

УДК: 330.341.1:338.1:351.778.5(477)

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РОЛЬ ЦИРКУЛЯРНОЇ ЕКОНОМІКИ У ЗАБЕЗПЕЧЕННІ ЕКОНОМІЧНОЇ БЕЗПЕКИ

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ROLE OF CIRCULAR ECONOMY IN ENSURING THE ECONOMIC SECURITY

Анотація. Сучасна економічна система України функціонує в умовах тривалих і глибоких викликів, спричинених війною, глобальними трансформаціями, поглибленням ресурсної обмеженості та ескалацією кліматичних загроз. За таких обставин традиційні моделі зростання демонструють свою вичерпність, водночас посилюється запит на нову економічну парадигму, яка б відповідала вимогам сталого розвитку та зміцнення економічної безпеки. Однією з перспективних відповідей на ці виклики є концепція циркулярної економіки – як системи, що забезпечує ресурсну ефективність, зменшення екологічного навантаження та підвищення економічної стійкості.

Мета – наукове обґрунтування векторів трансформації економічної моделі України через імплементацію принципів циркулярної економіки як інструменту зміцнення економічної безпеки держави в умовах полікризової реальності та євроінтеграційного курсу, з урахуванням стратегічних пріоритетів сталого розвитку.

Методологія дослідження. У процесі дослідження використано комплекс методів, які дозволили забезпечити досягнення мети, зокрема: системний підхід; метод структурно-функціонального аналізу; інституційний аналіз.

Основні результати. Невід'ємною складовою посилення ефективності використання ресурсів як нагального завдання для забезпечення економічної безпеки є наявність високоякісної бази даних прийняття управлінських рішень та моніторингу прогресу розбудови циркулярної економіки в контексті досягнення ЦСР в Україні.

Сталий розвиток держав, які перебувають у надзвичайних обставинах, зокрема в умовах конфліктів, військових дій, є складним завданням. Для таких країн, нарівні зі стандартами стійкості мають також використовуватись стандарти економічної резилієнтності як здатності підтримувати функціонування складних систем та їх швидкого відновлення в шокових умовах. Економічне зростання не є єдиним індикатором розвитку держав, важливими стають також підвищення добробуту населення, екологічна стабільність, справедливий і раціональний розподіл ресурсів.

Висновки та перспективи подальших досліджень. Забезпечення економічної безпеки держави в умовах сучасних багатовекторних викликів неможливе без інтеграції принципів сталого розвитку та циркулярної економіки в оцінювання загроз і розробку відповідних стратегічних управлінських рішень на державному рівні.

Перспективний напрям подальших досліджень становить концептуалізація механізму державного стимулювання циркулярної економіки в Україні.

Ключові слова: економічна безпека, циркулярна економіка, сталий розвиток, резилієнтність, полікриза.

Abstract. Introduction. The modern economic system of Ukraine operates under prolonged and profound challenges caused by war; global transformations, increasing resource constraints, and escalating climate threats. Under such conditions, traditional growth models are proving to be exhausted, while the demand for a new economic paradigm aligned with the principles of sustainable development and enhanced economic security is increasing. One of the promising responses to these challenges is the concept of the circular economy – a system that ensures resource efficiency, reduces environmental pressure, and strengthens economic resilience.

Purpose. To scientifically substantiate the vectors of transformation of Ukraine's economic model through the implementation of circular economy principles as a tool to enhance the state's economic security in the context of a polycrisis reality and European integration course, considering the strategic priorities of sustainable development.

Methodology. A comprehensive set of methods was used in the study to ensure the achievement of its aim, including: the systems approach, structural-functional analysis, and institutional analysis.

Results. A critical component in improving the efficiency of resource use – an urgent task for ensuring economic security – is the availability of a high-quality data base for informed decision-making and monitoring the progress of circular economy development in the context of achieving the Sustainable Development Goals (SDGs) in Ukraine. Sustainable development in countries under extraordinary circumstances, particularly in the context of conflict and warfare, is a complex challenge. For such countries, in addition to resilience standards, standards of economic resilience must also be applied – defined as the ability to maintain the functioning of complex systems and ensure their rapid recovery under shock conditions. Economic growth is no longer the sole indicator of a country's development; improving population welfare, environmental stability, and a fair, rational distribution of resources are gaining increasing importance.

Conclusions and prospects for further research. Ensuring economic security in the face of today's multifaceted challenges is impossible without integrating the principles of sustainable development and the circular economy into the assessment of threats and the development of appropriate strategic management decisions at the state level. A promising direction for further research is the conceptualization of the mechanism of state support for the development of the circular economy in Ukraine.

Keywords: *economic security, circular economy, sustainable development, resilience, polycrisis.*

Problem Statement and Relevance to Key Scientific and Practical Tasks

The current economic system of Ukraine operates under prolonged and profound challenges stemming from war, global transformations, deepening resource constraints, and escalating climate threats. Under such circumstances, traditional growth models have proven increasingly exhausted, while the demand for a new economic paradigm aligned with the principles of sustainable development and enhanced economic security is becoming more urgent. One of the promising responses to these challenges is the concept of the circular economy – as a system that ensures resource efficiency, reduces environmental burden, and enhances economic resilience.

Against the background of Ukraine's strategic course toward European integration, the implementation of the principles of the European Green Deal and the adoption of best practices in sustainable development are gaining increasing importance. In this context, the circular economy is viewed not merely as an environmental initiative but as a system-forming vector for transforming the country's economic model.

Despite the declared strategic priorities, the implementation of circular economy principles in Ukraine remains fragmented and limited. Linear, resource-intensive approaches still dominate; waste recycling rates are low; there is a lack of effective mechanisms to incentivize businesses toward greening; coordination among public institutions is weak; and there is a shortage of high-quality analytical data for informed decision-making.

Moreover, in the context of compounded polycrises – including war, energy instability, migration, and environmental degradation – the integration of circular economy approaches is closely linked to the development of a robust economic security system. However, current tools for assessing threats to economic security do not adequately consider factors of sustainable development, particularly economic resilience, the institutional capacity of the state in the area of green regulation, and the degree of integration of circular economy practices at both micro and macro levels.

Therefore, there is a pressing need for a scientific rethinking of existing approaches to ensuring economic security, taking into account the vectors of circular economy transformation, as well as for the development of institutionally grounded mechanisms to stimulate the green transition. Especially relevant is the search for models that create synergy between national strategies, corporate initiatives, and international commitments within the framework of the UN Sustainable Development Goals and the EU–Ukraine Association Agreement.

Review of Recent Research and Publications

The theoretical foundations for the development and advancement of the concept of sustainable development have been elaborated in the works of scholars such as K. Boulding [1], H. Hotelling [2], J. Dales [3], W. D. Montgomery [4], D. Pearce, R. Turner [5], M. Hernández-Blanco, R. Costanza [6], B. M. Ali, A. O. Ahmed, M. Abedah, M. M. AbdulRahman [7], among others.

Scientific justification for improving the institutional support of the Sustainable Development Goals (SDGs) is reflected in the research of H. K. Lamba, N. S. Kumar, S. Dhir [8]; G.-L. Zhuang, S.-G. Shih, F. Wagiri [9]; R. Sanguino, A. Barroso, S. Fernández-Rodríguez [10], and others.

At the same time, there is a need to deepen the understanding of the role of the circular economy in ensuring economic security.

Purpose is to provide a scientific justification for the transformation vectors of Ukraine's economic model through the implementation of circular economy principles as a tool for strengthening the state's economic security in the context of a polycrisis reality and the European integration course, taking into account the strategic priorities of sustainable development.

Research Methodology

The study employed a set of methods that ensured the achievement of the stated purpose, including: the systems approach, the method of structural-functional analysis, and institutional analysis.

Results.

Achieving the Sustainable Development Goals (SDGs) necessitates a scientific and practical rethinking of traditional models of business activity to ensure the resilience of economic relations. This innovative approach implies embedding environmental, social, and ethical dimensions across all areas of the financial and economic space. In the context of escalating polycrises, global and regional shocks, and military conflicts, modern policy-makers have come to understand that economic growth alone is no longer a sufficient indicator of a country's development. Increasingly important are improvements in population well-being, ecological stability, and the fair and rational distribution of resources.

In this context, it is appropriate to emphasize the importance of modernizing Ukraine's current economic model through the implementation of circular economy principles and the green transition, as outlined in the Ukraine Facility Plan. This shift is driven by the need to revise the state's economic security priorities, among which is the diversification of material reproduction potential (including primary and secondary sources; recyclable resources, etc.).

Another crucial element for improving the efficiency of resource use – as a pressing task in ensuring economic security – is the availability of a high-quality data base to support decision-making and to monitor the progress of building a circular economy within the framework of achieving the SDGs in Ukraine.

Sustainable development in countries experiencing extraordinary circumstances – particularly during conflicts and military action – is a complex challenge. In such contexts, alongside conventional sustainability standards, economic resilience standards must also be applied, which refer to the ability to maintain the functioning of complex systems and enable their rapid recovery under shock conditions. For Ukraine, during the war and throughout post-war recovery, this issue becomes especially relevant.

An essential component in assessing resilience and stability in the face of economic security threats at the macro-, meso-, and micro-levels is the availability of reliable, accurate, and inclusive information, one of the key sources of which is sustainability reporting. In the corporate sector, such reports serve, on the one hand, to reflect a business entity's level of adaptability to current challenges and, on the other hand, to provide aggregate data for tracking progress toward the SDGs at the macro level.

Achieving the SDGs contributes to strengthening the core elements of economic security, particularly through improved energy efficiency, rational resource use, human capital development, and environmental sustainability. In turn, a robust economic security system creates the conditions necessary for the realization of long-term sustainable development priorities by ensuring macroeconomic stability, institutional capacity, and investment attractiveness. Therefore, the integration of the SDGs into the strategic management system of economic security is a key prerequisite for sustainable development in the face of today's global challenges (see Table 1).

Table 1

Linkages between Economic Security Components and SDGs

Challenges and Threats to Economic Security	SDGs
Macroeconomic Security	
Sharp economic decline due to the collapse of business activity during wartime and the inability to conduct business in certain regions affected by military conflict	SDG 8 «Decent Work and Economic Growth»
	SDG 9 «Industry, Innovation and Infrastructure»
Capital outflow and business relocation abroad	SDG 8 «Decent Work and Economic Growth»
	SDG 17 «Partnerships for the Goals»
Significant decline in investment activity	SDG 17 «Partnerships for the Goals»
Critical reduction in credit financing of fixed capital, working capital, and investments	SDG 17 «Partnerships for the Goals»
Decrease in labor potential due to intensive migration, large share of internally displaced persons (IDPs), and civilian casualties	SDG 4 «Quality Education»
	SDG 8 «Decent Work and Economic Growth»
	SDG 16 «Peace, Justice and Strong Institutions»
Rising consumer price index (inflation)	SDG 2 «Zero Hunger»
Decline in private consumption	SDG 12 «Responsible Consumption and Production»
Financial Security	
Deterioration of the financial stability of the pension system	SDG 10 «Reduced Inequalities»
High level of state budget deficit	SDG 16 «Peace, Justice and Strong Institutions»
Significant loss of tax and customs revenues at national and local levels	SDG 16 «Peace, Justice and Strong Institutions»
Lack of trust from citizens and businesses towards tax and customs authorities	SDG 16 «Peace, Justice and Strong Institutions»
Underfunding of certain budget expenditures due to limited state financial capacity	SDG 17 «Partnerships for the Goals»
Growing public debt and rising expenditures for its servicing	-
Declining institutional capacity of the banking system due to shrinking resource base, losses, and reduced capitalization	SDG 17 «Partnerships for the Goals»
Sharp increase in non-performing loans in bank portfolios	-
Investment and Innovation Security	
Reduction in public capital investment	SDG 17 «Partnerships for the Goals»
Decline in innovation activity in the economy	SDG 8 «Decent Work and Economic Growth»
	SDG 9 «Industry, Innovation and Infrastructure»
	SDG 17 «Partnerships for the Goals»
	SDG 9 «Industry, Innovation and Infrastructure»
Weakening dynamics of investment processes in industry	SDG 9 «Industry, Innovation and Infrastructure»
Insufficient funding for research and development	SDG 9 «Industry, Innovation and Infrastructure»
Decline in capital investment in the corporate sector	SDG 17 «Partnerships for the Goals»
Relocation of innovation-active companies abroad	SDG 17 «Partnerships for the Goals»

Source: developed by the author.

This leads to the conclusion that it is necessary to improve the assessment of economic security challenges by integrating sustainable development data into the process of threat qualification. This can be achieved by complementing each component of economic security – according to the Methodological Recommendations for Calculating the Level of Economic Security of Ukraine, approved by the Order of the Ministry of Economic Development and Trade of Ukraine (Ministry of Economy) dated October 29, 2013, No. 1277 – with specific challenges related to achieving the goals of resilient and sustainable development (see Table 2).

Table 2

**Proposals for Expanding the List of Challenges
and Threats to Economic Security (Case of Selected Components)**

Component of Economic Security	Proposed Additions to the List of Challenges
1. Macroeconomic Security	1.1 Low efficiency in natural resource management (need to enhance transparency and accountability through improved reporting by economic entities: report on payments to the state (ensuring public accessibility); corporate sustainability reporting).
	1.2 Lack of adequate infrastructure for the transition to a digital economy.
	1.3 Insufficient government support for human capital.
2. Financial Security	2.1 Strengthening instruments to promote the transition to green finance.
	2.2 Risk of information asymmetry due to low quality of data from financial sector entities regarding sustainable development and their contribution to the SDGs.
3. Investment and Innovation Security	3.1 Insufficient (low) quality of information support for decision-making by investors regarding the sustainability and resilience of Ukrainian enterprises.
	3.2 Delays in achieving the stated goals of the green transition and environmental protection under the Ukraine Facility, and insufficient progress in integrating circular economy principles into business operations in Ukraine.

Source: developed by the author.

Thus, ensuring the economic security of the state amid today's multifaceted challenges is impossible without integrating the principles of sustainable development and the circular economy into threat assessment and the development of appropriate strategic management decisions at the state level.

Conclusions and Prospects for Further Research.

Complementing each component of economic security with specific challenges related to the achievement of the SDGs enables the formation of a more responsive and up-to-date system for monitoring and responding to risks. The use of sustainable development data – including sustainability reporting, reports on payments to the state, and other sources of information – contributes to building a transparent, accountable, and resilience-oriented model of economic governance. The implementation of such approaches will enhance the resilience and adaptability of Ukraine's economy under martial law and during the post-war recovery period.

A promising direction for further research is the conceptualization of a mechanism for state stimulation of the circular economy in Ukraine in the context of embedding European practices.

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