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FUNDING AND LOGISTICAL SUPPORT FOR THE NATIONAL RESISTANCE IN THE CONTEXT OF IMPLEMENTING THE CONCEPT OF MODERN FINANCE

Nina Petrukha[1], Serhii Petrukha[2], Bohdan Hudenko[3]

Abstract. The relevance of this study stems from the need to establish a sustainable system for the financing and logistical support of national resistance in the context of prolonged armed aggression, rising defence expenditure and limited budgetary resources. Contemporary security challenges require the development of new approaches to the mobilisation and management of resources capable of ensuring an adequate level of the state's defence resilience. The aim of this study is to develop theoretical and methodological foundations and practical recommendations for improving the financing and logistical support of national resistance in Ukraine in the context of implementing the concept of modern finance. The subject of the study is the processes of financial and resource support for the components of national resistance. The study employs systemic, institutional, comparative and economic-statistical approaches, as well as methods of analysis and synthesis, econometric modelling, index analysis and expert assessment. To assess the relationship between a country's economic potential and defence expenditure, a regression model was constructed, which demonstrated the existence of a strong statistical correlation between GDP per capita and expenditure on security and defence (R^2 = 0,9213). In addition, a comprehensive indicator of the effectiveness of funding for the security and defence sector has been developed, which takes into account the level of defence expenditure, its share of GDP, the structure of public expenditure, the Ministry of Defence of Ukraine's share in the funding of the security and defence sector, and the rate of growth in the relevant expenditure. The study's findings showed that Ukraine's expenditure on security and defence rose from 191.7 billion UAH in 2018 to 3,830 billion UAH in 2025, whilst its share of public expenditure reached 70 per cent. The value of the integrated indicator rose from 0.0091 in 2021 to 0.9043 in 2025, indicating a significant increase in the priority and scale of defence funding. A model for multi-channel funding of national resistance has been proposed, combining resources from the state and local budgets, international aid, military bonds, public-private partnerships and the voluntary sector. The practical value of this work lies in the potential to use the proposed approaches to improve public policy in the areas of national resistance, medium-term budget planning and the digital management of defence resources.

Keywords: national resistance, defence funding, logistical support, modern finance, military bonds, territorial defence, defence resilience, public finances, local budgets, budgetary expenditure, macroeconomic stability, public-private partnerships, the security and defence sectors.

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[1] Kyiv National University of Construction and Architecture, Ukraine
E-mail: nninna1983@gmail.com
ORCID: https://orcid.org/0000-0002-3805-2215
[2] West Ukrainian National University, Ukraine *(corresponding author)*
E-mail: psv03051984@gmail.com
ORCID: https://orcid.org/0000-0002-8859-0724
[3] Research Financial Institute,
State Educational and Scientific Establishment
"The Academy of Financial Management", Ukraine
E-mail: bgdngdnk@gmail.com
ORCID: https://orcid.org/0000-0003-2246-7130

1. Introduction

The Russian Federation's full-scale armed aggression against Ukraine has led to a radical transformation in approaches to ensuring national security and defence. One of the key elements of the state's defence resilience has become the national resistance system, which brings together territorial defence, the resistance movement and the preparation of citizens to carry out tasks to defend the state. The effectiveness of this system depends to a large extent on the adequacy of financial resources, the level of logistical support and the state's ability to ensure their timely mobilisation and rational allocation.

The relevance of this study stems from the need to develop a sustainable model for financing national defence in the face of prolonged military threats, rising defence expenditure and limited budgetary resources. Wartime experience has shown that traditional mechanisms of budgetary funding need to be supplemented by multi-channel resource mobilisation tools, which combine the capabilities of the national budget, local budgets, international aid, war bonds, public-private partnerships and civil society resources. In this context, the concept of modern finance takes on particular significance, as it emphasises the priority of ensuring that the state fulfils its socially significant functions whilst maintaining macroeconomic stability.

The problem lies in the lack of a comprehensive, scientifically grounded approach to the funding and logistical support of national resistance, one that would integrate state, local, international and civil society resources into a single management system.

The scientific novelty of this study lies in the development of a conceptual model for the financing and logistical support of national resistance, based on the principles of modern finance, as well as in the proposed integrated approach to assessing the effectiveness of funding for the security and defence sector, which takes into account the scale, structure and prioritisation of defence expenditure.

The aim of the study is to develop theoretical and methodological principles and practical recommendations for improving the financing and logistical support of national resistance in the context of implementing the concept of modern finance.

To achieve the stated objective, the following tasks have been identified:

– To examine the theoretical principles of the concept of modern finance and the possibilities for their application in the defence sector.
– To analyse international experience in the funding of territorial defence and national resilience systems.
– To assess the current state of funding and logistical support for the national resistance.
– To construct an econometric model of the relationship between a country's economic potential and defence expenditure.
– To develop a comprehensive indicator for assessing the effectiveness of funding for the security and defence sector.
– To put forward practical recommendations on improving the mechanisms for funding and managing the resources of the national resistance.

The hypothesis of this study is that the introduction of a multi-channel funding model, which combines resources from the state budget, local budgets, international aid, war bonds, public-private partnership mechanisms and civil society, ensures a higher level of resilience and effectiveness of the national resistance system compared with models based exclusively on centralised budgetary funding.

The research methodology involves a step-by-step progression from theoretical analysis to the empirical validation of the findings. The first part examines the concept of modern finance, the specific features of the use of public finances during periods of military crisis, and international experience in financing national resilience systems. The second part is devoted to an analysis of the funding and logistical support for national resistance, the development of econometric models, and a comprehensive indicator for assessing the effectiveness of funding for the security and defence sector. The concluding section contains practical recommendations for improving the mechanisms for providing resources to national resistance, as well as conclusions based on the results of the study.

2. Methodology

The methodological basis of the study is an interdisciplinary approach that combines the principles of public finance theory, the concepts of modern inance, the economics of security, and the theory of national resilience. The study aims to assess the characteristics of the funding and logistical support for national resistance, as well as to develop a model for improving the efficiency of resource provision to the security and defence sector.

The research is based on Ukrainian legislation, in particular the Law of Ukraine "On Fundamentals of National Resistance", as well as statistical and analytical data from the Ministry of Finance of Ukraine, the Ministry of Defence of Ukraine, the State Statistics Service of Ukraine, international financial organisations, and open data from the World Bank and other international institutions. The study covers the period 2018–2025, enabling a comparison of trends in funding for the security and defence sector prior to the outbreak of the full-scale Russo-Ukrainian war and under martial law (The Law of Ukraine

"On Fundamentals of National Resistance" of July 16, 2021, No. 1702-IX; Open Budget, n.d.; World Bank, n.d.).

A range of general scientific and specialised methods was applied in the course of the research. The method of analysis and synthesis was used to summarise the theoretical principles of the concept of modern finance and to identify the specific features of its application in the field of defence financing. A systems approach enabled national resilience to be considered as a holistic, multi-level system encompassing financial, logistical, organisational and institutional components. Institutional analysis was used to examine the mechanisms of state regulation and funding of the components of national resilience.

To examine international experience, a comparative method was employed, which enabled a comparison of models for financing territorial defence and national resilience systems in Israel, Finland, Switzerland, Poland and Estonia. The results of this comparison formed the basis for formulating recommendations on improving the Ukrainian model for the financing and logistical support of national resistance (Israel Defense Forces, n.d.; The Finnish Ministry of Defence, 2025; DDPS, n.d.; MNDRP, n.d.; MDE, n.d.).

The empirical part of the study is based on the use of economic-statistical and econometric methods. To assess the relationship between a country's economic potential and the level of funding for the security and defence sector, a linear regression model has been constructed to examine the relationship between security and defence expenditure and GDP per capita. The quality of the model was assessed using the correlation coefficient and the coefficient of determination *(R^2)*, which made it possible to determine the strength of the statistical relationship between the variables under study (Open Budget, n.d.; World Bank, n.d.).

To provide a comprehensive assessment of the effectiveness of funding for the security and defence sector, an integrated index has been proposed which takes into account five key indicators, namely the level of expenditure on security and defence, the share of defence expenditure in GDP, the share of defence expenditure in the structure of public expenditure, the share of the Ministry of Defence of Ukraine (hereinafter referred to as the MoD) in the total funding of the security and defence sector, and the rate of growth in defence expenditure. The calculation of the composite index was carried out in several stages: the development of a system of indicators, the standardisation of data, the determination of weighting coefficients using an expert-based method, and the calculation of the weighted sum of the standardised indicator values. This approach enables a comprehensive assessment of the level of financial support for the security and defence sector and facilitates cross-period comparisons.

3. Review of the Literature Used

The issues of funding, logistical support and institutional resilience within the security and defence sector have become particularly pressing in the context of the full-scale war against Ukraine. In contemporary research, national security is viewed not merely as a sphere of military management, but as a comprehensive system for threat forecasting, resource mobilisation, institutional coordination and the engagement of society in ensuring defence resilience. In particular, Mykolaichuk M., Petrukha N., Akimova L., Pozniakovska and others set out the conceptual foundations for analysing and forecasting threats to national security in the current context, emphasising the need for a systematic approach to risk assessment and the development of response mechanisms (Mykolaichuk et al., 2025). In this context, the funding of the national resistance should be regarded as one of the key instruments for maintaining the state's functional capacity in the face of protracted security challenges.

A separate area of research concerns the role of non-state actors in ensuring the state's defence capability. Madryha T., Bilousov Y., Zubrytska L. and others analyse the significance of the volunteer movement in the state's security policy in the context of military operations and highlight its ability to respond promptly to the needs of the security and defence sector (Madryha et al., 2023). This approach is further developed by I. Drobina, who regards volunteers as key players in Ukraine's security and defence sector (Drobina, 2023). She emphasises that the voluntary sector performs not only a supporting role but also, in effect, a resource-mobilisation function, particularly in circumstances where formal budgetary mechanisms do not always ensure the necessary speed of delivery of essential logistical resources. The role of non-state institutions in strengthening the security and defence sector is also examined by Yu. Romanyuk and V. Palyvoda, who emphasise the importance of civil society, the expert community and non-governmental organisations in shaping a sustainable security architecture (Romanyuk & Palyvoda, 2020).

Public-private partnerships are a key element of the modern model for defence resource provision. O. Didych and M. Naumko examine public-private partnerships in ensuring national security in the context of a full-scale invasion and demonstrate that co-operation between the state and the private sector can enhance flexibility, technological capability and the speed of response to defence needs (Didych & Naumko, 2023). This approach is particularly important for the development of dual-use products, unmanned systems, communications equipment, logistics solutions and digital resource management tools. In a broader European context, K. Schilde analyses the transformation of the European Union (hereinafter the EU) as a regulatory actor in the security sphere and demonstrates that contemporary security policy increasingly depends on the ability of states and supranational institutions to shape rules, coordinate resources and maintain defence-industrial capabilities (Schilde, 2023).

A significant proportion of the academic literature is devoted to issues relating to the funding of the security and defence sector and the impact of military operations on the structure of public expenditure. V. Shubin examines the funding of national security through the prism of the objectives and principles of budgetary policy, emphasising the need for the targeted, adequate and transparent use of financial resources (Shubin, 2022). O. Soldatenko, on the other hand, analyses the funding of the Armed Forces of Ukraine (hereinafter referred to as the AFU) under martial law and links it to the state's path towards European integration (Soldatenko, 2023). M. Tkach, S. Slobodyanyk and P. Makoshenets examine the financial and technical assistance provided to Ukraine by partner countries between 2022 and the first half of 2024, emphasising its critical importance for maintaining defence capabilities and macro-financial stability (Tkach et al., 2024). N. Gorobets, meanwhile, focuses on the specific aspects of meeting the needs of the Armed Forces of Ukraine as an entity within the security and defence sector, which is important for understanding the practical aspects of logistical support in the context of the Russo-Ukrainian war (Gorobets, 2024).

The issue of military expenditure is also being actively researched from international and comparative perspectives. N. Seliuchenko and A. Panchenko analyse the military expenditure of influential (leading) countries worldwide during the period of hostilities in Ukraine, which allows the Ukrainian situation to be compared with global trends in defence funding (Seliuchenko & Panchenko, 2023). In contrast, D. Silva and his colleagues, in a SIPRI study, examine global trends in military expenditure and demonstrate the growing importance of defence funding against the backdrop of an escalating international security situation (Silva et al., 2021). S. Jackson examines the interrelationship between national security exceptions, the global political economy and militarisation, which allows for a broader interpretation of defence expenditure as an element not only of a state's budgetary policy but also of its geo-economic policy (Jackson, 2013).

A separate section of international research focuses on models of territorial defence, volunteer units and the concept of total defence. Using the Baltic states as an example, L. Beehner and L. Collins analyse whether volunteer forces are capable of deterring war by major powers, and argue that such units can play an important role in raising the cost of aggression for the enemy (Beehner & Collins, 2019). K. Stringer views special operations forces as integrators of the overall defence and resistance system, emphasising the need to coordinate the military, civilian and volunteer components of defence (Stringer, 2022). These approaches are relevant to Ukraine, as the national resistance system also involves a combination of territorial defence, the resistance movement, citizen preparedness and co-operation between state and non-state actors.

A review of the academic literature indicates that existing studies provide a fairly thorough examination of the issues surrounding the overall funding of the security and defence sector, the role of the voluntary sector, international aid, public-private partnerships and territorial defence. At the same time, the issue of developing an integrated model for the funding and logistical support of national resistance – one that would combine state, local, international, private and civil society resources into a single management system – remains insufficiently addressed. It is precisely this research gap that determines the relevance of further research and justifies the need to develop a multi-channel model for the resource provision of national resistance in the context of implementing the concept of modern finance.

4. Presentation of the Main Content

4.1. Theoretical and Institutional Foundations of the Financing of National Resistance in the Context of the Ontogenesis of the Concept of Modern Finance

The theoretical foundations of the modern finance concept are based on several fundamental principles. Firstly, the government of a country that issues its own currency does not face the same financial constraints as households or private enterprises, as it has the ability to ensure that its financial obligations are met by issuing money. Secondly, taxes are viewed not only as a source of budgetary revenue, but also as a tool for shaping demand for the national currency and regulating aggregate demand with a view to curbing inflation. Thirdly, government bonds are viewed primarily as a tool for managing liquidity and interest rates, rather than as the sole mechanism for financing budgetary expenditure. Fourthly, the main constraint on fiscal expansion is considered to be not the budget deficit as such, but the level of inflation arising from government demand exceeding the economy's available production and resource capacities (Wray, 2015; Kelton, 2020).

For Ukraine, the concept of modern finance is significant, first and foremost, as a theoretical framework for setting priorities for public financial policy in a wartime context. Its use allows the focus to shift from the availability of financial resources to the issue of ensuring that state programmes have the actual material, production and institutional capacity to be implemented. At the same time, the high degree of openness of the Ukrainian economy, its significant dependence on imports for defence purposes and the need to maintain macro-financial stability necessitate the cautious use of monetary instruments to finance the budget deficit and underscore the importance of external financial support (Wray, 2015; Kelton, 2020; Shubin, 2022; Soldatenko, 2023).

Military crises significantly alter the mechanisms governing public finances, as ensuring national security becomes the priority of budgetary policy in the context of armed conflict. In such circumstances, the rate of growth in public expenditure generally far exceeds the potential for expanding the tax base, making it necessary to tap into additional sources of funding (Shubin, 2022; Soldatenko, 2023).

Historical experience shows that an effective model for financing military needs is based on a combination of several instruments, including tax revenue, government borrowing, deficit financing, external financial assistance and special mechanisms for mobilising resources. War bonds play an important role in such circumstances, as they make it possible to raise funds from both the public and the business sector whilst reducing inflationary pressure by withdrawing excess liquidity from the economy. It was precisely this mechanism that was actively used by the United Kingdom and the United States during the world wars (Wray, 2015; Rockoff, 2012).

In the current climate, the range of financial instruments has expanded significantly. In addition to domestic sources of funding, international grants, preferential loans, loan guarantees and special financial support mechanisms for countries at war have become particularly important. Of particular importance to Ukraine is the G7 financial support mechanism, funded by proceeds from frozen Russian assets, as well as the system of international budgetary assistance, which helps to maintain macro-financial stability amidst a protracted military conflict (Tkach et al., 2024; G7, 2024).

Ukraine's experience confirms that, even with substantial external support, expenditure on security and defence has reached unprecedented levels, both as a proportion of GDP and in terms of the structure of budgetary expenditure. In such circumstances, the assessment of new financing mechanisms must be carried out not only from the perspective of the potential to attract additional funds, but also taking into account their impact on inflation, public debt, currency stability and the country's long-term financial sustainability.

In accordance with the Law of Ukraine "On Fundamentals of National Resistance", national resistance comprises a set of measures organised and implemented with the aim of supporting Ukraine's defence by involving citizens as widely as possible in ensuring the state's military security. The main components of national resistance include territorial defence, the resistance movement and the preparation of citizens for national resistance (The Law of Ukraine "On Fundamentals of National Resistance" of July 16, 2021, No. 1702-IX).

The economic nature of national resistance allows it to be regarded as a specific public good, the benefits of which extend to the entire population of the state, regardless of the individual contribution of specific citizens towards its provision. This is precisely why the funding of national resistance should be provided primarily from public finances, although mechanisms such as public support, charitable activities and international aid may also play an important role (Samuelson, 1954).

A distinctive feature of the funding of the national resistance is the multi-tiered nature of its organisation. Unlike traditional military units, whose activities are funded primarily from the state budget, the national resistance system involves the active participation of local communities, local authorities, businesses, civil society organisations and the voluntary sector. This results in a complex system of resource provision that requires effective coordination and management (The Law of Ukraine "On Fundamentals of National Resistance" of July 16, 2021, No. 1702-IX; Romanyuk & Palyvoda, 2020; Drobina, 2023; The Resolution of the Cabinet of Ministers of Ukraine "Certain Issues Relating to the Financing of the Material and Technical Support of Military Units of the Armed Forces and Other Military Formations" of January 23, 2024, No. 69).

Material and technical support is one of the key factors in the effectiveness of the functioning of the national resistance system. Even with a sufficient number of personnel and a high level of motivation, the lack of proper logistics significantly limits the ability to perform the assigned tasks.

The key components of the logistical support for national resistance include weapons and military equipment, vehicles, communications equipment, engineering equipment, unmanned systems, personal protective equipment, training and material resources, and elements of defence infrastructure. In the context of modern warfare, digital technologies, information management systems and cyber defence measures are becoming increasingly important (Gorobets, 2024; The Resolution of the Cabinet of Ministers of Ukraine "Certain Issues Relating to the Financing of the Material and Technical Support of Military Units of the Armed Forces and Other Military Formations" of January 23, 2024, No. 69).

Consequently, the effective functioning of the national resistance system requires a comprehensive combination of financial and logistical support mechanisms, which creates the conditions for the development of an integrated model of resource provision based on the principles of modern finance.

4.2. International Models and a Multi-Channel Architecture for Resource Provision to Support National Resistance

International experience shows that the successful functioning of territorial defence and national resilience systems is based on a combination of state funding, local participation and the active involvement of civil society. The examples of Israel, Finland, Switzerland and Poland are particularly illustrative (Israel Defense Forces, n.d.; The Finnish Ministry of Defence, 2025; DDPS, n.d.; MNDRP, n.d.; MDE, n.d.; Stringer, 2022).

In Israel, the defence system is based on the concept of 'total defence', which involves significant state investment in reserve forces and in preparing the population to act in crisis situations. Finland implements a comprehensive security model, which ensures the integration of government bodies, the business sector and civil society into the processes of preparing for emergencies and military threats. In Switzerland, the reserve service system and local responsibility for maintaining defence infrastructure play an important role. Since 2014, Poland has carried out a large-scale reform of its territorial defence, establishing a separate branch of the armed forces with its own system of funding and logistical support (Israel Defence Forces, n.d.; The Finnish Ministry of Defence, 2025; DDPS, n.d.; MNDRP, n.d.).

A common feature of the models examined is the diversification of funding sources, a combination of centralised and decentralised resource management, and the use of modern digital technologies for monitoring and managing defence resources. It is precisely these approaches that can be utilised when developing a modern system for the financing and logistical support of national resistance in Ukraine (Table 1).

An analysis of international experience shows that the effective functioning of national resistance and territorial defence systems is ensured not by individual funding mechanisms, but by a comprehensive combination of centralised state management of resources, the involvement of local communities, the development of reserve components, and the use of modern digital technologies. Despite differences in political systems, the scale of their economies and the security environment, all the countries examined utilise multi-channel mechanisms for resource provision, which enables them to enhance the resilience of their defence systems to crises and to respond promptly to new challenges. Another important common feature is the combination of state funding with the active involvement of local authorities, the private sector and civil society in meeting defence needs.

For Ukraine, the most promising approach appears to be a hybrid model for the funding and logistical support of national resistance, which combines selected elements of the most successful international practices. From the Israeli model, it would be advisable to adopt the principle of centralised state funding and the maintenance of a high state of readiness among reserve components. The Finnish experience is valuable in terms of integrating state bodies, local authorities and the business sector into a comprehensive security system. The Swiss model demonstrates the effectiveness of sharing responsibility between central and regional levels of resource management, which is particularly relevant in the context of the ongoing decentralisation in Ukraine. The Polish model confirms the advisability of establishing a separate financial framework for territorial defence and medium-term planning of its resource requirements. At the same time, the Estonian experience highlights the significant potential of digital technologies, the voluntary sector and partnerships between the state and civil society in ensuring the resilience of the defence system.

Given the specific characteristics of Ukraine's security environment and the challenges associated with the protracted military conflict, a forward-looking model for funding national resistance should be based on a combination of the state budget, local budgets, international aid, defence bond schemes, public-private partnership instruments and resources from the voluntary sector. Implementing this approach will not only ensure stable funding for the current needs of the national resistance, but also create the conditions for the long-term development of the state's defence resilience system. It is for this reason that further research should focus on developing an integrated model for the funding and logistical support of national resistance, adapted to the realities of Ukraine and based on the principles of modern finance.

The voluntary sector plays a significant role in providing logistical support for the national resistance. Its importance lies not only in raising funds, but also in responding swiftly to the specific needs of military units, and in procuring specialised equipment, drones, communications equipment, medical supplies, vehicles and other equipment. The voluntary sector often fills gaps that cannot be addressed promptly through formal budgetary procedures. At the same time, it is precisely this flexibility that carries risks of fragmentation, duplication of procurement, insufficient transparency

Table 1
A comparative analysis of international models for financing national resistance within the framework of modern finance

Country	National resistance model	Main sources of funding	Local government's role	Features of logistical support	Lessons for Ukraine
Israel	The concept of total defence and the reserve army	The national budget, defence funds, international support	Local authorities are involved in civil defence and public preparedness	Continuous modernisation of weaponry, a well-developed reserve system, and digital command and control systems	A combination of centralised funding and a high level of readiness among reservists
Finland	The concept of comprehensive security	The national budget, local safety programmes	A high level of responsibility on the part of local authorities for crisis preparedness	A well-developed system of stocks, reserves and dual-use infrastructure	Integrating the state, communities and business into the security system
Switzerland	The police defence system and the reserve service	The federal budget, cantonal budgets	The cantons are responsible for part of the provision of resources	An extensive network of warehouses, shelters and mobilisation resources	A combination of centralisation and financial autonomy for the regions
Poland	Territorial Defence Forces	The national budget, defence modernisation programmes	Voivodeships and communities participate in providing infrastructure	The active deployment of modern communications equipment, unmanned aerial vehicles (hereinafter 'UAVs') and transport	Separate funding for territorial defence as an independent component of the defence system
Estonia	The 'Kaitseliit' Volunteer Defence League	The national budget, local programmes, voluntary contributions	Local communities are actively supporting the training and logistical support	A combination of professional and voluntary elements, digital management platforms	The use of digital solutions and the involvement of citizens in defence
Ukraine	National resistance (territorial defence, local community volunteer units (hereinafter 'LCVUs'), the resistance movement)	The national budget, local budgets, international aid, war bonds, voluntary contributions	Local authorities provide support for territorial defence and LCVUs	The vital role of the voluntary sector and international aid in meeting the needs of the units	Requires the creation of an integrated model for multi-channel funding and digital monitoring of resources

Source: compiled on the basis of (Israel Defense Forces, n.d.; The Finnish Ministry of Defence, 2025; DDPS, n.d.; MNDRP, n.d.; MDE, n.d.; The Law of Ukraine "On Fundamentals of National Resistance" of July 16, 2021, No. 1702-IX; The Resolution of the Cabinet of Ministers of Ukraine "Certain Issues Relating to the Financing of the Material and Technical Support of Military Units of the Armed Forces and Other Military Formations" of January 23, 2024, No. 69)

in accounting, and difficulties in integrating volunteer resources into the national planning system (Table 2) (Madryha et al., 2023; Drobina, 2023).

The data in Table 2 suggest that the resource provision for the national resistance in Ukraine is already effectively operating as a multi-channel system (Drobina, 2023). However, the key problem remains the insufficient level of integration between individual financial flows and material resources. The state budget ensures the scale and systematic nature of funding; local budgets ensure proximity to the needs of communities; military bonds enable the mobilisation of domestic financial resources; international aid provides access to external resources and technologies; and the voluntary sector ensures speed and flexibility of response. At the same time, the lack of a unified digital monitoring system makes it difficult to assess the actual level of supply to units, identify duplicate deliveries, pinpoint shortages and evaluate the effectiveness of spending.

In view of this, the logistical support for national resistance should be regarded not merely as a series of procurements, but as a complete management cycle: identifying needs, planning resources, mobilising funding, procuring or acquiring assets, logistics, record-keeping, monitoring usage and evaluating effectiveness. It is precisely this approach that enables a shift from a reactive support model, where resources are allocated only after a shortfall has arisen, to a proactive model focused on forecasting needs and maintaining the readiness of local communities.

Table 2
The structure of funding sources for the national resistance in Ukraine in the context of the modernisation of the public finance management system

Source of funding	Key entities	Areas of resource utilisation	Advantages	Limitations and risks
The State Budget of Ukraine	The Cabinet of Ministers of Ukraine, the Ministry of Defence of Ukraine, and other authorities responsible for directing and coordinating the security and defence sector	Funding; procurement of weapons, equipment, ammunition and communications equipment; logistical support	The largest and most stable resource, the ability to plan centrally	High dependence on budget revenue and external support; lengthy budgetary procedures
Local budgets	Regional, district, city, town and village councils, military administrations	Support for territorial defence units (hereinafter referred to as 'TDU'), LCVU, fitting out of facilities, procurement of equipment, transport and fuel	Closeness to the specific needs of communities and departments, and the speed of response	Inequalities in local authorities' financial capacity, the risk of territorial disparities
Military bonds	The Ministry of Finance of Ukraine, the National Bank of Ukraine, banks, citizens, businesses	Financing the budget deficit and the state's military requirements	Mobilising domestic resources and engaging citizens and businesses in supporting defence	Debt burden, dependence on investor confidence and macro-financial stability
International aid	Foreign governments, the EU, international financial organisations, donors	Weapons, military equipment, machinery, macro-financial support, training, logistics	The scale of resources, access to modern technologies and NATO standards	Dependence on partners' political decisions; the difficulty of long-term forecasting
The voluntary sector and charitable donations	Charitable foundations, non-governmental organisations, members of the public and businesses	Drones, vehicles, communications equipment, medical supplies, ammunition, specialist equipment	Rapid response, flexibility; targeted assistance	Fragmentation, risks of duplication, and the complexity of integration into the official accounting system
Public-private partnerships and business	Businesses, the defence industry, the IT sector, equipment manufacturers	Manufacturing, repairs, logistics, innovative developments, digital solutions	The ability to adapt quickly to technological changes; the development of in-house production	The need for clear rules on procurement, quality control and data protection

Source: compiled on the basis of (The Law of Ukraine "On Fundamentals of National Resistance" of July 16, 2021, No. 1702-IX; The Law of Ukraine "On National Security of Ukraine" of June 21, 2018, No. 2469-VIII; The Resolution of the Cabinet of Ministers of Ukraine "Certain Issues Relating to the Financing of the Material and Technical Support of Military Units of the Armed Forces and Other Military Formations" of January 23, 2024, No. 69)

4.3. An Empirical Assessment of Funding for Ukraine's Security and Defence Sector

Figure 1 presents a comparative analysis of the share of military expenditure within the structure of government expenditure in selected countries worldwide in 2025. This indicator reflects the level of budgetary priority given to the defence sector and the proportion of government resources allocated to national security and defence.

Figure 1 shows significant variation between countries in terms of the burden of defence expenditure on public finances. The highest figure was recorded in Ukraine, where 54.0 per cent of budget expenditure is allocated to defence. This is more than double the corresponding figure for Saudi Arabia (22.3 per cent) and almost three times that of the Russian Federation (18.9 per cent). Such a level of concentration of budgetary resources on defence needs is unprecedented among the countries surveyed and is explained by the conditions of the full-scale Russo-Ukrainian war and the need to ensure the functioning of the security and defence sector (Our World in Data, n.d.).

The second group comprises countries with moderate levels of defence expenditure. This group includes the United States (9.1 per cent), India (7.6 per cent), the United Kingdom (5.3 per cent) and China (5.1 per cent). Despite the substantial absolute size of these countries' military budgets, their share of total government expenditure remains significantly lower than in Ukraine, due to the larger scale of their economies and the absence of a need to fund active hostilities on their own territory (Our World in Data, n.d.).

The lowest figures for this indicator are recorded in France (3.6 per cent), Japan (3.3 per cent) and Australia (5.0 per cent). These countries are characterised by a focus on long-term strategic planning of defence expenditure and a balanced allocation of budgetary resources between the defence, social and economic sectors (Our World in Data, n.d.).

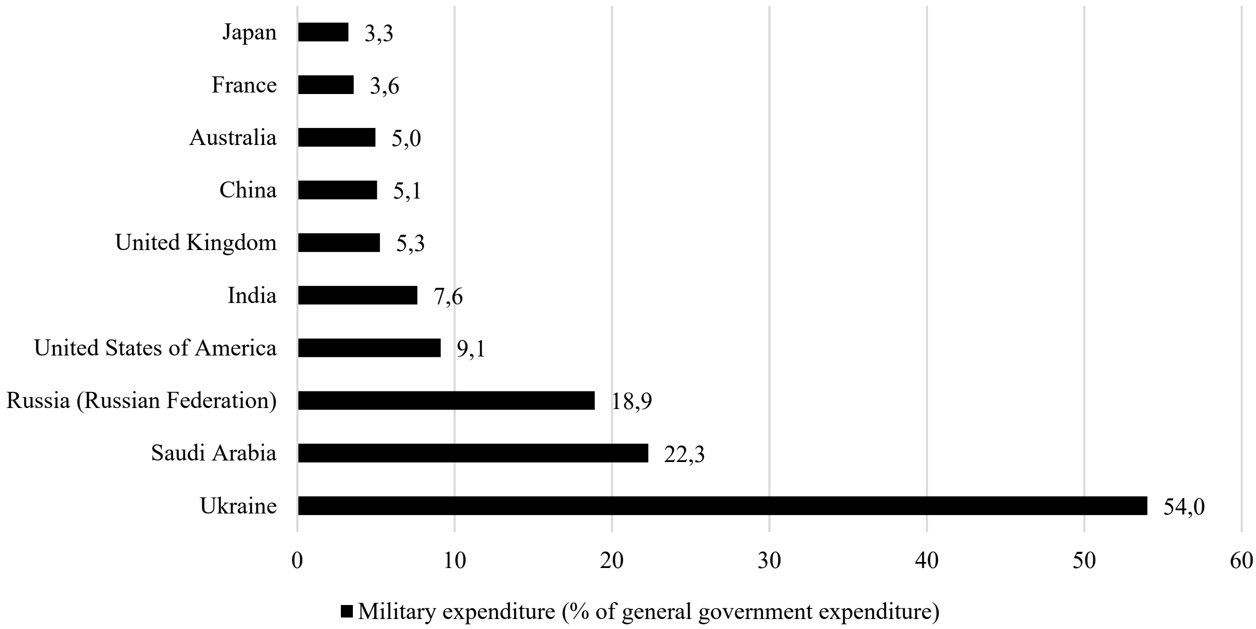

Figure 1. Defence budgets by country in 2025 (as a percentage of government expenditure)

Source: compiled on the basis of Our World in Data (n.d.)

A comparative analysis shows that, in 2025, Ukraine is effectively operating under a mobilisation model of public finance, with more than half of budgetary resources being channelled towards ensuring the country's defence capability. This confirms the exceptionally high priority accorded to the security and defence sector within the system of public policy and indicates a transformation of the budgetary structure in line with wartime requirements.

Figure 2 shows the results of building a linear regression model of the relationship between Ukraine's budget expenditure on security and defence and the level of GDP per capita for the period 2018–2025.

The resulting regression equation takes the folowing form:

$$y = 0{,}0897x - 2137{,}7 \quad (1)$$

where:

y – budget expenditure on security and defence, in billions UAH;

x – GDP per capita, UAH.

The correlation coefficient in this model is R = 0.9213, which indicates a strong linear relationship

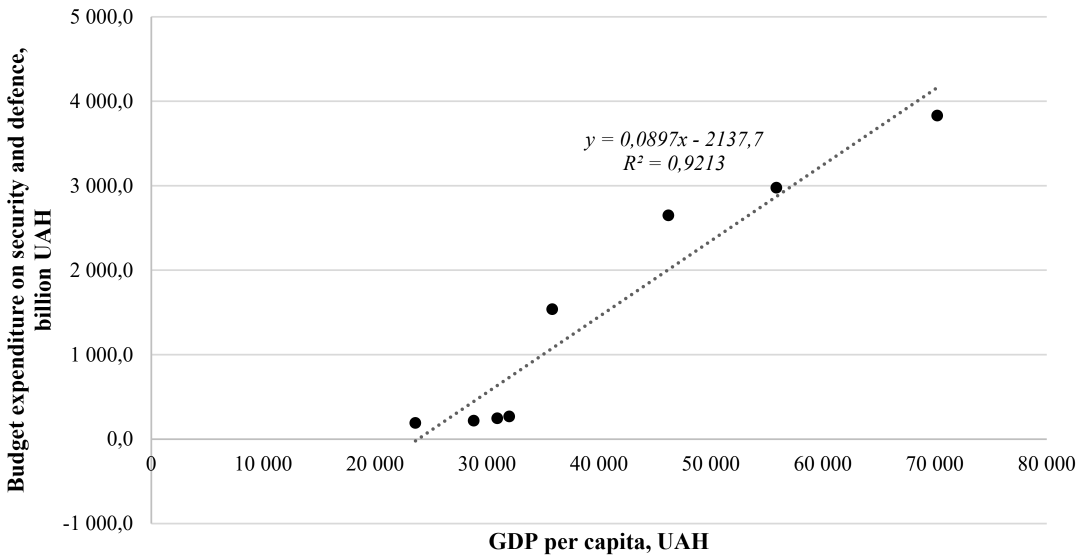

Figure 2. Regression model of the relationship between budget expenditure on security and defence and GDP per capita in Ukraine for 2018–2025.

Source: compiled on the basis of (Open Budget, n.d.; World Bank, n.d.)

between GDP per capita and the level of budgetary expenditure on security and defence. The coefficient of determination, R^2 = 0.9213, indicates that 92.13 per cent of the variation in budget expenditure on security and defence is attributable to changes in the growth of GDP per capita, whilst the remaining 7.87 per cent is attributable to other independent factors.

Particularly noticeable is the sharp shift in the data for 2022–2025 towards the top right of the graph, reflecting the simultaneous growth in both GDP per capita and funding for the security and defence sector against the backdrop of a full-scale war. It is these years that form the main upward trend in the regression relationship.

Thus, the results of the regression analysis confirm the existence of a strong statistical correlation between the level of economic development and the volume of funding for Ukraine's security and defence sector. At the same time, to provide a more in-depth explanation of the mechanisms underlying the formation of defence expenditure, it is advisable to supplement the model with factors such as the share of security and defence expenditure in GDP, the share of defence expenditure in the state budget, the share of the Ministry of Defence in security and defence sector expenditure, and the rate of growth in defence expenditure.

The comprehensive index of the effectiveness of funding for Ukraine's security and defence sector *(Y)* is a composite indicator that combines measures of financial adequacy, diversification of resource allocation, budgetary prioritisation and macro-financial stability. Unlike traditional approaches, which assess only the absolute levels of expenditure, the proposed index allows for the quality of the allocation and utilisation of financial resources within the security and defence sector to be taken into account (2).

$$Y = \beta_1 \cdot X_1 + \beta_2 \cdot X_2 + \beta_3 \cdot X_3 + \beta_4 \cdot X_4 + \beta_5 \cdot X_5 \quad (2)$$

The following factor variables are proposed for inclusion in the model:

X_1 – security and defence expenditure, billion UAH;

X_2 – share of security and defence expenditure in GDP, %;

X_3 – the proportion of security and defence expenditure in total government expenditure, %;

X_4 – the share of the Ministry of Defence in security and defence sector expenditure, %;

X_5 – rate of growth in defence expenditure, %.

To assess the effectiveness of funding for Ukraine's security and defence sector, the first step is to compile a dataset covering the period 2018–2025 (Table 3).

Analysis of the data indicates a significant transformation in the system of funding for Ukraine's security and defence sector over the period under review. Specifically, expenditure on security and defence (X1) rose from 191.7 billion UAH in 2018 to 3,830 billion UAH in 2025 – an almost 20-fold increase. The sharpest increase occurred in 2022 following the start of the Russian Federation's full-scale armed aggression, when funding rose to 1,537.5 billion UAH.

The ratio of defence expenditure to GDP (X_2) remained relatively stable at 5.4–5.9 per cent between 2018 and 2021, whilst in 2022 it rose to 31.2 per cent and reached 42.9 per cent in 2025. This indicates a sharp increase in the burden of defence expenditure on the economy and a reallocation of a significant proportion of national resources towards ensuring the state's defence capability.

A similar trend can be observed in the share of security and defence expenditure within public expenditure (X_3). Whilst this figure fluctuated between 17.9 per cent and 20.3 per cent in 2018–2021, following the outbreak of full-scale war it rose to 56.8 per cent in 2022 and 70.0 per cent in 2025. This confirms the dominance of defence needs within the structure of public budgetary policy.

The indicator of the share of the Ministry of Defence in security and defence sector expenditure (X_4) characterises the level of concentration of financial resources within a single department. Between 2018 and 2021, this figure ranged from 47.1 per cent

Table 3
Factors affecting the effectiveness of funding for Ukraine's security and defence sector

Year	Expenditure on security and defence, billion UAH	Share of GDP, %	Share of government expenditure, %	Share of the Ministry of Defence in security and defence sector expenditure, %	Rate of growth in defence expenditure (%)
Factor	X_1	X_2	X_3	X_4	X_5
2018	191,7	5,39	19,4	49,5	71,0
2019	218	5,45	20,3	48,4	13,7
2020	245,8	5,45	19,1	48,8	12,8
2021	267,2	5,93	17,9	47,1	8,7
2022	1537,5	31,2	56,8	72,4	475,4
2023	2648,9	41	66,0	78,0	72,3
2024	2975,8	39,2	66,3	74,9	12,3
2025	3830	42,9	70,0	78,4	28,7

Source: compiled on the basis of Open Budget (n.d.)

to 49.5 per cent, whilst in 2022 it rose to 72.4 per cent and reached 78.4 per cent in 2025. This indicates a strengthening of the Ministry of Defence's role as the main administrator of budgetary funds for the security and defence sector under martial law.

The defence expenditure growth rate indicator (X_5) reflects the speed at which financial resources are mobilised. The highest value was recorded in 2022 – 475.4 per cent – which is attributable to an unprecedented increase in the state's defence requirements. In subsequent years, the growth rates fell significantly and ranged from 12.3 per cent to 72.3 per cent, indicating a gradual transition from emergency financial mobilisation to a more stable model of funding for the security and defence sector.

Thus, these indicators form a system of factors that comprehensively characterise the scale, structure and intensity of funding for Ukraine's security and defence sector.

The weighting coefficients for the indicators of the comprehensive index of security and defence sector funding efficiency have been determined using an expert-based method, taking into account their impact on the development of the state's defence capabilities. The highest weighting (0.30) has been assigned to the indicator of the absolute volume of expenditure on security and defence (X_1), as it directly characterises the state's financial capacity to meet the needs of the security and defence sector. The share of expenditure in public expenditure (X_3) was assigned a weighting of 0.25 as an indicator of budgetary prioritisation of the defence sector, whilst the share of expenditure in GDP (X_2), with a weighting of 0.20, reflects the extent to which the country's economic resources are mobilised to ensure national security. The share of the Ministry of Defence in security and defence sector expenditure (X_4) has been assigned a weighting of 0.15, as this indicator characterises the degree of concentration of financial resources and influences the inter-agency balance of funding. The lowest weight (0.10) is assigned to the rate of growth in defence expenditure (X_5), which reflects the intensity of financial mobilisation but is characterised by considerable volatility due to crisis and war-related factors.

In the next stage, perform factor standardisation $(X_1–X_5)$ (Table 4).

The calculation of the integrated cost-effectiveness indicator for Ukraine's security and defence sector revealed two fundamentally different stages in the development of Ukraine's defence funding system (Figure 3).

To interpret the values of the integrated indicator of cost-effectiveness for the security and defence sector, it is advisable to use the following rating scale:

0.00–0.20 (critically low level of effectiveness);
0.21–0.40 (low level of effectiveness);
0.41–0.60 (average level of efficiency);
0.61–0.80 (high level of efficiency);
0.81–1.00 (very high level of efficiency).

As can be seen in Figure 3, between 2018 and 2021, the value of the integral indicator remained within the range of 0.009–0.032, which indicates a relatively low level of concentration of financial resources in the security and defence sector compared with subsequent years. The lowest value of the indicator was recorded in 2021 (0.009), which is explained by the relatively low share of defence expenditure in the structure of public finances and GDP.

Since 2022, there has been a sharp rise in the composite indicator to 0.657, resulting from the Russian Federation's full-scale armed aggression and the corresponding mobilisation of the state's budgetary resources. It was in 2022 that there was a significant increase in the absolute levels of funding for the security and defence sector, as well as its share of GDP and public expenditure.

Table 4
Standardised factors for calculating the comprehensive index of the effectiveness of funding for Ukraine's security and defence sector

Year	Expenditure on security and defence, billion UAH	Share of GDP, %	Share of government expenditure, %	Share of the Ministry of Defence in security and defence sector expenditure, %	Rate of growth in defence expenditure (%)
Factor	X_1	X_2	X_3	X_4	X_5
Weighting coefficient	0,30	0,20	0,25	0,15	0,10
2018	0,0000	0,0000	0,0291	0,0763	0,1335
2019	0,0072	0,0016	0,0459	0,0408	0,0107
2020	0,0149	0,0016	0,0222	0,0544	0,0087
2021	0,0208	0,0144	0,0000	0,0000	0,0000
2022	0,3699	0,6881	0,7475	0,8091	1,0000
2023	0,6754	0,9493	0,9234	0,9883	0,1362
2024	0,7652	0,9014	0,9299	0,8890	0,0078
2025	1,0000	1,0000	1,0000	1,0000	0,0429

Source: compiled by the authors

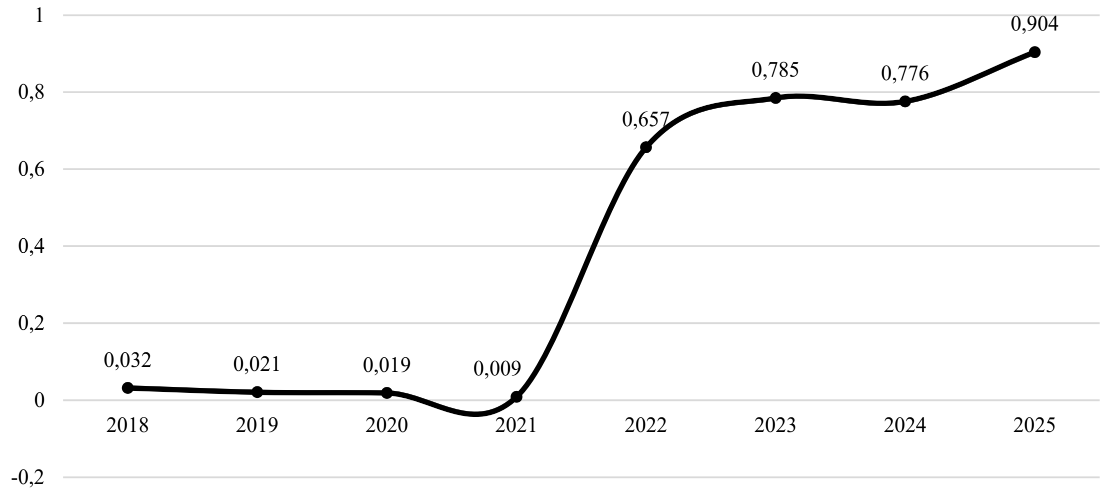

Figure 3. The value of the comprehensive cost-effectiveness indicator for the security and defence sector in Ukraine for 2018–2025

Source: compiled by the authors

In 2023, the indicator rose to 0.785, reflecting the continued prioritisation of defence needs in the state's budgetary policy. Despite a slowdown in the rate of expenditure growth compared with 2022, the high values of the structural indicators ensured an increase in the composite index.

In 2024, there is a slight decline in the composite indicator to 0.776, which is attributable to a slowdown in the rate of growth in defence expenditure and a certain stabilisation of the budget structure. The composite indicator reaches its highest value in 2025, at 0.904. This indicates the highest level of concentration of financial resources in the security and defence sector over the period under review, resulting from the simultaneous attainment of peak values in terms of absolute expenditure, its share of GDP, public expenditure and the sector's funding structure.

5. Recommendations

The further development of the national resilience system requires not only an increase in funding, but also improvements to the mechanisms for managing financial and logistical resources. In the context of a protracted military conflict and the state's future post-war reconstruction, it is particularly important to establish a sustainable model for resource provision that will enable the effective integration of the capabilities of the national budget, local budgets, international aid, the financial sector, the business community and civil society.

The model for financing national resistance proposed in this article envisages a shift from a predominantly reactive allocation of resources to strategic management of those resources, based on the principles of effectiveness, adaptability and digital transparency. Given the scale of the challenges facing Ukraine, it is advisable to structure public policy measures according to their time horizons: short-term, medium-term and long-term.

1. *In the short term (1–2 years)*, the main objective of government policy should be to ensure the stability of funding for the national defence effort and to improve the efficiency with which existing resources are utilised. The conditions of martial law require the swiftest possible response to changes in the security environment; therefore, improving the mechanisms for mobilising domestic financial resources is of particular importance.

One of the most effective tools for raising funds from the public and the business sector is domestic government military bonds. The further development of this instrument should be linked to broadening the investor base, improving digital channels for purchasing bonds, and raising public awareness of their role in financing defence needs. Another important area is the introduction of specific targeted defence bonds, the proceeds from which can be channelled directly towards supporting territorial defence, preparing the population for national resistance, or developing defence infrastructure (Wray, 2015; Rockoff, 2012).

At the same time, it is necessary to establish a unified digital platform for monitoring the resource provision for national resistance. Such a platform should ensure the tracking of needs, available resources, funding sources, procurement, deliveries and the actual use of material and technical resources. Its implementation will help to increase transparency, reduce the risk of duplicate procurement and enable a more efficient allocation of resources between local communities and national resistance units.

An equally important task is to strengthen coordination between state bodies, local authorities, voluntary organisations and international partners. To this end, it would be advisable to introduce mechanisms for the regular exchange of information on needs and resources, as well as standardised approaches to assessing the level of preparedness of individual components of national resilience.

2. *In the medium term (3–5 years)*, the key priority should be to establish an institutionally robust system for funding national defence. Drawing on the experience of NATO and EU member states, particular attention should be paid to introducing medium-term budgetary planning for the resource requirements of the security and defence sector (The Finnish Ministry of Defence, 2025; MNDRP, n.d.; MDE, n.d.).

The use of three-year or five-year planning horizons will improve the predictability of funding, ensure more effective implementation of territorial defence development programmes, and lay the groundwork for long-term contracts for the procurement of arms, military hardware and equipment. At the same time, this will help to boost the confidence of international partners and private investors in Ukraine's defence planning system.

Expanding public-private partnership mechanisms should become a key tool for modernisation. Engaging enterprises from the defence-industrial complex, IT companies, logistics operators and manufacturers of specialised equipment will help to raise the technological level of national defence capabilities and reduce dependence on external supplies. Of particular importance is the development of production of unmanned systems, communications equipment, software products for resource management and other dual-use technological solutions (Didych & Naumko, 2023).

Furthermore, it would be advisable to establish regional reserve funds to provide resources for national resistance. Such funds could be formed by combining resources from the state budget, local budgets and voluntary contributions, and used to respond promptly to crisis situations.

3. *In the long term (over 5 years)*, government policy should be geared towards integrating the system for funding national resilience into the overall framework of the state's national resilience. Drawing on the experience of Finland, Switzerland and Estonia, it is advisable to develop a model of comprehensive security in which the funding of defence readiness is viewed as part of a broader system for ensuring the resilience of society (The Finnish Ministry of Defence, 2025; DDPS, n.d.; MDE, n.d.).

In this context, the development of a digital ecosystem for the management of defence resources takes on particular importance. In the long term, the digital monitoring platform should evolve into a comprehensive decision-support system that utilises artificial intelligence, big data and predictive analytics to identify future needs and risks.

One of the strategic priorities should be the establishment of a permanent national reserve of resources, comprising material stocks, financial reserves and mechanisms for their rapid mobilisation in crisis situations. This approach will enhance the state's resilience to military, man-made and other threats.

4. *Once the active phase of the war has ended,* Ukraine will face two strategic challenges simultaneously: ensuring the country's long-term security and rebuilding the economy. In these circumstances, certain provisions of the modern finance framework could serve as a methodological basis for reconciling the policies of reconstruction with the maintenance of an adequate level of defence readiness.

The concept of modern finance allows government investment in security, defence infrastructure, public preparedness and technological development to be viewed not merely as expenditure, but as long-term investments in the state's resilience and its human capital. At the same time, adopting this approach requires adherence to the principles of macroeconomic stability, control of inflationary pressures and ensuring the efficient use of public resources (Wray, 2015; Kelton, 2020).

The application of elements of the modern finance concept in post-war reconstruction processes may contribute to the development of a new model for financing national resilience, based on a combination of public investment, international support, private capital and the active participation of civil society. Such a model will ensure not only the reconstruction of destroyed infrastructure, but also the creation of a modern system of defence resilience capable of responding effectively to the challenges of the future.

6. Conclusions

The research carried out has enabled the formulation of a comprehensive understanding of the characteristics of the financing and logistical support of national resistance in the context of full-scale war and the implementation of the concept of modern finance. It has been established that, in the current circumstances, the national resistance system has become one of the key elements in ensuring Ukraine's defence capability, and its effectiveness is largely determined by the level of resource provision, the state's ability to mobilise financial resources, and its capacity to ensure their targeted and effective use. After all, traditional budgetary funding mechanisms do not fully meet the needs of a protracted military conflict, as they need to be supplemented by tools for multi-channel resource mobilisation, the integration of various funding sources, and the implementation of modern digital management mechanisms.

The most effective models for ensuring national resilience are based on a combination of centralised state funding, the active participation of local communities, the use of long-term planning tools, and the broad involvement of civil society in resource allocation processes. The experience of Israel, Finland, Switzerland, Poland and Estonia confirms that the resilience of national defence systems is achieved not so much by the volume of resources as by the effectiveness of their coordination, the transparency of their use and the ability to adapt rapidly to changes in the security environment. For Ukraine, the most promising approach is to adopt a hybrid model that combines centralised state funding, decentralised mechanisms for supporting territorial defence, instruments for raising domestic capital through military bonds, international aid and the potential of the voluntary sector.

Based on the findings of the study, a conceptual model for the financing and logistical support of national resistance has been proposed for the first time; this model is based on the principles of modern finance and provides for the integration of the state budget, local budgets, international aid, defence bonds, public-private partnership mechanisms and civil society resources within a single resource management framework. Unlike existing approaches, the proposed model is geared not only towards ensuring the supply of resources, but also towards establishing a digital monitoring system that enables continuous monitoring of needs, supplies, the use of resources and the results of their application.

Another scientific innovation of the study is the development of a comprehensive indicator for assessing the effectiveness of resource provision for national resistance, which takes into account the level of financial support, logistical and technical equipment, staff training and resource readiness of local communities. The proposed approach enables a shift from assessing individual indicators to a comprehensive analysis of the functioning of the national resistance system and allows for a comparison of the effectiveness of resource utilisation across different regions and at different levels of government.

The findings of the study indicate that combining the resources of the state budget, military bonds, international aid, local budgets and the voluntary sector creates the conditions for establishing a more resilient and adaptive resource provision system compared with models that rely solely on centralised budgetary funding.

A promising area for further research is the development of applied methodologies for quantitatively assessing the level of resource readiness of local communities, the creation of models for forecasting national defence requirements based on artificial intelligence technologies, and the study of the impact of the digitalisation of resource management processes on the effectiveness of the security and defence sector. Such research will become particularly relevant during Ukraine's post-war reconstruction and the development of a new framework for national resilience in line with EU and NATO standards.

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