

## DEFENSE SPENDING AS A DETERMINANT OF POLAND'S MILITARY STRENGTH

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### ABSTRACT

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The purpose of the study is to analyze the level of Poland's defense spending in the years 2008–2018, in the context of their impact on the military strength of the state. The research question of this study is whether the amount of defense spending included in the state budget is a determinant of Poland's military strength. In accordance with the methodology adopted by NATO, the analysis includes the following aspects: total planned and executed defense spending, the share of defense spending in the state budget spending, the relation of defense spending to the GDP growth rate, and the share of defense spending in GDP. In analyzing Poland's military strength, a world military strength ranking, Global Firepower, was used. The result of the research is that the most important factors that impact the military strength of individual state economies include the amount of budget spending incurred for the functioning and modernization of the armed forces.

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**INTRODUCTION: DEFENSE SPENDING**

The level of defense spending is currently a universal information carrier regarding the assessment of the economic effort of states in maintaining the armed forces. It may reflect the general level of operational capabilities of the armed forces, as well as be a symptom of possible internal and external conflicts. The size of defense spending directly determines the military strength of the state, which has an impact on ensuring state security. It stimulates the size, equipment, training and logistics protection of the armed forces. Hence, the right level of defense spending is an important issue. On the one hand, its deficiency in relation to the real needs of the state may lead to military weakness, while on the other hand the surplus may lead to excessive militarization of economic life, which in the long term will also lead to military weakness.

Defense spending as an economic and defense category can be defined in various ways. These are funds allocated for defense, i.e. one of the areas of state activity related to counteracting all kinds of threats and serving to ensure the state's security.<sup>2</sup> The Armed Forces are consumers of national income and carry out their tasks on the basis of financial resources that are provided for in the state budget, in relation to both the **defense budget** and the **military budget**. These two terms refer to different components of budget, because the defense budget is a broader category than the military budget. The **military budget** constitutes a significant part of the country defensive effort, including funds for the maintenance of the armed forces; training and running expenses; armaments and military equipment; technical devices and other general-purpose equipment; scientific and research works; and construction for the needs of the armed forces. On the other

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<sup>2</sup> K. Stańczyk, *Wydatki obronne*, [in:] *Ekonomika bezpieczeństwa państwa w zarysie*, J. Płaczek (ed.), Warszawa 2014, p. 100.

hand, the **defense budget** includes expenses for which the Minister of National Defense is the administrator of public funds, but also other members of the Council of Ministers who, under their powers, are obliged to carry out preparations as part of the defense effort of the state. This applies to the issue of storing food, sanitary and other sensitive materials as well as refreshing them, or financing the maintenance of so-called spare capacity that is running in the event of war danger.<sup>3</sup> Defense spending is included in Part 29 of the state budget as “National Defense”, and under Chapter 752, also known as “National Defense”.<sup>4</sup> Expenditure on defense at the planning stage includes expenditure recorded, among others, in Part 83 of the state budget: “Specific Provisions”. The level of defense expenditure is determined by many factors. These include, but are not limited to, economic, political or social issues, both at home and abroad. An important factor shaping their level are also emerging or probably likely threats.

According to Płaczek, defense spending can also be equated with expenses incurred for the functioning and development of the state defense system in order to ensure the protection of vital national interests, in particular the sovereignty and independence of the nation, its right to territorial integrity, and inviolability of borders.<sup>5</sup> As mentioned earlier, defense spending is a broader concept, because it covers the scope of military expenditure, but also other expenses related to ensuring state security. They include, among others, pensions of soldiers and military personnel, public administration dealing with matters of state security, scientific research in the field of defense, military education etc.

## RESEARCH METHODS

In international comparisons in terms of defense spending, the method adopted by the Stockholm International Peace Research Institute (SIPRI) is most often used. Research on armaments and military spending is based on

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<sup>3</sup> R. Chyżyński, *System planowania i finansowania zadań obronnych realizowanych przez jednostki samorządu terytorialnego*, “Przegląd Nauk o Obronności”, 2016, year 1, no. 1/2, pp. 219–245, <http://yadda.icm.edu.pl/baztech/element/bwmeta1.element/baztech-e5c70343-d16e-4a4f-8009-4777beb166d6> (accessed: 2.03.2020).

<sup>4</sup> *Act of 25 May 2001 on the reconstruction and technical modernization and financing of the Armed Forces of the Republic of Poland*, Journal of Laws 2001, no. 76, item 804, as amended.

<sup>5</sup> J. Płaczek, *Współczesne tendencje wydatków wojskowych*, Warszawa 2003.

three comprehensive and widely available databases: arms transfer, defense industry, and military spending.<sup>6</sup> SIPRI is based on collecting, analyzing, processing and publishing data on military spending around the world, as well as monitoring and analyzing trends in military spending over time, analyzing economic, political and social factors affecting world peace, security and development.<sup>7</sup> The current SIPRI database covers military spending of over 170 national economies over a period of time from 1988 until today. According to the SIPRI methodology, military spending (defense and military spending is not differentiated) is considered to include all costs of current military activities. These include expenses of:

- armed forces,
- ministries of defense and other institutions related to the implementation of defense projects,
- paramilitary forces,
- military activities in space,
- military and civilian personnel,
- equipment operation and maintenance,
- orders,
- research and development.

Data regarding the above groups of expenses are presented in three forms: in current prices and the national currency of a given country, in constant prices (in USD), and as a percentage of GDP of a given economy.<sup>8</sup>

The European Defense Agency (EDA) is another institution that examines the amount of defense spending of world economies. Its purpose is to support research and coordinate the procurement of governments of European Union member countries (except Denmark) in the field of arms and the defense industry. These activities are intended to improve the Union's defense capabilities. The Agency acts as a European defense cooperation center in the following areas:

- harmonization of requirements for ensuring operational capabilities,
- research and innovation to develop and test new technologies,

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<sup>6</sup> Cf. *Arms and military expenditure*, "SIPRI – Stockholm International Peace Research Institute", n.d., <https://www.sipri.org/research/armament-and-disarmament/arms-and-military-expenditure> (accessed: 5.03.2020).

<sup>7</sup> *Ibidem*.

<sup>8</sup> *Ibidem*.

- maintenance of training and exercises to support operations carried out as the common security and defense policy.

EDA also works to strengthen the European defense sector and acts as an intermediary in the process of shaping EU policy.<sup>9</sup> According to EDA, defense spending is the total expenditure of the ministry of defense and of those related to defense as part of other ministries (so-called special budget lines). Published data are included in four groups:

1. macroeconomic data illustrating the share of defense spending in GDP and in state budgets,
2. level of defense spending in terms of staff, investment, service, and equipment maintenance,
3. the amount of expenses incurred on ordering equipment and R&D under joint investments,
4. spending incurred in crisis management operations.

For the purposes of this article, in order to analyze the level of defense spending in Poland and assess it as a determinant of military strength, a third methodology was adopted, recognized by NATO. Defense spending is defined here in the same way as in SIPRI, i.e. payments actually made or to be made during the financial year. They concern the following financial and economic aspects of NATO defense matters:

- total defense spending of individual Member States,
- relation of defense spending to the GDP growth rate,
- the share of defense spending in GDP,
- defense spending and GDP per capita,
- personnel expenses of the armed forces.

The purpose of the study is to analyze the level of Poland's defense spending in the years 2008–2018, in the context of its impact on the military strength of the state. The research question of this study is whether the amount of defense spending included in the state budget is a determinant of Poland's military strength. The following working hypothesis was put forward: the group of the most important factors that impact the military strength of individual national economies includes the amount of budget spending allocated to the functioning and modernization of the armed forces. In accordance with the methodology adopted by NATO, the analysis

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<sup>9</sup> Cf. *European Defence Agency (EDA)*, "Europa.eu – European Union", n.d., [https://europa.eu/european-union/about-eu/agencies/eda\\_pl](https://europa.eu/european-union/about-eu/agencies/eda_pl) (accessed: 2.03.2020).

covers the following aspects: total planned and executed defense spending, the share of defense spending in the state budget spending, the relation of defense spending to the GDP growth rate, and the share of defense spending in GDP.

#### FINDINGS

The first group of indicators adopted for the purposes of this article concerns the level of total defense spending in the Polish economy in 2008–2018 (Table 1).

TABLE 1. TOTAL DEFENSE SPENDING OF POLAND IN 2008–2018  
(IN PLN MILLION)

Year	Total defense spending		Share of defense spending in state budget spending (%)
	Plans in the budget act	Completed	
2008	22,681.6	19,769.5	7.11
2009	24,938.5	23,025.4	7.73
2010	25,719.0	25,269.4	8.57
2011	27,536.2	26,720.6	8.83
2012	29,490.0	28,105.1	8.84
2013	31,447.5	28,124.4	8.75
2014	32,036.5	31,501.1	10.08
2015	38,387.8	37,404.4	11.28
2016	35,898.7	35,784.1	9.92
2017	37,352.0	37,284.2	9.92
2018	41,144.0	41,852.6	10.54

Source: own study based on the reports of the Ministry of Finance on the implementation of the state budget in 2008–2018: “Ministerstwo Finansów”, <https://mf-arch2.mf.gov.pl/> (accessed: 1.03.2020); Sprawozdania (roczne), “Gov.pl – Serwis Rzeczypospolitej Polskiej”, <https://www.gov.pl/web/finanse/sprawozdania-roczne> (accessed 10.03.2020).

In the analyzed period, the total planned defense spending was greater than the completed one (except for 2018). It increased by 81.4%, from PLN 22,681.6 million in 2008 to PLN 41,144 million in 2018. On the other hand, the implemented defense spending increased by 111.7% in the analyzed period. But the increase in these expenses was slower than the increase in total state budget expenses. In the years 2008–2015, the ratio of the share of total defense spending in the state budget ranged from 7.11% in 2008 to 11.28% in 2015. This was due to the need to repay in 2015 B vouchers in the amount of PLN 5.363 billion for the program of acquiring F-16 multi-role aircraft for the needs of the Polish Armed Forces.<sup>10</sup> The following year, the ratio fell to 9.92% as a result of the global economic crisis and the slowdown in Poland's economy, but in subsequent years it reached a higher level, with 10.5% in 2018. On this basis, it can be concluded that in 2008–2018 defense spending constituted an increasing part of the state budget, reaching the level of 7.11% in 2008 and 10.5% in 2018. This means that currently every tenth zloty spent from public funds is allocated to defense spending.

Another group of indicators concerns the relation between defense spending and the GDP. In accordance with the Act on Reconstruction, Technical Modernization and the Financing of the Polish Armed Forces<sup>11</sup>, the minimum amount of planned defense spending on GDP in 2008–2015 was at the level of 1.95% of the previous year's GDP. However, in subsequent years (after the amendment to the Act in April 2014) this threshold was increased to 2% of GDP. Another amendment to the abovementioned was the Act of 29 September 2017, and the Act – Public Procurement Law<sup>12</sup>, which introduced a provision that the financing of the defense needs of the Republic of Poland will be supported by annual spending from the state budget in an amount not lower than:

- 2% of GDP – in the years 2018–2019,
- 2.1% of GDP – in 2020,
- 2.2% of GDP – in the years 2021–2023,

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<sup>10</sup> T. Dmitruk, *Wydatki obronne Polski w latach 2000–2019*, “Nowa Technika Wojskowa”, 2019, no. 1, p. 8.

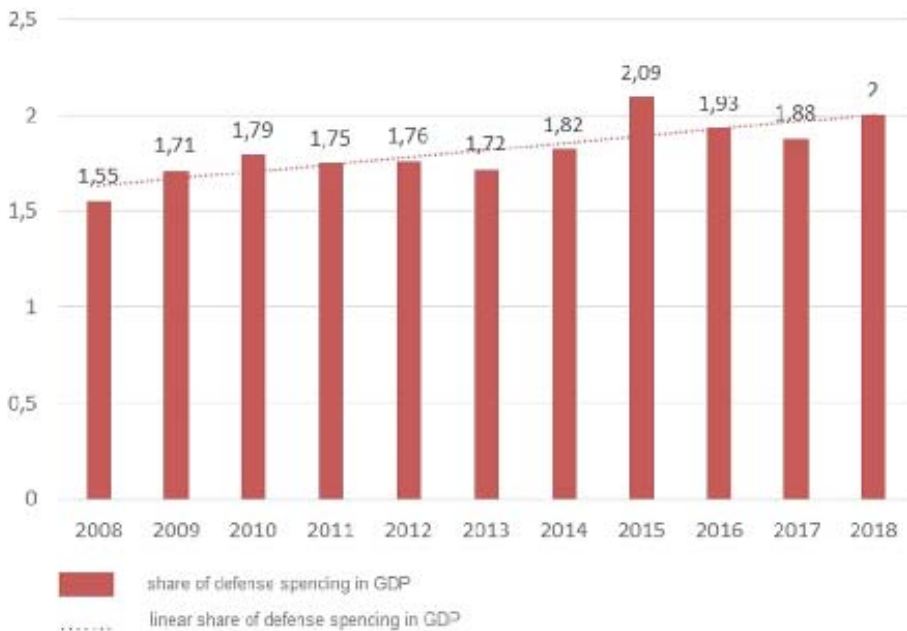
<sup>11</sup> *Act of 25 May 2001...*, *op. cit.*

<sup>12</sup> *Act of 29 January 2004 – the Public Procurement Law*, Journal of Laws 2004, no. 19, item 177, as amended.

- 2.3% of GDP – in the years 2024–2025,
- 2.4% of GDP – in the years 2026–2029,
- 2.5% of GDP – in 2030 and subsequent years.<sup>13</sup>

These amounts are in line with NATO methodology, in which it is assumed that the calculation of defense spending is based on the GDP of the current year, not the previous year, as it had been practiced until 2017. The amount of defense spending in relation to GDP is presented in Figure 1.

FIG. 1. SHARE OF DEFENSE SPENDING IN GDP IN 2008–2018 (IN %)



Source: T. Dmitruk, *Wydatki obronne Polski w latach 2000–2019*, “Nowa Technika Wojskowa”, 2019, no.1, pp. 6–13.

Based on statutory assumptions, the minimum amount of planned defense spending on GDP in 2008–2015 was to be at the level of 1.95% of the previous year’s GDP, and in subsequent years – 2%. At the stage of creating budget acts for subsequent years, the level of defense spending was determined in accordance with statutory requirements, but in the actual

<sup>13</sup> *Ibidem*.



settlement, i.e. the implementation of spending, there were discrepancies. Of course, it was influenced by Poland's economic growth, measured by the change in real GDP. The indicator of the share of implemented defense spending in the GDP made in the years 2008–2017 turned out to be lower than the statutory threshold of 1.95%. In 2008 it was only 1.55% with an upward trend to 1.79% in 2010. The following years were characterized by a lower level of the indicator until 2013, while in the years 2014–2015 it increased to 2.09%. The year 2015 is the only period in which the indicator of the share of implemented defense spending in the GDP was greater than 2%. In the last year of the examined period, the analyzed indicator coincided with the statutory threshold (2%). As previously mentioned, the implemented defense spending increased by 111.7% in the years 2008–2018. It is definitely a more dynamic increase in relation to the Polish GDP growth, which at that time increased by 65.9%<sup>14</sup>, which indicates the strengthening of the military forces of Poland in subsequent years.

For assessing Poland's military strength, the global ranking of military strength – Global Firepower<sup>15</sup> – was used for the purposes of the article. It uses over 50 individual factors to determine the PowerIndex (PwrIndx) result of a given country, in categories ranging from military strength and finances to logistic capabilities and geographical conditions. This annual analysis of military potential currently covers 138 countries in the world and is carried out on the basis of official data provided by the state authorities of the classified countries. The ranking is based on nearly 50 factors, together creating a “strength index”, in which the factor of 0.000 (PwrIndx points) was assumed as the highest (“ideal”) value, which means that the smaller the number of points, the greater the country's military strength.<sup>16</sup> The ranking does not take into account the nuclear potential of the countries listed, their current political leadership nor military command. It is not only about comparing the number of military equipment and weapons owned; it

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<sup>14</sup> Cf. *Mały Rocznik Statystyczny 2010*, “Główny Urząd Statystyczny”, 10 January 2011, [https://stat.gov.pl/cps/rde/xbcr/gus/oz\\_maly\\_rocznik\\_statystyczny\\_2010.pdf](https://stat.gov.pl/cps/rde/xbcr/gus/oz_maly_rocznik_statystyczny_2010.pdf) (accessed: 16.03.2020); *Mały Rocznik Statystyczny 2019*, “Główny Urząd Statystyczny”, 15 July 2019, [https://stat.gov.pl/cps/rde/xbcr/gus/oz\\_maly\\_rocznik\\_statystyczny\\_2019.pdf](https://stat.gov.pl/cps/rde/xbcr/gus/oz_maly_rocznik_statystyczny_2019.pdf) (accessed: 16.03.2020).

<sup>15</sup> Cf. “Global Firepower”, <https://www.globalfirepower.com/> (accessed: 15.03.2020).

<sup>16</sup> *Ibidem*.

also draws attention to geographical factors affecting each of the analyzed countries.<sup>17</sup> The results are modified by factors such as economic strength, natural resources and technological level, which often balance the numbers of large but less advanced armed forces. Such a complex structure of the indicator allows comparing various armies in the world.<sup>18</sup>

In *Global Firepower* published in 2020, Poland ranks 21 out of 138 among the countries included in the survey. The Polish PwrIndx index is 0.3397 (1st place is occupied by the USA with the PwrIndx index = 0.0606). Poland was included in the ranking for the first time in 2011, taking 21st place. It currently holds the same position, although against the background of more countries. The figure below presents Poland's place in the *Global Firepower* ranking in 2011–2020.

FIG. 2. POLAND'S POSITION IN THE GLOBAL FIREPOWER RANKING IN 2011–2020



Source: own study based on: “Global Firepower”, <https://www.globalfirepower.com>, (accessed: 15.03.2020).

<sup>17</sup> *Ibidem*.

<sup>18</sup> *Polska Armia* [forum thread], “Sadistic.pl”, 2014, <https://www.sadistic.pl/polska-armia-vt274835,15.htm> (accessed: 15.03.2020).

The table below presents a list of selected factors concerning Poland in 2020 included in the above ranking.

TABLE 2. SELECTED FACTORS INCLUDED IN GLOBAL FIREPOWER IN 2020 REGARDING POLAND

Factor	Number of persons/assets/ other relevant units	Poland's position in comparison with 138 countries
<b>Workforce</b>		
Military personnel	193,400	–
Active staff	118,000	42
Reserve staff	75,400	38
<b>Air attack power</b>		
Total power	457	29
Fighters	91	25
Transport	49	15
Training staff	104	26
Special missions	9	23
Helicopters	176	27
Attack helicopters	30	19
<b>Strength of the land attack</b>		
Tanks	1,069	19
Armored vehicles	2,547	28
Self-propelled artillery	547	13
Rocket projectors	180	18
<b>Equipment</b>		
Total assets	87	28
Carriers	0	138
Destroyers	0	138
Frigates	2	16
Comets	1	15
Submarines	3	17

Patrol	4	53
Mine warfare	25	4

Source: own study based on: "Global Firepower", <https://www.globalfirepower.com/> (accessed: 15.03.2020).

Global Firepower also allows to indicate Poland's position in terms of military strength in comparison with selected groups of countries. In this approach, Poland occupies the following position among countries:

1. NATO members – 8th place (out of 27 countries surveyed, first position is taken by the US – PwrIndx = 0.0606),
2. EU member states – 6th place (out of 25 countries surveyed, first position is taken by France – PwrIndx = 0.1702),
3. Eastern Europe – 2nd place (out of 11 countries surveyed, first position is taken by Russia – PwrIndx = 0.0681).

#### CONCLUSIONS

Military strength as a factor of state policy has special significance. It can be a tool of deterrence, aggression, or even retaliation. Its intensity is affected by the level of defense spending implemented. The purpose of this study was to attempt to analyze the level of Poland's defense spending in the years 2008–2018, in the context of its impact on the military strength of the state. Based on the research, it can be concluded that the amount of defense spending included in the state budget is a determinant of Poland's military strength, which positively verifies the hypothesis set out at the beginning. In the years 2008–2018, defense spending in Poland grew faster as compared to GDP growth and total state budget spending. The noticeable decreases over the period considered were caused by the emerging economic crises (2008, 2013). An important issue was also lower implementation of defense spending in relation to the amounts planned in budget acts for subsequent years. For this reason, in the years 2008–2015, about PLN 12.5 billion was not used in Poland, which could contribute to the increase of the country's military strength. Then, this strength measured by the PwrIndx indicator would allow Poland to improve its position in the global rankings in this field and strengthen its upward trend.

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