JOURNAL
OF EUROPEAN ECONOMY
Vol. 24. № 3 (94). July–September 2025
Publication of West Ukrainian National University

Economic Theory

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MODELING THE PATTERNS OF THE IMPACT OF MILITARIZATION ON MACROECONOMIC DEVELOPMENT

Abstract

The system of the modern global security space is characterized by growing instability, rising conflicts, and increasing military spending. The discrepancy in empirical findings regarding the impact of military spending on economic growth indicates that the issue is debatable and demonstrates that the reasons for and forms of conflict are always specific and unique, which makes it necessary

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to seek new approaches to assessing the intensity of militarization of economies. This article studies the socio-economic differences among countries that determine the possibilities for building up military potential. It has been substantiated that a high level of economic militarization does not guarantee greater stability, and social and economic inequality intensifies further stratification in society and becomes a source of conflict. The integrated index of the intensity of a country's military build-up was developed and tested, the application of which develops a system for monitoring, assessing and modeling the processes of militarization of countries' economies. A comparative analysis of countries by the intensity of militarization processes was conducted, which made it possible to: (1) classify countries by the intensity of these processes; (2) identify the patterns; and (3) assess their impact on country development indicators. Based on the assessment of the relationships between the developed integrated index and the indicators of the most significant international ratings (the Global Prosperity Index, the Fragile States Index, the Global Peace Index, the Human Development Index, the Social Progress Index, and the Democracy Index), it has been proven that intensive militarization has a significant negative impact on peace and security, as well as on the institutional, legal, and socio-economic stability and resilience of the country.

Key Words:

conflicts, militarization of the economy, military expenditure, military potential, modeling, regional security complex, security, the EU.

JEL: C43, C51, F51, H56.

4 formulas, 5 figures, 11 tables, 40 references.

Problem Statement and Literature Review

After the end of the World War II, world leaders made a collective commitment to promote international order and security. It was expected that the world would be steadily moving towards a situation where growth and development would strengthen the fundamental foundations of the global security space, and citizens would enjoy maximum social security. However, today's practice proves the opposite. Differences in the countries' socio-economic development determine the possibilities of building up military power. However, a high level of military expenditure does not guarantee a high level of stability in the country, and social and economic inequality increases further stratification in society and becomes a source of conflict (Collier & Hoeffler, 2004).

Authoritarian countries do not ensure respect for civil rights and freedoms, which increases social instability, and there is a correlation between the development of conflicts in society and the level of its democratization (Hegre, 2014). In studying the nature of asymmetric conflicts, the authors (Bulatova et al., 2024) emphasize that authoritarian countries do not ensure the effective functioning of state institutions or respect for civil rights and freedoms, which exacerbates institutional and social instability.

Zięba (2023) emphasizes the strengthening of democratic institutions and cooperation in the field of security as a response to new threats. The non-perception of democratic values became the basis for Russia's military aggression against Ukraine (Lavrynenko & Donaj, 2023). Considering that the war on the European continent has increased the level of threats at the global scale (Tskhovrebadze et al., 2023; Greminger & Vestner, 2022), the European countries need to significantly revise their military spending in order to strengthen their defense capabilities and readiness for existing threats (including hybrid ones) and change the EU's security development paradigm (Lazarou & Zamfir, 2022; Lishchynskyy & Lyzun, 2024). Current geopolitical changes and increased security threats actualize the need to update the roadmap for the long-term development of the European security complex (Lyzun et al., 2025; Argyriou et al., 2021).

The security of each individual country depends on the impact of other countries. According to the concept of regional security complexes (Buzan et al., 1998), the main regions of the global economy have formed groups of countries whose security systems are interdependent and closely interrelated. Such regional security complexes are characterized by the corresponding economic (resource), social, and political environment, the level of regional cooperation, its instruments and mechanisms, which form the corresponding regional security clusters (Tavares, 2008). In turn, Lishchynskyy and Lyzun (2020) emphasize that security governance structures at the regional and global levels are closely interrelated. In researching the link between the development of European integration

and the corresponding EU security mechanisms, Leonard et al. (2019) prove that the EU member states are becoming increasingly interdependent in ensuring their national interests, and with the deepening of integration cooperation, security guarantees are also strengthening for both EU countries and partner countries as the future members of the integration association.

The current geopolitical situation is becoming the background for confrontation, increasing the risks of violent conflicts, as evidenced by their constant growth. The impact of military spending on economic growth remains debatable. Dunne et al. (2006) identify several dimensions that determine the asymmetry of conflict: resource provision, restrictions resulting from existing social norms, and finally, the conflict's cost that its participants are ready to «pay». Due to its specific nature, the defense sector represents an important part of national production, so decisions made in this area have a special impact on national economic structures (Patomäki, 2008). There is also no empirical consensus on whether the causal effect between them is positive or negative (Saeed, 2025). States with more developed and stable institutional and political systems are less prone to internal violence and thus have fewer incentives for military spending (Besley & Persson, 2009). Democracies have lower percentages of military spending than autocracies. (Albalate et al., 2012).

Modern studies of the conflicts' impact on socio-economic development consider the hypothesis of the nature and extent of the impact of military spending on economic growth and have no unambiguous results regarding such relationships (Arshad et al., 2017; Dunne, 2012; d'Agostino et al., 2010). The empirical results of studies demonstrate the multidirectional impact of military spending on the economic development of specific countries: Lobont et al. (2019) substantiate the positive impact of military spending on growth and the efficient use of available resources in the economy, while Azam (2020) concludes that stimulating military spending hinders economic growth. Such a divergence of empirical results proves that the reasons and forms of conflict manifestation always have specifics and uniqueness, depending on the existing potential of countries. In turn, a country's military potential determines the ability and strength of pressure on another state. Accordingly, this makes it important to study the level of militarization of economies in the context of determining the possibilities of impact on the countries' development. Monitoring key indicators of the militarization of the economy, taking into account all components of security (social, economic, political, legal, technological, environmental, etc.), will help identify disparities and asymmetries in the development of countries that are building regional security complexes. For the EU countries and Ukraine, in turn, this will determine the directions for further cooperation and coordination of joint actions in solving security issues, which will strengthen the position of the European security complex in the global environment as a whole.

The *purpose of the study* is to substantiate and test a methodological approach to assessing the intensity of militarization of economies, based on an inte-

grated intensity index of the intensity of building up a country's military potential. The implementation of the proposed approach allows conducting a comparative analysis of countries by the level of militarization processes intensity, classifying countries by the intensity of these processes, tracking patterns, as well as assessing and modeling their impact on indicators of socio-economic, political, and legal development of countries.

The *research objectives* are:

- to develop an integrated index that will allow a comprehensive assessment of the level of intensity of the country's military build-up;
- to classify countries by the intensity of military build-up, to identify patterns of militarization processes;
- to substantiate the impact of the intensity of economic militarization on indicators of socio-economic, political and legal development, security and resilience;
- to study the peculiarities of the impact of military build-up on the general level of socio-economic development.

Methodology

To achieve the research purpose and objectives, general scientific and special research methods were used, in particular: methods of analysis, abstraction and synthesis (in the study of global trends in modern conflicts); index method (to estimate the intensity of military build-up). The information base for the relevant calculations and analysis is the UNCTAD (n.d.), UNHCR (n.d.), World Bank (n.d.), Institute for Economics & Peace (2024), SIPRI (2024), and ACLED (n.d.) databases.

The basis of the study is the calculation of an integrated index of the intensity of the country's military build-up. The formation of this index is based on the methodology of multidimensional assessment and construction of composite indicators (OECD, 2008) and involves the implementation of the following stages:

Firstly, the formation of the structure of the integrated index and the determination of the individual indicators (parameters) of the system that can be used to characterize the level of military build-up of the country's economy; substantiation of each indicator in terms of its ability to describe the level of militarization of the country. Also, at this stage, it is necessary to take into account the possibility of quantitative measurement of the indicators that form the index, including in a certain period of retrospection, which will allow them to be included in the structure of the integrated index and carry out an assessment in the dynamics using

statistical data from various sources. Individual indicators can have different forms, including absolute, relative, average values, individual or composite indicators, but it is relative indicators that should be preferred, taking into account the size of the economic system and its ability to ensure economic development and growth.

The substantiation of the selection and further integration of individual indicators into the integrated index is based on the analytical function of the indicator, its ability to serve as a criterion for assessing the level of militarization of the economy, its quantitative measurement, and its accessibility in the relevant open statistical databases for the totality of countries in dynamic representation.

Based on the analysis, taking into account the above mentioned, it is proposed to include into the integrated index the indicators presented in Table 1.

It should be noted that individual indicators systematized in Table 1 are stimulators by the nature of their impact on the integrated indicator, i.e., an increase in the value of the indicator indicates an increase in the level of the integrated score and vice versa.

Secondly, the standardization of individual parameters for comparability purposes and further aggregation into the structure of the integrated index. The theory of modern economic analysis offers standardization methods such as the ranking method, the z-score method, the max-min method, the method of comparison with the average level of the indicator, with the highest or lowest value of the indicator (the best level), with the reference (normative) value, the method of categorical scaling, methods of cyclical indicators, etc. (OECD, 2008; Freudenberg, 2003; Nilsson, 2000). Each of the methods has its own conditions of application, advantages and disadvantages, but the most common is z-scores standardization, since this method takes into account not only the generalized level of the indicator (mean), but also the level of its variation in the examined sample (standard deviation).

The z-score is a measure of the relative variation in the actual value of the indicator, which characterizes how many standard deviations (σ) it is from the mean (μ). The z-score is a dimensionless statistical indicator used to compare indicators of different dimensions and units of measurement. The application of the z-standartisation converts different estimates into a single measurement scale in the range (0;1) or (0;100) and forms a distribution that corresponds to the «normal»; the mean of the distribution is zero, allowing to avoid aggregation distortions that arise from differences in the mean levels of different variables (parameters).

Table 1

The system of the individual indicators of the integrated index

Indicator		Specification
Military expenditure as percentage of gross domestic product (SIPRI, 2024)	$ME_{\%GDP}$	Indicates the share of military expenditure in the country's GDP, and is therefore an indicator of the level of militarization
Military expenditure per capita (SIPRI, 2024)	ME_{PC}	Characterizes the amount of military expenditures per capita, the growth of which also signals an increase in the level of the country's militarization
Military expenditure by country as percentage of government spending (SIPRI, 2024)	$ME_{\%GSp}$	Indicator of the share of military expenditures in the total amount of state budget expenditures, the growth of which indicates the build-up of military potential
Armed forces personnel (% of total labor force) (World Bank, 2024)	$AFP_{\%LF}$	Characterizes the share of military personnel (including paramilitary forces) in the composition of the economically active population
Arms imports (transfers) (SIPRI, 2024)	M_{Im}	Indicators that characterize the volume of authorized arms transfers (physical or nominal movement of arms from one owner to another) relative to the size of the country's economy, measured by GDP. According to the methodology for calculating the indicators, arms transfers (exports or imports) cover the supply of military weapons through sales, aid, gifts, and production licensing. The data cover major conventional weapons such as aircraft, armored vehicles, artillery, radar systems, missiles, and ships intended for military use. Transfers of other military equipment, such as small arms and light weapons, trucks, small artillery, ammunition, auxiliary equipment, technology transfers and other military services are excluded.
Arms exports (transfers) (SIPRI, 2024)	M_{Ex}	
Militarization index (Institute for Economics and Peace, 2024)	Im	A pillar of the Global Peace Index, which helps to assess the impact of violence and develop tools for creating peaceful societies. The level of militarization identifies the build-up of a country's military power and access to weapons.

Source: SIPRI (2024), World Bank (n.d.), Institute for Economics and Peace (2024).

The indicators of the integrated index of the country's military build-up intensity (Table 1) are stimulators, and their standardized values will be calculated using the formula:

$$Z_j^{st} = \frac{x_j - \mu}{\sigma} \quad (1)$$

Where: Z_j^{st} – the standardized value of the j-th indicator, X_j – the actual value of the j-th indicator, μ – the average value of the j-th indicator, σ – standard deviation of the j-th indicator.

The standardized values are brought into the range (0;1) by converting them to a function of the standard normal integral distribution according to the formula (Equation 2):

$$Z_j^{st} = \frac{1}{\sqrt{2\pi}} e^{-\frac{z_j^2}{2}} \quad (2)$$

Thirdly, *substantiation of the form of the integrated index*, which involves the selection of the aggregation method for standardized values calculated in the previous stage. There are two methods of aggregation: linear and geometric. In case of linear aggregation, the integrated index has the form of arithmetic mean, in geometric aggregation – geometric mean.

The arithmetic mean is used when it can be supposed that the relationship between each individual component and the resulting phenomenon under study is linear. In this case, there are practically no restrictions on the number of components of the integrated index. In addition, the geometric mean is also used when the actual indicators analyzed are relative, but such a mean is sensitive to low values of its components; if one of its components is close to zero, it eliminates the influence of all other factors.

With the above mentioned, as well as based on the evaluation of the input data, including zero values and values close to zero, the arithmetic mean has been chosen as the form of the integrated indicator. Also, at this stage, it is necessary to justify the use of simple or weighted average. Given the fact that individual parameters cannot influence the formation of the level of the integrated index with the same degree, the weighted average should be preferred. Among the methods of weighting, which calculate the weighting coefficients for individual parameters, it is possible to use the method of expert evaluation, the method of principal components, methods of factor analysis, including correlation analysis, etc.

To summarize, the formula for the integrated index in general is as follows (Equation 3):

$$Imil_i = \sum_{j=1}^{m} \alpha_j Z_j^{st} \quad Z_j^{st}, \qquad (3)$$

Where: $Imil_i$ – integrated index of the intensity of the *i*-th country's military build-up; Z_j^{st} – the standardized value of the j-th indicator; α_j – weighting coefficients of the j-th indicator, $\sum \alpha_j = 1$.

Correlation analysis was used to determine the weighting coefficients.

The fourth stage involves conducting empirical calculations. This stage involves forming a sample of countries for the analysis, determining the retrospective period for the analysis, and making calculations using Equations (1)-(3). Considering the importance of strengthening the European security complex, into which Ukraine is integrating, the following countries were selected in the study when forming the sample: the EU countries, as well as the top 10 countries with the highest military expenditures according to the Stockholm International Peace Research Institute (France, Germany, Russia, the United States, China, India, Saudi Arabia, the United Kingdom, South Korea, Japan) and Ukraine. Thus, the total size of the sample is 36 countries; the study period covers 2016-2023.

The *final (fifth) stage* involves analyzing the results obtained, including ranking countries by the level of military build-up, grouping countries, assessing the uneven development of countries by the integrated index; identifying the most influential indicators; conducting factor analysis to assess the impact of the level of militarization on indicators of socio-economic development, security and resilience, etc.

Table 2 shows the results of calculating the weighting coefficients based on the factor analysis.

Table 2

Results of calculating the weighting coefficients of individual indicators

	Year							
Indicator	2016	2017	2018	2019	2020	2021	2022	2023
$ME_{\%GDP}$	0.22	0.22	0.19	0.20	0.17	0.17	0.17	0.17
ME_{PC}	0.13	0.13	0.12	0.12	0.13	0.13	0.13	0.13
$ME_{\%GSp}$	0.17	0.17	0.19	0.16	0.17	0.17	0.17	0.17
$AFP_{\%LF}$	0.13	0.13	0.12	0.12	0.13	0.13	0.13	0.13
M_{Im}	0.09	0.09	0.12	0.12	0.13	0.13	0.13	0.13
M_{Ex}	0.09	0.09	0.12	0.12	0.09	0.09	0.09	0.09
Im	0.17	0.17	0.15	0.16	0.17	0.17	0.17	0.17
∑	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Source: authors' calculations.

In the periods of 2016-2017 and 2020-2023, the coefficients were characterized by the same distribution of values, with some minor changes in 2018 and 2019. The highest level of significance was obtained for the share of military expenditure in GDP, the share of military expenditure in public spending, and the militarization index.

Thus, the integrated index for 2023 was calculated using the following formula (Equation 4):

$$Imil_i(2023) = 0{,}17 * ME_{\%GDP} + 0{,}13 * ME_{PC} + 0{,}17 *_{\%GSp} + 0{,}13 * AFP_{\%LF} + \\ + 0{,}13 * M_{\text{Im}} + 0{,}09 * M_{Ex} + 0{,}17 * \text{Im} \quad (4)$$

For other years, the weighting coefficients were adjusted accordingly.

Research Results

As a result of the calculations, the integrated indicators of the intensity of the country's military build-up for the period 2016-2023 have been obtained. The ranking of the sample countries according to the latest relevant data (2023) is presented in Figure 1.

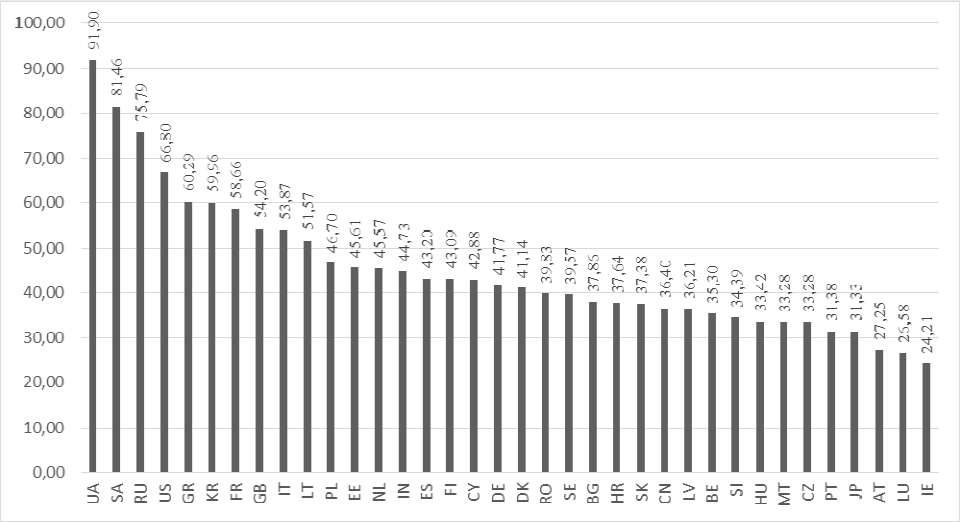
According to the obtained results, Ukraine has the highest level of military build-up intensity (90.9 out of 100), and the top ten most militarized economies include Saudi Arabia (81.46), Russia (75.79), the United States (66.8), as well as such European countries as Greece (60.29), South Korea (59.96), France (58.66), the United Kingdom (54.2), Italy (53.87), and Lithuania (51.57). For the rest of the countries, which account for 71% of the sample, the index is less than 50. The least militarized economies are Austria, Luxembourg, and Ireland, which have an integrated index of less than 30.

The analysis of the individual indicators that form the integrated index showed that the top ten countries with the largest share of military expenditure in GDP include Ukraine, Saudi Arabia, Russia, Poland, the United States, Greece and Estonia, with Ukraine having the highest indicator; in particular, its military expenditures account for more than one third of Ukraine's GDP, namely 36.65% (Table 3).

The highest level of military expenditures per capita, exceeding $2000, is observed in the United States and Saudi Arabia; Ukraine, Denmark, Finland, the United Kingdom and Luxembourg have an indicator of more than $1000 of military expenditures per capita; the top 10 countries by this indicator also include France, the Netherlands and South Korea.

Figure 1

Ranking of countries by the integrated index of the country's military build-up intensity (2023)



Source: authors' calculations.

Table 3

Countries with the highest military expenditures relative to GDP, population, and government spending

Military expenditure, % GDP		Military expenditure per capita, USD		Military expenditure, % government spending	
Top 10 countries	$ME_{\%GDP\ (2023)}$	Top 10 countries	$ME_{PC\ (2023)}$	Top 10 countries	$ME_{\%GSp\ (2023)}$
Ukraine	36.65	USA	2694.2	**Ukraine**	58.17
Saudi Arabia	7.09	Saudi Arabia	2051.9	Saudi Arabia	24.04
Russia	5.86	**Ukraine**	1762.2	Russia	16.14
Poland	3.80	Denmark	1377.9	South Korea	11.10
USA	3.36	Finland	1325.2	USA	9.06
Greece	3.23	United Kingdom	1106.4	India	8.15
Estonia	2.87	Luxembourg	1011.4	Poland	8.12
South Korea	2.81	France	946.6	Lithuania	6.93
Lithuania	2.70	Netherlands	943.6	Estonia	6.77
India	2.44	South Korea	925.5	Greece	6.57

Source: SIPRI (2024).

The share of military expenditures in the government spending structure is the highest in Ukraine (5.17%) and Saudi Arabia (24.04%). The share of military spending is higher than 10% in Russia and South Korea. The top 10 countries by this indicator also include the United States, India, Poland, Lithuania, Estonia, and Greece.

In terms of labor force militarization (Table 4), the largest share of armed forces personnel in total labor force is in Greece (3.2%) and Lithuania (2.5%). The top 10 countries with the largest share of armed forces personnel in the labor force also include Cyprus, Russia, South Korea, Saudi Arabia, Ukraine, Romania, Italy, and Croatia. The top 10 arms importers include Ukraine, Malta, Greece, Saudi Arabia, Lithuania, Poland, India, the Netherlands, Sweden, and Latvia. The top 10 countries with the largest volume of military exports relative to GDP are Russia, France, Italy, Spain, Poland, Slovenia, Slovakia, the United Kingdom, the United States, and Lithuania.

Table 4

Countries with the largest shares of armed forces personnel, military exports and imports

Armed forces personnel, % of total labor force		Arms imports (transfers), USD per 1000 USD GDP		Arms exports (transfers), USD per 1000 USD GDP	
top 10 countries	AFP%LF (2020)	top 10 countries	MIm (2022)	top 10 countries	MEx (2022)
Greece	3.20	**Ukraine**	1647324	Russia	1258691
Lithuania	2.50	Malta	248268	France	1087046
Cyprus	1.99	Greece	226582	Italy	890358
Russia	1.99	Saudi Arabia	204948	Spain	670052
South Korea	1.99	Lithuania	138078	Poland	656857
Saudi Arabia	1.76	Poland	92861	Slovenia	632664
Ukraine	1.45	India	83298	Slovakia	614922
Romania	1.44	Netherlands	68853	USA	570565
Italy	1.35	Sweden	53742	United Kingdom	486877
Croatia	1.13	Latvia	48861	Lithuania	408598

Source: World Bank (n.d.).

As a result of the grouping, the countries of the sample were classified by the level of military build-up (Table 5). Countries are classified into 4 groups depending on the level of intensity (low, medium, high and very high). It should be noted that 47.2% of countries are defined as those with the low level of military build-up intensity; these are mostly the EU countries, with the exception of China and Japan. The average value of the integrated index in this group is 33.84, which is 25% lower than the average index score for the sample as a whole; the standard deviation is 4.4, and the relative level of variation of the index scores is 13%, which indicates insignificant variation (high homogeneity) between the countries of the group in terms of the integrated index. One third of the countries in the sample (33.3%, 12 countries) are classified as economies with a medium level of military build-up intensity, these are the European countries, excluding India, with the highest level in the United Kingdom.

Table 5

Grouping of countries by the level of military build-up intensity

The level of military build-up intensity (index score)	Number (countries)	Average $\bar{x}$	St.dev.σ	Variation, % V σ
Low (24.21 – 41.14)	**17** (Romania, Sweden, Bulgaria, Croatia, Slovakia, China, Latvia, Belgium, Slovenia, Hungary, Malta, Czechia, Portugal, Japan, Austria, Luxemburg, Ireland)	33.84	4.40	13.00
Medium (41.14 – 58.06)	**12** (United Kingdom, Italy, Lithuania, Poland, Estonia, Netherlands, India, Spain, Finland, Cyprus, Germany, Denmark)	46.19	4.57	9.89
High (58.06 – 74.98)	**5** (Russia, USA, Greece, South Korea, France)	64.30	7.16	11.13
Very high (74.98 – 91.90)	**2** (**Ukraine**, Saudi Arabia)	86.68	7.39	8.52
Total:	36	45.12	15.39	34.10

Source: authors' calculations.

The average score of the integrated index for the group is 46.19, which is 2.3% higher than the overall average for the sample. The standard deviation is 4.57, variation is 9.89%, which indicates that the countries in the group are similar. Five countries (13.9%) have a high level of military build-up intensity, including two European countries (Greece and France) and the United States, Russia, and South Korea, with the highest score in Russia. The average score of the integrated index for the group is 64.3, which is 42.5% higher than the overall average for the sample. The relative variation is 11.13%. Two countries, such as Ukraine and Saudi Arabia, are included in the group of countries with a very high level of military build-up intensity, with an average integrated score of 86.6, which is 92% higher than the average level in the sample. Summarizing, it should be noted that 80% of the countries studied have a low or medium level of development of the processes of militarization of economies. The obtained estimates of variation indicate high variability and heterogeneity of the sample as a whole according to the integrated index, while in the selected groups the countries are similar in terms of the intensity of the processes under analysis.

The integrated scores were obtained in the dynamics for the period of 2016-2023 (Table 6), which allowed assessing the patterns of changes in the processes of militarization of economies (Table 7).

Table 6

Dynamics of the integrated indices for the period of 2016-2023

Country		Integrated indices (scores %)							
		2016	2017	2018	2019	2020	2021	2022	2023
Austria	AT	27.07	27.57	27.04	25.57	25.49	25.52	27.63	27.25
Belgium	BE	31.57	31.48	30.53	29.43	29.82	34.55	36.28	35.30
Bulgaria	BG	39.23	39.08	40.12	56.34	42.83	36.67	38.17	37.86
Croatia	HR	39.56	39.82	37.32	36.91	35.99	39.37	38.76	37.64
Cyprus	CY	43.32	50.45	45.85	50.70	53.80	49.24	42.71	42.88
Czechia	CZ	28.75	28.42	30.54	28.74	28.34	28.30	33.19	33.28
Denmark	DK	34.52	33.63	35.62	33.93	33.79	40.00	37.50	41.14
Estonia	EE	47.27	47.18	47.29	47.23	49.76	46.62	42.38	45.61
Finland	FI	47.82	44.42	43.88	42.21	38.69	36.16	40.47	43.09
Greece	GR	65.87	63.04	62.08	62.53	63.78	76.68	63.99	60.29
Spain	ES	37.45	40.89	41.35	37.43	40.21	39.41	43.53	43.20
Netherland	NL	43.17	45.92	44.56	47.93	50.81	51.37	47.96	45.57
Ireland	IE	23.86	22.91	22.52	21.50	19.68	18.69	24.75	24.21
Lithuania	LT	47.43	49.47	58.08	54.44	58.08	59.63	58.81	51.57
Luxemburg	LU	28.97	32.47	31.00	29.34	36.78	26.46	34.38	26.58

Country		Integrated indices (scores %)							
		2016	2017	2018	2019	2020	2021	2022	2023
Latvia	LV	35.92	37.78	44.70	44.30	42.22	43.05	40.09	36.21
Malta	MT	31.99	31.58	27.22	27.02	25.96	24.48	34.38	33.28
Poland	PL	41.08	43.46	43.89	43.62	41.90	42.12	47.27	46.70
Portugal	PT	41.15	33.88	34.04	33.75	34.09	32.67	31.73	31.38
Romania	RO	48.50	46.53	47.29	44.91	50.90	48.79	41.08	39.83
Slovakia	SK	30.01	31.68	33.29	35.42	35.38	31.23	36.56	37.38
Slovenia	SI	32.69	28.10	27.73	26.89	24.66	27.29	34.56	34.39
Sweden	SE	42.95	39.99	36.58	36.69	36.92	40.84	39.71	39.57
Hungary	HU	27.70	29.47	28.75	29.86	34.68	32.71	31.61	33.42
Italy	IT	47.23	47.69	45.94	43.75	49.37	52.74	53.48	53.87
France	FR	58.79	60.30	57.94	60.77	59.45	59.66	59.08	58.66
Germany	DE	38.93	39.85	39.03	39.17	38.66	36.78	39.58	41.77
Ukraine	UA	67.14	62.94	69.07	67.55	64.45	65.02	87.08	91.90
Russia	RU	86.19	83.61	81.28	81.26	78.83	78.24	71.80	75.79
USA	US	77.11	78.11	77.16	78.03	76.36	77.85	70.59	66.80
China	CN	43.03	42.56	42.49	40.92	39.64	39.21	38.06	36.40
India	IN	59.16	58.61	60.29	61.10	61.68	60.65	46.96	44.73
Saudi Arabia	SA	91.32	91.51	89.43	88.48	90.97	90.83	82.68	81.46
United Kingdom	GB	56.66	57.71	55.44	55.79	54.81	57.44	55.64	54.20
South Korea	KR	71.34	71.97	76.60	78.11	80.13	78.74	63.55	59.96
Japan	JP	28.31	28.55	29.38	28.45	27.07	26.44	28.24	31.33

Source: authors' calculations.

In general, half of the countries surveyed have a general growing trend in integrated scores, with an average annual change not exceeding 1 percentage point, which is a very small change, with only Ukraine having an average annual increase of 3.54 over the study period.

Table 7

Evaluation of the patterns of index dynamics

Country	Change (absolute increase), Δ				Country	Change (absolute increase), Δ			
	2023/ 2022	2022/ 2021	2023/ 2016	average		2023/ 2022	2022/ 2021	2023/ 2016	average
AT	0.17	2.12	0.17	0.02	PT	-9.78	-0.94	-9.78	-1.40
BE	3.73	1.73	3.73	0.53	RO	-8.67	-7.70	-8.67	-1.24
BG	-1.37	1.50	-1.37	-0.20	SK	7.37	5.33	7.37	1.05
HR	-1.92	-0.61	-1.92	-0.27	SI	1.70	7.27	1.70	0.24
CY	-0.43	-6.54	-0.43	-0.06	SE	-3.39	-1.13	-3.39	-0.48
CZ	4.52	4.89	4.52	0.65	HU	5.72	-1.10	5.72	0.82
DK	6.61	-2.50	6.61	0.94	IT	6.64	0.74	6.64	0.95
EE	-1.66	-4.24	-1.66	-0.24	FR	-0.13	-0.58	-0.13	-0.02
FI	-4.73	4.31	-4.73	-0.68	DE	2.84	2.80	2.84	0.41
GR	-5.58	-12.69	-5.58	-0.80	UA	24.76	22.06	24.76	3.54
ES	5.75	4.12	5.75	0.82	RU	-10.40	-6.43	-10.40	-1.49
NL	2.40	-3.41	2.40	0.34	US	-10.31	-7.27	-10.31	-1.47
IE	0.36	6.06	0.36	0.05	CN	-6.63	-1.15	-6.63	-0.95
LT	4.13	-0.82	4.13	0.59	IN	-14.43	-13.69	-14.43	-2.06
LU	-2.39	7.92	-2.39	-0.34	SA	-9.86	-8.14	-9.86	-1.41
LV	0.29	-2.96	0.29	0.04	GB	-2.46	-1.80	-2.46	-0.35
MT	1.29	9.90	1.29	0.18	KR	-11.39	-15.20	-11.39	-1.63
PL	5.62	5.15	5.62	0.80	JP	3.01	1.80	3.01	0.43

Source: authors' calculations.

Among the countries characterized by a general downward trend in the intensity of militarization processes, the highest, but relatively low (within 1-2%) estimates of the average decrease are in Portugal, Romania, Russia, the United States, Saudi Arabia, and South Korea.

In 2022-2023, after the beginning of the war in Ukraine, European countries such as Belgium, the Czech Republic, Estonia, Latvia, Poland, Slovakia, Italy, and Germany demonstrated an increase in the intensity of militarization processes. For Ukraine, the growth (increase) of the index in 2022 was 24.76, and in 2023 – 22.06. For the period 2016-2023, the increase was 24.76.

The dynamics of countries' rankings by the integrated index is presented in Table 8.

Table 8

Dynamics of countries' rankings by the integrated index

Country		Rank							
		2016	2017	2018	2019	2020	2021	2022	2023
Austria	AT	35	35	35	35	34	34	35	34
Belgium	BE	29	30	30	29	30	26	27	27
Bulgaria	BG	22	23	21	9	16	24	23	22
Croatia	HR	21	22	23	23	25	21	22	23
Cyprus	CY	15	10	14	12	11	13	15	17
Czechia	CZ	32	33	29	31	31	30	31	31
Denmark	DK	26	26	25	26	29	19	25	19
Estonia	EE	13	13	12	14	14	15	16	12
Finland	FI	11	16	18	19	21	25	18	16
Greece	GR	6	5	6	6	6	5	5	5
Spain	ES	24	19	20	22	19	20	14	15
Netherlands	NL	16	15	16	13	13	12	11	13
Ireland	IE	36	36	36	36	36	36	36	36
Lithuania	LT	12	11	8	11	9	9	8	10
Luxembourg	LU	31	27	28	30	24	32	30	35
Latvia	LV	25	24	15	16	17	16	19	26
Malta	MT	28	29	34	33	33	35	29	30
Poland	PL	20	17	17	18	18	17	12	11
Portugal	PT	19	25	26	27	28	28	32	32
Romania	RO	10	14	11	15	12	14	17	20
Slovakia	SK	30	28	27	25	26	29	26	24
Slovenia	SI	27	34	33	34	35	31	28	28
Sweden	SE	18	20	24	24	23	18	20	21
Hungary	HU	34	31	32	28	27	27	33	29
Italy	IT	14	12	13	17	15	11	10	9
France	FR	8	7	9	8	8	8	7	7
Germany	DE	23	21	22	21	22	23	21	18
Ukraine	UA	5	6	5	5	5	6	1	1
Russia	RU	2	2	2	2	3	3	3	3
USA	US	3	3	3	4	4	4	4	4
China	CN	17	18	19	20	20	22	24	25
India	IN	7	8	7	7	7	7	13	14
Saudi Arabia	SA	1	1	1	1	1	1	2	2
United Kingdom	GB	9	9	10	10	10	10	9	8
South Korea	KR	4	4	4	3	2	2	6	6
Japan	JP	33	32	31	32	32	33	34	33

Source: authors' calculations.

Firstly, with regard to the assessment of changes in the top ten countries with the highest level of the integrated index, Ukraine, which ranked 1st in 2022-2023, took 5th and 6th positions in 2016-2021. In the period of 2016-2021, Saudi Arabia was the leader in terms of the intensity of military build-up. During the study period, Russia occupied the 2nd (2016-2019) and 3rd (2020-2022) ranks, while the United States held the 3rd and 4th positions during these periods, and Greece – the 5th and 6th. South Korea is ranked 6th in 2022-2023, while in 2020-2021 it was ranked 2nd. France ranked 7th in 2022-2023 compared to 8th in 2016 and 2019-2021 and 9th in 2018. The United Kingdom is ranked 8th in 2023 compared to 10th place in 2018-2021. Italy, which is ranked 9th in 2023, demonstrates a high intensity of militarization processes, as evidenced by the increase in its ranking position from 14th in 2016. Lithuania, which rounds out the top 10 countries in the ranking, was ranked 8th in 2018 and 2022, 9th in 2020-2021, and 11th and 12th during the study period.

Secondly, the countries that during the study period are characterized by a significant change in their positions in the direction of growth, that is, characterized by an increase in the intensity of the development of militarization processes, include Denmark (change in position in the ranking by 7 points, namely from 26th rank in 2016 to 19th in 2023), Spain (9 points from 24th rank in 2016 to 15th in 2023), Poland (9 points from 20th rank in 2016 to 11th in 2023), Slovakia (6 points from 30th rank in 2016 to 24th in 2023), Hungary (5 points from 34th rank in 2016 to 29th in 2023).

Finally, the countries that have lost their positions in the ranking, which is evidence of a slowdown in the pace of militarization, include: Portugal (13 points from 19th rank in 2016 to 32nd in 2023), Romania (10 points from 10th rank in 2016 to 20th in 2023), China (8 points from 17th rank in 2016 to 25th in 2023), India (10 points from 7th rank in 2016 to 14th in 2023). Other countries in the ranking have insignificant change in their ranking positions during the research period (within 1-3 points).

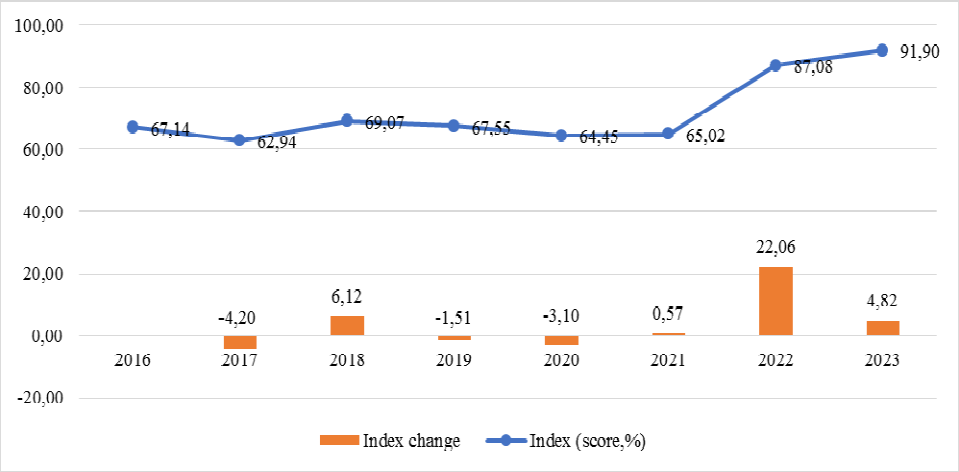
Figure 2 shows the dynamics of the integrated index of the intensity of Ukraine's military build-up.

With the beginning of the war in Ukraine, the value of the index increased significantly (by 22.06 p.p.) from 65.02 in 2021 to 87.08 in 2022 and further increased by 4.82 p.p. in 2023 compared to 2022. During the period of 2016-2021, the value of the index was characterized by insignificant changes, with the lowest value in 2017 (62.94) and the highest in 2018 (69.07).

The dynamics of individual indicators that form the index for Ukraine is presented in Table 9.

Figure 2

Dynamics of the integrated index of the intensity of Ukraine's military build-up, 2016-2023



Source: authors' calculations.

Table 9

Dynamics of individual indicators of the integrated index of Ukraine

Year	$ME_{\%GDP}$	ME_{PC}	$ME_{\%GSp}$	$AFP_{\%LF}$	M_{Im}	M_{Ex}	Im
2016	3.15	65.8	7.78	1.36	5356	4873823	2.393
2017	2.88	73.0	6.94	1.39	3569	3345511	2.123
2018	3.19	94.2	7.65	1.40	53480	1940545	2.065
2019	3.52	123.2	8.51	1.47	14946	1072243	2.026
2020	3.81	135.5	8.30	1.45	11493	740657	2.024
2021	3.23	136.7	7.32	…	19523	735861	2.129
2022	33.55	1018.7	42.20	…	1647324	311521	2.349
2023	36.65	1762.2	58.17	…	…	…	3.009

Source: SIPRI (2024), World Bank (n.d.), Institute for Economics and Peace (2024).

Note: «…» – no data available.

During the period of 2016-2021, the level of military expenditure in GDP remained in the range of 2.88-3.81%, with the beginning of the war in 2022 it increased by 10 times to 33.55%, in 2023 it increased by another 3.1% to 36.65%. Military expenditure per capita is also characterized by an upward trend, having doubled from $65.8 per capita to $136.7, in 2022 it increased by 7.5 times to $1018.7, and in 2023 by 73%, reaching $1762.2 per capita.

The share of military expenditure in government spending in the period of 2016-2021 fluctuated between 7.32 and 8.51%; in 2022, it increased by 5.8 times to 42.2%, and in 2023 it increased by another 16%. As for the share of the armed forces personnel in the total labor force, it increased by only 0.09% from 1.36% in 2016 to 1.45% in 2020. As for military imports per $1,000 of GDP, a significant increase also occurred in 2022, which increased by 84 times, due not only to the growth of imports, but also to a significant reduction in GDP itself (by 30%). The volume of military exports tends to decline, in particular, in 2020 it decreased by 30% compared to the previous year, and in 2022 – by 58%. The militarization index as a component of the global peace index increased by 25.7% in 2023 compared to 2016.

In order to assess the impact of the intensity of the militarization processes on the countries' economy, the study of the impact of index scores on the indicators of the economic, social, political and legal environment was conducted. For the analysis purposes, the following global country rankings were selected: the Global Prosperity Index, the Fragile States Index, the Global Peace Index, the Human Development Index, the Social Progress Index, and the Democracy Index. Table 10 shows the positions of countries in these global rankings and the values of the indices.

The Global Prosperity Index reflects the level of countries' development on the basis of an inclusive society, in which all conditions are created to protect rights and freedoms and ensure the security of everyone, and thereby create conditions for true prosperity. The countries of the European region are among the 30% of the most prosperous countries in the ranking (among the top 50), and according to the index's prosperity scale, they are in the first two groups in terms of well-being. Ukraine ranks 74th in the prosperity index, Russia 77th, Saudi Arabia 79th, and India 103rd. In other words, countries that are leaders in terms of the intensity of military potential building have the lowest scores in terms of the development of an inclusive society and the population's well-being.

The Social Progress Index measures the countries' progress in developing the social sphere and ensuring the quality of life, respectively, evaluates the level of progress in terms of the quality of education, healthcare, technology, ensuring personal security and human rights. Countries that increase military spending correspondingly reduce funding for the social sphere, which does not contribute to the growth of the general well-being of the population. All countries in the European region are among the top 50 countries in the world with the greatest progress in achieving social progress (Tiers 1 and 2). Non-European countries, which are world leaders in terms of military expenditure, occupy lower positions, in particular, Russia – 76th, China – 77th, Saudi Arabia – 90th, India – 111th.

Table 10

Countries of the sample in the global rankings

Country	Global Prosperity Index (2023)		Fragile States Index (2023)		Global Peace Index (2024)		Human Develop-ment Index (2022)		Social Progress Index (2024)		Democracy Index (2023)	
	score	rank	score	rank	score	rank	score	rank	score	rank	score	rank
Austria	79.38	14	24.4	167	1.313	3	0.926	22	86.73	11	8.28	18
Belgium	77.84	18	31.4	160	1.510	16	0.942	12	86.13	13	7.64	36
Bulgaria	65.55	48	51.8	131	1.629	26	0.799	70	76.25	43	6.41	62
Croatia	68.24	41	48.7	138	1.504	15	0.878	39	80.25	33	6.5	58
Cyprus	71.82	34	57.0	120	2.101	88	0.907	29	81.88	28	7.38	37
Czechia	75.08	25	40.2	151	1.459	12	0.895	32	84.82	19	7.97	26
Denmark	84.55	1	17.9	174	1.382	8	0.952	5	90.38	1	9.28	6
Estonia	77.31	21	38.6	153	1.615	24	0.899	31	85.17	18	7.96	27
Finland	83.47	4	16.0	177	1.474	13	0.942	12	89.96	3	9.30	5
Greece	68.48	40	55.1	123	1.793	40	0.893	33	80.09	34	8.14	20
Spain	76.03	24	43.5	144	1.597	23	0.911	27	83.87	25	8.07	23
Netherlands	82.32	6	21.0	169	1.527	18	0.946	10	87.73	9	9.00	9
Ireland	80.31	11	19.5	171	1.303	2	0.950	7	86.57	12	9.19	7
Lithuania	72.54	32	39.4	152	1.672	31	0.879	37	81.51	31	7.31	39
Luxemburg	81.83	7	19.5	172	…	…	0.927	20	86.87	7	8.81	11
Latvia	72.99	31	43.3	145	1.661	30	0.879	37	81.12	32	7.38	37
Malta	74.36	28	33.0	158	…	…	0.915	25	82.68	27	7.93	28
Poland	70.15	37	45.2	142	1.678	32	0.881	36	79.53	36	7.18	41
Portugal	74.64	26	25.7	164	1.372	7	0.874	42	84.1	23	7.75	31
Romania	66.40	45	53.0	129	1.755	36	0.827	53	75.24	44	6.45	60
Slovakia	71.15	35	37.8	155	1.634	27	0.855	45	75.54	35	7.07	44
Slovenia	74.54	27	27.3	163	1.395	9	0.926	22	84.6	20	7.75	31
Sweden	83.67	2	20.6	170	1.782	39	0.952	5	89.9	5	9.39	4
Hungary	66.88	42	48.8	135	1.502	14	0.851	47	77.47	40	6.72	50
Italy	73.03	30	42.6	146	1.692	33	0.906	30	83.61	26	7.69	34
France	76.73	23	28.8	162	2.088	86	0.910	28	83.88	24	8.07	23
Germany	80.81	9	24.6	166	1.542	20	0.950	7	87.64	10	8.80	12
Ukraine	58.84	74	95.9	18	3.280	159	0.734	100	70.47	59	5.06	91
Russia	58.5	77	80.7	53	3.249	157	0.821	56	67.68	76	2.22	144
USA	77.4	19	45.3	141	2.622	132	0.927	20	81.7	29	7.85	29
China	62.1	54	65.1	102	2.101	88	0.788	75	67.61	77	2.12	148
India	53.7	103	74.1	73	2.319	116	0.644	134	58.06	111	7.18	41
Saudi Arabia	58.4	79	65.3	100	2.206	102	0.875	40	65.58	90	2.08	150
United Kingdom	79.9	12	41.9	148	1.703	34	0.940	15	84.89	21	8.28	18
South Korea	74.1	29	31.5	159	1.848	46	0.929	19	85.26	17	8.09	22
Japan	78.2	16	30.5	161	1.525	17	0.920	24	85.52	16	8.40	16

Source: The Social Progress Imperative (2024), Legatum Institute (2024), The Fund for Peace (2023), Institute for Economics and Peace (2024), UNDP (n.d.), Economist Intelligence Unit (n.d.-b). Note: «…» – no data available.

As for human development, all the countries in the sample, except Bulgaria, Ukraine, China, and India, are countries with very high levels of human development (HDI > 0.8). It should be noted that Ukraine has significantly worsened its position in this global ranking, taking 100th rank according to the HDI 2022, compared to 77th according to the HDI 2021, that is, a loss of 23 positions.

The Fragile States Index reflects the level of institutional and social stability of a country, and measures the level of sustainability and evaluates the political and legal environment. An increase in the index score indicates the country's involvement in conflicts, increased instability and threats, i.e. the most unstable («fragile») countries are the leaders of the ranking. The EU countries are among the third most resistant countries, occupying positions at the bottom of the Fragile States Index Ranking. Ukraine, which is suffering from the war with Russia, ranks 1st with a fragility score of 95.9 out of 100.

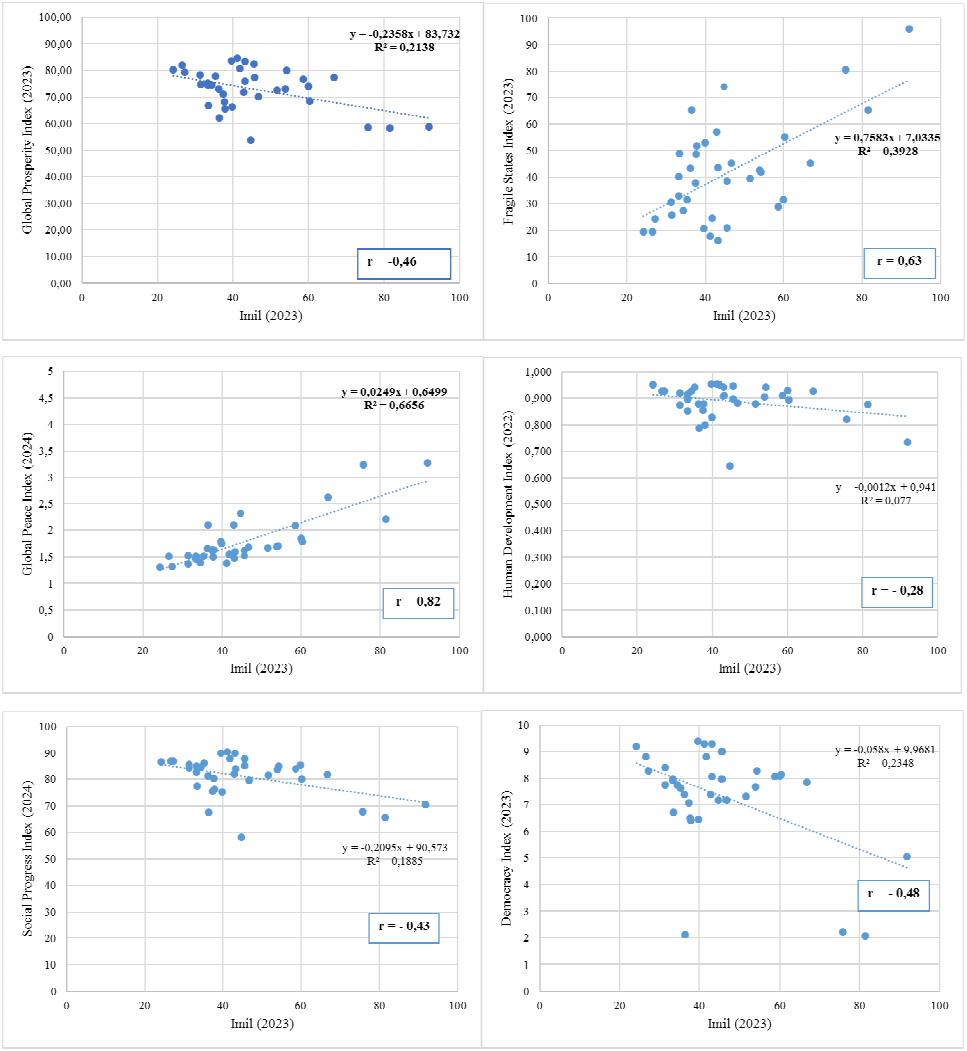
The Global Peace Index is a quantitative measure of the absence of violence or fear of violence to assess the level of the country's peacefulness. The absence of violence is defined as negative peace. The higher the Global Peace Index score, the higher the level of violence in the country. The index reflects the degree of involvement of countries in internal and external conflicts, as well as their role and duration of participation in conflicts; it evaluates the level of public security and protection, as well as the degree of militarization of the country. European countries are among the leaders in the ranking, with very high or high peace and security scores, excluding France and Cyprus. Among the countries in the sample, the lowest peace and security scores (indicating involvement in conflicts and intensive militarization) are Ukraine (159th in the ranking), Russia (157th), the United States (132nd), India (116th), and Saudi Arabia (102nd).

The Democracy Index estimates the level of development of democratic societies, respect for civil rights and freedoms, and the existence of independent and effective state institutions, and on its basis, countries are classified into four groups: «full democracy», «flawed democracy», hybrid regimes, and authoritarian regimes. It should be noted that according to the Democracy Index 2024 (EIU, n.d.), 74 of the 167 countries included in the ranking are democracies of some type. The number of «full democracies» remained at 24 countries in 2023, the same as in the previous year. The number of «flawed democracies» increased from 48 in 2022 to 50 in 2023. Out of the remaining 95 countries in the ranking, 34 are classified as «hybrid regimes», combining elements of formal democracy and authoritarianism, and 59 as «authoritarian regimes». At the same time, 45.4% of the world's population lives in some kind of democracy, of which 7.8% live in «full democracy,» and more than a third of the world's population (39.4%) lives under authoritarian rule, the share of which has been growing in recent years (Economist Intelligence Unit, n.d.-a). Fourteen countries in the sample (38.9%) are «full democracies» (including Japan and South Korea), 18 (50%) are «flawed democracies» (including the United States and India), 1 country (Ukraine) has a hybrid regime, and 3 countries (8.3%), namely Russia, China and Saudi Arabia, are authoritarian.

In order to determine the impact of the militarization level of economies on the indicators of socio-economic, political and legal development, a correlation and regression analysis was conducted, and the results are illustrated in Figure 3.

Figure 3

Evaluation of the impact of the index of military build-up on socio-economic, political and legal development of countries



Source: authors' calculations.

The received results allow us to draw the following conclusions:

- There is a significant and inverse relationship (correlation coefficient is -0.46) between the integrated index of military build-up intensity and the level of the country's prosperity, which indicates that intensive militarization of the economy reduces the level of the population's well-being. In particular, with a 1% increase in the intensity of militarization processes, the level of prosperity falls by 0.24%.
- A moderate and direct relationship has been established between the integrated index of military build-up intensity and the State Fragility Index, measured by a correlation coefficient of 0.63. A 1% increase in the intensity of militarization leads to a 0.76% increase in instability.
- A significant inverse relationship (correlation = 0.82) is observed between the level of militarization and the peace index, in particular, a 1% increase in the integrated index of military build-up intensity reduces the peace index by 0.02.
- The index has a weak inverse relationship with the level of human development.
- A noticeable and inverse relationship is established between the integrated index of military build-up intensity and the indices of social progress and democracy, namely, under the influence of a 1% increase in the intensity of militarization, they decrease by 0.21% and 0.06, respectively.

Thus, intensive militarization has a significant impact on ensuring peace and security, as well as on the institutional, legal, socio-economic stability and resilience of the country, and has a moderate negative impact on ensuring prosperity and welfare, increasing social progress and quality of life.

The presence of the identified patterns of relationship is confirmed by the calculation of the average scores of the studied indices (Table 11) within the framework of the previously conducted grouping of countries (Table 5) by the level of intensity of militarization. Thus, while in the group of countries with a low level of intensity of military build-up the level of prosperity is 73.72, in the group with a high level it is 20% lower and amounts to 58.62, demonstrating a decrease under the influence of intensification of militarization processes. The same patterns can be observed with the social progress index; in particular, the average value of the SPI is 17% lower in the group of countries with a high level of intensity of military build-up.

Table 11

Grouping of countries by the level of intensity of military build-up

Imil	Average scores of indices							
	Number of countries	Imil	GPRI	FSI	GPI	HDI	SPI	DI
Low	17	33.84	73.72	36.51	1.56	0.89	81.85	7.40
Meduim	12	46.19	75.47	38.48	1.69	0.90	82.85	8.12
High	5	64.30	71.04	48.28	2.32	0.90	79.72	6.87
Very high	2	86.68	58.62	80.60	2.74	0.80	68.03	3.57

Source: authors' calculations.

Countries with a low level of militarization intensity (FSI = 36.51) are 55% more stable and resilient than countries with a high level of intensity (FSI = 80.6), and they are also more peaceful and secure, with an average peace index score 73% lower (better). Countries in the low and medium intensity group have democratic governance models, while those with high and very high intensity are mostly hybrid and authoritarian regimes.

In the process of the study, the impact of military expenditure on the level and dynamics of socio-economic development of countries was evaluated. To conduct the analysis, a sample of countries was formed, including the EU countries, Ukraine and the countries with the highest level of military spending (in terms of value) (the same sample), but the retrospective period was taken as 20 years (2002-2022).

Based on the conducted analysis, the matrixes of relationships between the amount of military spending in a country and the level of impact of this spending on real GDP per capita were constructed (Figure 4 and Figure 5).

On the basis of the conducted calculations, groups of countries were identified (by the level of military expenditure and type of correlation between military expenditure and real GDP per capita):

Group 1: $r < 0.5$ (insignificant correlation), high military spending (> 6167.5 billion US dollars – median value) – Japan, the United Kingdom, Italy, Spain, Ukraine (inverse correlation).

Group 2: $r < 0.5$ (insignificant correlation), low military spending (< 6167.5 billion US dollars – median value) – Portugal, Luxembourg, Slovenia, Ireland (inverse correlation).

Group 3: 0.5 < r < 0.7 (moderate correlation), high military spending (> 6167.5 billion US dollars – median value) – Sweden, France (very high military spending > $46085.42 billion – top quartile), Belgium.

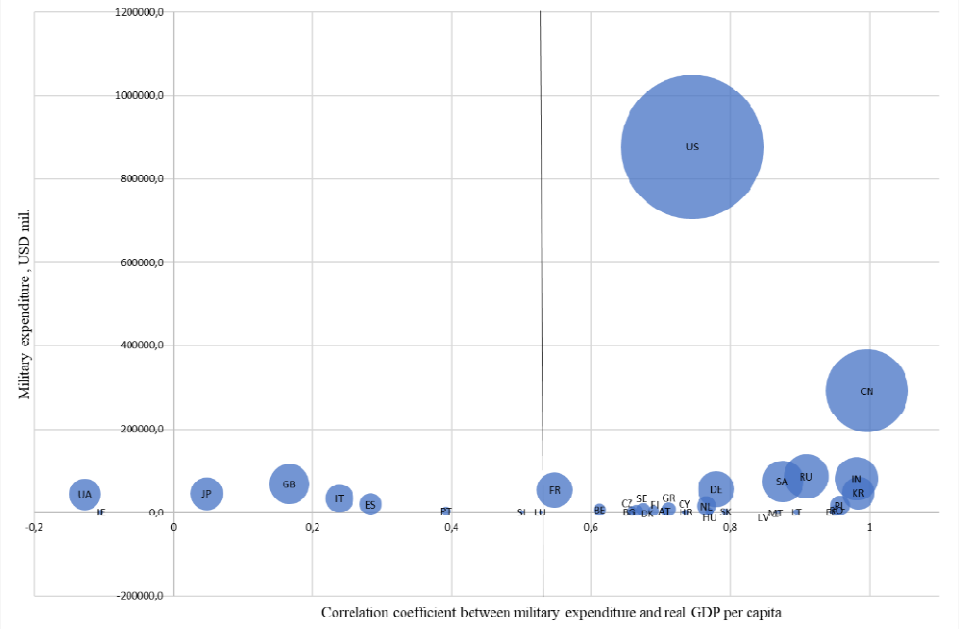
Group 4: 0.5 < r < 0.7 (moderate correlation), low military spending (< 6167.5 billion US dollars – median value) – Bulgaria, Czech Republic, Denmark, Finland.

Group 5: r > 0.7 (significant correlation), low military expenditures (< 6167.5 billion US dollars – median value) – Austria, Croatia, Cyprus, Estonia, Latvia, Lithuania, Malta, Slovakia, Hungary.

Group 6: r > 0.7 (significant correlation), high military expenditures (> 6167.5 billion US dollars – median value) – Greece, the Netherlands, Poland, Romania and very high military expenditures (> 46085.42 billion US dollars) – Germany, Russia, the United States, China, India, Saudi Arabia, South Korea.

Figure 4

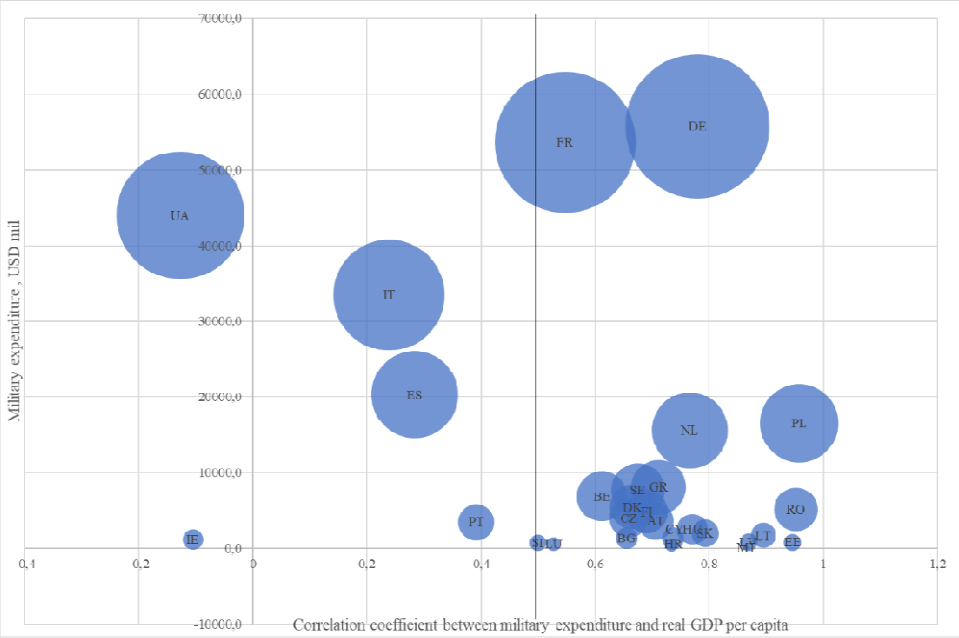
Matrix of interrelationships «amount of military expenditure – level of impact of military expenditure on socio-economic development» (sample of 36 countries)



Source: authors' calculations. Note*:* The size of the balloon is the country's share in global military expenditure (2022); these countries (36) account for 85.92% of global military spending.

Figure 5

Matrix of interrelationships «amount of military expenditure – level of impact of military expenditure on socio-economic development» (sample of 28 countries: EU + Ukraine)



Source: authors' calculations. Note: The size of the balloon is the country's share in global military expenditure (2022); these countries (28) account for 13.86% of global military spending.

Summarizing the results, it is possible to draw the following conclusions:

1. There is a positive correlation between military spending and real GDP per capita (34 among 36 countries, excluding Ukraine and Ireland), but the strength of the impact is quite different, which does not allow us to state definitively its significance.

2. Nine countries out of 36 (25% of the sample) demonstrate an insignificant relationship between expenditures and GDP per capita, and more than half of these countries have high levels of military expenditure.

3. Seventy-five percent of the countries in the sample have a significant and high level of correlation between expenditures and GDP.

4. It can be noted that the higher the level of military expenditure in a country, the more significant is the direct impact on the level of GDP per capita (in particular, 8 of the top 10 countries with the highest level of military expenditure demonstrate this, with the exception of the UK and Japan).

5. Fifty percent of the EU countries, despite low military spending (possibly due to the relatively small size of the national economy), demonstrate a significant relationship between military expenditure and GDP.

Conclusions

The implementation of an integrated index of the intensity of country's military build-up intensity develops a system for monitoring, evaluating and modeling of the processes of economic militarization of countries. Testing of the proposed index allowed us to conduct a comparative analysis of a sample of countries by the intensity of militarization processes, classify countries by the intensity of these processes, identify patterns, as well as assess and model their impact on indicators of socio-economic and political-legal development of countries.

The militarization of European economies is mostly moderate and aimed at maintaining regional stability amid escalating security risks. In particular, about 80% of the EU countries belong to groups with low or medium intensity of military build-up. Since 2022 there has been a refocusing of the EU's security policy towards strengthening defense capabilities and coordinating actions within the common security complex. The growth of militarization in EU countries has a positive impact on the development of the defense industry and stimulates technological innovation but creates risks of slowing down socio-economic development in the long term. The EU is forming a new security paradigm focused on the integration of defense efforts, collective resilience, and a balance between military expenditure and socio-economic development priorities.

Based on the assessment of the interrelationships between the integrated index of the intensity of the country's military build-up and the most significant international indices (the Global Prosperity Index, the Social Progress Index, the Human Development Index, the Global Peace Index, the Democracy Index, and the Fragile States Index), it has been proven that intensive militarization has a significant negative impact on peace and security, as well as on the institutional, legal, and socio-economic stability and sustainability of a country, and has a moderate negative impact on prosperity and well-being, social progress, and quality of life.

The intensification of geopolitical tensions in the world gives reason to expect a further increase in countries' military expenditure, which determines the continuation of research into the militarization of the economy in terms of analyz-

ing regional security complexes that consolidate the international actors' military potential for joint resolution of security development issues.

To ensure balanced development of the EU, it is crucial to find an optimal balance model between economic security, social welfare, and military needs. The results obtained can be used to formulate analytical recommendations on the EU policy in the field of security, defense, and economic development in the context of post-war reconfiguration of the regional space.

Finally, assessing the intensity of the militarization of countries' economies in terms of their impact on countries' development indicators will help optimize cooperation and coordinate joint actions to build strong security ecosystems. This issue is particularly relevant for the development of the European regional security complex, in which Ukraine will play a powerful role.

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Appendix

Input data

Year 2016

Country		$ME_{\%GDP}$	ME_{PC}	$ME_{\%GSp}$	$AFP_{\%LF}$	M_{Im}	M_{Ex}	Im
Austria	AT	0.73	329.9	1.46	0.49	3284	42947	1.382
Belgium	BE	0.89	374.8	1.68	0.68	840	14704	1.577
Bulgaria	BG	1.24	93.8	3.80	0.96	0	1130378	1.686
Croatia	HR	1.60	198.8	3.42	1.01	38086	0	1.626
Cyprus	CY	1.40	252.4	3.77	2.56	0	0	1.513
Czechia	CZ	1.00	184.1	2.51	0.43	0	769340	1.297
Denmark	DK	1.15	629.1	2.19	0.55	32256	67068	1.341
Estonia	EE	2.07	377.9	5.25	0.93	120468	0	1.485
Finland	FI	1.42	621.1	2.55	0.90	66868	224279	1.964
Greece	GR	2.57	467.6	5.15	3.07	156357	0	2.052
Spain	ES	1.14	300.5	2.68	0.86	8431	389119	1.726
Netherlands	NL	1.16	536.8	2.72	0.45	9693	617299	2.092
Ireland	IE	0.34	213.3	1.19	0.39	14403	0	1.391
Lithuania	LT	1.48	219.9	4.44	2.01	65045	0	1.628
Luxembourg	LU	0.38	406.8	0.95	0.52	1607	0	1.645
Latvia	LV	1.45	204.9	4.01	0.53	99702	0	1.361
Malta	MT	0.51	136.9	1.42	0.96	51423	0	1.645
Poland	PL	1.95	241.2	4.72	0.97	9999	10638	1.543
Portugal	PT	1.54	307.8	3.44	1.44	10173	833228	1.249
Romania	RO	1.43	133.6	4.49	1.67	95527	0	1.805
Slovakia	SK	1.12	184.3	2.62	0.57	0	200105	1.456
Slovenia	SI	1.00	216.6	2.18	1.33	0	201042	1.203
Sweden	SE	1.05	551.8	2.16	0.58	13575	511971	2.113
Hungary	HU	1.00	132.1	2.14	0.86	10886	0	1.139
Italy	IT	1.33	412.7	2.72	1.38	39956	330834	1.913
France	FR	1.92	732.5	3.38	1.00	1901	871424	2.754
Germany	DE	1.15	485.6	2.60	0.41	1585	728849	1.836
Ukraine	UA	3.15	65.8	7.78	1.36	5356	4873823	2.393
Russia	RU	5.43	476.6	14.83	1.93	9947	5334487	3.273
United States	US	3.42	1980.5	9.63	0.83	2450	522543	3.037
China	CN	1.77	140.4	5.48	0.35	10175	218012	2.048
India	IN	2.54	42.8	9.08	0.59	121231	21353	2.441
Saudi Arabia	SA	9.87	1962.6	27.75	1.80	442493	7508	2.628
United Kingdom	GB	1.98	804.4	5.00	0.44	10487	497935	2.58
South Korea	KR	2.46	723.5	12.62	2.26	69215	315401	1.894
Japan	JP	0.93	363.7	2.50	0.39	6895	0	1.298

Year 2017

Country		$ME_{\%GDP}$	ME_{PC}	$ME_{\%GSp}$	$AFP_{\%LF}$	M_{Im}	M_{Ex}	Im
Austria	AT	0.76	357.5	1.54	0.46	2397	52725	1.388
Belgium	BE	0.88	388.2	1.70	0.63	1392	33813	1.57
Bulgaria	BG	1.22	101.4	3.82	0.92	0	522680	1.773
Croatia	HR	1.64	220.1	3.68	0.99	23189	53512	1.633
Cyprus	CY	1.57	304.3	4.31	2.56	131172	0	1.587
Czechia	CZ	0.96	195.3	2.45	0.43	0	402508	1.338
Denmark	DK	1.14	656.7	2.25	0.51	15657	39142	1.32
Estonia	EE	2.01	407.5	5.12	0.86	122565	0	1.582
Finland	FI	1.35	622.6	2.52	0.92	18385	109526	1.893
Greece	GR	2.56	481.4	5.29	3.10	25520	150117	2.136
Spain	ES	1.23	343.9	2.99	0.86	6244	624407	1.787
Netherlands	NL	1.16	562.9	2.78	0.45	4317	1279577	2.073
Ireland	IE	0.31	215.7	1.17	0.38	593	0	1.348
Lithuania	LT	1.71	285.5	5.28	2.33	14657	0	1.691
Luxembourg	LU	0.50	545.8	1.20	0.67	1522	0	1.661
Latvia	LV	1.59	247.3	4.37	0.60	98413	0	1.392
Malta	MT	0.48	146.7	1.41	0.86	59327	0	1.661
Poland	PL	1.90	260.1	4.59	1.04	24398	19061	1.667
Portugal	PT	1.24	264.3	2.73	0.99	3614	252984	1.305
Romania	RO	1.73	184.3	5.56	1.39	41875	0	1.695
Slovakia	SK	1.10	192.6	2.80	0.58	49137	230005	1.367
Slovenia	SI	0.98	228.2	2.23	0.68	0	0	1.275
Sweden	SE	1.02	558.0	2.12	0.55	5915	149718	1.983
Hungary	HU	1.19	175.0	2.57	0.85	3494	0	1.145
Italy	IT	1.36	435.9	2.78	1.33	36344	365481	1.922
France	FR	1.91	758.7	3.38	1.00	3275	907462	2.761
Germany	DE	1.15	511.5	2.61	0.41	1165	505575	1.889
Ukraine	UA	2.88	73.0	6.94	1.39	3569	3345511	2.123
Russia	RU	4.25	459.8	12.20	1.95	5908	3937875	3.291
United States	US	3.32	1989.3	9.37	0.83	2706	602341	3.074
China	CN	1.71	148.1	5.26	0.35	10609	131351	2.052
India	IN	2.53	48.2	9.39	0.59	109071	21120	2.414
Saudi Arabia	SA	10.22	2126.8	30.71	1.81	548256	0	2.671
United Kingdom	GB	1.95	780.4	4.99	0.43	37386	416768	2.628
South Korea	KR	2.42	766.6	12.33	2.24	59270	454693	1.949
Japan	JP	0.91	353.4	2.49	0.39	8802	406	1.346

Year 2018

Country		$ME_{\%GDP}$	ME_{PC}	$ME_{\%GSp}$	$AFP_{\%LF}$	M_{Im}	M_{Ex}	Im
Austria	AT	0.75	381.1	1.53	0.49	1319	15385	1.355
Belgium	BE	0.89	421.5	1.71	0.61	184	38653	1.532
Bulgaria	BG	1.45	136.3	4.22	1.11	0	210938	1.702
Croatia	HR	1.55	232.5	3.42	1.01	3253	0	1.585
Cyprus	CY	1.76	378.8	4.14	2.50	0	0	1.555
Czechia	CZ	1.09	254.1	2.68	0.41	2811	361445	1.353
Denmark	DK	1.28	792.5	2.53	0.48	13732	70059	1.338
Estonia	EE	2.01	464.8	5.12	0.95	55511	0	1.544
Finland	FI	1.36	679.8	2.56	0.92	31555	141454	1.796
Greece	GR	2.72	547.2	5.60	3.16	18392	0	2.102
Spain	ES	1.25	381.7	3.01	0.86	10480	495884	1.803
Netherlands	NL	1.22	651.5	2.94	0.44	15317	509823	2.044
Ireland	IE	0.29	229.7	1.14	0.36	1293	0	1.307
Lithuania	LT	1.97	377.1	5.93	2.70	14883	1116250	1.683
Luxembourg	LU	0.50	588.2	1.18	0.62	0	0	1.639
Latvia	LV	2.06	367.9	5.42	0.69	60995	0	1.429
Malta	MT	0.44	152.3	1.24	0.70	0	0	1.639
Poland	PL	2.04	317.5	4.93	1.07	9681	40762	1.575
Portugal	PT	1.34	316.5	3.10	1.00	7841	12381	1.269
Romania	RO	1.79	223.5	5.61	1.41	14385	0	1.780
Slovakia	SK	1.22	237.7	3.08	0.58	32034	113060	1.386
Slovenia	SI	0.98	254.8	2.25	0.70	0	0	1.205
Sweden	SE	1.03	574.9	2.12	0.28	1260	277250	1.849
Hungary	HU	1.01	166.4	2.19	0.84	16816	0	1.146
Italy	IT	1.36	468.8	2.81	1.31	13719	257657	1.96
France	FR	1.84	791.0	3.31	0.99	6915	715884	2.767
Germany	DE	1.17	559.4	2.64	0.41	352	278278	1.912
Ukraine	UA	3.19	94.2	7.65	1.40	53480	1940545	2.065
Russia	RU	3.72	422.8	11.40	1.95	3741	4328049	3.237
United States	US	3.32	2088.2	9.35	0.83	1851	471143	3.104
China	CN	1.67	162.9	5.05	0.35	15250	98741	2.024
India	IN	2.42	49.0	9.10	0.59	78359	17389	2.565
Saudi Arabia	SA	9.14	2213.8	25.94	1.74	386967	0	2.599
United Kingdom	GB	1.94	831.6	5.01	0.43	18040	237868	2.546
South Korea	KR	2.50	841.7	12.25	2.13	66073	610882	2.042
Japan	JP	0.96	381.6	2.62	0.38	14978	595	1.309

Year 2019

Country		$ME_{\%GDP}$	ME_{PC}	$ME_{\%GSp}$	$AFP_{\%LF}$	M_{Im}	M_{Ex}	Im
Austria	AT	0.75	372.6	1.54	0.47	3824	6748	1.328
Belgium	BE	0.89	412.6	1.72	0.50	1680	106370	1.529
Bulgaria	BG	3.13	308.4	8.74	1.09	2904	145178	1.788
Croatia	HR	1.61	242.6	3.50	1.01	8134	0	1.573
Cyprus	CY	1.79	386.7	4.69	2.46	73226	0	1.562
Czechia	CZ	1.15	272.3	2.81	0.46	396	126708	1.357
Denmark	DK	1.30	777.5	2.61	0.49	12410	5772	1.288
Estonia	EE	2.05	480.4	5.20	1.00	57912	0	1.557
Finland	FI	1.35	657.1	2.54	0.98	32028	93105	1.708
Greece	GR	2.62	514.0	5.49	3.14	45310	0	2.085
Spain	ES	1.23	367.8	2.93	0.86	2510	220896	1.724
Netherlands	NL	1.32	701.9	3.20	0.43	54274	330699	2.104
Ireland	IE	0.28	227.9	1.15	0.37	9024	0	1.279
Lithuania	LT	2.00	396.3	5.91	2.52	71157	0	1.628
Luxembourg	LU	0.55	619.8	1.27	0.32	4292	0	1.621
Latvia	LV	2.01	362.8	5.36	0.61	90576	0	1.459
Malta	MT	0.51	182.4	1.43	0.75	0	0	1.621
Poland	PL	1.98	311.1	4.72	1.03	44291	16777	1.539
Portugal	PT	1.37	322.6	3.24	0.99	18334	12501	1.264
Romania	RO	1.84	238.2	5.45	1.40	5179	0	1.713
Slovakia	SK	1.70	330.3	4.21	0.58	14190	18919	1.416
Slovenia	SI	1.05	275.6	2.44	0.68	0	0	1.188
Sweden	SE	1.09	581.9	2.28	0.27	1311	402713	1.754
Hungary	HU	1.34	226.2	2.93	0.84	9755	0	1.145
Italy	IT	1.31	435.7	2.71	1.32	8800	190921	1.909
France	FR	1.84	769.5	3.32	0.99	3445	1323625	2.767
Germany	DE	1.26	587.7	2.81	0.41	977	262266	1.869
Ukraine	UA	3.52	123.2	8.51	1.47	14946	1072243	2.026
Russia	RU	3.86	447.0	11.40	1.98	295	3323460	3.226
United States	US	3.43	2236.6	9.55	0.83	4163	509238	3.086
China	CN	1.68	167.6	4.91	0.33	10525	110995	2.024
India	IN	2.55	52.3	9.14	0.59	122372	6348	2.502
Saudi Arabia	SA	8.13	1907.3	23.15	1.63	415472	0	2.514
United Kingdom	GB	1.98	837.7	5.14	0.43	11994	319141	2.489
South Korea	KR	2.67	861.0	11.85	2.13	90528	412977	2.102
Japan	JP	0.99	400.3	2.66	0.38	18992	0	1.306

Year 2020

Country		$ME_{\%GDP}$	ME_{PC}	$ME_{\%GSp}$	$AFP_{\%LF}$	M_{Im}	M_{Ex}	Im
Austria	AT	0.88	426.4	1.56	0.50	2988	20687	1.332
Belgium	BE	1.01	458.8	1.73	0.46	17102	51305	1.556
Bulgaria	BG	1.59	161.1	4.21	1.12	62528	42633	1.699
Croatia	HR	1.71	238.9	3.15	1.13	0	0	1.583
Cyprus	CY	1.94	400.5	4.36	1.99	118919	0	1.621
Czechia	CZ	1.32	303.7	2.81	0.50	3659	126029	1.326
Denmark	DK	1.38	843.8	2.57	0.50	17476	0	1.278
Estonia	EE	2.29	541.2	5.12	0.99	79693	0	1.552
Finland	FI	1.43	698.2	2.51	0.80	19493	44136	1.646
Greece	GR	3.06	553.9	5.12	3.20	53586	0	2.038
Spain	ES	1.37	372.8	2.60	0.87	5555	759704	1.748
Netherlands	NL	1.44	763.7	3.15	0.43	63201	507808	2.147
Ireland	IE	0.27	231.8	0.98	0.37	2566	0	1.272
Lithuania	LT	2.07	431.3	4.93	2.50	170280	0	1.647
Luxembourg	LU	0.58	679.2	1.22	0.31	119404	0	1.615
Latvia	LV	2.15	393.5	5.22	0.91	29077	0	1.473
Malta	MT	0.58	195.2	1.27	0.73	0	0	1.615
Poland	PL	2.23	353.2	4.60	1.04	23855	0	1.496
Portugal	PT	1.43	320.5	2.90	1.01	19648	200845	1.296
Romania	RO	2.01	262.6	5.24	1.44	75190	0	1.749
Slovakia	SK	1.92	374.9	4.28	0.66	23423	28108	1.26
Slovenia	SI	1.06	273.0	2.07	0.68	0	0	1.145
Sweden	SE	1.15	621.0	2.25	0.27	548	515488	1.792
Hungary	HU	1.76	286.6	3.46	0.97	34981	0	1.165
Italy	IT	1.74	544.6	3.06	1.35	10593	446913	1.957
France	FR	2.00	808.1	3.26	1.00	8121	898233	2.78
Germany	DE	1.37	636.4	2.73	0.42	1363	301461	1.838
Ukraine	UA	3.81	135.5	8.30	1.45	11493	740657	2.024
Russia	RU	4.17	422.9	10.59	1.99	67	2614736	3.226
United States	US	3.70	2348.0	8.25	0.84	3803	447568	3.19
China	CN	1.76	179.2	4.77	0.33	6019	47931	2.062
India	IN	2.81	52.9	8.78	0.59	106566	56521	2.495
Saudi Arabia	SA	9.18	1854.4	22.51	1.76	339248	0	2.581
United Kingdom	GB	2.16	859.3	4.33	0.44	24168	231670	2.481
South Korea	KR	2.80	899.5	11.17	1.99	77601	469497	2.286
Japan	JP	1.02	406.4	2.29	0.38	18257	0	1.337

Year 2021

Country		$ME_{\%GDP}$	ME_{PC}	$ME_{\%GSp}$	$AFP_{\%LF\ (2020)}$	M_{Im}	M_{Ex}	Im
Austria	AT	0.87	464.1	1.58	0.50	7094	47987	1.343
Belgium	BE	1.05	536.4	1.88	0.46	42447	153142	1.611
Bulgaria	BG	1.52	184.9	3.93	1.12	1190	83292	1.634
Croatia	HR	2.01	333.5	3.94	1.13	0	0	1.588
Cyprus	CY	1.91	445.6	4.45	1.99	37310	0	1.607
Czechia	CZ	1.40	367.0	2.96	0.50	11711	17744	1.265
Denmark	DK	1.32	907.2	2.53	0.50	74688	59159	1.336
Estonia	EE	2.01	565.0	4.83	0.99	48399	0	1.55
Finland	FI	1.26	676.3	2.27	0.80	17877	50595	1.587
Greece	GR	3.86	800.3	6.63	3.20	114596	0	2.061
Spain	ES	1.37	418.1	2.74	0.87	9338	410887	1.744
Netherlands	NL	1.38	811.8	2.91	0.43	63321	336998	2.205
Ireland	IE	0.25	254.4	1.02	0.37	0	25322	1.263
Lithuania	LT	1.97	485.8	5.07	2.50	194614	29941	1.713
Luxembourg	LU	0.47	635.1	1.09	0.31	0	0	1.612
Latvia	LV	2.07	440.9	4.83	0.91	38029	0	1.482
Malta	MT	0.50	198.5	1.12	0.73	0	0	1.612
Poland	PL	2.22	399.8	5.03	1.04	10861	4403	1.484
Portugal	PT	1.54	383.2	3.24	1.01	2348	43047	1.278
Romania	RO	1.86	277.1	4.97	1.44	64028	0	1.646
Slovakia	SK	1.77	378.1	3.69	0.66	0	0	1.244
Slovenia	SI	1.24	366.9	2.52	0.68	14556	0	1.145
Sweden	SE	1.19	746.3	2.39	0.27	19071	518981	1.828
Hungary	HU	1.68	317.6	3.59	0.97	10434	0	1.177
Italy	IT	1.72	600.5	3.11	1.35	9743	776204	2.003
France	FR	1.92	865.8	3.22	1.00	1385	1301973	2.773
Germany	DE	1.33	673.6	2.60	0.42	4488	219236	1.746
Ukraine	UA	3.23	136.7	7.32	1.45	19523	735861	2.129
Russia	RU	3.72	451.7	10.22	1.99	327	1555345	3.211
United States	US	3.46	2428.2	8.04	0.84	3723	471540	3.114
China	CN	1.61	198.0	4.96	0.33	5505	82041	2.039
India	IN	2.47	54.8	7.92	0.59	132273	10475	2.405
Saudi Arabia	SA	7.58	1788.1	22.81	1.76	198935	0	2.587
United Kingdom	GB	2.16	989.6	4.72	0.44	27948	208817	2.443
South Korea	KR	2.81	991.6	10.75	1.99	43884	299159	2.268
Japan	JP	1.02	404.3	2.39	0.38	18810	0	1.325

Year 2022

Country		$ME_{\%GDP}$	ME_{PC}	$ME_{\%GSp}$	$AFP_{\%LF\ (2020)}$	$M_{Im\ (}$	M_{Ex}	Im
Austria	AT	0.77	399.9	1.52	0.50	849	29728	1.328
Belgium	BE	1.18	588.5	2.23	0.46	27081	207392	1.672
Bulgaria	BG	1.51	195.2	4.06	1.12	4427	199234	1.619
Croatia	HR	2.17	322.4	3.93	1.13	40503	55866	1.575
Cyprus	CY	1.81	404.1	4.52	1.99	0	0	1.55
Czechia	CZ	1.36	373.0	3.17	0.50	23747	399221	1.279
Denmark	DK	1.42	937.1	2.93	0.50	36235	167430	1.403
Estonia	EE	2.09	613.4	5.34	0.99	44618	157477	1.545
Finland	FI	1.72	868.2	3.22	0.80	12029	102600	1.585
Greece	GR	3.69	785.6	7.26	3.20	226582	32172	2.114
Spain	ES	1.47	434.7	3.14	0.87	12202	670052	1.751
Netherlands	NL	1.58	906.8	3.67	0.43	68853	292253	2.079
Ireland	IE	0.23	231.9	1.03	0.37	0	86281	1.301
Lithuania	LT	2.52	650.7	6.41	2.50	138078	408598	1.835
Luxembourg	LU	0.70	879.5	1.60	0.31	0	0	1.624
Latvia	LV	2.05	459.0	5.16	0.91	48861	244307	1.471
Malta	MT	0.50	195.9	1.22	0.73	248268	0	1.624
Poland	PL	2.39	439.1	5.84	1.04	92861	656857	1.542
Portugal	PT	1.35	345.2	3.14	1.01	0	7837	1.211
Romania	RO	1.73	272.5	4.97	1.44	41903	0	1.624
Slovakia	SK	1.76	365.2	3.82	0.66	1732	614922	1.271
Slovenia	SI	1.19	353.8	2.55	0.68	0	632664	1.23
Sweden	SE	1.31	755.7	2.72	0.27	53742	114920	1.864
Hungary	HU	1.53	267.8	3.30	0.97	33270	0	1.191
Italy	IT	1.68	555.7	3.17	1.35	11514	890358	2.07
France	FR	1.94	817.9	3.43	1.00	792	1087046	2.769
Germany	DE	1.39	664.7	2.75	0.42	4458	369874	1.73
Ukraine	UA	33.55	1018.7	42.20	1.45	1647324	311521	2.349
Russia	RU	4.06	592.4	10.35	1.99	5758	1258691	3.187
United States	US	3.45	2631.2	9.32	0.84	3290	570565	3.081
China	CN	1.60	201.6	4.79	0.33	4493	112285	2.03
India	IN	2.43	57.8	8.26	0.59	83298	3220	2.388
Saudi Arabia	SA	7.42	2092.7	27.79	1.76	204948	0	2.694
United Kingdom	GB	2.23	999.5	5.29	0.44	25865	486877	2.452
South Korea	KR	2.72	903.3	10.57	1.99	24374	124857	2.182
Japan	JP	1.08	366.2	2.53	0.38	30331	3054	1.333

Year 2023

Country		$ME_{\%GDP}$	ME_{PC}	$ME_{\%GSp}$	$AFP_{\%LF\ (2020)}$	$M_{Im\ (2022)}$	$M_{Ex\ (2022)}$	Im
Austria	AT	0.84	492.2	1.63	0.50	849	29728	1.323
Belgium	BE	1.21	652.9	2.22	0.46	27081	207392	1.719
Bulgaria	BG	1.85	286.8	5.02	1.12	4427	199234	1.613
Croatia	HR	1.78	359.0	3.90	1.13	40503	55866	1.678
Cyprus	CY	1.82	449.9	4.62	1.99	0	0	1.725
Czechia	CZ	1.52	481.8	3.30	0.50	23747	399221	1.340
Denmark	DK	1.95	1377.9	4.10	0.50	36235	167430	1.526
Estonia	EE	2.87	899.1	6.77	0.99	44618	157477	1.66
Finland	FI	2.42	1325.2	4.44	0.80	12029	102600	1.571
Greece	GR	3.23	747.5	6.57	3.20	226582	32172	2.234
Spain	ES	1.51	498.7	3.21	0.87	12202	670052	1.851
Netherlands	NL	1.53	943.6	3.39	0.43	68853	292253	2.103
Ireland	IE	0.22	251.0	1.02	0.37	0	86281	1.328
Lithuania	LT	2.7	795.0	6.93	2.50	138078	408598	1.828
Luxembourg	LU	0.8	1011.4	1.62	0.31	0	0	1.704
Latvia	LV	2.3	571.2	5.63	0.91	48861	244307	1.534
Malta	MT	0.6	210.5	1.38	0.73	248268	0	1.704
Poland	PL	3.8	771.5	8.12	1.04	92861	656857	1.657
Portugal	PT	1.52	412.1	3.44	1.01	0	7837	1.224
Romania	RO	1.61	282.0	4.37	1.44	41903	0	1.747
Slovakia	SK	2.02	459.6	4.19	0.66	1732	614922	1.424
Slovenia	SI	1.34	428.1	2.83	0.68	0	632664	1.256
Sweden	SE	1.47	825.0	3.06	0.27	53742	114920	1.968
Hungary	HU	2.13	428.9	4.41	0.97	33270	0	1.264
Italy	IT	1.61	603.5	3.04	1.35	11514	890358	2.300
France	FR	2.06	946.6	3.57	1.00	792	1087046	2.776
Germany	DE	1.52	802.3	3.08	0.42	4458	369874	1.960
Ukraine	UA	36.65	1762.2	58.17	1.45	1647324	311521	3.009
Russia	RU	5.86	757.8	16.14	1.99	5758	1258691	3.090
United States	US	3.36	2694.2	9.06	0.84	3290	570565	3.142
China	CN	1.67	207.9	4.97	0.33	4493	112285	2.058
India	IN	2.44	58.5	8.15	0.59	83298	3220	2.421
Saudi Arabia	SA	7.09	2051.9	24.04	1.76	204948	0	2.969
United Kingdom	GB	2.26	1106.4	5.15	0.44	25865	486877	2.504
South Korea	KR	2.81	925.5	11.10	1.99	24374	124857	2.159
Japan	JP	1.20	406.8	2.82	0.38	30331	3054	1.725

Received: June 12, 2025.
Reviewed: July 15, 2025.
Accepted: September 12, 2025.