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Strengthening Defense Industry Strategies to Enhance Economic Competitiveness and National Defense

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Abstract

The defense industry plays a dual role in both safeguarding national sovereignty and driving economic competitiveness, making it a strategic pillar for long-term national resilience. For Indonesia, whose security environment is shaped by dynamic Indo-Pacific geopolitics, strengthening the defense industrial base is not only a matter of security but also a crucial element in realizing the national vision of Indonesia Emas 2045. This study was conducted to address the persistent challenges of technological dependence, fragmented institutional support, and high reliance on imports, which undermine Indonesia's strategic autonomy and economic competitiveness. The objective is to formulate a comprehensive strategy for defense industry development that simultaneously enhances security and contributes to economic transformation. Methodologically, the research employs a Systematic Literature Review (SLR) complemented by meta-analysis of empirical findings. This dual approach ensures both conceptual depth and empirical robustness by synthesizing global insights and quantitative evidence on the multiplier effects of defense industry development. The findings reveal that a robust defense industry generates significant spillover effects, including technological innovation, high-skilled employment, industrial upgrading, and reduced import dependency. Furthermore, indigenous capabilities strengthen national sovereignty, deterrence, and resilience against both traditional and non-traditional threats. The analysis highlights that aligning defense industrial policy with national economic strategy can create a virtuous cycle of innovation, competitiveness, and security. In conclusion, the strengthening of Indonesia's defense industry is essential not only to reduce strategic vulnerabilities but also to serve as a catalyst for sustainable economic growth. This study underscores the need for coherent regulation, sustained R&D investment, multi-stakeholder collaboration, and an export-oriented approach to achieve both defense resilience and economic competitiveness.

Keywords: Defense Industry, Economic Competitiveness, Indonesia Emas 2045, National Security, Innovation

INTRODUCTION

The defense industry is a strategic pillar for national independence, as it provides states with the capacity to safeguard sovereignty, ensure territorial integrity, and reduce dependency on external actors. A strong defense industry not only guarantees security but also stimulates technological advancement and industrial competitiveness, creating a multiplier effect on the national economy (Raska, 2019). For developing nations like Indonesia, whose security environment is shaped by dynamic regional geopolitics, strengthening the defense industrial base has become a national priority. This vision aligns with long-term national development goals such as "Indonesia Emas 2045," which emphasizes sovereignty, resilience, and competitiveness as key determinants of success.

In today's interconnected world, global defense industry competition is marked by rapid technological advancements, the weaponization of artificial intelligence (AI), cyber capabilities, and the integration of dual-use technologies. Major powers, such as the United States, China, and Russia, are continuously investing in their defense industries to secure strategic superiority, while emerging economies seek to establish independent defense capabilities (Bitzinger, 2021). This context illustrates the widening gap between advanced and developing nations, highlighting the urgent need for Indonesia to modernize its defense industry. Without strong industrial foundations, the country risks technological dependence and strategic vulnerability.

Moreover, geopolitical tensions in the Indo-Pacific region amplify the urgency of defense industrial strengthening. The South China Sea dispute, strategic competition between the United States and China, and rising non-traditional security threats such as cyberwarfare and terrorism all demand resilient defense capabilities (Macaraig & Fenton, 2021). In such a volatile environment, reliance on foreign defense imports could jeopardize national readiness during crises, as supply chains might be disrupted due to embargoes, sanctions, or shifting alliances. Therefore, defense industrial self-reliance is not merely an economic issue but a strategic imperative for national security.

Another pressing challenge lies in the global technological race. Breakthroughs in defense-related technologies, including unmanned aerial vehicles (UAVs), hypersonic missiles, and space-based surveillance, are reshaping the battlefield and redefining modern warfare. Countries unable to adapt risk becoming technologically obsolete, relegated to dependency on advanced exporters (Horowitz et al., 2022). For Indonesia, developing indigenous defense technologies could enable the nation to maintain operational readiness while also transferring innovation to civilian industries, thereby improving overall economic competitiveness.

Import dependency remains one of Indonesia's structural weaknesses. According to SIPRI (2023), Indonesia remains among the top arms importers in Southeast Asia, underscoring the gap between defense requirements and domestic production capacity. Excessive reliance on imports not only drains foreign reserves but also undermines the sustainability of defense procurement. More importantly, dependence exposes the nation to strategic risks should supplier countries impose restrictions. Strengthening domestic defense manufacturing, therefore, is not only an economic consideration but also a matter of sovereignty.

The development of a robust defense industry can also serve as a catalyst for broader industrial transformation. Lessons from countries such as South Korea and Turkey show how investments in defense industries can generate spillover effects in innovation, industrial upgrading, and workforce development (Baysal, 2025). By aligning industrial policy with defense modernization, Indonesia could simultaneously enhance national security and economic competitiveness. Defense technology transfers into civilian sectors—such as aerospace, telecommunications, and renewable energy—could amplify this effect, creating long-term growth opportunities.

However, achieving this vision requires overcoming systemic challenges, including limited research and development (R&D) investment, regulatory hurdles, and fragmented cooperation among stakeholders. To chart a sustainable path forward, Indonesia needs a comprehensive strategy that integrates defense industrial development into its national economic and security frameworks. This would involve synergizing policies between the government, defense industry actors, academia, and international partners, while ensuring technological innovation is embedded at every stage of the process (Riyadi & Dewi, 2022).

Table 1. Key Global Challenges for the Defense Industry

Challenge	Description	Implication for Indonesia
Geopolitical Rivalries	Intensifying power competition in the Indo-Pacific, including US–China rivalry	Increased demand for strategic autonomy
Technological Competition	Rapid innovation in AI, cyber, space, and unmanned systems	Risk of technological obsolescence if lagging
Import Dependence	High reliance on foreign defense procurement	Vulnerability to embargoes and supply disruption

Economic Pressures	Rising costs of advanced weapon systems and limited defense budget	Need for efficiency and local production
Regulatory & Institutional Gaps	Fragmented governance and limited R&D support	Constraints on industrial growth and innovation

Source: processed by researchers from various sources (2025)

The table highlights the interconnected challenges faced by Indonesia in building a resilient defense industry. Geopolitical rivalries and rapid technological advancements create pressure for innovation and strategic independence. However, heavy reliance on imports, combined with budgetary and regulatory constraints, underscores the need for comprehensive policy reforms. Addressing these challenges will be crucial for Indonesia to establish a sustainable defense industry that enhances both economic competitiveness and national security.

The defense industry has a profound multiplier effect on national economies, particularly through its ability to stimulate innovation, create employment, and strengthen supply chains across multiple sectors. Beyond its core function of producing military equipment, the defense industry often generates technological spillovers that benefit civilian industries such as aerospace, telecommunications, energy, and manufacturing (Biswas, 2019). These spillovers emerge through research and development (R&D), dual-use technologies, and cross-sector collaboration, all of which enhance national productivity and competitiveness. For Indonesia, the multiplier effect of defense industrial development could significantly contribute to industrial upgrading and sustainable economic growth.

One of the most critical economic contributions of the defense industry lies in its role in driving R&D activities. Investments in defense-related R&D often lead to breakthrough technologies that later diffuse into civilian applications, thereby stimulating broader industrial innovation (Ilzetzki, 2025). For instance, global innovations such as satellite technology, internet infrastructure, and advanced materials initially emerged from defense research. Indonesia, by enhancing its defense R&D capacity, could replicate such pathways and achieve technology-driven economic transformation.

Furthermore, the defense industry acts as a catalyst for employment and human capital development. Highly skilled labor, engineers, and technicians employed in defense industries contribute not only to defense production but also to the overall skills base of the nation's workforce. These human capital gains have long-term economic implications, as workers trained in defense industries often transfer their expertise to civilian sectors (Wibowo et al., 2020). Thus, investing in defense industries is simultaneously an investment in the knowledge economy.

The relevance of strengthening the defense industry becomes even more pronounced when viewed through the lens of Indonesia's long-term development vision—Indonesia Emas 2045. This national vision seeks to position Indonesia as one of the world's top five economies by its centennial anniversary of independence. Achieving such an ambitious target requires not only macroeconomic stability but also strategic industries that can elevate competitiveness and resilience (Kemensetneg RI, 2025). The defense industry, with its capacity for innovation and economic spillovers, fits directly into this framework.

Modernization of the defense sector is also a prerequisite for Indonesia's strategic autonomy. Without domestic production capacity and technological independence, Indonesia risks perpetual reliance on external suppliers, undermining its sovereignty and limiting its ability to project regional influence. Modernization efforts aligned with Indonesia Emas 2045 emphasize building indigenous technological capabilities, expanding domestic production, and fostering public–private partnerships to ensure long-term sustainability (Sjamsoeddin et al., 2022). Thus, the defense industry is not only central to national defense but also integral to the vision of becoming a globally competitive economy.

Another dimension of relevance is regional competitiveness. Countries like South Korea and Turkey have demonstrated that defense industrial modernization can become a springboard for national economic transformation (Lee & Park, 2020). By integrating defense industrial policy into broader national development agendas, these countries have enhanced export competitiveness, fostered domestic innovation, and strengthened their geopolitical standing. Indonesia, learning from these experiences, can adapt similar strategies to ensure that defense industrial development becomes a driver for both national defense and economic growth.

Ultimately, the interlinkage between defense industry development and Indonesia Emas 2045 is symbiotic: modernizing the defense industry enhances sovereignty and economic competitiveness, while economic transformation provides the foundation for sustained defense modernization. This virtuous cycle highlights the necessity of embedding defense industrial policy into Indonesia's broader national development framework. By doing so, Indonesia can leverage the multiplier effects of the defense industry to accelerate progress toward its 2045 vision while simultaneously ensuring robust national security.

Table 2. Economic and Strategic Linkages of Defense Industry Development

Dimension	Economic Impact	Strategic Relevance
Research & Development	Drives innovation and dual-use technologies	Strengthens indigenous technological capacity
Employment & Skills	Creates high-skilled jobs and develops human capital	Enhances national expertise for defense readiness
Industrial Spillovers	Stimulates growth in civilian sectors (aerospace, ICT, energy)	Expands economic competitiveness
Export Opportunities	Increases defense-related exports and foreign revenue	Enhances regional and global influence
Strategic Autonomy	Reduces dependency on imports	Improves sovereignty and defense resilience

Source: processed by researchers (2025)

The table 2 illustrates how defense industry development produces a dual impact on economic and strategic dimensions. On the economic side, defense industries contribute to innovation, employment, and industrial upgrading. On the strategic side, they reinforce autonomy, resilience, and influence within the global system. The synergy between these dimensions directly aligns with Indonesia's aspiration to achieve Indonesia Emas 2045, where both economic competitiveness and defense modernization are essential pillars.

The central problem underlying this study lies in understanding how defense industry strengthening The central problem underlying this study lies in understanding how defense industry strengthening strategies can simultaneously enhance both economic competitiveness and national defense resilience. Despite its recognized strategic value, Indonesia's defense industry continues to face structural limitations, including technological dependence, fragmented institutional support, and limited integration with the broader national economy. Previous research has demonstrated that defense industrial development can generate significant spillover effects on civilian sectors (Hartley, 2017; Bitzinger, 2015), while emerging evidence suggests that developing nations often struggle with balancing military self-sufficiency with commercial competitiveness (Kurniawan & Prasetyani, 2021). These challenges raise a critical research question: how can defense industry development be strategically designed to generate dual benefits—supporting national security while also acting as a catalyst for economic competitiveness in an era of intensifying global competition and geopolitical uncertainty?

The objective of this paper is to develop a comprehensive strategy for strengthening Indonesia's defense industry through a systematic review of relevant literature. The study aims to identify key strategic pathways—ranging from innovation and R&D policies to institutional

reforms and industrial partnerships—that can align defense industrial development with the long-term vision of Indonesia Emas 2045. Recent scholarship has emphasized the importance of integrating defense industrial policy with national innovation systems and leveraging strategic partnerships to overcome technological gaps (Markowski & Hall, 2019; Kulve & Smit, 2003).

The significance of this study can be viewed from both theoretical and practical dimensions. Theoretically, it contributes to the literature on defense economics and industrial policy by providing an integrated perspective on how defense industry development can generate multiplier effects while reinforcing national defense capabilities (Calcara, 2020; Dunne & Sköns, 2010). Practically, the findings are expected to serve as a valuable reference for governments in formulating coherent defense industrial policies, for industry actors in identifying strategic opportunities, and for other stakeholders in fostering a supportive ecosystem that aligns defense modernization with Indonesia's long-term vision of sustainable growth and strategic autonomy.

RESEARCH METHODS

This study employs a **Systematic Literature Review (SLR)** approach to synthesize existing knowledge on the nexus between defense industry development, economic competitiveness, and national security. SLR is particularly useful in providing a transparent, replicable, and structured method for reviewing academic publications and policy reports, allowing researchers to identify recurring themes, theoretical frameworks, and empirical findings (Snyder, 2019). In this study, the SLR process involved three main stages: identification of relevant sources through academic databases such as Scopus, Web of Science, and Google Scholar; screening based on inclusion and exclusion criteria such as publication period (2016–2025) and relevance to defense economics or industrial strategy; and thematic categorization of findings. This structured process ensures that the review captures both global insights and region-specific literature relevant to Indonesia’s context.

To complement the SLR, a **meta-analysis** technique was applied in order to integrate quantitative findings from prior empirical studies, particularly those examining the economic and strategic impacts of defense industry development. Meta-analysis enables the aggregation of statistical results across multiple studies, thus providing a higher level of evidence and enhancing the robustness of conclusions (Borenstein et al., 2021). This process involved coding quantitative indicators such as defense spending, R&D investment, employment generation, and arms imports/exports, which were then systematically compared to identify patterns of economic multiplier effects and strategic benefits. By synthesizing these results, the study provides empirical grounding to theoretical arguments regarding the dual role of the defense industry.

The combined application of SLR and meta-analysis strengthens the methodological rigor of this paper. While SLR ensures comprehensiveness and depth in capturing conceptual and policy-related discussions, meta-analysis adds empirical robustness by quantifying the effects across diverse contexts. This dual approach allows the study to provide nuanced insights into how defense industrial strategies can be tailored to Indonesia’s long-term development goals, while also drawing comparative lessons from international experiences. Such methodological integration enhances both the academic validity and the practical relevance of the research findings (Tranfield et al., 2003).

RESULT AND DISCUSSION

Current Condition of Indonesia's Defense Industry (SWOT)

The Indonesian defense industry occupies a strategic position within the broader framework of national security and economic development. In recent years, government initiatives such as the enactment of Law No. 16/2012 on the Defense Industry and the establishment of the Defense Industry Policy Committee (KKIP) have signaled a strong political commitment to strengthen indigenous capabilities (Damayanti & Ratnasih, 2025). State-owned enterprises such as PT Pindad, PT PAL, and PT Dirgantara Indonesia serve as the backbone of the sector, supported by private industries and academic partnerships. These strengths reflect Indonesia's determination to achieve defense self-reliance, reduce import dependence, and foster technological transfer, thereby integrating defense industrial development into the vision of Indonesia Emas 2045.

Despite these achievements, the sector continues to face structural weaknesses that limit its global competitiveness. The most pressing challenges include limited investment in research and development (R&D), technological dependence on foreign suppliers, and fragmented coordination among key stakeholders (Yulivan, 2022). Production capacity remains modest compared to regional competitors such as South Korea or Turkey, while bureaucratic inefficiencies and inconsistent procurement processes often slow down industrial progress. These weaknesses not only constrain innovation but also hinder Indonesia's ability to meet its own defense modernization requirements.

Opportunities, however, remain significant. Indonesia's geostrategic location in the Indo-Pacific and its growing defense budget provide a favorable environment for expanding defense industrial capacity (SIPRI, 2023). Participation in global supply chains, regional defense cooperation frameworks, and international joint ventures could accelerate technology transfer and enhance competitiveness. Furthermore, the growing demand for dual-use technologies—ranging from unmanned systems to cyber defense—offers opportunities for the Indonesian defense industry to align innovation with both security and civilian market needs (Lee & Park, 2020). If properly leveraged, these opportunities could transform the defense industry into a catalyst for national economic and technological advancement.

Nevertheless, external threats and challenges must not be underestimated. Geopolitical rivalries in the Indo-Pacific, particularly between the United States and China, create an unstable security environment that demands rapid modernization. At the same time, global defense industries are marked by intense technological competition, with breakthroughs in artificial intelligence, space systems, and advanced weaponry reshaping the future battlefield (Bitzinger, 2021). For Indonesia, the challenge lies in ensuring that domestic industries are not left behind in this innovation race while maintaining resilience against potential supply chain disruptions and policy uncertainties.

Table 3. SWOT Analysis of Indonesia's Defense Industry

Strengths (S)	**Weaknesses (W)**
Strong political commitment (Law No. 16/2012, KKIP)	Limited R&D investment and innovation capacity
State-owned enterprises as industrial backbone	Technological dependence on foreign suppliers
Integration with Indonesia Emas 2045 vision	Fragmented institutional coordination
Opportunities (O)	**Threats (T)**
Expanding defense budget and market demand	Geopolitical tensions in Indo-Pacific
International cooperation and joint ventures	Global technological race (AI, cyber, space)

Rising demand for dual-use technologies	Supply chain vulnerabilities and embargo risks

Source: processed by researchers (2025)

The SWOT analysis highlights Indonesia's defense industry as a sector with solid foundations but constrained by systemic weaknesses. While state-owned enterprises and political commitment provide a strong base, structural limitations in R&D and institutional coordination hinder growth. Opportunities such as international cooperation, growing budgets, and dual-use innovation present pathways for advancement. However, threats from geopolitical instability and global technological competition underscore the urgency of comprehensive reforms and long-term industrial strategies.

Strengthening strategy

Strengthening Indonesia's defense industry requires a comprehensive regulatory and policy framework that ensures consistency, continuity, and adaptability in addressing global security dynamics. The Defense Industry Law (UU No. 16/2012) has provided a foundation, yet its implementation requires updated roadmaps aligned with technological disruption and the long-term vision of Indonesia Emas 2045. The integration of defense industry policies into the National Medium-Term Development Plan (RPJMN) and the Defense White Paper is essential to guarantee policy coherence and sustainable implementation (Solehudin, 2024). Without legal certainty and an adaptive regulatory structure, the defense industry risks fragmentation and inefficiency, limiting its ability to compete internationally.

Technological advancement forms the second pillar of defense industrial strengthening. Research and development (R&D), particularly in artificial intelligence (AI), drone technology, and cyber defense, is vital to achieve technological leapfrogging. Investment in dual-use technologies, which serve both civilian and military applications, offers efficiency and broader economic impact (Damayanti & Ratnasih, 2025). The ability of Indonesian defense industries to internalize and adapt frontier technologies will determine their resilience against asymmetric threats and their competitiveness in the global defense market. Strengthening university-industry-government collaboration is a prerequisite for sustaining technological innovation within this sector.

Equally important is the role of collaboration among state-owned defense enterprises (BUMNIS), private companies, and small and medium enterprises (SMEs). A solid defense industrial base requires synergy between these stakeholders, where SMEs can function as agile suppliers of components and subsystems while BUMNIS provide production scale and integration capacity (McGinn, 2020). This layered industrial structure not only promotes efficiency but also nurtures innovation ecosystems, enhancing the competitiveness of the national defense industry in both domestic and foreign markets.

Financing remains a critical enabler in realizing Indonesia's defense industrial ambitions. Innovative financing mechanisms such as public-private partnerships (PPP), sovereign wealth fund (SWF) allocations, and offset agreements with foreign defense contractors present viable pathways for sustaining long-term investment (Lee & Park, 2020). These mechanisms reduce the burden on the state budget while ensuring continuous funding for modernization and innovation. The integration of offset agreements, particularly in technology transfer, provides a strategic avenue for domestic industries to acquire advanced capabilities without excessive reliance on imports.

In addition to domestic strengthening, defense diplomacy and the expansion of export markets for defense products are vital strategies. Indonesia has potential markets in Southeast Asia, Africa, and the Middle East, where affordable and reliable defense systems are in high demand (Sarjito, 2025). Proactive defense diplomacy not only promotes exports but also strengthens bilateral and multilateral security cooperation, thereby enhancing Indonesia's

strategic position in the global arena. Defense exports also generate economic multipliers, fostering job creation and technology spillover across sectors.

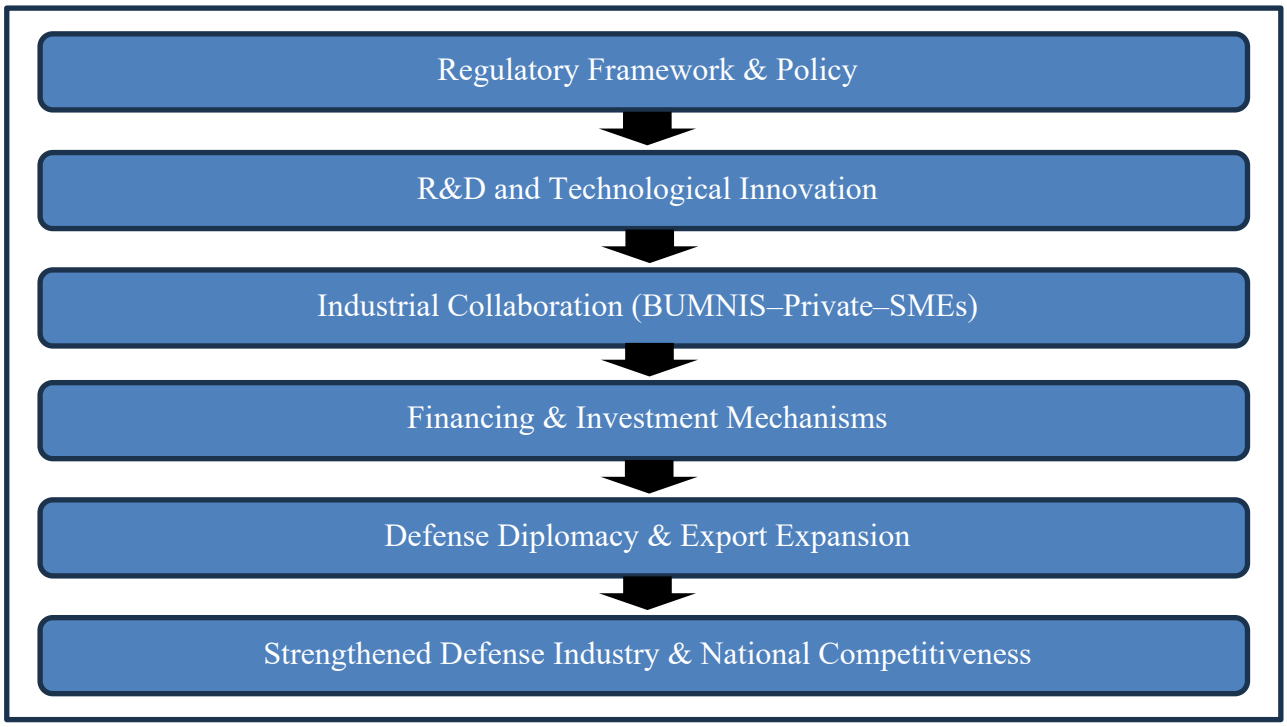

Figure 1. Strategic Flow Diagram for Defense Industry Strengthening
Source: processed by researchers (2025)

The diagram illustrates a sequential flow where regulations and policy act as the foundation for all subsequent strategies. R&D drives technological competitiveness, which in turn is sustained through collaboration between BUMNIS, private enterprises, and SMEs. Financing and investment mechanisms ensure continuity, while defense diplomacy and export expansion position Indonesia on the global stage. Together, these interlinked strategies reinforce the resilience and competitiveness of the national defense industry.

Correlation with economic competitiveness

The strengthening of the defense industry demonstrates a significant correlation with broader economic competitiveness, particularly through its multiplier effects on related industries such as technology, logistics, and energy. Defense production often drives innovation in dual-use technologies, which can be transferred into civilian applications, thereby expanding industrial capacity beyond military needs. For instance, advancements in materials engineering, information systems, and transportation derived from defense-oriented research can stimulate efficiency gains in commercial sectors. This cross-sectoral diffusion not only improves industrial resilience but also enhances national competitiveness in high-value industries, positioning the defense sector as a cornerstone of technological and economic progress (Franko & Herz, 2021; McGinn, 2020).

Another critical dimension is the potential for the defense industry to generate employment opportunities in high-technology domains. Unlike labor-intensive industries, the defense sector emphasizes advanced skill sets in engineering, cybersecurity, data analytics, and artificial intelligence. This demand for specialized competencies contributes to human capital development by fostering a workforce equipped with cutting-edge technical knowledge. Countries that invest in their defense industries often experience a positive spillover effect, wherein the training, expertise, and career paths established in defense-related fields transition into broader innovation ecosystems. In the Indonesian context, strengthening the defense industry

could play a pivotal role in bridging the gap between educational outcomes and market demand, enhancing both productivity and the knowledge economy (Wibowo et al., 2020).

The substitution of imports represents another pathway through which defense industrial policy strengthens economic competitiveness. By reducing reliance on foreign suppliers of military equipment and technology, Indonesia not only enhances its strategic autonomy but also conserves foreign exchange reserves. Domestic production and technological mastery create higher value-added chains, particularly when local industries move beyond assembly roles to indigenous research, design, and manufacturing. This shift not only supports national security imperatives but also stimulates domestic demand for raw materials, components, and specialized services, thereby creating synergies across multiple industrial clusters (Damayanti & Ratnasih, 2025; Yulivan, 2022).

Finally, the integration of these factors—technological spillovers, high-tech employment creation, and import substitution—collectively strengthens Indonesia's long-term economic competitiveness. A well-developed defense industrial base acts as a driver of industrial upgrading by embedding advanced technological capabilities into the national economy. Moreover, it positions Indonesia more competitively in regional and global markets, both as a consumer and as a potential exporter of defense and dual-use technologies. This alignment of defense industrial development with economic policy not only supports the vision of Indonesia Emas 2045 but also ensures that defense modernization contributes directly to inclusive and sustainable economic growth (Maryanti et al., 2023).

Implications for national defense

One of the most significant implications of strengthening the defense industry is the achievement of greater autonomy in the production of defense equipment (alutsista). A strong domestic defense industry reduces dependency on foreign suppliers and minimizes vulnerabilities arising from embargoes, supply chain disruptions, or political restrictions. By developing indigenous capabilities in research, design, and manufacturing, Indonesia can ensure that its armed forces are equipped with systems tailored to its strategic environment and operational requirements. This independence not only secures long-term sustainability in defense procurement but also strengthens strategic sovereignty, aligning with the broader national agenda of defense self-reliance (Damayanti & Ratnasih, 2025).

The enhancement of the deterrence effect represents another critical implication. A robust defense industrial base enables the continuous modernization of military capabilities, thereby projecting credibility and resilience in the face of external threats. When adversaries recognize that a country has the capacity to produce and maintain sophisticated weapon systems, the likelihood of aggression or coercion decreases. Deterrence is not solely a function of possessing advanced equipment but also of demonstrating the ability to replenish, adapt, and innovate without reliance on external powers. This credibility, underpinned by domestic industrial strength, reinforces Indonesia's role as a stabilizing force within the Southeast Asian security architecture (McGinn, 2020).

Beyond conventional threats, a resilient defense industry also enhances national preparedness in responding to non-traditional security challenges, such as cyberattacks, pandemics, and natural disasters. Investments in defense research and dual-use technologies can be leveraged for disaster response, critical infrastructure protection, and cybersecurity resilience. For instance, advancements in drone technology, satellite surveillance, and secure communication systems can simultaneously serve military and civilian functions. This dual applicability not only maximizes the return on defense investments but also embeds resilience across multiple domains of national security, making the defense industry a vital actor in safeguarding against hybrid and non-military threats (Franko & Herz, 2021).

Collectively, the pursuit of defense industry strengthening leads to a comprehensive enhancement of national defense capabilities by integrating autonomy, deterrence, and resilience.

These elements are mutually reinforcing: autonomy in defense production reduces strategic vulnerability, deterrence ensures stability against external threats, and resilience builds capacity to manage complex non-traditional challenges. In the Indonesian context, this synergy provides a solid foundation for realizing the long-term vision of Indonesia Emas 2045, where defense modernization and national resilience serve as inseparable pillars of sustainable security and prosperity.

CONCLUSION

The strengthening of Indonesia's defense industry represents a critical strategic imperative that simultaneously addresses national security concerns and economic development objectives. This study demonstrates that a robust defense industrial base generates significant multiplier effects, including technological innovation, high-skilled employment creation, industrial upgrading, and reduced import dependency. Through systematic analysis, the research reveals that defense industry development serves as a catalyst for comprehensive national transformation, directly supporting the vision of Indonesia Emas 2045 by enhancing both sovereignty and economic competitiveness.

The strategic pathways identified emphasize the necessity of an integrated approach encompassing regulatory coherence, sustained R&D investment, multi-stakeholder collaboration, and export-oriented policy. The SWOT analysis reveals that while Indonesia possesses strong political commitment and institutional foundations, structural weaknesses including limited R&D capacity and fragmented coordination continue to constrain progress. Addressing these challenges requires comprehensive reforms that align defense industrial development with national innovation systems and leverage public-private partnerships for sustainable financing.

The correlation between defense industry strengthening and economic competitiveness is evident through technological spillovers into civilian sectors, creation of high-value employment opportunities, and substitution of imports with domestic production. Indigenous capabilities in defense manufacturing not only enhance strategic autonomy but also stimulate broader industrial transformation across technology, logistics, and energy sectors. This dual benefit positions the defense industry as a cornerstone for achieving long-term economic resilience and global competitiveness.

Ultimately, defense industry development is essential for Indonesia to achieve strategic autonomy while accelerating progress toward becoming a leading global economy. The synergy between defense modernization and economic growth creates a virtuous cycle where enhanced capabilities strengthen deterrence, reduce vulnerabilities, and build resilience against both traditional and non-traditional threats. By embedding defense industrial policy within the Indonesia Emas 2045 framework, the nation can leverage this strategic sector as an indispensable foundation for sustainable security, economic competitiveness, and national resilience.

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