



Poland's Investment in Defence

**Military buildup and seeking efficiencies
in working towards targets**

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Introduction

This document is a point of view of experts – authors, who are members of Deloitte economic analysis team. The authors aim at structuring modernization and development of challenges faced by the Polish army in terms of their economic effectiveness. Planned changes, modernization and improvement of the military capabilities are a response to the evolving threat from Russia and to the need to improve the country's defence capabilities. A military strategy determines what equipment the armed forces need whereas an economic strategy should ensure that such equipment can be effectively supplied and later – maintained.

The authors neither question the necessity to invest in defence, nor attempt to assess whether the assumed spending level is sufficient to reach the expected goals. The analyses we present in this document focus specifically on the important aspects of efficient spending of the funds and on identifying areas where such efficiencies could be specifically ensured.

According to Deloitte's estimates, in 2025-2035 defence expenditure in Poland will total PLN 1.9 trillion compared to PLN 825 billion in 2014-2024. With the expenditure on defence set to continue to grow until 2035, so far having been financed primarily through government borrowing, it is essential that the spending is as efficient as possible. An increase in the public debt will allow initial fast growth of defence expenditure. However, long-term payables should be spread out over time so as to ensure that the country's financial position remains stable. As the size of the army grows and new weapon systems are put in place, personnel and equipment maintenance expenditure will become a major financial challenge for the state budget.

The authors have also emphasized the importance of competition in public procurement in the defence sector and outsourcing, which may result in savings and improve the efficiency of armed forces' operations. The munitions market, although specific due to being subject to regulation and controls, is still governed by free market principles.

In conclusion, the goal of the study is to present a substantive analysis concerning effective management of defence expenditure including key economic and financial aspects that will materially affect the achievement of defence objectives assumed for Poland.

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New defence strategy for Poland

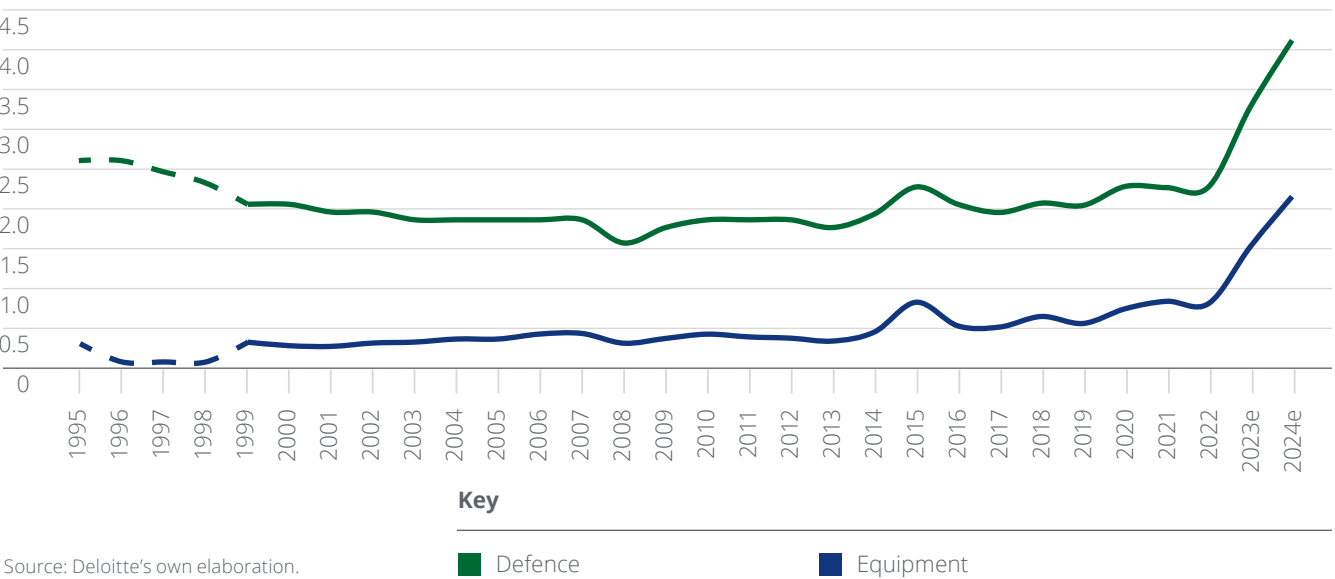
The threat from Russia and the instability in the Middle East has forced us to reconsider our approach to national security and once again focus on its military aspects, leading to increased spending on defence.

After 1989 Poland benefited from peace dividend that followed the experienced detente and allowed decreasing defence spending and allocating resources elsewhere. Poland's military expenditure decreased to 2 percent of GDP when the country joined NATO in 1999, and then to 1.8 percent of GDP. During the detente with Russia, defence spending reached the lowest

level of 1.5 percent of GDP in 2008. However, the annexation of Crimea in 2014 and Russia's further invasion of Ukraine in February 2022, have made Europe change its approach to security. In the wake of the war between Russia and Ukraine, Poland's defence expenditure has returned to 2 percent of GDP and in the face of Russia's full-scale invasion, in 2024 they went above

4 percent of GDP. New threats to security have resulted in increased purchases of advanced military equipment. From the accession to NATO to 2013, Poland spent on average 0.25 percent of GDP on military equipment. In the years 2014–2021 the figure doubled to the average of 0.5 percent of GDP, and it is estimated to grow to 1.4 percent in the years 2022–2024.

Figure 1. Poland's defence expenditure (% GDP)



Method used to estimate expenditure in 1995-2024

Defence expenditure has been estimated based on NATO's definition of defence expenditure (including retirement pensions). Military equipment includes expenditure on major equipment as well as on research and development. The figures for 1995–1998 have been estimated based on Eurostat's data on defence expenditure, including capital expenditure on fixed assets.

Poland's government presents its attitude to the country's strategic security in the Report of the Ministry of National Defence (MON) published on 13 December 2024¹. Key strategic documents, such as Programme for the Development of Polish Armed Forces 2021-2035 along with Central Financial Plans (including Technical Modernization Plan, Material Purchase Plan and Construction Investment Plan) are classified as confidential. Moreover, according to the Report by the Ministry

of National Defence, the Programme for the Development of Polish Armed Forces 2025-2039 is being updated. Therefore, when preparing the document, we focused on publicly available information and expert estimations.

The keystones of Poland's defence strategy focus on modernization of the armed forces through significant investment in advanced military equipment. Purchases include an integrated anti-aircraft and missile defence system, tanks, combat vehicles, rocket and tube artillery, aircraft, ships and drones. The latest major contracts have been made for the delivery of IBCS under the Wisła Programme, Homar-K rocket launcher and MQ-9B SkyGuardian remotely piloted aircraft systems. With the accompanying development of infrastructure and training, armed forces can move forward.

Poland's defence strategy relies as well on close international collaboration, specifically within NATO and with other key partners, such as USA, UK, Germany, France, South Korea and Sweden. Poland has resumed the Weimar Triangle and seeks to strengthen the protection of European airspace.

An important element of the strategy is the reform of military education system, including development of Non-Commissioned

Officer schools, reactivating the Military Medical University in Łódź, establishing the National Security University and intensifying the training programme for the armed forces. Innovation and the latest technologies are also important, with the use of artificial intelligence and development of space capabilities. The defence strategy focuses on social initiatives, such as the "Train with the Army" and "Holiday with the Army" programmes as well as classes delivered by soldiers. These are measures intended to build public confidence in the army and teach the society about the country's defences.

This outline of the military strategy determines what measures will be taken to strengthen Poland's security. A military strategy should be coupled by an economic strategy to ensure effective delivery of the tasks through carefully developed procurement plans, mutually beneficial international partnerships and where possible use of the potential of the private sector. To fulfil the commitment to spend one-half of the funds in the domestic defence sector and the other half abroad appropriate boundary conditions will need to be defined. This study analyses the potential for increased efficiencies in the planned rise in expenditure.

¹ 2024 Report by the Ministry of National Defence, , <https://www.gov.pl/web/obrona-narodowa/rok-pracy-na-rzecz-wzmacniania-bezpieczenstwa-i-rozwoju-wojska-polskiego>

Planned increase in defence expenditure by 2035

According to Deloitte's estimates, in 2025-2035 defence expenditure in Poland will total PLN 1.9 trillion compared to PLN 825 billion in 2014-2024.²

Initially, the increase in defence expenditure is set to be financed through government borrowing. Such a significant rise in public spending on defence could hardly be financed from other sources. First of all, this arrangement helps buy large amounts of necessary weaponry in a short period of time.

However, there is more to this approach. The investment serves public good – national security – and its cost can be spread over several generations of taxpayers, its beneficiaries. Government borrowing is the public sector's debt issued in the form of bonds and loans. Any liabilities incurred for defence purposes will need to be paid back from future income in the budget, mainly from taxes. This way, not only current taxpayers will help improve Poland's security, but also future generations will benefit from the measures taken today.

Poland's increase in defence expenditure is set to last. Deloitte expects that the 4.7 percent GDP spending on defence, which the government has announced for 2025, will be the peak that will gradually decline, but will continue to exceed the levels seen before 2022. We expect that by 2035, with the current objectives fully achieved and with no significant efficiency improvements, it will remain at 4 percent of GDP, compared to 2.2 percent in 2022. Whereas the initial purchases can be financed by increased borrowing, a continued rise in defence expenditure will require a stable source of funding, either by reducing other public expenditure or raising taxes. Key to successfully maintaining the required combat readiness levels at a relatively low cost to the economy will be an economic strategy.

² In fixed prices as at 2024.

Defence expenditure by category

We have categorized estimated expenditure so as to be able to use significant amounts from across areas and later in our study point to efficiencies. We have divided expenditure into: personnel, infrastructure, procurement (including equipment and research and development) and other expenditure necessary to maintain the equipment and infrastructure in the right

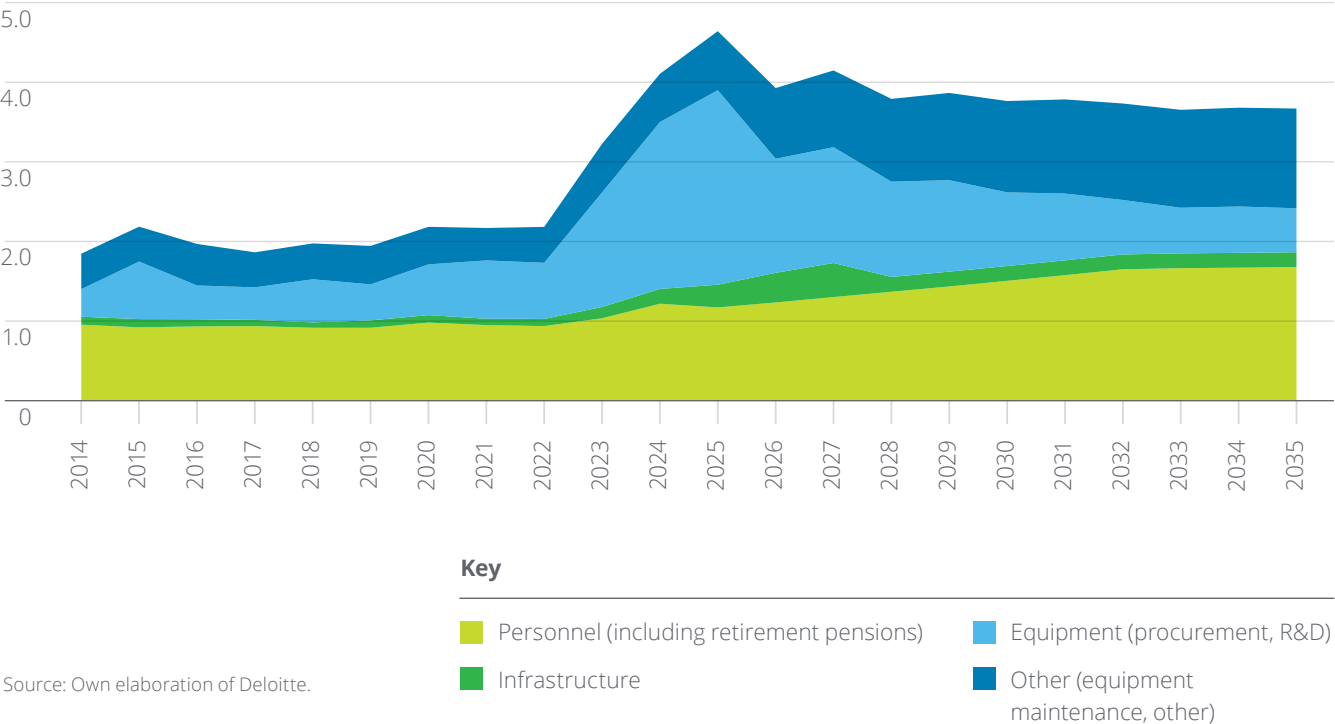
condition or expenditure on education and other social projects. Total expenditure in 2025–2035 is expected to be PLN 503 billion on equipment (procurement, R&D), PLN 719 billion on personnel (including pensions paid to retirees), PLN 111 billion on infrastructure and PLN 534 billion in other expenditure (equipment maintenance and other).



Method used to estimate future expenditure in 2025-2035

We calculated the expenditure until 2024 based on NATO's data and estimates (2024). From 2025 onwards, we have assumed that the expenditure on personnel will grow as the armed forces expand to 300 thousand in 2033 and will be aligned with the real changes in wages in the national economy as provided in the guidelines of the Ministry of Finance. As far as infrastructure is concerned, we have assumed values aligned with the share in GDP in 2024 with additional PLN 10 billion in expenditure on the 'East Shield' programme spread over 2025–2027. We calculated the expenditure on equipment in 2025 as the residue amount of the announced 4.7 percent of GDP. From 2026 onwards, we have taken the 2024–2035 estimates and subtracted the 2024 and 2025 expenditure. 'Other' is a percentage of 2024 GDP and maintenance of the equipment purchased from 2024, assuming that the purchase price is 1/3 of total costs over 30 years.

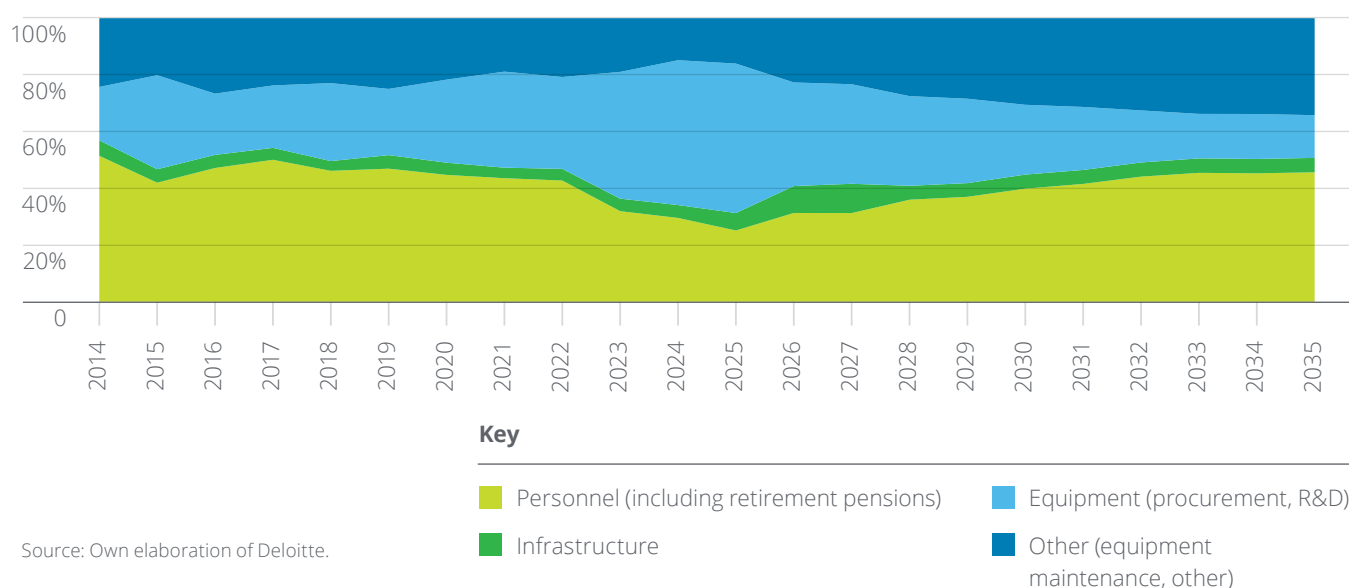
Figure 2. Poland's estimated defence expenditure by 2035 (% GDP)



Source: Own elaboration of Deloitte.

If the target to increase the size of the armed forces is maintained, in the long run personnel costs will become the main financial challenge. In line with the guidelines of the Ministry of Finance, wages will grow at a rate similar to the economy as a whole. This way, the increase in the share of personnel expenditure in GDP will result from the increase in the size of the armed forces to 300 thousand, which – considering the dynamics so far – Deloitte assumes will take place in 2033. The cost is set to increase

from 1.2 percent of GDP in 2024 to as much as 1.7 percent in 2035. This is more than 1.6 percent of GDP spent on new equipment and maintenance of the equipment purchased since 2024 expected in 2035. However, with the population ageing, such a significant increase in the number of professional soldiers and the Territorial Defence Force from the present 208 thousand (MON, 2024) will require the wages to grow at a faster rate than in other areas of the economy. Otherwise the target will need to be revised.

Figure 3. Poland's estimated structure of defence expenditure by 2035

Source: Own elaboration of Deloitte.

Infrastructure spending does not materially affect the total defence expenditure. NATO defines infrastructure as the Alliance's common infrastructure and national military structures.

In future, the necessary development and improvement of collective protection facilities for civilians will become a separate issue as such facilities do not qualify as military infrastructure. At present, the only public nuclear bunkers that are known to exist in Warsaw date back to 1950s and have only historical value. The Act on the protection of civilians, which came into force on 1 January 2025, imposes specific obligations on local governments in this area which means that the expenditure will be dispersed and largely paid for from the local government budgets. The so-called shelter bill, which the Ministry of the

Interior and Administration is now working on, and which is set to come into force in 2026, transfers some obligations to the private sector, obliging multi-family residential and commercial property developers to include special collective protection space in their construction designs.

In view of these facts, we have estimated that the public spending on infrastructure in the years 2025–2035 will be PLN 111 billion.³ Actually, they may be much higher than that, depending on the progress of public construction and improvement of collective protection facilities.

Procurement of equipment will permanently increase defence expenditure due to maintenance costs. It has been preliminary estimated that over the next 10 years,

the cost of procurement will account for 15–20 percent of 2024 GDP. The 4.7 percent of GDP to be spent on defence in 2025 suggests that the government intends to carry out the military investment at a faster rate. Some analyses assume that procurement will reach its peak in 2027. One possible explanation for that is that the government intends to accelerate its spending ahead of the planned fiscal consolidation in 2026 following the EU's excessive deficit procedure opened against Poland and the approaching constitutional limit on government borrowing. However, procurement expenditure will remain at equally high levels because of the equipment maintenance cost, which in its baseline scenario Deloitte assumes to be two-times the purchase price spread over 30 years.

³ In fixed prices as at 2024.

Defence expenditure vs economic growth

Generally, defence expenditure is a burden to the economy, though sometimes it results in innovation which can foster further economic growth. Therefore, the primary objective and rationale for the defence expenditure should be to prevent war, not to help the economy grow.

Alptekin and Levine (2012) conducted a meta-analysis to review 32 empirical studies with 169 estimates of the effect of military expenditure on economic growth. They did not find any support for the hypothesis of a negative military expenditure–growth relationship, but they did find a positive effect in developed countries. However, the research carried out in recent years resulted in contrary conclusions. Dunne and Tian (2013) reviewed 96 cross-country studies and 72 case studies on the effect of military expenditure on economic growth. Among them only 23 percent showed to have a positive impact and as much as 38 percent – negative. Dunne and Smith (2019) used a large country data set from the years 1960–2014 and did not find any strong relations between defence expenditures and investment or growth. Recently, authors have become more interested in the reverse causality, i.e. the phenomenon where economic growth results in an increase of defence expenditure, not the other way round. d'Agostino, Dunne and Pieroni (2019) analysed the reverse causal impact of military expenditure

on economic growth in 109 countries in years 1998–2012. In their sample, they found a statistically significant negative effect. Also Saeed (2023), using a different method, accounted for reverse causality in his studies of the impact of military expenditure on economic growth in a sample of 133 countries in years 1960–2012. He estimated that an increase in military expenditure/GDP of 1 percentage point reduces economic growth by 1.10 percentage points. Therefore, based on the literature we have analysed, we cannot clearly determine that there is a one-way cause-and-effect relationship between country's defence expenditure and economic growth.

Defence expenditure is a cost, not a driving force behind the economy, and it should be remembered that its purpose is not to stimulate economic growth, but to prevent military conflicts.

The costs of military conflict can be significantly higher than the amounts spent on a country's security and deterrence. For example, in the wake of the First World War, Poland's GDP per capita dropped from approx. 20 percent in 1913 to 9 percent in 1920 as compared to USA. After the Second World War, Poland's GDP per capita fell from 29 percent in 1938 to 12 percent in 1946 as compared to USA (Trzeciakowski, 2018). There is also the human cost of war and traumas which limit the potential for development for many future generations.

Ways to improve the efficiency of defence expenditure

Personnel expenditure

Savings opportunities are rather limited in this category. After the 2024 pay rises, the wages in the army are competitive. Base pay starts a little below Poland's median salary⁴ and there are a number of additional benefits (accommodation or a housing allowance, holiday allowance for family members, separation allowance etc.) and preferential retirement terms (early retirement and a separate pension plan).⁵ To expand to 300 thousand, the army will need to maintain or improve these conditions. It will also need to strengthen its positive image tarnished by recurring reports about frictions in the chain of command, which are hard to verify, and minimise the risk of such events repeating themselves, so that soldiers can focus on the performance of their shared mission. U.S. Army is an example of such initiatives, having implemented many initiatives to promote positive norms attractive for soldiers, such as "Warrior Ethos".⁶

Demography poses a substantial challenge, since over the next five years, the 18–44 age group in Poland will fall by around one million (from 13 to 12 million). Poland and the Czech Republic have the lowest unemployment rates in the EU. The current shortage of labour in Polish economy is partly concealed by cyclical factors: although the services sector is strong, the manufacturing sector, focused on export, has been adversely affected by the poor economic standing of our key trade partners. When, as expected, the foreign economies start growing and the Polish economy gains further momentum, workforce shortages will again become a significant limitation that the army recruiting soldiers will have to face. Once the economic growth picks up, the cost of alternative military service, in particular the opportunities offered by other industry sectors, can go up and require pay to grow faster. In USA, base salary in the first year with

all additional bonuses⁷ is similar to the median earnings in the economy⁸, but an important incentive is that the army can finance higher education. Despite this, the American army has struggled to fulfil its recruitment targets. Since 2002, 187,000 members of the U.S. military have been naturalised.⁹

In the long run, it is important to maintain competitive pay levels and benefits so as to attract and retain qualified military staff.

Military naturalization schemes could also increase the number of recruits, although they would require building cross-cultural personnel management competencies.

⁴ <https://www.gov.pl/web/obrona-narodowa/zwiekszenie-liczebnosci-wojska-polskiego->

⁵ <https://stat.gov.pl/obszary-tematyczne/rynek-pracy/pracujacy-zatrudnieni-wynagrodzenia-koszty-pracy/rozklad-wynagrodzen-w-gospodarce-narodowej-w-czerwcu-2024-roku,32,6.html>

⁶ https://www.army.mil/article/50082/warrior_ethos

⁷ <https://www.goarmy.com/benefits/while-you-serve/money-pay>

⁸ <https://www.bls.gov/news.release/pdf/wkyeng.pdf>

⁹ <https://www.uscis.gov/military/military-naturalization-statistics>

Infrastructure expenditure

We see more opportunities for efficient spending of funds in development, expansion and modernization of infrastructure.

As far as infrastructure expenditure is concerned, Poland's important asset is a large construction sector with one of EU's biggest contributions to GDP. At present the sector is well prepared to satisfy market needs. It meets a high demand from the private sector (e.g. Poland has one of the highest share of dwellings under construction in the total existing housing stock from among the OECD countries¹⁰) and carries out other public projects financed from the EU's Reconstruction and Development Fund.

Apart from strictly defence infrastructure, a number of projects can be delivered with the financial assistance of the private sector.

These include public and private partnership projects (PPP), such as: public leverage projects or standard PPP, which involve development and maintenance of public infrastructure.

Public leverage are projects in which the public sector sets targets and tasks and has them delivered by private entities given the right conditions and incentives.

One example is the development of infrastructure to protect civilians. This can include legislation (e.g. the so-called shelter bill, which obliges property developers to include protection space in their commercial projects) as well as favourable terms of provision of lots for building construction or real property tax credits. The general assumption in such projects is to create the right conditions to encourage private entities to engage in the delivery of public defence projects as part of their core business operations.

Development and maintenance of public infrastructure are projects in which private entities deliver public tasks under civil law contracts, for a fee and within the agreed time frame. The contracts are long term, their objective is to carry out capital intensive infrastructure projects which,

once completed, are handed over to a public administrator. One benefit of such projects for the public sector is that it can avoid large expenditure when the project is being carried out by spreading out the payment over many years. The parties share project risks according to their best capabilities. This way the infrastructure development and maintenance are cost effective and there is the right demand for the services. As far as defence policy is concerned, these projects can include the construction of barracks, warehouses, transport infrastructure and their later maintenance up to the expected standard.

¹⁰ https://webfs.oecd.org/Els-com/Affordable_Housing_Database/HM1-1-Housing-stock-and-construction.pdf

R&D expenses and costs of equipment

Most savings can be achieved in the munitions purchases and maintenance of the obtained equipment. When purchasing equipment, it is recommended to consider offers of companies that operate on a large scale, which may offer lower prices. As far as maintenance costs are concerned, using services of domestic firms may provide an advantage, as a portion of their revenue is returned to the state budget through taxation. For these reasons, a growth in demand for equipment does not necessarily translate into proportional cost increase.

A sufficiently large scale of operations justifies higher investment value and allows automation, thus improving productivity. Whether this is achieved depends both on the structure of initial purchases (e.g. a single platform vs. several ones) and the scale of operations and investments of their providers. Box 1 presents the dependency using the example of self-propelled howitzers, whose cost per unit decreases along with an increase of capacity of a given platform. Unfortunately, the capacity of Polish AHS Krab is low, and its price per unit high. When the production scale grows, R&D expenses are distributed among large numbers of items sold, which results in unit price reduction. Due to the occurrence of both factors, once R&D expenditure and production scale have reached a "critical mass", competitiveness increases, thus offering higher export opportunities. A positive effect of export may reduce the total costs of defence expenditure incurred by the economy.

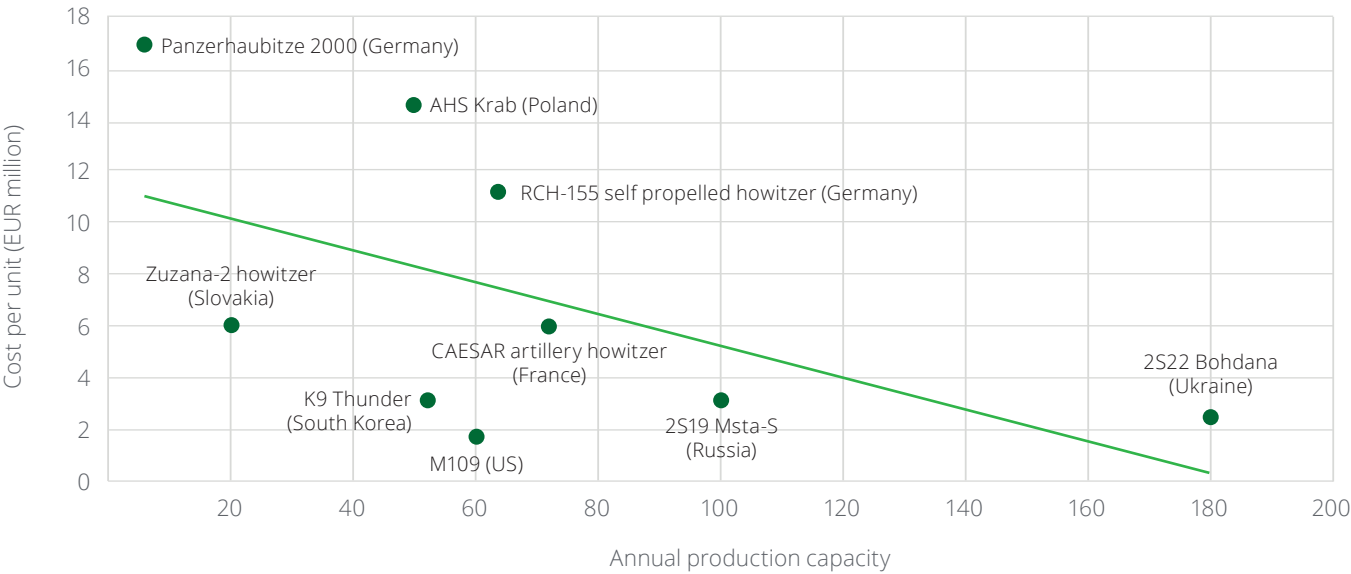
Efficiency of scale vs. cost per unit

A report authored by J. Mejino-López and G.B. Wolff (2024), working in Bruegel think tank, analyses data related to unit costs and annual production capacity of various self-propelled howitzers using information on purchase contracts and delivery deadlines published by firms and specialised media. Although due to small amount of comparable equipment and data access problems we have managed to collect just eight data points, the outcome fits the expected regularity: high production capacity results in the efficiency of scale, which allows

reducing costs per unit. The analysis has been supplied with data regarding Polish Krab gun-howitzers presented in Figure 4, which confirm the dependency. For years the EU has been discussing the concept of using the benefits of scale in the form of the joint purchasing of munitions. A recent report prepared by a think tank of the European Parliament estimates that separate purchases made in the EU generate annual additional costs ranging from EUR 18 billion to EUR 57 billion (Centrone and Fernandes, 2024).



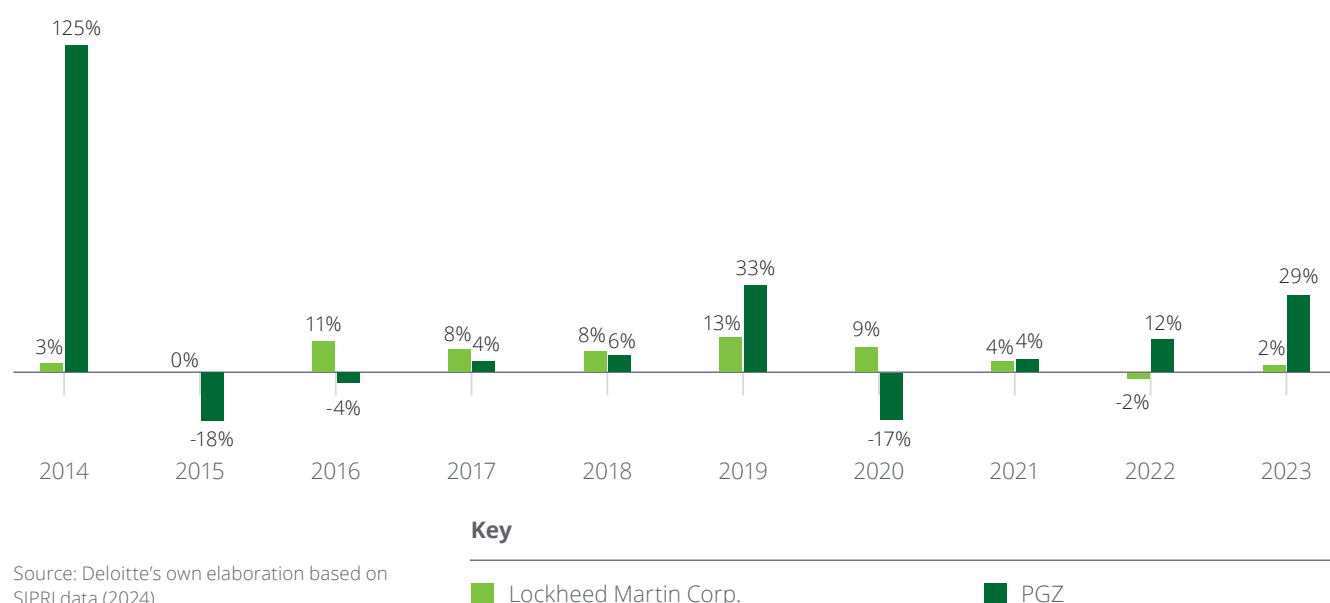
Figure 4. Unit cost of a self-propelled howitzer vs. annual production capacity



Source: Own elaboration of Deloitte based on Mejino-López and Wolff (2024) and information on AHS KRAB.

In 2023, the largest entity in the Polish defence sector, Polska Grupa Zbrojeniowa (PGZ), which consists of many smaller firms, was only 64th in the ranking of the world's largest munitions groups (SIPRI, 2024). Moreover, considered in a long-term perspective, its year-to-year revenue from munitions sales seem unstable, much more than for example that of Lockheed Martin, the world's largest munitions manufacturer, which produces F-16 and F-35 aircraft and HIMARS rocket launchers (Figure No. 5). This poses a considerable difficulty in the planning of production capacity of Polish companies, indicating an urgent need to manage the risk of demand. Usually, commercial companies are unable to do so without government support.



Figure 5. Annual changes in revenue from munitions sales: Lockheed Martin and PGZ, 2014-2023

Consequently, the existing estimates show that in the period 2024-2035, just 41 percent of munitions purchases will be done in Poland. In terms of finance, the percentage may be still lower, since majority of the equipment (e.g. K2 tanks, K9 gun-howitzers) is built based on foreign licences or includes imported components (e.g. Rosomak armoured personnel carrier) as opposed to proprietary products of Polish firms. Investments made by domestic firms will result from the strategy adopted by the government; a long-term consistent purchasing strategy combined with reliable funding will provide incentives for firms to invest in more capacity and result in growing productivity.

The need to buy fast results in a growth of future servicing costs.

For example, Poland will soon have four types of tanks: a Polish modernized version of Soviet T-72, i.e. PT-91 Twardy, a modernized version of the German Leopard, American Abrams, and Korean K2, which we are buying to quickly fill the gap resulting from transfer of certain equipment to Ukraine. Ukraine has demonstrated that it is possible to service various systems even during war, but it certainly increases the costs of maintenance, repairs and renewals.

These observations lead to a conclusion that a long-term servicing strategy that takes into consideration diversity of

equipment is necessary. Instead of focusing solely on fast purchases of new munitions, attention should also be paid to investments in servicing infrastructure and training of specialists able to operate a variety of systems. Measurable benefits could result from implementation of international collaboration programmes concerning equipment servicing knowledge sharing, and from concluding equipment service contracts directly with manufacturers. Developing domestic production and repair capabilities will also be crucial, as in a longer perspective it may reduce costs and increase operational independence, at the same time being a more attractive solution from the viewpoint of the public finance

sector. This is because a portion of expenditure paid to domestic companies returns to the public finance sector in the form of premiums and taxes. Thus the involvement of equipment servicing firms located in Poland should generate savings, provided the firms are as productive as their foreign peers. Therefore, it will probably include

mostly private companies, which have more saving capabilities. The scale of operations will also be important; if the amount of equipment is limited (e.g. as a result of several platforms being maintained at the same time), domestic entities will find it difficult to reach the productivity of their foreign peers.

Competition in spending for defence

The munitions market, although specific due to the need to treat certain information as confidential, and being subject to extensive regulation and controls, is still governed by free market principles.

Hartley and McGuire (2018) have presented a competition principle which, in line with the standard economic theory, allows achieving efficiencies in defence spending. Compared to monopoly, competition results in lower prices and higher productivity.

As far as personnel expenditure is concerned, efficiency may be maintained through balancing the demand for military service volunteers and civilians employed in the army with the supply of working-age population

on the labour market. Demographical challenges that occur in Poland are of the structural nature and will promote the development of the employee market, which may substantially affect actual personnel expenditure in the nearest decade.

Besides, competition may materially affect the efficiency of spending for infrastructure and maintenance.

The PPP project performance formula mentioned above is confirmed in a research conducted by Hartley and McGuire (2018); its authors propose to extend the competition related to the functioning of the army in the form of outsourcing of services including accommodation, catering, maintenance, repairs, training, transport

and management (e.g. of warehouses or shooting range facilities). Offering such contracts in the form of public procurement allows participation of many competitors. Sometimes outsourcing may involve funding offered by the private sector (e.g. new buildings or aircrew training centres equipped with flight simulators), and then signing a long-term agreement with a public entity to provide services for a fixed fee. Typical PPP contracts, on the other hand, involve the private sector's funding of operations or assets, as well as leasing of free capacity (e.g. that of tanker aircraft) to other users in the time of peace. Examples of defence sector PPP projects implemented around the world are presented in Box No. 2.

Examples of public-private partnership in the defence sector



USA – Fighter F35 Lightning II

The F-35 programme is carried out by the United States as the main investor and client, Lockheed Martin as the main contractor and system integrator, and partnering countries that co-fund the programme and commit to buy the F-35 aircraft. Additionally, there is a broad group of private-sector subcontractors who participate in the programme providing components and services.

Lockheed Martin, as the project leader, has involved many private-sector firms in the programme, thus contributing to the transfer of advanced technologies to the defence sector. The participation of international partners and private firms in the programme has allowed distributing the costs of development and production of F-35 among many entities, thus reducing expenditure per participant. The involvement of the private sector in the production and maintenance of F-35 has contributed to the improvement of overall programme efficiency owing to the experience and innovative solutions offered by private firms.



South Korea – K9 Thunder self-propelled howitzer

The K9 Thunder is a South Korean 155 mm self-propelled howitzer designed and developed by the Agency for Defense Development in cooperation with private firms, such as Dongmyeong Heavy Industries, Kia Heavy Industry, Poongsan Corporation, and Samsung Aerospace Industries. The project is an example of successful public-private collaboration in the defence sector, resulting in the development of an advanced weaponry system and the enhancement of the South Korean industrial base.

The public sector was in charge of project supervision, determining operational requirements and providing funds. The private sector, represented by a consortium of companies, was responsible for design, development, production and integration of the system.



United Kingdom – infrastructure management

The Private Finance Initiative (PFI) is a British PPP model widely used in a variety of sectors, including defence. As part of PFI, the private sector has funded, built and managed public infrastructure, subsequently receiving long-term remuneration from the public sector.

Under PFI, the public sector (e.g. the Ministry of Defence) concludes contracts with private consortia that fund, build and manage a given infrastructure type (e.g. a military base, field hospital). The public sector pays the consortia for the use of the infrastructure and services during a determined period, usually 25-30 years.



Singapore – pilot training

In Singapore, the first PPP project in the defence sector involved the Republic of Singapore Air Force (RSAF) Rotary Wing Course contracted in 2005 for helicopter pilots.

In 2006, a twenty-year PPP contract was signed for Basic Wings Course (BWC). Under the BWC, the prime contractor is responsible for providing all aspects of pilot training, including analysis, aircraft, maintenance, simulators, courseware, and ground-based instructors to the RSAF at RSAF's training base at Royal Australian Air Force Base Pearce, north of Perth in Western Australia. The BWC PPP contract was awarded the 2007 Asia Pacific PPP Deal of the Year and is considered by the industry as the world's first PPP training system where "RSAF provides the students, and Lockheed Martin [the BWC prime contractor] turns them into pilots."



Australia – Defense Headquarters Joint Operation Command Facility

The project involved the construction of a new strategic operational-level headquarters for Australian Defence Force. Key project deliverables included the joint operation command facility allowing the Head of Defence Force more efficient command of Australian Defence Force.



Germany – outsourcing civil IT of the German army

The Hercules project involved outsourcing of non-military IT of Bundeswehra. The participants were state-owned entities (49.9 percent), Siemens Business Systems (50.05 percent) and IBM (0.05 percent). The project scope included over 140,000 workstations, 300,000 stationary networks and 150,000 mobile phones.



France – pilot training

The Dax EAALAT Defence project included the provision of helicopter flight training at the army's light aviation school. The contract winner was a joint venture of Défense Conseil International (DCI) and Proteus Helicopters. The project scope included providing a set number of flying hours to the French Ministry of Defence over a 20-year period and helicopters to implement the project.

Source: Own elaboration of Deloitte.

When purchasing defence equipment, competition may be secured through permitting foreign firms to participate in tenders, offering fixed-price orders instead of cost-plus and eliminating

any purchase preferences for domestic champions and defence industries, which will force them to remain competitive.

European defence industry

The EU defence sector provides a broader context for the issue.

In the recent report “The future of European competitiveness”, a.k.a. Draghi’s Report (2024), the munitions sector has been considered an area of key importance. Despite competitive advantages in several areas (such as main battle tanks with related subsystems, conventional submarines, naval shipyard technology, rotorcraft and transport aircraft), annual turnover of EUR 135 billion and export exceeding EUR 52 billion, the EU defence sector is suffering from structural deficiencies including general public spending level, access to private funding, industrial potential, product interoperability and standardization, dependence on foreign suppliers, innovation and management. Out of the total EUR 75 billion spent by member states in the period from June 2022 to June 2023, 78 percent of public procurement expenditure went to non-EU suppliers, out of which 63 percent were located in the U.S.

The Draghi’s Report (2024) puts special focus on funding defence expenditure in the EU. In 2023, defence spending in the EU accounted for mere one-third of the amount spent

in the U.S. (USD 313 billion in the EU vs. USD 916 billion in the U.S. in 2023); at the same time, only ten EU member states met the NATO membership obligation to spend at least 2 percent of GDP for defence. Had all EU member states participating in NATO achieved the target, they would have had additional EUR 60 billion for defence in 2024. In the coming decade, the EU will need additional EUR 500 billion for defence investments. Apart from public financing, access to private funds is a key challenge, in particular for SMEs, which are the foundation of supply chains and the key innovation actors. The estimated equity financing gap for SMEs in the defence sector is EUR 2 billion, on top of which there is the debt financing gap of EUR 2 billion.

According to the authors, access to funding is often impeded by the interpretation of EU’s sustainable funding framework and ESG, as well as complex regulatory framework applicable to industrial operations and public procurement in the defence sector.

According to the study “Access to equity financing for European defence SMEs” (DG DEFIS, 2024) ordered by the European Commission,

44 percent of SMEs in the EU’s defence sector avoid bank loans as they are hard to obtain; still more (68 percent) avoid equity financing. Further, although recently EC has clarified that defence investments may qualify for sustainable financing, investors tend to perceive the production of weapons as unethical. As a result, in the period from January 2022 to July 2023 European venture capital and private equity investments in the defence sector amounted to EUR 32 million compared to EUR 2.2 billion in the U.S. Some venture capital operations are carried out in Germany and Spain; private equity hardly exists in the EU except for France. Importantly, in May 2024 the European Investment Bank, the lending arm of the EU, cancelled the ban on the financing of defence firms, permitting investments in dual-use technologies. The Defence Equity Facility, an EBF defence instrument, is worth EUR 175 million, and is expected to grow to EUR 500 million within three years.¹¹

¹¹ European Defense: Close the Finance Gap - CEPA

Conclusions

In the face of the growing threat posed by Russia, defence spending must be increased.

This is a key investment indispensable to protect our country, the health and life of its citizens, as well as its assets and economic growth. The feeling of instability discourages both foreign companies and Polish citizens from investing in Poland. Growing defence investment is itself a major cost item that absorbs limited funds. More members of the ageing society will work in the army or munitions industry instead of producing consumer goods. Efficient use of limited resources will be of crucial importance.

The munitions sector is governed by the laws of economics.

Large operation scale, standardization and competition promote efficiency improvement. Economic principles, such as the efficiency of scale, competitiveness and specialization, result in more effective purchases

and operations. Along with general principles, economic sciences provide a series of analytical tools used both in the private and public sector. Cost-benefit analyses performed in a long time horizon, multicriteria analyses or financial models allow comparing a variety of possible scenarios. Even if typical effectiveness ratios, such as NPV or B/C, are negative due to the sector characteristics, the adopted methodology may allow comparing available initiatives and projects and selecting the optimal ones based on specific criteria. There are many tools used around the world to assess specific defence spending, also ones that consider overoptimistic purchases, allow comparing projects when simple price comparison is impossible, or include various efficiency criteria. For example, British Ministry of Defence has developed evaluation guidelines and guide (MOD 2014) for such issues.

The public and private sectors must collaborate in order for each of them to assume the responsibility for aspects they are more effective at.

This will improve risk management and performance of both defence-related tasks and investments. Implementation of assumptions about equal distribution of defence costs between domestic and foreign companies requires determining appropriate boundary conditions. At the same time, no strategy intended for the sector may ignore the overall vision of the country's economic growth. Broader conditions and structural challenges, such as the ageing society, modern technologies, or access to low-cost energy carriers, will also materially affect the success of performance and achievement of the determined goals.

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