The Impact of War on the Global Economy: Challenges and Opportunities for the Indonesian Defense Industry

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War exerts a substantial influence on the economy, affecting the levels of production, consumption, and international trade. The defense industry is essential to a country's economic framework, especially in addressing global shifts. The objective of this research is to evaluate the influence of war on worldwide economic stability, analyze how the Indonesian defense sector tackles global issues, and provide measures to improve market share. The research will utilize qualitative approaches, including descriptive case studies. In order to strengthen the domestic defense sector, it is necessary to enact policies that enhance infrastructure, human resources, budgetary assistance and promote both national and international strategic collaboration. To achieve self-sufficiency in supplying defense equipment, minimize dependence on imports, and support Indonesia's goal of becoming a global maritime power, it is crucial to prioritize research and development, technology transfer, and the improvement of defense industry facilities and infrastructure. Enhancing the national military industry not only functions as a defensive strategy but also boosts economic competitiveness. Pursuing autonomous development of the industry will make a significant contribution to the economy, foster job creation, and uphold national security. The commitment and cooperation of the government, industry, and relevant institutions are crucial for achieving Indonesia's aim of becoming an independent and globally competitive military force.
INTRODUCTION

Referencing the theorizing in Petricevic and Teece (2019) regarding the application of dynamic capabilities in volatile, uncertain, complex and ambiguous (VUCA) environments, the authors see this as the root of the world's instability. The war has markedly eroded near-term global economic prospects. The initial global economic impact has primarily been through commodity markets. Prices for commodities supply, including energy, wheat, fertilizers, and some metals, are sharply higher. In many emerging market and developing economies, rising food and energy prices are exacerbating poverty and, in some cases, food insecurity, and heightening inflation pressures that were already building. Financial markets have been volatile amid increased uncertainty and geopolitical tension. The relationship between war and economics is closely intertwined and has a significant impact on global dynamics. Worldwide interactions and forces at play. War disrupts economic stability by altering the processes of production, consumption, and international trade. The military industry plays a crucial role in a nation's economic framework, particularly in light of worldwide transformations. The research inquiries encompass the influence of warfare on worldwide economic stability, the reaction of the Indonesian defense sector to global problems, and tactics to enhance market dominance. This study employs qualitative research methodologies to analyze case studies descriptively. Given the significant influence of war on the worldwide economy and the need to enhance the national defense sector, it is crucial to adopt policies that promote the growth of the domestic defense industry. The domestic defense industry refers to the sector of the economy that is involved in the production and development of military equipment and technologies within a country. This entails enhancing infrastructure, human capital, sufficient financial backing, and strategic collaboration at both the domestic and global levels. Strategic collaboration at both the domestic and global levels. There is a requirement for increased emphasis on research and development, the transfer of technology, and enhancing the quality of defense industry facilities and infrastructure. Therefore, Indonesia may achieve independence in supplying defense equipment that aligns with national security requirements, decrease reliance on imported defense equipment, and bolster Indonesia's vision as a global marine hub. Amidst the backdrop of globalization and warfare, bolstering the national defense sector serves not only as a defensive tactic but also as a means to cultivate economic competitiveness. An endeavor to establish economic competitiveness. Indonesia can enhance its economic impact, create jobs, and uphold national security stability by persisting in the autonomous advancement of its military industry. Ensure the ongoing stability of national security. Hence, the achievement of Indonesia's goal to become a self-sufficient and globally competitive organization heavily relies on the dedication and collaboration of the government, industry, and relevant institutions.

International trade refers to the economic interactions between countries, particularly in the context of exchanging goods and services. This text presents a comprehensive analysis of the motivations behind a country's engagement in international commerce, the significance of international trade, the rationales for a country to participate in international trade, and the microeconomic foundation of international trade, including pricing theory. International trade, as defined by Mankiw & Taylor (2014), refers to the exchange of goods and services between two countries through the process of exporting and importing, which is agreed upon by both parties. Export operations can be defined as the commercial exchange of a product or service sold to foreign countries. In contrast, imports refer to the acquisition of a product or service obtained from foreign countries. International commerce enables a country to broaden the market for its primary commodities and enhance the availability of items and services that are not domestically produced. International trade is driven by the geographical disparities among countries, resulting in a diverse range of primary commodities in each country. International trade facilitates and influences...
international economic activity through collaborative efforts between nations. The study of international relations includes the examination of international trade, which encompasses trading blocs, international trade balances, and government laws that govern international trade. International commerce examines the economic interactions between nations, including the trading of goods and services, the interchange of resources and elements of production, and the implications of debt and credit relationships. The paper by Thompson (2011) provides an analysis of how global economic dynamics impact the economic conditions of the defense industry in various countries. Substantial transformations are occurring in the global military economy. Defense expenditures on a global scale are steadily increasing as countries like China, India, and Russia are allocating more funds toward their defense budgets. Moreover, the rise of novel participants in the defense sector, such as private enterprises and non-governmental groups, adds further intricacy to the industry's terrain.

The theory of supply and demand elucidates the relationship between price fluctuations of a traded commodity and the corresponding impact on production levels and consumer demand. This theory can also elucidate the correlation between the accessibility of a commodity and the desire for that commodity at a specific price point. The law of supply and demand is only applicable when all other factors, apart from price, remain constant (ceteris paribus). The interplay between supply and demand determines the equilibrium price, sometimes referred to as the market price. The equilibrium point is reached when the quantity of customers who desire to purchase an item at a specific price is equal to the quantity of sellers who provide the goods at the same price (Mankiw & Taylor, 2014).

Diplomatic relations are official relations established between countries to establish friendships. Thus, if there are no good diplomatic relations between countries, there is no international trade, and the diplomatic factor about this country must be number one. If the conditions between the two countries are not good, it will certainly have an impact on trade activities and cooperative relations between these countries.

The defense industry is a sector within the national industrial complex that is specifically capable of producing weapons systems, equipment, and administrative/logistical support or services for national defense. The swift advancement of defense technology concurrently introduces novel difficulties and prospects for the defense sector. Management of critical industries and defense industry in numerous countries consistently encounters three primary challenges: The development of defense technology relies on two schemes: the enhancement of research and development in the defense industry and the implementation of offset and technology transfer schemes. Secondly, the defense sector receives support from diverse finance methods, and thirdly, there is a challenge in enhancing the quality of the defense industry's human resources (HR). All three entities are interconnected in their efforts to fulfill the requirements of the Main Armament System (Alutsista) within the country or are transitioning towards becoming exporters of weapons and military equipment (Muradi, 2020).

**METHOD**

Research methods are the procedures and schemes used in research, allowing research to be carried out in a planned, scientific, neutral and valuable manner. Research methods as a strategy to collect data and find facts-based solutions to problems. (Williams, 2017). This study uses qualitative research methodologies to analyze case studies, which will be presented descriptively to address the established concerns (Sugiyono, 2017).

The data collection strategies employed in this study are derived from literature studies. Research on literature studies is done in phases. The phases of a literature review are article collection, article reduction or article reduction depending on variable variables, article display or arrangement and arrangement of selected articles, discussion and organization, and conclusion drafting (Asbar & Witarsa, 2020). Based on this assessment, the researcher identified the following stages of the
research process: choosing the study's focus, obtaining pertinent data, examining pertinent theories, locating theoretical underpinnings from specialists and earlier research findings, evaluating pertinent theories and research findings and coming to conclusions. The data utilized is secondary data, specifically derived from records, books, government reports, essays, theoretical books, journals, and other academically verifiable sources. Historiography is the examination and analysis of the historical accounts and writings related to a specific subject or event. Authors can analyze many historical works to gain insight into the progression of ideas and interpretations surrounding a specific event. This can facilitate the misreading of prior works and contribute to a more comprehensive comprehension of history.

RESULTS AND DISCUSSION
Impact of War

War significantly affects the global economy. The enduring repercussions of warfare on the economy are evident in economic policy, international trade, and globalization (Zhao et al., 2021). These are some primary consequences that can arise as a result of conflict. War frequently leads to a decrease in economic growth because of the destruction of assets, infrastructure, and human capital. Furthermore, wars have the effect of redirecting resources and labor away from productive areas of the economy towards defense and military industries, thus impeding economic progress. The war leads to inflation as a result of substantial government spending. Consequently, it reduces the output of products and services, leading to an increase in prices, thereby reducing people's ability to buy and raising the cost of living. Amidst the battle, numerous individuals abandon their occupations to enlist in the military or suffer as casualties of war. Moreover, some enterprises were compelled to terminate the employment of their workers due to the conflict. Consequently, the currency of the country engaged in the war depreciates as a consequence of substantial government expenditures on the war and political instability. The potential consequences of this situation include a detrimental effect on global trade and an exacerbation of the economic crisis. This, in turn, might lead to increased political and economic instability, which may discourage investors from allocating their money to nations engaged in the conflict. This might worsen the decrease in economic growth and lengthen the challenging period for the countries impacted by the war. The presence of a conflict between collaborating countries will undoubtedly have detrimental effects on the long-term viability of their partnership (Pratama, 2016).

Key Defense Industry Implications

The primary consequences of the correlation between the advancement and growth of the national defense sector and the objectives outlined in Law No. 16/2012 are as follows: (1) Achieving autonomy in the supply of defense and security equipment, (2) Achieving a proficient, effective, streamlined, cohesive, and inventive defense industry, (3) Enhancing the capacity to produce defense equipment and maintenance services to support the establishment of dependable defense and security forces (as stated in Law No. 16, Article 3 of 2012). Presently, the government has implemented a defense strategic plan. Indonesia is commencing the fourth phase of RPJMN (Rencana Pembangunan Jangka Menengah Nasional/ National Medium Term Development Plan) with the objective of achieving a self-sufficient, advanced, equitable, and prosperous Indonesian society through rapid development in all sectors of a robust economic framework built on competitive advantage. The RPJMN stipulation policy is referred to as the Minimum Essential Force or MEF policy. The primary objective of MEF is to establish an optimal minimum defense essential force, both domestically and globally. This is accomplished through four distinct phases: relocation, revitalization, rematerialization, and procurement. These stages are outlined in Indonesia's defense industry master plan, as stated in the Defense White Paper of 2018. The domestic defense industry plays a crucial role in a country's endeavor to establish an autonomous defense system. Currently, the defense sector in Indonesia consists of various
strategic industries such as air platforms (Dirgantara Indonesia), land platforms, heavy equipment, weapons and munitions (Pindad), marine platforms, shipbuilding (PAL Indonesia), electronic systems (Len Industri), and high-energy materials (Dahana). These industries operate under the umbrella of Defend ID, with PT Len Industri serving as the parent company of the Defense Industry BUMN holding. Defend ID's mission is to foster national innovation collaboration, achieve technological independence, and enhance company competitiveness. Subsequently, it integrates into the worldwide supply chain through the establishment of global strategic alliances and plays a pivotal role in fostering the growth of the domestic industrial ecosystem. The creation of a State-Owned Enterprise (SOE) holding in the defense industry should serve as a means to develop a sophisticated, robust, autonomous, and competitive national defense sector.

An autonomous military sector is necessary to ensure the production of high-quality and sufficient defense equipment that aligns with the unique characteristics of the Indonesian region. Additionally, it serves as an effective measure to reduce political reliance on foreign nations. Upon examining India and China, it becomes evident that the enhancement of their defense systems and the modernization of their defense equipment have successfully bolstered their defense and security capabilities in confronting different threats and adapting to the changing strategic landscape. This has been achieved through the growth of their domestic defense industries, which has potentially positioned both countries to become the dominant military powers in Asia. As part of the Indonesian government's dedication to developing the national defense industry, Indonesia is now expediting initiatives to fulfill the Minimum Essential Force (MEF) standards outlined in Law Number 16 of 2012 regarding the Defense Industry. The Indonesian government recognizes the significance of the presence and capabilities of diverse strategic defense industries for the defense system. Furthermore, as a nascent participant in the advancement of the domestic defense sector, Indonesia must acquire knowledge and engage in collaboration within the realm of defense, particularly with numerous technologically advanced nations. A real manifestation of defense industry operations is the collaboration between the government and multinational corporations in the development and manufacturing of defense equipment. This collaboration includes activities such as sales assessment, cost sharing, and profit sharing in the production of weapons (Perwita, 2013).

War has emerged as a significant catalyst for technological advancement and creativity. The pursuit of victory in wars has exerted a significant influence on technological progress and invention, propelling advancements in several fields. The conflict has spurred advancements in the field of communications technology. In contemporary times, military technologies are being repurposed for non-violent applications (Arshad et al., 2017). These communication technologies enable military personnel to communicate efficiently and expeditiously in order to facilitate the coordination of military actions. Following the war, these systems experienced widespread adoption in civilian and commercial communications. War has also spurred advancements in transportation technology. Aircraft serve the purpose of conducting reconnaissance and launching attacks on the enemy, whereas ships and cars are employed for the movement of troops and equipment. Subsequently, these technologies were employed in civilian and commercial transportation following the war. War has also spurred advancements in medical technology. Medical technology was employed to preserve the lives of soldiers throughout the war, and subsequently, it was implemented in civilian medical treatment. Promoted the advancement of nuclear technology. Despite the contentious nature and detrimental effects on human health and the environment, nuclear weapons have also been employed for benign reasons, such as generating nuclear electricity and conducting scientific research. Moreover, it resulted in advancements in computer technology and digital technology. Computers were employed for
Data from the Indonesian Ministry of Trade for the period 2018 - 2022 shows that Indonesia's defense equipment experienced fluctuations. The highest year occurred in 2020 when it was valued at USD 835.18 million or as much as 3.45 thousand tons. After 2020, defense equipment imports continued to decline until they touched USD 311.21 million in 2022. From 2023 until May, Indonesia's defense equipment imports were valued at USD 128.18 million (up 28.70% YoY) or 1.16 thousand tons (up 35.69% YoY).

In 2023, Indonesia's imports of defense equipment encompassed:
1. Tanks and War Vehicles (60.53%) worth USD 77.59 million or 644.17 tons.
2. Bombs and ammunition (21.47%) worth USD 27.52 million or 438.38 tons.
3. Military weapons other than pistols (15.06%) worth USD 19.30 million or 13.94 tons.

Indonesia's government is prioritizing the development of the defense industry to enhance defense and security capabilities. The goal is to fulfill the defense equipment requirements for achieving the Minimum Essential Force (MEF) by 2024 and to achieve self-sufficiency in defense equipment procurement by 2029, as outlined in the defense industry master plan. The defense industry, as outlined in the RPJMN 2020-2024, is deemed suboptimal. The MEF report indicates that the military industry's contribution in the fourth quarter of 2018 amounted to only 35.9% of the target of 49%. Indonesia, being a nation with expansive land, necessitates the ability to adjust to obstacles in the realm of defense.

Challenges and Solutions for Defense Industry Development
1) The advancement of defense technology and industry was rapid during the Cold War. This was caused by the competition between the two dominant nations of that era to build up their military capabilities. Following the conclusion of the Cold War, there was an expectation that the arms race would cease and that advancements in technology and the military industry would not progress as swiftly as they did during the Cold War. According to Francis Fukuyama, the end of the Cold War will lead to a more peaceful world where countries would no longer prioritize armaments, as mentioned in Rachmat's writings (2016). However, the events that occurred in
reality were not completely accurate. Despite the absence of a rivalry between two superpowers, the advancement of technology and the military industry remains a crucial aspect of a country's security policy, particularly for powerful nations like the United States (US), Russia, China, and others. The advancement of technology and the defense industry has significantly expanded since the Cold War, and this phenomenon may be attributed to two key factors. Initially, the process of liberalization was implemented specifically in the defense sector, with a particular focus on the United States. Furthermore, the advent of significant transformations in the extent of warfare led to the utilization of technological breakthroughs in conjunction with fundamental alterations in doctrine, operations, and military organizational concepts, all of which were closely linked to the nature and manner of conducting military operations. The term used to describe this transition is commonly referred to as the Revolution in Military Affairs (RMA) (Rachmat, 2016). The National Science and Technology Institution's limited capability and capacity continue to hinder the mastery of technology, leading to various criticisms. Insufficient proficiency in technology is a contributing factor to low competitiveness. The dearth of technological resources is likewise evident in the subpar caliber of personnel employed in the realm of technology. An additional issue lies in the inefficiency of the triple helix communication system between BRIN, Universities, and the Defense Industry. When it comes to expanding the military industry, a significantly higher level of advanced technology is required compared to other industrial sectors. However, the technological capabilities in Indonesia are still somewhat limited. The Chairman of the National Private Defense Industry Association stated that the technology in the military sector is highly advanced, and military missions pose significant risks if the equipment used does not meet standard specifications and requirements (Commission 1 2021). Currently, the military sector of developed countries primarily focuses on weapons technology that possesses stealth capabilities and unmanned weaponry, such as Unmanned Aerial Vehicles (UAVs). Although local products have failed to meet technological criteria, the number of competent engineers in the country for high technology remains limited. Research and development (R&D) is currently at a scale that allows it to meet all technological requirements, although it still requires significant expenditure.

2) The inception of contemporary technology necessitates the initiation of research and development (R&D), which involves the application of extensively researched scientific knowledge. The success of R&D activity is mostly determined by the Human Resources (HR) department. The scarcity of skilled and knowledgeable technology professionals will restrict the scope of the research and development role. Research and development serves as a conduit that links scientific and technological advancements with human needs and desires. Consequently, an R&D organization must have a substantial number of highly skilled technological specialists. In Indonesia, there is a lack of follow-up on research and development findings despite their significant potential in advancing our military technology and achieving self-sufficiency in satisfying defense requirements. Unlike industrialized countries and other nations, the outcomes of research and development in military technology have a significant impact on shaping a country's future security strategy. The findings are then applied in the production stage and utilized by the nation's military. In addition, defense equipment production is encouraged for export to other nations. This will contribute to the country's balance of payments and bolster its defense sector.

3) Facilities and infrastructure play a crucial role in the advancement of defense technology. Facilities and infrastructure refer to the physical equipment and structures that are necessary to accomplish the desired research and development objectives. The laboratory conditions where the current tools are perhaps less competent. Undoubtedly, the laboratory infrastructure is antiquated, leading to subpar test results (Indrawan et al., 2016). The advancement and enhancement of defense technologies are of utmost importance in achieving Indonesia's defense independence. Enhancing the capabilities
of the military sector involves several initiatives, such as collaborative research and development, joint manufacturing, and strategic cooperation with external entities. One important aspect of this is the Transfer of Technology (ToT), which plays a crucial role in defense technology. Regrettably, the absence of tangible initiatives in technology transfer poses a significant constraint. It is important to acknowledge that the technology transfer that was initiated did not go without difficulties, resulting in our continued reliance on countries that produce the technology. Furthermore, the current domestic output that is capable of meeting the TNI's requirements is not being fully used. In order to fulfill the requirements of advanced defense equipment autonomously, military officials, industrial experts, and defense technology specialists must take tangible measures.

4) Each country worldwide has a specific vision for the optimal functioning of its military sector. It is ideal for every government, particularly those in developed nations, to get support and allocate a substantial budget for national defense. Approximately 20 - 30% of the defense budget is designated for the defense sector (Karim, 2020). Indonesia still has challenges and barriers when it comes to the allocation of funds for national defense, which is crucial for the advancement of the military sector. Indonesia's defense budget can be considered relatively modest in comparison to that of other nations. Budget shortfalls are critical for the advancement of the defense industry since a sufficient allocation of research and development (R&D) is necessary to establish a robust defense sector. Indonesia must effectively address its budget deficit to establish a robust military industry. Indonesia's financial capacity to support the defense industry is now somewhat restricted. This is evident from the amount of money Indonesia allocates to its defense budget and the proportion of Indonesia's research and development (R&D) expenditure in relation to its gross domestic product (GDP) remains relatively small. In the fiscal year 2024, the Ministry of Defense was allocated a substantial budget ceiling of IDR 131 trillion (Prabowo, 2024). Despite competing priorities such as managing the COVID-19 pandemic, upgrading defensive equipment, and ensuring the well-being of soldiers, it is imperative to maintain a focus on the ongoing growth of the defense industry. The objective is to reduce reliance on foreign defense companies in the advancement of the indigenous defense sector. Meanwhile, in the sphere of research and development, data from the Central Bureau of Statistics will be utilized in the year 2024. In 2023, Indonesia's economy saw a growth rate of 5.05 percent, which was lower than the 5.31 percent growth achieved in 2022. In 2023, the Indonesian economy recorded a Gross Domestic Product (GDP) of Rp20,892.4 trillion, assessed at current values. The GDP per capita stood at Rp75.0 million or US$4,919.7.

**Strengthening the National Defense Industry**

Indonesia must realize its national vision of being a global maritime hub. In order to realize this objective, the Indonesian government should maximize the utilization of all available resources and infrastructure by formulating and executing a national policy aimed at enhancing the current military sector. The process of strengthening Indonesia's defense industry involves specific methods and resources, such as the enhancement of maritime defense forces, in order to implement the national defense strategy and achieve the desired national defense objectives. The domestic defense sector plays a leading role in the country's endeavors to enhance its defense system. This addresses the requirement for defense equipment, both in terms of supplying defense equipment that has regional attributes in terms of quality and quantity and also in reducing political reliance on other countries. To attain Indonesia's national vision of becoming the world's maritime axis, it is necessary to modernize defense equipment by developing the national defense industry. By promoting the enhancement of the domestic industry and defense collaboration, it is anticipated that Indonesia's aspiration to establish a self-reliant and competitive defense industry can be successfully achieved. Furthermore, in order to bolster the defense industry, the government must play an active and substantial role by implementing regulations or national policies that are conducive to the enhancement of the national defense industry.
CONCLUSION
The interplay of factors within the worldwide defense economy poses both obstacles and prospects for the military sector. An adaptable defense sector that can capitalize on these changes and use the available opportunities will have a chance of achieving future growth and success. War has significantly influenced the transformation of the global economy. Although the conflict has resulted in significant casualties for numerous nations, it has also yielded technological breakthroughs and expedited economic expansion in certain countries. Nevertheless, it is imperative to meticulously contemplate the expenses and casualties incurred as a result of warfare. The historical record of global civilization demonstrates a tight interconnection between warfare and the economy. Conflicts between nations have impacted the global economy in various ways. Firstly, wars necessitate significant financial investments in military expenditures, which can influence both national and global economic policies. Secondly, war conflicts can compel countries to redirect resources toward the production of war vehicles, weapons, ammunition, and other military equipment. This can prompt governments to establish industry and trade regulations that are applicable to the current circumstances. (3) Warfare can catalyze countries to establish alliances and economic blocs, with the aim of providing mutual support and enhancing their collective strength in response to shared challenges. (4) Wars frequently necessitate the development of novel technological advancements in the manufacturing of weaponry and other military apparatus. This has the potential to result in significant transformations in the methods of production and trade. The relationship between conflict and business is intricate and interconnected. Alterations in the worldwide economy have the potential to instigate conflict, while conflict can have an impact on the global economic structure. Comprehending this correlation and implementing suitable measures to prevent and resolve conflicts and oversee worldwide economic transformation is crucial.

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