35A Lightning-2	FGA aircraft	2024	24	2034	10	145	55	7975	**191400**
Sweden	CV-90 Mk-4 IFV	IFV	2023	210	2027	3	122	**2**	**244**	**51240**
TOTAL				274						**263405,92**

Export Data

CZECHIA P-1

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV/ Unit	MEV	PVI
Mali	MiG-21MF	fighter aircraft	2005	3	2005	1				
Afghanistan	Mi-24V	combat helicopter	2007	6	2009	2	86	5,61	482,46	2895,0
Afghanistan	Mi-17	transport helicopter	2007	6	2008	1				
Georgia	D-30 122mm	towed gun	2005	30	2006	1				
Croatia	Z-142	trainer aircraft	2006	5	2008	2				
Equatorial Guinea	BMP-1	IFV	2006	20	2007	1	146	0,36	52,56	1051,2
Indonesia	BM-21 122mm	MLRS	2007	3	2008	1	148	0,36	53,28	159,84
Angola	Mi-17	transport helicopter	2006	2	2007	1				
United Nations**	OT-64A	APC	2007	10	2008	1	99	0,12	11,88	111,8
Slovakia	L-410 Turbolet	light transport aircraft	2008	2	2010	2				
Nepal	OT-64A	APC	2007	8	2008	1	99	0,12	11,88	95,04
Georgia	BM-21 122mm	MLRS	2009	12	2009	1	148	0,36	53,28	639,36
TOTAL										**4952,24**

CZECHIA P-2

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV/ Unit	MEV	PVI
Russia	L-410 Turbolet	light transport aircraft	2010	4	2011					
Yemen	BMP-1	IFV	2010	15	2010	1	146	0,1	52,56	788,4

								3		
Iraq	L-159B	trainer/combat aircraft	2014	1	2017					
Russia	L-410 Turbolet	light transport aircraft	2011	3	2012					
Russia	L-410 Turbolet	light transport aircraft	2012	4	2014					
Russia	L-410 Turbolet	light transport aircraft	2012	17	2017					
Slovakia	L-410 Turbolet	light transport aircraft	2012	2	2013					
Mexico	Z-142	trainer aircraft	2013	20	2014					
United States	L-159A	FGA aircraft	2014	21	2018					
Poland	Z-143	light aircraft	2012	2	2013					
Poland	Z-142	trainer aircraft	2012	1	2013					
Cambodia	BM-21 122mm	MLRS	2012	20	2013	1	148	0,36	53,28	1065,6
Yemen	BMP-1	IFV	2012	5	2013	1	146	0,13	52,56	262,82
Cambodia	BMP-1	IFV	2012	61	2013	1	146	0,36	53,28	3250,08
Iraq	L-159A	FGA aircraft	2014	3	2017	3		10		
Iraq	BMP-1	IFV	2014	45	2015	1	146	0,36	53,28	2397,6
Iraq	T-72M1	tank	2014	60	2016	2	51	1,04	53,04	3182,4
Nigeria	T-72M1	tank	2014	20	2015	1	51	1,04	53,04	1060,8
Nigeria	BMP-1	IFV	2014	20	2015	1	146	0,36	53,28	1065,6
Nigeria	BM-21 122mm	MLRS	2014	7	2015	1	148	0,36	53,28	372,96
Bangladesh	L-410 Turbolet	light transport aircraft	2012	3	2015					
Mexico	Z-143	light aircraft	2014	2	2015					
Indonesia	BM-21 Vampire 122mm	MLRS	2014	8	2016	2	148	0,95	140,6	1124,8
Iraq	L-159B	trainer/combat aircraft	2014	1	2018					
Ukraine	BMP-1	IFV	2014	50	2018	2	146	0,36	53,28	2664
TOTAL										**17235,06**

CZECHIA P-3

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV/ Unit	MEV	PVI
Uganda	BMP-2	IFV	2019	41	2021	2	154	0,36	55,44	2273,04
Hungary	Z-142	trainer aircraft	2016		2017					
Bolivia	Z-142	trainer aircraft	2016		2016					
Turkmenistan	BM-21 122mm	MLRS	2015	6	2016	1	148	0,36	53,28	319,68
Hungary	Z-143	light aircraft	2016		2018					
Azerbaijan	BM-21 122mm	MLRS	2016	30	2018	2	148	0,36	53,28	3196,8
Ukraine	2S1 122mm	SPG	2018	40	2018					
Uganda	D-30 122mm	towed gun	2018		2018					

Ukraine	2S1 122mm	SPG	2019	16	2019					
Ukraine	BMP-1	IFV	2019	37	2020					
TOTAL										**5789,52**

CZECHIA P-4

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV/ Unit	MEV	PVI
Ukraine	BM-21 122mm	MLRS	2022	12	2022					
Ukraine	T-72M1	tank	2022	20	2022					
Hungary	L-39NG -	trainer/combat aircraft	2022	12	0					
Viet Nam	L-39NG -	trainer/combat aircraft	2021	12	0					
Indonesia	BM-21 Vampire 122mm	MLRS	2021	28	2023	2	148	0,95		26,6
Bulgaria	Z-142	trainer aircraft	2020	4	2021					
Ukraine	BMP-1	IFV	2022	75	2023					
Ukraine	BMP-1	IFV	2022	56	2022					
Ukraine	T-72M1	tank	2022	20	2022					
Ukraine	BM-21 Vampire 122mm	MLRS	2022	20	2022					
Ukraine	DANA 152mm	SPG	2022	26	2023					
Hungary	Z-142	trainer aircraft	2020	4	2020					
Ukraine	Mi-24V	combat helicopter	2022	8	2024					
Ukraine	T-72M1	tank	2022	1	2022					
Ukraine	One 150	UAV	2022	18	0					
unknown recipient(s)	One 150	UAV	2022	8	2023					
Ukraine	T-55AM-2	tank	2022	22	2022					
Ukraine	One 150	UAV	2022	6	2022					
Ukraine	BM-21 122mm	MLRS	2023	1	2023					
Ukraine	Kvadrat SAMS	SAM system	2023	2	2023					
Ukraine	T-72M1	tank	2023	15	2023					
Ukraine	BMP-2	IFV	2023	80	2024					
Kazakhstan	L-410 Turbolet	light transport aircraft	2022	2	2023					
Ukraine	DITA	SPG	2023	9	2024					
Ukraine	DITA	SPG	2024	6	2					
TOTAL										**26,6**

D-GBARD Data

CZECHIA P-1	R&D EXPENDITURE	%of GBARD
2005	14,032	2,54
2006	19,772	3,06
2007	16,612	2,25
2008	19,644	2,39

	2009	20,509	2,36
TOTAL		**90,569**	**12,6**
AVERAGE		**18,114**	

CZECHIA P-2	**R&D EXPENDITURE**	**%of GBARD**
2010	20,079	2,25
2011	17,841	1,7
2012	16,507	1,59
2013	15,136	1,47
2014	14,004	1,41
TOTAL	**83,567**	**8,42**
AVERAGE	**16,713**	

CZECHIA P-3	**R&D EXPENDITURE**	**%of GBARD**
2015	13,434	1,32
2016	12,177	1,18
2017	14,684	1,26
2018	15,197	1,17
2019	14,959	1,07
TOTAL	**70,451**	**6**
AVERAGE	**14,090**	

CZECHIA P-4	**R&D EXPENDITURE**	**%of GBARD**
2020	14,238	0,99
2021	4,786	0,32
2022	6,83	0,44
2023	10,364	0,64
2024	12,61	0,79
TOTAL	**48,828**	**3,18**
AVERAGE	**9,766**	

Military Budgets / GDP / R3 Calculations

CZECHIA P-1	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2005	2439,5	137,3	2,44	
2006	2450,0	156,2	2,45	
2007	2707,7	190	2,7	
2008	2918,7	236,5	2,92	
2009	2718,6	207,1	2,72	
TOTAL	**13234,4**	**927,1**		

AVERAGE		**2646,9**	**185,4**		**1,428**
		2,6469			

CZECHIA P-2	MIL BUDGET (D)		GDP	M.B. in Bil	R3 (D/GDP*100)
2010		2497,9	211,17	2,5	
2011		2474,3	231,43	2,47	
2012		2220,6	210,36	2,22	
2013		2148,8	213,02	2,15	
2014		2022,9	210,91	2,02	
TOTAL		**11364,5**	**1076,89**		
AVERAGE		**2272,9**	**215,4**		**1,034**
		2,2273			

CZECHIA P-3	MIL BUDGET (D)		GDP	M.B. in Bil	R3 (D/GDP*100)
2015		1779,9	189,11	1,78	
2016		1954,9	198,16	1,95	
2017		2077,7	221,56	2,08	
2018		2710,0	251,99	2,71	
2019		2910,3	256,79	2,91	
TOTAL		**11432,8**	**1117,61**		
AVERAGE		**2286,6**	**223,5**		**1,023**
		2,2866			

CZECHIA P-4	MIL BUDGET (D)		GDP	M.B. in Bil	R3 (D/GDP*100)
2020		3252,5	251,11	3,25	
2021		3935,6	290,97	3,96	
2022		4005,4	301,83	4,01	
2023		5056,3	343,21	5,06	
2024		5900,0	342,99	5,9	
TOTAL		**22149,8**	**1530,11**		
AVERAGE		**4430,0**	**306,0**		**1,448**

Active Personnel / Population / R1, R2, & MRI Calculation

CZECHIA P-1	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2005	28000	10210000				
2006	26000	10240000				
2007	27000	10300000				
2008	27000	10380000				
2009	26541	10440000				
TOTAL	**134541**	**51570000**				
AVERAGE	26908,2	10314000	**0,557**	**0,098**	**1,428**	**0,695**

CZECHIA P-2	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2010	28521	10470000				
2011	26750	10500000				
2012	26750	10510000				
2013	24100	10510000				
2014	24800	10530000				
TOTAL	**130921**	**52520000**				
AVERAGE	26184,2	10504000	**0,543**	**0,087**	**1,034**	**0,555**

CZECHIA P-3	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2015	25050	10550000				
2016	23200	10570000				
2017	23000	10590000				
2018	22245	10630000				
2019	25000	10670000				
TOTAL	**118495**	**53010000**				
AVERAGE	23699	10602000	**0,510**	**0,096**	**1,023**	**0,543**

CZECHIA P-4	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2020	27000	10700000				
2021	27000	10510000				
2022	27000	10670000				
2023	27500	10860000				
2024	28000	10900000				
TOTAL	**136500**	**53640000**				
AVERAGE	27300	10728000	**0,550**	**0,162**	**1,448**	**0,720**

PEI-Calculation

CZECHIA	EXPORT	IMPORT	∑EX/∑IM (LOG(∑EX/∑IM))
P1	4.952,24	6.511,95	-0,12
P2	17.235,06	1,00	4,24
P3	5.789,52	8.299,20	-0,16
P4	26,60	263.405,92	-4,00

APPENDIX 10.7.
STATE PROFILE: **DENMARK**

Procurement Data

DENMARK P-1

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Sweden	CV-9035	IFV	2005	45	2010	5	122	2	244	**10980**
Switzerland	Eagle	APC	2005	90	2008	3	70	0,13	9,1	**819**
Switzerland	DURO-3 -	APC	2006	29	2009	3	67	0,27	18,09	**524,61**
TOTAL				164						**12323,61**

DENMARK P-2

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Israel	K-6 120mm	mortar	2010	20	2010	4				
United States	MH-60R -	anti-submarine helicopter	2012	9	2018	6				
United States	Cougar MRAP	APC	2010	40	2011	1	46	0,14	6,44	**257,6**
United States	Cougar MRAP	APC	2014	9	2018	4	46	0,35	16,1	**144,9**
TOTAL				78						**402,5**

DENMARK P-3

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United States	F-35A Lightning-2	FGA aircraft	2018	27	2026	8	145	55	7975	**215325**
Switzerland	Piranha-5 -	APC	2015	309	2023	7	107	0,43	46,01	**14217,09**
Bahamas	BN-2 Islander	light transport aircraft	2015	1	2015	1				
unknown supplier(s)	BN-2 Islander	light transport aircraft	2015	1	2015	1				
Israel	CARDOM 120mm	mortar	2017	15	2021	4				
Switzerland	Eagle	APC	2017	36	2019	2	70	0,13	9,1	**327,6**
United States	Cougar MRAP	APC	2017	6	2017	1	46	0,14	6,44	**38,64**
Germany	Leopard-2A7	tank	2017	16	2023	6	118	5,2	613,6	**9817,6**
Germany	PSB-2	armoured bridgelayer	2019	7	2024	5				
TOTAL				82						**239725,93**

DENMARK P-4

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Switzerland	Eagle	APC	2020	57	2022	2	70	0,13	9,1	**518,7**
Israel	ATMOS-2000 155mm	self-propelled gun	2022	19	2024	2	82	1,25	102,5	**9690**
Israel	PULS	multiple rocket launcher	2023	8	2024	1	198	1,1	217,8	**1742,4**
Germany	Skyranger-30	air-defence system	2024	16	0					

	TUR									
Sweden	CV-90 Mk-4 IFV	IFV	2024	115	2027	3	122	2	244	**28060**
Germany	Wisent-2	armoured engineer/recovery vehicle	2024	17	0					
TOTAL				232						**40011,1**

Export Data

DENMARK
P-1

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Canada	Sperwer	UAV	2006	10	2007					
Lithuania	StanFlex-300 PC	patrol boat	2007	3	2010	3	147	8	117 6	3528
TOTAL										**3528**

DENMARK
P-2

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Portugal	StanFlex-300 PC	patrol boat	2014	4	2018	4	147	8	117 6	4704
Myanmar	ATR-42	transport aircraft	2013	1	2014					
TOTAL										**4704**

DENMARK
P-3

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Lithuania	StanFlex-300 PC	patrol boat	2015	1	2016	1	147	8	117 6	1176
TOTAL										**1176**

DENMARK
P-4

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Argentina	F-16C	FGA aircraft	2024	24	2028	4	100	11, 4	114 0	2736 0
Ukraine	M-113A3	APC	2022	54	2022					
Ukraine	HCDS	coastal defence system	2022	2	2022					
Ukraine	F-16C	FGA aircraft	2023	19	0					
Ukraine	K-6 120mm	mortar	2022	20	2022					
TOTAL										**2736 0**

D-GBARD Data

DENMARK P-1 **R&D EXPENDITURE** **%of GBARD**

	2005	11,018	0,72
	2006	11,221	0,69
	2007	10,295	0,56
	2008	11,481	0,55
	2009	10,945	0,48
TOTAL		**54,96**	**3**
AVERAGE		**10,992**	

DEMNARK P-2	**R&D EXPENDITURE**	**%of GBARD**
2010	10,219	0,43
2011	7,744	0,31
2012	7,792	0,31
2013	7,804	0,3
2014	8,37	0,31
TOTAL	**41,929**	**1,66**
AVERAGE	**8,386**	

DENMARK P-3	**R&D EXPENDITURE**	**%of GBARD**
2015	8,634	0,32
2016	8,354	0,33
2017	8,456	0,32
2018	8,359	0,31
2019	8,84	0,32
TOTAL	**42,643**	**1,6**
AVERAGE	**8,529**	

DENMARK P-4	**R&D EXPENDITURE**	**%of GBARD**
2020	9,807	0,32
2021	10,892	0,35
2022	11,936	0,38
2023	13,837	0,42
2024	15,101	0,42
TOTAL	**61,573**	**1,89**
AVERAGE	**12,315**	

Military Budgets / GDP / R3 Calculations

DENMARK P-1	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2005		3468,5	265,2	3,47
2006		3896,7	283,4	3,9

2007		4175,7	320,2	4,18	
2008		4788,0	355	4,79	
2009		4337,4	322,6	4,34	
TOTAL		**20666,2**	**1546,4**		
AVERAGE		**4133,2**	**309,3**		**1,336**
		4,1332			

DENMARK P-2	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2010	4503,5	322,3	4,5	
2011	4518,6	344,3	4,52	
2012	4422,5	326,8	4,42	
2013	4216,6	344,6	4,22	
2014	4056,9	352,8	4,06	
TOTAL	**21718,0**	**1690,8**		
AVERAGE	**4343,6**	**338,2**		**1,284**
	4,3436			

DENMARK P-3	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2015	3364,0	301,8	3,34	
2016	3592,7	312,2	3,59	
2017	3764,0	331,6	3,76	
2018	4558,7	355,3	4,56	
2019	4487,8	345,4	4,49	
TOTAL	**19767,3**	**1646,3**		
AVERAGE	**3953,5**	**329,3**		**1,201**
	3,9535			

DENMARK P-4	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2020	4887,2	355,6	4,89	
2021	5273,7	408,4	5,27	
2022	5475,0	401,9	5,48	
2023	8144,9	407,1	8,15	
2024	8800,0	412,3	8,8	
TOTAL	**32580,8**	**1985,3**		
AVERAGE	**6516,2**	**397,1**		**1,641**
	6,5162			

Active Personnel / Population / R1, R2, & MRI Calculation

DENMARK P-1	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2005	21000	5419000				
2006	30000	5437000				
2007	30000	5461000				

2008		30000	5494000				
2009		18707	5523000				
TOTAL		**129707**	**27334000**				
AVERAGE		25941,4	5466800	**0,759**	**0,159**	**1,336**	**0,752**

DENMARK P-2	**R1 (LOG10(A/P*1000+1))**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2010	18628	5548000				
2011	16450	5571000				
2012	17200	5592000				
2013	17200	5615000				
2014	17200	5643000				
TOTAL	**86678**	**27969000**				
AVERAGE	17335,6	5593800	**0,613**	**0,251**	**1,284**	**0,716**

DENMARK P-3	**R1 (LOG10(A/P*1000+1))**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2015	16600	5683000				
2016	16100	5728000				
2017	15000	5765000				
2018	14500	5794000				
2019	15000	5814000				
TOTAL	**77200**	**28784000**				
AVERAGE	15440	5756800	**0,566**	**0,256**	**1,201**	**0,674**

DENMARK P-4	**R1 (LOG10(A/P*1000+1))**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2020	15000	5831000				
2021	16000	5857000				
2022	17000	5903000				
2023	18500	5947000				
2024	20000	5991000				
TOTAL	**86500**	**29529000**				
AVERAGE	17300	5905800	**0,594**	**0,377**	**1,641**	**0,871**

PEI-Calculation

DENMARK	**EXPORT**	**IMPORT**	**∑EX/∑IM (LOG(∑EX/∑IM))**
P1	3.528,00	12.323,61	-0,54
P2	7.404,00	402,50	1,26
P3	1.176,00	239.725,93	-2,31
P4	27.360,00	40.011,10	-0,17

APPENDIX 10.8.
STATE PROFILE: **ESTONIA**

Procurement Data

ESTONIA P-1

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United Kingdom	Sandown	minehunter	2006	3	2009	3	**101**	18	181 8	**5454**
Finland	D-30 122mm	towed gun	2009	42	2009	1				
TOTAL				45						**5454**

ESTONIA P-2

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Netherlands	XA-180	APC	2010	81	2016	6	121	0,1 2	14,5 2	**1176,12**
Ukraine	L-39C Albatros	(armed) trainer aircraft	2012	2	2013	1				
Netherlands	CV-9035	IFV	2014	44	2019	5	122	2	244	**10736**
Netherlands	BPz-2	armoured recovery vehicle	2014	2	2017	3				
Netherlands	Biber	armoured bridgelayer	2014	2	2017	3				
Netherlands	PiPz-1	armoured engineer vehicle	2014	2	2017	3				
TOTAL				133						**11912,12**

ESTONIA P-3

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
South Korea	K-9 155mm	self-propelled gun	2018	24	2023	5	103	1,8	185,4	**4449,6**
Norway	CV-90 APC	APC	2016	37	0		207	0,18	37,26	**1378,62**
United States	M-28 Skytruck	light transport aircraft	2017	2	2019	2				
United States	M-ATV	APC	2019	9	2021	2	88	0,9	79,2	**712,8**
TOTAL				72						**6541,02**

ESTONIA P-4

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Germany	IRIS-T SL	SAM system	2023	2	0					
Israel	Blue Spear CDS	coastal defence system	2021	2	2024	3				
Israel	M-65 120mm	mortar	2020	12	2022	2				
United States	HIMARS	multiple rocket launcher	2022	6	2026	4	181	1,1	199,1	**1194,6**
South Korea	K-9 155mm	self-propelled gun	2023	12	2026	3	103	1,8	185,4	**2224,8**
Turkiye	ARMA -	APC	2023	115	2030	7	103	0,27	27,81	**3198,15**
Turkiye	NMS	APC	2023	115	2030	7	100	0,18	18	**2070**
France	CAESAR 155mm -	self-propelled gun	2024	12	0		100	1,07	107	**1284**

TOTAL				274						9971,55

Export Data

ESTONIA P-1

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
TOTAL										**0**

ESTONIA P-2

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
TOTAL										**0**

ESTONIA P-3

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Iraq	PM-43 120mm	mortar	2015	12	2015					
TOTAL										**0**

ESTONIA P-4

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Ukraine	D-30 122mm	towed gun	2021	9	2022					
Ukraine	FH-70 155mm	towed gun	2022	24	2023					
Ukraine	Mamba AV	APC	2022	7	2022					
Ukraine	D-30 122mm	towed gun	2022	31	2023					
Ukraine	M-41D 120mm	mortar	2022	30	2022					
UAE	Type X -	armed UGV	2023	20	0					
TOTAL										**0**

D-GBARD Data

ESTONIA P-1	**R&D EXPENDITURE**	**%of GBARD**
2005	0,447	0,99
2006	0,697	1,04
2007	0,754	0,97
2008	1,234	1,19
2009	0,92	0,96
TOTAL	**4,052**	**5,15**
AVERAGE	**0,810**	

ESTONIA P-2	**R&D EXPENDITURE**	**%of GBARD**
2010	0,36	0,35
2011	0,359	0,29
2012	0,47	0,32
2013	0,712	0,46
2014	1,881	1,33
TOTAL	**3,782**	**2,75**
AVERAGE	**0,756**	

ESTONIA P-3	R&D EXPENDITURE	%of GBARD
2015	2,1	1,49
2016	3,3	2,27
2017	2,7	1,89
2018	6,17	3,38
2019	3,06	1,74
TOTAL	**17,33**	**10,77**
AVERAGE	**3,466**	

ESTONIA P-4	R&D EXPENDITURE	%of GBARD
2020	4,47	2,39
2021	4,816	2,23
2022	5,604	2,15
2023	9,182	2,72
2024	12,415	2,94
TOTAL	**36,487**	**12,43**
AVERAGE	**7,297**	

Military Budgets / GDP / R3 Calculations

ESTONIA P-1	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2005	667,7	14,1	0,67	
2006	715,7	17,1	0,72	
2007	990,2	22,5	0,99	
2008	1161,5	24,4	1,16	
2009	905,0	19,7	0,91	
TOTAL	**4440,0**	**97,8**	**4,45**	
AVERAGE	**888,0**	**19,6**		**4,540**
	0,8880			

ESTONIA P-2	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2010	832,5	19,6	0,83	
2011	757,9	23,3	0,76	
2012	722,1	23,3	0,72	
2013	811,6	25,5	0,81	
2014	747,5	27,1	0,75	
TOTAL	**3871,7**	**118,8**		
AVERAGE	**774,3**	**23,8**		**3,259**
	0,7743			

ESTONIA P-3	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2015	632,5	23,3	0,63	
2016	670,6	24,6	0,67	
2017	720,0	27,5	0,72	
2018	961,3	31,2	0,96	

2019	2158,6	31,9	2,16		
TOTAL	**5143,0**	**138,5**			
AVERAGE	**1028,6**	**27,7**			**3,713**
	1,0286				

ESTONIA P-4	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2020	1119,0	31,8	1,12	
2021	1275,2	37,2	1,28	
2022	1436,9	38,4	1,44	
2023	1918,4	41,3	1,92	
2024	2250,0	43	2,25	
TOTAL	**7999,6**	**191,7**		
AVERAGE	**1599,9**	**38,3**		**4,173**

Active Personnel / Population / R1, R2, & MRI Calculation

ESTONIA P-1	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2005	8000	1355000				
2006	7000	1347000				
2007	7000	1341000				
2008	7000	1337000				
2009	5450	1335000				
TOTAL	**34450**	**6715000**				
AVERAGE	6890	1343000	**0,787**	**0,129**	**4,540**	**1,819**

ESTONIA P-2	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2010	5750	1331000				
2011	5750	1327000				
2012	5750	1323000				
2013	5750	1318000				
2014	5750	1315000				
TOTAL	**28750**	**6614000**				
AVERAGE	5750	1322800	**0,728**	**0,135**	**3,259**	**1,374**

ESTONIA P-3	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2015	6400	1315000				
2016	6400	1316000				
2017	6000	1317000				
2018	6700	1322000				
2019	7000	1327000				
TOTAL	**32500**	**6597000**				
AVERAGE	6500	1319400	**0,773**	**0,158**	**3,713**	**1,548**

ESTONIA P-4	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2020	7000	1330000				

2021	7200	1331000					
2022	7400	1349000					
2023	7600	1370000					
2024	7700	1391000					
TOTAL	**36900**	**6771000**					
AVERAGE	7380	1354200		**0,810**	**0,217**	**4,173**	**1,733**

PEI-Calculation

ESTONIA	EXPORT	IMPORT	∑EX/∑IM (LOG(∑EX/∑IM))
P1	1,00	5.454,00	-3,74
P2	1,00	11.912,12	-4,08
P3	1,00	6.541,02	-3,82
P4	1,00	9.971,55	-4,00

APPENDIX 10.9.1
STATE PROFILE: **FRANCE**

Procurement Data

FRANCE P-1

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Austria	A-340	transport aircraft	2005	2	2007	2				
Israel	Heron UAV	UAV	2005	3	2009	4				
Germany	G-120	trainer aircraft	2006	18	2007	1				
United States	Cougar MRAP	APC	2008	5	2008	1	46	0,35	16,1	**80,5**
Sweden	BVS-10	APC	2009	53	2013	4	102	0,25	25,5	**1351,5**
Israel	Heron UAV	UAV	2009	1	2010	1				
Belgium	AS-565	helicopter	2009	2	2009	1				
France	FREMM	frigate	2008	6	2026	18	744	124	92256	**553536**
TOTAL				88						**554968**

FRANCE P-2

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Spain	CN-235 -	transport aircraft	2010	8	2013	3				
United States	SR-20	light aircraft	2012	21	2012	1				
United States	SR-22	light aircraft	2012	13	2017	5				
United States	MQ-9 UAV	UAV	2013	6	2017	4				
Austria	Camcopter S-100	UAV	2011	1	2012	1				
France	VBCI	IFV	2011	214	2014	3	89	1,7	151,3	**32378,2**
France	Rafale	FGA	2012	21	2014	2	131	55	7205	**151305**
France	VBCI	IFV	2013	25	2015	2	89	1,7	151,3	**3782,5**
France	Rafale	FGA	2012	5	2016	4	131	55	7205	**36025**
France	M 2000D	FGA	2012	4	2016	4	114	48	5472	**21888**
France	M 2000-5	FGA	2012	1	2016	4	114	48	5472	**5472**
France	ARAVIS	APC	2014	2	2017	3	104	0,3	31,2	**62,4**
France	M 2000-5	FGA	2013	3	2017	4	114	48	5472	**16416**
France	Confiance	patrol boat	2013	3	2020	7	56	93	5208	**15624**
TOTAL				43						**282953,1**

FRANCE P-3

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United States	C-130J Hercules	transport aircraft	2016	2	2018	2				
United States	KC-130J Hercules	tanker/transport aircraft	2016	2	2020	4				

United States	King Air	light transport aircraft	2016	3	0					
Austria	Camcopter S-100	UAV	2018	1	2018	1				
Belgium	AS-565	helicopter	2017	4	2018	1				
Italy	Vulcano SH -	replenishment ship	2019	4	0					
Austria	Camcopter S-100	UAV	2019	4	2020	1				
United States	MQ-9 UCAV	armed UAV	2015	6	2020	4				
France	VBCI	IFV	2015	25	2016	1	89	1,7	151,3	**3782,5**
France	Rafale	FGA	2015	18	2017	2	131	55	7205	**129690**
France	M 2000D	FGA	2015	1	2017	2	114	48	5472	**5472**
France	Rafale	FGA	2015	4	2018	3	131	55	7205	**7209**
France	M 2000D	FGA	2015	3	2018	3	114	48	5472	**16416**
France	M 2000-5	FGA	2015	2	2019	4	114	48	5472	**10944**
France	Leclerc	tank	2016	22	2019	3	122	1,6	195,2	**4294,4**
France	VBCI	IFV	2018	3	2020	2	89	1,7	151,3	**453,9**
France	Griffon VMBR	APC	2017	260	2021	4	91	0,15	13,65	**3549**
France	POM	patrol boat	2019	6	2027	8	104	93	9672	**58032**
TOTAL				300						**239842,8**

FRANCE P-4

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United States	E-2D Advanced Hawkeye	airborne early-warning aircraft	2020	3	0					
United States	MQ-9 UCAV	armed UAV	2021	2	0					
Switzerland	PC-21 -	trainer aircraft	2021	9	2023	2				
Panama	Fokker-100	transport aircraft	2020	1	0					
India	Falcon-2000	transport aircraft	2020	4	0					
Brazil	A-330	transport aircraft	2020	2	2020	1				
United States	MQ-9 UAV	UAV	2020	1	2020	1				
United States	Saab-340	transport aircraft	2023	1	2024	1				
Switzerland	PC-7 -	(armed) trainer aircraft	2024	22	0					
France	Griffon VMBR	APC	2020	313	2024	4	91	0,15	13,65	**4272,45**
TOTAL				344						**4272,45**

Export Data

FRANCE
P-1

Supplier	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Thailand	CAESAR 155mm	SPG	2006	6	2009	3	100	1,1	110	660
Saudi Arabia	A-330 MRTT -	tanker/transport aircraft	2008	3	2013					
Belgium	NH-90 TTH	transport helicopter	2007	4	2014					
Spain	NH-90 TTH	transport helicopter	2005	22	2022					
Australia	NH-90 TTH	transport helicopter	2005	12	2010					
Oman	A-321	transport aircraft	2007	2	2009					
UAE	A-330 MRTT -	tanker/transport aircraft	2008	3	2013					
India	Scorpene -	submarine	2005	6	0					
New Zealand	NH-90 TTH	transport helicopter	2006	9	2014					
UAE	Baynunah -	corvette	2005	2	2017	12	473	107,25	507 29,25	101458,5
Chile	AS-532 Cougar	transport helicopter	2008	8	2010					
Brazil	Scorpene -	submarine	2009	4	0					
Australia	NH-90 TTH	transport helicopter	2006	35	2018					
Bulgaria	AS-532 Cougar	transport helicopter	2005	12	2010					
Bulgaria	AS-565M	helicopter	2005	3	2012					
Morocco	MF-2000	FGA aircraft	2005	27	2012	7	114	22	250 8	67716
Mexico	AS-565M	helicopter	2008	3	2010					
Brazil	Mirage-2000	FGA aircraft	2005	12	2008	3	114	14,25	162 4,5	19494
Pakistan	SA-316 Alouette-3	light helicopter	2005	8	2008					
Brazil	SNBR -	nuclear submarine	2009	1	0					
Algeria	FPB-98	patrol boat	2007	21	2011	4	54	6,5	351	7371
Singapore	EC-120 Colibri	light helicopter	2005	5	2006					
Canada	Sperwer	UAV	2006	5	2006					
Saudi Arabia	CAESAR 155mm -	SPG	2006	80	2011	5	100	1,07	107	8560
Greece	Sperwer	UAV	2006	8	2008					
Saudi Arabia	AS-565M	helicopter	2006	6	2011					
Indonesia	VAB-VTT	APC	2006	32	2007	1	122	0,3	41,48	1327,36
Brazil	P-400	patrol boat	2006	2	2010	4	87	19	165 3	3306
Senegal	TB-30 Epsilon	(armed) trainer aircraft	2006	2	2006					
Saudi Arabia	Bastion APC	APC	2005	30	2007	2	98	0,16	15,68	470,4
Jordan	Mirage F-1E	FGA aircraft	2005	1	2006	1	114	8	912	912
Oman	AS-350	light helicopter	2005	3	2006					
Morocco	FREMM -	frigate	2008	1	2014	6	744	482,95	359 314,8	359314,8
Spain	AS-532U2	transport helicopter	2007	2	2011					
Senegal	AS-355	light helicopter	2006	1	2006					
Oman	2R2M 120mm	mortar	2007	6	2009					
Saudi Arabia	2R2M 120mm	mortar	2007	25	2010					

Brazil	H-725 Caracal	transport helicopter	2008	41	0					
Morocco	OPV-70 -	patrol ship	2008	1	2011	3	64	29,75	1904	1904
Pakistan	AS-350	light helicopter	2007	10	2014					
Bolivia	AS-350	light helicopter	2008	2	2009					
Kuwait	VBL	armoured reconnaissance vehicle	2008	20	2009					
Mexico	H-725 Caracal	transport helicopter	2009	6	2012					
Brazil	P-400	patrol boat	2009	2	2026	17	87	19	1653	3306
Oman	VL-MICA	SAM system	2009	1	2012					
Saudi Arabia	A-330 MRTT -	tanker/transport aircraft	2009	3	2015					
Saudi Arabia	CAESAR 155mm	SPG	2009	20	2011	2	100	1,07	107	2140
Colombia	LG-1 105mm	towed gun	2008	20	2010					
Mauritania	EMB-312	(armed) trainer aircraft	2009	4	2011					
Thailand	ATR-72 -	transport aircraft	2007	3	2009					
Chad	VAB-VTT	APC	2008	25	2008	1	122	0,12	14,64	416
Chile	PVP	armoured reconnaissance vehicle	2009	15	2011					
Albania	AS-532 Cougar	transport helicopter	2009	4	2014					
Iraq	SA-342 Gazelle	light helicopter	2009	6	2010					
Pakistan	AS-350	light helicopter	2009	7	2011					
Italy	2R2M 120mm	mortar	2006	21	2017					
Indonesia	EC-120 Colibri	light helicopter	2008	2	2009					
Togo	PVP	armoured reconnaissance vehicle	2008	6	2010					
Mauritania	VAB-VTT	APC	2009	70	2010	1	122	0,12	14,64	1024,8
Lebanon	Gwalarn	patrol boat	2009	1	2009	1	31	1,4	43,4	43,4
India	SA-315	light helicopter	2009	10	2010					
Viet Nam	H-725 Caracal	transport helicopter	2009	2	2011					
TOTAL										**579424,26**

FRANCE
P-2

Supplier	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Singapore	A-330 MRTT -	tanker/transport aircraft	2014	6	2020					
Malaysia	H-725 Caracal	transport helicopter	2010	12	2014					
Thailand	H-725 Caracal	transport helicopter	2012	4	2015					
India	Mirage-2000-5	FGA aircraft	2011	49	2027	16	114	31	3534	173166
Malaysia	2R2M 120mm	mortar	2010	8	2010					
Senegal	EDIC	landing craft	2010	1	2011					
Djibouti	EDIC	landing craft	2010	1	2012					
Kenya	P-400	patrol boat	2011	1	2011	1	83	7,6	630,8	630,8
Mexico	H-725 Caracal	transport helicopter	2010	6	2014					
Greece	AS-532 Cougar	transport helicopter	2010	2	2011					
Chile	Foudre	amphibious assault ship	2011	1	2011					

Indonesia	H-725 Caracal	transport helicopter	2012	6	2017					
Indonesia	Sherpa	APC	2011	100	2015	4	87	0,25	21,75	2175
Saudi Arabia	MPCV	self-propelled air-defence system	2011	49	2015					
Lebanon	VAB-VTT	APC	2011	8	2011	1	122	0,12	14,64	117,12
Benin	LH-10	trainer aircraft	2010	4	2013					
Benin	FPB-98	patrol boat	2011	3	2012	1	54	6,5	351	1053
Mali	LH-10	trainer aircraft	2011	2	2013					
Ecuador	AS-350	light helicopter	2010	9	2015					
Bangladesh	AS-565	helicopter	2011	2	2012					
Indonesia	AS-350	light helicopter	2012	6	2017					
Indonesia	AS-565S -	anti-submarine helicopter	2014	2	2020					
Malaysia	Gowind-2500 MAL -	frigate	2014	6	2028	14	311	115	35765	214590
Thailand	AS-350	light helicopter	2011	8	2014					
Chile	CDIC	landing craft	2011	1	2011					
Qatar	Sherpa	APC	2011	22	2013	2	87	0,4	21,75	478,5
Qatar	Sherpa	APC	2011	10	2013	2	87	0,25	21,75	217,5
South Korea	Falcon-2000	transport aircraft	2011	2	2017					
Saudi Arabia	Aravis -	APC	2011	73	2015	4	104	0,27	28,08	2049,84
Saudi Arabia	Aravis -	APC	2012	191	2016	4	104	0,27	28,08	5363,28
Nigeria	FPB-72	patrol boat	2011	3	2012	1	55	3,6	198	594
Chile	AS-532 Cougar	transport helicopter	2012	1	2014					
Saudi Arabia	CAESAR 155mm -	SPG	2011	32	2015	4	100	1,07	107	3424
Senegal	TR-F-1 155mm	towed gun	2010	8	2011					
Malaysia	2R2M 120mm	mortar	2011	8	2019					
Brazil	P-400	patrol boat	2011	1	2026	15	83	7,6	630,8	630,8
Indonesia	CAESAR 155mm -	SPG	2012	37	2015	3	100	1,07	107	3959
Chad	Bastion APC	APC	2012	22	2012	1	98	0,16	15,68	344,96
Egypt	Sherpa	APC	2012	173	2014	2	87	0,25	21,75	3762,75
Mexico	H-725 Caracal	transport helicopter	2011	3	2012					
Togo	RPB-33	patrol boat	2013	2	2014	1	34	5	170	340
Senegal	OPV-45 FRA	patrol boat	2013	1	2015	2	138	10,25	1414,5	1415,5
Egypt	Sherpa	APC	2011	18	2012	1	87	0,25	21,75	391,5
Mozambique	Ocean Eagle-43	patrol boat	2013	3	2016	3	41	11	451	1353
Nigeria	FPB-98	patrol boat	2012	1	2013	1	54	6,5	351	351
India	SA-315	light helicopter	2013	20	2016					
Russia	AS-350	light helicopter	2012	3	2013					
Russia	AS-355	light helicopter	2012	2	2013					
Belgium	Castor	patrol boat	2013	2	2015	2	205	15	3075	6150

Gabon	EC-120 Colibri	light helicopter	2011	2	2012					
Bolivia	AS-532 Cougar	transport helicopter	2013	6	2017					
Suriname	FPB-98	patrol boat	2012	1	2013	1	54	6,5	351	351
Singapore	SAMP/T	ABM/SAM system	2013	2	2018					
Lithuania	AS-565	helicopter	2013	3	2015					
Saudi Arabia	VL-MICA	SAM system	2013	5	2019					
Poland	Cabri	light helicopter	2013	2	2013					
Niger	SA-342 Gazelle	light helicopter	2012	3	2013					
Uruguay	AS-565	helicopter	2013	1	2014					
Lebanon	VAB-VTT	APC	2012	4	2013	1	122	0,3	36,6	146,4
Cameroon	Grebe	patrol boat	2012	1	2017	5	184	7,92	145 7,28	1457,28
Morocco	Heron UAV	UAV	2013	3	2014					
Cote d'Ivoire	RPB-33	patrol boat	2013	3	2016	3	34	5	170	510
Egypt	Gowind-2500 -	frigate	2014	4	2023	9	311	211	656 21	262484
Togo	Bastion APC	APC	2013	30	2014	1	98	0,16	15,6 8	470,4
Chad	Bastion APC	APC	2012	10	2013	1	98	0,14	15,6 8	156,8
Mexico	AS-565M	helicopter	2014	10	2017					
Uzbekistan	AS-350	light helicopter	2013	8	2016					
Uzbekistan	AS-532 Cougar	transport helicopter	2013	8	2016					
Thailand	H-725 Caracal	transport helicopter	2014	2	2016					
Pakistan	SA-316 Alouette-3	light helicopter	2013	2	2014					
Indonesia	AS-355	light helicopter	2012	6	2017					
Burkina Faso	Bastion APC	APC	2011	10	2012	1	98	0,16	15,6 8	156,8
Gabon	Aravis IFV -	IFV	2014	8	2016	2	104	1,27	132, 08	1056,64
Mexico	H-725 Caracal	transport helicopter	2014	2	2016					
Senegal	OPV-190	patrol ship	2014	1	2016	2	40	20	800	800
Romania	PVP	armoured reconnaissance vehicle	2012	16	2015	3				
Lebanon	Sherpa	APC	2012	9	2013	1	87	0,25	21,7 5	195,75
India	Sherpa	APC	2012	14	2017	5	87	0,25	21,7 5	304,5
Colombia	LG-1 105mm	towed gun	2012	20	2012					
Singapore	Sherpa	APC	2014	51	2016	2	87	0,4	21,7 5	1109,25
Senegal	TB-30 Epsilon	(armed) trainer aircraft	2014	4	2015					
Ghana	Sherpa	APC	2014	2	2014	1	87	0,25	21,7 5	43,5
Laos	AS-565	helicopter	2014	2	2015					
Nigeria	SA-342 Gazelle	light helicopter	2013	3	2013					
Brazil	EC-725 AS -	anti-ship helicopter	2012	4	0					
Chile	AS-532 Cougar	transport helicopter	2014	1	2016					
Singapore	Sherpa	APC	2014	60	2015	1	87	0,25	21,7 5	1305
Cote	AS-565	helicopter	2014	1	2014					

d'Ivoire										
Saudi Arabia	Sherpa	APC	2013	500	2018	5	87	0,25	21,75	10875
Indonesia	AS-565M	helicopter	2014	9	2019					
TOTAL										**703979,87**

FRANCE
P-3

Supplier	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
South Korea	A-330 MRTT -	tanker/transport aircraft	2016	4	2019					
Spain	NH-90 TTH	transport helicopter	2019	16	0					
Gabon	VAB-VTT	APC	2018	5	2019	1	122	0,16	14,64	73,2
Gabon	Bastion APC	APC	2016	5	2019	3	98	0,3	15,68	78,4
Qatar	Rafale	FGA aircraft	2015	24	2020	5	131	55	7205	172920
Nigeria	FPB-110	patrol boat	2016	2	2018	2	55	6,8	374	748
Qatar	NH-90 TTH	transport helicopter	2018	16	0					
Bhutan	EC-130	light helicopter	2015	2	2016					
Hungary	H-725 Caracal	transport helicopter	2018	16	0					
Indonesia	H-725 Caracal	transport helicopter	2019	8	2023					
Egypt	FREMM -	frigate	2015	1	2015	1	744	482,95	359314,8	359315
Egypt	Rafale	FGA aircraft	2015	24	2019	4	131	55	7205	172920
Brazil	Foudre	amphibious assault ship	2015	1	2015					
India	Rafale	FGA aircraft	2017	36	2022	5	131	55	7205	259380
Kuwait	H-725 Caracal	transport helicopter	2016	27	2021					
Morocco	LCT-50m	landing craft	2015	1	2016					
Egypt	Mistral SH -	amphibious assault ship	2015	2	2016					
Belgium	MCM-2730	MCM ship	2019	6	2028	9	451	116	52316	313896
Czechia	TITUS -	APC	2019	62	2024	5	80	0,27	21,6	1339,2
Cameroon	Bastion APC	APC	2015	23	2016	1	98	0,16	15,68	360,64
Somalia	Bastion APC	APC	2015	13	2016	1	98	0,16	15,68	203,84
Uganda	Bastion APC	APC	2015	31	2017	2	98	0,16	15,68	486,08
Tunisia	Bastion APC	APC	2015	4	2016	1	98	0,16	15,68	62,72
Ethiopia	Bastion APC	APC	2015	12	2016	1	98	0,16	15,68	188,16
Egypt	EDAR	landing craft	2015	2	2016					
Kuwait	Sherpa	APC	2015	120	2018	3	87	0,25	21,75	2610
Mozambique	HSI-32	patrol boat	2015	3	2016	1	61	5	305	915
Colombia	ATR-42	transport aircraft	2015	1	2015					
Kuwait	Sherpa	APC	2018	300	2021	3	87	0,25	21,75	6525

Qatar	Exocet CDS	coastal defence system	2016	2	2023					
Mali	Bastion APC	APC	2015	5	2016	1	98	0,16	15,68	78,4
Botswana	VL-MICA	SAM system	2016	1	2020					
Malaysia	EC-120 Colibri	light helicopter	2015	3	2016					
Saudi Arabia	VBCI	IFV	2016	100	2020	4	89	1,3	115,7	11570
Saudi Arabia	Sherpa	APC	2016	100	2017	1	87	0,25	21,75	217,5
Argentina	Gowind OPV -	patrol ship	2018	3	2022	4	116	6,8	788,8	2366,4
Spain	AS-532 Cougar	transport helicopter	2015	2	2017					
Spain	AS-532 Cougar	transport helicopter	2016	1	2016					
Thailand	H-725 Caracal	transport helicopter	2016	2	2018					
Mali	AS-532 Cougar	transport helicopter	2016	2	2017					
Angola	HSI-32	patrol boat	2016	3	2019	3	61	5	305	915
Singapore	H-725 Caracal	transport helicopter	2016	18	2023					
Niger	VAB-VTT	APC	2015	4	2015	1	122	0,3	14,64	58,56
Nigeria	FPB-72	patrol boat	2017	2	2017	1	55	3,6	198	396
Indonesia	CAESAR 155mm -	SPG	2017	18	2020	3	100	1,06	106	1908
Lebanon	VAB-VCAC	tank destroyer	2016	25	2019					
Tunisia	VAB-VTT	APC	2015	13	2017	2	122	0,3	36,6	475,8
Belgium	Griffon VBMR	APC	2019	382	2026	7	91	0,16	14,56	5561,92
Belgium	Jaguar EBRC	armoured car	2019	60	0					
Saudi Arabia	Bastion APC	APC	2015	71	2016	1	98	0,16	15,68	1113,28
Tunisia	Bastion APC	APC	2015	4	2016	1	98	0,16	15,68	62,72
United States	Mirage F-1C	FGA aircraft	2017	45	2023	6	114	6,4	729,6	32832
Nigeria	FPB-72	patrol boat	2017	2	2018	1	55	3,6	198	396
Argentina	Super Etendard	FGA aircraft	2017	5	2019	2	131	4	524	2620
UAE	Gowind-2500 -	frigate	2019	2	2024	5	311	211	65621	131242
Thailand	VL-MICA	SAM system	2016	1	2018					
Spain	AS-532 Cougar	transport helicopter	2016	3	2018					
Qatar	Rafale	FGA aircraft	2017	12	2022	5	131	55	7205	86460
Ecuador	AS-350	light helicopter	2017	2	2018					
Senegal	PVP	armoured reconnaissance vehicle	2016	13	2017					
Lesotho	AS-350	light helicopter	2016	1	2017					
Tanzania	AS-532 Cougar	transport helicopter	2017	4	2021					
Tanzania	H-725 Caracal	transport helicopter	2017	2	2018					
Netherlands	MCM-2730	MCM ship	2019	6	2029	10	451	93	41943	251658
Qatar	AS-350	light helicopter	2018	16	2020					
Ukraine	H-725 Caracal	transport helicopter	2018	5	2022					
Ukraine	AS-350	light helicopter	2018	14	0					
Benin	Bastion APC	APC	2015	6	2016	1	98	0,16	15,68	94,08
Saudi	HSI-32	patrol boat	2018	39	2022	4	61	5	305	11895

Arabia										
Guinea	SA-330 Puma	helicopter	2017	1	2017					
Malaysia	LG-1 105mm	towed gun	2018	18	2021					
Senegal	Bastion APC	APC	2016	9	2017	1	98	0,16	15,68	141,12
Saudi Arabia	CAESAR 155mm -	SPG	2018	24	2018	1	100	1,06	106	2544
Nepal	AS-350	light helicopter	2017	1	2018					
Cote d'Ivoire	Bastion APC	APC	2017	9	2018	1	98	0,16	15,68	141,12
Thailand	H-725 Caracal	transport helicopter	2018	4	2021					
Tanzania	AS-350	light helicopter	2017	8	0					
Lesotho	AS-350	light helicopter	2017	1	2018					
Argentina	Gowind OPV	patrol ship	2018	1	2019					
Algeria	FPB-98	patrol boat	2018	20	2021	3	54	3,6	194,4	3888
Kenya	Bastion APC	APC	2018	12	2018	1	98	0,16	15,68	188,16
Mexico	H-725 Caracal	transport helicopter	2018	1	2018					
Senegal	Bastion APC	APC	2018	36	2018	1	98	0,16	15,68	564,48
Senegal	TB-30 Epsilon	(armed) trainer aircraft	2019	2	2019					
Chile	AS-350	light helicopter	2019	5	2023					
India	SA-316 Alouette-3	light helicopter	2017	8	2020					
Saudi Arabia	LG-1 105mm	towed gun	2017	91	2022					
Uzbekistan	AS-532 Cougar	transport helicopter	2018	8	2023					
Senegal	OPV-58 -	missile boat	2019	3	2024	5	621	58,85	36545,85	109637,7
Lesotho	AS-350	light helicopter	2019	1	2019					
Togo	SA-342 Gazelle	light helicopter	2016	4	2020					
Mali	Bastion APC	APC	2019	13	2020	1	98	0,16	15,68	203,84
Burkina Faso	Bastion APC	APC	2019	6	2020	1	98	0,16	15,68	94,08
Mauritania	Bastion APC	APC	2019	7	2019	1	98	0,16	15,68	109,76
Chad	Bastion APC	APC	2019	7	2020	1	98	0,16	15,68	109,76
Niger	Bastion APC	APC	2019	13	2019	1	98	0,16	15,68	203,84
Nigeria	FPB-110	patrol boat	2019	2	2021	2	55	3,4	187	374
Nigeria	FPB-72	patrol boat	2019	1	2020	1	55	3,6	198	198
Saudi Arabia	AS-532 Cougar	transport helicopter	2019	7	2021					
Italy	2R2M 120mm	mortar	2018	38	2024					
NATO**	A-330 MRTT -	tanker/transport aircraft	2016	10	0					
India	SA-315	light helicopter	2018	10	0					
Turkmenistan	VL-MICA	SAM system	2019	1	2021					
Kuwait	EC-725 AS -	anti-ship helicopter	2016	3	2024					
TOTAL										**1952339,8**

FRANCE
P-4

Supplier	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Belgium	CAESAR 155mm	SPG	2022	9	0		100	1,06	106	954
Greece	Rafale	FGA aircraft	2021	12	2023		131	55	7205	86460
UAE	Rafale F-4	FGA aircraft	2021	80	0		131	55	7205	576400
India	Rafale F-4	FGA aircraft	2024	26	0		131	55	7205	187330
Indonesia	Rafale F-4	FGA aircraft	2022	42	0		131	55	7205	302610
South Korea	Falcon-2000	transport aircraft	2021	4	0					
Nigeria	FPB-98	patrol boat	2023	3	0		54	3,6	194,4	583,2
India	Mirage-2000-5	FGA aircraft	2021	2	0		114	31	3534	7068
Netherlands	Barracuda SUB	submarine	2024	4	0					
South Korea	EC-155	helicopter	2022	210	0					
Indonesia	A-330 MRTT -	tanker/transport aircraft	2023	2	0					
Brazil	AS-350	light helicopter	2022	27	0					
Egypt	Rafale	FGA aircraft	2021	30	0		131	55	7205	216150
Saudi Arabia	A-330 MRTT -	tanker/transport aircraft	2024	4	0					
UAE	A-330 MRTT -	tanker/transport aircraft	2021	2	0					
Ukraine	FPB-98	patrol boat	2020	20	0		54	3,6	194,4	3888
Morocco	CAESAR 155mm -	SPG	2020	36	2022		100	1,06	106	3816
Morocco	VL-MICA	SAM system	2020	2	2022					
Indonesia	Scorpene	submarine	2024	2	0					
Morocco	Sherpa	APC	2020	36	2022		87	0,25	21,75	783
Czechia	CAESAR 155mm -	SPG	2021	52	0		100	1,06	106	5512
Saudi Arabia	HSI-32	patrol boat	2020	19	0		61	5	305	5795
Greece	Rafale	FGA aircraft	2021	6	2024		131	55	7205	43230
Croatia	Rafale	FGA aircraft	2021	12	0		131	55	7205	86460
Greece	FDI -HN (FREMM)	frigate	2022	3	2026	4	744	124	92256	276768
Thailand	LG-1 105mm	towed gun	2021	12	2023					
Chad	ERC-90	armoured car	2020	12	2021					
Iraq	H-725 Caracal	transport helicopter	2024	12	0					
Greece	Rafale	FGA aircraft	2022	6	2024		131	55	7205	43230
Saudi Arabia	FPB-2200	missile boat	2020	12	2023		133	4	532	6384
Angola	LCT-200-70	landing ship	2021	2	0					
Cameroon	Bastion APC	APC	2020	33	2022		98	0,16	15,68	517,44

Senegal	TB-30 Epsilon	(armed) trainer aircraft	2020	2	2021				
Ukraine	CAESAR 155mm	SPG	2022	18	2022	100	1,06	106	1908
Senegal	LG-1 105mm	towed gun	2022	8	2024				
Cote d'Ivoire	P-400	patrol boat	2022	1	2022	83	4	332	332
Lithuania	CAESAR 155mm -	SPG	2022	18	0	100	1,06	106	1908
Ukraine	VAB-VTT	APC	2022	378	2024				
Djibouti	MO-120-RT 120mm	mortar	2020	6	2021				
Canada	A-330 MRTT	tanker/transport aircraft	2023	4	0				
Gabon	AML	armoured car	2020	4	2023				
Ukraine	TR-F-1 155mm	towed gun	2022	6	2022				
Ukraine	CAESAR 155mm -	SPG	2022	19	2023				
Ukraine	SAMP/T	ABM/SAM system	2022	1	2023				
Ukraine	Crotale-NG SAMS	SAM system	2022	2	2022				
Czechia	CAESAR 155mm -	SPG	2022	10	0	100	1,06	106	1060
Angola	Ocean Eagle-43	patrol boat	2022	3	0	41	11	451	1353
Ukraine	M-270 MLRS	MLRS	2022	4	2023				
Niger	SA-342 Gazelle	light helicopter	2022	2	2022				
Ukraine	AMX-10RC	armoured car	2022	56	2024				
Angola	BR-71-2 -	corvette	2023	3	0	45	1,6	720	2160
Benin	VAB-VTT	APC	2021	30	2024	122	0,3	36,6	1098
Mauritania	ERC-90	armoured car	2021	18	2021				
Netherlands	H-725 Caracal	transport helicopter	2024	12	0				
Greece	Patroller	armed UAV	2023	4	0				
Sweden	Learjet-60	light transport aircraft	2023	1	2023				
Niger	VAB-VTT	APC	2022	2	2022	122	0,3	36,6	73,2
Ukraine	CAESAR 155mm	SPG	2023	6	2024				
Ecuador	H-725 Caracal	transport helicopter	2023	5	0				
Armenia	Bastion APC	APC	2023	24	2023	98	0,16	15,68	376,32
Lebanon	VAB-VTT	APC	2023	20	2024	122	0,3	14,64	292,8
Ukraine	MO-120-RT 120mm	mortar	2022	10	2022				
Ukraine	CAESAR 155mm	SPG	2023	12	2023				
Belgium	CAESAR 155mm	SPG	2023	18	0	100	1,06	106	1908
United States	KC-135	tanker/transport aircraft	2023	14	0				
Ukraine	CAESAR 155mm	SPG	2023	12	2024				
Ukraine	CAESAR 155mm	SPG	2024	60	0				
Morocco	Sherpa	APC	2022	36	0	87	0,25	21,75	783
Guyana	OPV-190	patrol ship	2024	1	0	40	20	800	800
Ukraine	Mirage-2000-5	FGA aircraft	2024	6	0				

Serbia	Rafale F-4	FGA aircraft	2024	12	0	131	55	7205	86460
Armenia	CAESAR 155mm	SPG	2024	36	0	100	1,06	106	3816
Romania	AS-532 ASW	anti-submarine helicopter	2024	2	0				
Estonia	CAESAR 155mm -	SPG	2024	12	0	100	1,06	106	1272
Luxembourg	Griffon VBMR	APC	2024	16	0	91	0,35	31,85	509,6
Luxembourg	Jaguar EBRC	armoured car	2024	38	0				
Luxembourg	Serval VBMR	APC	2024	5	0	86	0,1	8,6	43
Iraq	H-725 Caracal	transport helicopter	2024	2	0				
Portugal	CAESAR 155mm -	SPG	2024	36	0	100	1,06	106	3816
Montenegro	OPV-60M	patrol ship	2024	2	0	105	4	420	840
Nigeria	Alpha Jet -	trainer/combat aircraft	2024	6	0				
TOTAL									**196474** **7,6**

D-GBARD Data

FRANCE P-1		**R&D EXPENDITURE**	**%of GBARD**
	2005	3480	20,84
	2006	4078,412	27,93
	2007	4064,504	28,81
	2008	3610	21,3
	2009	3820	21,81
TOTAL		**19052,916**	**120,69**
AVERAGE		**3810,583**	

FRANCE P-2		**R&D EXPENDITURE**	**%of GBARD**
	2010	2405	14,7
	2011	1143	6,8
	2012	1077,893	7,12
	2013	942,502	6,29
	2014	981,979	6,63
TOTAL		**6550,374**	**41,54**
AVERAGE		**1310,075**	

FRANCE P-3		**R&D EXPENDITURE**	**%of GBARD**
	2015	1017,434	7,18
	2016	1007,466	7,17
	2017	1175,046	7,97
	2018	1048,012	6,74
	2019	209,036	1,37
TOTAL		**4456,994**	**30,43**
AVERAGE		**891,399**	

FRANCE P-4	R&D EXPENDITURE	%of GBARD
2020	178,935	1,13
2021	1882,787	10,66
2022	1576,261	8,81
2023	1556,523	8,52
2024	1314,125	9,21
TOTAL	**6508,631**	**38,33**
AVERAGE	**1301,726**	

Military Budgets / GDP / R3 Calculations

FRANCE P-1	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2005	44442,1	2193,4	44,44	
2006	45792,1	2318	45,79	
2007	50684,5	2656,1	50,68	
2008	55366,0	2926,5	55,37	
2009	56441,5	2697,1	56,44	
TOTAL	**252726,1**	**12791,1**		
AVERAGE	**50545,2**	**2558,2**		**1,976**
	50,5452			

FRANCE P-2	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2010	52044,1	2648,4	52,04	
2011	54120,9	2869,9	54,12	
2012	50216,5	2684,7	50,22	
2013	52001,5	2816,1	52	
2014	53134,8	2862	53,13	
TOTAL	**261517,7**	**13881,1**		
AVERAGE	**52303,5**	**2776,2**		**1,880**
	52,2035			

FRANCE P-3	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2015	45647,5	2442,73	45,65	
2016	47370,6	2469,7	47,37	
2017	49195,7	2588	49,2	
2018	51409,8	2782,8	54,41	
2019	50118,9	2723,1	50,12	
TOTAL	**243742,5**	**13006,33**		
AVERAGE	**48748,5**	**2601,3**		**1,874**
	48,7485			

FRANCE P-4	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2020	52747,1	2645,8	52,75	
2021	56647,0	2968,4	56,65	
2022	53638,7	2798,5	53,64	
2023	61301,3	3052,7	61,3	
2024	68500,0	3174,1	68,5	
TOTAL	**292834,1**	**14639,5**		
AVERAGE	**46236,8**	**2927,9**		**1,579**
	46,2368			

Active Personnel / Population / R1, R2, & MRI Calculation

FRANCE P-1	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2005	359000	63180000				
2006	354000	63620000				
2007	353000	64020000				
2008	353000	64380000				
2009	341967	64710000				
TOTAL	**1760967**	**319910000**				
AVERAGE	352193,4	63982000	**0,813**	**0,143**	**1,976**	**0,978**

FRANCE P-2	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2010	341967	65030000				
2011	332250	65340000				
2012	325600	65660000				
2013	318400	66000000				
2014	312350	66310000				
TOTAL	**1630567**	**328340000**				
AVERAGE	326113,4	65668000	**0,776**	**0,160**	**1,880**	**0,939**

FRANCE P-3	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2015	306350	66550000				
2016	306100	66720000				
2017	307000	66920000				
2018	304800	67160000				
2019	304000	67380000				
TOTAL	**1528250**	**334730000**				
AVERAGE	305650	66946000	**0,746**	**0,159**	**1,874**	**0,926**

FRANCE P-4	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2020	304000	67600000				
2021	304000	67840000				
2022	305000	68070000				

2023	305000	68290000					
2024	305000	68510000					
TOTAL	**1523000**	**340310000**					
AVERAGE	304600	68062000		**0,738**	**0,152**	**1,579**	**0,823**

PEI-Calculation

FRANCE	EXPORT	IMPORT	(LOG(∑EX/∑IM))	
P1	579.424,30	554.968,00		0,02
P2	703.979,90	282.953,10		0,40
P3	1.952.340,00	239.842,80		0,91
P4	1.964.748,00	4.272,45		2,66

APPENDIX 10.10.
STATE PROFILE: **GERMANY**

Procurement Data

GERMANY
P-1

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Sweden	BV-206S	APC	2005	81	2009	4	102	0,2	20,4	
Israel	Heron UAV	UAV	2009	5	2011	2				
Sweden	BV-206S	APC	2005	75	2007	2	102	0,2	20,4	**1530**
Switzerland	Skyshield-35	anti-aircraft gun system	2009	2	2012	3				
Netherlands	Leopard-2A6	tank	2007	20	2012	5	116	2	232	**4640**
Switzerland	Eagle	APC	2008	25	2009	1	70	0,13	9,1	**227,5**
Switzerland	Eagle	APC	2008	173	2010	2	70	0,13	9,1	**1574,3**
Switzerland	Eagle	APC	2009	20	2011	2	70	1,13	79,1	**1582**
Germany	Dingo-2	APC	2006	149	2009	3	81	0,2	16,2	2413,8
Germany	Puma	IFV	2007	350	2021	14	121	1,5	181,5	63525
Germany	GTK Boxer	APC	2006	272	2021	15	105	0,2	21	5712
Germany	Baden-Wurttemberg	frigate	2009	3	2019	19	894	12 4	1108 56	**332568**
TOTAL										**413772 ,6**

GERMANY -
P2

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Switzerland	Eagle	APC	2013	100	2015	2	70	0,13	9,1	**910**
Switzerland	Eagle	APC	2010	60	2011	1	70	0,13	9,1	**546**
Switzerland	Eagle	APC	2010	195	2012	2	70	0,13	9,1	**1774,5**
Switzerland	Eagle	APC	2014	76	2016	2	70	0,13	9,1	**691,6**
Canada	A-4M Skyhawk-2	FGA aircraft	2014	7	2015	1	75	4	300	**2100**
TOTAL				438						**6022,1**

GERMANY -
P-3

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Netherlands	Leopard-2A6	tank	2015	16	2017	2	**116**	**2**	**232**	
Israel	Heron-TP -	armed UAV	2018	5	2021	3				
Israel	Heron UAV	UAV	2016	3	2016	1				
United States	C-130J Hercules	transport aircraft	2019	3	2022	3				
Croatia	PC-9	(armed) trainer aircraft	2017	3	2017	1				
Poland	M-28 Skytruck	light transport aircraft	2017	2	2017	1				
United States	KC-130J Hercules	tanker/transport aircraft	2019	3	2024	5				

Germany	Leopard-2A7	tank	2017	68	2023	6	118	5,2	613,6	**41724,8**
Netherlands	Leopard-2A7	tank	2017	20	2023	6	118	5,2	613,6	**12272**
Germany	GTK Boxer	APC	2015	131	2021	6	105	0,2	21	**2751**
Germany	K-130	corvette	2017	5	2028	11	1104	53	5851 2	**292560**
TOTAL				232						**349307,8**

GERMANY
P-4

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United States	CH-47F	transport helicopter	2023	60	0					
United States	F-35A Lightning-2	FGA aircraft	2022	35	2027	5	145	55	7975	**279125**
Switzerland	Eagle-5 6x6 -	APC	2020	80	2027	7	70	0,2	14	**1120**
Canada	Global Express -	transport aircraft	2020	3	0					
Belgium	EC-145	light helicopter	2020	3	2021	1				
Israel	Heron UAV	UAV	2021	1	2021	1				
United States	P-8A	anti-submarine aircraft	2021	5	0					
United States	P-8A	anti-submarine aircraft	2023	3	0					
Israel	Arrow SAMS	ABM system	2023	1	0					
Austria	DA-62	light aircraft	2021	1	2022	1				
Sweden	BVS-10	APC	2022	367	2030	8	102	0,25	25,5	**9358,5**
Australia	Boxer IFV	IFV	2024	103	2030	6	102	1,7	173,4	**17860,2**
Israel	PULS	multiple rocket launcher	2024	5	2032	8	198	1,1	217,8	**1089**
United States	Patriot-3 SAMS	SAM system	2024	8	0					
Switzerland	Piranha-4 6x6 -	armoured reconnaissance vehicle	2024	92	0					
Germany	Leopard-2A8	tank	2023	18	2030	7	118	6,2	731,6	**13168,8**
Germany	Leopard-2A7	tank	2021	17	2028	7	118	5,2	613,6	**10431,2**
Germany	Puma	IFV	2023	229	2027	4	121	1,5	181,5	**41563,5**
Germany	Dingo-2	APC	2023	50	2028	5	81	0,2	16,2	**810**
Germany	Dingo-2	APC	2024	65	2028	5	81	0,2	16,2	**1053**
Germany	Leopard-2A8	tank	2024	105	2030	6	118	6,2	731,6	**76818**
TOTAL				576						**452397,2**

Export Data

GERMANY
P-1

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
UAE	Tpz-1 Fuchs	APC	2005	32	2009					
Belgium	Dingo-2	APC	2005	220	2011	6	81	0,35	28,35	6237
Ireland	EC-135	light helicopter	2005	2	2005					
Israel	Dolphin Batch-2	submarine	2006	2	2015					
Singapore	Leopard-2A4	tank	2007	158	2012	5	94	1,6	150,4	23763,2
Canada	G-120	trainer aircraft	2005	9	2006					
UAE	Frankenthal	MCM ship	2006	2	2006	1	107	22	2354	4708
Switzerland	Kodiak AEV	armoured engineer vehicle	2007	12	2011					
Switzerland	EC-135	light helicopter	2006	18	2009					
Greece	BPz-2	armoured recovery vehicle	2005	4	2006					
Jordan	EC-135	light helicopter	2006	4	2007					
South Korea	Patriot SAMS	SAM system	2007	8	2009					
Turkiye	Leopard-2A4	tank	2005	298	2010	5	94	1,6	150,4	44819,2
Greece	Leopard-1A5	tank	2005	150	2007	2	58	1,04	156	23400
Greece	Leopard-2A4	tank	2005	183	2007	2	94	2,64	483,12	88410,96
Chile	OPV-80 -	patrol ship	2005	2	2009	4	105	36	3780	7560
Greece	Biber	armoured bridgelayer	2005	10	2006					
Italy	Type-212	submarine	2008	2	2017					
Uruguay	Lueneburg	support ship	2005	1	2005					
United States	EC-145	light helicopter	2006	346	2015					
Latvia	SWATH-125	patrol boat	2008	5	2014	6	58	2,5	145	725
Chile	Leopard-2A4	tank	2006	172	2009	3	94	1,6	275,2	47334,4
Australia	Waran	APC	2008	81	2012	4	80	0,35	28	2268
India	Do-228	light transport aircraft	2007	12	2010					
Japan	EC-135	light helicopter	2009	15	2015					
Austria	Dingo-2	APC	2005	15	2006					
Albania	Bo-105	light helicopter	2006	6	2007					
France	G-120	trainer aircraft	2006	18	2007					
Pakistan	Luna	UAV	2006	30	2008					
Lithuania	M-106	self-propelled mortar	2005	32	2006					
Canada	Leopard-2A6	tank	2007	20	2007	1	116	2	232	4640
Canada	Buffel ARV	armoured recovery vehicle	2007	2	2007					
Uruguay	Bo-105	light helicopter	2006	6	2007					
South Korea	Type-214	submarine	2008	6	2020					
Chile	Marder-1A3	IFV	2008	120	2010	2	100	1,2	112	13440

Netherlands	Kodiak AEV	armoured engineer vehicle	2008	10	2018					
Sweden	Kodiak AEV	armoured engineer vehicle	2008	6	2012					
Luxembourg	Dingo-2	APC	2008	48	2010					
Brazil	Leopard-1A5	tank	2006	220	2012	6	58	1	58	12760
Lebanon	Bremen-2	patrol boat	2007	1	2007	1	105	2,4	252	252
Czechia	Dingo-2	APC	2007	4	2008	1	81	0,35	28,35	113,4
Colombia	OPV-80 -	patrol ship	2008	1	2012	4	105	36	3780	3780
Greece	M-109A5 155mm	SPG	2008	223	2010	2	45	1,8	81	18063
Iraq	EC-135	light helicopter	2009	24	2012					
Czechia	Dingo-2	APC	2008	15	2008	1	81	0,35	28,35	425,25
Brazil	BPz-2	armoured recovery vehicle	2006	7	2009					
Brazil	Dachs	armoured engineer vehicle	2006	4	2009					
Brazil	Biber	armoured bridgelayer	2006	4	2009					
United States	EC-145	light helicopter	2008	5	2010					
Romania	BPz-2	armoured recovery vehicle	2007	3	2008					
Brunei	FPB-41	patrol boat	2007	4	2010	3	105	16,4	1722	6888
Czechia	Dingo-2	APC	2008	2	2008	1	81	0,35	28,35	28,35
Singapore	Buffel ARV	armoured recovery vehicle	2007	19	2011					
United Kingdom	G-115	trainer aircraft	2009	23	2010					
Israel	Stollergrund	support craft	2005	2	2005					
Pakistan	Dingo-2	APC	2009	10	2010	1	81	0,35	28,35	283,5
Lebanon	Totendorf	patrol boat	2008	1	2008	1	105	1,4	147	147
Brunei	OPV-80 COR -	corvette	2007	3	2011	4	121	63	7623	22869
Chile	Marder-1A3	IFV	2009	146	2011	2	100	1,3	130	18980
Chile	M-113	APC	2009	24	2012	3	73	0,1	7,3	175,2
Colombia	CPV-40	patrol boat	2009	1	2011	2	105	10	1050	1050
United States	Do-328	transport aircraft	2009	15	2013					
Canada	G-120	trainer aircraft	2007	2	2008					
Brazil	Leopard-1 chassis	tank chassis	2006	4	2009					
Spain	EC-135	light helicopter	2008	2	2008					
Chile	BPz-2	armoured recovery vehicle	2009	10	2012					
Switzerland	Beech-1900	light transport aircraft	2007	1	2007					
Turkiye	Leopard-2A4	tank	2009	56	2014	5	95	1,6	152	8512
Chile	Dachs	armoured engineer vehicle	2009	6	2012					
Uganda	Bell-206	light helicopter	2007	1	2007					
TOTAL										**361632,46**

GERMANY
P-2

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Qatar	Leopard-2A7	tank	2013	62	2018		118	1,6	188,8	11705,6

Turkiye	Type-214	submarine	2011	6	0				
Singapore	Type-218	submarine	2013	2	2024				
Brazil	Gepard	self-propelled anti-aircraft gun	2013	34	2015				
Chile	OPV-80 -	patrol ship	2011	1	2014	105	2,64	277,2	277,2
Norway	Tpz-1 Fuchs	APC	2012	5	2013	80	0,35	28	140
Colombia	Type-206A	submarine	2012	2	2015				
Poland	BPz-2	armoured recovery vehicle	2013	18	2016				
Algeria	MEKO-A200 --	frigate	2012	2	2016	416	263,5	109824	219648
Saudi Arabia	FPB-40	patrol boat	2014	15	2018				
Bangladesh	Do-228MP -	maritime patrol aircraft	2011	2	2013				
Egypt	Type-209-1400	submarine	2012	2	2017				
Israel	Drakon	submarine	2012	1	0				
India	Do-228MP -	maritime patrol aircraft	2012	14	2016				
Algeria	Fuchs-2	APC	2011	54	2014	80	0,4	32	1728
Argentina	G-120TP	trainer aircraft	2012	10	2014				
Spain	EC-135	light helicopter	2010	12	2013				
Kazakhstan	EC-145	light helicopter	2010	12	2017				
Norway	Dingo-2	APC	2010	20	2012	81	0,35	28,35	567
Ghana	Type-143 PC	patrol boat	2010	2	2012	105	11,88	1249,5	2499
Indonesia	G-120TP	trainer aircraft	2011	18	2014				
Colombia	OPV-80 -	patrol ship	2011	1	2014	105	2,6	273	273
Austria	Dingo-2	APC	2013	6	2014	81	0,34	27,54	165,24
Gabon	EC-135	light helicopter	2010	2	2011				
Canada	G-120	trainer aircraft	2010	2	2011				
Bolivia	EC-145	light helicopter	2011	2	2012				
Indonesia	Leopard-2A4	tank	2012	61	2017	95	1,64	155,8	9503,8
Algeria	Fuchs-2	APC	2014	1200	0	80	0,4	32	38400
Saudi Arabia	Luna	UAV	2010	10	2012				
Canada	Wisent-2	armoured engineer/recovery vehicle	2011	18	2018				
Colombia	OPV-80 -	patrol ship	2011	1	2017	105	1,64	172,2	172,2
Indonesia	Marder-1A3	IFV	2012	42	2015	100	1,3	130	5460
Indonesia	Buffel ARV	armoured recovery vehicle	2012	3	2016				
Singapore	PSB-2	armoured bridgelayer	2010	10	2013				
Indonesia	Leopard-2A4	tank	2012	42	2015	95	1,6	152	6384
Pakistan	Luna	UAV	2012	8	2019				
Qatar	PzH-2000 155mm	SPG	2013	24	2016	112	2,1	235,2	5644,8
Thailand	EC-145	light helicopter	2013	6	2015				
Philippines	Bell-205A	helicopter	2013	5	2013				
Venezuela	Do-228	light transport aircraft	2013	1	2014				
Greece	M-113	APC	2012	15	2013	73	0,1	7,3	109,5
Singapore	Leopard-2A4	tank	2012	45	2019	95	1,6	152	6840

Brazil	Dachs	armoured engineer vehicle	2011	1	2012				
Brazil	BPz-2	armoured recovery vehicle	2011	2	2012				
Brazil	Biber	armoured bridgelayer	2011	1	2012				
Poland	Leopard-2A4	tank	2013	14	2014	95	0,8	76	1064
Poland	M-113	APC	2013	35	2015	73	0,1	7,3	255,5
Kenya	G-120	trainer aircraft	2013	6	2013				
UAE	Rmah	support ship	2011	2	2014				
Brunei	OPV-80 COR -	corvette	2012	1	2014	145	63	5220	5220
Brunei	FIB-25	patrol boat	2010	1	2011	160	4,4	704	704
Croatia	PzH-2000 155mm	SPG	2014	12	2017	112	3	336	4032
Poland	Leopard-2A5	tank	2013	105	2015	95	1,6	152	15960
Spain	EC-135	light helicopter	2013	8	2014				
Venezuela	Do-228	light transport aircraft	2013	2	2014				
Mexico	G-120TP	trainer aircraft	2014	25	2015				
Thailand	EC-145	light helicopter	2014	5	2016				
United States	EC-145	light helicopter	2014	155	0				
Qatar	Dingo-2	APC	2014	13	2017	81	0,35	28,35	368,55
Qatar	Fennek	armoured reconnaissance vehicle	2014	32	2020				
UAE	Wisent-2	armoured engineer/recovery vehicle	2014	4	2017				
Bolivia	EC-145	light helicopter	2014	2	2014				
Iraq	Dingo-2	APC	2014	15	2015	81	0,35	28,35	425,25
Indonesia	Biber	armoured bridgelayer	2012	3	2016				
Indonesia	BPz-2	armoured recovery vehicle	2012	2	2015				
Indonesia	PiPz-1	armoured engineer vehicle	2012	3	2016				
Egypt	Type-209-1400	submarine	2014	2	2021				
Colombia	ATR-42	transport aircraft	2014	1	2015				
Myanmar	G-120TP	trainer aircraft	2014	20	2016				
Australia	EC-135	light helicopter	2014	15	2017				
Qatar	Wisent-2	armoured engineer/recovery vehicle	2013	6	2017				
Albania	EC-145	light helicopter	2014	2	2015				
Israel	Patriot SAMS	SAM system	2012	2	2013				
Mozambique	Mirage	light aircraft	2014	6	2015				
Indonesia	G-120TP	trainer aircraft	2014	6	2015				
TOTAL									**337546,64**

GERMANY
P-3

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Kuwait	Fuchs-2	APC	2015	12	2017					
United Kingdom	Boxer APC	APC	2019	523	0		320	1,6	512	267776
Israel	MEKO PC-IN -	frigate	2015	4	2023		458	5,1	2335,8	9343,2
Canada	Berlin	replenishment ship	2017	2	0					

India	Do-228	light transport aircraft	2015	14	2020				
Hungary	A-319	transport aircraft	2017	2	2018				
United Kingdom	G-120TP	trainer aircraft	2016	23	2018				
India	Do-228MP -	maritime patrol aircraft	2016	12	0				
Spain	Patriot SAMS	SAM system	2015	2	2015				
Lithuania	Boxer APC	APC	2016	2	2020	320	0,55	176	352
Thailand	EC-145	light helicopter	2015	6	2016				
Lithuania	PzH-2000 155mm	SPG	2015	18	2022	112	2,97	332,64	5987,52
Saudi Arabia	EC-145	light helicopter	2016	23	2018				
Norway	Wisent-2	armoured engineer/recovery vehicle	2015	6	2022				
United States	G-120TP	trainer aircraft	2015	6	2016				
Netherlands	Leopard-2A6	tank	2015	18	2018	102	1,6	163,2	2937,6
Lithuania	BPz-2	armoured recovery vehicle	2015	6	2017				
Lithuania	M-113	APC	2015	22	2019	73	0,1	7,3	160,6
Iraq	Dingo-2	APC	2015	5	2016	81	0,14	11,34	56,7
Lithuania	Boxer IFV -	IFV	2016	89	2023	102	1,1	112,2	9985,8
Australia	OPV-80 -	patrol ship	2018	6	0	105	3,1	325,5	1953
Jordan	Marder-1A3	IFV	2016	25	2017	100	1,12	112	2800
Spain	NH-90 TTH	transport helicopter	2019	7	0				
Australia	Boxer IFV -	IFV	2018	133	0	102	1,1	112,2	14922,6
Austria	Dingo-2	APC	2016	18	2017	81	0,14	11,34	204,12
Chile	OPV-80	patrol ship	2015	1	2017	105	2,5	262,5	262,5
Jordan	G-120TP	trainer aircraft	2016	14	2017				
United Kingdom	EC-145	light helicopter	2015	3	2017				
United Kingdom	EC-135	light helicopter	2015	29	2018				
Pakistan	ATR-72MP -	anti-submarine aircraft	2015	2	2019				
Lithuania	M-113	APC	2016	168	2019	73	0,1	7,3	1226,4
Serbia	EC-145	light helicopter	2016	5	2019				
Netherlands	PSB-2	armoured bridgelayer	2016	8	2021				
Austria	Dingo-2	APC	2017	40	2019	81	0,14	11,34	453,6
Singapore	Type-218	submarine	2017	2	0				
Denmark	Leopard-2A7	tank	2017	16	2023	118	5,2	613,6	9817,6
Indonesia	MHV-60	MCM ship	2019	2	2023	230	6,1	1403	2806
Bangladesh	Do-228MP -	maritime patrol aircraft	2017	2	2022				
Jordan	Marder-1A3	IFV	2017	25	2018	100	1,12	112	11225
Luxembourg	EC-145	light helicopter	2018	2	2020				
Egypt	MEKO-A200 -	frigate	2019	4	0	416	22	9152	36608
Hungary	EC-145	light helicopter	2018	20	2021				
Jordan	Marder-1A3	IFV	2019	25	2020	100	1,1	112	2800

								2		
Jordan	G-120TP	trainer aircraft	2017	2	2018					
Tunisia	Dingo-2	APC	2017	10	2017		81	0,14	11,34	113,4
Australia	Boxer APC	APC	2018	78	0		320	0,55	176	13728
Hungary	Leopard-2A7	tank	2018	44	0		118	5,2	613,6	26972
Hungary	Leopard-2A4	tank	2018	12	2021		95	1,6	152	1824
Hungary	PzH-2000 155mm	SPG	2018	24	2024		112	4,5	504	12096
Egypt	IRIS-T SL	SAM system	2018	7	0					
Ecuador	EC-145	light helicopter	2019	6	2021					
Ethiopia	G-120TP	trainer aircraft	2019	6	2019					
Denmark	PSB-2	armoured bridgelayer	2019	7	2024					
Ecuador	G-120TP	trainer aircraft	2019	8	2022					
United Kingdom	EC-145	light helicopter	2019	4	2021					
Hungary	Wisent-2	armoured engineer/recovery vehicle	2019	5	0					
Peru	A-200 APV	APC	2019	10	2021		102	0,12	12,24	122,4
Norway	PSB-2	armoured bridgelayer	2019	8	0					
Indonesia	G-120TP	trainer aircraft	2017	6	2018					
TOTAL										**436534,04**

GERMANY
P-4

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Canada	EC-135	light helicopter	2024	19	0					
Estonia	IRIS-T SL	SAM system	2023	2	0					
Moldova	Piranha-3	APC	2022	19	2023		107	0,14	14,98	284,62
Norway	Type-212	submarine	2021	4	0					
Italy	Type-212	submarine	2021	2	0					
Hungary	Lynx KF-41	IFV	2020	109	0		102	2,2	224,4	24459,6
Sweden	Leopard-2A7	tank	2024	44	0		118	5,2	613,6	26998,4
Norway	PMMC-G5	APC	2021	44	0		80	0,45	36	1584
Brazil	MEKO-A100 -	frigate	2020	4	0		289	122	35258	141032
Indonesia	EC-145	light helicopter	2024	4	0					
Bulgaria	OPV-90 -	patrol ship	2020	2	0		116	124	14384	28768
Israel	Dakar	submarine	2022	3	0					
Ecuador	MPV-70-2 -	patrol ship/transport ship	2020	1	0					
Thailand	EC-135	light helicopter	2020	6	2021					
Pakistan	ATR-72MP -	anti-submarine aircraft	2020	1	2022					
Hungary	Buffel ARV	armoured recovery vehicle	2020	9	2024					
Spain	EC-135	light helicopter	2021	18	0					
Egypt	FPB-40	patrol boat	2020	9	2021		105	5,2	546	4914
Egypt	IPV-60	patrol ship	2020	1	2021		105	5,2	546	546

Norway	Leopard-2A7	tank	2023	54	0	118	5,2	613,6	33134,4
Qatar	Gepard	self-propelled anti-aircraft gun	2020	15	2022				
Italy	Type-212	submarine	2023	1	0				
Sweden	G-120TP	trainer aircraft	2021	7	2023				
Bangladesh	G-120TP	trainer aircraft	2021	24	2022				
enya	G-120TP	trainer aircraft	2020	9	2021				
Cyprus	EC-145	light helicopter	2022	6	0				
Serbia	EC-145	light helicopter	2021	9	0				
Egypt	IRIS-T SLX	SAM system	2021	10	0				
Egypt	IRIS-T SL	SAM system	2021	6	0				
Belgium	EC-145	light helicopter	2024	15	0				
Ukraine	PzH-2000 155mm	SPG	2022	14	2022				
Lithuania	Boxer IFV -	IFV	2022	27	0	102	1,1	112,2	3029,4
Ukraine	Gepard	self-propelled anti-aircraft gun	2022	55	0				
United Kingdom	Boxer APC	APC	2022	100	0	352	0,55	193,6	19360
Czechia	Leopard-2A4	tank	2022	14	2023	95	1,6	152	2128
Ukraine	IRIS-T SL -	SAM system	2022	24	0				
Ukraine	M-270 MLRS	MLRS	2022	5	2022				
Greece	Marder-1A3	IFV	2022	40	2023	100	0,68	68	2720
Ukraine	BPz-2	armoured recovery vehicle	2022	26	0				
Morocco	EC-135	light helicopter	2022	12	0				
Ukraine	PzH-2000 155mm	SPG	2023	18	0				
Ukraine	Biber	armoured bridgelayer	2022	27	2024				
India	Do-228	light transport aircraft	2023	6	0				
Slovakia	Leopard-2A4	tank	2022	15	2024	95	1,6	152	2280
Ukraine	Dingo-2	APC	2022	50	2022				
Ukraine	RCH-155	SPG	2022	54	0				
Latvia	IRIS-T SL	SAM system	2023		0				
Czechia	Buffel ARV	armoured recovery vehicle	2022	1	2023				
Ukraine	Dachs	armoured engineer vehicle	2022	12	2024				
Hungary	Lynx KF-41 APC	APC	2020	100	0	153	0,9	137,7	13770
Hungary	PSB-2	armoured bridgelayer	2020	9	0				
Lithuania	M-106	self-propelled mortar	2022	10	2022				
Ukraine	Marder-1A3	IFV	2022	165	0				
Ukraine	Patriot-3 SAMS	SAM system	2023	3	2024				
Ukraine	Leopard-2A6	tank	2022	18	2023				
Ukraine	Buffel ARV	armoured recovery vehicle	2022	2	2023				
Ukraine	Leopard-1A5	tank	2023	110	0				
Slovakia	Skyshield-35	anti-aircraft gun system	2023	2	2023				
Ukraine	BPz-2	armoured recovery vehicle	2023		0				
Honduras	EC-145	light helicopter	2023	4	0				
Ukraine	Leopard-2A4	tank	2023	14	2024				
Ukraine	Eagle	APC	2023	10	2023				
Norway	Wisent-2	armoured engineer/recovery vehicle	2023	11	0				
Italy	KF-51	tank	2024	132	0	119	8,9	1059,	139801

								1	,2
Lithuania	Leopard-2A7	tank	2024	44	0	118	5,2	613,6	26998,4
Ukraine	Luna-NG	UAV	2023	5	2023				
United Kingdom	EC-145	light helicopter	2023	6	0				
Austria	IRIS-T SL	SAM system	2023	8	0				
Slovenia	IRIS-T SL	SAM system	2024	1	0				
Serbia	Dingo-2	APC	2021	2	2024	81	0,14	81,14	162,28
Montenegro	Dingo-2	APC	2021	2	0	81	0,14	81,14	162,28
Ukraine	Sea King-1-41	transport helicopter	2024	6	0				
Austria	Skyranger-30 TUR	air-defence system	2024	36	0				
Denmark	Skyranger-30 TUR	air-defence system	2024	16	0				
Brunei	EC-145	light helicopter	2024	6	0				
Czechia	Leopard-2A4	tank	2024	14	0	95	1,6	152	2128
Italy	Type-212	submarine	2024	1	0				
Ukraine	Lynx KF-41	IFV	2023		0				
Denmark	Wisent-2	armoured engineer/recovery vehicle	2024	17	0				
Czechia	Buffel ARV	armoured recovery vehicle	2024	1	0				
Bulgaria	IRIS-T SL	SAM system	2024	1	0				
United Kingdom	RCH-155	SPG	2024	5	0	118	2,2	259,6	1298
Benin	Cavalon	light aircraft	2023	12	0				
Netherlands	Leopard-2A7	tank	2024	46	0	118	5,2	613,6	28225,6
Croatia	Leopard-2A7	tank	2024	50	0	118	5,2	613,6	30680
Sweden	G-120TP	trainer aircraft	2022	3	2024				
Sweden	G-120TP	trainer aircraft	2024	3	0				
Netherlands	PMMC-G5	APC	2024	23	0	80	0,45	36	828
Czechia	Leopard-2A4	tank	2024	14	0	95	1,6	152	2128
Ireland	EC-145	light helicopter	2024	4	0				
Ukraine	Boxer IFV	IFV	2024	9	0				
Netherlands	PMMC-G5 Skyranger-30	self-propelled anti-aircraft gun	2024	22	0				
Canada	G-120TP	trainer aircraft	2024	23	0				
TOTAL									**537420,18**

D-GBARD Data

GERMANY P-1		R&D EXPENDITURE		%of GBARD
	2005	990,511		5,75
	2006	1141,077		6,48
	2007	1130,961		6,05
	2008	1187,005		6,03
	2009	1181,4		5,44
TOTAL		**5630,954**		**29,75**
AVERAGE		**1126,191**		

GERMANY P-1		R&D EXPENDITURE		%of GBARD
	2010	1153,6		5,01
	2011	937,3		3,95
	2012	926,8		3,85
	2013	944,9		3,72
	2014	977,39		3,83
TOTAL		**4939,99**		**20,36**
AVERAGE		**987,998**		

GERMANY P-1		R&D EXPENDITURE		%of GBARD
	2015	826,97		3,12
	2016	759,71		2,68
	2017	1154		3,83
	2018	1032,76		3,25
	2019	1479,17		4,35
TOTAL		**5252,61**		**17,23**
AVERAGE		**1050,522**		

GERMANY P-1		R&D EXPENDITURE		%of GBARD
	2020	1560,86		4,2
	2021	1700,065		4,2
	2022	2283,027		5,3
	2023	1952,9		4,43
	2024	3400,521		10,2
TOTAL		**10897,373**		**28,33**
AVERAGE		**2179,475**		

Military Budgets / GDP / R3 Calculations

GERMANY P-1	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2005	30325,0	2895	30,32	
2006	35883,7	3046,5	35,88	
2007	40110,9	3484,5	40,11	
2008	45099,0	3808,4	45,1	
2009	44528,9	3476	44,53	
TOTAL	**195947,4**	**16710,4**		
AVERAGE	**39189,5**	**3342,1**		**1,173**
	39,1895			

GERMANY P-2	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2010	43025,9	3471		
2011	45163,2	3824,2		
2012	43798,2	3600,2		
2013	44242,6	3808,1		
2014	44662,8	3966,8		
TOTAL	**220892,8**	**18670,3**		
AVERAGE	**44178,6**	**3734,1**		**1,183**
	44,1786			

GERMANY P-3	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2015	38170,0	3423,9		
2016	39909,7	3536,8		
2017	42281,1	3761,8		
2018	46497,7	4053,9		
2019	49079,4	3957,7		
TOTAL	**215937,9**	**18734,1**		
AVERAGE	**43187,6**	**3746,8**		**1,153**
	43,1876			

GERMANY P-4	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2020	53318,7	3937		
2021	56513,1	4351,2		
2022	56153,1	4166,9		
2023	66826,6	4527		
2024	76682,0	4710		
TOTAL	**309493,6**	**21692,1**		
AVERAGE	**61898,7**	**4338,4**		**1,427**

Active Personnel / Population / R1, R2, & MRI Calculation

GERMANY P-1	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2005	285000	82470000				
2006	246000	82380000				
2007	244000	82270000				
2008	24400	81110000				
2009	251465	81900000				
TOTAL	**1050865**	**410130000**				
AVERAGE	210173	82026000	**0,55**	**0,186**	**1,173**	**0,637**

GERMANY P-2	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2010	251465	81780000				
2011	196000	80270000				
2012	186450	80430000				
2013	181550	80650000				
2014	178600	80980000				
TOTAL	**994065**	**404110000**				
AVERAGE	198813	80822000	**0,54**	**0,222**	**1,183**	**0,648**

GERMANY P-3	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2015	177300	81690000				
2016	179100	82350000				
2017	180000	82660000				
2018	181400	82910000				
2019	184000	83090000				
TOTAL	**901800**	**412700000**				
AVERAGE	180360	82540000	**0,50**	**0,239**	**1,153**	**0,632**

GERMANY P-4	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2020	183000	83160000				
2021	183000	83200000				
2022	182000	83800000				
2023	182000	83280000				
2024	181600	83380000				
TOTAL	**911600**	**416820000**				
AVERAGE	182320	83364000	**0,50**	**0,340**	**1,427**	**0,757**

PEI-Calculation

GERMANY	EXPORT	IMPORT	∑EX/∑IM (LOG(∑EX/∑IM))	
P1	361.632,46	413772,6		-0,06

P2	337.546,64	6022,1	1,75
P3	436.534,04	349307,8	0,10
P4	537.420,18	452397,2	0,07

APPENDIX 10.11.
STATE PROFILE: **GREECE**

Procurement Data

GREECE P-1

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Germany	BPz-2	armoured recovery vehicle	2005	4	2006	1				
Germany	Leopard-1A5	tank	2005	150	2007	2	58	1,04	60,32	**9048**
Germany	Leopard-2A4	tank	2005	183	2007	2	95	2,64	250,8	**45896,4**
Germany	Biber	armoured bridgelayer	2005	10	2006	1				
United States	F-16C Block-50	FGA aircraft	2005	30	2010	5	100	31	3100	**93000**
United States	Osprey MCM	minehunter	2005	2	2007	2	148	21,7	3211,6	**6423,2**
France	Sperwer	UAV	2006	8	2008	2				
Germany	M-109A5 155mm	self-propelled gun	2008	223	2010	2	45	0,5	22,5	**5017,5**
United Kingdom	Roussen-Class	corvette	2008	2	2022	14	300	53	15900	**31800**
TOTAL				458						**191185,1**

GREECE P-2

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United States	M-901	tank destroyer	2013	106	2015	2				
United States	MaxxPro	APC	2010	11	2010	1	58	0,32	18,56	**204,16**
France	AS-532 Cougar	transport helicopter	2010	2	2011	1				
United States	M-113	APC	2013	370	2015	2	73	0,1	7,3	**2701**
Germany	M-113	APC	2012	15	2013	1	73	0,1	7,3	**109,5**
United States	M-106	self-propelled mortar	2013	1	2014	1				
TOTAL				505						**3014,66**

GREECE P-3

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United States	CH-47D Chinook	transport helicopter	2015	10	2019	4				
United States	OH-58D	combat helicopter	2017	60	2019	2	46	1,2	55,2	**3312**
Italy	P-2002 Sierra	light aircraft	2018	12	2018	1				
										3312

GREECE P-4

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
France	Patroller	armed UAV	2023	4	0					
Italy	M-346 Master -	trainer/combat aircraft	2021	10	0					
Israel	Orbiter-3	UAV	2023	34	0					
United States	S-70L Black	transport helicopter	2024	35	0					

	Hawk									
Israel	Heron-MP	maritime patrol UAV	2021	2	2021					
Israel	Heron-MP	maritime patrol UAV	2020	2	2020					
United States	MH-60R -	anti-submarine helicopter	2020	7	0					
United States	F-35A Lightning-2	FGA aircraft	2024	20	2034	10	145	55	7975	**159500**
France	Rafale	FGA aircraft	2021	12	2023	2	131	36,3	4755,3	**57063,6**
France	Rafale	FGA aircraft	2021	6	2024	3	131	55	7205	**43230**
France	Rafale	FGA aircraft	2022	6	2024	2	131	55	7205	**43230**
Germany	Marder-1A3	IFV	2022	40	2023	1	100	0,68	68	**2720**
United States	AAV-7A1	APC	2024	76	2028	4	204	0,4	81,6	**6201,6**
United States	M-1117 Guardian	APC	2021	1200	2024		117	1,16	135,72	**162864**
Israel	Spike NMT	coastal defence system	2023	34	0					
United States	Island PC	patrol boat	2022	4	2023	1	75	3,68	276	**828**
France	FDI -HN (FREMM)	frigate	2022	3	2026	4	744	124	92256	**276768**
TOTAL				1363						**752405,2**

Export Data

GREECE P-1

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Iraq	BMP-1	IFV	2005	100	2006	1	146	0,36	52,56	525,6
TOTAL										**525,6**

GREECE P-2

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
TOTAL										**0**

GREECE P-3

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Canada	Asterix	cargo ship	2015	1	2017					
TOTAL										**0**

GREECE P-3

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Ukraine	BMP-1	IFV	2022	40	2023					
TOTAL										**0**

D-GBARD Data

GREECE P-1		R&D EXPENDITURE	%of GBARD
	2005	3,2	0,5
	2006	3,5	0,51
	2007	3,212	0,49
	2008	7,89	0,77
	2009	3,72	0,44
TOTAL		**21,522**	**2,71**
AVERAGE		**4,304**	

GREECE P-2		R&D EXPENDITURE	%of GBARD
	2010	1,96	0,29
	2011	5,69	0,88
	2012	4,98	0,68
	2013	3,59	0,42
	2014	0,93	0,12
TOTAL		**17,15**	**2,39**
AVERAGE		**3,430**	

GREECE P-3		R&D EXPENDITURE	%of GBARD
	2015	0,82	0,09
	2016	8,7	0,92
	2017	15,49	1,75
	2018	19,29	1,73
	2019	19,91	1,55
TOTAL		**64,21**	**6,04**
AVERAGE		**12,842**	

GREECE P-4		R&D EXPENDITURE	%of GBARD
	2020	22,7	1,55
	2021	22,565	1,46
	2022	26,879	1,75
	2023	22,182	1,73
	2024	24,472	1,81
TOTAL		**118,798**	**8,3**
AVERAGE		**23,760**	

Military Budgets / GDP / R3 Calculations

GREECE P-1	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2005	7028,4	248	7,03	
2006	7607,2	273,6	7,61	
2007	8533,1	318,9	8,53	
2008	10574,1	355,9	10,57	
2009	10641,3	331	10,64	
TOTAL	**44384,2**	**1527,4**		
AVERAGE	**8876,8**	**305,5**		**2,906**
	8,8768			

GREECE P-2	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2010	8163,6	297,37	8,16	
2011	7128,6	283	7,13	
2012	5915,0	242,2	5,92	
2013	5655,2	238,9	5,66	
2014	5531,3	235,5	5,53	
TOTAL	**32393,7**	**1296,97**		
AVERAGE	**6478,7**	**259,4**		**2,498**
	6,4787			

GREECE P-3	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2015	4818,1	195,7	4,82	
2016	4963,5	193,1	4,96	
2017	5088,2	199,8	5,09	
2018	5757,1	212,2	5,76	
2019	5383,1	205,3	5,38	
TOTAL	**26010,0**	**1006,1**		
AVERAGE	**5202,0**	**201,2**		**2,585**
	5,2020			

GREECE P-4	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2020	5773,3	188,3	5,77	
2021	8299,9	214,8	8,3	
2022	8745,4	217,8	8,75	
2023	7729,8	238,3	7,73	
2024	8745,0	252,7	8,75	
TOTAL	**39293,3**	**1111,9**		
AVERAGE	**7858,7**	**222,4**		**3,534**
	7,8587			

Active Personnel / Population / R1, R2, & MRI Calculation

GREECE P-1	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2005	168000	10990000				
2006	161000	11020000				
2007	161000	11050000				

2008	161000	11080000				
2009	142936	11110000				
TOTAL	**793936**	**55250000**				
AVERAGE	158787,2	11050000	**1,187**	**0,056**	**2,906**	**1,383**

GREECE P-2	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2010	149647	11120000				
2011	142936	11100000				
2012	147350	11050000				
2013	148950	10970000				
2014	148950	10890000				
TOTAL	**737833**	**55130000**				
AVERAGE	147566,6	11026000	1,158	**0,044**	**2,498**	**1,233**

GREECE P-3	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2015	146950	10820000				
2016	145350	10780000				
2017	146000	10750000				
2018	147850	10730000				
2019	147000	10720000				
TOTAL	**733150**	**53800000**				
AVERAGE	146630	10760000	**1,165**	**0,035**	**2,585**	**1,262**

GREECE P-4	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2020	147000	10700000				
2021	147000	10570000				
2022	146000	10440000				
2023	145000	10410000				
2024	142700	10395000				
TOTAL	**727700**	**52515000**				
AVERAGE	145540	10503000	**1,172**	**0,054**	**3,534**	**1,587**

PEI-Calculation

GREECE	**EXPORT**	**IMPORT**	**∑EX/∑IM (LOG(∑EX/∑IM))**
P1	525,60	191.185,10	-2,56
P2	1,00	3.014,66	-3,48
P3	1,00	3.312,00	-3,52
P4	1,00	752.405,20	-5,88

APPENDIX 10.12.
STATE PROFILE: **HUNGARY**

Procurement Data

HUNGARY
P-1

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United States	Cougar MRAP	APC	2009	3	2009	1	46	0,35	16,1	**48,3**
TOTAL				3						**48,3**

HUNGARY
P-2

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United States	MaxxPro	APC	2010	12	2011	1	58	0,32	18,56	**222,72**
United States	HMMWV-UA	APC	2010	46	2011	1	148	0,13	19,24	**885,04**
Finland	Mi-8T	transport helicopter	2011	2	2011	1				
United States	MaxxPro	APC	2013	12	2013	1	58	0,32	18,56	**222,72**
Russia	Mi-8T	transport helicopter	2014	3	2014	1				
TOTAL				75						**1330,48**

HUNGARY
P-3

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Germany	A-319	transport aircraft	2017	2	2018	1				
France	H-725 Caracal	transport helicopter	2018	16	0					
Czechia	Z-142	trainer aircraft	2016	2	2017	1				
Sweden	JAS-39C Gripen	FGA aircraft	2015	1	2016	1	113	11,4	1288,2	**1288,2**
Czechia	Z-143	light aircraft	2016	2	2018	2				
Germany	EC-145	light helicopter	2018	20	2021	3				
Germany	Leopard-2A7	tank	2018	44	2025	7	118	5,2	613,6	**26998,4**
Germany	Leopard-2A4	tank	2018	12	2021	3	95	1,6	152	**1824**
TOTAL				97						**30110,6**

HUNGARY
P-4

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Germany	Lynx KF-41	IFV	2020	109	2030	10	102	2,2	224,4	**24459,6**
Brazil	C-390 -	transport aircraft	2020	2	0					
Norway	NASAMS-2 -	SAM system	2020	7	2024	4				
Germany	Buffel ARV	armoured recovery vehicle	2020	9	2024	4				

Czechia	L-39NG -	trainer/combat aircraft	2022	12	0					
Czechia	Z-142	trainer aircraft	2020	4	2020	1				
Germany	Lynx KF-41 APC	APC	2020	100	2027	7	153	0,5	76,5	**7650**
Germany	PSB-2	armoured bridgelayer	2020	9	0					
Sweden	JAS-39C Gripen -	FGA aircraft	2024	4	2032	8	113	26,3	2971,9	**11887,6**
TOTAL				145						**43997,2**

Export Data

HUNGARY P-1

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Iraq	BTR-80	APC	2005	66	2007					
TOTAL										**0**

HUNGARY P-2

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Ethiopia	Mi-24V	combat helicopter	2012	12	2013	1	86	3,4	292,4	3508,8
TOTAL										**3508,8**

HUNGARY P-3

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
TOTAL										**0**

HUNGARY P-4

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Serbia	BTR-80A	IFV	2023	10	0		109	0,36	39,24	392,4
Netherlands	L-39Z	trainer/combat aircraft	2021	1	2021					
TOTAL										**392,4**

D-GBARD Data

HUNGARY P-1	R&D EXPENDITURE	%of GBARD
2005	0,37	0,1
2006	0,333	0,1
2007	2,193	0,56

	2008	2,545	0,56
	2009	0,378	0,09
TOTAL		**5,819**	**1,41**
AVERAGE		**1,164**	

HUNGARY P-2	**R&D EXPENDITURE**	**%of GBARD**
2010	2,159	0,62
2011	0,176	0,06
2012	0,901	0,27
2013	1,147	0,17
2014	0,438	0,15
TOTAL	**4,821**	**1,27**
AVERAGE	**0,964**	

HUNGARY P-3	**R&D EXPENDITURE**	**%of GBARD**
2015	1,854	0,6
2016	0,587	0,13
2017	1,742	0,4
2018	0,128	0,03
2019	0,131	0,03
TOTAL	**4,442**	**1,19**
AVERAGE	**0,888**	

HUNGARY P-4	**R&D EXPENDITURE**	**%of GBARD**
2020	2,153	0,29
2021	44,477	6,4
2022	46,478	8,98
2023	24,36	3,96
2024	44,549	5,22
TOTAL	**162,017**	**24,85**
AVERAGE	**32,403**	

Military Budgets / GDP / R3 Calculations

HUNGARY P-1	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2005	1596,1	113,2	1,6	
2006	1410,1	115,7	1,41	
2007	1776,5	140,2	1,78	
2008	1867,9	158,3	1,87	
2009	1475,8	131,1	1,48	
TOTAL	**8126,3**	**658,5**		
AVERAGE	**1625,3**	**131,7**		**1,234**
	1,6253			

HUNGARY P-2	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**

2010	1350,8	132,2	1,35		
2011	1472,1	141,9	1,47		
2012	1322,3	128,8	1,32		
2013	1280,1	135,7	1,28		
2014	1209,8	141	1,21		
TOTAL	**6635,0**	**679,6**			
AVERAGE	**1327,0**	**135,9**			**0,976**
	1,3270				

HUNGARY P-3	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2015	1132,5	125,2	1,13	
2016	1288,7	128,6	1,29	
2017	1702,6	143,1	1,7	
2018	1615,6	160,6	1,62	
2019	2190,6	164	2,19	
TOTAL	**7930,0**	**721,5**		
AVERAGE	**1586,0**	**144,3**		**1,099**
	1,5860			

HUNGARY P-4	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2020	2768,4	157,3	2,77	
2021	2409,6	182,1	2,41	
2022	3256,8	177,3	3,26	
2023	4355,5	212,5	4,36	
2024	5251,0	228,8	5,25	
TOTAL	**18041,3**	**958**		
AVERAGE	**3608,3**	**191,6**		**1,883**

Active Personnel / Population / R1, R2, & MRI Calculation

HUNGARY P-1	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2005	44000	10090000				
2006	44000	10070000				
2007	37000	10060000				
2008	37000	10040000				
2009	41626	10020000				
TOTAL	**203626**	**50280000**				
AVERAGE	40725	10056000	**0,703**	**0,040**	**1,234**	**0,659**

HUNGARY P-2	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2010	34587	10000000				
2011	38500	9972000				
2012	38500	9920000				

2013	38500	9893000				
2014	38500	9866000				
TOTAL	**188587**	**49651000**				
AVERAGE	37717	9930200	**0,681**	**0,035**	**0,976**	**0,564**

HUNGARY P-3	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2015	38500	9843000				
2016	39800	9814000				
2017	40000	9788000				
2018	39800	9776000				
2019	40000	9771000				
TOTAL	**198100**	**48992000**				
AVERAGE	39620	9798400	**0,703**	**0,040**	**1,099**	**0,614**

HUNGARY P-4	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2020	46000	9750000				
2021	45000	9710000				
2022	44000	9644000				
2023	42000	9592000				
2024	41600	9392000				
TOTAL	**218600**	**48088000**				
AVERAGE	43720	9617600	**0,744**	**0,083**	**1,883**	**0,903**

PEI-Calculation

HUNGARY	**EXPORT**	**IMPORT**	**∑EX/∑IM (LOG(∑EX/∑IM))**
P1	1,00	48,30	-1,68
P2	3.508,80	1.330,48	0,42
P3	1,00	30.110,60	-4,48
P4	392,40	43.997,20	-2,05

APPENDIX 10.13.
STATE PROFILE: **ITALY**

Procurement Data

ITALY P-1

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV		MEV	PVI
United States	F-35A Lightning-2	FGA aircraft	2006	75	0		145		55	797 5	**59812 5**
Germany	Type-212	submarine	2008	2	2017	9					
United States	MQ-9 UAV	UAV	2008	2	2010	2					
United States	Cougar MRAP	APC	2008	10	2008	1	46		0,35	16,1	**161**
United States	CH-47F	transport helicopter	2009	16	2018	9					
United States	MQ-9 UAV	UAV	2009	2	2010	1					
France	2R2M 120mm	mortar	2006	21	2017	11					
United States	F-35B Lightning-2	FGA aircraft	2006	35	2028	12	145		60	870 0	**30450 0**
Italy	VBM Freccia	IFV	2007	249	2017	10	115		2	230	57270
TOTAL				335							**96005 6**

ITALY P-2

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV		MEV	PVI
United States	RQ-7 Shadow-200	UAV	2010	16	2015	5					
United States	MQ-9 UAV	UAV	2011	2	2012	1					
United States	ScanEagle	UAV	2011	10	2013	12					
United States	Gulfstream-5	light transport aircraft	2012	2	2018	6					
United States	Gulfstream-3 EW	reconnaissance/signals intelligence aircraft	2012	1	2012	1					
United States	Predator UAV	UAV	2014	2	2015	1					
Germany	GFF4	APC	2011	40	2013	2	66		**0,35**	**23,1 922**	**924 92256**
Italy	FREMM	frigate	2013	10	2026	13	744		**124**	**56** 371	**0** 25974
Italy	Thaon do Revel Class	patrol ship	2014	7	2025	11	399		93	07	9
TOTAL				72							**11832 33**

ITALY P-3

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV		MEV	PVI
France	2R2M 120mm	mortar	2018	38	2024	6					
United States	King Air ISR	ground surveillance aircraft	2016	1	2016	1					
Italy	Trieste	LHD	2015	1	2024	9	500		124	620 00	62000

TOTAL				112						**62000**

ITALY P-4

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United States	Gulfstream-5	light transport aircraft	2021	6	0					
Germany	Type-212	submarine	2021	2	0					
Germany	Type-212	submarine	2023	1	0					
United States	HIMARS	multiple rocket launcher	2024	21	2029	5	181	1,1	199,1	4181,1
Germany	KF-51	tank	2024	132	2037	13	119	5	595	78540
United States	M-270 MLRS	multiple rocket launcher	2023	20	2027	4	100	1,2	120	2400
Germany	Type-212	submarine	2024	1	0					
Italy	Ariete C2	tank	2023	90	230	7	66	1.6 (UPGRADE!)	105,6	9504
Italy	VBM Freccia	IFV	2020	5	2023	6	115	2	230	1150
United States	Cougar MRAP	APC	2022	9	2025	3	46	0,35	16,1	144,9
TOTAL				278						**95920**

Export Data

ITALY P-1

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Belgium	LMV	APC	2005	440	2008	3	58	0,15	8,7	3828
Malaysia	MB-339C -	trainer/combat aircraft	2006	8	2009					
Turkiye	ATR-72MP -	anti-submarine aircraft	2005	6	2023					
Turkiye	Bell-412	helicopter	2005	5	2008					
UAE	Abu Dhabi -	frigate	2009	1	2013	4	312	142	44304	44304
Turkiye	T-129B ATAK -	combat helicopter	2008	50	2026	8	70	10,5	735	36750
Cyprus	AW-139	helicopter	2008	3	2011					
New Zealand	A-109K	light helicopter	2008	5	2012					
Pakistan	Spada-2000	SAM system	2007	10	2013					
United States	C-27J -	transport aircraft	2007	21	2014					
Brazil	VBTP Guarani	APC	2009	1410	2028	9	180	0,35	63	88830
Romania	C-27J -	transport aircraft	2007	7	2015					
Lithuania	C-27J -	transport aircraft	2006	3	2009					
Bulgaria	C-27J -	transport aircraft	2006	3	2011					
Peru	Lupo	frigate	2005	2	2007	2	312	171,6	53539,2	107078,4
Qatar	AW-139	helicopter	2008	18	2013					
UAE	AW-139	helicopter	2005	6	2007					
Nigeria	G-222	transport aircraft	2005	1	2007					
Ireland	AW-139	helicopter	2006	2	2008					

Norway	LMV	APC	2008	35	2008	1	58	0,15	8,7	304,5
Norway	LMV	APC	2008	47	2012	4	58	0,15	8,7	408,9
Libya	A-109K	light helicopter	2005	10	2010					
Zambia	Bell-205A-1	helicopter	2006	3	2006					
Nigeria	AW-139	helicopter	2006	3	2009					
Latvia	A-109K	light helicopter	2006	2	2007					
Iraq	Diciotti	patrol boat	2006	4	2009	3	105	1,2	126	504
Pakistan	Falco	UAV	2006	25	2009					
Australia	A-109K	light helicopter	2006	2	2007					
Finland	MCMV-2010	MCM ship	2006	3	2016	10	100	4,5	450	1350
Nigeria	ATR-42MP -	maritime patrol aircraft	2007	2	2010					
Philippines	SF-260	(armed) trainer aircraft	2008	18	2011					
Spain	LMV	APC	2007	40	2008	1	58	0,15	8,7	348
Afghanistan	G-222	transport aircraft	2008	16	2012					
Norway	LMV	APC	2006	25	2007	1	58	0,15	8,7	217,5
Oman	Centauro	fire-support vehicle	2008	6	2010					
Czechia	LMV	APC	2007	4	2008	1	58	0,15	8,7	34,8
Spain	Freccia APC	APC	2007	4	2011	4	109	0,45	49,05	196,2
Spain	LMV	APC	2008	80	2008	1	58	0,15	8,7	696
Morocco	C-27J -	transport aircraft	2008	4	2011					
Austria	LMV	APC	2008	150	2013	5	58	0,15	8,7	1305
Czechia	LMV	APC	2008	15	2008	1	58	0,15	8,7	130,5
Pakistan	Falco	UAV	2009	25	2011					
Bahamas	P-68	light transport aircraft	2008	1	2009					
Algeria	A-109K	light helicopter	2009	15	2011					
Czechia	LMV	APC	2009	90	2013	4	58	0,15	8,7	783
Oman	Centauro	fire-support vehicle	2009	3	2011					
India	Deepak-2 -	replenishment ship	2009	1	2011					
Nigeria	A-109K	light helicopter	2009	6	2012					
Spain	LMV	APC	2009	15	2010	1	58	0,15	8,7	130,5
Turkiye	Comandante	patrol ship	2007	4	2012					
Pakistan	LMV	APC	2009	45	2010	1	58	0,15	8,7	391,5
Libya	Bigliani	patrol boat	2009	6	2010	1	105	2,76	289,8	1738,8
Croatia	LMV	APC	2006	10	2007	1	58	0,15	8,7	87
Turkiye	ATR-72 -	transport aircraft	2005	2	2013					
Libya	AW-139	helicopter	2009	1	2011					
TOTAL										**289416,6**

ITALY P-2

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Australia	C-27J -	transport aircraft	2012	10	2018					
Poland	M-346 Master -	trainer/combat aircraft	2014	8	2017					
Israel	M-346 Master -	trainer/combat aircraft	2012	30	2016					
Bangladesh	A-109K	light helicopter	2010	2	2011					
Singapore	M-346 Master -	trainer/combat aircraft	2010	12	2014					

Saudi Arabia	Falco	UAV	2011	4	2012					
Slovakia	C-27J -	transport aircraft	2014	2	2018					
UAE	Falaj-2 -	corvette	2010	2	2013	3	214	82,6	17676,4	35352,8
Spain	LMV	APC	2010	50	2011	1	58	0,15	8,7	435
Algeria	BDSL -	amphibious assault ship	2011	1	2014					
Slovakia	LMV	APC	2011	10	2012	1	58	0,15	8,7	87
Turkiye	T-129B ATAK -	combat helicopter	2010	9	2015	5	70	10,5	105	945
New Zealand	A-109K	light helicopter	2010	3	2012					
Turkmenistan	AW-139	helicopter	2010	4	2011					
Russia	LMV	APC	2011	358	2016	5	58	0,15	8,7	3114,6
Egypt	AW-139	helicopter	2011	2	2012					
Peru	C-27J -	transport aircraft	2013	2	2015					
Mexico	C-27J -	transport aircraft	2011	4	2012					
Zambia	SF-260TP	(armed) trainer aircraft	2011	6	2012					
Malta	AW-139	helicopter	2013	1	2014					
Philippines	A-109K	light helicopter	2012	3	2013					
Thailand	AW-139	helicopter	2012	2	2014					
Norway	LMV	APC	2013	62	2018	5	58	0,14	8,7	539,4
Libya	Puma-4	APC	2012	20	2013	1	86	0,06	5,16	103,2
United Nations**	Falco	UAV	2013	3	2013					
Lebanon	Falco	UAV	2013	3	2014					
Mauritania	A-109K	light helicopter	2013	2	2014					
Chad	C-27J -	transport aircraft	2012	2	2014					
Philippines	A-109K	light helicopter	2013	8	2015					
Algeria	AW-119	light helicopter	2012	8	2013					
Algeria	AW-139	helicopter	2011	14	2015					
Peru	C-27J -	transport aircraft	2014	2	2017					
Philippines	A-109K	light helicopter	2014	2	2015					
Jordan	Centauro	fire-support vehicle	2014	80	2022					
Djibouti	M-109A1 155mm	SPG	2013	10	2013	1	82	0,44	36,08	360,8
Djibouti	Puma-4	APC	2013	7	2013	1	86	0,06	5,16	36,12
Bangladesh	AW-139	helicopter	2014	2	2015					
Malta	AW-139	helicopter	2014	1	2014					
Thailand	P-180 Avanti	light transport aircraft	2014	1	2017					
Algeria	MCMV-2010	MCM ship	2014	1	2017	3	250	57,5	14375	14375
Lebanon	LMV	APC	2014	25	2017	3	58	0,15	8,7	217,5
Pakistan	M-113	APC	2013	622	2015	2	73	0,1	7,3	4540,6
Zambia	SF-260TP	(armed) trainer aircraft	2014	6	2016					
Burkina Faso	AW-139	helicopter	2014	1	2016					
Turkmenistan	A-109K	light helicopter	2011	6	2017					
Turkmenistan	Falco	UAV	2010	3	2011					
Jordan	Falco	UAV	2013	4	2014					
Lebanon	MPV-VTTM	APC	2014	5	2015	1	101	0,25	25,25	126,25
Tunisia	LMV	APC	2014	3	2015	1	58	0,15	8,7	26,1
Brazil	AW-119	light helicopter	2010	2	2011					
TOTAL										**60259,3**

ITALY P-3

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Qatar	BDSL+ -	ampibious assault ship/frigate	2016	1	2024					
Qatar	NH-90 NFH --	anti-submarine helicopter	2018	12	0					
Indonesia	M-113	APC	2016	10	2018	2	73	0,2	14,6	146
Brazil	LMV	APC	2019	32	2021	2	58	0,15	8,7	278,4
Austria	LMV	APC	2015	22	2017	2	58	0,15	8,7	191,4
Somalia	Puma-4	APC	2015	5	2015	1	86	0,06	5,16	25,8
Albania	LMV	APC	2015	8	2017	2	58	0,15	8,7	69,6
United States	ACV	APC	2018	632	2025	7	70	0,55	38,5	24332
Pakistan	Puma-4	APC	2015	79	2018	3	86	0,06	5,16	407,64
Czechia	LMV	APC	2018	80	2023	5	58	0,15	8,7	696
Netherlands	MTV	APC	2019	625	2026	7	82	0,18	14,76	9225
Turkiye	T-129B ATAK -	combat helicopter	2017	24	2027	10	70	10,5	735	17640
Turkiye	T-129B ATAK -	combat helicopter	2017	9	2025	8	70	10,5	735	6615
Qatar	Fincantieri-700 -	corvette	2016	2	2022	6	312	95	29640	59280
Turkmenistan	M-346FA -	trainer/combat aircraft	2019	6	2021	2		12		
Kuwait	Typhoon-20	FGA aircraft	2016	28	2025	9	143	57,5	8222,5	230244
Qatar	Fincantieri-3000 -	frigate	2016	4	2023	7	413	300	123900	495600
United States	AW-139	helicopter	2018	42	0					
Angola	AW-139	helicopter	2015	4	2018					
Nepal	AW-139	helicopter	2017	2	2019					
Pakistan	AW-139	helicopter	2017	15	2018					
Bangladesh	AW-139	helicopter	2017	2	2018					
UAE	AW-139	helicopter	2015	9	2015					
Pakistan	AW-139	helicopter	2016	5	2017					
Pakistan	AW-139	helicopter	2016	5	2019					
Thailand	AW-139	helicopter	2015	8	2017					
Kenya	AW-139	helicopter	2018	3	2020					
Egypt	AW-149	helicopter	2019	32	2023					
Nigeria	AW-139	helicopter	2019	1	2021					
Uruguay	Bell-412	helicopter	2017	2	2021					
Thailand	AW-149	helicopter	2016	5	2018					
Malta	AW-139	helicopter	2015	1	2016					
Greece	P-2002 Sierra	light aircraft	2018	12	2018					
Argentina	P-2002 Sierra	light aircraft	2016	8	2017					
Angola	A-109K	light helicopter	2015	2	2017					
Cambodia	A-109	light helicopter	2018	2	2018					
Argentina	Bell-206	light helicopter	2016	15	2018					
Bangladesh	AW-119	light helicopter	2016	2	2017					
Nigeria	A-109K	light helicopter	2018	4	2020					
Portugal	AW-119	light helicopter	2018	5	2020					

Israel	AW-119	light helicopter	2019	12	0					
Chile	P-68	light transport aircraft	2015	7	2017					
Algeria	MCMV-2010	MCM ship	2015	1	2020	213	213	57,5	12247,5	12247,5
Algeria	MCMV-2010	MCM ship	2019	1	2022	213	213	57,5	12247,5	12247,5
Malta	CNV-1800	patrol ship	2018	1	2023	5	185	45	8325	8325
France	Vulcano SH -	replenishment ship	2019	4	0					
Pakistan	M-109A1 155mm	SPG	2015	162	2019	4	45	0,44	19,8	3207,6
Argentina	Model-56 105mm	towed gun	2015	4	2016					
Poland	M-346 Master -	trainer/combat aircraft	2018	4	2020					
Kenya	C-27J -	transport aircraft	2017	3	2020					
Turkmenistan	C-27J -	transport aircraft	2019	2	2021					
Zambia	C-27J -	transport aircraft	2015	2	2019					
unknown recipient(s)	Falco	UAV	2016	1	2017					
unknown recipient(s)	Falco	UAV	2017	2	2018					
TOTAL										**880778,44**

ITALY P-4

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Ukraine	SAMP/T	ABM/SAM system	2024	1	2024					
Netherlands	NH-90 NFH --	anti-submarine helicopter	2024	6	0					
Ukraine	LMV	APC	2022	10	2022					
Congo	MLS Shield -	APC	2021	6	2021	1	91	0,3	27,3	163,8
Brazil	LMV	APC	2024	388	2029	5	58	0,15	8,7	3375,6
Ukraine	M-113	APC	2022	20	2022					
Ukraine	M-113	APC	2023	40	2023					
Ukraine	MLS Shield -	APC	2022	11	2022	1				
Austria	M-346FA -	trainer/combat aircraft	2024	12	2029	5				
Nigeria	M-346FA -	trainer/combat aircraft	2021	24	2027	6				
Brazil	Centauro-2	fire-support vehicle	2022	98	0					
Egypt	FREMM -	frigate	2020	2	2021	1	744	483	359352	718704
Indonesia	Maestrale	frigate	2021	2	2026	5	641	410	262810	525620
Indonesia	FREMM -	frigate	2021	6	2026	5	744	483	359352	2156112
Niger	Bell-412	helicopter	2022	2	2022					
Austria	AW-169	helicopter	2022	18	0					
Slovenia	AW-139	helicopter	2023	6	0					
Somalia	Bell-205A	helicopter	2023	4	2024					
Zambia	Bell-412	helicopter	2020	2	2021					
Dominican Republic	AW-169	helicopter	2023	4	0					
Australia	AW-139	helicopter	2020	2	2021					
Austria	AW-169	helicopter	2021	18	0					

Poland	AW-149	helicopter	2022	32	0					
Malaysia	AW-139	helicopter	2020	3	2022					
North Macedonia	AW-149	helicopter	2024	4	0					
North Macedonia	AW-169	helicopter	2024	4	0					
Algeria	AW-139	helicopter	2023	7	0					
Somalia	Bell-412	helicopter	2022	2	2023					
Argentina	P-2002 Sierra	light aircraft	2023	2	2024					
United States	AW-119	light helicopter	2020	130	0					
Turkiye	AW-119	light helicopter	2021	15	2024					
Nigeria	A-109K	light helicopter	2022	12	0					
Argentina	A-109K	light helicopter	2024	4	0					
Nigeria	A-109K	light helicopter	2022	1	2023					
Nigeria	A-109K	light helicopter	2021	3	2024					
Portugal	AW-119	light helicopter	2022	2	2023					
Nigeria	A-109K	light helicopter	2022	2	2024					
Dominican Republic	Tucano-R	light/trainer aircraft	2022	10	0					
Malaysia	ATR-72MPA -	maritime patrol aircraft	2023	2	0					
Qatar	M-23 C	midget submarine	2020	2	0					
Ukraine	M-270 MLRS	MLRS	2022	2	2022					
Indonesia	PPA-L -	patrol ship	2024	2	2030	6	105	15	1575	3150
Algeria	Vulcano SH -	replenishment ship	2024	1	0					
Ukraine	Spada-2000	SAM system	2023	1	2023					
Ukraine	M-109A1 155mm	SPG	2022	60	2023					
Ukraine	PzH-2000 155mm	SPG	2022	6	2022					
Ukraine	FH-70 155mm	towed gun	2022	10	2022					
Poland	M-346 Master -	trainer/combat aircraft	2021	4	2022					
Qatar	M-346 Master -	trainer/combat aircraft	2021	6	0					
Greece	M-346 Master -	trainer/combat aircraft	2021	10	0					
Slovenia	C-27J -	transport aircraft	2023	1	2024					
Philippines	ATR-72 -	transport aircraft	2024	2	0					
Peru	C-27J -	transport aircraft	2024	2	0					
Slovenia	C-27J -	transport aircraft	2021	1	2023					
Tanzania	C-27J -	transport aircraft	2024	2	0					
Azerbaijan	C-27J -	transport aircraft	2023	2	0					
Bangladesh	Falco	UAV	2020	3	2022					
										340712
TOTAL										**5,4**

D-GBARD Data

ITALY P-1	R&D EXPENDITURE	%of GBARD
2005	347,94	3,63

	2006	123,9	4,36
	2007	451,36	5,54
	2008	123,88	5,68
	2009	67	4,25
TOTAL		**1114,08**	**23,46**
AVERAGE		**222,816**	

ITALY P-2	**R&D EXPENDITURE**	**%of GBARD**
2010	80,5	4,35
2011	90,52	8,24
2012	63,2	4,25
2013	80,36	8,68
2014	101,52	9,47
TOTAL	**416,1**	**34,99**
AVERAGE	**83,220**	

ITALY P-3	**R&D EXPENDITURE**	**%of GBARD**
2015	152,41	6,25
2016	112,55	4,62
2017	165,44	5,6
2018	268,5	6,1
2019	235	4,9
TOTAL	**933,9**	**27,47**
AVERAGE	**186,780**	

ITALY P-4	**R&D EXPENDITURE**	**%of GBARD**
2020	251,258	5,2
2021	260,58	6,5
2022	369,47	7,2
2023	485,36	9,3
2024	523,25	9,1
TOTAL	**1889,918**	**37,3**
AVERAGE	**377,984**	

Military Budgets / GDP / R3 Calculations

ITALY P-1	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2005	29737,6	1865	29,74	
2006	29633,0	1959	29,63	
2007	31982,4	2223	31,98	

2008		36840,0	2418		36,84	
2009		34054,5	2209		34,06	
TOTAL		**162247,6**	**10674**			
AVERAGE		**32449,5**	**2134,8**			**1,520**
		32,4495				

ITALY P-2	**MIL BUDGET (D)**		**GDP**	**M.B. in Bil**		**R3 (D/GDP*100)**
2010		32020,8	2145		32,02	
2011		33828,8	2307		33,83	
2012		29781,0	2098		29,78	
2013		29957,4	2153		29,96	
2014		27701,0	2173		27,7	
TOTAL		**153289,1**	**10876**			
AVERAGE		**30657,8**	**2175,2**			**1,4**
		30,6578				

ITALY P-3	**MIL BUDGET (D)**		**GDP**	**M.B. in Bil**		**R3 (D/GDP*100)**
2015		22180,8	1845		22,18	
2016		25033,0	1887		25,03	
2017		26447,9	1971		26,45	
2018		28420,1	2099		28,42	
2019		26380,7	2020		26,38	
TOTAL		**128462,5**	**9822,0**			
AVERAGE		**25692,5**	**1964,4**			**1,308**
		25,6925				

ITALY P-4	**MIL BUDGET (D)**		**GDP**	**M.B. in Bil**		**R3 (D/GDP*100)**
2020		32929,1	1907		32,93	
2021		36232,7	2179		36,23	
2022		34691,9	2103		34,69	
2023		35528,9	2301		35,53	
2024		39528,0	2398		39,53	
TOTAL		**178910,6**	**10888**			
AVERAGE		**35782,1**	**2177,6**			**1,643**
		35,7821				

Active Personnel / Population / R1, R2, & MRI Calculation

ITALY P-1	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2005	445000	57970000				

2006		440000	58140000				
2007		436000	58440000				
2008		436000	58830000				
2009		326939	59100000				
TOTAL		**2083939**	**292480000**				
AVERAGE		416788	58496000	**0,910**	**0,078**	**1,520**	**0,836**

ITALY P-2	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2010	359378	59280000				
2011	367550	59380000				
2012	359500	59540000				
2013	359500	60230000				
2014	356850	60790000				
TOTAL	**1802778**	**299220000**				
AVERAGE	360556	59844000	**0,847**	**0,085**	**1,400**	**0,777**

ITALY P-3	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2015	356850	60730000				
2016	356850	60630000				
2017	347000	60540000				
2018	341500	60420000				
2019	342000	59730000				
TOTAL	**1744200**	**302050000**				
AVERAGE	348840	60410000	**0,831**	**0,074**	**1,308**	**0,738**

ITALY P-4	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2020	338000	59440000				
2021	338000	59130000				
2022	339000	59010000				
2023	400000	58990000				
2024	400000	59010000				
TOTAL	**1815000**	**295580000**				
AVERAGE	363000	59116000	**0,854**	**0,099**	**1,643**	**0,865**

PEI-Calculation

ITALY	**EXPORT**	**IMPORT**	**∑EX/∑IM (LOG(∑EX/∑IM))**
P1	289.416,60	960.056,00	-0,52
P2	60.259,37	1.183.232,00	-1,29
P3	880.778,40	62.060,00	1,15
P4	3.407.125,00	95.920,00	1,55

APPENDIX 10.14.
STATE PROFILE: **LATVIA**

Procurement Data

LATVIA P-1

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Germany	SWATH-125	patrol boat	2008	5	2014	6	58	4,6	266,8	**1334**
Netherlands	Tripartite	MCM ship	2005	5	2011	6	100	22	2200	**11000**
Italy	A-109K	light helicopter	2006	2	2007	1				
TOTAL				12						**12334**

LATVIA P-2

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United States	HMMWV-UA	APC	2010	40	2010	1	148	0,05	7,4	**296**
United States	Cougar MRAP	APC	2010	8	2010	1	46	0,14	6,44	**51,52**
Sweden	M-41D 120mm	mortar	2010	16	2010	1				
United Kingdom	Spartan UK	APC	2014	73	2020	6	69	0,1	6,9	**503,7**
United Kingdom	Scimitar	light tank	2014	50	2020	6	36	0,33	11,88	**594**
TOTAL				187						**1445,22**

LATVIA P-3

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Austria	M-109A5 155mm	self-propelled gun	2017	47	2018	1	45	0,5	22,5	**1057,5**
United States	S-70L Black Hawk	transport helicopter	2019	4	0					
United Kingdom	Spartan UK	APC	2019	42	2022	3	69	0,1	6,9	**289,8**
United Kingdom	Scimitar	light tank	2019	40	2022	3	36	0,1	3,6	**144**
TOTAL				133						**1491,3**

LATVIA P-4

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Finland	Patria 6x6 -	APC	2021	200	2029	8	71	0,35	24,85	**4970**
Germany	IRIS-T SL	SAM system	2023		0					
United States	HIMARS	multiple rocket launcher	2023	6	2028	5	181	1,1	199,1	**1194,6**
United States	MD-500E	light helicopter	2024	4	0					
Norway	NSM CDS -	coastal defence system	2023	2	0					
Spain	ASCOD -	IFV	2024	42	2027	3	111	2	222	**9324**
TOTAL				254						**15488,6**

Export Data

LATVIA P-1

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
TOTAL										**0**

LATVIA P-2

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
TOTAL										**0**

LATVIA P-3

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
TOTAL										**0**

LATVIA P-4

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Ukraine	Latvia	Mi-2	light helicopter	Aircraft	2022	2	2022			
Ukraine	Latvia	Mi-17	transport helicopter	Aircraft	2022	4	2023			
Ukraine	Latvia	M-109A5 155mm	SPG	Artillery	2022	6	2022			
United States	Latvia	Penguin UAV	UAV	Aircraft	2022	5	0			
Ukraine	Latvia	Penguin UAV	UAV	Aircraft	2022	10	2022			
Ukraine	Latvia	Spartan UK	APC	Armoured vehicles	2024	9	2024			
TOTAL										**0**

D-GBARD Data

LATVIA P-1	R&D EXPENDITURE	%of GBARD
2005	0,287	1,13
2006	0,144	0,34
2007	0,043	0,07
2008	0,000	0
2009	0,142	0,37
TOTAL	**0,616**	
AVERAGE	**0,123**	

LATVIA P-2	R&D EXPENDITURE	%of GBARD
2010	0,141	0,49
2011	0,142	0,48
2012	0,143	0,44
2013	0,401	1,23
2014	0,714	1,83
TOTAL	**0,1428**	
AVERAGE		

LATVIA P-3	R&D EXPENDITURE	%of GBARD
2015	0,944	1,93
2016	1,447	2,66
2017	1,426	2,44
2018	1,354	2,33
2019	1,148	1,96
TOTAL	**6,319**	
AVERAGE	**1,264**	

LATVIA P-4	R&D EXPENDITURE	%of GBARD
2020	1,426	1,84
2021	1,359	1,61
2022	1,817	1,95
2023	4,333	3,67
2024	6,548	4,56
TOTAL	**15,483**	
AVERAGE	**3,097**	

Military Budgets / GDP / R3 Calculations

LATVIA P-1	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2005	272,6	17,03		
2006	367,8	21,59		
2007	481,5	31,1		
2008	581,8	36		
2009	363,8	26,5		
TOTAL	**2067,4**	**132,22**		
AVERAGE	**413,5**	**26,4**		**1,564**
	0,4135			

LATVIA P-2	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2010	259,7	24		
2011	296,8	27,7		
2012	255,7	28,2		
2013	283,6	30,2		
2014	295,7	31,4		
TOTAL	**1391,5**	**141,5**		
AVERAGE	**278,3**	**28,3**		**0,983**
	0,2783			

LATVIA P-3	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2015	282,7	27,3		
2016	404,6	28,1		
2017	482,5	30,5		
2018	709,4	34,4		
2019	691,9	34,2		
TOTAL	**2571,0**	**154,5**		
AVERAGE	**514,2**	**30,9**		**1,664**
	0,5142			

LATVIA P-4	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2020	742,0	34,4		
2021	823,1	39,5		
2022	856,1	40,5		
2023	1045,3	43,6		
2024	1256,0	45,5		
TOTAL	**4722,6**	**203,5**		
AVERAGE	**944,5**	**40,7**		**2,321**

Active Personnel / Population / R1, R2, & MRI Calculation

LATVIA P-1	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2005	5000	2239000				
2006	17000	2218000				
2007	17000	2200000				
2008	5000	2177000				
2009	5745	2142000				
TOTAL	**49745**	**10976000**				
AVERAGE	9949	2195200	**0,743**	**0,042**	**1,564**	**0,783**

LATVIA P-2	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2010	4600	2098000				
2011	5350	2060000				
2012	5310	2034000				
2013	5310	2013000				
2014	5310	1994000				
TOTAL	**25880**	**10199000**				
AVERAGE	5176	2039800	**0,549**	**0,054**	**0,983**	**0,528**

LATVIA P-3	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2015	5310	1978000				
2016	5310	1960000				
2017	6000	1942000				
2018	6900	1927000				
2019	6000	1914000				
TOTAL	**29520**	**9721000**				
AVERAGE	5904	1944200	**0,606**	**0,087**	**1,664**	**0,786**

LATVIA P-4	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2020	9000	1900000				
2021	11000	1884000				
2022	13500	1879000				
2023	15000	1877000				
2024	17250	1875000				
TOTAL	**65750**	**9415000**				
AVERAGE	13150	1883000	**0,902**	**0,072**	**2,321**	**1,098**

PEI-Calculation

LATVIA	EXPORT	IMPORT	∑EX/∑IM (LOG(∑EX/∑IM))
P1	1,00	12.334,00	-4,09
P2	1,00	1.445,22	-3,16
P3	1,00	1.491,30	-3,17
P4	1,00	15.488,60	-4,19

APPENDIX 10.15.
STATE PROFILE: **LUXEMBOURG**

Procurement Data

LUX. P-1

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Germany	Dingo-2	APC	2008	48	2010	2	81	0,35	28,35	**1360,8**
TOTAL				48						**1360,8**

LUX P-2

N/A

TOTAL				96						**0**

LUX P-3

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Germany	EC-145	light helicopter	2018	2	2020	2				
United States	RQ-21 Blackjack	UAV	2019	4	2022	3				
TOTAL				102						**0**

LUX P-4

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Switzerland	Eagle-5 6x6	APC	2021	4	2023	2	70	0,3	21	**84**
Switzerland	Eagle	APC	2022	80	2027	5	70	0,13	9,1	**728**
France	Griffon VBMR	APC	2024	16	2030	6	91	0,15	13,65	**218,4**
France	Jaguar EBRC	armoured car	2024	38	0					
France	Serval VBMR	APC	2024	5	2030	6	86	0,15	12,9	**64,5**
TOTAL				143						**1094,9**

Export Data

LUX. P-1

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Senegal	Luxembourg	BN-2 Islander	light transport aircraft	Aircraft	2005	1	2007			
TOTAL										**0**

LUX. P-2

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
TOTAL										**0**

LUX. P-3

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
TOTAL										**0**

LUX. P-4

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
TOTAL										**0**

D-GBARD Data

LUX P-1		R&D EXPENDITURE	%of GBARD
	2005	0	0
	2006	0	0
	2007	0	0
	2008	0	0
	2009	0	0
TOTAL		**0**	
AVERAGE		**0,000**	

LUX P-2		R&D EXPENDITURE	%of GBARD
	2010	0	0
	2011	0	0
	2012	0	0
	2013	0	0
	2014	0	0
TOTAL		**0**	
AVERAGE		**0,000**	

LUX P-3		R&D EXPENDITURE	%of GBARD
	2015	0	0
	2016	0	0
	2017	0	0
	2018	0	0
	2019	0	0
TOTAL		**0**	
AVERAGE		**0,000**	

LUX P-4		R&D EXPENDITURE	%of GBARD
	2020	0	0
	2021	1,359	1,61
	2022	1,817	1,95
	2023	4,333	3,67
	2024	6,584	4,46
TOTAL		**14,093**	
AVERAGE		**2,819**	

Military Budgets / GDP / R3 Calculations

LUX. P-1	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2005	220,2	37,7		
2006	223,3	42,9		
2007	258,4	51,6		
2008	213,9	58,8		
2009	201,4	54,4		
TOTAL	**1117,2**	**245,4**		
AVERAGE	**223,4**	**49,1**		**0,455**
	0,2234			

LUX. P-2	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2010	247,7	56,3		
2011	232,2	61,7		
2012	214,6	59,8		
2013	233,7	65,2		
2014	252,1	68,8		
TOTAL	**1180,2**	**311,8**		
AVERAGE	**236,0**	**62,4**		**0,378**
	0,2360			

LUX. P-3	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2015	249,5	60,1		
2016	235,6	62,2		
2017	323,1	65,7		
2018	355,3	71		
2019	381,8	69,9		
TOTAL	**1545,3**	**328,9**		
AVERAGE	**309,1**	**65,8**		**0,470**
	0,3091			

LUX. P-4	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2020	425,2	73,6		
2021	403,3	85,6		
2022	509,9	81,7		
2023	662,5	85,8		
2024	745,0	91,2		
TOTAL	**2745,8**	**417,9**		
AVERAGE	**549,2**	**83,6**		**0,657**
	0,5492			

Active Personnel / Population / R1, R2, & MRI Calculation

LUX. P-1	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2005	1512	465158				
2006	1512	472637				
2007	1512	479993				
2008	1612	488650				
2009	1512	497783				
TOTAL	**7660**	**2404221**				
AVERAGE	1532	480844,2	**0,622**	**0,146**	**0,445**	**0,404**

LUX. P-2	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2010	1512	506953				
2011	1510	518347				
2012	1510	530946				
2013	1510	543360				
2014	1510	556319				
	7552	**2655925**				
	1510,4	531185	**0,585**	**0,156**	**0,378**	**0,373**

LUX. P-3	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2015	1500	569604				
2016	1500	582014				
2017	2000	596336				
2018	1900	607950				
2019	1000	620001				
TOTAL	**7900**	**2975905**				
AVERAGE	1580	595181	**0,563**	**0,196**	**0,470**	**0,409**

LUX. P-4	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2020	1000	630419				
2021	1000	640064				
2022	1000	653103				
2023	1000	666430				
2024	1000	672210				
TOTAL	**5000**	**3262226**				
AVERAGE	1000	652445,2	**0,404**	**0,549**	**0,657**	**0,537**

PEI-Calculation

LUX	EXPORT	IMPORT	∑EX/∑IM (LOG(∑EX/∑IM))
P1	1,00	1.360,80	-3,13
P2	1,00	1,00	-
P3	1,00	1,00	-
P4	1,00	1.094,90	-3,04

APPENDIX 10.16.
STATE PROFILE: **NETHERLANDS**

Procurement Data

NL P-1

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United States	F-35A Lightning-2	FGA aircraft	2008	37	2023	15	145	55	803 0	**29711 0**
Norway	NASAMS-2 -	SAM system	2006	2	2009	3				
United States	CH-47F	transport helicopter	2007	6	2013	6				
Sweden	BVS-10	APC	2005	74	2007	2	102	0,25	25,5	**1887**
United States	C-130H Hercules	transport aircraft	2005	2	2010	5				
Australia	Bushmaster -	APC	2006	25	2006	1	100	0,32	32	**800**
Germany	Kodiak AEV	armoured engineer vehicle	2008	10	2018	10				
Australia	Bushmaster -	APC	2007	11	2008	1	100	0,32	32	**352**
Australia	Bushmaster -	APC	2008	13	2008	1	100	0,32	32	**416**
Israel	Aerostar	UAV	2009	5	2009	1				
Australia	Bushmaster -	APC	2009	14	2009	1	100	0,32	32	**448**
Australia	Bushmaster -	APC	2009	9	2009	1	100	0,32	32	**288**
Australia	Bushmaster -	APC	2009	14	2009	1	100	0,32	32	**448**
Romania	Holland OPV -	patrol ship	2007	2	2013	6	300	93	279 00	**55800**
TOTAL				68						**35754 9**

NL P-2

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United States	ScanEagle	UAV	2012	12	2012	1				
United States	ScanEagle	UAV	2012	6	2013	1				
TOTAL				88						**0**

NL P-3

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United States	CH-47F	transport helicopter	2016	12	2021	5				
Australia	Bushmaster -	APC	2015	12	2017	2	100	0,32	32	**384**
Germany	Leopard-2A6	tank	2015	18	2018	3	116	3,3	382,8	**6890,4**
United States	RQ-21 Blackjack	UAV	2017	6	2018	1				
United States	CH-47F	transport helicopter	2017	2	2021	4				
Germany	PSB-2	armoured bridgelayer	2016	8	2021	5				
United States	CH-47F	transport helicopter	2017	6	2023	6				

France	MCM-2730	MCM ship	2019	6	2026	7	451	18	8118	**48708**
United States	AH-64E Apache	combat helicopter	2018	28	2025	7	100	15	1500	**42000**
Australia	Bushmaster -	APC	2016	8	2017	1	100	0,32	32	**256**
United States	F-35A Lightning-2	FGA aircraft	2019	9	2026	7	145	55	7975	**71775**
Italy	MTV	APC	2019	625	2026	7	82	0,18	14,76	**9225**
TOTAL				690						**17923 8,4**

NL P-4

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Italy	NH-90 NFH --	anti-submarine helicopter	2024	6	0					
France	Barracuda SUB	submarine	2024	4	0					
Romania	Den Helder -	replenishment ship	2020	1	0					
Australia	Bushmaster -	APC	2020	6	2021	1	100	0,32	32	**192**
Sweden	Skeldar	UAV	2020	5	0					
Brazil	C-390 -	transport aircraft	2024	5	0					
unknown supplier(s)	PC-7 -	(armed) trainer aircraft	2024	8	0					
United States	F-35A Lightning-2	FGA aircraft	2022	6	2026	4	145	55	7975	**47850**
United States	MQ-9 UCAV	armed UAV	2023	4	0					
Finland	Finnmerchant	transport ship	2022	1	2022	1				
Israel	PULS	multiple rocket launcher	2023	20	2026	3	198	1,1	217,8	**4356**
France	H-725 Caracal	transport helicopter	2024	12	0					
Norway	NASAMS-2 -	SAM system	2024	6	0					
Sweden	Mjölner	mortar turret	2024	15	0					
Germany	Leopard-2A7	tank	2024	46	2030	6	118	5,2	613,6	**28225,6**
United States	F-35A Lightning-2	FGA aircraft	2024	5	2028	4	145	55	7975	**39875**
Norway	NOMADS -	SAM system	2024	18	0					
Thailand	L-39Z	trainer/combat aircraft	2024	2	2024	1				
Hungary	L-39Z	trainer/combat aircraft	2021	1	2021	1				
Germany	PMMC-G5	APC	2024	23	2030	6	80	0,45	36	**828**
Germany	PMMC-G5 Skyranger-30	self-propelled anti-aircraft gun	2024	22	0					
TOTAL				117						**12132 6,6**

Export Data

NL P-1

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Jordan	F-16C	FGA aircraft	2007	6	2009		100	11,4	1140	6840
Belgium	Doorman	frigate	2005	2	2008		400	124	49600	99200
Chile	F-16C	FGA aircraft	2005	18	2007		100	11,4	1140	20520
Finland	M-270 MLRS	MLRS	2006	22	2007		100	0,48	48	1056
Indonesia	SIGMA-90 -	frigate	2005	2	2009		210	151,5	31815	63630
Angola	C-130H Hercules	transport aircraft	2005	1	2005					
Latvia	Tripartite	MCM ship	2005	5	2011		100	22	2200	11000
Portugal	Doorman	frigate	2006	2	2010		400	124	49600	99200
Chile	F-16C	FGA aircraft	2009	18	2011		100	11,4	1140	20520
Canada	Leopard-2A4	tank	2007	80	2015		95	1,6	152	12160
Portugal	Leopard-2A6	tank	2007	37	2009		116	2	320	11840
Morocco	SIGMA-90 -	frigate	2008	2	2012		792	151,5	11998	23997 6
Barbados	SP-4207	patrol boat	2006	3	2009		105	10	1050	3150
Germany	Leopard-2A6	tank	2007	20	2012		116	2	320	6400
Chile	M-113	APC	2007	18	2008		73	0,12	8,76	8,76
United Kingdom	Damen-8316	support ship	2008	1	2010					
Portugal	Leopard-2 Train	training tank	2007	1	2008					
United States	SP-4708	patrol boat	2008	1	2012		105	15,4	1617	1617
United States	SP-4708	patrol boat	2009	65	0		105	15,4	1617	105105
Tanzania	Vincent	patrol boat	2005	2	2009		105	1,8	189	378
Venezuela	SL-5612	landing ship	2009	4	2014					
Morocco	SIGMA-105 -	frigate	2008	1	2012		210	210,5	44205	44205
United States	SP-2600	patrol boat	2006	4	2009		105	4,2	441	1764
TOTAL										**748569,8**

NL P-2

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Jordan	Gepard	self-propelled anti-aircraft gun	2013	60	2016					
Peru	Fokker-50MP	maritime patrol aircraft	2010	2	2010					
Jordan	F-16C	FGA aircraft	2013	15	2017		100	11,4	1140	17100
Indonesia	SIGMA-105 -	frigate	2012	1	2017		210	210,5	44205	44205
Peru	Fokker-50	transport aircraft	2010	2	2010					
Jordan	Puma-4	IFV	2010	264	2015		86	0,36	30,96	8173,44
Jordan	M-113	APC	2010	69	2013		73	0,1	7,3	503,7

Jordan	M-109A1 155mm	SPG	2010	121	2012	45	0,44	19,8	2395,8
Estonia	XA-180	APC	2010	81	2016	121	0,12	14,52	1176,12
Chile	M-113	APC	2010	6	2011	73	0,12	8,76	52,56
Honduras	SP-4207	patrol boat	2012	2	2013	105	10	1050	2100
Cabo Verde	SP-5009	patrol boat	2010	1	2012	105	10	1050	1050
Ecuador	Stan-2606	patrol boat	2011	4	2014	105	4,25	446,25	1785
Venezuela	SP-4207	patrol boat	2012	1	2014	105	10	1050	1050
Mexico	SP-4207	patrol boat	2011	2	2012	105	10	1050	2100
Jordan	M-113	APC	2010	177	2016	73	0,12	8,76	1550,52
Mexico	SP-4207	patrol boat	2013	3	2015	105	10	1050	3150
Mexico	SP-4207	patrol boat	2014	5	2017	105	10	1050	5250
Jordan	PiPz-1	armoured engineer vehicle	2013	5	2015				
Finland	Leopard-2A6	tank	2014	100	2021	116	2	232	23200
Indonesia	SIGMA-105 -	frigate	2013	1	2017	210	210,5	44205	44205
UAE	FOPV-850 -	corvette	2013	2	2018	213	83,5	17785,5	35571
Peru	Amsterdam	replenishment ship	2014	1	2014				
Venezuela	SL-5612	landing ship	2014	5	2020				
Bahamas	SP-4207	patrol boat	2014	4	2015	105	10	1050	4200
Bahamas	SL-5612	landing ship	2014	1	2016				
Bahamas	SP-3007	patrol boat	2014	4	2017	105	10	1050	4200
Ecuador	SP-5009	patrol boat	2014	2	2017	105	10	1050	2100
Estonia	CV-9035	IFV	2014	44	2019	122	2	244	10736
Peru	Fokker-50	transport aircraft	2014	2	2014				
Mexico	FCS-5009	transport ship	2014	1	2016				
Peru	Bell-412	helicopter	2014	3	2015				
Estonia	BPz-2	armoured recovery vehicle	2014	2	2017				
Estonia	Biber	armoured bridgelayer	2014	2	2017				
Estonia	PiPz-1	armoured engineer vehicle	2014	2	2017				
Australia	Sycamore sh	training ship	2014	1	2017				
TOTAL									**215854,1**

NL P-3

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Germany	Leopard-2A6	tank	2015	16	2017		116	2	232	3712
South Africa	SP-6211	patrol ship	2018	3	0		105	30	3150	9450
Trinidad and Tobago	SP-5009	patrol boat	2015	4	2016		105	10	1050	4200
Trinidad and Tobago	FCS-5009	transport ship	2015	2	2015					
Jordan	M-113	APC	2016	15	2016		73	0,12	8,76	131,4
Philippines	M-113	APC	2015	4	2015		73	0,12	8,76	35,04

Jordan	Puma-4	IFV	2016	5	2016	86	0,36	30,96	154,8
Jamaica	SP-4207	patrol boat	2016	2	2016	119	10	1190	2380
Mexico	SIGMA-105 -	frigate	2016	1	2020	487	210,5	10251	10251
Tanzania	FCS-3307	patrol boat	2015	4	2016	89	5	445	1780
Tunisia	OPV-1400 -	patrol ship	2016	4	2018	118	34,5	4071	16284
Pakistan	OPV-1900 -	patrol ship	2017	2	2020	40	40,2	1608	3216
Finland	PiPz-1	armoured engineer vehicle	2017	8	2020				
Finland	BPz-2	armoured recovery vehicle	2017	9	2019				
Myanmar	Fokker-70	transport aircraft	2016	2	2017				
HoR (Libya)*	Emer	patrol ship	2017	1	2018	85	10	850	850
Viet Nam	RGS-9316	support ship	2017	1	2021				
Nicaragua	SP-4207	patrol boat	2018	2	2019	98	10	980	1960
Bulgaria	Tripartite	MCM ship	2019	2	2020	100	22	2200	4400
United States	KC-10	tanker/transport aircraft	2019	2	2021				
Nigeria	LST-100	landing ship	2019	1	2022				
Nigeria	FCS-4008	patrol boat	2019	2	2021	151	10	1510	3020
Jamaica	FCS-5009	transport ship	2019	2	2024				
UAE	SP-5009	patrol boat	2019	3	2023	105	10	1050	3150
Viet Nam	SL-5612	landing ship	2019	1	2021				
Viet Nam	SL-5612	landing ship	2018	3	2021				
Jordan	M-113	APC	2019	10	2019	73	0,12	8,76	87,6
TOTAL									**157323,8**

NL P-4

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Colombia	SIGMA-105 -	frigate	2024	1	0		210	210,5	44205	44205
Belgium	BEL-NET frigate -	frigate	2023	2	0		795	124	98580	197160
Portugal	MPSS-7000 -	support ship	2023	1	0					
Djibouti	FCS-5009	transport ship	2020	2	2021					
Pakistan	Tripartite	MCM ship	2021	2	2022		100	22	2200	4400
Jamaica	SP-4207	patrol boat	2020	2	2023		106	10	1060	2120
Ukraine	M-113	APC	2022	353	2024					
Ukraine	PzH-2000 155mm	SPG	2022	8	2022					
Australia	LST-100	landing ship	2024	8	0					
Pakistan	OPV-2600 -	patrol ship/frigate	2022	2	2024		658	106,5	70077	140154
Djibouti	SL-5612	landing ship	2020	1	2022					
Ukraine	MO-120-RT 120mm	mortar	2022	10	2022					
Ukraine	Tripartite	MCM ship	2023	2	0					
Ukraine	Fennek	armoured reconnaissance vehicle	2022	17	2023					
Ukraine	BVS-10	APC	2022	48	2024					

Ukraine	F-16C	FGA aircraft	2023	24	0				
Ukraine	Biber	armoured bridgelayer	2023	5	2023				
Jordan	M-113	APC	2020	53	2023	73	0,12	8,76	464,28
Suriname	FCS-4008	patrol boat	2022	1	2024	105	12	1260	1260
Romania	F-16C	FGA aircraft	2024	18	0	100	11,4	1140	20520
									41028
TOTAL									**3,3**

D-GBARD Data

NL P-1		**R&D EXPENDITURE**	**%of GBARD**
	2005	78,69	2
	2006	84,557	1,99
	2007	77,958	1,79
	2008	76,831	1,68
	2009	83,745	1,73
TOTAL		**401,781**	
AVERAGE		**80,356**	

NL P-2		**R&D EXPENDITURE**	**%of GBARD**
	2010	76,128	1,57
	2011	73,313	1,47
	2012	77,935	1,67
	2013	59,166	1,23
	2014	59,403	1,22
TOTAL		**345,945**	
AVERAGE		**69,189**	

NL P-3		**R&D EXPENDITURE**	**%of GBARD**
	2015	61,612	1,26
	2016	61,078	1,24
	2017	54,756	1,1
	2018	64,929	1,18
	2019	70,246	1,25
TOTAL		**312,621**	
AVERAGE		**62,524**	

NL P-4		**R&D EXPENDITURE**	**%of GBARD**
	2020	117,149	1,93
	2021	214,922	3,14
	2022	200,125	2,66

2023		244,575	2,87
2024		316,667	3,25
TOTAL		**1093,438**	
AVERAGE		**218,688**	

Military Budgets / GDP / R3 Calculations

NL P-1	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2005	9567,0	685,7		
2006	10217,8	734		
2007	11480,4	848,7		
2008	12374,8	951,8		
2009	12131,8	870,6		
TOTAL	**55771,8**	**4090,8**		
AVERAGE	**11154,4**	**818,2**		**1,363**
	11,1544			

NL P-2	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2010	11220,5	848,1		
2011	11647,9	905,1		
2012	10364,7	839,5		
2013	10226,3	877,2		
2014	10332,6	892,4		
TOTAL	**53792,0**	**4362,3**		
AVERAGE	**10758,4**	**872,5**		**1,233**
	10,7584			

NL P-3	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2015	8667,8	765,7		
2016	9115,2	783,8		
2017	9580,7	833,6		
2018	11114,9	914,5		
2019	12000,7	929		
TOTAL	**50479,4**	**4226,6**		
AVERAGE	**10095,9**	**845,3**		**1,194**
	10,0959			

NL P-4	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2020	13085,7	931,8		
2021	14395,7	1055		
2022	13632,4	1047,4		
2023	16624,8	1154,7		
2024	19618,2	1218,4		
TOTAL	**77356,9**	**5407,3**		
AVERAGE	**15471,4**	**1081,5**		**1,431**
	15,4714			

Active Personnel / Population / R1, R2, & MRI Calculation

NL P-1	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2005	60000	16320000				
2006	46000	16350000				
2007	41000	16380000				
2008	47000	16450000				
2009	43279	16530000				
TOTAL	**237279**	**82030000**				
AVERAGE	47455,8	16406000	**0,590**	**0,235**	**1,363**	**0,729**

NL P-2	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2010	43279	16620000				
2011	43300	16690000				
2012	43300	16750000				
2013	43300	16800000				
2014	41900	16870000				
AVERAGE	**215079**	**83730000**				
	43015,8	16746000	**0,553**	**0,250**	**1,233**	**0,679**

NL P-3	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2015	41310	16940000				
2016	41310	17030000				
2017	41000	17130000				
2018	41410	17230000				
2019	41000	17340000				
TOTAL	**206030**	**85670000**				
AVERAGE	41206	17134000	**0,532**	**0,245**	**1,194**	**0,657**

NL P-4	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2020	41000	17440000				
2021	40000	17530000				
2022	39500	17700000				
2023	41000	17880000				
2024	41380	18000000				
TOTAL	**202880**	**88550000**				
AVERAGE	40576	17710000	**0,517**	**0,381**	**1,431**	**0,777**

PEI-Calculation

NL	EXPORT	IMPORT	∑EX/∑IM (LOG(∑EX/∑IM))
P1	748.570,00	357.549,00	0,32
P2	215.854,00	1,00	5,33
P3	157.324,00	179.238,40	-0,06
P4	410.823,00	121.326,60	0,53

APPENDIX 10.17.
STATE PROFILE: **POLAND**

Procurement Data

POLAND P-1

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United Kingdom	AS-90M TUR	self-propelled gun turret	2008	8	2012	4	102	2,5	255	**2040**
Norway	NSM CDS -	coastal defence system	2008	2	2013	5				
Russia	Mi-17	transport helicopter	2006	7	2008	2				
Spain	C-295 -	transport aircraft	2007	2	2008	1				
Spain	C-295 -	transport aircraft	2006	2	2007	1				
United States	Cougar MRAP	APC	2008	40	2009	1	46	0,35	16,1	**644**
United States	C-130E Hercules	transport aircraft	2009	2	2009	1				
TOTAL				133						**2684**

POLAND P-2

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Italy	M-346 Master -	trainer/combat aircraft	2014	8	2017	3				
Germany	BPz-2	armoured recovery vehicle	2013	18	2016	3				
United States	MaxxPro	APC	2010	30	2010	1	58	0,32	18,56	**556,8**
Russia	Mi-17	transport helicopter	2010	5	2011	1				
United States	ScanEagle	UAV	2010	10	2011	1				
United States	ScanEagle	UAV	2010	2	2010	1				
Spain	C-295 -	transport aircraft	2012	5	2013	1				
Finland	AMV -	APC	2013	412	2023	10	252	0,32	80,64	**33223,68**
South Korea	K-9 chassis -	self-propelled gun chassis	2014	24	2017	3	103	0,59	60,77	**1458,48**
France	Cabri	light helicopter	2013	2	2013	1				
Germany	Leopard-2A4	tank	2013	14	2014	1	95	1,6	152	**2128**
Germany	M-113	APC	2013	35	2015	2	73	0,1	7,3	**255,5**
Austria	DA-20	light aircraft	2012	5	2013	1				
Czechia	Z-143	light aircraft	2012	2	2013	1				
Czechia	Z-142	trainer aircraft	2012	1	2013	1				
Germany	Leopard-2A5	tank	2013	105	2015	2	116	1,8	208,8	**21924**
Norway	NSM CDS -	coastal defence system	2014	2	2016	2				
United States	M-ATV	APC	2014	45	2015	1	88	0,1	8,8	**396**
TOTAL				133						**59942,46**

POLAND P-3

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI

United States	Patriot-3 SAMS	SAM system	2018	4	2024	6				
United States	HIMARS	multiple rocket launcher	2019	20	2024	5	181	1,1	199,1	**3982**
United States	S-70L Black Hawk	transport helicopter	2019	4	2019	1				
United Kingdom	AW-101-111 -	anti-submarine helicopter	2019	4	2024	5				
South Korea	K-9 chassis -	self-propelled gun chassis	2016	96	2024	8	103	0,59	60,7	**5833,92**
Italy	M-346 Master -	trainer/combat aircraft	2018	4	2020	2				
United States	RQ-21 Blackjack	UAV	2018	5	2018	1				
TOTAL				133						**9815,92**

POLAND P-4

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United States	AH-64E Apache	combat helicopter	2024	96	0		100	15	1500	**144000**
United States	M-1A2 SEPv-3 Abrams	tank	2022	250	2026	4	113	5,2	587,6	**146900**
South Korea	FA-50 Block-20 -	FGA aircraft	2022	36	2028	6	62	18	1116	**40176**
United Kingdom	Type-31 -	frigate	2022	3	2031	9	708	124	8779 2	**263376**
South Korea	K-239 Chunmoo	multiple rocket launcher	2022	290	2029	7	77	1,1	84,7	**24563**
United States	Patriot-3 LTAMDS SAMS	SAM system	2023	12	0					
United States	F-35A Lightning-2	FGA aircraft	2020	32	2030	10	145	55	7975	**255200**
United States	C-130H Hercules	transport aircraft	2021	5	0					
South Korea	K-2 -	tank	2022	180	2027	5	105	4,75	498,75	**89775**
Italy	AW-149	helicopter	2022	32	0					
Turkiye	Bayraktar TB-2	armed UAV	2021	24	2024	3				
United States	Cougar MRAP	APC	2021	300	2023	2	46	0,14	6,44	**1932**
United States	S-70L Black Hawk	transport helicopter	2021	4	2024	3				
United States	M-88A2	armoured recovery vehicle	2022	26	0					
United States	M-1074 JABS	armoured bridgelayer	2022	17	0					
United States	MQ-9 UAV	UAV	2024	3	0					
Italy	M-346 Master -	trainer/combat aircraft	2021	4	2022	1				
United States	M-1A2 Abrams	tank	2022	28	2022	1	113	1,8	203,4	**5695,2**
United States	M-1A1 Abrams	tank	2022	116	2024	2	100	1,6	160	**18560**
South Korea	K-9 155mm -	self-propelled gun	2022	212	2027	5	103	4,34	447,02	**94768,24**
South Korea	K-2 -	tank	2022	820	2033	9	105	4,75	498,75	**408975**
South Korea	K-9 155mm -	self-propelled gun	2022	308	2024	2	103	4,34	447,02	**137682,16**
United States	HIMARS	multiple rocket launcher	2023	486	2030	6	181	1,1	199,1	**96762,6**

United States	MQ-9 UAV	UAV	2022	2	2022	2				
Norway	NSM CDS -	coastal defence system	2023	4	0					
United States	AH-64D Apache Longbow	combat helicopter	2024	8	2025	1	100	6,2	620	**4960**
Sweden	Saab-340AEW	airborne early-warning aircraft	2023	2	2024	1				
United States	S-70L Black Hawk	transport helicopter	2024	32	0					
United States	M-113A3	APC	2022	6	2024	2	73	0,12	8,76	**52,56**
United States	M-88A2	armoured recovery vehicle	2022	12	2023	1				
United States	M-1074 JABS	armoured bridgelayer	2022	8	2024	2				
South Korea	KLTV	APC	2023	400	0		112	0,14	15,68	**6272**
United States	M-1150 ABV	armoured engineer vehicle	2023	25	0					
South Korea	K-9 155mm -	self-propelled gun	2023	152	2027	4	103	4,34	447,02	**67947,04**
United States	M-ATV	APC	2023	79	2024	1	88	0,1	8,8	**695,2**
South Korea	FA-50 -	FGA aircraft	2022	12	2023	1	62	16,45	1019,9	**12238,8**
TOTAL				133						**182053 0,8**

Export Data

POLAND P-1

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Indonesia	KOBRA	anti-aircraft gun/SAM system	2006	1	2009					
Indonesia	KOBRA	anti-aircraft gun/SAM system	2005	1	2007					
Iraq	DZIK	APC	2005	600	2007	2	130	0,15	19,5	11700
United States	M-28 Skytruck	light transport aircraft	2009	9	2011					
TOTAL										**11700**

POLAND P-2

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Philippines	W-3 Sokol	helicopter	2011	8	2013					
India	WZT-3M	armoured recovery vehicle	2012	8	2013					
United States	MiG-21bis	fighter aircraft	2012	21	2013					
United States	MiG-21PFM	fighter aircraft	2012	4	2013					
Algeria	W-3 Sokol	helicopter	2011	8	2014					
Burkina Faso	Xenon	light aircraft	2010	2	2010					

United States	M-28 Skytruck	light transport aircraft	2011	6	2012					
Jordan	M-28 Skytruck	light transport aircraft	2013	1	2014					
TOTAL										**0**

POLAND P-3

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Jordan	M-28 Skytruck	light transport aircraft	2015	1	2016					
Sweden	Artemis	support ship	2017	1	2023					
Ecuador	M-28 Skytruck	light transport aircraft	2018	1	2018					
Germany	M-28 Skytruck	light transport aircraft	2017	2	2017					
Nepal	M-28 Skytruck	light transport aircraft	2019	2	2019					
Ukraine	MT-LB	APC	2018	54	2019	1	110	0,1	11	594
Iraq	2B11 120mm	mortar	2018	24	2018					
Ukraine	Dozor-B	APC	2019	24	2021	2	120	0,15	18	432
TOTAL										**1026**

POLAND P-4

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Ukraine	Leopard-2A4	tank	2022	14	2023					
Ukraine	AMV-IFV -	IFV	2023	150	0					
Ukraine	MiG-29	fighter aircraft	2023	14	2023					
Ukraine	T-72M1	tank	2022	270	2023					
Ukraine	BMP-1	IFV	2022	400	2023					
Ukraine	2S1 122mm	SPG	2022	150	2023					
Ukraine	BM-21 122mm	MLRS	2022	36	2022					
Ukraine	Krab 155mm	SPG	2022	54	2022					
Ukraine	Krab 155mm -	SPG	2022	54	2024					
Ukraine	PT-91M	tank	2022	20	2022					
Ukraine	S-125 Newa-SC	SAM system	2022	4	2022					
Ukraine	Osa SAMS	mobile SAM system	2022	4	2022					
Ukraine	PT-91M	tank	2023	30	2023					
Nepal	M-28 Skytruck	light transport aircraft	2023	2	0					
Ukraine	ZSU-23-4	self-propelled anti-aircraft gun	2023	4	2023					
Ukraine	Mi-24V	combat helicopter	2023	11	2023					
Ukraine	AMV-RAK -	self-propelled mortar	2023	24	0					
Ukraine	Dozor-B	APC	2023	100	2024					
Ukraine	MiG-29S	FGA aircraft	2024	14	0					
Ukraine	MT-LB	APC	2022	61	2022					
Ukraine	DZIK	APC	2022	19	2022					
Ukraine	S-200 Angara	SAM system	2023	1	2023					
Ukraine	Kvadrat SAMS	SAM system	2023	3	2024					
TOTAL										**0**

D-GBARD Data

POLAND P-1	R&D EXPENDITURE	%of GBARD
2005	9,694	1,35
2006	8,111	0,95
2007	20,615	2,1
2008	34,908	3,18
2009	39,568	4,55
TOTAL	**112,896**	
AVERAGE	**22,579**	

POLAND P-2	R&D EXPENDITURE	%of GBARD
2010	41,2598	4,88
2011	55,458	6,68
2012	98,024	7,15
2013	75,021	5,22
2014	84,387	4,77
TOTAL	**269,7628**	
AVERAGE	**53,953**	

POLAND P-3	R&D EXPENDITURE	%of GBARD
2015	88,645	5,05
2016	216,928	15,49
2017	155,884	9,24
2018	82,788	5,83
2019	111,039	4,69
TOTAL	**655,284**	
AVERAGE	**131,057**	

POLAND P-4	R&D EXPENDITURE	%of GBARD
2020	80,914	3,53
2021	116,773	4,44
2022	115,851	4,19
2023	608,854	15,95
2024	814,578	19,48
TOTAL	**1736,97**	
AVERAGE	**347,394**	

Military Budgets / GDP / R3 Calculations

POLAND P-1	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2005	5896,4	306,3		
2006	6619,4	344,6		

2007		8589,1	429		
2008		9349,4	533,6		
2009		7903,8	439,8		
TOTAL		**38358,2**	**2053,3**		
AVERAGE		**7671,6**	**410,7**		**1,868**
		7,6716			

POLAND P-2	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2010	8790,2	475,7		
2011	9455,4	524,4		
2012	8986,8	495,2		
2013	9275,7	515,8		
2014	10345,2	539,2		
TOTAL	**46853,3**	**2550,3**		
AVERAGE	**9370,7**	**510,1**		**1,837**
	9,3707			

POLAND P-3	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2015	10212,8	476,8		
2016	9164,2	469,7		
2017	9870,7	524,8		
2018	12040,7	588,8		
2019	11786,2	596		
TOTAL	**53074,5**	**2656,1**		
AVERAGE	**10614,9**	**531,2**		**1,998**
	10,6149			

POLAND P-4	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2020	13718,3	599,5		
2021	15295,5	681,4		
2022	15341,3	689,9		
2023	31649,9	811,7		
2024	51587,0	862,9		
TOTAL	**127592,0**	**3645,4**		
AVERAGE	**25518,4**	**729,1**		**3,500**
	25,5184			

Active Personnel / Population / R1, R2, & MRI Calculation

POLAND P-1	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2005	162000	38170000				
2006	148000	38140000				
2007	142000	38120000				
2008	143000	38130000				
2009	121400	38150000				
TOTAL	**716400**	**190710000**				
AVERAGE	143280	38142000	**0,677**	**0,054**	**1,868**	**0,866**

POLAND P-2	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2010	121400	38040000				
2011	118050	38060000				
2012	172700	38060000				
2013	172700	38040000				
2014	172700	38010000				
	757550	**190210000**				
AVERAGE	151510	38042000	0,697	**0,062**	**1,837**	**0,865**

POLAND P-3	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2015	172700	37990000				
2016	178400	37970000				
2017	191000	37970000				
2018	196700	37970000				
2019	189000	37900000				
TOTAL	**927800**	**189800000**				
AVERAGE	185560	37960000	**0,770**	**0,057**	**1,998**	**0,942**

POLAND P-4	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2020	189000	37900000				
2021	190000	36980000				
2022	190000	36820000				
2023	195000	36690000				
2024	202100	36490000				
TOTAL	**966100**	**184880000**				
AVERAGE	193220	36976000	**0,794**	**0,660**	**3,500**	**1,652**

PEI-Calculation

ITALY	EXPORT	IMPORT	∑EX/∑IM (LOG(∑EX/∑IM))
P1	289.416,60	960.056,00	-0,52
P2	60.259,37	1.183.232,00	-1,29
P3	880.778,40	62.060,00	1,15
P4	3.407.125,00	95.920,00	1,55

APPENDIX 10.18.
STATE PROFILE: **PORTUGAL**

Procurement Data

PORTUGAL
P-1

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Israel	CARDOM 120mm	mortar	2006	33	2011	5				
Spain	C-295MPA -	maritime patrol aircraft	2006	3	2010	4				
Austria	Pandur-2 -	APC	2005	158	2016	11	156	0,3	46,8	**7394,4**
Spain	C-295 -	transport aircraft	2006	9	2011	5				
Netherlands	Doorman	frigate	2006	2	2010	4	400	124	4960	**99200**
Netherlands	Leopard-2A6	tank	2007	37	2009	2	116	2	232	**8584**
Netherlands	Leopard-2 Train	training tank	2007	1	2008	1				
Austria	Pandur-2 IFV -	IFV	2005	30	2016	11	100	1,25	125	**3750**
TOTAL				133						**118928,4**

PORTUGAL
P-2

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Denmark	StanFlex-300 PC	patrol boat	2014	4	2018	4	147	8	1176	**4704**
United States	F-16C	FGA aircraft	2013	3	2016	3	100	28,5	2850	**8550**
TOTAL				133						**13254**

PORTUGAL
P-3

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Brazil	C-390 -	transport aircraft	2019	5	0					
Italy	AW-119	light helicopter	2018	5	2020	2				
Spain	VAMTAC	APC	2018	139	2021	3	119	0,14	16,66	**2315,74**
TOTAL				133						**2315,74**

PORTUGAL
P-4

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Brazil	EMB-314 Super Tucano -	trainer/combat aircraft	2024	12	0					
Turkiye	STM-11000 -	replenishment ship	2024	2	0					
United Kingdom	Forceshield -	SAM system	2024	2	0					
Netherlands	MPSS-7000 -	support ship	2023	1	0					
Italy	AW-119	light helicopter	2022	2	2023	1				
France	CAESAR 155mm -	self-propelled gun	2024	36	2034	10	100	1,07	107	**3852**

TOTAL				133						**3852**

Export Data

PORTUGAL
P-1

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
									997	1994
Uruguay	Commandant Riviere	frigate	2007	2	2008	1	277	36	2	4
Chile	B-767	transport aircraft	2008	1	2008					
Belgium	A-330	transport aircraft	2009	1	2009					
										1994
TOTAL										**4**

PORTUGAL
P-2

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
								18,8	188	2257
Romania	F-16C	FGA aircraft	2013	12	2017	4	100	1	1	2
Mozambique	Cessna-337	light aircraft	2010	2	2012					
Uruguay	C-212MP	maritime patrol aircraft	2014	2	2015					
Belgium	A-321	transport aircraft	2014	1	2014					
										2257
TOTAL										**2**

PORTUGAL
P-3

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Colombia	AS-565	helicopter	2018	2	2018					
Cabo Verde	C-212	transport aircraft	2018	2	2019					
TOTAL										**0**

PORTUGAL
P-4

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Romania	F-16C	FGA aircraft	2020	5	2021					
Ukraine	M-113	APC	2022	47	2024					
Ukraine	VM-90P	APC	2022	4	2022					
Ukraine	Ka-32	transport helicopter	2022	5	2024					
Ukraine	Leopard-2A6	tank	2023	3	2023					
Ukraine	L-118 105mm	towed gun	2023	9	2024					
TOTAL										**0**

D-GBARD Data

PORTUGAL P-1		R&D EXPENDITURE		%of GBARD
	2005	0,45		0,06
	2006	0,43		0,06
	2007	0,55		0,07
	2008	0,65		0,08
	2009	1,41		0,15
TOTAL		**3,49**		
AVERAGE		**0,698**		

PORTUGAL P-2		R&D EXPENDITURE		%of GBARD
	2010	1,76		0,18
	2011	1,78		0,23
	2012	0,67		0,11
	2013	1,4		0,21
	2014	2,13		0,34
TOTAL		**7,74**		
AVERAGE		**1,548**		

PORTUGAL P-3		R&D EXPENDITURE		%of GBARD
	2015	2,18		0,32
	2016	2,19		0,31
	2017	2,307		0,32
	2018	2,706		0,36
	2019	2,192		0,29
TOTAL		**11,575**		
AVERAGE		**2,315**		

PORTUGAL P-4		R&D EXPENDITURE		%of GBARD
	2020	1,792		0,24
	2021	2,065		0,27
	2022	2,158		0,27
	2023	2,153		0,27
	2024	2,587		0,29
TOTAL		**10,755**		
AVERAGE		**2,151**		

Military Budgets / GDP / R3 Calculations

PORTUGAL P-1	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2005	3142,6	197,4		
2006	3153,8	208,8		
2007	3309,4	240,5		
2008	3714,8	263,4		
2009	3738,3	244,4		
TOTAL	**17058,9**	**1154,5**		
AVERAGE	**3411,8**	**230,9**		**1,478**
	3,4118			

PORTUGAL P-2	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2010	3540,2	238,3		
2011	3651,9	245,1		
2012	3040,0	216,4		
2013	3262,3	226,4		
2014	3002,4	230		
TOTAL	**16496,7**	**1156,2**		
AVERAGE	**3299,3**	**231,2**		**1,427**
	3,2993			

PORTUGAL P-3	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2015	2643,9	199,4		
2016	3178,3	206,4		
2017	2719,7	221,3		
2018	3245,9	242,4		
2019	3299,4	240		
TOTAL	**15087,2**	**1109,5**		
AVERAGE	**3017,4**	**221,9**		**1,360**
	3,0170			

PORTUGAL P-4	MIL BUDGET (D)	GDP	M.B. in Bil	R3 (D/GDP*100)
2020	3268,0	228,9		
2021	3882,5	255,7		
2022	3566,6	255,4		
2023	4223,2	287,2		
2024	5625,0	303		
TOTAL	**20565,2**	**1330,2**		
AVERAGE	**4113,0**	**266,0**		**1,546**

Active Personnel / Population / R1, R2, & MRI Calculation

PORTUGAL P-1	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2005	93000	10500000				
2006	91000	10520000				
2007	91000	10540000				
2008	91000	10560000				
2009	91040	10570000				
TOTAL	**457040**	**52690000**				
AVERAGE	91408	10538000	**0,986**	**0,037**	**1,478**	**0,834**

PORTUGAL P-2	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1)) R1 (A/P*1000)	R2 (D/A)	R3 (D/GDP*100)	MRI
2010	90334	10570000				
2011	90300	10560000				
2012	30300	10510000				
2013	79850	10460000				
2014	78100	10400000				
TOTAL	**368884**	**52500000**				
AVERAGE	73776,8	10500000	**0,905**	**0,045**	**1,427**	**0,792**

PORTUGAL P-3	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2015	73600	10360000				
2016	74500	10330000				
2017	52000	10300000				
2018	52250	10280000				
2019	52000	10290000				
TOTAL	**304350**	**51560000**				
AVERAGE	60870	10312000	**0,839**	**0,050**	**1,360**	**0,750**

PORTUGAL P-4	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2020	52000	10300000				
2021	51000	10360000				
2022	50000	10430000				
2023	50500	10580000				
2024	51000	10620000				
TOTAL	**254500**	**52290000**				
AVERAGE	50900	10458000	**0,687**	**0,081**	**1,546**	**0,771**

PEI-Calculation

PORTUGAL	EXPORT	IMPORT	∑EX/∑IM (LOG(∑EX/∑IM))
P1	19.944,00	118.928,40	-0,78
P2	22.572,00	13.254,00	0,23
P3	1,00	2.315,74	-3,36
P4	1,00	3.852,00	-3,59

APPENDIX 10.19.
STATE PROFILE: **ROMANIA**

Procurement Data

ROMANIA P-1

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Italy	C-27J -	transport aircraft	2007	7	2015	8				
United States	HMMWV-UA	APC	2006	22	2007	1	148	0,13	19,24	**423,28**
Switzerland	Piranha-3 -	APC	2006	31	2015	9	107	0,3	32,1	**995,1**
Germany	BPz-2	armoured recovery vehicle	2007	3	2008	1				
Israel	Wolf APC	APC	2009	3	2009	1	102	0,16	16,32	**48,96**
TOTAL				133						**1467,34**

ROMANIA P-2

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Portugal	F-16C	FGA aircraft	2013	12	2017	4	100	18,81	1881	**22572**
United States	MaxxPro	APC	2010	60	2010	1	58	0,32	18,56	**1113,6**
Spain	VAMTAC	APC	2010	4	2011	1	119	0,14	16,66	**66,64**
France	PVP	armoured reconnaissance vehicle	2012	16	2015	3				
United States	Cougar MRAP	APC	2014	2	2014	1	46	0,14	6,44	**12,88**
TOTAL				133						**23765,12**

ROMANIA P-3

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United States	C-130H Hercules	transport aircraft	2019	1	2021	2				
Switzerland	Piranha-3 -	APC	2017	12	2018	1	107	0,3	32,1	**385,2**
United States	Patriot-3 SAMS	SAM system	2017	4	2023	6				
Switzerland	Piranha-5 -	APC	2018	127	2027	9	107	0,43	46,01	**5843,27**
United States	HIMARS	multiple rocket launcher	2018	54	2024	6	181	1,1	199,1	**10751,4**
Switzerland	Piranha-5 IFV -	IFV	2018	100	2030	12	98	0,92	90,16	**9016**
Israel	CARDOM 120mm	mortar	2017		0					
TOTAL				133						**25995,87**

ROMANIA P-4

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United States	M-1A2 SEPv-3 Abrams	tank	2023	54	2032	9	113	5,2	587,6	**31730,4**
United Kingdom	Sandown	minehunter	2023	2	2026	3	101	18	1818	**3636**
United States	F-35A Lightning-2	FGA aircraft	2024	32	2034	10	145	55	7975	**255200**
Portugal	F-16C	FGA aircraft	2020	5	2021	1	100	11,4	1140	**5700**
Norway	NSM CDS -	coastal defence system	2021	2	0					
United States	L-ATV	APC	2022	34	2023	1	110	0,18	19,8	**673,2**
Norway	F-16C	FGA aircraft	2022	32	2025	3	100	11,4	1140	**36480**
Turkiye	Bayraktar TB-2	armed UAV	2023	18	0					
Israel	Hermes-450	UAV	2022	21	0					
South Korea	K-9 155mm -	self-propelled gun	2024	54	2030	6	103	4,34	447,02	**24139,08**
United States	C-130H Hercules	transport aircraft	2022	2	2023	1				
United States	M-88A2	armoured recovery vehicle	2023	4	0					
United States	M-1150 ABV	armoured engineer vehicle	2023	4	0					
United States	M-1074 JABS	armoured bridgelayer	2023	4	0					
France	AS-532 ASW	anti-submarine helicopter	2024	2	0					
South Korea	K-10 -	armoured supply vehicle	2024	36	0					
Turkiye	Cobra-2 -	APC	2024	1059	2029	5	68	0,25	17	**18003**
United States	Patriot-3 SAMS	SAM system	2024	3	0					
Netherlands	F-16C	FGA aircraft	2024	18	2025	1	100	11,4	1140	**20520**
TOTAL				133						**396081,68**

Export Data

ROMANIA P-1

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Viet Nam	Yak-52	trainer aircraft	2008	10	2011					
Burkina Faso	BM-21	MLRS	2009	5	2009	1	148	0,24	35,52	177,6
Netherlands	Holland OPV -	patrol ship	2007	2	2013	6	400	108,1	4324	86480
TOTAL										**86657,6**

ROMANIA P-2

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Mozambique	R-40S	light aircraft	2012	2	2013					
TOTAL										**0**

ROMANIA P-3

Recipient	Designation	Description	Order	Number	Delivery	TT	MPI	TIV	MEV	PVI

			Year	Delivered	Years	D	UNIT			
TOTAL										**0**

ROMANIA P-4

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Netherlands	Den Helder -	replenishment ship	2020	1	0					
Ukraine	TAB-71	APC	2022	20	2023					
Ukraine	Patriot-3 SAMS	SAM system	2024	1	2024					
TOTAL										**0**

D-GBARD Data

ROMANIA P-1		**R&D EXPENDITURE**	**%of GBARD**
	2005	2,953	1,7
	2006	9,842	3,04
	2007	10,713	2,32
	2008	15,207	2,73
	2009	12,333	3,42
TOTAL		**51,048**	
AVERAGE		**10,210**	

ROMANIA P-2		**R&D EXPENDITURE**	**%of GBARD**
	2010	6,386	1,81
	2011	7,036	1,99
	2012	14,105	4,9
	2013	4,3	1,45
	2014	5,728	1,79
TOTAL		**37,555**	
AVERAGE		**7,511**	

ROMANIA P-3		**R&D EXPENDITURE**	**%of GBARD**
	2015	6,636	1,61
	2016	8,316	1,75
	2017	15,737	4,47
	2018	27,138	7,71
	2019	35,732	8,34
TOTAL		**93,559**	
AVERAGE		**18,712**	

ROMANIA P-4		**R&D EXPENDITURE**	**%of GBARD**
	2020	25,746	6,49

2021	13,565	3,45
2022	25,22	6,35
2023	51,085	10,35
2024	46,951	11,14
TOTAL	**162,567**	
AVERAGE	**32,513**	

Military Budgets / GDP / R3 Calculations

ROMANIA P-1	**MIL BUDGET (D)**	**GDP**	**R3 (D/GDP*100)**
2005	1976,0	95,6	
2006	2251,5	122,1	
2007	2607,7	174,8	
2008	3000,4	215,6	
2009	2225,1	174,6	
TOTAL	**12060,7**	**782,7**	
AVERAGE	**2412,1**	**156,5**	**1,541**
	2,4121		

ROMANIA P-2	**MIL BUDGET (D)**	**GDP**	**R3 (D/GDP*100)**
2010	2086,2	170,3	
2011	2379,9	192,8	
2012	2102,9	179,2	
2013	2452,5	189,8	
2014	2691,5	200	
TOTAL	**11713,0**	**932,1**	
AVERAGE	**2342,6**	**186,4**	**1,257**
	2,3426		

ROMANIA P-3	**MIL BUDGET (D)**	**GDP**	**R3 (D/GDP*100)**
2015	2580,6	177,9	
2016	2644,2	185,3	
2017	3622,1	210,5	
2018	4359,0	243,5	
2019	4613,0	251	
TOTAL	**17818,9**	**1068,2**	
AVERAGE	**3563,8**	**213,6**	**1,668**
	3,5638		

ROMANIA P-4	**MIL BUDGET (D)**	**GDP**	**R3 (D/GDP*100)**
2020	5052,3	251,7	
2021	5300,5	286	
2022	5188,0	299,5	
2023	5610,7	351	
2024	6220,5	380,6	
TOTAL	**27372,0**	**1568,8**	
AVERAGE	**5474,4**	**313,8**	**1,745**

Active Personnel / Population / R1, R2, & MRI Calculation

ROMANIA P-1	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2005	177000	21320000				
2006	154000	21190000				
2007	153000	20880000				
2008	153000	20540000				
2009	151645	20370000				
TOTAL	**788645**	**104300000**				
AVERAGE	157729	20860000	**0,933**	**0,015**	**1,541**	**0,830**

ROMANIA P-2	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2010	153800	20250000				
2011	151300	20150000				
2012	151300	20060000				
2013	151300	19980000				
2014	151300	19910000				
TOTAL	**759000**	**100350000**				
AVERAGE	151800	20070000	**0,933**	**0,015**	**1,257**	**0,735**

ROMANIA P-3	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2015	150400	19820000				
2016	149200	19700000				
2017	126000	19590000				
2018	126600	19470000				
2019	126000	19370000				
TOTAL	**678200**	**97950000**				
AVERAGE	135640	19590000	**0,899**	**0,026**	**1,668**	**0,864**

ROMANIA P-4	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2020	128000	19270000				
2021	110000	19120000				
2022	115000	19050000				
2023	128000	19060000				
2024	130000	19040000				
TOTAL	**611000**	**95540000**				
AVERAGE	122200	19108000	**0,869**	**0,045**	**1,745**	**0,886**

PEI-Calculation

ROMANIA	EXPORT	IMPORT	∑EX/∑IM (LOG(∑EX/∑IM))
P1	86.657,60	1.467,34	1,77
P2	1,00	23.765,12	-4,38
P3	1,00	25.995,87	-4,41
P4	1,00	396.081,68	-5,60

APPENDIX 10.20.
STATE PROFILE: **SLOVAKIA**

Procurement Data

SLOVAKIA P-1

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Czechia	L-410 Turbolet	light transport aircraft	2008	2	2010	2				
South Africa	RG-32 Scout	APC	2007	1	2008	1	46	0,15	6,9	**6,9**
South Africa	RG-32 Scout	APC	2008	6	2009	1	46	0,15	6,9	**41,4**
TOTAL				133						**48,3**

SLOVAKIA P-2

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Italy	C-27J -	transport aircraft	2014	2	2018	4				
Italy	LMV	APC	2011	10	2012	1	58	0,15	8,7	**87**
Czechia	L-410 Turbolet	light transport aircraft	2012	2	2013	1				
TOTAL				133						**87**

SLOVAKIA P-3

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United States	F-16V Viper	FGA aircraft	2018	14	2025	7	100	40	4000	**56000**
United States	S-70L Black Hawk	transport helicopter	2015	9	2020	5				
China	A-319	transport aircraft	2016	1	2017	1				
TOTAL				133						**56000**

SLOVAKIA P-4

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Finland	AMV-IFV -	IFV	2022	60	2027	5	98	1,02	99,96	**5997,6**
United States	S-70L Black Hawk	transport helicopter	2024	12	0					
Sweden	CV-90 Mk-4 IFV	IFV	2022	110	2028	6	122	1,1	134,2	**14762**
Sweden	CV-90 Mk-4 APC	APC	2022	42	2028	6	207	0,45	93,15	**3912,3**
Germany	Leopard-2A4	tank	2022	15	2024	2	95	1,6	152	**2280**
Germany	Skyshield-35	anti-aircraft gun system	2023	2	2023	1				
United States	L-ATV	APC	2023	160	2025	2	110	0,18	19,8	**3168**

Israel	Barak-MX Land	SAM system	2024	6	0					
Finland	AMV -	APC	2022	16	2027	5	252	0,32	80,64	**1290,24**
Brazil	C-390 -	transport aircraft	2024	3	0					
TOTAL				133						**31410,14**

Export Data

SLOVAKIA P-1

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Afghanistan	D-30 122mm	towed gun	2006	24	2006					
Afghanistan	Mi-17	transport helicopter	2007	3	2008					
Central African Republic	BMP-1	IFV	2008	3	2008	1	146	0,13	18,98	56,94
TOTAL										**56,94**

SLOVAKIA P-2

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Azerbaijan	DANA 152mm	SPG	2012	36	2018	6	71	0,66	46,86	1686,96
Mozambique	L-39Z	trainer/combat aircraft	2013	1	2014					
Cambodia	BMP-1	IFV	2012	8	2012	1	146	0,36	52,56	420,48
Cambodia	BM-21 122mm	MLRS	2012	5	2012	1	148	0,36	52,56	262,8
Saudi Arabia	BM-21 122mm	MLRS	2012	36	2016	4	148	0,36	52,56	1892,16
Cameroon	Mi-24V	combat helicopter	2014	2	2016	2	86	3,4	292,4	584,8
TOTAL										**4847,2**

SLOVAKIA P-3

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Senegal	Mi-24V	combat helicopter	2016	3	2017	1	86	3,4	292,4	877,2
Mali	RM-21 122mm	MLRS	2015	18	2016	1	148	0,36	52,56	946,08
Rwanda	BM-21 122mm	MLRS	2018	2	2019	1	148	0,36	52,56	105,12
Saudi Arabia	M-12 120mm	mortar	2015	42	2020					
TOTAL										**1928,4**

SLOVAKIA P-4

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Ukraine	MiG-29S	FGA aircraft	2023	13	2023					
Ukraine	S-300PMU	SAM system	2022	1	2022					
Ukraine	Mi-17	transport helicopter	2022	4	2022					

Ukraine	Mi-2	light helicopter	2022	1	2022	
Ukraine	Zuzana-2 155mm -	SPG	2022	8	2023	
Ukraine	BMP-1	IFV	2022	30	2022	
Ukraine	Zuzana-2 155mm -	SPG	2022	16	0	
TOTAL						**0**

D-GBARD Data

SLOVAKIA P-1	**R&D EXPENDITURE**	**%of GBARD**
2005	8,99	8,34
2006	7,55	6,28
2007	7,035	6,06
2008	7,971	4,46
2009	8,306	3,63
TOTAL	**39,852**	
AVERAGE	**7,970**	

SLOVAKIA P-2	**R&D EXPENDITURE**	**%of GBARD**
2010	4,259	1,68
2011	6,258	1,93
2012	6,615	2,24
2013	4,078	1,41
2014	3,963	1,37
TOTAL	**25,173**	
AVERAGE	**5,035**	

SLOVAKIA P-3	**R&D EXPENDITURE**	**%of GBARD**
2015	6,225	1,88
2016	4,637	1,53
2017	5,17	1,69
2018	6,07	1,85
2019	8,466	2,35
TOTAL	**30,568**	
AVERAGE	**6,114**	

SLOVAKIA P-4	**R&D EXPENDITURE**	**%of GBARD**
2020	7,568	1,97
2021	8,779	2,16
2022	11,853	2,87
2023	19,659	4,33
2024	24,698	5,11
TOTAL	**72,557**	

AVERAGE				**14,511**	

Military Budgets / GDP / R3 Calculations

SLOVAKIA P-1	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2005	1976,0	49,1		
2006	2251,5	57,5		
2007	2607,7	77,2		
2008	3000,4	97,2		
2009	2225,1	89,3		
TOTAL	**12060,7**	**370,3**		
AVERAGE	**2412,1**	**74,1**		**3,257**
	2,4121			

SLOVAKIA P-2	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2010	2086,2	91,2		
2011	2379,9	100		
2012	2102,9	94,7		
2013	2452,5	98,9		
2014	2691,5	101,5		
TOTAL	**11713,0**	**486,3**		
AVERAGE	**2342,6**	**97,3**		**2,409**
	2,3426			

SLOVAKIA P-3	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2015	2580,6	88,9		
2016	2644,2	89,9		
2017	3622,1	95,6		
2018	4359,0	106,2		
2019	4613,0	105,7		
TOTAL	**17818,9**	**486,3**		
AVERAGE	**3563,8**	**97,3**		**3,664**
	3,5638			

SLOVAKIA P-4	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2020	5052,3	106,7		
2021	5300,5	118,6		
2022	5188,0	115,7		
2023	5610,7	132,8		
2024	6118,5	142,6		
TOTAL	**27270,0**	**616,4**		
AVERAGE	**5454,0**	**123,3**		**4,424**
	5,4540			

Active Personnel / Population / R1, R2, & MRI Calculation

SLOVAKIA P-1	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**

2005	20000	5373000					
2006	17000	5373000					
2007	17000	5375000					
2008	17000	5379000					
2009	16531	5386000					
TOTAL	**87531**	**26886000**					
AVERAGE	17506,2	5377200		**0,629**	**0,138**	**3,257**	**1,341**

SLOVAKIA P-2	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2010	15799	5391000				
2011	15850	5398000				
2012	15850	5408000				
2013	15850	5413000				
2014	15850	5419000				
TOTAL	**79199**	**27029000**				
AVERAGE	15839,8	5405800	**0,594**	**0,148**	**2,409**	**1,050**

SLOVAKIA P-3	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2015	15850	5424000				
2016	15850	5431000				
2017	16000	5439000				
2018	15850	5447000				
2019	16000	5454000				
TOTAL	**79550**	**27195000**				
AVERAGE	15910	5439000	**0,594**	**0,224**	**3,664**	**1,494**

SLOVAKIA P-4	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2020	18000	5459000				
2021	18000	5447000				
2022	18500	5432000				
2023	19000	5427000				
2024	19500	5419000				
TOTAL	**93000**	**27184000**				
AVERAGE	18600	5436800	**0,646**	**0,293**	**4,424**	**1,788**

PEI-Calculation

SLOVAKIA	**EXPORT**	**IMPORT**	**∑EX/∑IM**	**(LOG(∑EX/∑IM))**
P1	56,94	48,30		0,07
P2	4.847,20	87,00		1,75
P3	1.928,40	56.000,00		-1,46
P4	1,00	31.410,14		-4,50

APPENDIX 10.21.
STATE PROFILE: **SPAIN**

Procurement Data

SPAIN P-1

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
France	NH-90 TTH	transport helicopter	2005	22	2022	7				
Israel	Searcher	UAV	2007	16	2008	1				
Italy	LMV	APC	2007	40	2008	1	58	0,15	8,7	**348**
France	AS-532U2	transport helicopter	2007	2	2011	4				
Switzerland	Piranha-3 -	APC	2007	21	2014	7	107	0,3	32,1	**674,1**
South Africa	RG-31 Nyala	APC	2008	100	2010	2	116	0,18	20,88	**2088**
Italy	Freccia APC	APC	2007	4	2011	4	109	0,45	49,05	**196,2**
Italy	LMV	APC	2008	80	2008	1	58	0,15	8,7	**696**
Italy	LMV	APC	2009	15	2010	2	58	0,15	8,7	**130,5**
Germany	EC-135	light helicopter	2008	2	2008	1				
TOTAL				133						**4132,8**

SPAIN P-2

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Italy	LMV	APC	2010	50	2011	1	58	0,15	8,7	**435**
Germany	EC-135	light helicopter	2010	12	2013	3				
Sweden	Skeldar	UAV	2013	2	2013	1				
Germany	EC-135	light helicopter	2013	8	2014	1				
United States	MaxxPro	APC	2014	14	2016	2	58	0,13	7,54	**105,56**
TOTAL				133						**540,56**

SPAIN P-3

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
France	NH-90 TTH	transport helicopter	2019	16	0					
United States	S-70L Black Hawk	transport helicopter	2015	2	2018	3				
Germany	Patriot SAMS	SAM system	2015	2	2015	1				
United States	MQ-9 UCAV	armed UAV	2016	4	2020	5				
Germany	NH-90 TTH	transport helicopter	2019	7	0					
France	AS-532 Cougar	transport helicopter	2015	2	2017	2				
France	AS-532 Cougar	transport helicopter	2016	1	2016	1				
United States	S-70L Black Hawk	transport helicopter	2017	2	2021	4				
France	AS-532 Cougar	transport helicopter	2016	3	2018	2				
United States	CH-47F	transport helicopter	2018	17	2024	6				

United States	S-70L Black Hawk	transport helicopter	2019	2	0					
United States	S-70L Black Hawk	transport helicopter	2018	2	2022	4				
TOTAL				133						**0**

SPAIN P-4

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Switzerland	Piranha-5 -	APC	2020	15	2028	8	107	0,43	46,01	690,15
Switzerland	PC-21 -	trainer aircraft	2020	24	2022	2				
Switzerland	Piranha-5 IFV -	IFV	2020	10	2028	8	98	0,92	90,16	901,6
Germany	EC-135	light helicopter	2021	18	0					
United States	MH-60R -	anti-submarine helicopter	2023	8	0					
Switzerland	PC-21 -	trainer aircraft	2023	16	0					
United States	CH-47F	transport helicopter	2023	1	0					
United States	Patriot-3 SAMS	SAM system	2024	4	0					
Israel	PULS	multiple rocket launcher	2023	12	2028	5	198	1,1	217,8	2613,6
Norway	NASAMS-2 -	SAM system	2024	1	0					
TOTAL				133						**4205,35**

Export Data

SPAIN P-1

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Brazil	C-295 -	transport aircraft	2005	12	2009	4				
Australia	Hobart -	destroyer	2007	3	2020	13	500	250	125000	375000
Australia	BPE -	amphibious assault ship	2007	2	2015	8				
Venezuela	POVZEE -	patrol ship	2005	4	2012	7	105	61,75	6483,75	25935
Portugal	C-295MPA -	maritime patrol aircraft	2006	3	2010	4				
Finland	C-295 -	transport aircraft	2006	2	2007	1				
Portugal	C-295 -	transport aircraft	2006	9	2011	5				
Czechia	C-295 -	transport aircraft	2009	4	2011	2				
Malaysia	A-400M -	transport aircraft	2005	4	2017	12				
Venezuela	BVL (Guaicamacuto)	patrol ship	2005	4	2020	15	105	30,5	3202,5	12810
Nicaragua	Rodman-101	patrol boat	2007	4	2007	1	105	3,5	367,5	1470
Colombia	C-212	transport aircraft	2005	1	2005	1				
Jordan	Mirage F-1E	FGA aircraft	2005	1	2006	1	114	8	912	912
Colombia	SBT 155mm	towed gun	2005	15	2008	3				
Bolivia	C-212	transport aircraft	2006	3	2009	3				
Chile	C-295MPA -	maritime patrol aircraft	2007	1	2010	3				
Poland	C-295 -	transport aircraft	2007	2	2008	1				

Poland	C-295 -	transport aircraft	2006	2	2007	1				
Colombia	C-295 -	transport aircraft	2007	4	2009	2				
Mexico	CN-235MP -	maritime patrol aircraft	2008	2	2010	2				
Uruguay	Bell-205A-1	helicopter	2008	1	2009	1				
Cabo Verde	C-212	transport aircraft	2008	1	2009	1				
Senegal	C-212	transport aircraft	2008	1	2009	1				
Senegal	Bell-205A-1	helicopter	2008	1	2008	1				
Mexico	C-295 -	transport aircraft	2008	2	2009	1				
Chile	Scorpion	light tank	2008	15	2008	1				
Botswana	CN-235 -	transport aircraft	2008	2	2010	2				
Indonesia	C-212	transport aircraft	2009	6	2016	7				
Mexico	C-295 -	transport aircraft	2009	5	2011	2				
Mexico	CN-235MP -	maritime patrol aircraft	2009	4	2012	3				
Colombia	CN-235MP -	maritime patrol aircraft	2009	1	2010	1				
Jordan	CN-235	transport aircraft	2009	2	2014	5				
Chile	C-295ASW -	anti-submarine aircraft	2007	2	2011	4				
TOTAL										**416127**

SPAIN P-2

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Philippines	C-295 -	transport aircraft	2014	3	2016					
Oman	C-295MPA -	maritime patrol aircraft	2012	4	2016					
Mexico	CN-235MP -	maritime patrol aircraft	2013	2	2015					
Indonesia	C-295 -	transport aircraft	2012	9	2015					
Mauritania	C-212MP	maritime patrol aircraft	2010	1	2011					
Ghana	C-295 -	transport aircraft	2011	2	2012					
United Kingdom	Scout-SV	IFV	2014	245	2027	13	74	1,27	93,98	23025,1
Brazil	C-295 -	transport aircraft	2014	2	2019					
France	CN-235 -	transport aircraft	2010	8	2013					
Finland	C-295 -	transport aircraft	2010	1	2011					
Mexico	C-295 -	transport aircraft	2011	1	2011					
Mexico	C-295 -	transport aircraft	2010	2	2011					
Egypt	C-295 -	transport aircraft	2012	3	2013					
Egypt	C-295 -	transport aircraft	2010	3	2011					
Yemen	CN-235 -	transport aircraft	2011	1	2013					
Romania	VAMTAC	APC	2010	4	2011	1	119	0,14	16,66	66,64
Senegal	Conejera	patrol boat	2011	1	2011	1	105	1,56	163,8	163,8
Mozambique	Conejera	patrol boat	2011	1	2013	2	105	1,56	163,8	163,8
Kazakhstan	C-295 -	transport aircraft	2012	2	2013					
Kazakhstan	C-295 -	transport aircraft	2013	2	2014					
Oman	C-295 -	transport aircraft	2012	4	2014					
Cameroon	CN-235 -	transport aircraft	2012	1	2013					
Poland	C-295 -	transport aircraft	2012	5	2013					
Colombia	C-295 -	transport aircraft	2012	1	2013					

Mexico	C-295 -	transport aircraft	2014	2	2015					
Pakistan	ATR-72	transport aircraft	2012	2	2013					
Colombia	C-295 -	transport aircraft	2013	1	2013					
Egypt	C-295 -	transport aircraft	2013	6	2014					
Uruguay	ECIA 120mm	mortar	2012	60	2015					
Cameroon	Aresa-3200	patrol boat	2012	2	2014	2	105	4,6	483	966
Ecuador	C-295 -	transport aircraft	2012	3	2014					
Viet Nam	C-295 -	transport aircraft	2014	3	2015					
Egypt	C-295 -	transport aircraft	2014	8	2016					
Mexico	C-295 -	transport aircraft	2014	2	2015					
United Kingdom	Scout-SV APC -	APC	2014	344	2026	12	157	0,42	65,94	22683,36
Uzbekistan	C-295 -	transport aircraft	2014	4	2016					
Iraq	VAMTAC	APC	2014	231	2016	2	119	0,14	16,66	3848,46
TOTAL										**50917,16**

SPAIN P-3

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Australia	Cantabria -	replenishment ship	2016	2	2021					
Turkiye	BPE -	amphibious assault ship	2015	1	2023					
Canada	C-295MPA -	maritime patrol aircraft	2016	16	0					
Ghana	C-295 -	transport aircraft	2015	1	2016					
Czechia	C-295 -	transport aircraft	2019	2	2021					
Saudi Arabia	C-295 -	transport aircraft	2015	2	2017					
Egypt	C-295 -	transport aircraft	2015	4	2016					
Mali	C-295 -	transport aircraft	2016	1	2016					
Saudi Arabia	Avante-2200 SAU -	frigate	2018	5	2024	6	301	197,25	59372,25	296861,25
Kazakhstan	C-295 -	transport aircraft	2015	2	2016					
Thailand	C-295 -	transport aircraft	2015	2	2019					
Botswana	H-725 Caracal	transport helicopter	2016	1	2016					
Philippines	C-295 -	transport aircraft	2018	1	2019					
Bangladesh	C-295 -	transport aircraft	2016	1	2017					
Kazakhstan	C-295 -	transport aircraft	2017	2	2017					
United States	Mirage F-1M	FGA aircraft	2017	19	2020	3	114	8,4	957,6	18194,4
UAE	C-295 -	transport aircraft	2017	5	2019					
Saudi Arabia	C-295MPA -	maritime patrol aircraft	2015	2	2018					
Brazil	C-295 -	transport aircraft	2018	1	2020					
Saudi Arabia	Alakran 120mm	self-propelled mortar	2017	100	2020					
Cote d'Ivoire	C-295 -	transport aircraft	2018	1	2019					
Portugal	VAMTAC	APC	2018	139	2021	3	119	0,14	16,66	2315,74
Burkina Faso	C-295 -	transport aircraft	2019	1	2021					
United States	C-295 -	transport aircraft	2018	3	2021					
Ireland	C-295MPA -	maritime patrol aircraft	2019	2	2023					
El Salvador	Model-56	towed gun	2015	12	2019					

	105mm									
Philippines	C-295 -	transport aircraft	2019	3	2023					
TOTAL										**317371,39**

SPAIN P-4

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
India	C-295 -	transport aircraft	2021	56	0					
Angola	C-295	transport aircraft	2022	1	2024					
Mali	VAMTAC	APC	2022	8	2022	2	119	0,13	15,47	123,76
Uruguay	OPV-1700 -	patrol ship	2023	2	2028	5	105	1,56	163,8	327,6
Indonesia	A-400M -	transport aircraft	2021	2	0					
India	C-295MPA -	maritime patrol aircraft	2024	9	0					
Angola	C-295MPA -	maritime patrol aircraft	2022	2	0					
Thailand	C-295 -	transport aircraft	2021	1	2023					
Mali	C-295 -	transport aircraft	2020	1	2022					
Morocco	BVL -	patrol ship	2021	1	2026	5	205	30,5	6252,5	6252,5
Uruguay	C-130H Hercules	transport aircraft	2020	2	2020					
Peru	C-130H Hercules	transport aircraft	2020	2	2020					
Philippines	ASCOD-APC -	APC	2020	20	2025	5	111	0,34	37,74	754,8
Burkina Faso	AS-350	light helicopter	2020	5	2020					
Kazakhstan	A-400M -	transport aircraft	2021	2	0					
Senegal	C-295 -	transport aircraft	2021	2	2023					
Serbia	C-295 -	transport aircraft	2022	2	2023					
Ukraine	RG-31 Nyala	APC	2022	1	2022	1				
Ukraine	Leopard-2A4	tank	2022	29	2024					
Ukraine	Spada	SAM system	2022	1	2022					
Ukraine	M-113	APC	2022	65	2024					
Bangladesh	C-295 -	transport aircraft	2020	1	2022	2				
Peru	SH-3H Sea King	anti-submarine helicopter	2022	4	2023	1				
Ukraine	I-HAWK SAMS	SAM system	2024	1	2024					
Lithuania	120-MX2-SM 120mm	mortar	2022	26	2023					
Ukraine	Model-56 105mm	towed gun	2022	8	2023					
Dominican Republic	VAMTAC	APC	2022	24	2023	1	119	0,13	15,47	371,28
Brunei	C-295 -	transport aircraft	2022	4	0					
Ireland	C-295 -	transport aircraft	2022	1	0					
Benin	AS-350	light helicopter	2022	2	2023					
Gabon	C-295 -	transport aircraft	2023	1	2023					
Kazakhstan	C-295 -	transport aircraft	2022	1	2023					
Ecuador	C-295 -	transport aircraft	2023	2	0					
Ukraine	BMR-600	APC	2023	3	2024	1				
Colombia	SIRTAP	UAV	2024	16	0					
Philippines	ASCOD --	IFV	2020	1	2023	3	111	0,34	37,74	37,74

Dominican Republic	T-35 Pillan	trainer aircraft	2024	7	2024					
Saudi Arabia	Avante-2200 SAU -	frigate	2024	3	2031	7	301	197,25	59372,25	178116,75
Latvia	ASCOD -	IFV	2024	42	2028	4	111	0,34	37,74	1585,08
New Zealand	VAMTAC	APC	2024	20	2028	4	119	0,13	15,47	309,4
Mozambique	C-295 -	transport aircraft	2023	1	0					
Ukraine	Alakran 120mm	self-propelled mortar	2024	6	2024					
TOTAL										**187878,91**

D-GBARD Data

SPAIN P-1		**R&D EXPENDITURE**	**%of GBARD**
	2005	192,628	3,89
	2006	182,318	2,71
	2007	212,562	2,66
	2008	256,217	3,05
	2009	198,388	2,28
TOTAL		**1042,113**	
AVERAGE		**208,423**	

SPAIN P-2		**R&D EXPENDITURE**	**%of GBARD**
	2010	117,98	1,42
	2011	121,337	1,67
	2012	107,155	1,73
	2013	82,239	1,45
	2014	72,589	1,26
TOTAL		**501,300**	
AVERAGE		**100,260**	

SPAIN P-3		**R&D EXPENDITURE**	**%of GBARD**
	2015	85,977	1,42
	2016	60,757	1
	2017	65,005	1,08
	2018	58,814	0,94
	2019	96,612	1,49
TOTAL		**367,165**	
AVERAGE		**73,433**	

SPAIN P-4		**R&D EXPENDITURE**	**%of GBARD**
	2020	95,896	1,38
	2021	83,931	1,12
	2022	207,212	2,59
	2023	319,049	3,55

2024		326,945	3,87
TOTAL		**1033,033**	
AVERAGE		**206,607**	

Military Budgets / GDP / R3 Calculations

SPAIN P-1	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2005	15997,7	1155,3		
2006	17252,2	1261,9		
2007	20065,7	1476,9		
2008	22227,7	1635,9		
2009	20178,3	1495		
TOTAL	**95721,6**	**7025**		
AVERAGE	**19144,3**	**1405,0**		**1,363**
	19,1443			

SPAIN P-2	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2010	19710,8	1429,2		
2011	19695,4	1487,3		
2012	18860,6	1331,8		
2013	17243,0	1362,2		
2014	17178,5	1380,6		
TOTAL	**92688,4**	**6991,1**		
AVERAGE	**18537,7**	**1398,2**		**1,326**
	18,5377			

SPAIN P-3	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2015	15187,2	1206,3		
2016	14014,4	1242,7		
2017	16043,5	1321,3		
2018	17823,3	1432,3		
2019	17189,3	1403,7		
TOTAL	**80257,7**	**6606,3**		
AVERAGE	**16051,5**	**1321,3**		**1,215**
	16,0515			

SPAIN P-4	**MIL BUDGET (D)**	**GDP**	**M.B. in Bil**	**R3 (D/GDP*100)**
2020	17431,8	1288,8		
2021	19544,5	1462,2		
2022	20306,6	1447,6		
2023	23699,1	1620,6		
2024	27689,5	1731,5		
TOTAL	**108671,4**	**7550,7**		
AVERAGE	**21734,3**	**1510,1**		**1,439**
	21,7343			

Active Personnel / Population / R1, R2, & MRI Calculation

SPAIN P-1	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2005	220000	43650000				
2006	222000	44400000				
2007	222000	45230000				
2008	223000	45950000				
2009	222422	46360000				
TOTAL	**1109422**	**225590000**				
AVERAGE	221884,4	45118000	**0,772**	**0,086**	**1,363**	**0,740**

SPAIN P-2	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2010	223216	46580000				
2011	215700	46740000				
2012	215600	46770000				
2013	213950	46620000				
2014	200000	46480000				
TOTAL	**1068466**	**233190000**				
AVERAGE	213693,2	46638000	**0,747**	**0,087**	**1,326**	**0,720**

SPAIN P-3	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2015	199950	46440000				
2016	197950	46480000				
2017	196000	46590000				
2018	196350	46800000				
2019	199000	47130000				
TOTAL	**989250**	**233440000**				
AVERAGE	197850	46688000	**0,719**	**0,081**	**1,215**	**0,672**

SPAIN P-4	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2020	199000	47370000				
2021	181000	47420000				
2022	183000	47760000				
2023	184500	48350000				
2024	195000	48550000				
TOTAL	**942500**	**239450000**				
AVERAGE	188500	47890000	**0,693**	**0,115**	**1,439**	**0,749**

PEI-Calculation

SPAIN	EXPORT	IMPORT	∑EX/∑IM (LOG(∑EX/∑IM))	
P1	416.127,00	4132,8		2,00
P2	50.917,16	540		1,97
P3	317.371,39	1		5,50
P4	187.878,91	4205,35		1,65

APPENDIX 10.22.
STATE PROFILE: **UNITED KINGDOM**

Procurement Data

UK P-1

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Israel	Hermes-450	UAV	2005	54	2016	11				
United States	F-35B Lightning-2	FGA aircraft	2006	138	0		145	60	**870**	**120060**
United States	C-17	heavy transport aircraft	2006	1	2008	2			**0**	**0**
United States	Cougar MRAP	APC	2006	30	2007	1	46	0,35	**16,1**	**483**
United States	MQ-9 UCAV	armed UAV	2006	3	2008	2				
United States	Cougar MRAP	APC	2006	108	2007	1	46	0,35	**16,1**	**1738,8**
Israel	Hermes-450	UAV	2007	20	2007	1				
United States	C-RAM	anti-aircraft gun	2007	2	2007	1				
Sweden	BVS-10	APC	2007	21	2008	1	102	0,25	**25,5**	**535,5**
United States	C-17	heavy transport aircraft	2007	1	2008	1				
United States	King Air ISR	ground surveillance aircraft	2007	4	2009	2				
United States	Cougar MRAP	APC	2008	174	2009	1	46	0,35	**16,1**	**2801,4**
United States	MQ-9 UCAV	armed UAV	2008	2	2009	1				
United States	Cougar MRAP	APC	2008	157	2009	1	46	0,35	**16,1**	**2527,7**
Australia	Bushmaster -	APC	2008	24	2008	1	100	0,35	**35**	**840**
Sweden	BVS-10	APC	2008	14	2008	1	102	0,25	**25,5**	**357**
United States	MQ-9 UCAV	armed UAV	2008	1	2010	2				
Singapore	Bronco -	APC	2008	115	2011	3	126	0,15	**18,9**	**2173,5**
United States	Cougar MRAP	APC	2008	24	2009	1	46	0,35	**16,1**	**386,4**
United States	Cougar MRAP	APC	2009	97	2011	2	46	0,35	**16,1**	**1561,7**
United States	MXT-MV	APC	2009	262	2010	1	102	0,15	**15,3**	**4008,6**
United States	Cougar MRAP	APC	2008	14	2009	1	46	0,35	**16,1**	**225,4**
Sweden	BVS-10	APC	2008	9	2009	1	102	0,25	**25,5**	**229,5**
Netherlands	Damen-8316	support ship	2008	1	2010	2				
Austria	DA-42MPP	reconnaissance aircraft	2008	1	2008	1				
United States	Cougar MRAP	APC	2009	20	2011	2	46	0,35	**16,1**	**322**
Sweden	BVS-10	APC	2009	24	2010	1	102	0,25	**15,3**	**367,2**

Sweden	BVS-10	APC	2008	12	2009	1	102	0,25	**15,3**	**183,6**
United States	King Air	light transport aircraft	2007	3	2009	2				
United States	King Air MP	maritime patrol aircraft	2008	4	2011	3				
United States	C-17	heavy transport aircraft	2009	1	2010	1				
Germany	G-115	trainer aircraft	2009	23	2010	1				
Austria	DA-42	light aircraft	2008	2	2008	1				
Israel	M-113 Spike-NLOS	surface-to-surface missile launcher	2007	14	2007	1				
TOTAL				133						**121934** **1,3**

UK P-2

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United States	CH-47F	transport helicopter	2011	14	2015	4				
South Korea	Tide MARS -	replenishment tanker	2012	4	2019	7				
United States	RC-135	signals intelligence aircraft	2010	3	2017	7				
United States	Cougar MRAP	APC	2010	37	2011	1	46	0,35	**16,1**	**595,7**
Spain	Scout-SV REC -	IFV	2014	245	2030	16	74	1,27	**93,98**	**23025,1**
United States	Cougar MRAP	APC	2010	23	2011	1	46	0,35	**16,1**	**370,3**
United States	MQ-9 UCAV	armed UAV	2010	5	2014	4				
United States	Cougar MRAP	APC	2010	28	2011	1	46	0,35	**16,1**	**450,8**
United States	C-17	heavy transport aircraft	2012	1	2012	1				
United States	King Air ISR	ground surveillance aircraft	2010	1	2011	1				
United States	Cougar MRAP	APC	2011	47	2011	1	46	0,35	**16,1**	**756,7**
Belgium	BAe-146	transport aircraft	2012	2	2013	1				
Israel	Hermes-450	UAV	2012	5	2012	1				
United States	MXT-MV	APC	2010	71	2011	1	102	0,16	**16,32**	**1158,72**
United States	ScanEagle	UAV	2013	5	2014	1				
Moldova	Mi-17	transport helicopter	2011	2	2011	1				
Moldova	Ka-32	transport helicopter	2011	2	2011	1				
United States	King Air	light transport aircraft	2012	1	2013	1				
Spain	Scout-SV APC -	APC	2014	344	2027	13	157	0,42	**65,94**	**22683,36**
United States	King Air ISR	ground surveillance aircraft	2012	1	2013	1				
United Kingdom	River Class	patrol boat	2013	3	2021	8	160	40	6400	19200
TOTAL				133						**68240,68**

UK P-3

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Germany	Boxer APC	APC	2019	523	0		220	0,35	**77**	**40271**
United States	T-6 Texan-2 -	(armed) trainer aircraft	2016	10	2018	2				
Brazil	Phenom-100	light transport aircraft	2016	5	2018	2				
United States	P-8A	anti-submarine aircraft	2016	9	2022	6				
United States	AH-64E Apache	combat helicopter	2016	50	2025	9	100	15	**1500**	**75000**
Germany	G-120TP	trainer aircraft	2016	23	2018	2				
Germany	EC-145	light helicopter	2015	3	2017	2				
Germany	EC-135	light helicopter	2015	29	2018	3				
United States	B-737 AEW	airborne early-warning aircraft	2019	3	0					
Germany	EC-145	light helicopter	2019	4	2021	2				
United States	T-6 Texan-2 -	(armed) trainer aircraft	2019	4	2020	1				
United Kingdom	Scout-SV IFV	IFV	2019	344	2029		74	2	148	50912
TOTAL				133						**166183**

UK P-4

Supplier	Designation	Description	Order Year	Number Ordered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
United States	MQ-9 UCAV	armed UAV	2021	1	2023	2				
United States	Protector-CPB	armed UAV	2020	16	0					
United States	MH-47G Chinook	transport helicopter	2021	14	0					
United States	King Air ISR	ground surveillance aircraft	2021	2	0					
Germany	Boxer APC	APC	2022	100	2030	8	220	0,55	**121**	**12100**
Norway	M-270 MLRS	multiple rocket launcher	2022	3	2025	3	100	0,48	**48**	**144**
United States	L-159A	FGA aircraft	2022	13	2024	2	75			
United States	M-270 MLRS	multiple rocket launcher	2021	76	2030	9	100	1,2	**120**	**9120**
Sweden	BVS-10	APC	2022	60	2027	5	102	0,25	**25,5**	**357**
Sweden	Archer 155mm	self-propelled gun	2023	14	2024	1	100	1,25	**125**	**1750**
Germany	EC-145	light helicopter	2023	6	0					
Austria	Camcopter S-100	UAV	2023	1	2024	1				
Germany	RCH-155	self-propelled gun	2024	100	0		118	1,75	**206,5**	**20650**
Israel	Sling 120mm	mortar	2024		0					
Germany	Boxer APC	APC	2019	523	2035	16	220	0,55	**121**	**63283**
United Kingdom	Challenger 3	tank	2022	148	2027	5	97	2	194	**28712**
TOTAL				133						**136116**

Export Data

UK P-1

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Saudi Arabia	Tactica	APC	2006	261	2009	3	72	0,18	12,96	3382,56
Iraq	Saxon	APC	2006	60	2007	1	62	0,08	4,96	297,6
Jordan	Saxon	APC	2009	12	2010	1	62	0,08	4,96	59,52
India	Jaguar-S	FGA aircraft	2006	20	2009	3	78	13	1014	20280
Saudi Arabia	Typhoon-8	FGA aircraft	2007	48	2015	8	143	55	7865	377520
Saudi Arabia	Typhoon-20	FGA aircraft	2007	24	2017	10	143	57,5	8222,5	197340
Oman	Shamikh -	frigate	2007	3	2014	7	708	144,5	102306	306918
Chile	Type-23	frigate	2005	3	2008	3	708	124	87792	263376
Algeria	Super Lynx	helicopter	2007	4	2012					
Brazil	Round Table	landing ship	2007	1	2007					
Brazil	Round Table	landing ship	2008	1	2009					
Pakistan	SA-316 Alouette-3	light helicopter	2005	2	2008					
Lithuania	Hunt MCM	MCM ship	2008	2	2013	5	158	36,3	5735,4	11470,8
Estonia	Sandown	MCM ship	2006	3	2009	3	101	18	119	357
Greece	Super Vita -	missile boat	2008	2	2022	14	300	53	15900	31800
Thailand	BVT-90 -	patrol ship	2009	1	2013	4	105	35	3675	3675
Poland	AS-90M TUR	SPG turret	2008	8	2012					
Canada	UFH 155mm	towed gun	2009	25	2011					
United States	L-118 105mm	towed gun	2005	275	2013					
Canada	UFH 155mm	towed gun	2005	12	2008					
Ecuador	Strikemaster	trainer/combat aircraft	2007	2	2007					
Philippines	F-27 Friendship	transport aircraft	2005	1	2007					
Venezuela	Shorts-360	transport aircraft	2005	2	2005					
Algeria	AW-101	transport helicopter	2007	6	2011					
Afghanistan	Mi-17	transport helicopter	2009	2	2010					
TOTAL										**1216476,48**

UK P-2

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Australia	Enforcer	amphibious assault ship	2011	1	2011					
South	AW-159 ASW -	anti-submarine	2013	8	2016					

Korea		helicopter								
Algeria	Super Lynx ASW --	anti-submarine helicopter	2012	6	2016					
Mozambique	Saxon	APC	2013	25	2013	1	62	0,08	4,96	124
Mozambique	FV-432	APC	2013	40	2013	1	62	0,12	7,44	297,6
Rwanda	FV-432	APC	2013	1	2013	1	62	0,12	7,44	7,44
Ukraine	Saxon	APC	2014	75	2015	1	62	0,08	4,96	372
Djibouti	Saxon	APC	2012	7	2012	1	62	0,08	4,96	34,72
Latvia	Spartan UK	APC	2014	73	2020	6	69	0,1	6,9	503,7
Somalia	Saxon	APC	2012	25	2013	1	62	0,08	4,96	124
Oman	Typhoon-20	FGA aircraft	2012	12	2018	6	143	57,5	8222,5	98670
Indonesia	Brunei -	frigate	2013	3	2014	1	792	197,25	156222	468666
Latvia	Scimitar	light tank	2014	50	2020	6	36	0,33	11,88	594
Ireland	PV-90 -	patrol ship	2014	1	2016					
Brazil	VT-90M -	patrol ship	2011	3	2013					
Ireland	PV-90 -	patrol ship	2010	2	2015					
Bangladesh	Castle OPV	patrol ship	2010	2	2010					
Indonesia	Forceshield -	SAM system	2014	10	2023					
Australia	UFH 155mm	towed gun	2012	19	2015					
Australia	UFH 155mm	towed gun	2010	35	2012					
India	Hawk-100	trainer/combat aircraft	2010	57	2016					
Oman	Hawk-100	trainer/combat aircraft	2012	8	2017					
Saudi Arabia	Hawk-100	trainer/combat aircraft	2012	22	2017					
Chile	AS-532 Cougar	transport helicopter	2011	2	2012					
TOTAL										**569393,46**

UK P-3

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Brazil	Ocean	amphibious assault ship	2018	1	2018					
Philippines	AW-159 ASW -	anti-submarine helicopter	2016	2	2019					
Poland	AW-101-111 -	anti-submarine helicopter	2019	4	2024					
Congo	Saxon	APC	2015	28	2015	1	62	0,08	4,96	138,88
Mauritania	Saxon	APC	2015	4	2016	1	62	0,08	4,96	19,84
Cote d'Ivoire	Saxon	APC	2016	4	2016	1	62	0,08	4,96	19,84
Latvia	Spartan UK	APC	2019	42	2022	3	69	0,1	6,9	289,8
Djibouti	Spartan UK	APC	2019	8	2020	1	69	0,1	6,9	55,2
Qatar	Typhoon-20	FGA aircraft	2017	24	2026	9	143	57,5	8222,5	197340
Australia	Hunter -	frigate	2018	6	2029	9	792	128,5	101772	610632
Canada	Global Combat Ship -	frigate	2019	15	2028	9	792	128,5	101772	1526580
Australia	AW-139	helicopter	2017	1	2017					

Malawi	SA-341 Gazelle	light helicopter	2015	1	2016					
Latvia	Scimitar	light tank	2019	40	2022	3	36	0,33	11,88	475,2
Guyana	Skyvan	light transport aircraft	2018	2	2019					
Ireland	PV-90 -	patrol ship	2016	1	2019	3	105	34,85	3659,25	3659,25
Thailand	BVT-90 -	patrol ship	2015	1	2019	4	105	35	3675	3675
Malaysia	Forceshield -	SAM system	2015	1	2016					
Brazil	Adams Challenge	support ship	2019	1	2020					
Colombia	L-118 105mm	towed gun	2017	18	2018					
United States	UFH 155mm	towed gun	2018	18	2021					
India	UFH 155mm	towed gun	2016	145	2022					
Jordan	T-67	trainer aircraft	2015	8	2015					
Finland	G-115	trainer aircraft	2016	28	2018					
Qatar	Hawk-100	trainer/combat aircraft	2018	9	2022					
Saudi Arabia	Hawk-100	trainer/combat aircraft	2015	22	2022					
Bangladesh	C-130J Hercules	transport aircraft	2019	3	2024					
Bangladesh	C-130J Hercules	transport aircraft	2018	2	2020					
Bahrain	C-130J Hercules	transport aircraft	2017	2	2018					
United States	C-130J Hercules	transport aircraft	2019	1	2020					
Pakistan	Commando AC	transport helicopter	2017	4	2018					
Pakistan	Sea King-3	transport helicopter	2016	1	2018					
TOTAL										**2342885,01**

UK P-4

Recipient	Designation	Description	Order Year	Number Delivered	Delivery Years	TTD	MPI UNIT	TIV	MEV	PVI
Japan	AW-101	transport helicopter	2023	2	0					
Romania	Sandown	minehunter	2023	2	0					
Portugal	Forceshield -	SAM system	2024	2	0					
Indonesia	Type-31 -	frigate	2021	2	0		708	114	80712	161424
Poland	Type-31 -	frigate	2022	3	0		708	114	80712	242136
Bahrain	River Batch-1	patrol ship	2020	1	2020		105	15,2	1596	1596
United States	B-707	transport aircraft	2021	1	2021					
Ukraine	Sandown	minehunter	2021	2	2022					
Egypt	Fort Rosalie	replenishment ship	2021	2	2023					
Chile	E-3A	airborne early-warning aircraft	2021	2	2022					
Lithuania	Hunt MCM	MCM ship	2020	1	0		232	72	16704	16704
Ukraine	Cougar MRAP	APC	2022	60	2022					
Ukraine	Stormer HVM	mobile SAM system	2022	6	2022					
Ukraine	AS-90B 155mm	SPG	2022	32	2023					
Ukraine	MXT-MV	APC	2022	20	2022					
Ukraine	Spartan UK	APC	2022	40	2022					
Ukraine	L-118 105mm	towed gun	2022	60	2022					
Ghana	MXT-MV	APC	2022	70	2022					

Ukraine	M-270 MLRS	MLRS	2022	6	2022				
United States	B-707	transport aircraft	2021	1	0				
Ukraine	Spartan UK	APC	2022	14	2022				
Ukraine	Spartan UK	APC	2022	82	2023				
Ukraine	Sea King-3	transport helicopter	2022	3	2023				
Ukraine	Challenger-2	tank	2022	14	2023				
Ukraine	Challenger ARV	armoured recovery vehicle	2022	2	2023				
Ukraine	FV-432	APC	2022	100	2023				
Australia	SSN-AUKUS	nuclear submarine	2023	3	0				
Ukraine	Pinzgauer	APC	2022	15	2023				
Ukraine	FV-432	APC	2022	42	2024				
Ukraine	Spartan UK	APC	2023	183	2024				
Ukraine	Bronco	APC	2023	11	2024				
Ukraine	BVS-10	APC	2023	30	2024				
Uruguay	EMB-120	transport aircraft	2024	1	2024				
Australia	EC-135	light helicopter	2024	5	2024				
Ukraine	AS-90B 155mm	SPG	2024	16	2024				
Ukraine	Saracen	APC	2022	5	2023				
Ukraine	Stormer	APC	2023	21	2024				
Ukraine	MXT-MV	APC	2024	160	2024				
Qatar	Typhoon-20	FGA aircraft	2024	12	2030	143	57,5	8222,5	98670
TOTAL									**520530**

D-GBARD Data

UK P-1		R&D EXPENDITURE		%of GBARD
	2005	2940,772		23,45
	2006	3127,916		23,75
	2007	3141,897		23,01
	2008	2515,007		21,69
	2009	1981,255		18,72
TOTAL		**13706,847**		
AVERAGE		**2741,369**		

UK P-2		R&D EXPENDITURE		%of GBARD
	2010	1988,692		18,24
	2011	1519,415		14,48
	2012	1817,243		16,19
	2013	1801,130		15,32
	2014	2127,908		16,85
TOTAL		**9254,388**		
AVERAGE		**1850,878**		

UK P-3		R&D EXPENDITURE		%of GBARD
	2015	2292,505		16,45
	2016	1990,974		15,92
	2017	1875,672		15,16
	2018	1872,951		14,14
	2019	1604,010		11,39
TOTAL		**9636,112**		
AVERAGE		**1927,222**		

UK P-4		R&D EXPENDITURE		%of GBARD
	2020	1405,590		14,39

	2021		1394,450	15,55
	2022		1428,368	16,11
	2023		2487,257	15,25
	2024		2874,850	18,77
TOTAL			**9590,515**	
AVERAGE			**1918,103**	

Military Budgets / GDP / R3 Calculations

UK P-1	**MIL BUDGET (D)**	**GDP**	**R3 (D/GDP*100)**
2005	61653,6	2546	
2006	64217,6	2712,3	
2007	73448,0	3091,7	
2008	72915,4	2960,4	
2009	64010,5	2421,5	
TOTAL	**336245,2**	**13731,9**	
AVERAGE	**67249,0**	**2746,4**	**2,449**
	67,2490		

UK P-2	**MIL BUDGET (D)**	**GDP**	**R3 (D/GDP*100)**
2010	63979,1	2487,9	
2011	66569,6	2664,7	
2012	65452,5	2707,6	
2013	63837,7	2786,7	
2014	66995,5	3066,3	
TOTAL	**326834,3**	**13713,2**	
AVERAGE	**65366,9**	**2742,6**	**2,383**
	65,3669		

UK P-3	**MIL BUDGET (D)**	**GDP**	**R3 (D/GDP*100)**
2015	59990,2	2928,6	
2016	53327,4	2699,1	
2017	52075,0	2682,3	
2018	55832,9	2875	
2019	56567,6	2853,1	
TOTAL	**277793,1**	**14038,1**	
AVERAGE	**55558,6**	**2807,6**	**1,979**
	55,5586		

UK P-4	**MIL BUDGET (D)**	**GDP**	**R3 (D/GDP*100)**

	2020	58332,4	2698,7			
	2021	65136,2	3144,1			
	2022	64081,6	3125,4			
	2023	74942,8	3382,1			
	2024	84942,3	3587,6			
TOTAL		**347435,4**	**15937,9**			
AVERAGE		**69487,1**	**3187,6**			**2,117**
		67,4871				

Active Personnel / Population / R1, R2, & MRI Calculation

UK P-1	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2005	217000	60400000				
2006	181000	60850000				
2007	160000	61320000				
2008	160000	61810000				
2009	178470	62280000				
TOTAL	**896470**	**306660000**				
AVERAGE	179294	61332000	**0,594**	**0,375**	**2,449**	**1,139**

UK P-2	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2010	174020	62770000				
2011	165650	63260000				
2012	169150	63700000				
2013	159150	64130000				
2014	154700	64600000				
TOTAL	**822670**	**318460000**				
AVERAGE	164534	63692000	**0,554**	**0,397**	**2,383**	**1,112**

UK P-3	**Active Personnel (A)**	**Population**	**R1 (LOG10(A/P*1000+1))**	**R2 (D/A)**	**R3 (D/GDP*100)**	**MRI**
2015	152350	65120000				
2016	150250	65610000				
2017	148000	66060000				
2018	148450	66460000				
2019	149000	66840000				
TOTAL	**748050**	**330090000**				
AVERAGE	149610	66018000	**0,514**	**0,371**	**1,979**	**0,955**

UK P-4	Active Personnel (A)	Population	R1 (LOG10(A/P*1000+1))	R2 (D/A)	R3 (D/GDP*100)	MRI
2020	153000	67080000				
2021	161000	67030000				
2022	167500	67790000				
2023	179400	68350000				
2024	184860	68750000				
TOTAL	**845760**	**339000000**				
AVERAGE	169152	67800000	**0,543**	**0,411**	**2,117**	**1,024**

PEI-Calculation

UK	EXPORT	IMPORT	∑EX/∑IM (LOG(∑EX/∑IM))
P1	1.216.476,48	1.219.341,30	-0,00
P2	569.393,46	68.240,68	0,92
P3	2.342.885,01	166.183,00	1,15
P4	520.530,00	136.116,00	0,58