

THE ESSENCE OF DECOUPLING AS THE MAIN CONDITION FOR THE EFFECTIVE IMPLEMENTATION OF THE SUSTAINABLE DEVELOPMENT CONCEPT**L. Korolchuk**

Lutsk National Technical University, korolchuck@i.ua

The main goal of the concept of sustainable development worldwide and at the level of nation states is the harmonious coexistence of man and nature, when the economic system that creates benefits for human life, functions without harming the environment, and is able to demonstrate economic growth that does not depend on increasing the use of non-renewable resources in production processes and does not create additional negative impact on the ecosystem. Such a gap between economic growth and environmental damage is called decoupling.

The word "decoupling" means "disconnection" and is used in various sciences, such as physics, mechanics, electronics, finance, economics, etc., to denote the rupture of the relationship between processes and phenomena. In studies of the economics of nature management and environmental protection, sustainable development, green, circular, or circular economy, this word is used in the phrases: "decapping in the economy" [3; 2], "ecological decoupling" [5], "ecological and economic decoupling" [8; 9], "decoupling of economic growth and environmental impact" [6], "decoupling from economic growth and consumption" [11] and "decoupling of environmental pressure from economic growth" [12], etc.

The work of P. Tapio, M. Fisker-Kowalski, K.Y. Zeng and V.M. Wong, O.O. Veklych and B.M. Danylyshyn, O. Vatchenko and K. Svistun, O.M. Tura, A.V. Barzhina, I.M. Sotnyk and L.A. Kulik and others. Despite the high interest of scientists in this topic, we consider it appropriate to deepen research in this area in order to systematize the theoretical material, clarify and improve definitions, as well as the essence of basic concepts for their operation in the future.

The decoupling of environmental pressures from economic growth was first considered by the Organization for Economic Co-operation and Development (OECD) in its 2002 report "Indicators to Measure the Decoupling of Environmental Pressure from Economic Growth" [12], which refers to the gap between "environmental bads" and "economic goods", which has become one of the main goals of the OECD Environment Strategy for the first decade of the 21st century.

Today in the scientific literature there are many determinations of this type of decoupling, which scientists give depending on the subject of their study. To maximize the definition of this concept for all possible parameters, we propose to analyze the existing definitions of decoupling with the subsequent separation of common content features between them, which we synthesize into a single definition. As

our analysis of the existing definitions of the concept of “decoupling” [12; 4; 7; 1; 10; 3; 6; 13] shows, they have three common features:

1) the predominance of economic growth of the economic system over the environmental damage it causes.

Since decoupling is treated as a gap, there is a positive gap between the economic growth sought by the economic system and environmental losses as prices for such growth, it means decoupling occurs when the ratio of economic growth to environmental damage is greater than one.

2) environmental damage is assessed by two groups of factors: resource factors and environmental factors.

Environmental losses can occur both at the entrance to the economic system in the form of exhaustible raw materials and non-renewable energy resources used in production, and at the exit from it as emissions of harmful substances into the environment (greenhouse gases, industrial effluents, waste, etc.).

3) the growing gap between the economic growth of the economic system and the environmental damage it causes.

Decoupling involves a steady growth of the gap between economic growth and environmental damage, which is expected either by stopping maximizing environmental losses from the economic system, or reducing them by introducing eco-innovation into production processes, expanding the use of alternative energy sources, recycling, waste disposal without damage to the ecosystem, etc.

In turn, the application of the method of synthesis to our common content features in the analyzed definitions allows us to define decoupling as a state of the economic system in which its economic growth outweighs the environmental damage it does to the ecosystem through two groups of factors: resource and factors environmental impact with the prospect of widening such a gap in the future.

References

1. Akulov, A. O. (2013). Dekaplinh efekt v industrialnomu regioni. [Decoupling effect in the industrial region (Kemerovo region).] *Ekonomicheskie i sotsyalnye peremeny: fakty, tendentsii, prohnaz (Economic and Social Changes: Facts, Trends, Forecast)*, 4, 177-185. URL: http://library.vsec.ac.ru/Files/articles/1378699300AKULOV_EFFEKT%20DEKAPLINGA.PDF. [in Russian].
2. Arsanova Z., Hagmuradov Z., Hagmyradova S. (2019). Dekaplinh v ekonomike – suschnost, opredelenie i vydy. [Decoupling in economy – essence, definition and types]. *Society, economy, management*. Vol. 4, №4, C. 13-18. URL: <https://cyberleninka.ru/article/n/dekapling-v-ekonomike-suschnost-opredelenie-i-vidy/viewer>. [in Russian].
3. Vatchenko A., Svystun K. (2019). Dekaplinh v ekonomici – sutnist, vyznachennja i vydy. [Decoupling in economy - Декаплінг в економіці – essence, definition and types]. *Economic space*. № 141. 5-24. URL: http://nbuv.gov.ua/UJRN/ecpros_2019_141_3. [in Ukrainian].
4. Danylyshyn, B.M. & Veklych, O.O. (2008). Efekt dekaplinhu yak faktor vzayemozviazku mizh ekonomichnym zrostanniam i tyskom na dovkillia [Decoupling effect as a factor of interrelation between economic growth and pressure on environment]. *Visnyk Nacionalnoi Akademii Nauk Ukrainy – Bulletin of National Academy of Sciences of Ukraine*, 5, 12-18 [in Ukrainian].
5. Jelisjeeva G. (2014). Ocinka vplyvu rozvytku zelenoi ekonomiky za dopomogoju doslidzennja procesiv decaplingu. [Assessing the impact of green economy development through the study of decoupling processes]. *Intelligence XXI*. № 2. 127-135. URL: http://nbuv.gov.ua/UJRN/int_XXI_2014_2_16. [in Ukrainian].
6. Sotnyk, I.M. & Kulyk, L.A. (2014). Dekaplinh-analiz ekonomichnoho zrostannia ta vplyvu na dovkillia v regionax Ukrainy [Decoupling analysis of economic growth and environmental impact in the regions of Ukraine]. *Ekonomichni chasopysy-XXI – Economic Annals-XXI*, 7-8, 60-64. URL: http://soskin.info/userfiles/file/2014/7-8_2014/7-8_2/Sotnyk_Kulyk.pdf [in Ukrainian].
7. Tur, O.M. (2012). Ekonomichne obgruntuvannia stratehii ekolocho-orientovanoho rozvytku nacionalnoi ekonomiky [Economic substantiation of the strategy of ecologically-oriented development of the national economy]. *Candidate's thesis*. Sumy: SumSU [in Ukrainian].
8. At a glance. Thinking about tomorrow. Decoupling economic growth from environmental harm European Parliamentary Research Service Author: Eamonn Noonan with Stefano Vrizzi, Global Trends Unit PE. July. 2020 URL:

[https://www.europarl.europa.eu/RegData/etudes/ATAG/2020/651916/EPRS_ATA\(2020\)651916_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/ATAG/2020/651916/EPRS_ATA(2020)651916_EN.pdf).
[in English].

9. CFI Education Inc. Decoupling. The act of creating gaps. URL: <https://corporatefinanceinstitute.com/resources/knowledge/finance/decoupling/>[in English].

10. Fischer-Kowalski M. Decoupling natural resource use and environmental impacts from economic growth: A Report of the Working Group on Decoupling to the International Resource Panel / M. Fischer-Kowalski, M. Swilling, E.U. von Weizsacker, Y. Ren, Y. Moriguchi, W. Crane et al. // United Nations Environment Programme, 2011. 174 p. URL: [http://wedocs.unep.org/bitstream/handle/20.500.11822/9816/-Decoupling%3a natural resource use and environmental impacts from economic growth -2011Decoupling_1.pdf](http://wedocs.unep.org/bitstream/handle/20.500.11822/9816/-Decoupling%3a+natural+resource+use+and+environmental+impacts+from+economic+growth-2011Decoupling_1.pdf). [in English].

11. Hennicke P., Khosla A., Dewan Ch., Nagrath K., Niazi Z., O'Brien M., Singh Thakur M., Wilts H. Decoupling economic growth from resource consumption. A transformation strategy with manifold socio-economic benefits for India and Germany. Indo-german expert group on green and inclusive economy. Nov. 2014. 36 p. URL: https://www.giz.de/de/downloads/giz2014-en-IGEG_2_decoupling-economic-growth.pdf. [in English].

12. Indicators to measure decoupling of environmental pressure from economic growth. Executive summary / The OECD Environment Programme. – 3 p. URL: <http://www.oecd.org/dataoecd/0/52/1933638.pdf>. [in English].

13. IRP, 2017. Assessing global resource use: A systems approach to resource efficiency and pollution reduction. A Report of the International Resource Panel. United Nations Environment Programme, Nairobi, Kenya. 102 p. URL:[file:///C:/Documents%20and%20Settings/User/My%20Documents/Downloads/assessing_global_resource_use_amended_130318_0%20\(1\).pdf](file:///C:/Documents%20and%20Settings/User/My%20Documents/Downloads/assessing_global_resource_use_amended_130318_0%20(1).pdf). [in English].