

**Ministry of Education and Science of Ukraine  
Sumy State University  
Kaunas University of Technology, School of Economics and  
Business  
University of Bradford, School of Management  
Riga Technical University  
Czech University of Life Sciences Prague  
University of New Brunswick  
International Centre for Enterprise and Sustainable  
Development (ICED), Accra, Ghana**



# **"ECONOMICS FOR ECOLOGY"**

*Materials  
International scientific-practical conference  
(Ukraine, Sumy, May - June 31- 01, 2022)*

*Sumy  
Sumy State University  
2022*

УДК: 330.36.012

Авторський знак: S70

Editor-in-Chief Prof., Dr. Karitseva Oleksandra, Head of the Department of Economics, Entrepreneurship and Business Administration, Sumy State University

Approved by the Academic Council of Sumy State University (order № 0547-I, 12 September, 2022)

Economics for Ecology : Proceedings of the International Scientific and Practical Conference, Sumy, 31 May – 01 June, 2022 / edited by Karitseva Oleksandra and Kubatko Oleksandr . – Sumy : Sumy State University, 2022. – 93 p. (*electronic edition*)

For scientists, scientists, students, graduate students, representatives of business and public organizations and higher education institutions and a wide range of readers.

## ENSURING THE STABILITY OF THE ECONOMY THROUGH ENVIRONMENTAL PROTECTION AND MODELING FOR EFFECTIVE DECISION MAKING\*

*Vira Shvydka, student of ARI BiEM,  
Voronenko Viacheslav, PhD, As. Prof.,  
Sumy State University, Ukraine*

Ensuring the macroeconomic stability of the country is the main task of the functioning of the system of socio-economic relations within the state. Achieving the global stability and stability of the national economy is a very important issue today, which must be addressed as a matter of priority. Therefore, it is necessary to study the nature of the economic growth of national economies through the formation and optimization of complex systems of factors for effective decision-making.

Environmental protection is prioritized by most governments; public authorities are encouraged to use environmental criteria in procurement. In some countries provisions for this are embedded in public procurement regulations. In others, there is no formal requirement to do so but public authorities may still adhere to green procurement, aligning their procurement practices with the government priorities, or responding to the pressure from other institutions (values, goodwill, desire to be seen as a keen government supporter are among factors potentially contributing to such an alignment), (Elena V. Shadrina Dmitri V. Vinogradov Dmitri V. Kashin, 2022).

Having analyzed the relevant efficiency factors for the national economy, we can conclude that in our economic system there is no uniform, clear for all conceptual approaches rules. Thus, Ukraine's economy is significantly destroyed, because the adoption of a significant number of unsystematic political decisions leads to an increase in external debt and reduced financial resources of the country (Ruska, Ivashchuk, 2014).

One of the main components that determine the manifestation and specificity of the development of institutions in the general system of the main factors managing the efficiency of the national economy is the level of democracy in society. Therefore, let's build a model of effective decision-making in the field of monetary, fiscal policy, and open economy, taking into account the level of democracy as a political regime that forms the appropriate direction of these policies, which can be determined by equations (Lyulyov O. V., Pimonenko T. V. Liulova L., 2018):

$$Mon_{it} = c + \alpha DEM_{it} + Vt + \omega it \quad (1)$$

$$SB_{it} = c + \beta DEM_{it} + Vt + \theta it \quad (2)$$

$$Ouv_{it} = c + \gamma DEM_{it} + Vt + \varphi it \quad (3)$$

$Mon_{it}$  — the logarithm of the growth rate of money supply (assessment of monetary policy), ("Towards a green economy in Europe – EU environmental policy targets and objectives 2010–2050", 2013);

$SB_{it}$  — fiscal balance to GDP (assessment of fiscal policy);

$Ouvit$  — openness of trade;

$DEM_{it}$  — level of democracy in the period (calculated according to the ratings of «The Economist Intelligence Unit», «Nations in Transit», «Voice and accountability», ("Towards a green economy in Europe – EU environmental policy targets and objectives 2010–2050", 2013);

$V_t$  — corresponds to temporarily fixed effects;

$\omega_{it}$ ,  $\varphi_{it}$  — stochastic error;

$c$ ,  $\alpha$ ,  $\beta$ ,  $\gamma$  — constant.

If the level of democracy increases and the control over the creation of money becomes more difficult, then the coefficient in the Democracy Index becomes positive for equation (1). Instead, with the emergence of difficulties in the liberalization of trade and the establishment of sound fiscal policy in equations (2) — (3) we will have negative values of the coefficients (Lyulyov O. V., Pimonenko T. V. Liulova L., 2018).

Thus, by creating macroeconomic models, it is possible to develop approaches to the formation of multi-purpose programs for the macroeconomic growth of the state. One of the main factors of positive impact on the country's macroeconomic efficiency should be the implementation of reforms to promote democracy.

Along with the above, the implementation of effective mechanisms of innovation policy is also a key factor in the stability and sustainability of the country [7,8,13,14,15,16,17,18,21,23,24,27]. The Ukrainian capital is the most accessible source of funds for intensifying innovation activity within the country. Thus, an important step in this direction is to create a mechanism for the development of innovation within the country (Ruska, Ivashchuk, 2014).

To sum up, despite no regulatory requirement to do so, a significant fraction of organizations in our sample use environmental criteria in procurement, and use them repeatedly, yet organizations funded from the Federal budget (which are supposed to have stronger incentives to demonstrate compliance with government objectives) are less likely to act pro-environmentally than other types of institutions and enterprises. This suggests strong implicit incentives to behave pro-environmentally stem from informal institutions like culture, habits and shared values, rather than from the willingness to align with the declared priorities of the government. Still, public bodies standing high in the power hierarchy exhibit more pro-environmentalism in their procurement practices, potentially attributable to

reduced caution due to better connectedness and administrative power (Elena V. Shadrina Dmitri V. Vinogradov Dmitry V. Kashin, 2022).

Thus, to solve the problem of achieving stability and stability of the national economy, a model was proposed to assess and build effective solutions in the field of monetary, fiscal policy, and openness of the economy through the level of democracy and developed a model for a progressive national economy through innovation [5,6,10,11,12,19,20,22,25,26].

Overall, organizations subject to a more rigid procurement regulation, even if only in some part of their procurement activities, demonstrate less GPP than organizations under more flexible regulations. From a policy perspective, clear guidance on how to implement environmental procurement and less rigidity in regulation would help towards more GPP through pressure from informal institutions. A managerial implication from our study is that investments in improvement of environmental awareness of staff alone may be insufficient to promote GPP. On top of that, establishing internal GPP strategies and regular GPP training would help reduce the caution factor, as would do the improved communication with other procurement entities on approaches and experiences with GPP (Elena V. Shadrina Dmitri V. Vinogradov Dmitry V. Kashin, 2022).

## References

1. Ruska, Ivashchuk. (2014). Methods of economic and statistical research. Ministry of Education and Science of Ukraine Ternopil National Economic University, 190.

2. Lyulyov O. V., Pimonenko T. V. Liulova L. (2018). Between macroeconomic stability and democracy. Yu Empirical Linkages. [URL: http://mer.fem.sumdu.edu.ua/content/acticles/issue\\_36/Alexey\\_V\\_Lyulyov\\_Tetiana\\_V\\_Pimonenko\\_Lilia\\_Yu\\_LyulovaEmpirical\\_Linkages\\_Between\\_Macroeconomic\\_Stability\\_and\\_Democracy.pdf](http://mer.fem.sumdu.edu.ua/content/acticles/issue_36/Alexey_V_Lyulyov_Tetiana_V_Pimonenko_Lilia_Yu_LyulovaEmpirical_Linkages_Between_Macroeconomic_Stability_and_Democracy.pdf).

3. Towards a green economy in Europe – EU environmental policy targets and objectives 2010–2050. (2013). European Environment Agency. [URL: https://www.eea.europa.eu/publications/towards-a-green-economy-in-europe](https://www.eea.europa.eu/publications/towards-a-green-economy-in-europe).

4. Elena V. Shadrina Dmitri V. Vinogradov Dmitry V. Kashin. (2022). Implicit incentives in green public procurement: Good intentions versus rigid regulations. Ecological Economics, 198.

5. Pavlo Hrytsenko, Viacheslav Voronenko, Yevhen Kovalenko, Tetiana Kurman and Vitalii Omelianenko (2021). Assessment of the development of innovation activities in the regions: Case of Ukraine. Problems and Perspectives in Management, 19(4), 77-88. DOI: 10.21511/ppm.19(4).2021.07.

6. Kovalov, B., Burlakova, I., and Voronenko, V. (2017). Evaluation of Tourism Competitiveness of Ukraine's Regions. *Journal of Environmental Management and Tourism*, 8(2), 460-466. DOI: 10.14505//jemt.v8.2(18).19.

7. Voronenko, V., Kovalov, B., Horobchenko, D., and Hrycenko P. (2017). The Effects of the Management of Natural Energy Resources in the European Union. *Journal of Environmental Management and Tourism*, 8(7), 1410-1419. DOI: 10.14505//jemt.v8.7(23).10.

8. Horobchenko, D., Voronenko, V. (2018). Approaches to the Formation of a Theoretical Model for the Analysis of Environmental and Economic Development. *Journal of Environmental Management and Tourism*, 9(5), 1108-1119. DOI: 10.14505//jemt.v9.5(29).24.

9. Babenko, V., Matsenko, O., Voronenko, V., Nikolaiev, S., Kazak, D. (2020). Economic prospects for cooperation the European Union and Ukraine in the use of blockchain technologies. *Вісник Харківського національного університету імені В. Н. Каразіна. Серія «Міжнародні відносини. Економіка. Країнознавство. Туризм»*, 12, 8-17. DOI: 10.26565/2310-9513-2020-12-01.

10. Hrytsenko, P. V., Kovalenko, Y. V., Voronenko, V. I., Smakouz, A. M., Stepanenko, Y. S. (2021). Analysis of the Definition of “Change” as an Economic Category. *Механізм регулювання економіки*, 1, 92-98. DOI: 10.21272/mer.2021.91.07.

11. Derev`yanko Yu.M., Lukash O.A., Litsman M.A., Svitlychna A.O. The State and Trends of Enterprises Efficiency on the Basis of Modern Indicators. *Механізм регулювання економіки*. 2020. 1. С. 106-115. DOI: <https://doi.org/10.21272/mer.2020.87.09>.

<https://essuir.sumdu.edu.ua/handle/123456789/80687>

12. Hrytsenko, P. V., Kovalenko, Y. V., Voronenko, V. I., Smakouz, A. M., Stepanenko, Y. S. Analysis of the Definition of “Change” as an Economic Category. *Механізм регулювання економіки*. 2021. 1. С. 92-98. DOI: 10.21272/mer.2021.91.07. <https://essuir.sumdu.edu.ua/handle/123456789/84025>

13. Kubatko O. V., Yaryomenko D. O., Kharchenko M.O., Almashaqbeh Ismail Y. A. Economic and environmental aspects of Smart Grid technologies implementation in Ukraine. *Механізм регулювання економіки*. 2020. 1. С. 28-37. DOI: [doi.org/10.21272/mer.2020.87.01](https://doi.org/10.21272/mer.2020.87.01).

<https://essuir.sumdu.edu.ua/handle/123456789/80469>

14. Kubatko O.V., Ignatchenko V.M., Shaparenko S.V., Starodub I.A., Yaryomenko D.O. Economic optimization of resource use based on smart grid. *Механізм регулювання економіки*. 2020. 2. С. 37-46. DOI: [doi.org/10.21272/mer.2020.87.03](https://doi.org/10.21272/mer.2020.87.03).

<https://essuir.sumdu.edu.ua/handle/123456789/82241>

15. Lukash O.A., Derev`yanko Yu.M., Kozlov D.V., Mukorez A.I. Regional Economic Development in The Context of the COVID-19 Pandemic and the

Economic Crisis. *Механізм регулювання економіки*. 2021. 1. С. 99-107. DOI: <https://doi.org/10.21272/mer.2021.91.08>.

<https://essuir.sumdu.edu.ua/handle/123456789/84026>

16. Matsenko, O., Kovalev, Y., Tkachenko, O. & Chorna, Y. Complex Solution of Ecological and Economic Problems of Traffic Jams. *Mechanism of Economic Regulation*. 2020. 4. С. 6–15. DOI: <https://doi.org/10.21272/mer.2019.86.02>.

<https://essuir.sumdu.edu.ua/handle/123456789/77238>

17. Matsenko, O., Tereshchenko, V., Piven, V., Panchenko, A. & Perekhod, E. Socio-environmental and Economic Problems of Solar Panels Recycling. *Mechanism of Economic Regulation*. 2020. 1. С. 48–55. DOI: <https://doi.org/10.21272/mer.2020.87.03>.

<https://essuir.sumdu.edu.ua/handle/123456789/80473>

18. Melnyk L. Hr, Shaulska L. V., Matsenko O. I., Piven V. S., Konoplov V. V. Modern Trends in the Production of Renewable Energy: the Cost Benefit Approach. *Механізм регулювання економіки*. 2021. 1. С. 6-17. DOI: <https://doi.org/10.21272/mer.2021.91.01>. <https://essuir.sumdu.edu.ua/handle/123456789/83761>

19. Melnyk L., Derykolenko O., Matsenko O., Mazin Y., Piven V. Modern Trends in the Development of Renewable Energy: the Experience of the EU and Leading Countries of the World. *Mechanism of Economic Regulation*. 2020. 3. С. 117-133. DOI: <https://doi.org/10.21272/mer.2020.89.09>.

<https://essuir.sumdu.edu.ua/handle/123456789/81810>

20. Melnyk L., Matsenko O., Piven V., Kyrylenko M., Derykolenko O. Formation of Human Capital in the Digital Economy. *Mechanism of economic regulation*. 2020. 4. С. 19-35. DOI: <https://doi.org/10.21272/mer.2020.90.02>.

<https://essuir.sumdu.edu.ua/handle/123456789/83750>

21. Nesterenko V., Dolhosheieva O., Kirilieva A., Voronenko V., Hrytsenko P. «Green» vector of the economic development of the country. *Механізм регулювання економіки*. 2021. 3. С. 82-90. DOI: <https://doi.org/10.21272/mer.2021.93.07>.

<https://essuir.sumdu.edu.ua/handle/123456789/87533>

22. Pavlenko D. S., Kubatko O. V., Ziabina Y. A. Economic, Social and Technological Factors of Startup's Success. *Механізм регулювання економіки*. 2020. 1. С. 64-74. DOI: <https://doi.org/10.21272/mer.2020.87.05>.

<https://essuir.sumdu.edu.ua/handle/123456789/80477>

23. Sotnyk I. M., Matsenko O. M., Popov V. S., Martymianov A. S. Ensuring the economic competitiveness of small green energy projects. *Mechanism of Economic Regulation*. 2021. 1. С. 28-40. DOI: <https://doi.org/10.21272/mer.2021.91.03>.

<https://essuir.sumdu.edu.ua/handle/123456789/84021>

24. Sotnyk I., Sotnyk M., Olondar A., Pidopryhora N., Maslii M. Managing the energy-efficient development of the university: re-strains and ways to overcome

them. *Mechanism of Economic Regulation*. 2020. 3. С. 68-86. DOI: <https://doi.org/10.21272/mer.2020.89.06>.

<https://essuir.sumdu.edu.ua/handle/123456789/81758>

25. Tambovceva T., Melnyk L., Dehtyarova I., Nikolaev S. Circular Economy: Tenden-cies and Development Per-spectives. *Mechanism of Economic Regulation*. 2021. 2. С. 33-42. DOI: <https://doi.org/10.21272/mer.2021.92.04>.

<https://essuir.sumdu.edu.ua/handle/123456789/85156>

26. Yaremenko A., Chortok Yu., Goncharenko O., Chama Theodore KETUAMA Peculiarities of formation of the region's logistics infrastructure on the basis of Eco-innovations within the framework of stakeholders' partnership in the Enterprise-Region. *Механізм регулювання економіки*. 2021. 4. С. 9-13.

<https://essuir.sumdu.edu.ua/handle/123456789/87514>

27. Yevdokymov Andriy V., Dron Viktoriya V., Yevdokymova Alona V., Karintseva Oleksandra I., Kharchenko Mykola O. Designing the information educational environment of the studying course for the educational process management using cloud services. *Механізм регулювання економіки*. 2020. 3. С. 87-96. DOI: [doi.org/10.21272/mer.2020.89.06](https://doi.org/10.21272/mer.2020.89.06).

<https://essuir.sumdu.edu.ua/handle/123456789/81759>

*\*The paper is prepared within the scientific research project “Sustainable development and resource security: from disruptive technologies to digital transformation of Ukrainian economy” (№ 0121U100470).*

## **ESSENCE AND MAIN TASKS OF ECOLOGICAL AND ECONOMIC ANALYSIS OF ENTERPRISE ACTIVITY\***

*Sahnenko Tetiana, student of ARI BiEM,  
Voronenko Viacheslav, PhD, As. Prof.,  
Oleksandr Derykolenko, PHD in Economics, As., Prof.,  
Sumy State University, Ukraine*

Ecological and economic system has two major subsystems that combine with each other and in harmony and integrity. Extraction of mineral and biological resources provides opportunities to ensure the existence of the economic system. With proper use, you can analyze the level of environmental efficiency of the region, state, territory.

Each company aims at a complete analysis to identify strengths and weaknesses. The environmental factor is not an exception. Growing concerns about the quality of this factor have focused producers' attention on the possible