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The Imperative of State Financial Security for Sustainable Post-War Recovery

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The right decisions today are a guarantee of success tomorrow

ABSTRACT. The article examines the financial security of the state as a systemic prerequisite for socio-economic stability and analyses the key determinants of financial security in conditions of armed conflict and post-war recovery. The author proposes a classification of financial security risks, covering five main groups: macroeconomic, fiscal, external, institutional and social. Risks are considered as a multidimensional field of threats that requires constant monitoring and strategic response from state policy. Within the empirical block, an integrated model for assessing financial security is presented, based on eleven key indicators, and an assessment and comparative analysis of nine reference countries during periods of military conflict is carried out: Ukraine (2022), Vietnam (1975), Israel (1973), Syria (2015), Iraq (2005), Japan (1945), India (1947), Egypt (1973), and Germany (1945).

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In addition, a historical and comparative review of the practices of military bonds and external borrowing during World War II and the Korean War, as well as in the modern cases of Iraq, Afghanistan and Ukraine, was conducted. The calculated integral indices demonstrated the high adaptability of the financial systems of Israel and Ukraine in conditions of prolonged conflict; sharply destabilised Japan and Germany in the post-war period, followed by recovery thanks to large-scale external assistance; and the demonstrative dependence of Iraq and Afghanistan on donor flows in conditions of low internal stability. Ukraine (2022–2024) demonstrates fiscal asymmetry: growth in defence and social spending is accompanied by a reduction in funding for education, the environment and innovation. Based on the results of index analysis and risk assessment, a set of financial security strategies for post-war recovery has been developed, including: the introduction of specialised financial instruments (war bonds, reserve funds), transition to a preventive model of social protection, development of digital and "green" infrastructure, strengthening institutional capacity for administering international aid, and support for the private sector through public-private partnerships. A conceptual model of development based on three scenarios is proposed: linear (linear strengthening), exponential (synergy arising at breakthrough points), and quantum leap (sudden institutional and/or technological transformation). The study confirms that effective restoration of financial security is only possible if comprehensive strategies are implemented that combine internal resource mobilisation, flexible fiscal policy, and balanced international aid.
KEYWORDS: financial security, military conflict, post-war recovery, fiscal policy, international assistance, security indices, risk management.

Introduction

In the current context of transformational change and the transition to a new technological order—the era of digitalisation and artificial intelligence, uncertainty has intensified[5], which in 2022 was exacerbated by military conflict and, in its current configuration of forces, is growing into a phase of global change and redrawing of the existing geopolitical landscape, using mainly financial and economic strategies. It is during periods of military conflict that a state's financial security ceases to be merely a component of economic stability—it becomes a key factor in the survival of society and a guarantee of the restoration of socio-economic processes in the post-war period. From a theoretical point of view, financial security is defined as the state of the financial, monetary, currency,

[5] "The future is always uncertain. The famous American philosopher Yogi Berra once said, 'The future ain't what it used to be.' But, as American professor Andrew W. Lo points out, it was American economist Frank Knight who taught us to distinguish between risk and uncertainty. Risk can be measured in quantitative terms; uncertainty is the 'unknown unknown'. Andrew Lo also notes that "one of the most important achievements of modern financial economics has been the ability to build on uncertainty, transforming the 'unknown unknown' into known and familiar quantitative values. We have a chance to overcome uncertainty and use risks to achieve our own goals. According to the adaptive markets' hypothesis, when uncertainty is transformed into risk, investors and capital adapt." [For details, see Lo E. Adaptive Markets. Financial Evolution at the Speed of Thought / Andrew W. Lo; translated from English by I. Tereshchenko, V. Zengva, N. Mochalova. — Kyiv: Foros Ukraine, 2018, 530 — 531] (*author's note).*

banking, budgetary and tax systems, characterised by balance and resilience to internal and external challenges and the ability to ensure the effective functioning of the national economy and economic growth[6].

In wartime, the state's ability to minimise the impact of internal and external threats on economic stability and to ensure the financing of defence, social and economic needs becomes particularly important. At this stage, the priority task is to form a stable system of financial security for the state, which involves ensuring the effective functioning of the financial system, control over financial resources, maintaining the liquidity of the banking system and counteracting inflationary pressure. To this end, it is advisable to actively use mechanisms for mobilising internal resources, in particular through the issuance of war bonds, the introduction of strict control over budget expenditures and the effective coordination of international financial assistance to finance defence and humanitarian needs. At the same time, it is necessary to lay the foundation for ensuring, supporting and building the capacity to implement post-war recovery strategies. In particular, through the introduction of specialised financial instruments, the formation of reconstruction funds, the restoration of confidence in the financial system, macroeconomic stabilisation, investment in human capital, support for innovation and business, and structural diversification of the economy.

Research into the determinants of financial security in wartime is extremely relevant from both a theoretical and practical point of view: it allows not only to systematise existing methodological recommendations, but also to propose innovative models of financial mobilisation and resource consolidation for sustainable post-war development.

The architecture of state financial security

Contemporary scientific research distinguishes several approaches to defining the financial security of the state, which differ in their methodological focus. The institutional approach focuses on analysing the functioning of key elements of the financial system; the systemic approach integrates financial subsystems into a single mechanism for assessing stability; while the crisis-oriented approach focuses on the system's ability to function in force majeure conditions, such as war or economic blockade. The combination of these approaches allows for a multidimensional understanding of financial security as a dynamic phenomenon that changes under the influence of both internal and external challenges (Table 1).

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[6] Ministry of Economy of Ukraine. (2013). Methodological recommendations for calculating the level of economic security of Ukraine (Order of the Ministry of Economic Development of Ukraine No. 1277 of 29 October 2013). Kyiv: Department of Economic Strategy and Macroeconomic Forecasting.

Table 1

MAIN APPROACHES TO DEFINING STATE FINANCIAL SECURITY

Researcher(s) / Source	Year	Approach	Definition
Methodological recommendations No. 1277[7], Ministry of Economy of Ukraine	2013	Institutional	"... the state of a country's financial system in which the necessary financial conditions for stable socio-economic development are created, resistance to financial shocks and imbalances is ensured, and the integrity of the financial system is preserved."
Heyets V., Kvasnyuk B. et al.[8]	1999		"... protection of the financial interests of economic entities at all levels of financial relations, provision of households, enterprises, organisations and institutions, regions, industries, sectors of the economy, and the state with financial resources sufficient to meet their needs and fulfil existing obligations."
Order of the Ministry of Economy of Ukraine "On Approval of the Methodology..."[9]	2007	Systemic	"The state of the financial, monetary, credit, currency, banking, budgetary and tax systems, characterised by balance, resistance to internal and external risks and the ability to ensure the effective functioning of the national economy."
Baranovsky O.I.[10]	2004		"... an important component of the economic security of the state, based on the independence, efficiency and competitiveness of the financial and credit sphere of Ukraine, which is reflected through a system of criteria and indicators of its state, characterising the balance of finances, sufficient liquidity of assets and the availability of necessary monetary and gold and foreign exchange reserves: the degree of protection of financial interests at all levels of financial relations: the state of financial flows in the economy, characterised by balance and the availability of proven mechanisms of regulation and self-regulation..."

[7] Ministry of Economy of Ukraine. (2013). Methodological recommendations for calculating the level of economic security of Ukraine (Order of the Ministry of Economic Development of Ukraine dated 29 October 2013 No. 1277). Kyiv: Department of Economic Strategy and Macroeconomic Forecasting.

[8] Concept of Economic Security of Ukraine. (1999) / project manager V.M. Heyets. — Kyiv: Logos, 1999. — 56. URL: https://ief.org.ua/publication/naukovi-dopovidi/1999/koncepcija-ekonomichnoi-bezpeky-ukrainy

[9] Ministry of Finance of Ukraine. (2023). Social expenditure by category. Kyiv. Appendix_No. 3.pdf

[10] Baranovskyi O.I. (2004). Financial security in Ukraine (assessment methodology and enforcement mechanisms): Monograph / Oleksandr Baranovskyi. — Kyiv: Kyiv National University of Trade and Economics.

Researcher(s) / Source	**Year**	**Approach**	**Definition**
Yermoshenko M. M.[11]	2001		"... such a state of the financial and credit sphere, which is characterised by the balance and quality of the systemic set of financial instruments, technologies and services, resistance to internal and external negative factors (threats), the ability of this sphere to ensure the protection of national financial interests, sufficient financial resources for all economic entities and the population as a whole – the effective functioning of the national economic system and social development."
Lutsyshyn Z., Yuzhanina N., Katrych O., Khlopchyk V.	2025	Crisis-oriented (period of war, military conflicts)	"the ability of the state to maintain control over financial resources, minimise the impact of threats and ensure the financing of defence, social and economic needs in conditions of military conflict"
Piletska S., Myagkikh I.[12]	2017	Multilateral /integrative	"A specific type of socio-economic relations between the state and entities aimed at optimising the financial system and protecting national interests in the global financial environment."
Starinsky M. V., Zavalna Zh. V.[13]	2018	Institutional and procedural	"a mechanism of state regulation that ensures the formation, implementation and control of financial security as an integral element of the economic security of the state"
Bukha G., Bychin S., Ozerna I.[14]	2019	European integration	"a state that guarantees the protection of the financial interests of the state by adapting to EU standards and integrated regulatory requirements"
Sukhorukov A.I., Ladiuk O.D. [15]	2007	Resource-functional	"... protection of the state's interests in the financial sphere, or a state of the budgetary, tax and monetary systems that guarantees the state's ability to effectively form, protect from excessive depreciation and rationally use the country's financial resources to ensure

[11] Yermoshenko M. M. (2001). Financial security of the state: national interests, real threats, security strategy: monograph. Kyiv: KNTEU, 2001.

[12] Piletska, S., Myagkikh, I. (2023). Mechanism for ensuring the financial security of enterprises in a knowledge-based economy. *Economy and Society,* 53, 12.

[13] Starinsky, M. V., Zavalna, Zh. V. (2023). The place of financial security in the system of ensuring and realising the economic sovereignty of the state (Chapter 11). Publishing House "Baltija Publishing". — 233.

[14] Buha, H., Bychin, S., Ozerna, I. (2023). The Definition and Structure of Financial Security. *Baltic Journal of Economic Studies,* Publishing house "Baltija Publishing", vol. 9(2), 68.

[15] Sukhorukov, A.I., Ladiuk, O.D. (2007). Financial Security of the State. Textbook. — Kyiv: Centre for Educational Literature. 2007.

Researcher(s) / Source	Year	Approach	Definition
			socio-economic development and service financial obligations."
Shevchenko, N. Yu., Blyznyuk, V. V.[16]	2013		"Ensuring the stability and balance of financial resources through their effective distribution and use to counter threats and support economic development
Kovalenko V., Slatvinska M., Sheldyko S., Makukha S., Valigura V.[17]	2013	Assessment and procedural	"The state of the financial system, characterised by the absence of critical threats and the ability of the state to apply preventive and corrective measures to maintain financial stability"
Levine R.[18]	2016	Institutional /component	"A set of institutional elements and processes that ensure the development, coordination and control of measures to protect the financial interests of the state."
Bukha G., Bychin S., Ozerna I.[19]	2023	Economic and legal	"The most important element of a country's economic security, which provides for the protection of financial interests at all levels and the establishment of legal and administrative control mechanisms in the field of finance."

Source: developed by the authors

Scientific discourse highlights a number of interrelated components that form the integrity of a state's financial security. In particular, the following components are highlighted (Fig. 1).

Budget security, the essence of which lies in the ability of the budget system to ensure the financial independence of the state and the effective use of budget funds in the process of performing social protection, public administration and international activities, financing science, education, culture and health care, ensuring national security and defence, and implementing investment and economic policies. This approach guarantees the financing of social, defence and critical economic needs even in the event of macroeconomic shocks or restrictions on access to external borrowing.

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[16] Shevchenko, N. Yu., Blyzniuk, V. V. (2024). Selected Aspects of the Development of the Financial System of Ukraine in the Context of European Integration. *Investment Practice and Experience,* 12, 131.

[17] Kovalenko, V., Slatvinska, M., Sheludko, S., Makukha, S., Valihura, V. (2023). The Monetary Component in Ensuring the Financial Security of the State. *Financial and Credit Activities: Problems of Theory and Practice,* 1(48), 10.

[18] Levine, R. (1999). Financial Development and Economic Growth: views and agenda. In World Bank policy research working paper. P. 2.

[19] Buha, H., Bychin, S., Ozerna, I. (2023). The Definition and Structure of Financial Security. *Baltic Journal of Economic Studies,* Publishing house "Baltija Publishing", vol.9(2).

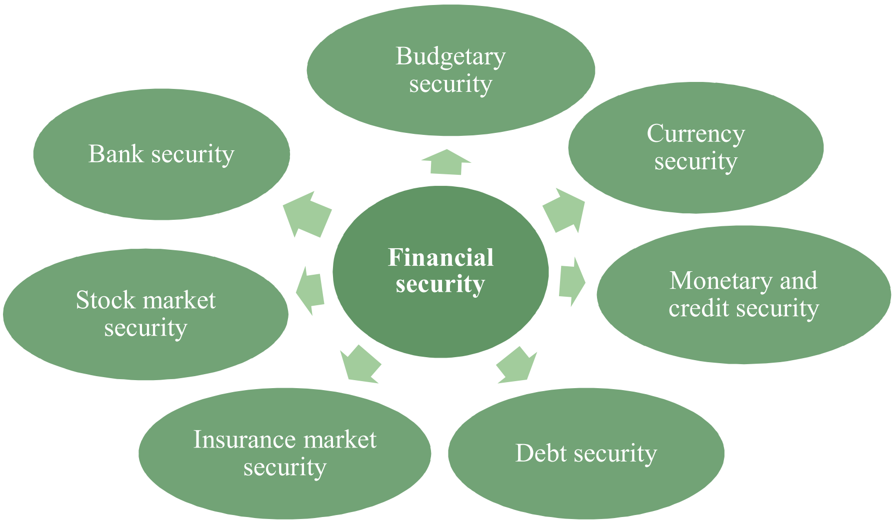

Fig. 1. Components of financial security

Source: developed by the authors

The definition of budgetary security proposed by O.A. Borodiy deserves attention: "protection from the influence of internal and external threats to the budgetary system, achieved through the ability of authorities to generate sufficient budgetary resources to perform their functions, ensure the stability of the main parameters of the payment and settlement system, optimally attract and use borrowed funds to finance budget expenditures, and prevent violations of budget legislation in order to promote the sustainable socio-economic development of the state"[20].

Banking security. The reliability of the banking system is a key link. An optimal level of capital, high-quality assets and sufficient liquidity, together with clear and transparent supervisory mechanisms, ensure the smooth operation of credit and payment transactions, protecting the confidence of both the population and business.

Monetary and currency security involves maintaining a stable exchange rate and accumulating sufficient international currency reserves and gold and foreign exchange assets. This makes it possible to mitigate external currency risks, keep inflation within monetary policy targets and strengthen the competitiveness of national exports[21]. In addition, the stability of the payment

[20] Borodii, O.A. *Management of Ukraine's Budget Security*: abstract of thesis for the degree of Candidate of Economic Sciences: specialisation 08.00.08 "Money, Finance and Credit"/ O.A. Borodii; Chernihiv National Technological University. — Chernihiv, 2015. — 20 p.

[21] Kovalenko, V., Slatvinska, M., Sheludko, S., Makukha, S., Valihura, V. (2023). The Monetary Component in Ensuring the Financial Security of the State. *Financial and Credit Activities: Problems of Theory and Practice,* 1(48), 10.

infrastructure and modern cyber security measures ensure the continuity of interbank and retail payments. The reliability of these systems protects the state from technical failures and cyber-attacks, especially in the context of heightened geopolitical risks. Tax security, which encompasses effective administration, combating tax evasion and reducing the shadow economy, is of particular importance. It contributes to the formation of predictable and stable budget revenues, reducing fiscal instability and supporting long-term planning.

Equally important is *investment* attractiveness, which is measured by the protection of investor rights, a transparent regulatory framework, and government instruments to support strategic industries. It stimulates the inflow of long-term capital and technological innovation, creating a safety cushion against external financial shocks [22]. In addition, financial transparency and internal control in public institutions minimise corruption risks and inefficient use of resources. Independent auditing and open access to budget data increase the confidence of society and international partners, organically combined with compliance with confidentiality requirements[23] in public policy in the financial sector[24].

Insurance and stock market security. Financial risk insurance mechanisms—whether through the development of the derivatives market or the creation of reserve funds—allow for a rapid response to extraordinary circumstances and smooth out fluctuations in the revenues of budgetary and corporate structures. Finally, *social* financial security requires the existence of social protection and income redistribution systems in crisis situations, particularly during armed conflict. It ensures minimum social standards, reducing the risks of social destabilisation and promoting the consolidation of the population around state priorities[25]. Only the comprehensive and coordinated functioning of these components can guarantee the financial security of the state in peacetime and especially in conditions of extreme challenges.

Financial security as understood by the IMF was first formalised in its Articles of Agreement, which came into force on 27 December 1945. These initial provisions (Article I) laid down the basic elements of financial security

[22] Piletska, S., Myagkikh, I. (2023). Mechanism for Ensuring the Financial Security of Enterprises in a Knowledge Economy. *Economy and Society,* 53, 9.

[23] As Andrew W. Lo notes, "Privacy places yet another enormous burden on regulatory agencies, which are already overburdened." However, according to Moore's Law, improvements in computing power offer cryptography as a solution to this problem, which involves the study of mathematical methods of information security and is therefore useful in the field of financial regulation. In addition, "there is a well-known method called 'confidential computing protocol' — the best way to share certain types of information while maintaining the confidentiality of each party's data" [For details, see Lo E. Adaptive Markets. Financial Evolution at the Speed of Thought / Andrew W. Lo; translated from English by I. Tereshchenko, V. Zengva, N. Mochalova. — Kyiv: Foros Ukraine, 2018, 490 — 491]. (*author's note)*

[24] Lo, E. Adaptive Markets: Financial Evolution at the Speed of Thought / Andrew W. Lo; translated from English by I. Tereshchenko, V. Zengva, N. Mochalova. — Kyiv: Foros Ukraine, 2018, 490.

[25] Shevchenko, N. Yu., Blyzniuk, V. V. (2024). Selected aspects of the development of Ukraine's financial system in the context of European integration. *Investment Practice and Experience,* 12, 132.

for member states[26]. The IMF Articles of Agreement have since evolved in several stages, resulting in new mechanisms and responsibilities being added to the initial "package" of financial security instruments (Table 2).

Table 2

EVOLUTION OF FINANCIAL SECURITY INSTRUMENTS IN THE IMF STATUTE (1945–1992)[27]

Stage	Date of entry into force	What was included
1. Original Articles of Agreement	27 December 1945	a) monetary cooperation; b) balanced growth of trade; c) exchange rate stability; d) correction of balance of payments imbalances; e) provision of resources against collateral; f) reduction of currency imbalances
2. First Amendment	28 July 1969	Introduction of Special Drawing Rights (SDRs) as a new international reserve unit to supplement gold and national currencies
3. Second Amendment	1 April 1978	Official recognition of floating exchange rates (Jamaica Agreement), abolition of the gold standard and establishment of the IMF's obligation to conduct "firm surveillance" (strict oversight of monetary policy)
4. Third Amendment	11 November 1992	Addition of a mechanism for temporarily suspending the voting rights of debtor members with accumulated arrears to the Fund as a means of fiscal discipline

Source: compiled by the authors

The concept of financial security in modern conditions goes far beyond the traditional understanding of exchange rate stability or budget deficit levels. In times of military challenges, systemic transformations and growing global threats, financial security is becoming a multi-component architecture in which each element performs a strategic function. Based on a synthesis of contemporary approaches, the generalised model (Fig. 2) proposes to consider financial security through the prism of four key clusters: fiscal, infrastructural, monetary and institutional.

Fiscal stability is not just about controlling deficits or public debt. It is the ability of the state to accumulate and redistribute resources, ensuring the financing of defence, social programmes, and critical infrastructure[28]. Especially

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[26] International Monetary Fund. (1945). Articles of Agreement of the International Monetary Fund. Washington, DC.

[27] See International Monetary Fund. (1945). Articles of Agreement of the International Monetary Fund. Washington, DC.

[28] Levine, Ross. (2004). Finance and Growth: Theory and Evidence. National Bureau of Economic Research, Inc, NBER Working Papers. 10766. URL: https://www.nber.org/system/files/working_papers/w10766/w10766.pdf

in wartime, this is the foundation of a country's viability. Tax infrastructure, financial discipline, and the ability to effectively mobilise internal resources all determine whether a country can withstand long-term budgetary pressures.

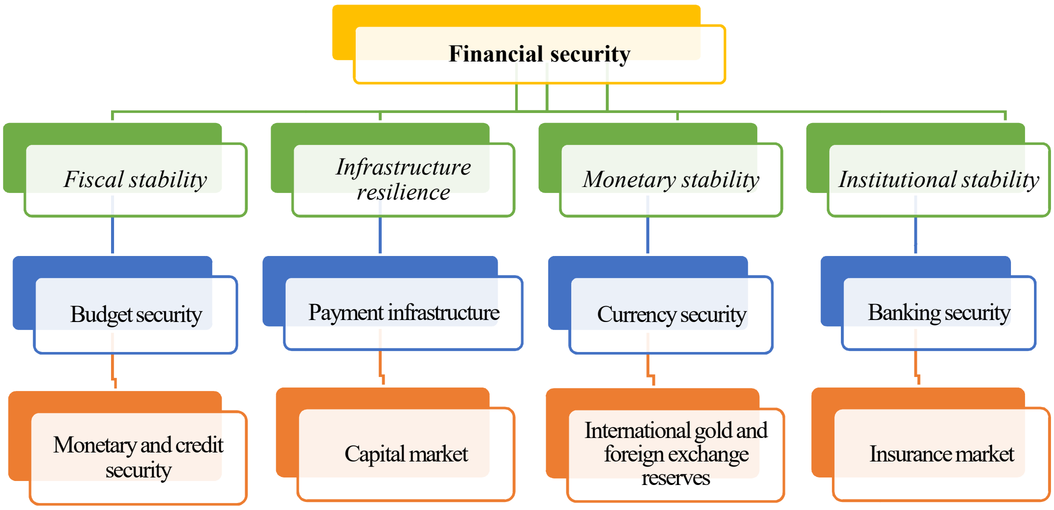

Fig. 2. Generalised model of financial security components

Source: developed by the authors

Infrastructural stability encompasses the institutions and platforms through which financial resources circulate in the economy. These include, in particular, tax and investment infrastructure, capital markets, and reconstruction financing mechanisms [29]. Without high-quality financial logistics, even significant international inflows will not yield results — they will simply "dissolve" into an inefficient system.

Monetary stability in this model plays the role of a balance between internal trust and external stability[30]. Controlling inflation, managing gold and foreign exchange reserves, and maintaining the stability of the national currency are not only the functions of the National Bank, but also indicators of the strategic competence of the entire financial authority[31].

Institutional stability is the lifeblood of trust. If the banking system cannot withstand stress, if the regulator is weak, and if the judicial system

[29] Carter, C. C., & Stiglitz, J. E. (2011). Review of Freefall: America, Free Markets, and the Sinking of the World Economy. *Journal of Real Estate Literature,* 19(2), 492–494. http://www.jstor.org/stable/24884136

[30] Taylor, J. B. (1993). Discretion versus policy rules in practice. *Carnegie-Rochester Conference Series on Public Policy,* 39, 195–214. https://doi.org/10.1016/0167-2231(93)90009-l

[31] Reinhart, C. M., & Rogoff, K. S. (2009). This Time Is Different: Eight Centuries of Financial Folly. Princeton University Press. https://doi.org/10.2307/j.ctvcm4gqx

is unable to protect investors, no financial indicators will matter[32]. It is here that the foundation is laid for long-term financial independence, for the launch of domestic investment, and for preserving the integrity of the state as an economic entity.

Thus, the presented model is not a simple classification of components. It is a systemic map of vulnerabilities and strengths. Its application allows not only to diagnose the state of the financial system, but also to set policy priorities in difficult periods, particularly during times of military conflict. In the case of Ukraine, it is a tool not only for survival, but also for a strategic rethinking of the financial architecture as the basis for sustainable development.

Financial security in wartime

Financial security during wartime is not only about survival, but also about the possibility of creating a stable foundation for the future. The specifics of financial security in wartime require a transition from the usual macroeconomic mechanisms to a regime of emergency fiscal and monetary policy focused on the rapid mobilisation of resources and strict control over their redistribution. Budget funds must be promptly directed towards defence needs, support for critical infrastructure and social payments to the affected population, which radically changes the procedure for forming and implementing the state budget[33]. At the same time, there is an acute problem of declining tax revenues due to the destruction of production capacity and the decline in business activity, while public debt is growing rapidly as a result of increased domestic and external borrowing to finance military spending. In this situation, traditional deficit management tools are being replaced by the issuance of war bonds, the introduction of temporary fiscal levies and the restructuring of debt servicing obligations.

Under the pressure of military action, the monetary policy of the central bank focuses on maintaining exchange rate stability amid a shortage of foreign exchange revenues and logistical constraints[34]. The mobilisation of international reserves and active negotiations with foreign partners become necessary to ensure liquidity in the foreign exchange market. At the same time, cyber security and the physical resilience of payment systems are being strengthened. In addition, sanctions pressure and limited access to international credit markets are prompting the state to seek alternative channels of external financing through bilateral credit agreements, donor

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[32] La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. (1998). Law and finance. *Journal of Political Economy,* 106(6), 1113–1155. https://doi.org/10.1086/250042

[33] Starynskyi, M. V., & Zavalna, Zh. V. (2023). The place of financial security in the system of ensuring and implementing the economic sovereignty of the state (Ch. 11). Publishing House "Baltija Publishing," 232–256.

[34] European Investment Bank. (2025). European Commission and EIB Group sign €2 billion guarantee under Ukraine Facility to support country's reconstruction and resilience. 15.

programmes and special drawing rights mechanisms[35]. The government is introducing temporary restrictions on the movement of capital within the country to prevent asset outflows and maintain financial stability.

Finally, the social aspect of financial security is becoming particularly important: the creation of stabilisation funds, the development of direct payment mechanisms and credit programmes for small and medium-sized businesses help to maintain minimum living standards and ensure social cohesion. Only the coordinated work of all these elements can withstand the extraordinary challenges of wartime and lay the foundation for economic recovery after the end of hostilities. And, as E. Lo aptly notes, "serious social problems require an unprecedented level of cooperation and collective intelligence. Finance is the most effective means known to humankind for harnessing this type of collective intelligence"[36].

Financial security in wartime means not only maintaining the state's solvency, but also ensuring the stable functioning of key financial mechanisms in situations of critical external and internal challenges (Fig. 3).

1 **Mobilisation of resources:**

- Generating tax revenues even during an economic downturn
- Use of war bonds to finance the defence budget
- Formation of a wartime budget
- Support from international partners through grants, loans, and humanitarian aid

2 **Control over financial risks:**

- Maintaining a stable currency exchange rate and avoiding hyperinflation
- Strict control over government spending with prioritisation (defence, humanitarian support)
- Countering external sanctions and attempts to destabilise the economy

3 **Support for the financial and banking system:**

- Ensuring bank liquidity
- Guaranteeing minimum deposits for citizens to avoid panic

Fig. 3. The essence of financial security in wartime
Source: developed by the authors

[35] Shevchenko, N. Yu., Blyzniuk, V. V. (2024). Selected aspects of the development of Ukraine's financial system in the context of European integration. *Investment Practice and Experience,* 12, p. 132.
[36] Lo E. Adaptive Markets: Financial Evolution at the Speed of Thought / Andrew W. Lo; translated from English by I. Tereshchenko, V. Zengva, N. Mochalova. — Kyiv: Foros Ukraine, 2018, 533.

1 Geopolitical
- Geopolitical fragmentation
- Increasing imbalances
- Armed and military conflicts
- Political instability

2 Economic
- Weakness of the monetary system
- Low level of development of the insurance and stock markets
- Weakness of the banking system
- Inefficient use of financial resources
- Imperfection of the tax and budgetary system
- High level of monopolism in financial markets
- Growth of the shadow economy and its criminalisation
- High inflation
- Low level of financial management

3 Legal
- legislation
- Risk of non-performance or improper performance of contracts
- Violation of international law.
- Sanctions or restrictions imposed by other states.
- Risk of contracts not complying with the laws of another jurisdiction.
- Imperfect

4 Military
- Armed conflicts
- Occupation of territories
- Attacks on critical infrastructure
- Risks of man-made disasters due to attacks on factories or nuclear power plants
- Terrorist acts
- Destruction of transport routes
- Restrictions on economic activity.
- International humanitarian crisis
- Information warfare
- Dependence on military aid

5 Technological and security
- Cyber risks
- Failures in critical infrastructure
- Vulnerability of information systems
- Use of artificial intelligence (AI)
- Data leaks
- Biometric risks
- Regulatory risks in the field of technology
- Digital dependency
- Centralisation of technology

6 Demographic
- Physical population loss
- Emigration
- Declining birth rates
- Migration flows of IDPs and refugees
- Deformation of the population structure
- Increased social tension

7 Uncertainty
- Unpredictability of the duration of the war and its impact on the economy
- Lack of predictability in exchange rates and inflation
- Risk of sudden changes in tax, customs or regulatory policy
- Decline in investment activity due to fear of losses.
- Unpredictability of political decisions in crisis situations
- Changes in the terms of cooperation with international organisations or partner countries
- Loss of confidence in financial institutions due to instability in regulatory policy
- Unpredictability of the scale of infrastructure destruction
- Risk of loss of confidence in the national currency
- Capital outflow from the banking system
- Deterioration of the social climate...

Fig. 4. Financial security risks

Source: developed by the authors

However, such stability is extremely vulnerable to systemic risks operating at various levels, from global geopolitical to intra-institutional. They not only complicate decision-making, but can also paralyse financial institutions, cause capital flight, undermine confidence in the currency, increase the budget deficit or exacerbate social tensions.

In addition to purely economic factors, financial security is increasingly affected by hybrid risks: cyberattacks, demographic erosion, legal uncertainty, information wars, sanctions pressure, migration waves and institutional weakness. The combination of these challenges forms a multi-level architecture of threats that must be taken into account when developing policies for the stability and adaptability of the financial system.

A generalised analysis of financial security risks in the context of military conflict allows us to identify interrelated groups of threats, each of which jeopardises the stability of public finances and requires specific countermeasures and adaptation measures (Table 3).

Table 3

CLASSIFICATION OF FINANCIAL SECURITY RISKS DURING MILITARY CONFLICT

Category	Description	Potential impact on financial security
Geopolitical and military risks	Escalation of hostilities, changes in the front line, external intervention and sanctions, destruction of critical infrastructure, blockades of ports and transport corridors.	Decrease in customs and tax revenues; increase in military and repair costs; disruption of logistics.
Economic and macroeconomic threats	Decrease in tax revenues due to production stoppages and decline in business activity, inflationary shock, balance of payments imbalances, devaluation of the national currency, and debt growth.	Deterioration of budgetary sustainability indicators; restrictions on external borrowing; increase in debt servicing costs.
Demographic and social challenges	Mass migration and internal displacement, reduction in the economically active population, rising unemployment, increased need for social support for vulnerable groups, and an increase in the number of individuals belonging to such groups, in particular persons who have lost their ability to work, the wounded, families and children of the deceased	Increased social spending; reduction of the fiscal base; need to create stabilisation funds.
Technological and cyber risks	Cyberattacks on banks, payment and settlement systems, destruction of telecommunications infrastructure, failures in financial flow monitoring systems.	Paralysis of payment channels; leakage of confidential data; significant costs for restoration and improvement of cyber security.

Category	Description	Potential impact on financial security
Legal risks	Incompleteness or inconsistency of military and emergency legislation, risk of non-fulfilment of international obligations, conflicts between the rules of different jurisdictions, sanctions discrepancies.	Legal uncertainty; complications with external financing; risk of transactions and contracts being blocked.
Operational uncertainties	The duration of hostilities and the unpredictability of their intensity, the lack of clear forecasts regarding the timing of recovery, and the instability of communications with international financial partners.	Complications in budget planning; delays in the implementation of investment projects; increased liquidity risks.
Reputational and trust risks	Damage to the country's international image, loss of trust among creditors and investors, risks of misinformation and information warfare.	Increased borrowing costs; reduced capital inflows; the need for additional spending on communication campaigns.

Source: compiled by the authors based on[37]

A retrospective analysis of financial security tools in the context of military operations has revealed a natural transition from fragmented, one-off measures to comprehensive state strategies for mobilising resources and supporting macroeconomic stability (Fig. 5).

During World War II, the United States introduced a large-scale issue of war bonds, which allowed it to attract the savings of the population to finance military operations without significant inflationary pressure. The principle of involving the "street" in the defence economy not only provided the necessary funds, but also strengthened civic solidarity and trust in state financial institutions.

At the same time, during the war period in the USSR, financial mobilisation was carried out under the auspices of centralised planning and strict control over key industries. In particular, the nationalisation of key production capacities was combined with the normative distribution of resources and the payment of specialised military loans, which made it possible to maintain the front and at the same time provide social support to the population[38].

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[37] Buha, H., Bychin, S., Ozerna, I. (2023). The Definition and Structure of Financial Security. Baltic Journal of Economic Studies, Publishing house "Baltija Publishing", vol. 9(2), 68; Kovalenko, V., Slatvinska, M., Sheludko, S., Makukha, S., Valihura, V. (2023). The Monetary Component in Ensuring the Financial Security of the State. *Financial and Credit Activities: Problems of Theory and Practice,* 1(48), 11; Nosan, N. (2019). Financial security of the state: content and problems of governance in the system of the national economy. *Bulletin of Cherkasy University. Series "Economic Sciences",* 2019. 2, 43.

[38] Hudson, R., & Urquhart, A. (2015). War and stock markets: The effect of World War Two on the British stock market. International Review of Financial Analysis, 40, 168.

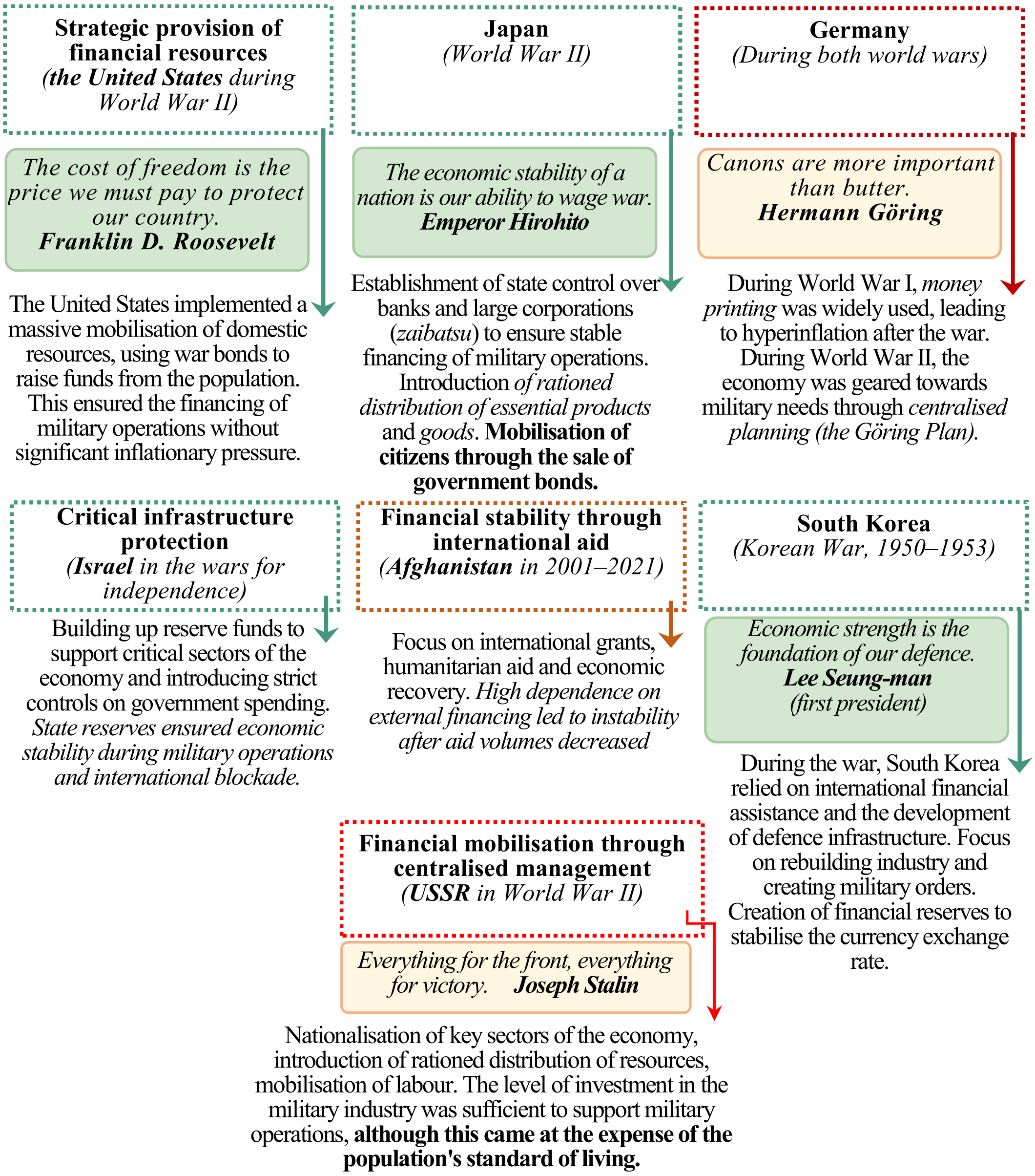

Fig. 5. Approaches to determining the financial security of a state in wartime

Source: developed by the authors[39]

[39] Hudson, R., & Urquhart, A. (2015). War and stock markets: The effect of World War Two on the British stock market. International Review of Financial Analysis, 40, 168; International Monetary Fund. (1945). Articles of Agreement of the International Monetary Fund. Washington, DC; Levine, R. (1999). Financial Development and

Similar approaches were used in Nazi Germany, where financing through government loans and compulsory loans was integrated into a nationwide "credit-exchange" (Kredit-Tausch) mechanism that combined economic expansion with military priorities[40].

In post-war conflicts, Korean and Israeli practices demonstrated the role of foreign aid and financial security institutions that emerged in response to existential threats. In the Korean War (1950–1953), the United Kingdom, the United States and the United Nations provided substantial financial assistance to South Korea, which not only alleviated the budget deficit but also contributed to the restoration of industrial infrastructure[41]. In Israel, reserve funds were created for critical industries, and strategic exports of bonds and loans ensured long-term planning horizons even in conditions of almost constant threat.

The recent experience of Afghanistan (2001–2021) points to a growing dependence on international grants and humanitarian aid: with enormous amounts of external financing, the formation of a stable financial system during and after military operations requires not only resources but also transparent mechanisms for their distribution[42]. This evolutionary path—from the issuance of war bonds to the creation of multi-level institutional schemes—demonstrates that the financial security of states in wartime is becoming an increasingly complex combination of internal mobilisation mechanisms and external partnership resources.[43]

In order to verify the above regarding the level of key financial security indicators and the possibility of developing forecast recommendations and models for Ukraine's post-war recovery, integral indices of key components of state financial security in conditions of military conflict were calculated, based on the calculation methodology summarised in Table 4.

Table 4

METHODOLOGY FOR CALCULATING INTEGRAL INDICES OF FINANCIAL SECURITY COMPONENTS

Indicator	Formula
Energy security	$I_{Energy} = (y_1^{w_1} \times y_2^{w_2} \times y_3^{w_3} \times y_n^{w_n}) \times \exp(\beta y_1 y_2 y_3 y_n)$ w_n weights are determined using the analytical hierarchy process (AHP) or entropy method; β- parameter of interaction of indicators

Economic Growth: views and agenda. In World Bank policy research working paper. 18; World Bank. (2021). Afghanistan Reconstruction Finance. Washington, DC: World Bank.

[40] Ibid.

[41] United Nations. (1953). Financial Assistance to South Korea, 1950–1953. New York: United Nations.

[42] World Bank. (2021). Afghanistan Reconstruction Finance. Washington, DC: World Bank.

[43] State Treasury Service of Ukraine. (2024). Report on the implementation of the state budget for 2022–2024. Kyiv: Ministry of Finance; Ministry of Economy of Ukraine. (2013); Methodological recommendations for calculating the level of economic security of Ukraine (Order of the Ministry of Economic Development of Ukraine No. 1277 of 29 October 2013). Kyiv: Department of Economic Strategy and Macroeconomic Forecasting

Indicator	Formula
Foreign economic security	$I_{Foreign\ economic}=\exp\left(\sum_{i=1}^{n} w_i \ln(y_i+\epsilon)\right)$ where ∈ is a small number to avoid logarithming zero.
Investment and innovation security	$I_{\text{Invetment and innovation}} = \sum_{i=1}^{n} \alpha_i y_i$ where α_i are the coefficients of the main components obtained from PCA.
Macroeconomic security	$I_{\text{Macroeconomic}} = (\sum_{i=1}^{n} w_i y_i) \times (1 - CV)$ where CV is the coefficient of variation of normalised indicators.
Banking security	$I_{Banking} = (\prod_{i=1}^{5} y_i^{w_i}) \times \exp\left(\lambda \times \sum_{i=1}^{5} \sum_{j=i+1}^{5} p_{ij} y_i y_j\right)$ λ- coefficient reflecting the overall interaction of indicators, p_{ij}- correlation coefficient between indicators.
Non-bank financial market security	$I_{Non-bank} = \left(\sum_{i=1}^{4} w_i y_i^{\psi}\right)^{1/\psi}$ $\psi \neq 0$- aggregation parameter ($\psi = 1$ — arithmetic mean, $\psi \to 1$ — geometric mean)
Debt security	$I_{Debt} = \left(\sum_{i=1} w_i y_i\right) \times (1 - CV)$
Budget security	$I_{Budget} = \left(\prod_{i=1}^{4} y_i^{w_i}\right) \times \exp\left(\gamma \times \sqrt{\sum_{i=1}^{4} (y_i - \overline{y})^2}\right.$ $\overline{y}$- average value of normalised indicators, γ- coefficient that takes into account the dispersion of indicators.
Currency security	$I_{Currency} = \left(\sum_{i=1}^{4} w_i y_i^{\xi}\right)^{1/\xi}$ $\xi \neq 0$- aggregation parameter
Monetary security	$\mathrm{I}_{\text{Monetary and credit}} = \left(\prod_{i=1}^{6} y_i^{w_i}\right) \times \exp\left(-\delta \times \sqrt{\sum_{i=1}^{6} (y_i - \overline{y})^2}\right)$ δ- coefficient that takes into account the dispersion of indicators

Indicator	Formula
Financial security	$$I_{Financail} = \left(\prod_{j=1}^{6} I_j^{D_i}\right) \times \exp\left(\sum_{j=1}^{6}\sum_{k=j+1}^{6} \theta_{jk} I_j I_K\right)$$ I_j- integral index of the j-th sub-sector, D_i- weight coefficient, θ_{jk}- coefficient of interaction between subsystems j and k.
Demographic security*	$$I_{\text{Demographic}} = \sum_{i-1}^{n} w_i \times I_i$$ w_n weights are determined using the analytical hierarchy process (AHP)
Food security**	$I_{\text{Food}} = w_1 \times I_{aviability} + w_2 \times I_{access} + w_3 \times I_{quality} + w_4 \times I_{stability}$

Note:

* includes an assessment of population reproduction, migration balance, birth/death rates, and gender-age structure. The methodology takes into account not only absolute values, but also the dynamics of demographic processes in comparison with base periods and international standards;

**assessed in accordance with the approaches proposed by the Food and Agriculture Organisation of the United Nations (FAO), which include: Availability—availability of food in the country (production, imports); Access—physical and economic accessibility for the population; Quality — nutritional value and sanitary safety of food products; Stability—stability of supply over time (seasonal/emergency factors). It should be noted that these indicators are adapted to the military context, taking into account the risks of logistical constraints, shelling of the agricultural sector and migration imbalances.

Source: authors' improvements

Table 5 shows empirically calculated integral indices of key components of financial security for nine benchmark countries (including Ukraine–2022) in conditions of military conflict.

Analysis of Table 5 reveals a clear dependence of the level of individual components of financial security on the historical context of the conflict and the nature of state institutions. Thus, the highest values are mostly demonstrated by Israel (1973) and, to a lesser extent, Ukraine (2022)—countries that combined mobile internal financing mechanisms with intensive international support. For example, Israel's high investment and innovation index indicates the successful construction of an innovation and investment model for recovery through the issuance of war bonds and active public-private partnerships. In most cases, countries with short-term and large-scale destruction (Japan 1945, Germany 1945) have low macroeconomic and banking security indices, which is due to the initial catastrophic destabilisation of fiscal and financial systems. However, in the later stages of their recovery (Iraq 2005, Syria 2015), there is a gradual increase in foreign economic and debt security indicators due to external borrowing and donor assistance, although low demographic and food security indicators point to an unsatisfactory level of social and food stabilisation.

Table 5

INDEXES OF COMPONENTS OF STATE FINANCIAL SECURITY IN WAR CONDITIONS (CALCULATED INDICATORS)

Country (year)	**Energy**	**Foreign economic**	**Investment and innovation**	**Macroeconomic**	**Banking**	**Non-banking**	**Monetary and credit**	**Budgetary**	**Debt**	**Demographic**	**Food**
Ukraine (2022)	0.3267	0.3889	0.2333	0.0833	0.1075	0.2158	0.3890	0.1667	0.2625	0.5171	0.7200
Vietnam (1975)	0.4032	0.3531	0.1967	0.1517	0.1587	0.2500	0.4310	0.2121	0.3108	0.4780	0.4000
Israel (1973)	0.6534	0.7037	0.7967	0.7517	0.7250	0.7250	0.6000	0.4500	0.5625	0.6942	0.8500
Syria (2015)	0.3778	0.3241	0.2167	0.1167	0.1324	0.2800	0.4444	0.4667	0.3625	0.3236	0.3000
Iraq (2005)	0.5012	0.4444	0.3033	0.2167	0.1650	0.2200	0.2500	0.2000	0.1500	0.3688	0.5000
Japan (1945)	0.2041	0.2469	0.1467	0.1000	0.07	0.2000	0.3000	0.25	0.35	0.3169	0.4600
India (1947)	0.4479	0.3981	0.2489	0.3014	0.2850	0.2300	0.2800	0.3600	0.4250	0.4326	0.5800
Egypt (1973)	0.3546	0.3025	0.2167	0.2483	0.1750	0.1700	0.2200	0.2200	0.3000	0.4612	0.6800
Germany (1945)	0.1532	0.1975	0.1033	0.0542	0.0350	0.0200	0.15	0.100	0.1250	0.4617	0.6800

Note: Data is presented with an accuracy of four decimal places; source of calculations — own processing of historical and contemporary statistical data. Nine benchmark countries were selected for empirical analysis based on two criteria: first, coverage of different historical and geopolitical contexts of military conflicts (World War II, the Korean and Arab-Israeli wars, conflicts of the 21st century); second, the diversity of economic types and their capacity for recovery (from industrialised countries with strong financial institutions to economies that have suffered severe destruction). This approach makes it possible to compare Ukraine's experience (2022) with the qualities of recovery under different models of state response and scales of external support.

Source: calculations based on data from[44].

[44] State Treasury Service of Ukraine. (2024). Report on the implementation of the state budget for 2022–2024. Kyiv: Ministry of Finance; Ministry of Economy of Ukraine. (2013); Methodological recommendations for calculating the level of economic security of Ukraine (Order of the Ministry of Economic Development of Ukraine No. 1277 of 29 October 2013). Kyiv: Department of Economic Strategy and Macroeconomic Forecasting.

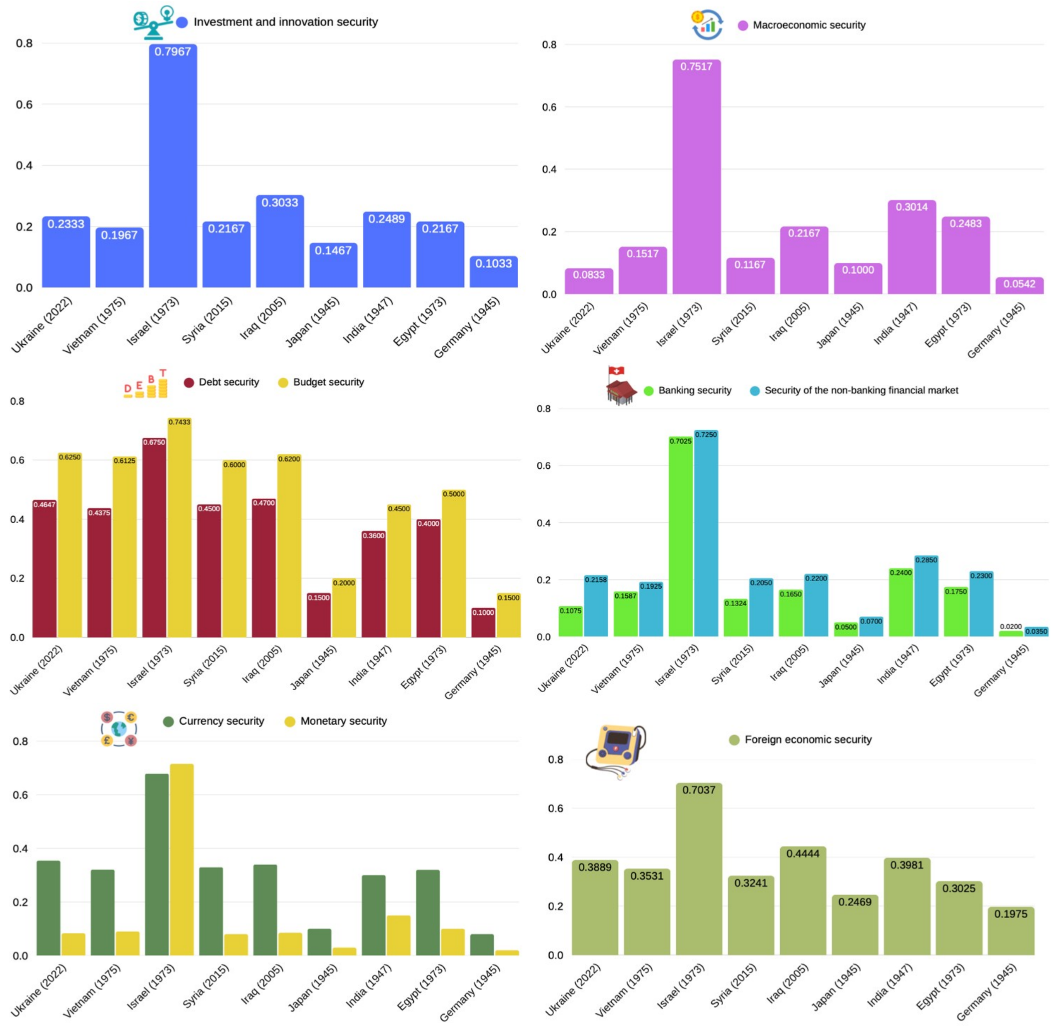

Fig. 6. Calculated integral indicators of financial security components in wartime

Source: developed by the authors

Ukraine-2022 is distinguished by a balance between banking and foreign economic security, which indicates the relatively stable operation of the banking system during the war and the successful attraction of resources from international partners. Lower macroeconomic and energy security values reflect the need for further fiscal consolidation and strengthening of energy independence (Table 5, Fig. 6). The results show that the most effective strategies for recovery are comprehensive ones that combine internal resource mobilisation, flexible fiscal policy and targeted external assistance.

Along with the identified patterns of financial security component indices, which confirm the importance of combining domestic resource mobilisation, flexible fiscal policy and targeted external assistance, it is advisable to turn to the real budget priorities of the state.

The functional structure of budget expenditures in 2022–2024 indicates a shift in the priorities of state fiscal policy towards defence needs and the expansion of social protection[45]. Compared to the pre-conflict period, the share of defence spending has increased significantly, as has social security spending, particularly pension payments and subsidies for housing and communal services. At the same time, the rate of increase in spending on education and environmental protection remains relatively low[46]. This resource structure reflects the need to simultaneously respond to security challenges and support vulnerable populations, but it also opens up a discussion about the balance between short-term and long-term investments in human and natural capital.

A historical analysis of the tax burden on peasant farms in the USSR between 1920 and 1931 shows extreme forms of fiscal pressure, when the agricultural sector not only ensured food security but also covered a significant part of the state's budgetary needs. The ratio of peasants' incomes to compulsory payments was extremely high, indicating a lack of adequate compensation mechanisms and social guarantees during the period of centralised planning. This experience highlights the risk of excessive taxation of key productive sectors without taking into account their economic sustainability and the well-being of the population.

Fig. 7. Total taxes paid by individual peasant farms (in 1931)[47]

Source: authors' own work

[45] Ministry of Finance of Ukraine. (2023). Social expenditure by category. Kyiv.
[46] Ibid.
[47] For more details, see http://holodomor-era.history.org.ua/item/0000169; Ganza O.I. Ukrainian villages during the establishment of the totalitarian regime (1917-1927). — Kyiv, 2000, 55 — 65.

The distribution of social expenditures by category in the current conditions shows that more than 60 per cent of social funds are allocated to pensions, another 30 per cent to cover the Pension Fund deficit, while subsidies for housing and communal services account for only about 6 per cent of social payments[48]. This dominance of pension expenditure indicates a preference for financing "payments on demand" and insufficient attention to preventive measures to support working households. To ensure financial security more effectively, it is necessary to review social policy, shifting the focus from covering the deficit of social funds to preventive mechanisms of benefits and subsidies that reduce budgetary risks in the long term. In parallel with the adjustment of domestic social policy, the country is actively attracting external resources, including foreign direct investment, international financial assistance, humanitarian and technical support, funds from donor conferences, insurance and guarantee instruments, as well as participation in international public-private partnership projects.

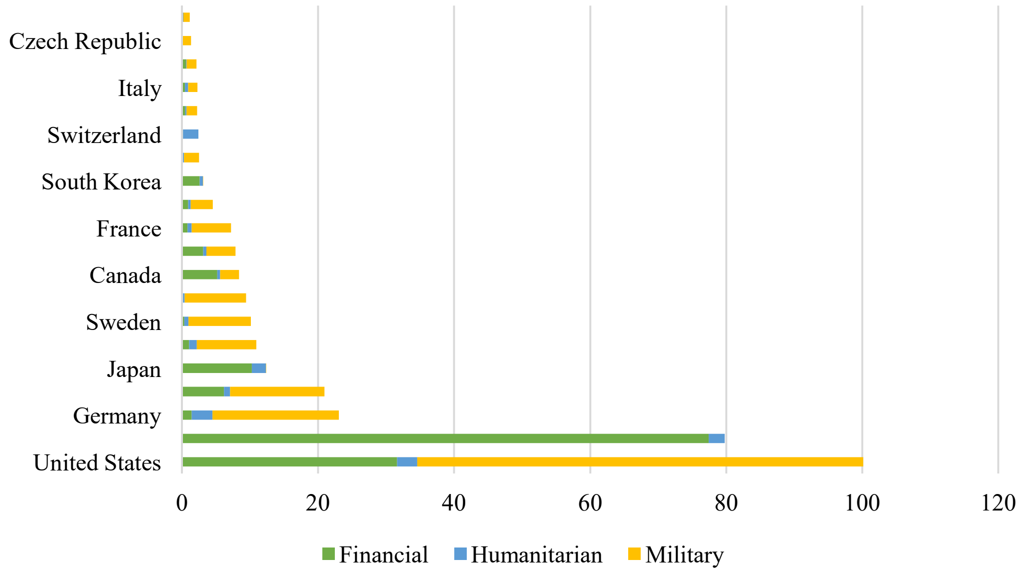

Fig. 8 — Aid provided to Ukraine by type of assistance, 2022–2024 (billion euros)[49]

Source: authors' own work

[48] Ministry of Finance of Ukraine. (2023). Social expenditure by category. Kyiv. Appendix_No. 3.
[49] European Investment Bank. (2025). European Commission and EIB Group sign €2 billion guarantee under Ukraine Facility to support country's reconstruction and resilience

International support for Ukraine in 2022–2024 has taken on a distinct three-pronged character, with financial, humanitarian and military assistance complementing each other[50]. In terms of volume[51], the largest donors were the United States (a total of about €100 billion, mainly military and financial aid) and EU institutions (€≈80 billion, with a high share of budget deficit financing and macro support). Germany, the United Kingdom and Japan are also among the leaders, investing significant resources in both weapons and equipment and in the restoration of critical infrastructure.

The humanitarian component accounts for 5 per cent to 10 per cent of total aid in leading donor countries and is particularly important for meeting the basic needs of displaced persons and affected populations. At the same time, countries with a lower total amount of aid (some Scandinavian and Central European countries) have a higher share of humanitarian grants, reflecting their specialisation in socially oriented programmes. Military aid, along with financial support, remains a key tool for deterring aggression and restoring defence capabilities: its share ranges from 40 per cent in the European Union to over 70 per cent in the United States. This proportion confirms the strategic choice of the main partners, which, through the transfer of weapons and logistical support, contribute to maintaining the front line and stabilising the situation on the line of contact[52].

An analysis of the structure and geography of international aid shows that maximum effectiveness is achieved precisely through a balanced combination of macroeconomic support (financial aid), targeted social protection (humanitarian grants) and strengthening of defence capabilities (military aid). Such a pragmatic approach not only allows countries to withstand the extreme pressures of wartime, but also lays the foundation for further post-war recovery.

In this context, a comparative analysis of the volume of international assistance in key military conflicts in the second half of the 20th and early 21st centuries, reveals a number of patterns.

First, the current level of financial, military and macro support for Ukraine (over €100 billion for 2014–2024) significantly exceeds the amounts of aid received by other states in similar crisis situations. International inflows were also high for Iraq (2003–2011) and Afghanistan (2001–2021) (around €80–100 billion), but most of this money went towards rebuilding infrastructure and internal security, while Ukraine is

[50] European Investment Bank. (2025). European Commission and EIB Group sign €2 billion guarantee under Ukraine Facility to support country's reconstruction and resilience

[51] As of 31 August 2024.

[52] Ibid.

getting a lot of military equipment and macro-financial loans on top of reconstruction[53].

Secondly, classic "Cold War" conflicts — Vietnam (1950–1975), the Korean War (1950–1953), Arab-Israeli clashes (1948, 1973) — were characterised by significant but more diffuse assistance: some of the resources came through UN mechanisms, while others came from direct allies (the US, the USSR, the UK, France)[54]. The volume of these inflows rarely exceeded €20–30 billion, and the focus was on humanitarian and political programmes rather than direct financing of the state budget.

Thirdly, the geographical concentration of partners and their level of economic development determine the ratio between military, financial and humanitarian components. In the case of Ukraine and Iraq, a combination of direct military supplies and macro-financial loans dominates, while for Afghanistan and Palestine, humanitarian aid to cover the most acute social needs was more significant[55].

Finally, the scale and structure of aid directly correlate with the strategic interests of donors. For Ukraine, this means that a significant part of the funds today is formed under the influence of political decisions at the highest level, which simultaneously creates opportunities for rapid stabilisation and risks of long-term dependence on external resources. In the context of further recovery, the lessons of previous cases should be taken into account: the high share of military and macro support requires a parallel increase in investment in social and food security, as well as in mechanisms for transparent grant administration, in order to avoid "financial traps" in the post-conflict period.

State financial security strategies for post-war recovery

Otto von Bismarck once called politics "the art of the possible." Andrew Lo paraphrased his words by saying that "finance is the 'mediator of the possible'". Thanks to finance, we can change everything within the reach of our politics and make the previously impossible achievable[56]; "… in the future, with the help of finance, we will be able to determine social priorities."[57]

War changes economic priorities, but laying the groundwork for future recovery begins even during hostilities. Post-war economic revival can rely

[53] Ibid.; Hudson, R., & Urquhart, A. (2015). War and stock markets: The effect of World War Two on the British stock market. *International Review of Financial Analysis,* 40, 169

[54] United Nations. (1953). Financial Assistance to South Korea, 1950–1953. New York: United Nations

[55] World Bank. (2021). Afghanistan Reconstruction Finance. Washington, DC: World Bank.

[56] Lo, E. Adaptive Markets: Financial Evolution at the Speed of Thought / Andrew W. Lo; translated from English by I. Tereshchenko, V. Zengva, N. Mochalova. — Kyiv: Foros Ukraine, 2018, 534,

[57] Ibid., p. 537.

primarily on the activities of specialised recovery funds that accumulate international aid, state reserve resources and private investment. Grants and credit lines from international financial institutions should be directed towards rebuilding key sectors, particularly infrastructure and energy, while the formation of state reserves ensures the rapid financing of priority needs without excessive inflationary pressure [58], for the restoration of destroyed facilities. At the same time, special bond issuance mechanisms and targeted investment platforms encourage private capital to participate in recovery projects on transparent and predictable terms.

Restoring investor confidence requires increased transparency in the budget process and the restoration of credit support for businesses and households through the recapitalisation of the banking sector and state loan guarantees. Diversification of the economic structure is designed to increase resilience to external shocks: a focus on green energy, digital technologies and modernisation of production, together with the creation of favourable tax regimes and specialised platforms for small and medium-sized businesses, should contribute to sustainable growth. This multi-pronged approach will ensure a smooth transition from crisis management to long-term development.

The above areas of financial security recovery are integrated into five key strategic blocks that ensure a consistent transition from crisis management to long-term economic development (Table 6).

Table 6

KEY STRATEGIES FOR STATE FINANCIAL SECURITY FOR POST-WAR RECONSTRUCTION[59]

Strategy	Main implementation mechanisms	Expected results
1. Creation of specialised financial instruments	• Issue of "war" or "resource" bonds for state and private investors; • Formation of a state reserve fund for recovery; • Development of public-private partnerships in the RPP format to co-finance infrastructure projects.	• Ensuring the mobilisation of additional resources without significant inflationary pressure; • Increasing investment attractiveness; • Increasing the amount of capital available for reconstruction.

[58] See United Nations. (1953). Financial Assistance to South Korea, 1950–1953. New York: United Nations.

[59] See Buha, H., Bychin, S., Ozerna, I. (2023). The Definition and Structure of Financial Security. Baltic Journal of Economic Studies, Publishing house "Baltija Publishing", vol. 9(2), 69; International Monetary Fund. (1945). Articles of Agreement of the International Monetary Fund. Washington, DC; Nosan, N. (2019). Financial security of the state: content and problems of governance in the system of the national economy. Bulletin of Cherkasy University. Series "Economic Sciences", 2019. No 2, 43; United Nations. (1953). Financial Assistance to South Korea, 1950–1953. New York: United Nations; World Bank. (2021). Afghanistan Reconstruction Finance. Washington, DC: World Bank.

Strategy	Main implementation mechanisms	Expected results
2. Ensuring macroeconomic stability	• Monitoring the deficit and public debt using strict fiscal rules; • Controlling inflation through targeted monetary policy; • Regulating borrowing volumes on domestic and foreign markets to avoid a "debt trap".	• Stabilisation of budget balance; keeping inflation within target limits; • Increasing the confidence of creditors and investors; • Reducing the cost of borrowing.
3. Stimulating international cooperation	• Active participation in IMF, World Bank and EIB programmes; • Access to bilateral credit lines and grant agreements; • Institutional consolidation of mechanisms for transparent reporting to donors.	• Attracting external financial resources on preferential terms; • Improving the quality of management through transparency and accountability; • Expanding access to advanced technologies and expertise.
4. Investment in human capital	• Implementation of education and retraining programmes for internally displaced persons; • Rebuilding social infrastructure (education, healthcare); • Providing preferential loans for small and medium-sized businesses (SMEs).	• Reducing unemployment and social tensions; • Increasing labour productivity; • Creating the conditions for sustainable economic growth through human capital development.
5. Stimulating innovation and private business	• Introduction of tax incentives and subsidies for the restoration of manufacturing enterprises • Development of green and digital clusters; • Creation of innovative financial platforms (crowdfunding, "mega-maturity" bonds[60]). • Investing in start-ups and technology companies that can become a new engine of the economy	• Diversification of the economy and reduction of dependence on traditional industries; • Attracting venture capital; • Increasing the competitiveness of national enterprises.

Source: authors' own development

Taking into account the above strategic approaches, we have developed our own conceptualisation of trajectories for the revival of financial security, which includes three possible scenarios for development.

[60] The author's term "megaron bonds" ("megaron" (from *the* Greek *megaron* — a large hall, the core of an ancient palace)) refers to large-scale debt instruments specifically aimed at financing cluster development, technology hubs and transformational projects. Such bonds can combine government guarantees with private investment, attracting both domestic and international capital for long-term recovery. (*author's note)*

A linear scenario, in which measures to mobilise resources and support macro-stability are implemented sequentially within the framework of the "formation — provision — support" phases, ensuring sustainable but linear improvement in financial security. (Fig. 9).

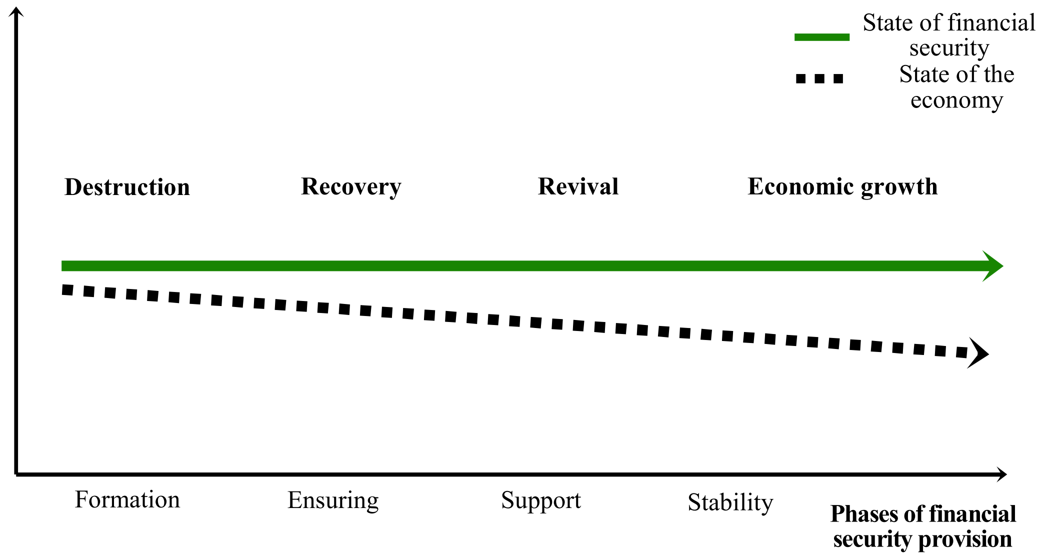

Fig. 9. Model of the linear nature of post-war revival

Source: authors' own development

Exponential scenario (Fig. 10), in which overcoming critical links in resource and institutional support gives rise to a series of infrastructure, social and innovation projects with an accelerated synergy effect, leading to increasingly intense economic growth. Within the exponential scenario of financial security revival, two distinct trajectories are possible: optimistic and pessimistic.

In an optimistic scenario, focusing efforts on the simultaneous launch of infrastructure, fiscal and social programmes based on technological modernisation creates a synergistic effect, leading to accelerated economic recovery. After overcoming the initial "formation" phase and securing the basic resources for growth, increased spending on reconstruction and modernisation generates a multiplier effect: each additional hryvnia invested in recovery contributes to increasingly higher rates of economic growth. In this case, the "exponential surge" in activity manifests itself already within the "support" phase and moves into the "laying the groundwork for growth" phase, which guarantees high rates of macroeconomic stability recovery.

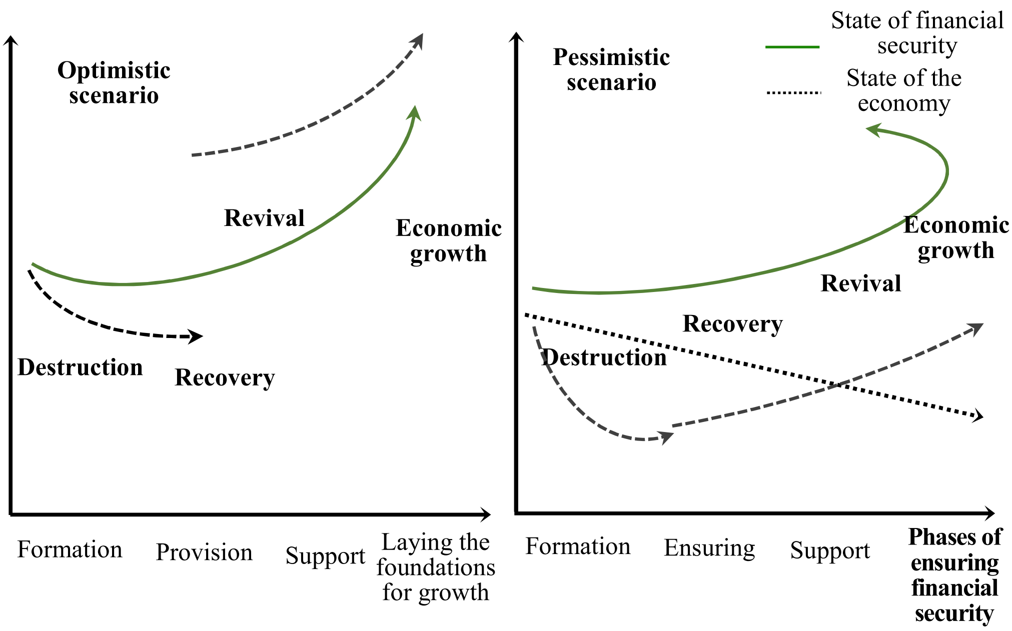

Fig. 10. Exponential model of post-war revival

Source: authors' own work

In the pessimistic scenario, the same instruments, due to delays in implementation or fragmented financing, do not form the necessary large-scale institutional base and do not trigger multiplier mechanisms in time. In this case, the escalation of deficit imbalances during the "destruction" period turns into prolonged stagnation during the "recovery" stage, and the expected revival is hampered by low investor confidence and fiscal policy uncertainty. Only after significant delays in the "support" phase may there be a broken exponential surge, but its intensity and duration will remain below the optimistic scenario forecast, and the untimely or insufficient accumulation of financial resources will not contribute to the formation of a sufficient base to ensure financial security. The two exponential development options reflect the sensitivity of recovery mechanisms to the timeliness, scale and comprehensiveness of the financial security strategies applied.

A quantum leap in economic development (Fig. 11) is an extreme form of the recovery scenario, which involves the targeted and one-off implementation of highly effective innovative or institutional solutions. Unlike a gradual build-up of potential or even accelerated exponential growth, a quantum leap causes an instantaneous transition of the country to a fundamentally different level of macroeconomic power and financial independence.

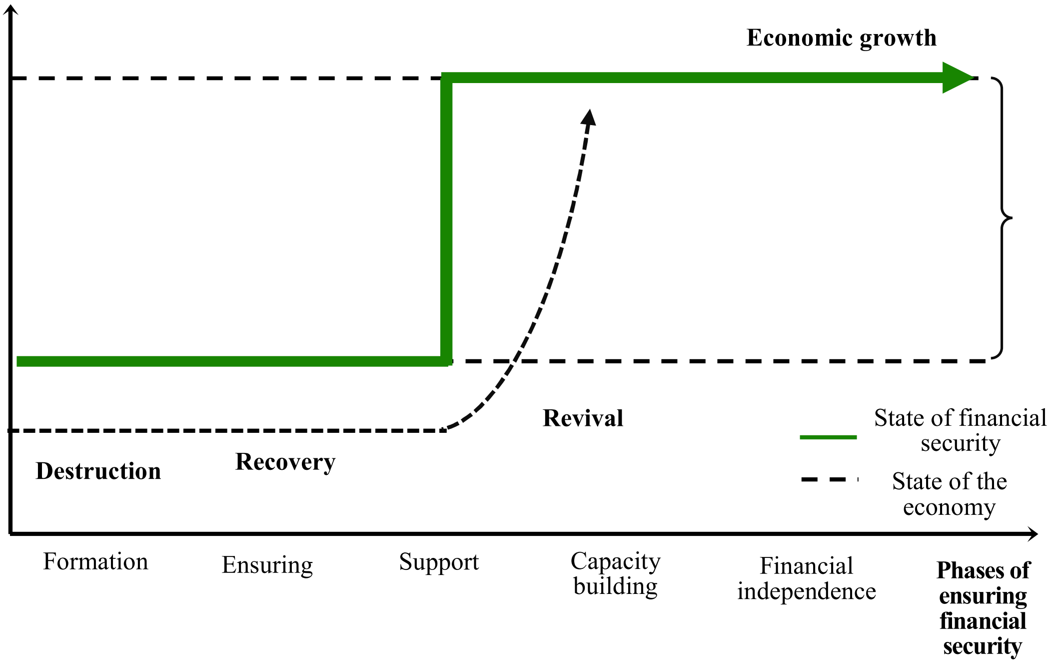

Fig. 11. Model of a quantum leap in economic development during the post-war recovery and ensuring financial security stability

Source: authors' own development

To achieve such a leap, the first prerequisite is the creation of a pool of financing instruments, quantitative concentration of "quality" capital, reforming the structure of the economy, technological modernisation using domestic high-tech developments and the formation of a new culture of the domestic financial system [61] in combination with the use of financial strategies and financial diplomacy. For example, the issue of a large tranche of targeted bonds ("infrastructure" or "green" bonds), which concentrates financial resources at a single point in time in an amount sufficient to implement projects of national importance (new generation power units, digital platforms for public services, large-scale repair and restoration work). Secondly, the success of a quantum leap depends on the

[61] For more details on the "cultural change" in the financial sector, see Lo E. Adaptive Markets. Financial Evolution at the Speed of Thought / Andrew W. Lo; translated from English by I. Tereshchenko, V. Zengva, N. Mochalova. — Kyiv: Foros Ukraine, 2018, 63-99, 494-495.

simultaneous application of technological breakthroughs—for example, the large-scale deployment of blockchain infrastructure for government financial transactions or the introduction of artificial intelligence in budget expenditure modelling. Synchronising funding with the introduction of smart management and control systems ensures that investments are directed precisely to the most efficient sectors of the economy, minimising losses and reducing the time required for their implementation. Thirdly, the quantum leap has a pronounced multiplier and transformational effect: by reaching a new "baseline" of financial stability and productivity, the state lays the foundation for long-term economic growth without returning to the previous phases of "destruction" or "recovery."

As a result, this scenario creates a kind of "plateau" of high macro-stability and opens up access to new external capital markets on favourable terms, which in turn strengthens the state's financial security. In the process of post-war revival of the state's financial security, five consecutive phases are distinguished, each of which performs decisive functions in ensuring stability and striving for financial independence.

The stages that a country's economy goes through during a war: destruction, recovery, revival, and economic growth are accompanied by phases (Fig. 12) of ensuring financial security from the process of destruction to the post-war revival of the state. Each of these is designed to fulfil specific objectives and play a role at each stage.

The strategic goals for ensuring post-war economic growth should be innovative approaches, in particular innovative financial instruments for economic revival, the introduction of transparent financial systems and open finance, and the digitalisation of public finances: the introduction of electronic accounting and reporting systems using blockchain technology to prevent corruption; transparent management of foreign aid: reporting to donors on the use of funds received; use of digital technologies to track spending, while also developing a data protection regulation system based on the principles and within the framework of cooperation and association between Ukraine and the European Union.

Financial security in wartime is not limited to short-term measures to support economic stability. It involves the formation of long-term strategies that allow the state to recover and move towards sustainable development after the end of the conflict.

Financial security in wartime is not only about survival, but also about strategic preparation for the post-war period. The experience of countries such as Germany, Japan and Israel, shows that effective mobilisation of resources, transparent financial management and a focus on the future can ensure the rapid and successful recovery of a state. Today, Ukraine faces a unique challenge, but with the right decisions, this challenge will become an opportunity to build a modern, stable economy.

Formation

- At this stage, a comprehensive assessment of the current economic situation is carried out, taking into account military losses and forecasting their impact on the budgetary and monetary spheres. Important tasks include creating a regulatory framework for fiscal response, developing mechanisms for transparent control over the use of public finances, and initially mobilizing international grants and loans.

Provision

- This phase is aimed at promptly adjusting fiscal and monetary policy: optimizing public spending, strengthening fiscal discipline by revising tax rates and introducing temporary levies, and developing public financing instruments (war bonds, government loans). At the same time, the banking system is being strengthened by supporting liquidity and strengthening the capital of the most vulnerable institutions.

Support

- After stabilizing the basic parameters of the budget deficit and inflation, the government is moving on to a series of measures to support small and medium-sized businesses, launch social assistance programs, and provide compensation to affected segments of the population. In this context, mechanisms for restoring innovative activity are being deployed, in particular through grant and guarantee programs, and the volume of market borrowing on the stock exchange is increasing.

Capacity building

- This phase involves targeted investments in the "long tail" of the economy: reforming the education system and retraining personnel to meet the needs of the new economy, developing renewable energy sources and ensuring energy security, as well as attracting foreign direct investment in high-tech industries. At the same time, a network of financial clusters is being formed to ensure a stable partnership between the state and private business.

Financial "independence"

- The ultimate goal is to reach a stage where the financial system functions without constant external "artificial" support: the state gains energy sovereignty, reduces its external debt burden, and implements multi-level systems for preventive risk monitoring. Achieving financial independence creates the conditions for long-term and self-sustaining economic growth.

Fig. 12. Phases of ensuring financial security in the process of post-war revival of the state

Source: authors' own work

Conclusions

The study identified the key mechanisms for building the financial security of a state in conditions of military conflict and demonstrated that its effectiveness is based on a combination of internal resource mobilisation, flexible fiscal policy and targeted international support. Historical analysis has shown that examples from World War II, the Korean War, and contemporary cases—Iraq, Afghanistan, and Ukraine—confirm the need to create specialised financial instruments (war bonds, reserve funds) alongside the attraction of grants and credit lines. The author's development model—from a linear scenario through exponential to quantum leap—illustrates that successful states are able to move from stabilisation to leapfrog growth using "pulse" funding and technological innovation.

Empirical calculations of the integral indices of eleven components of financial security for nine benchmark countries showed the high adaptability of the financial institutions of Israel and Ukraine, while the "pioneers"—Japan and Germany in 1945— initially experienced profound destabilisation, followed by a sharp recovery thanks to large-scale external inflows. Strong macro support and infrastructure reconstruction in Iraq and Afghanistan indicate long-term dependence on donors, accompanied by unsatisfactory demographic and food results.

In budgetary terms, modern Ukraine shows a clear shift of resources towards defence needs and covering the pension fund deficit, while spending on education, the environment and preventive social programmes remains fragmented. This requires a review of social policy: priority should be given to preventive benefits and subsidies that will reduce the medium-term fiscal burden and increase the economic resilience of households.

An analysis of the geography and structure of international aid is also key: the more than €100 billion allocated to Ukraine significantly exceeds the amounts spent on classic Cold War conflicts and demonstrates that the most effective approach is a balanced combination of macro-financial support, humanitarian grants and military aid. However, such multi-billion-dollar support also creates risks of long-term dependence and the need to improve transparent mechanisms for administering grants and loans. Therefore, Ukraine's post-war recovery requires a combination of strict fiscal discipline with increased investment in green energy and digital infrastructure, the reorganisation of social protection based on prevention, and the development of the high-tech sector with the support of public-private partnerships. Only a comprehensive approach that integrates internal mobilisation tools, institutional innovation and international coordination can lay a solid foundation for long-term and self-sustaining economic growth.

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